Bid Number/बोली क्रमांक (बिड संख्या):
GEM/2025/B/5794812
Dated/दिनांक : 08-01-2025

Bid Document/ बिड दस्तावेज़

Bid Details/बिड विवरण	
Bid End Date/Time/बिड बंद होने की तारीख/समय	05-02-2025 11:00:00
Bid Opening Date/Time/बिड खुलने की तारीख/समय	05-02-2025 11:30:00
Bid Offer Validity (From End Date)/बिड पेशकश वैधता (बंद होने की तारीख से)	120 (Days)
Ministry/State Name/मंत्रालय/राज्य का नाम	Ministry Of Petroleum And Natural Gas
Department Name/विभाग का नाम	Oil India Limited
Organisation Name/संगठन का नाम	Oil India Limited
Office Name/कार्यालय का नाम	Oil India Limited
क्रेता ईमेल/Buyer Email	buyer13.oil.as@gembuyer.in
Total Quantity/कुल मात्रा	10
Item Category/मद केटेगरी	Wireless Process Monitoring system OCS 1 , Wireless Process Monitoring system OCS 8 , Wireless Process Monitoring system JOYPUR OCS , Wireless Process Monitoring system BAGHJAN EPS , Wireless Process Monitoring system KHUMCHAI EPS , Wireless Process Monitoring system USHAPUR OCS , Wireless Process Monitoring system LANGKASHI OCS , Wireless Process Monitoring system JORAJAN OCS , Wireless Process Monitoring system NAGAJAN OCS , Wireless Process Monitoring system BHEKULAJAN EPS
GeMARPTS में खोजी गई स्ट्रिंग / Searched Strings used in GeMARPTS	Wireless Process Monitoring System, Process Monitoring System, Wireless Monitoring System

Bid Details/बिड विवरण	
GeMARPTS में खोजा गया परिणाम / Searched Result generated in GeMARPTS	**Searched String**: Wireless Process Monitoring System Wireless Attendant Calling System, Live Remote Temperature and Humidity Monitoring and Alert System, electronic physiogrowth monitoring system, intracompartmental pressure monitoring set accessories (Pressure Monitoring Line), Water Purification System with UV (Ultra-Violet Process) or UV (Ultra-Violet Process)+UF (Ultra-Filtration Process), Multipara Monitor - Low End, Continuous Ambient Particulate Monitoring System, Urodynamic System, media control systems or wireless presentation system, Accounts and Bill Monitoring Management System Software **Searched String**: Process Monitoring System electronic physiogrowth monitoring system, Multipara Monitor - Low End, intracompartmental pressure monitoring set accessories (Pressure Monitoring Line), Live Remote Temperature and Humidity Monitoring and Alert System, Water Purification System with UV (Ultra-Violet Process) or UV (Ultra-Violet Process)+UF (Ultra-Filtration Process), RO Water Treatment System Above 50 LPH Filtration Capacity, Continuous Ambient Particulate Monitoring System, Accounts and Bill Monitoring Management System Software, Process Calibrator, Potable Water Purification System with Inbuilt Water Cooler **Searched String**: Wireless Monitoring System Wireless Attendant Calling System, Multipara Monitor - Low End, electronic physiogrowth monitoring system, Live Remote Temperature and Humidity Monitoring and Alert System, intracompartmental pressure monitoring set accessories (Pressure Monitoring Line), RO Water Treatment System Above 50 LPH Filtration Capacity, Continuous Ambient Particulate Monitoring System, Wireless Bridge, Potable Water Purification System with Inbuilt Water Cooler, Wireless Controller
अधिसूचना के लिए चयनित प्रासंगिक श्रेणियाँ / Relevant Categories selected for notification	• Wireless Controller • Central Monitoring Station • media control systems or wireless presentation system
BOQ Title/बीओक्यू शीर्षक	Wireless Process Monitoring System for 10 Installations of Oil India Limited
MSE Exemption for Years of Experience and Turnover/ अनुभव के वर्षों से एमएसई छूट	No
Startup Exemption for Years of Experience and Turnover/ अनुभव के वर्षों से स्टार्टअप छूट	No

Bid Details/बिड विवरण	
Document required from seller/विक्रेता से मांगे गए दस्तावेज़	Experience Criteria,Bidder Turnover,Certificate (Requested in ATC),OEM Authorization Certificate,OEM Annual Turnover,Additional Doc 1 (Requested in ATC),Additional Doc 2 (Requested in ATC),Additional Doc 3 (Requested in ATC),Additional Doc 4 (Requested in ATC),Compliance of BoQ specification and supporting document *In case any bidder is seeking exemption from Experience / Turnover Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer
Do you want to show documents uploaded by bidders to all bidders participated in bid?/	No
Bid to RA enabled/बिड से रिवर्स नीलामी सक्रिय किया	No
Type of Bid/बिड का प्रकार	Two Packet Bid
Primary product category	Wireless Process Monitoring system OCS 1
Time allowed for Technical Clarifications during technical evaluation/तकनीकी मूल्यांकन के दौरान तकनीकी स्पष्टीकरण हेतु अनुमत समय	5 Days
Inspection Required (By Empanelled Inspection Authority / Agencies pre-registered with GeM)	No
Payment Timelines	Payments shall be made to the Seller within **21** days of issue of consignee receipt-cum-acceptance certificate (CRAC) and on-line submission of bills (This is in supersession of 10 days time as provided in clause 12 of GeM GTC)
Evaluation Method/मूल्यांकन पद्धति	Total value wise evaluation
Financial Document Required/वित्तीय दस्तावेज की आवश्यकता है।	Yes
Arbitration Clause	No
Mediation Clause	No

EMD Detail/ईएमडी विवरण

Advisory Bank/एडवाईजरी बैंक	ICICI
EMD Amount/ईएमडी राशि	887869

ePBG Detail/ईपीबीजी विवरण

Advisory Bank/एडवाइजरी बैंक	ICICI
ePBG Percentage(%)/ईपीबीजी प्रतिशत (%)	5.00

Duration of ePBG required (Months)/ईपीबीजी की अपेक्षित अवधि (महीने).	30

(a). EMD EXEMPTION: The bidder seeking EMD exemption, must submit the valid supporting document for the relevant category as per GeM GTC with the bid. Under MSE category, only manufacturers for goods and Service Providers for Services are eligible for exemption from EMD. Traders are excluded from the purview of this Policy./जेम की शर्तों के अनुसार ईएमडी छूट के इच्छुक बिडर को संबंधित केटेगरी के लिए बिड के साथ वैध समर्थित दस्तावेज़ प्रस्तुत करने है। एमएसई केटेगरी के अंतर्गत केवल वस्तुओं के लिए विनिर्माता तथा सेवाओं के लिए सेवा प्रदाता ईएमडी से छूट के पात्र हैं। व्यापारियों को इस नीति के दायरे से बाहर रखा गया है।

(b). EMD & Performance security should be in favour of Beneficiary, wherever it is applicable./ईएमडी और संपादन जमानत राशि, जहां यह लागू होती है, लाभार्थी के पक्ष में होनी चाहिए।

Beneficiary/लाभार्थी :

GENERAL MANAGER -MATERIALS (HOD)
Sathiyaraj.F, Senior Manager (Materials), Foreign Purchase Section, Materials Department, Oil India Limited, Field Head Quarters, Duliajan P.O., Dibrugarh District, Assam - 786602. Tel: +91-374-2808741 (PR No.: 1426971) (General Manager-materials Hod)

MII Purchase Preference/एमआईआई खरीद वरीयता

MII Purchase Preference/एमआईआई खरीद वरीयता	Yes

MSE Purchase Preference/एमएसई खरीद वरीयता

MSE Purchase Preference/एमएसई खरीद वरीयता	Yes

1. Preference to Make In India products (For bids < 200 Crore):Preference shall be given to Class 1 local supplier as defined in public procurement (Preference to Make in India), Order 2017 as amended from time to time and its subsequent Orders/Notifications issued by concerned Nodal Ministry for specific Goods/Products. The minimum local content to qualify as a Class 1 local supplier is denoted in the bid document. If the bidder wants to avail the Purchase preference, the bidder must upload a certificate from the OEM regarding the percentage of the local content and the details of locations at which the local value addition is made along with their bid, failing which no purchase preference shall be granted. In case the bid value is more than Rs 10 Crore, the declaration relating to percentage of local content shall be certified by the statutory auditor or cost auditor, if the OEM is a company and by a practicing cost accountant or a chartered accountant for OEMs other than companies as per the Public Procurement (preference to Make-in -India) order 2017 dated 04.06.2020. Only Class-I and Class-II Local suppliers as per MII order dated 4.6.2020 will be eligible to bid. Non - Local suppliers as per MII order dated 04.06.2020 are not eligible to participate. However, eligible micro and small enterprises will be allowed to participate .The buyers are advised to refer the OM No.F.1/4/2021-PPD dated 18.05.2023. OM_No.1_4_2021_PPD_dated_18.05.2023 for compliance of Concurrent application of Public Procurement Policy for Micro and Small Enterprises Order, 2012 and Public Procurement (Preference to Make in India) Order, 2017.

2. Purchase preference will be given to MSEs having valid Udyam Registration and whose credentials are validated online through Udyam Registration portal as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail themselves of the Purchase preference, the bidder must be the manufacturer / OEM of the offered product on GeM. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises and hence resellers offering products manufactured by some other OEM are not eligible for any purchase preference. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service and Buyer will decide

eligibility for purchase preference based on documentary evidence submitted, while evaluating the bid. If L-1 is not an MSE and MSE Seller (s) has / have quoted price within L-1+ 15% (Selected by Buyer) of margin of purchase preference /price band defined in relevant policy, such MSE Seller shall be given opportunity to match L-1 price and contract will be awarded for 100% (selected by Buyer) percentage of total quantity. The buyers are advised to refer the OM No. F.1/4/2021-PPD dated 18.05.2023 OM_No.1_4_2021_PPD_dated_18.05.2023 for compliance of Concurrent application of Public Procurement Policy for Micro and Small Enterprises Order, 2012 and Public Procurement (Preference to Make in India) Order, 2017. Benefits of MSE will be allowed only if seller is validated on-line in GeM profile as well as validated and approved by Buyer after evaluation of documents submitted.
3. Estimated Bid Value indicated above is being declared solely for the purpose of guidance on EMD amount and for determining the Eligibility Criteria related to Turn Over, Past Performance and Project / Past Experience etc. This has no relevance or bearing on the price to be quoted by the bidders and is also not going to have any impact on bid participation. Also this is not going to be used as a criteria in determining reasonableness of quoted prices which would be determined by the buyer based on its own assessment of reasonableness and based on competitive prices received in Bid / RA process.

Excel Upload Required/एक्सेल में अपलोड किए जाने की आवश्यकता :

Price Break-Up of Wireless Process Monitoring System for 10 installations of Oil India Limited - 1736332027.xlsx

Wireless Process Monitoring System OCS 1

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively/क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक)

Technical Specifications/तकनीकी विशिष्टियाँ

Specification Document	View File
BOQ Detail Document	View File

Advisory-Please refer attached BOQ document for detailed consignee list and delivery period.

Consignees/Reporting Officer/परेषिती/रिपोर्टिंग अधिकारी and/ तथा Quantity/मात्रा

S.No./क्र. सं.	Consignee Reporting/Officer/ परेषिती/रिपोर्टिंग अधिकारी	Address/पता	Quantity/मात्रा	Delivery Days/डिलीवरी के दिन
1	Chandana Phukan	786602,Oil India Limited, Duliajan, Assam	1	252

Wireless Process Monitoring System OCS 8

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively/क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक)

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S.No./क्र. सं.	Consignee Reporting/Officer/ परेषिती/रिपोर्टिंग अधिकारी	Address/पता	Quantity/मात्रा	Delivery Days/डिलीवरी के दिन
1	Chandana Phukan	786602,Oil India Limited, Duliajan, Assam	1	252

Wireless Process Monitoring System JOYPUR OCS

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively/क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक)

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Consignees/Reporting Officer/परेषिती/रिपोर्टिंग अधिकारी and/ तथा Quantity/मात्रा

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S.No./क्र. सं.	Consignee Reporting/Officer/ परेषिती/रिपोर्टिंग अधिकारी	Address/पता	Quantity/मात्रा	Delivery Days/डिलीवरी के दिन
1	Chandana Phukan	786602,Oil India Limited, Duliajan, Assam	1	252

Wireless Process Monitoring System BAGHJAN EPS

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively/क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक)

Technical Specifications/तकनीकी विशिष्टियाँ

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S.No./क्र. सं.	Consignee Reporting/Officer/ परेषिती/रिपोर्टिंग अधिकारी	Address/पता	Quantity/मात्रा	Delivery Days/डिलीवरी के दिन
1	Chandana Phukan	786602,Oil India Limited, Duliajan, Assam	1	252

Wireless Process Monitoring System KHUMCHAI EPS

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively/क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक)

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S.No./क्र. सं.	Consignee Reporting/Officer/ परेषिती/रिपोर्टिंग अधिकारी	Address/पता	Quantity/मात्रा	Delivery Days/डिलीवरी के दिन
1	Chandana Phukan	786602,Oil India Limited, Duliajan, Assam	1	252

Wireless Process Monitoring System USHAPUR OCS

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively/क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक)

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S.No./क्र. सं.	Consignee Reporting/Officer/ परेषिती/रिपोर्टिंग अधिकारी	Address/पता	Quantity/मात्रा	Delivery Days/डिलीवरी के दिन
1	Chandana Phukan	786602,Oil India Limited, Duliajan, Assam	1	252

Wireless Process Monitoring System LANGKASHI OCS

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively/क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक)

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Consignees/Reporting Officer/परेषिती/रिपोर्टिंग अधिकारी and/ तथा Quantity/मात्रा

S.No./क्र. सं.	Consignee Reporting/Officer/ परेषिती/रिपोर्टिंग अधिकारी	Address/पता	Quantity/मात्रा	Delivery Days/डिलीवरी के दिन
1	Chandana Phukan	786602,Oil India Limited, Duliajan, Assam	1	252

Wireless Process Monitoring System JORAJAN OCS

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively/क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक)

Technical Specifications/तकनीकी विशिष्टियाँ

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Consignees/Reporting Officer/परेषिती/रिपोर्टिंग अधिकारी and/ तथा Quantity/मात्रा

S.No./क्र. सं.	Consignee Reporting/Officer/ परेषिती/रिपोर्टिंग अधिकारी	Address/पता	Quantity/मात्रा	Delivery Days/डिलीवरी के दिन
1	Chandana Phukan	786602,Oil India Limited, Duliajan, Assam	1	252

Wireless Process Monitoring System NAGAJAN OCS

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively/क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक)

Technical Specifications/तकनीकी विशिष्टियाँ

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Consignees/Reporting Officer/परेषिती/रिपोर्टिंग अधिकारी and/ तथा Quantity/मात्रा

S.No./क्र. सं.	Consignee Reporting/Officer/ परेषिती/रिपोर्टिंग अधिकारी	Address/पता	Quantity/मात्रा	Delivery Days/डिलीवरी के दिन
1	Chandana Phukan	786602,Oil India Limited, Duliajan, Assam	1	252

Wireless Process Monitoring System BHEKULAJAN EPS

(Minimum 50% and 20% Local Content required for qualifying as Class 1 and Class 2 Local Supplier respectively/क्रमशः श्रेणी 1 और श्रेणी 2 के स्थानीय आपूर्तिकर्ता के रूप में अर्हता प्राप्त करने के लिए आवश्यक)

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S.No./क्र. सं.	Consignee Reporting/Officer/ परेषिती/रिपोर्टिंग अधिकारी	Address/पता	Quantity/मात्रा	Delivery Days/डिलीवरी के दिन
1	Chandana Phukan	786602,Oil India Limited, Duliajan, Assam	1	252

Buyer Added Bid Specific Terms and Conditions/क्रेता द्वारा जोड़ी गई बिड की विशेष शर्तें

1. **Generic**

   OPTION CLAUSE: The Purchaser reserves the right to increase or decrease the quantity to be ordered up to 25 percent of bid quantity at the time of placement of contract. The purchaser also reserves the right to increase the ordered quantity by up to 25% of the contracted quantity during the currency of the contract at the contracted rates. Bidders are bound to accept the orders accordingly.

2. **Generic**

   Bidder financial standing: The bidder should not be under liquidation, court receivership or similar proceedings, should not be bankrupt. Bidder to upload undertaking to this effect with bid.

3. **Generic**

   Bidders shall quote only those products (Part of Service delivery) in the bid which are not obsolete in the market and has at least 5 years residual market life i.e. the offered product shall not be declared end-of-life by the OEM before this period.

4. **Generic**

   Bidders are advised to check applicable GST on their own before quoting. Buyer will not take any responsibility in this regards. GST reimbursement will be as per actuals or as per applicable rates (whichever is lower), subject to the maximum of quoted GST %.

5. **Generic**

   Buyer Organization specific Integrity Pact shall have to be complied by all bidders. Bidders shall have to upload scanned copy of signed integrity pact as per Buyer organizations policy along with bid. Click here to view the file

6. **Generic**

   Bidder shall submit the following documents along with their bid for Vendor Code Creation:

   a. Copy of PAN Card.

   b. Copy of GSTIN.

   c. Copy of Cancelled Cheque.

   d. Copy of EFT Mandate duly certified by Bank.

7. **Generic**

   Manufacturer Authorization: Wherever Authorised Distributors/service providers are submitting the bid, Authorisation Form /Certificate with OEM/Original Service Provider details such as name, designation, address, e-mail Id and Phone No. required to be furnished along with the bid

8. **Generic**

Products supplied shall be nontoxic and harmless to health. In the case of toxic materials, Material Safety Data Sheet may be furnished along with the material.

9. **Generic**

Scope of supply includes Training: Number of employees to be trained

30
, Place for Training
Installation / Office of Oil India Limited
and Duration of training
1
days.

10. **Generic**

Supplier shall ensure that the Invoice is raised in the name of Consignee with GSTIN of Consignee only.

11. **Generic**

The buyer organization is an institution eligible for concessional rates of GST as notified by the Government of India. The goods for which bids have been invited fall under classification of GST concession and the conditions for eligibility of concession are met by the institution. A certificate to this effect will be issued by Buyer to the Seller after award of the Contract. Sellers are requested to submit their bids after accounting for the Concessional rate of GST.
Applicable Concessional rate of GST :

12
%
Notification No.and date :
08/2022
dated
13/07/2022

12. **Generic**

1. The Seller shall not assign the Contract in whole or part without obtaining the prior written consent of buyer.
2. The Seller shall not sub-contract the Contract in whole or part to any entity without obtaining the prior written consent of buyer.
3. The Seller shall, notwithstanding the consent and assignment/sub-contract, remain jointly and severally liable and responsible to buyer together with the assignee/ sub-contractor, for and in respect of the due performance of the Contract and the Sellers obligations there under.

13. **Generic**

Without prejudice to Buyer’s right to price adjustment by way of discount or any other right or remedy available to Buyer, Buyer may terminate the Contract or any part thereof by a written notice to the Seller, if:
i) The Seller fails to comply with any material term of the Contract.
ii) The Seller informs Buyer of its inability to deliver the Material(s) or any part thereof within the stipulated Delivery Period or such inability otherwise becomes apparent.
iii) The Seller fails to deliver the Material(s) or any part thereof within the stipulated Delivery Period and/or to replace/rectify any rejected or defective Material(s) promptly.
iv) The Seller becomes bankrupt or goes into liquidation.
v) The Seller makes a general assignment for the benefit of creditors.
vi) A receiver is appointed for any substantial property owned by the Seller.
vii) The Seller has misrepresented to Buyer, acting on which misrepresentation Buyer has placed the Purchase Order on the Seller.

14. **Generic**

While generating invoice in GeM portal, the seller must upload scanned copy of GST invoice and the

screenshot of GST portal confirming payment of GST.

15. **Generic**

Whereever Essentiality Certificate is applicable (PEL/ML), successful bidder should provide Proforma Invoice for processeing for EC application and material should be dispatche after receiving of EC rom DGH. In view of the same, an ATC may be incorporated in GeM, viz, "BIDDER/OEM must provide Proforma Invoice for processeing for EC application within

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days from date of issue of GeM Contract and material should be dispatche after receiving of EC rom DGH."

16. **Scope of Supply**

Scope of supply (Bid price to include all cost components) : Supply Installation Testing Commissioning of Goods and Training of operators and providing Statutory Clearances required (if any)

17. **Purchase Preference (Centre)**

Purchase preference to Micro and Small Enterprises (MSEs): Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service. If L-1 is not an MSE and MSE Seller (s) has/have quoted price within L-1+ 15% of margin of purchase preference /price band defined in relevant policy, such Seller shall be given opportunity to match L-1 price and contract will be awarded for percentage of 100% of total value.

18. **Certificates**

Bidder's offer is liable to be rejected if they don't upload any of the certificates / documents sought in the Bid document, ATC and Corrigendum if any.

19. **Certificates**

Material Test Certificate Should Be Sent Along with The Supply. The Material Will Be Checked by Buyer’s Lab & the Results of the Lab will be the Sole Criteria for Acceptance of the Item.

20. **Certificates**

The bidder is required to upload, along with the bid, all relevant certificates such as BIS licence, type test certificate, approval certificates and other certificates as prescribed in the Product Specification given in the bid document.

21. **Warranty**

Warranty period of the supplied products shall be as given in specifications from the date of final acceptance of goods or after completion of installation, commissioning & testing of goods (if included in the scope of supply), at consignee location. OEM Warranty certificates must be submitted by Successful Bidder at the time of delivery of Goods. The seller should guarantee the rectification of goods in case of any break down during the guarantee period. Seller should have well established Installation, Commissioning, Training, Troubleshooting and Maintenance Service group in INDIA for attending the after sales service. Details of Service Centres near consignee destinations are to be uploaded along with the bid.

22. **Warranty**

Timely Servicing / rectification of defects during warranty period: After having been notified of the defects / service requirement during warranty period, Seller has to complete the required Service / Rectification within 15 days time limit. If the Seller fails to complete service / rectification with defined time limit, a

penalty of 0.5% of Unit Price of the product shall be charged as penalty for each week of delay from the seller. Seller can deposit the penalty with the Buyer directly else the Buyer shall have a right to recover all such penalty amount from the Performance Security (PBG).Cumulative Penalty cannot exceed more than 10% of the total contract value after which the Buyer shall have the right to get the service / rectification done from alternate sources at the risk and cost of the Seller besides forfeiture of PBG. Seller shall be liable to re-imberse the cost of such service / rectification to the Buyer.

23. **Forms of EMD and PBG**

    Bidders can also submit the EMD with Payment online through RTGS / internet banking in Beneficiary name

    Oil India Limited
    Account No.
    10494832599
    IFSC Code
    SBIN0002053
    Bank Name
    State Bank of India
    Branch address
    SBI, Duliajan, Dibrugarh District, Assam-786602
    .
    Bidder to indicate bid number and name of bidding entity in the transaction details field at the time of on-line transfer. Bidder has to upload scanned copy / proof of the Online Payment Transfer along with bid.

24. **Forms of EMD and PBG**

    Successful Bidder can submit the Performance Security in the form of Payment online through RTGS / internet banking also (besides PBG which is allowed as per GeM GTC). On-line payment shall be in Beneficiary name

    Oil India Limited
    Account No.
    10494832599
    IFSC Code
    SBIN0002053
    Bank Name
    State Bank of India
    Branch address
    SBI, Duliajan, Dibrugarh District, Assam-786602
    . Successful Bidder to indicate Contract number and name of Seller entity in the transaction details field at the time of on-line transfer. Bidder has to upload scanned copy / proof of the Online Payment Transfer in place of PBG within 15 days of award of contract.

25. **Buyer Added Bid Specific ATC**

    Buyer uploaded ATC document Click here to view the file.

Disclaimer/अस्वीकरण

The additional terms and conditions have been incorporated by the Buyer after approval of the Competent Authority in Buyer Organization, whereby Buyer organization is solely responsible for the impact of these clauses on the bidding process, its outcome, and consequences thereof including any eccentricity / restriction arising in the bidding process due to these ATCs and due to modification of technical specifications and / or terms and conditions governing the bid. If any clause(s) is / are incorporated by the Buyer regarding following, the bid and resultant contracts shall be treated as null and void and such bids may be cancelled by GeM at any stage of bidding process without any notice:-

1. Definition of Class I and Class II suppliers in the bid not in line with the extant Order / Office Memorandum issued by DPIIT in this regard.
2. Seeking EMD submission from bidder(s), including via Additional Terms & Conditions, in contravention to exemption provided to such sellers under GeM GTC.

3. Publishing Custom / BOQ bids for items for which regular GeM categories are available without any Category item bunched with it.
4. Creating BoQ bid for single item.
5. Mentioning specific Brand or Make or Model or Manufacturer or Dealer name.
6. Mandating submission of documents in physical form as a pre-requisite to qualify bidders.
7. Floating / creation of work contracts as Custom Bids in Services.
8. Seeking sample with bid or approval of samples during bid evaluation process. (However, in bids for attached categories, trials are allowed as per approved procurement policy of the buyer nodal Ministries)
9. Mandating foreign / international certifications even in case of existence of Indian Standards without specifying equivalent Indian Certification / standards.
10. Seeking experience from specific organization / department / institute only or from foreign / export experience.
11. Creating bid for items from irrelevant categories.
12. Incorporating any clause against the MSME policy and Preference to Make in India Policy.
13. Reference of conditions published on any external site or reference to external documents/clauses.
14. Asking for any Tender fee / Bid Participation fee / Auction fee in case of Bids / Forward Auction, as the case may be.

Further, if any seller has any objection/grievance against these additional clauses or otherwise on any aspect of this bid, they can raise their representation against the same by using the Representation window provided in the bid details field in Seller dashboard after logging in as a seller within 4 days of bid publication on GeM. Buyer is duty bound to reply to all such representations and would not be allowed to open bids if he fails to reply to such representations.

All GeM Sellers / Service Providers are mandated to ensure compliance with all the applicable laws / acts / rules including but not limited to all Labour Laws such as The Minimum Wages Act, 1948, The Payment of Wages Act, 1936, The Payment of Bonus Act, 1965, The Equal Remuneration Act, 1976, The Payment of Gratuity Act, 1972 etc. Any non-compliance will be treated as breach of contract and Buyer may take suitable actions as per GeM Contract.

This Bid is also governed by the General Terms and Conditions/ यह बिड सामान्य शर्तों के अंतर्गत भी शासित है

In terms of GeM GTC clause 26 regarding Restrictions on procurement from a bidder of a country which shares a land border with India, any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. While participating in bid, Bidder has to undertake compliance of this and any false declaration and non-compliance of this would be a ground for immediate termination of the contract and further legal action in accordance with the laws./जेम की सामान्य शर्तों के खंड 26 के संदर्भ में भारत के साथ भूमि सीमा साझा करने वाले देश के बिडर से खरीद पर प्रतिबंध के संबंध में भारत के साथ भूमि सीमा साझा करने वाले देश का कोई भी बिडर इस निविदा में बिड देने के लिए तभी पात्र होगा जब वह बिड देने वाला सक्षम प्राधिकारी के पास पंजीकृत हो।बिड में भाग लेते समय बिडर को इसका अनुपालन करना होगा और कोई भी गलत घोषणा किए जाने व इसका अनुपालन न करने पर अनुबंध को तत्काल समाप्त करने और कानून के अनुसार आगे की कानूनी कार्रवाई का आधार होगा।

---Thank You/धन्यवाद---

OIL INDIA LIMITED
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FORWARDING LETTER, INSTRUCTION TO BIDDERS (ITB) AND STANDARD BIDDING DOCUMENTS (SBDS)

OIL INDIA LIMITED (OIL) is a premier National Oil Maharatna Company engaged in the business of Exploration, Production and Transportation of Crude Oil and Natural gas. A Maharatna Company under the Ministry of Petroleum and Natural gas, Government of India (GOI), with its Headquarters at Duliajan, Assam. Duliajan is connected by Air with nearest Airport at Dibrugarh, 45 km away.

In connection to its operations, OIL invites **DOMESTIC COMPETITIVE BIDS** from competent and experienced bidders through **GEM portal** for the items mentioned below. You are invited to submit your most competitive bid on or before the scheduled bid closing date and time through **GEM portal**. For your ready reference, few salient points of the Tender are highlighted below.

The tender documents & other corrigendum / addendum / amendments, etc. is available in **Government E-Market (GeM) portal (visit www.gem.gov.in)** for participation of prospective bidders and tender information will be available in Oil India Limited's website (**www.oil-india.com**) for reference. Bidders will have to download the tender document before the due date of submission and use the same for participating in the tender.

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TENDER INFORMATION SUMMARY

(1)	Type of Bidding	:	**Single Stage – Two Bid System**
(2)	Bid Security	:	**Applicable** (As per Proforma – G(A) for BG). **NOTE:** **Original Bank Guarantee (If Applicable) will have to be submitted directly to Oil India Limited on or before the Bid closing date and time, failing which the bid may be rejected.** (*Exempted bidder shall submit bid security declaration as per prescribed format in Proforma-G(B)*)
(3)	Bid Security Amount	:	**Rs. 8,87,869.00**
(4)	Bid Security Validity	:	Bid Security (if applicable & if submitted) in the form of BG/e-PBG must be valid atleast for a **period of 6 months from the date of original bid closing date** of the tender i.e. **valid upto 05.08.2025**
(5)	Bid Submission Mode	:	Bid shall be submitted only through Government E-Marketplace (GeM) portal (Visit **www.gem.gov.in**) **Note:** **Bid in any other form / mode of submission other than through Government E-Market (GeM) portal will not be considered as valid.**
(6)	Bid Opening Place	:	Office of Head of Department (HoD), Materials Department, Field Head Quarters (FHQ), Oil India Limited, Duliajan P.O., Dibrugarh District, Assam, India - 786602
(7)	Bid Validity	:	Bid should be valid for **minimum 120 days** from actual bid closing date.
(8)	Performance Guarantee	:	**Applicable @ 5 % of Order value** (As per Proforma – F for BG) Performance Security (if applicable) is to be furnished within 30 days after notification of the award and it should remain **valid for a period of 03 (three) months beyond the date of completion of all contractual obligations of the supplier, including warranty / guarantee / defect liability period (if any).**
(9)	Integrity Pact	:	**Applicable**
(10)	Restrictions on procurement from a bidder of a country which shares land border with India	:	Applicable
(11)	PPP-MII Purchase Preference	:	**Applicable**
(12)	MSE Purchase Preference	:	Applicable (100% of tender / order quantity)
(13)	Price Variation Clause	:	Not Applicable

(14)	Document Verification	:	Not Applicable
(15)	Evaluation Method	:	All the tendered item(s) shall be evaluated as per **total value-wise evaluation method**; hence bidder(s) are requested to quote accordingly.
(16)	Inspection Method	:	Consignee Inspection at Consignee's site (Default)
	Pre-Dispatch Inspection (PDI)	:	**Applicable**
	Third Party Inspection (TPI)	:	Not Applicable
(17)	Installation & Commissioning (I&C)	:	**Applicable**
(18)	Pre-Bid Conference	:	Not Applicable
(19)	Training	:	**Applicable**
(20)	Annual Maintenance Contract (AMC)	:	Not Applicable
(21)	Contact Details	:	Mr. F. Sathiyaraj Senior Manager - Materials (F.P.) E-Mail: **f_sathiyaraj@oilindia.in	materials@oilindia.in** Phone: +91-374-2808741
(22)	Technical Support regarding GeM Portal	:	Email: **helpdesk-gem[at]gov[dot]in** Toll Free Numbers (Inbound): Call: 1800-419-3436 / 1800-102-3436 (9:00 am - 10:00 pm Mon to Sat)
(23)	Bids to be addressed to	:	The Head of Department, Materials Department, Oil India Limited, Field Head Quarters, Duliajan P.O., Dibrugarh District, Assam, India -786602
(24)	Consignee address	:	The General Manager – Materials, Receiving Section, Materials Department, Oil India Limited, Field Head Quarters, Duliajan P.O., Dibrugarh District, Assam, India -786602
(25)	Payment term (Applicable for Domestic bidder)	:	**(i)** Payments shall be made to the seller within 21 days of issue of consignee receipt-cum-acceptance certificate (CRAC) and on-line submission of bills. **(ii)** Payment terms where installation and commissioning & Training is involved: Wherever installation and commissioning is involved, 80% payment shall be made against supply of materials and balance 20% after satisfactory commissioning at site along with the installation & commissioning charges. Payment towards training shall be released after successful completion of training.

(26)	Concessional GST benefit for supply of tendered good(s)	:	**Applicable** **(Concessional GST @ 12% will be applicable *only if total material value is more than Rs.1,00,000 (i.e. 1 Lakh & above). Otherwise, GST at actuals / merit rate* will be reimbursed against submission of documentary evidence. Bidder is advised to take note of above and accordingly submit price bid).**
(27)	Variance in quantity at the time of order placement	:	This tender has a provision for variation of quantity at the time of placement of order up to +/- 25%. The bids, however, will be evaluated based on the tendered quantity to decide the interse ranking of the bidder.
(28)	Variation of quantities during execution		The purchaser reserves right to increase or decrease the quantity of the required goods upto plus / minus 20 (twenty) per cent without any change in the terms and conditions and prices quoted by the bidders.
(29)	Clarification of tender documents / Amendment of tender documents	:	**(i)** The prospective bidder requiring clarification on the tender documents may notify to the company in writing well before the due date of submission of bid to enable purchaser to give response in writing to the clarification sought by such bidder. **(ii)** The prospective bidder is advised to submit their queries in relation to the tender document **atleast 5 (five) working days** before the scheduled date of bid closing date. **(iii)** At any time prior to the deadline for submission of bids, the Company may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bid Documents through issuance of an Addendum(s) / Corrigendum(s) / Amendment(s) and such Addendum(s) / Corrigendum(s)/ Amendment(s) will be published in the tender portal and hosted on OIL website only. No separate intimation shall be sent to the Bidders. Prospective bidders are requested to visit the website regularly to keep themselves updated. Bidders are expected to take the Addendum(s)/Corrigendum(s)/ Amendment(s) into account in preparation and submission of their bid.
(30)	The tendered / ordered (if) goods shall be delivered to	:	The General Manager – Materials, Receiving Section, Materials Department, Oil India Limited, Field Head Quarters, Duliajan P.O., Dibrugarh District, Assam, India -786602 **(or)** Any other Oil India Limited's installation / operational site located in Assam / Arunachal Pradesh. *The bidder is advised to consider appropriate freight & insurance charges (as applicable) in their quotation/ bid.*
Disclaimer: Refer all tender terms and conditions governing this tender for more information.			

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DISCLAIMER	
(1)	The firm(s) to whom no further business is to be given or dealings with whom have been banned / suspended are not eligible to participate in the tender and any bid received from such firm(s) shall not be considered.
(2)	*"If a firm quotes NIL charges / consideration, the bid shall be treated as unresponsive and will not be considered"*
(3)	*At any time prior to the deadline for submission of bids, the Company may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bid Documents through issuance of an Addendum(s)/Corrigendum(s)/Amendment(s) and such Addendum(s)/ Corrigendum(s)/Amendment(s) will be published in the tender portal and hosted on OIL website only. No separate intimation shall be sent to the Bidders. Prospective bidders are requested to visit the website regularly to keep themselves updated. Bidders are expected to take the Addendum(s)/Corrigendum(s)/ Amendment(s) into account in preparation and submission of their bid.*
(4)	*The resultant contract / order will be interpreted under Indian laws.*
(5)	**(i)** The prospective bidder requiring clarification on the tender documents may notify to the company in writing well before the due date of submission of bid to enable purchaser to give response in writing to the clarification sought by such bidder. **(ii)** The prospective bidder is advised to submit their queries in relation to the tender document atleast 5 (five) working days before the scheduled date of bid closing date. **(iii)** At any time prior to the deadline for submission of bids, the Company may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bid Documents through issuance of an Addendum(s) / Corrigendum(s) / Amendment(s) and such Addendum(s) / Corrigendum(s)/ Amendment(s) will be published in the tender portal and hosted on OIL website only. No separate intimation shall be sent to the Bidders. Prospective bidders are requested to visit the website regularly to keep themselves updated. Bidders are expected to take the Addendum(s)/Corrigendum(s)/ Amendment(s) into account in preparation and submission of their bid.
(6)	This tender has a provision for variation of quantity at the time of placement of order up to +/- 25%. The bids, however, will be evaluated based on the tendered quantity to decide the interse ranking of the bidder.
(7)	Authorization to participate in the tender does not guarantee placement of order. Requests received from interested vendors after 10 days of publication of tender shall be considered for future tenders only, subject to meeting the above evaluation criteria.
(8)	The bidder, after submitting its tender, is permitted to withdraw / alter / modify its tender up to the date & time of receipt of tender (bid closing date & time). Government E-Market (GeM) portal / OIL's e-procurement portal (As applicable) will not allow the withdrawal / alteration / modification of bids after the bid closing date & time has been reached and bids have been opened. Any withdrawal / amendment / modification received after the prescribed date & time of receipt of tenders are not to be considered and action will be taken as per Company's Banning Policy.
(9)	Oil India Limited ('Buyer') reserves the right to share, communicate, quote, the information / documents / drawings submitted by bidder / seller with any external agency / organization for purpose of verification, validation, and investigation in the interest of the buyer organization. The bidder / seller by virtue of submitting bid against this tender abide by the buyer organization's right in this regard.

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DISCLAIMER	
(10)	Deviation to the following criteria mentioned in the tender document shall make the bid liable for rejection: **(i)** Firm price **(ii)** EMD / Bid Bond / Bid Security Declaration **(iii)** Scope of work **(iv)** Specifications **(v)** Price Schedule **(vi)** Delivery / Completion Schedule **(vii)** Period of Validity of Bid **(viii)** Liquidated Damages **(ix)** Performance Bank Guarantee / Security deposit **(x)** Guarantee of material / work **(xi)** Arbitration / Resolution of Dispute **(xii)** Force Majeure **(xiii)** Applicable Laws **(xiv)** Integrity Pact, if applicable **(xv)** Any other condition specifically mentioned in the tender documents elsewhere that non-compliance of the clause lead to rejection of the bid. However, OIL reserves the sole right to decide on acceptance / rejection of any deviation to tendered requirements by bidder.
(11)	Regarding Annual Maintenance Contracts, the purchaser reserves its right to terminate the maintenance contract at any time after giving due notice without assigning any reason. The contractor will not be entitled to claim any compensation against such termination. However, while terminating the contract, if any payment is due to the contractor for maintenance services already performed in terms of the contract, these would be paid to it/him as per the contract terms
(12)	If any bidder refuses to sign the Integrity Pact (IP) or refuses to accept the provisions of Integrity Pact (IP), their offers will be rejected.
(13)	A suitable provision has been made this tender for enabling a bidder to submit representation against the bidding conditions, bidding process and / or rejection of its bid. These provisions have a specific time frame mentioned in the tender document / e-procurement portal in which buyer will address the bidder's questions. However, Oil India Limited (Buyer) reserves the sole right to decide on acceptance / rejection of any representation / questions by bidder against the tender.
(14)	The provisions in the Special Conditions of Contract (SCC) will supersede the corresponding provisions in the General Conditions of Contract (GCC).

All other terms and conditions are as per General Terms and Conditions (Ref.: MM/GLOBAL/01/2005) available in Oil India Limited's official website (www.oil-india.com), General Terms and Conditions available in Government E-Marketplace (GeM) portal and various public procurement guidelines / policy issued by Oil India Limited / Government of India from time-to-time.

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LIST OF ANNEXURES/PROFORMAS

ANNEXURES		
Annexure - I	:	Price Break up
Annexure - II	:	Technical & Commercial Checklist
Annexure - III	:	General Conditions of Contract (GCC) & (Part-A) of Special Conditions of Contract (SCC)
Annexure - IV	:	Policy for providing preference to Domestically Manufactured Iron & Steel Products (DMI & SP)
Annexure - V		General Conditions of Contract *(For all services to be rendered including AMC)*
Annexure - VI	:	Technical Specification, Scope of Work
Annexure - VII	:	(Part-B) of Special terms & Conditions & Matrix
Annexure - VIII	:	Bid Evaluation Criteria / Bid Rejection Criteria (BEC/BRC) & Matrix
PROFORMAS		
Proforma - A	:	Format for undertaking towards compliance of Financial Criteria
Proforma - B	:	Format for Annual Turn Over and Net Worth Certificate
Proforma - C	:	Format for Corporate Guarantee towards Financial Standing
Proforma - D	:	Format for Integrity Pact
Proforma – E(I), E(II), E(III)	:	Formats for undertaking towards compliance of restriction on procurement from a bidder of a country which shares a land border with India
Proforma - F	:	Format for Performance Security
Proforma – G(A)	:	Format for Bid Security
Proforma – G(B)	:	Format for Bid Security Declaration
Proforma - H	:	Format for undertaking towards submission of authentic information/ documents
Proforma - I	:	Format for Authorization letter For attending Tender Opening
Proforma – J	:	Format for Exception / Deviation
Proforma – K	:	Format for Undertaking for Local Content
Proforma - L	:	Format for Power of Attorney / Authorization letter (Regarding authority for submission of bid)
Proforma – M	:	Format for Bidders financial standing
Proforma – N	:	Format for declaration of Blacklisting / Holiday Listing/ NCLT / NCLAT /DRT /DRAT/ Court Receivership/ Liquidation
Proforma – O	:	Format for bidder's information
Proforma – P	:	Format for pre-bid queries from prospective bidder
Proforma – Q	:	Format of Authorization & Backup Warranty by Manufacturers to Sole Selling Agent / Dealer / Distributer

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PROFORMAS

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PROFORMA – A

FORMAT FOR CERTIFICATE OF COMPLIANCE OF FINANCIAL CRITERIA

(*ON THE OFFICIAL PAD OF THE BIDDER TO BE EXECUTED BY THE AUTHORIZED SIGNATORY OF THE BIDDER*)

Ref : Clause No. A.2 (3.0) - Financial Criteria of the BEC

Tender No. : _____

I ..... the authorized signatory(s) of.....(Company or firm name of address) do hereby affirm and declare as under:-

The balance sheet/Financial Statements for the financial year _____ (as the case may be) has actually not been audited as on the Original Bid closing Date.

Place :.....

Date :..... **Signature of the authorized signatory**

Note:

This certificate is to be issued only considering the time required for preparation of Financial Statements i.e. if the last date of preceding financial / accounting year falls within the preceding six months reckoned from the original bid closing date.

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808741
EMAIL: materials@oilindia.in | f_sathiyaraj@oilindia.in

PROFORMA – B

CERTIFICATE OF ANNUAL TURNOVER & NETWORTH

TO BE ISSUED BY PRACTISING CHARTERED ACCOUNTANTS' FIRM ON THEIR LETTER HEAD

TO WHOM IT MAY CONCERN

This is to certify that the following financial positions extracted from audited financial statements of M/s..... (Name of the bidder) for the last 3 (three) completed accounting years upto.....(as the case may be) are correct.

YEAR	TURNOVER In INR (Rs.) Crores/ USD Million*	NET WORTH In INR (Rs.) Crores / USD Million*

*Rate of conversion (if used any): USD 1.00 = INR .....

Place:
Date:

Seal:

Membership No.:
Registration Code:

Signature:

Applicable for Global Tenders.

NOTE:

As per the guidelines of ICAI, every practicing CA is required to mention Unique Document Identification Number (UDIN) against each certification work done by them. Documents certified by CA without UDIN shall not be acceptable.

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PROFORMA – C

PARENT/ ULTIMATE PARENT/ HOLDING COMPANY'S CORPORATE GUARANTEE TOWARDS FINANCIAL STANDING (Delete whichever not applicable)

(TO BE EXECUTED ON COMPANY'S LETTER HEAD)

DEED OF GUARANTEE

THIS DEED OF GUARANTEE executed at ..... this ..... day of ..... by M/s .....(mention complete name) a company duly organized and existing under the laws of ..... (insert jurisdiction/country), having its Registered Office at.....herein after called "the Guarantor" which expression shall, unless excluded by or repugnant to the subject or context thereof, be deemed to include its successors and permitted assigns.

WHEREAS M/s. Oil India Limited (hereinafter referred to as OIL) has invited offers vide their Tender No..... for.....and M/s.....(Bidder) intends to bid against the said tender and desires to have Financial support of M/s..... [Parent / Ultimate Parent/Holding Company(Delete whichever not applicable)] and whereas Parent/Ultimate Parent/Holding Company(Delete whichever not applicable) represents that they have gone through and understood the requirements of subject tender and are capable and committed to provide the Financial support as required by the bidder for qualifying and successful execution of the contract, if awarded to the bidder.

Now, it is hereby agreed by the Guarantor to give this Guarantee and undertakes as follows:

1. The Guarantor confirms that the Bidder is a 100% subsidiary of the Guarantor.

2. The Guarantor agrees and confirms to provide the Audited Annual Reports of any of the preceding 03(three) financial/accounting years reckoned from the original bid closing date.

3. The Guarantor have an annual financial turnover of minimum INR..... Cr or USD ..... during any of the preceding 03(three) financial/ accounting years reckoned from the original bid closing date.

4. Net worth of the Guarantor is positive for preceding financial/ accounting year.

5. The Guarantor undertakes to provide financial support to the Bidder for executing the project/job, in case the same is awarded to the Bidder.

6. The Guarantor represents that:

(a) this Guarantee herein contained shall remain valid and enforceable till the satisfactory execution and completion of the work (including discharge of the warranty obligations) awarded to the Bidder.

(b) the liability of the Guarantor, under the Guarantee, is limited to the 100% of the order value between the Bidder and OIL. This will, however, be in addition to the forfeiture of the Performance Guarantee furnished by the Bidder.

(c) this Guarantee has been issued after due observance of the appropriate laws in force in India.

(d) this Guarantee shall be governed and construed in accordance with the laws in force in India and subject to the exclusive jurisdiction of the courts of New Delhi, India.

(e) this Guarantee has been given without any undue influence or coercion, and that the Guarantor has fully understood the implications of the same.

(f) the Guarantor has the legal capacity, power and authority to issue this Guarantee and that giving of this Guarantee and the performance and observations of the obligations hereunder do not contravene any existing laws.

For and on behalf of (Parent/Ultimate Parent/ Holding Company) **(Delete whichever not applicable)** Witness: 1. 2.	For and on behalf of (Bidder) Witness: 1. 2.

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PROFORMA – D

INTEGRITY PACT

Between

Oil India Limited (OIL) hereinafter referred to as "The Principal"

And

(Name of the bidder).....hereinafter referred to as "The Bidder"

Preamble:

The Principal intends to award, under laid down organizational procedures, contract/s for ----------. The Principal values full compliance with all relevant laws and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder/s.

In order to achieve these goals, the Principal cooperates with the renowned international Non-Governmental Organization "Transparency International" (TI). Following TI's national and international experience, the Principal will appoint an external independent Monitor who will monitor the tender process for compliance with the principles mentioned above.

Section: 1 -Commitments of the Principal

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:

(i) No employee of the Principal, personally or through family members, will in connection with the tender for, or during execution of a contract, demand, take a promise for or accept, for him/herself or third person, any material or immaterial benefit which he/she is not legally entitled to.

(ii) The Principal will, during the tender process treat all Bidders with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidders the same information and will not provide to any Bidder confidential/additional information through which the Bidder could obtain an advantage in relation to the tender process.

(iii) The Principal will exclude from the process all known prejudiced persons.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the relevant Anti-Corruption Laws of India, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officers and in addition can initiate disciplinary actions.

Section: 2 -Commitments of the Bidder~~/ Contractor~~

(1) The Bidder commits itself to take all measures necessary to prevent corruption. During his participation in the tender process, the Bidder commits himself to observe the following principles:

(i) The Bidder will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or immaterial benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during subsequent contract execution, if awarded.

(ii) The Bidder will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, Subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

(iii) The Bidder(s) will not commit any offence under the relevant Anticorruption Laws of India, further, the Bidder(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

(iv) The Bidder will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

(v) Bidders to disclose any transgressions with any other public/government organization that may impinge on the anti-corruption principle. The date of such transgression, for the purpose of disclosure by the bidders in this regard, would be the date on which cognizance of the said transgression was taken by the competent authority. The period for which such transgressions (s) is/are to be reported by the bidders shall be the last **three years** to be reckoned from date of bid submission. The transgression (s), for which cognizance was taken even before the said period of three years, but are pending conclusion, shall also be reported by the bidders.

(vi) The Bidder(s) of foreign origin shall disclose the name and address of the Agents/ representatives in India, if any. Similarly, the Bidder(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further, all the payments made to the Indian agent/ representative have to be in India Rupees only.

(vii) Bidders not to pass any information provided by Principal as part of business relationship to others and not to commit any offence under PC/ IPC Act;

(2) The Bidder will not instigate third persons to commit offences outlined above or be an accessory to such offences.

(3) The Bidder signing Integrity Pact shall not approach the Courts while representing the matters to IEMs and he/she will await their decision in the matter.

Section 3 -Disqualification from tender process and exclusion from future Contracts

If the Bidder, before contract award has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or risibility as Bidder into question, the Principal is entitled to disqualify the Bidder from the tender process, for such reason.

1. If the Bidder has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Principal is entitled also to exclude the Bidder from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressions within the company hierarchy of the Bidder and the amount of the damage. The exclusion will be imposed for a minimum of 6 months and maximum of 2 years.

2. The Bidder accepts and undertakes to respect and uphold the Principal's Absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.

3. If the Bidder can prove that he has restored/recouped the Damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the exclusion prematurely.

4. A transgression is considered to have occurred if in light of available evidence, no reasonable doubt is possible.

5. Integrity Pact, in respect of a particular contract, shall be operative from the date Integrity Pact is signed by both the parties or as mentioned in Section 9 - Pact Duration whichever is later. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings.

Section 4 -Compensation for Damages

(1) If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover from the Bidder liquidated damages equivalent to Earnest Money Deposit / Bid Security.

(2) The bidder agrees and undertakes to pay the said amounts without protest or demur subject only to condition that if the Bidder can prove and establish that the exclusion of the Bidder from the tender process has caused no damage or less damage than the amount or the liquidated damages, the Bidder shall compensate the Principal only to the extent of the damage in the amount proved.

Section 5 -Previous transgression

(1) The Bidder declares that no previous transgression occurred in the last 3 years with any other company in any country conforming to the TI approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process for such reason.

Section: 6 -Equal treatment of all Bidders/Contractor/Subcontractors

(1) The Principal will enter into Pacts on identical terms with all bidders.

(2) The Bidder undertake(s) to procure from all subcontractors a commitment in conformity with this Integrity Pact. The Bidder shall be responsible for any violation(s) of the provisions laid down in this agreement/Pact by any of its sub-contractors/sub-vendors.

(3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section: 7 -Criminal charges against violating Bidders/Contractors/ Subcontractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor, which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section: 8 -External Independent Monitor/Monitors

(1) The Principal appoints competent and credible Independent External Monitor (IEM) for this Pact.

(2) The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairperson of the Board of the Principal.

(3) The Bidder accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Bidder. The Bidder will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder/Contractor/Subcontractor with confidentiality.

(4) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Bidder. The parties offer the Monitor the option to participate in such meetings.

(5) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or heal the violation, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action. However, the Independent External Monitor shall give an opportunity to the bidder to present its case before making its recommendations to the Principal.

(6) The Monitor will submit a written report to the Chairperson of the Board of the Principal within 8 to 10 weeks from the date of reference or intimation to him by the 'Principal' and, should the occasion arise, submit proposals for correcting problematic situations.

(7) If the Monitor has reported to the Chairperson of the Board a Substantiated suspicion of an offence under relevant Anti-Corruption Laws of India, and the Chairperson has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

(8) The word 'Monitor' would include both singular and plural.

(9) In case of any complaints referred under IP Program, the role of IEMs is advisory and the advice of IEM is non-binding on the Organization. However, as IEMs are invariably persons with rich experience who have retired as senior functionaries of the government, their advice would help in proper implementation of the IP.

Section:9 -Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the respective contract, and for all other Bidders 6 months after the contract has been awarded.

If any claim is made/ lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by Chairperson of the Principal.

OIL INDIA LIMITED
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Section:10 -Other provisions

(1) This agreement is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal. The Arbitration clause provided in the main tender document / contract shall not be applicable for any issue / dispute arising under Integrity Pact.

(2) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

(3) In case of a joint venture, all the partners of the joint venture should sign the Integrity Pact. In case of sub-contracting, the principal contractor shall take the responsibility of the adoption of IP by the sub-contractor. It is to be ensured that all sub-contractors also sign the IP. In case of sub-contractors, the IP will be a tri-partite arrangement to be signed by the Organization, the contractor, and the sub-contractor.

(4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intensions.

SENIOR MANAGER-MATERIALS (F.P.) **OIL INDIA LIMITED** **For the Principal** Date : Place :	**.....** **For the Bidder/Contractor** Witness 1: ..... Witness 2: .....

OIL INDIA LIMITED
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PROFORMA – E (I)

UNDERTAKING TOWARDS COMPLIANCE OF PROVISIONS FOR RESTRICTIONS ON PROCUREMENT FROM A BIDDER OF A COUNTRY WHICH SHARES LAND BORDER WITH INDIA

(To be typed on the letter head of the bidder)

Ref. No : _____
Date : _____

Tender No. _____Date:_____

M/s. OIL INDIA LIMITED
MATERIALS DEPARTMENT,
DULIAJAN, ASSAM, INDIA

Dear Sirs,

We, M/s _____, have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; we certify that we are not from such a country/or if from such a country, have been registered with the Competent Authority. We hereby certify that we fulfil all requirements in this regard and are eligible to be considered. *[wherever applicable, evidence of valid registration by the Competent Authority shall be attached]*

Yours faithfully,
For (type name of the firm here)

Signature of Authorised Signatory
Name:
Designation:
Phone No.
Place:
Date:

(Affix Seal of the Organization here, if applicable)

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
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PROFORMA – E (II)

UNDERTAKING FOR WORKS INVOLVING POSSIBILITY OF SUB-CONTRACTING

(To be typed on the letter head of the bidder)

Ref. No. : _____

Date : _____

Tender No. : _____ **Date:** _____

M/s. OIL INDIA LIMITED
MATERIALS DEPARTMENT,
DULIAJAN, ASSAM, INDIA

Dear Sirs,

We, M/s _____ , have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such-countries, we certify that we are not from such a country/or if from such a country, have been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. We hereby certify that we fulfil all requirements in this regard and is eligible to be considered. *[wherever applicable, evidence of valid registration by the Competent Authority shall be attached]*

Yours faithfully,
For (type name of the firm here)

Signature of Authorized Signatory
Name:
Designation:
Phone No.
Place:
Date:

(Affix Seal of the Organization here, if applicable)

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
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PROFORMA – E (III)

ADDITIONAL UNDERTAKING BY BIDDER IN CASES OF SPECIFIED TRANSFER OF TECHNOLOGY

(To be typed on the letter head of the bidder)

Ref. No. : _____

Date : _____

Tender No. : _____ **Date:** _____

M/s. OIL INDIA LIMITED
MATERIALS DEPARTMENT,
DULIAJAN, ASSAM, INDIA

Dear Sir,

We, M/s _____, have read the clause regarding restrictions on procurement from a bidder having Transfer of Technology (ToT) arrangement. We certify that we do not have any ToT arrangement requiring registration with the competent authority.

OR

We, M/s _____, have read the clause regarding restrictions on procurement from a bidder having Transfer of Technology (ToT) arrangement. We certify that we have valid registration to participate in this procurement. *[Evidence of valid registration by the Competent Authority shall be attached]*

Yours faithfully,
For (type name of the firm here)

Signature of Authorised Signatory
Name:
Designation:
Phone No.
Place:
Date:

(Affix Seal of the Organization here, if applicable)

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
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PROFORMA – F

FORMAT FOR PERFORMANCE BANK GUARANTEE

To,

THE GENERAL MANAGER – MATERIALS (HOD)
OIL INDIA LIMITED, MATERIALS DEPARTMENT,
DULIAJAN, ASSAM, INDIA, PIN – 786602

WHEREAS.....(Name and address of Contractor) (hereinafter called "Contractor") had undertaken, in pursuance of Contact No..... to execute (Name of Contract and Brief Description of the Work) ..... (hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee as security for compliance with Contractor's obligations in accordance with the Contract.

AND WHEREAS we (May incorporate the Bank Name) have agreed to give the Contractor such a Bank Guarantee; NOW THEREFORE we hereby affirm that we are Guarantors on behalf of the Contractor, up to a total of (Amount of Guarantee in figures)..... (in words ....), such amount being payable in the types and proportions of currencies in which the Contract price is payable, and we undertake to pay you, upon your first written demand and without cavil or arguments, any sum or sums within the limits of guarantee sum as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein. We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or the work to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way cease us from any liability under this guarantee, and we hereby waive notice of such change, addition or modification.

This guarantee is valid until the ..... day of.....

The details of the Issuing Bank and Controlling Bank are as under:

A. Issuing Bank:
BANK FAX NO:
BANK EMAIL ID:
BANK TELEPHNE NO:
IFSC CODE OF THE BANK:

B. Controlling Office:
Address of the Controlling Office of the BG issuing Bank:
Name of the Contract Person at the Controlling Office with Mobile No. and e-mail address:

Notwithstanding anything contained herein:

(a) Our liability under this Bank Guarantee shall is restricted up to Rs……
(b) This guarantee shall be valid till ……
(c) We are liable to pay the guarantee amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before ……(Date of Expiry of BG PLUS one year claim period).
(d) At the end of the claim period that is on or after……(Date of expiry of……the Bank Guarantee Plus Minimum of 1 year claim period shall be stipulated) all your rights under this Guarantee shall stand extinguished and we shall be discharged from all our liabilities under this Guarantee irrespective of receipt of original Bank Guarantee duly discharged, by Bank.

Name of the Contact Person at the Controlling Office with Mobile No. and e-mail address:

SIGNATURE AND SEAL OF THE GUARANTORS ……
Designation : ……
Name of the Bank : ……
Address : ……
……
……

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
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UNDERTAKING BY VENDOR ON SUBMISSION OF BANK GUARANTEE

To,
Oil India Limited,
Materials Department,
Duliajan, Assam - 786602

We, M/s..... are submitting the Bid Security/Performance Security (strike out whichever not applicable) in favour of Oil India Limited, Duliajan in the form of bank guarantee bearing Reference No..... for an amount of INR.....valid up to ..... as per terms and conditions of Tender / Contract No.....

BG issuing bank details:

Bank: Branch: IFS Code:	
Contact Details E-mail Addresses:	Mobile No.: Telephone No.: Fax No.:
Correspondence Address H No/Street/City:	State: Country: Pin Code:

Declaration

We have arranged to send the confirmation of issuance of the bank guarantee via SFMS portal through our bank using the details mentioned in the tender and hereby confirming the correctness of the details mentioned.

Authorized Signature : _____
Name : _____
Vendor Code : _____
Email ID : _____
Mobile No. : _____

Enclosure : **Original bank guarantee**

OIL INDIA LIMITED
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PROFORMA – G (A)

BID SECURITY FORM

To:
M/s. OIL INDIA LIMITED,
MATERIALS DEPARTMENT

Whereas.....(hereinafter called 'the Bidder') has submitted their Bid No. ..... dated..... against OIL INDIA LIMITED, DULIAJAN, ASSAM, INDIA (hereinafter called the Purchaser) 's Tender No. ..... for the supply of ..... (hereinafter called 'the Bid') KNOW ALL MEN by these presents.

That we ..... of .... having our registered office at ..... (hereinafter called 'the Bank') are bound unto the Purchaser, in the sum of .... for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents.

Sealed with the said Bank this .....day of .....

THE CONDITIONS of this obligation are:

1. If the Bidder withdraws their Bid during the period of Bid validity specified by the Bidder,

or

2. If the Bidder, having been notified of the acceptance of their bid by the Purchaser during the period of bid validity:

a) fails or refuses to accept the order; or

b) fails or refuses to furnish the performance security

or

3. If the Bidder furnishes fraudulent document/information in their bid.

We undertake to pay to the Purchaser up to the above amount upon receipt of their first written demand (by way of letter /fax/Email) without the Purchaser having to substantiate their demand, provided that in their demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of any of the conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including ..... (Bidder to indicate specific date as mentioned in the tender), and any demand in respect thereof should reach the Bank not later than the above date.

The details of the Issuing Bank and Controlling Bank are as under:

A. Issuing Bank :
BANK FAX NO :
BANK EMAIL ID :
BANK TELEPHONE NO. :
IFSC CODE OF THE BANK :

B. Controlling Office :
Address of the Controlling Office of the BG issuing Bank :

Name of the Contact Person at the Controlling Office with Mobile No. and e-mail address:

Notwithstanding anything contained herein:

a) Our liability under this Bank Guarantee shall is restricted up to Rs .....

b) This guarantee shall be valid till .....

c) We are liable to pay the guarantee amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before ..... (***Date of Expiry of BG PLUS one year claim period***).

d) At the end of the claim period that is on or after ..... (***Date of expiry of the Bank Guarantee Plus Minimum of 1 year claim period shall be stipulated***) all your rights under this Guarantee shall stand extinguished and we shall be discharged from all our liabilities under this Guarantee irrespective of receipt of original Bank Guarantee duly discharged, by Bank.

Name of the Contact Person at the Controlling Office with Mobile No. and e-mail address:

SIGNATURE AND SEAL OF THE GUARANTORS _____

Designation : _____

Name of Bank : _____

Address : _____

_____

_____

Date : _____

Place : _____

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
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PROFORMA – G (B)

BID SECURITY DECLARATION

To,

M/s. Oil India Limited
……
……

Sub: ……

Tender No: ……

Dear Sir,

After examining/reviewing provisions of above referred tender documents (including all corrigendum/ Addendum), we M/s. …… (Name of Bidder) have submitted our offer/bid no……

We, M/s. …… (Name of Bidder) hereby understand that, according to your conditions, we are submitting this Declaration for Bid Security.

We understand that we will be put on watch list/holiday/banning list (as per policies of OIL INDIA in this regard), if we are in breach of our obligation(s) as per following:

(a) have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or

(b) having been notified of the acceptance of our Bid by the OIL INDIALIMITED during the period of bid validity:

- **(i)** fail or refuse to execute the Contract, if required, or
- **(ii)** fail or refuse to furnish the Contract Performance Security, in accordance provisions of tender document.
- **(iii)** Fail or refuse to accept 'arithmetical corrections' as per provision of tender document.

(c) having indulged in corrupt/fraudulent/collusive/coercive practice as per procedure.

Place:

Date:

[Signature of Authorized Signatory of Bidder]

Name:

Designation:

Seal:

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808741
EMAIL: materials@oilindia.in | f_sathiyaraj@oilindia.in

PROFORMA – H

FORMAT OF UNDERTAKING BY BIDDERS TOWARDS SUBMISSION OF AUTHENTIC INFORMATION / DOCUMENTS

(To be typed on the letter head of the bidder)

Ref. No : _____ **Date:** _____

To,

The General Manager (Materials)
Materials Department
Oil India Limited, Duliajan

Sub : Undertaking of authenticity of information/documents submitted

Ref : Your tender No.: _____ **Date:** _____

Sir,

With reference to our quotation no. ..... dated..... against your above-referred tender, we hereby undertake that no fraudulent information/documents have been submitted by us.

We take full responsibility for the submission of authentic information/documents against the above cited bid.

We also agree that, during any stage of the tender/contract agreement, in case any of the information/documents submitted by us are found to be false/forged/fraudulent, OIL has right to reject our bid at any stage including forfeiture of our EMD and/or PBG and/or cancel the award of contract and/or carry out any other penal action on us, as deemed fit.

Yours faithfully,

For (type name of the firm here)

Signature of Authorised Signatory

Name :

Designation :

Phone No. :

Place :

Date :

(Affix Seal of the Organization here, if applicable)

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
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PROFORMA - I

PROFORMA OF AUTHORISATION LETTER FOR ATTENDING TENDER OPENING

Ref No.: **Date :**

To,
The General Manager - Materials (HoD)
Materials Department
Oil India Limited,
P.O. Duliajan, Dist. Dibrugarh,
Assam, India, PIN-786602

Dear Sir,

Sub: OIL's Tender No. _____

For _____

Mr/Ms./Mrs. _____ has been authorized to be present at the time of opening of above tender due on at on my / our behalf.

Yours faithfully,

Signature of Bidder

Name :
Designation :
For & on behalf of :

Copy to:

Mr _ for information and for production before The General Manager-Materials (HoD) during the opening of bids.

****

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
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PROFORMA – J

EXCEPTION / DEVIATION PROFORMA
(To be submitted in the letter head of the bidder)

OIL expects the bidders to fully accept the terms and conditions of the bidding documents. However, should the bidder experience some exception and deviations to the terms of the bidding documents, the same should be indicated here and put in unpriced bid. In order to be considered responsive, Bidder's offer must specifically include the following statement:

(a) We certify that the rate(s) quoted by bidder against the tender is/are the same and not higher than those quoted with other Government, public sector or private organisations (Fall Clause).

(b) We certify that our offer complies with all NIT requirements and specifications without any deviations.

Or

(c) We certify that our offer complies with all NIT requirements and specifications with the following deviations:

Clause No. of Bidding Document	Full compliance/ not agreed	Exception/ deviations taken by the Bidders	Remarks

Signature of Bidder

Name :
Designation :
For & on behalf of :

Seal of the company

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808741
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PROFORMA – K

UNDERTAKING FOR LOCAL CONTENT

(To be submitted in the letter head of the bidder)

Tender No.: _____

We, M/s. _____
(Name of the bidder) have submitted Bid against Tender No._____
dated _____ for supply of _____.

We hereby undertake that we meet the mandatory m1mmum local content requirement as mandated by Public Procurement (Preference to Make in India) Order, 2017 of Department for Promotion of Industry and Internal Trade (DPIIT), Govt. of India as revised vide Order No. P-45021/ 2 / 2017-PP (BE-II) dated 16th September 2020 (and as amended time to time) with modifications as notified vide MoPNG Order No. FP-20013/2/2017-FP-PNG-Part (4) (E-41432) dated 26th April 2022 (including subsequent amendments thereof, if any). **The percentage of Local Content is _____ %.**

We further declare that the percentage of Local content for the tendered Goods/Services has been calculated in conjunction with the directive issued by Ministry of Petroleum and Natural Gas vide notification no. **FP-20013/2/2017-FP- PNG-Part (4) (E-41432) dated 26.03.2024**.

For and behalf of M/s. _____ (type name of the firm here)

Signature of Authorised Signatory

Name :
Designation :
Phone No. :
Place :
Date :

(Affix Seal of the Organization here, if applicable)

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
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EMAIL: materials@oilindia.in | f_sathiyaraj@oilindia.in

PROFORMA - L

LETTER OF AUTHORITY

Note:
This letter of authority shall be on printed letter head of the Bidder and shall be signed by a person competent and having the power of attorney (power of attorney shall be annexed) to bind such Bidder.

To,
The General Manager - Materials (HoD)
Materials Department
Oil India Limited,
P.O. Duliajan, Dist. Dibrugarh,
Assam, India, PIN-786602

Dear Sir,

Sub: OIL's Tender No. _____

We _____ of _____ confirm that Mr./Ms./Mrs._____ (Name and address) is authorised to represent us to bid, negotiate and conclude the agreement on our behalf with you against OIL's Tender No. _____ for any commercial /Legal purpose etc.

We confirm that we shall be bound by all and whatsoever our said representative shall commit.

Authorised Person's Signature :
Name :
Designation :

Yours faithfully,

Signature :
Name & Designation :
For & on behalf of M/s. :

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
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PROFORMA – M

UNDERTAKING FOR BIDDERS FINANCIAL STANDING

(To be submitted in the letter head of the bidder)

To,
The General Manager - Materials (HoD)
Materials Department
Oil India Limited,
P.O. Duliajan, Dist. Dibrugarh,
Assam, India, PIN-786602

Dear Sir,

Sub: OIL's Tender No. _____

We, _____ (Name of the bidder) have submitted Bid against Tender No. _____dated _____**.** We hereby undertake that we are not under liquidation, court receivership or similar proceedings, we are not bankrupt.

Authorised Signatory

Name :
Designation :
Contact Address :

Contact Email :
Contact Telephone Number :

Seal of the company

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808741
EMAIL: materials@oilindia.in | f_sathiyaraj@oilindia.in

PROFORMA – N

PROFORMA OF DECLARATION OF BLACKLISTING / HOLIDAY LISTING/ NCLT / NCLAT /DRT /DRAT/ COURT RECEIVERSHIP/ LIQUIDATION

(To be submitted in the letter head of the bidder)

To,

The Head of the Department,
Materials Department, Field Head Quarters,
Oil India Limited, Duliajan, Dibrugarh District,
Assam, India, Postal Code – 7866602

Dear Sir,

Sub: OIL's Tender No. _____

We hereby declare that we are presently neither placed on any holiday list or blacklist declared by Oil India Limited, nor any inquiry is pending by Oil India Limited. We are also not undergoing insolvency resolution process or liquidation or bankruptcy proceeding as on date. In respect of corrupt or fraudulent practice (s), except as indicated below: -

(Here give particulars of blacklisting or holiday listing and /or inquiry and in the absence thereof state "NIL")

In understood that if this declaration is found to be false in any particular, Oil India Limited shall have the right to reject my / our bid, and if the bid has resulted in a contract, the contract is liable to be terminated without prejudice to any other right or remedy (include blacklisting or holiday listing) available to Oil India Limited.

For and behalf of M/s. _____ (type name of the firm here)

Signature of Authorised Signatory

Name :
Designation :
Phone No. :
Place :
Date :

(Affix Seal of the Organization here, if applicable)

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808741
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PROFORMA – O

BIDDER INFORMATION

(To be submitted as part of technical bid)
(On Company Letter-head)
(Along with supporting documents, if any)

Bidder's Name_____

[Address and Contact Details]

Bidder's Reference No. : _____ Date: .....

Tender Document No. : _____ Date: .....

Tender Title:

Note: Bidder shall fill in this Form following the instructions indicated below. No alterations to its format shall be permitted, and no substitutions shall be accepted. Bidder shall enclose certified copies of the documentary proof/ evidence to substantiate the corresponding statement wherever necessary and applicable. Bidder's wrong or misleading information shall be treated as a violation of the Code of Integrity. Such Bids shall be liable to be rejected as nonresponsive, in addition to other punitive actions provided for such misdemeanours in the Tender Document.

(Please tick appropriate boxes or strike out sentences/ phrases not applicable to you)

1) Bidder/ Contractor particulars:

(a) Name of the Company: .....
(b) Corporate Identity No. (CIN): .....
(c) Registration, if any, with Oil India Limited: .....
(d) GeM Supplier ID (if registered with GeM, it is mandatory at the time of placement of Contract)
(e) Place of Registration/ Principal place of business / manufacture .....
(f) Complete Postal Address: .....

(g) Pin code/ ZIP code: .....
(h) Telephone nos. (with country/ area codes): .....
(i) Mobile Nos.: (with country/ area codes): .....
(j) Contact persons/ Designation: .....
(k) Email IDs: .....

2) Taxation Registrations:

(a) PAN number: .....
(b) Type of GST Registration as per the Act (Normal Taxpayer, Composition, Casual Taxable Person, SEZ, etc.): .....
(c) GSTIN number: ..... in Consignor and Consignee States
(d) Registered/ Certified Works/ Factory where the Goods would be mainly manufactured and Place of Consignor for GST Purpose: .....
(e) Contact Names, Nos. & email IDs for GST matters (Please mention primary and secondary contacts): .....

☐ We solemnly declare that our GST rating on the GST portal/ Govt. official website is not negative/ blacklisted.

Documents to be submitted: Self-attested Copies of PAN card and GSTIN Registration.

3) Authorization of Person(s) signing the bid on behalf of the Bidder

(a) Full Name: _____
(b) Designation: _____
(c) Signing as:

 A sole proprietorship firm. The person signing the bid is the sole proprietor/ constituted attorney of the sole proprietor,
 A partnership firm. The person signing the bid is duly authorised being a partner to do so, under the partnership agreement or the general power of attorney,
 A company. The person signing the bid is the constituted attorney by a resolution passed by the Board of Directors or in pursuance of the Authority conferred by Memorandum of Association.

Documents to be submitted: Registration Certificate/ Memorandum of Association/ Partnership Agreement/ Power of Attorney/ Board Resolution

4) Bidder's Authorized Representative Information

(a) Name:
(b) Address:
(c) Telephone/ Mobile numbers:
(d) Email Address:

(Signature with date)
.....

(Name and designation)
Duly authorized to sign bid for and on behalf of
[name & address of Bidder and seal of company]

DA: As above

OIL INDIA LIMITED
MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808741
EMAIL: materials@oilindia.in | f_sathiyaraj@oilindia.in

PROFORMA – P

FORMAT FOR PRE-BID QUERIES FROM PROSPECTIVE BIDDER

TENDER NO. :
ITEM :
BIDDER NAME : M/s.

Sl. No.	Tender Clause / Reference	As per tender	Query from prospective bidder
1)			
2)			
3)			

(Signature)

Name :
Designation :
Contact Email :
Contact Mobile Number :

Seal of the company

ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्यम)
Oil India Limited
(A Government of India Enterprise)

MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808613
EMAIL: **materials@oilindia.in** | **f_sathiyaraj@oilindia.in**

PROFORMA – Q

FORMAT OF AUTHORIZATION & BACKUP WARRANTY BY MANUFACTURERS TO SOLE SELLING AGENT / DEALER / DISTRIBUTER

(TO BE TYPED ON THE LETTER HEAD OF THE MANUFACTURER)

Ref. No.: _____ **Date:** _____

Sub: Authorization & Backup Warranty

Ref: Your tender No.: _____ **Date:** _____

To,
The Head of Department,
Materials Department - Field Head Quarters (FHQ),
Oil India Limited, Duliajan P.O.,
Dibrugarh District, Assam, India - 786602

Sir,

We, M/s ..... (Name & address of the Manufacturer) hereby authorize M/s..... (Name & address of the Bidder) to submit their Bid against Tender No..... floated by M/s. OIL INDIA LIMITED (OIL) for supply tendered goods, which will be manufactured by us. As we do not participate directly against such tendering process, we authorize M/s. ..... (name of the Bidder) to participate as our only Sole Selling Agent/Dealer/Distributer (strike out whichever is not applicable) against the tender.

We hereby guarantee the supply through M/s..... (name of the Bidder) in the event of placement of purchase order by OIL and shall provide all back-up supports as may be necessary including for the quality & workmanship of supplied materials.

This authorization and back-up warrantee/guaranty shall remain valid throughout the execution by M/s. ..... (Name of the Bidder) including the defect liability and AMC period, in the event of an order by OIL on them.

Yours faithfully,
For (Name of the manufacturer)

Name & Signature of Authorized signatory :
Designation :
Phone No. :
Place :
Date :
Seal of the Manufacturer :

****

ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्यम)
Oil India Limited
(A Government of India Enterprise)

MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808613
EMAIL: **materials@oilindia.in** | **f_sathiyaraj@oilindia.in**

ANNEXURES

ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्यम)
Oil India Limited
(A Government of India Enterprise)

MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808613
EMAIL: **materials@oilindia.in** | **f_sathiyaraj@oilindia.in**

ANNEXURE - I

PRICE BREAK UP FORMAT

A) PRICE BREAK UP OF ITEMS WHOSE COST IS TO BE INCLUDED IN "GEM PRICE SCHEDULE".

Item Details	*Unit Price (In Rs) including GST*	*Applicable GST rate considered in quoted unit price*
THIS IS A SPECIMEN PRICE BREAK-UP FORMAT FOR REFERENCE ONLY (NOTE: BIDDER SHOULD NOT UPLOAD THIS PRICE BID IN TECHNICAL BID DOCUMENT SUBMISSION AREA UNLESS OR OTHERWISE MENTIONED IN TENDER, FAILING WHICH BID WILL BE LIABLE FOR REJECTION		

B) PRICE BREAK UP OF ITEMS WHOSE COST IS NOT TO BE INCLUDED IN "GEM PRICE SCHEDULE".

Sl. No.	*Description*	*Qty*	*Unit Price (In Rs) including GST*	*Applicable GST rate*

Notes:

1. ***Price break-up to be provided as above, if asked for specifically in the tender.***
2. ***Bidders should fill up, sign and upload this price break up under "Financial documents" of GEM Priced bid only. The price breakup should not be uploaded under GEM Technical bid as it shall lead to rejection of the bid.***

****

ANNEXURE-I

PRICE BREAK-UP SUMMARY

Sl. No.	Term	Qty	UoM	Unit Price (Rs.)	Extended FOR, Destination Price including GST	Installation & Comissioning Charges including GST	Total Cost including I&C charges
	A	B	C	D	E=BxD	F	G=E+F
1	Wireless Process Monitoring system for OCS 1	1	Lot				
2	Wireless Process Monitoring system for OCS 8	1	Lot				
3	Wireless Process Monitoring system for JOYPUR OCS	1	Lot				
4	Wireless Process Monitoring system for BAGHJAN EPS	1	Lot				
5	Wireless Process Monitoring system for KHUMCHAI EPS	1	Lot				
6	Wireless Process Monitoring system for USHAPUR OCS	1	Lot				
7	Wireless Process Monitoring system for LANGKASHI OCS	1	Lot				
8	Wireless Process Monitoring system JORAJAN OCS	1	Lot				
9	Wireless Process Monitoring system for NAGAJAN OCS	1	Lot				
10	Wireless Process Monitoring system for BHEKULAJAN EPS	1	Lot				
Total							

Note :

1) Bidder to note that concessional GST benefit is applicable only for the goods portion and accordingly, Oil India Limited can issue Indigenous Supplies Certificate issued by DGH to seller only for supply of goods. Bidder is advised to consider GST at Merit Rate for Installation & Commissioning, Training, Etc (As Applicable).

2) Installation & Commissioning charges w.r.t. product value shall be in the range 1% (Minimum) to 20% (Maximum).

PRICE BREAK-UP

ANNEXURE-I

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QTY / UNIT (B)	TOTAL QTY (C=A*B)	MAKE / MODEL NO.	UNIT PRICE (D)	EXTENDED FOR, DESTINATION PRICE INCLUDING GST (E=CxD)	APPLICABLE GST RATE (%) INCLUDED IN COLUMN 'E'
OCS-1	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	5	5				
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	1	1				
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	IH	3	Temperature Transmitter	0-100 Deg C	2	6				
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	GU-III	1	Pressure Transmitter	0-21 kg/cm2	1	1				
	ET (RTD with Thermwell is reqd)	1	Pressure Transmitter	0-10 kg/cm2	1	1				
			Temperature Transmitter	0-100 Deg C	1	0				
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1				
	LPMS	2	Pressure Transmitter	0-10 kg/cm2	1	2				
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1				
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	LP Flare	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Tank (Crude)	3	Level Transmitter	0-10 meter	1	3				
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1				
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1				
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	10 psi Flare	1	Pressure Transmitter	0-2 kg/cm2	1	1				
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT				
			Desktop computer with HM		1 LOT	1 LOT				
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT				
Sub-Total for Goods (X)										
Installation and Commissioning Charges (Y)										
Grand Total for Supply of Goods, Installation & Commissioning, Training (Z=X+Y above)										

Note :
Bidder to note that concessional GST benefit is applicable only for the goods portion and accordingly, Oil India Limited can issue Indigenous Supplies Certificate issued by DGH to seller only for supply of goods. Bidder is advised to consider GST at Merit Rate for Installation & Commissioning, Training, Etc (As Applicable).

PRICE BREAK-UP

ANNEXURE-I

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QNTY/ UNIT (B)	TOTAL (C=A*B)	MAKE / MODEL NO.	UNIT PRICE (D)	EXTENDED FOR, DESTINATION PRICE INCLUDING GST (E=CxD)	APPLICABLE GST RATE (%) INCLUDED IN COLUMN 'E'
OCS-8	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	5	5				
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	5	5				
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	IH	1	Temperature Transmitter	0-100 Deg C	4	4				
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	GU-III	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1				
			Temperature Transmitter	0-100 Deg C	1	1				
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1				
	VLPMS	1	Pressure Transmitter	0-5 kg/cm2	1	1				
	LPMS	2	Pressure Transmitter	0-21 kg/cm2	1	2				
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1				
	LP Flare	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Tank (Crude)	3	Level Transmitter	0-10 meter	1	3				
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1				
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1				
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	10 psi Flare	1	Pressure Transmitter	0-2 kg/cm2	1	1				
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT				
			Desktop computer with HM		1 LOT	1 LOT				
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT				
Sub-Total for Goods (X)										
Installation and Commissioning Charges (Y)										
Grand Total for Supply of Goods, Installation & Commissioning, Training (Z=X+Y above)										

Note :
Bidder to note that concessional GST benefit is applicable only for the goods portion and accordingly, Oil India Limited can issue Indigenous Supplies Certificate issued by DGH to seller only for supply of goods. Bidder is advised to consider GST at Merit Rate for Installation & Commissioning, Training, Etc (As Applicable).

ANNEXURE-I

PRICE BREAK-UP

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QTY / UNIT (B)	TOTAL (C=A*B)	MAKE / MODEL NO.	UNIT PRICE (D)	EXTENDED FOR, DESTINATION PRICE INCLUDING GST (E=CxD)	APPLICABLE GST RATE (%) INCLUDED IN COLUMN 'E'
Joypur OCS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	5	5				
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	5	5				
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	IH	3	Temperature Transmitter	0-100 Deg C	2	6				
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1				
			Temperature Transmitter	0-100 Deg C	1	1				
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1				
	LPMS	2	Pressure Transmitter	0-21 kg/cm2	1	2				
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1				
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	LP Flare	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Tank (Crude)	4	Level Transmitter	0-10 meter	1	4				
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1				
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1				
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	10 psi Flare	1	Pressure Transmitter	0-2 kg/cm2	1	1				
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT				
			Desktop computer with HM		1 LOT	1 LOT				
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT				
Sub-Total for Goods (X)										
Installation and Commissioning Charges (Y)										
Grand Total for Supply of Goods, Installation & Commissioning, Training (Z=X+Y above)										

Note :
Bidder to note that concessional GST benefit is applicable only for the goods portion and accordingly, Oil India Limited can issue Indigenous Supplies Certificate issued by DGH to seller only for supply of goods. Bidder is advised to consider GST at Merit Rate for Installation & Commissioning, Training, Etc (As Applicable).

ANNEXURE-I

PRICE BREAK-UP

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QTY/ UNIT (B)	TOTAL (C=A*B)	MAKE / MODEL NO.	UNIT PRICE (D)	EXTENDED FOR, DESTINATION PRICE INCLUDING GST (E=CxD)	APPLICABLE GST RATE (%) INCLUDED IN COLUMN 'E'
Baghjan EPS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	10	10				
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	15	15				
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	IH	4	Temperature Transmitter	0-100 Deg C	2	8				
	GU-I	3	Pressure Transmitter	0-50 KG/CM2	1	3				
	GU-II	3	Pressure Transmitter	0-21 kg/cm2	1	3				
	ET	2	Pressure Transmitter	0-10 kg/cm2	1	2				
			Temperature Transmitter	0-100 Deg C	1	2				
	HPMS	2	Pressure Transmitter	0-42 kg/cm2	1	2				
	VLPMS	1	Pressure Transmitter	0-5 kg/cm2	1	1				
	LPMS	2	Pressure Transmitter	0-21 kg/cm2	1	2				
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Stabilizer	2	Pressure Transmitter	0-10 Kg/cm2	1	2				
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	LP Flare	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Tank (Crude)	3	Level Transmitter	0-10 meter	1	3				
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1				
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	10 psi Flare	1	Pressure Transmitter	0-2 kg/cm2	1	1				
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT				
			Desktop computer with HMI		1 LOT	1 LOT				
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT				
Sub-Total for Goods (X)										
Installation and Commissioning Charges (Y)										
Grand Total for Supply of Goods, Installation & Commissioning, Training (Z=X+Y above)										

Note :
Bidder to note that concessional GST benefit is applicable only for the goods portion and accordingly, Oil India Limited can issue Indigenous Supplies Certificate issued by DGH to seller only for supply of goods. Bidder is advised to consider GST at Merit Rate for Installation & Commissioning, Training, Etc (As Applicable).

ANNEXURE-I

PRICE BREAK-UP

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QNTY/ UNIT (B)	TOTAL (C=A*B)	MAKE / MODEL NO.	UNIT PRICE (D)	EXTENDED FOR, DESTINATION PRICE INCLUDING GST (E=CxD)	APPLICABLE GST RATE (%) INCLUDED IN COLUMN 'E'
Kumchai EPS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	2	2				
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	IH	2	Temperature Transmitter	0-100 Deg C	2	4				
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	GU-II	1	Pressure Transmitter	0-21 kg/cm2	1	1				
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1				
			Temperature Transmitter	0-100 Deg C	1	1				
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1				
	LPMS	1	Pressure Transmitter	0-21 kg/cm2	1	1				
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	LP Flare	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Tank (Crude)	2	Level Transmitter	0-10 meter	1	2				
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1				
	Lifter Delivery / Injected gas pressure	1	Pressure Transmitter	0-120 KG/CM2	1	1				
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT				
			Desktop computer with HM		1 LOT	1 LOT				
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT				
Sub-Total for Goods (X)										
Installation and Commissioning Charges (Y)										
Grand Total for Supply of Goods, Installation & Commissioning, Training (Z=X+Y above)										

Note :
Bidder to note that concessional GST benefit is applicable only for the goods portion and accordingly, Oil India Limited can issue Indigenous Supplies Certificate issued by DGH to seller only for supply of goods. Bidder is advised to consider GST at Merit Rate for Installation & Commissioning, Training, Etc (As Applicable).

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Ushapur OCS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	3	3				
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	1	1				
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	IH	3	Temperature Transmitter	0-100 Deg C	2	6				
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	GU-II	1	Pressure Transmitter	0-21 kg/cm2	1	1				
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1				
			Temperature Transmitter	0-100 Deg C	1	1				
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1				
	VLPMS	1	Pressure Transmitter	0-5 kg/cm2	1	1				
	LPMS	2	Pressure Transmitter	0-21 kg/cm2	1	2				
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1				
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	LP Flare	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Tank (Crude)	2	Level Transmitter	0-10 meter	1	2				
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1				
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1				
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	10 psi Flare	1	Pressure Transmitter	0-2 kg/cm2	1	1				
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT				
			Desktop computer with HMI		1 LOT	1 LOT				
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT				
Sub-Total for Goods (X)										
Installation and Commissioning Charges (Y)										
Grand Total for Supply of Goods, Installation & Commissioning, Training (Z=X+Y above)										

Note :
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PRICE BREAK-UP

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LangKashi OCS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	3	3				
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	3	3				
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	IH	3	Temperature Transmitter	0-100 Deg C	2	6				
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1				
			Temperature Transmitter	0-100 Deg C	1	1				
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1				
	LPMS	3	Pressure Transmitter	0-21 kg/cm2	1	3				
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1				
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	LP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	Tank (Crude)	3	Level Transmitter	0-10 meter	1	3				
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1				
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1				
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1				
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT				
			Desktop computer with HM		1 LOT	1 LOT				
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT				
Sub-Total for Goods (X)										
Installation and Commissioning Charges (Y)										
Grand Total for Supply of Goods, Installation & Commissioning, Training (Z=X+Y above)										

Note :
Bidder to note that concessional GST benefit is applicable only for the goods portion and accordingly, Oil India Limited can issue Indigenous Supplies Certificate issued by DGH to seller only for supply of goods. Bidder is advised to consider GST at Merit Rate for Installation & Commissioning, Training, Etc (As Applicable).

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PRICE BREAK-UP

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QTY / UNIT (B)	TOTAL (C=A*B)	MAKE / MODEL NO.	UNIT PRICE (D)	EXTENDED FOR, DESTINATION PRICE INCLUDING GST (E=CxD)	APPLICABLE GST RATE (%) INCLUDED IN COLUMN 'E'
Jorajan OCS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	2	2				
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	2	2				
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	IH (RTD with Thermwell is reqd)	4	Temperature Transmitter	0-100 Deg C	2	8				
	GU-I	2	Pressure Transmitter	0-50 KG/CM2	1	2				
	ET (RTD with Thermwell is reqd)	1	Pressure Transmitter	0-10 kg/cm2	1	1				
			Temperature Transmitter	0-100 Deg C	1	1				
	HPMS	2	Pressure Transmitter	0-42 kg/cm2	1	2				
	VLPMS	1	Pressure Transmitter	0-5 kg/cm2	1	1				
	LPMS	2	Pressure Transmitter	0-21 kg/cm2	1	2				
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1				
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	LP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	Tank (Crude)	3	Level Transmitter	0-10 meter	1	3				
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1				
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1				
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1				
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT				
			Desktop computer with HM		1 LOT	1 LOT				
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT				
Sub-Total for Goods (X)										
Installation and Commissioning Charges (Y)										
Grand Total for Supply of Goods, Installation & Commissioning, Training (Z=X+Y above)										

Note :
Bidder to note that concessional GST benefit is applicable only for the goods portion and accordingly, Oil India Limited can issue Indigenous Supplies Certificate issued by DGH to seller only for supply of goods. Bidder is advised to consider GST at Merit Rate for Installation & Commissioning, Training, Etc (As Applicable).

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INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QTY/ UNIT (B)	TOTAL (C=A*B)	MAKE / MODEL NO.	UNIT PRICE (D)	EXTENDED FOR, DESTINATION PRICE INCLUDING GST (E=CxD)	APPLICABLE GST RATE (%) INCLUDED IN COLUMN 'E'
Nagajan OCS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	HP Manifold	0	Pressure Transmitter	0-60 kg/cm2	1	0				
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	IH	3	Temperature Transmitter	0-100 Deg C	1	3				
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1				
			Temperature Transmitter	0-100 Deg C	1	1				
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1				
	VLPMS	1	Pressure Transmitter	0-5 kg/cm2	1	1				
	LPMS	1	Pressure Transmitter	0-21 kg/cm2	1	1				
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1				
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	LP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	Tank (Crude)	3	Level Transmitter	0-10 meter	1	3				
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1				
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1				
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1				
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT				
			Desktop computer with HM		1 LOT	1 LOT				
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT				
Sub-Total for Goods (X)										
Installation and Commissioning Charges (Y)										
Grand Total for Supply of Goods, Installation & Commissioning, Training (Z=X+Y above)										

Note :
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PRICE BREAK-UP

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QTY/ UNIT (B)	TOTAL (C=A*B)	MAKE / MODEL NO.	UNIT PRICE (D)	EXTENDED FOR, DESTINATION PRICE INCLUDING GST (E=CxD)	APPLICABLE GST RATE (%) INCLUDED IN COLUMN 'E'
Bhekulajan EPS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	4	4				
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	5	5				
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	IH	1	Temperature Transmitter	0-100 Deg C	4	8				
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1				
	GU-II	1	Pressure Transmitter	0-21 kg/cm2	1	1				
	GU-III	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1				
			Temperature Transmitter	0-100 Deg C	1	1				
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1				
	LPMS	1	Pressure Transmitter	0-21 kg/cm2	1	1				
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1				
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1				
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	LP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1				
	Tank (Crude)	1	Level Transmitter	0-10 meter	1	1				
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1				
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1				
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1				
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT				
			Desktop computer with HM		1 LOT	1 LOT				
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT				
Sub-Total for Goods (X)										
Installation and Commissioning Charges (Y)										
Grand Total for Supply of Goods, Installation & Commissioning, Training (Z=X+Y above)										

Note :
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MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808613
EMAIL: **materials@oilindia.in** | **f_sathiyaraj@oilindia.in**

ANNEXURE-II

TECHNICAL & COMMERCIAL CHECKLIST

A. TECHNICAL CHECKLIST:

Sl. NO.	DESCRIPTION	BIDDER'S RESPONSE (COMPLIED / NOT COMPLIED/ NOT APPLICABLE)	REMARKS
(A)	**TECHNICAL**		
1)	Please categorically confirm whether the offered item / specification is same as mentioned in the tender specification?		
2)	Is your offer item/specification will be manufactured & tested as per relevant API norms as specified in the Tender (IF APPLICABLE)?		
3)	Have you supplied the item to any oil and gas industry? (If yes, please mention the details of client(s) to whom the item was supplied)		
4)	Have you submitted the API license (if applicable) valid till the execution of the Purchase Order?		
5)	Have you submitted all the supporting documents related to past supply experience requirement mentioned in tender?		
6)	If the bidder is a sole selling agent / distributor / dealer of the manufacturer of the tendered item(s), have you submitted the authorization certificate from the manufacturer (in original on manufacturer's letter head) along with the technical bid?		
7)	Items should be manufactured & tested **strictly** as per **technical specification indicated in the tender without any deviation**. Bidder to categorically confirm the same in their technical bid.		
8)	Quotation must be accompanied with relevant product catalogue / drawing, showing dimensional details, bill of material of various parts etc. (where applicable) of all components without which the offer will be liable for rejection.		

(SIGNATURE WITH COMPANY SEAL/STAMP)

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ANNEXURE-II

TECHNICAL & COMMERCIAL CHECKLIST

B. COMMERCIAL CHECKLIST:

Sl. No.	Requirement	Bidder's Response (Complied / Not complied/ Not applicable)
1	Whether quoted as manufacturer?	
2	Whether quoted as OEM Dealer/Supply House?	
3	If quoted as OEM Dealer/Supply House -	
	a) Whether submitted valid and proper authorization letter from manufacturer confirming that bidder is their authorized Dealer/supply House for the product offered?	
	(b) Whether manufacturer's back-up Warranty/Guarantee certificate submitted?	
4	Whether agreed to the tender warranty clause of the tender?	
5.0	Whether submitted EMD/Bid Security / Bid Security Declaration as per tender requirement?	
5.1	EMD/Bid Security (Amount & Validity)	
5.2	EMD/Bid Security exemption certificate with Validity	
5.3	Whether submitted Bid Security Declaration as per Proforma-G(B) ?	
6	Whether quoted a firm delivery period as per the tender requirement?	
7	Whether confirmed to submit PBG as asked for in tender?	
8	Whether confirmed Bid Validity as per the tender requirement?	
9	Whether confirmed Payment Terms as per the tender?	
10	Whether quoted as MSE unit? If yes, whether necessary document submitted?	
11	Whether submitted Integrity Pact duly signed and sealed as per **PROFORMA – D?** *(If applicable as per the tender)*	
12	Whether indicated the country of origin for the items quoted? Please mention the "Country of origin" under Remarks here.	
13	Whether submitted format of undertaking by bidders towards submission of authentic information/ documents as per **PROFORMA – H**	
14	Whether submitted **Proforma – J** - Format for Exception / Deviation	

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TECHNICAL & COMMERCIAL CHECKLIST

B. COMMERCIAL CHECKLIST:

Sl. No.	Requirement	Bidder's Response (Complied / Not complied/ Not applicable)
15	Ministry of Finance of Govt. of India, Department of Expenditure, Public procurement Division vide office memorandum F. No. 6/18/2019-PPD dated 23rd July, 2020(order-Public Procurement no.1) has proclaimed the insertion of Rule 144 (xi) in the General Financial Rules (GFRs), 2017 w.e.f. 23rd July, 2020 regarding restrictions on procurement from a bidder of a country which shares a land border with India on the grounds of defence of India on matters directly or indirectly related thereto including national security. Bidders are requested to take note of the office memorandum and submit their offers accordingly, wherever applicable. In this regard, bidders must submit duly sealed & signed undertaking as per format provided vide, **PROFORMA – E(I), E(II) & E(III)** along with the technical bid. Whether uploaded along with the bid?	
16	Whether indicated 'Local Content' required as per PPP-MII Policy?	
	Local content amount and percentage. Details of locations at which the local value addition is made.	
17	Whether indicated the import content in Price Bid?	
18	Whether all documents have been submitted as required for fulfilling Experience criteria clause of BRC-Technical (If Applicable).	
19	Name and details of the company to whom the bidder has successfully executed orders / contracts for atleast 50% of the tendered quantity as per Experience criteria clause of BRC-Technical (If Applicable).	
20	Whether submitted the profile and other documents of the company for verification (viz. Annual reports, Memorandum of Association, Article of Association etc.)	
21	Name of Manufacturer	
22	Place of Dispatch	
23	Name, Address, Phone No & E-mail ID of Bidder	
24	Bank details of Bidder	
25	Whether submitted **Proforma – K** - Format for Undertaking for Local Content	
26	Whether submitted **Proforma-L** - Format for Power of Attorney / Authorization letter (Regarding authority for submission of bid)	

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TECHNICAL & COMMERCIAL CHECKLIST

B. COMMERCIAL CHECKLIST:

Sl. No.	Requirement	Bidder's Response (Complied / Not complied/ Not applicable)
27	Whether submitted **Proforma–M** - Format for Bidders financial standing	
28	Whether submitted **Proforma–N** - Format for declaration of Blacklisting / Holiday Listing/ NCLT / NCLAT /DRT /DRAT/ Court Receivership/ Liquidation	
29	Whether submitted **Proforma – O** - Format for Bidder's Information	
30	Whether submitted **Proforma – G(B)** - Format for Bid Security Declaration (If Applicable)	
31	Whether submitted **Proforma – Q** - Format for Authorization & Backup Warranty by Manufacturers to sole selling agent / Dealer / Distributor?	
32	Whether submitted **Proforma – C** - Format for Corporate Guarantee towards financial standing?	

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ANNEXURE – III

GENERAL CONDITIONS OF CONTRACT (GCC)

1.0 The bid is governed by GeM General terms & conditions (GeM GTC) prevalent on the bid closing date of tender.

(PART-A) - SPECIAL CONDITIONS OF CONTRACT (SCC)

The SPECIAL CONDITIONS OF CONTRACT (SCC) shall supersede the GeM General terms & conditions (GeM GTC).

1.0 Bidders shall submit their offer mentioning pointwise compliance/noncompliance to all the terms & conditions, BEC/BRC, Specifications etc. Any deviation(s) from the tender terms & conditions, BEC/BRC, Specifications etc. should be clearly highlighted specifying justification in support of deviation.

2.0 To ascertain the substantial responsiveness of the bid, OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by OIL, failing which the offer will be summarily rejected. However, bidder(s) must note that there should not be any additional financial involvement arising out of such post tender clarifications.

3.0 The Bidder to submit following Technical Evaluation Sheet along with technical bid -

Annexure – VI: Bid Evaluation Matrix (Technical Specification)
Annexure – VII: Bid Evaluation Matrix (Bid Rejection Criteria)

4.0 INTEGRITY PACT (IF APPLICABLE)

OIL shall be entering into an Integrity Pact, **if applicable** with the bidders as per format enclosed vide **PROFORMA - D** of the tender document. This Integrity Pact proforma has been duly signed digitally by OIL's competent signatory. The proforma has to be returned by the bidder (along with the technical bid) duly signed (digitally) by the same signatory who signed the bid, i.e., who is duly authorized to sign the bid. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact have been signed by the bidder's authorized signatory who sign the Bid. If any bidder refuses to sign Integrity Pact or declines to submit Integrity Pact with the offer, their bid shall be rejected straightway.

OIL's Independent External Monitors at present are as under:

DR. TEJENDRA MOHAN BHASIN,
Former Vigilance Commissioner, CVC
E-mail: tmbhasin@gmail.com

SHRI RAM PHAL PAWAR, IPS (Retd.),
Former Director, NCRB, MHA
E-mail: rpawar61@hotmail.com
ramphal.pawar@ips.gov.in

Shri Ajit Mohan Sharan, IAS (Retd.)
Former Secretary, Ministry of Ayush, Govt. of India
E-mail: ams057@gmail.com

4.1 In case of a joint venture, all the partners of the joint venture should sign the Integrity Pact.

4.2 In the event of any dispute between the management and the contractor relating to those contracts where Integrity Pact is applicable, in case, both the parties are agreeable, they may try to settle dispute through mediation before the panel of IEMs in a time bound manner. If required, the organizations may adopt any mediation rules for this purpose. In case, the dispute remains unresolved even after mediation by the panel of IEMs, the organisation may take further action as per the terms and conditions of the contract.

5.0 MICRO AND SMALL ENTERPRISES (MSE)

Categorisation and various Criteria applicable to MSE bidders shall be guided by the Gazette Notification No. CG-DL-E-26062020-220191 dated 26.06.2020 and Amendment vide Gazette Notification no. CG-DL-E-16062021-227649 dated 16th June, 2021 issued by Ministry of Micro, Small and Medium Enterprises.

The bidder claiming as MSE status (MSE-General, MSE-SCIST, MSE -Woman) against this tender has to submit the following documents for availing the benefits applicable to MSEs:

Udyam Registration Number with Udyam Registration Certificate.

Note:
In case bidding MSE is owned by Schedule Caste or Schedule Tribe entrepreneur or Woman Entrepreneur, valid documentary evidence issued by the agency who has registered the bidder as MSE owned by SC/ST entrepreneur/ Woman Entrepreneurs should also be enclosed.

5.1 For availing benefits under Public Procurement Policy (Purchase preference), the interested MSE Bidders must ensure that they are the manufacturer of tendered item (Primary Product Category) and registered with the appropriate authority for the said item(s).

6.0 PREFERENCE TO MAKE IN INDIA (MII)

Department for Promotion of Industry and Internal Trade (DPIIT), has issued the revised 'Public Procurement (Preference to Make in India), Order 2017" vide Order no. No. P-45021/2/2017-PP (BE-II) dated 04.06.2020. Bidders are requested to go through the policy and its subsequent amendments, if any, and take note of the same while submitting their offer.

7.0 DOMESTICALLY MANUFACTURED IRON & STEEL PRODUCTS (DMI & SP):

Steel Policy notified vide Notification No. 324 dated 29.05.2019 and as amended from time to time by Ministry of Steel, Government of India is applicable against this tender. The detailed policy may be referred in Ministry's website. Also, refer **ANNEXURE – IV** to this tender in this regard.

8.0 RESTRICTIONS ON PROCUREMENT FROM A BIDDER OF A COUNTRY SHARING LAND BORDER WITH INDIA:

Ministry of Finance of Govt. of India, Department of Expenditure, Public procurement Division vide office memorandum F. No. 6/18/2019-PPD dated 23rd July, 2020 (order-Public Procurement no.1) has proclaimed the insertion of Rule 144 (xi) in the General Financial Rules (GFRs), 2017 w.e.f. 23rd July, 2020 and amended vide O.M. No. F.7/10/2021-PPD (1) dated 23.02.2023 (order public procurement no. 4) from Procurement Policy Division, Department of Expenditure, Ministry of Finance forwarded by Department of Public Enterprises vide O.M. No. F. No. DPE/7 (4)/2017-Fin dated 24.02.2023 regarding restrictions on procurement from a bidder of a country which shares a land border with India on the grounds of defence of India on matters directly or indirectly related thereto including national security. Bidders are requested to take note of the following clauses and submit their offers accordingly wherever applicable.

(1) Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority [Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT)]. Further, any bidder (including bidder from India) having specified Transfer of Technology (ToT) arrangement with an entity from a country which shares a land border with India, shall also require to be registered with the same competent authority to be eligible to bid in this tender.

(2) "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated hereinbefore, including any agency branch or office controlled by such person, participating in a procurement process.

(3) "Bidder (or entity) from a country which shares a land border with India" for the purpose of this Order means:

- **a.** An entity incorporated, established or registered in such a country; or
- **b.** A subsidiary of an entity incorporated, established or registered in such a country; or
- **c.** An entity substantially controlled through entities incorporated, established or registered in such a country; or
- **d.** An entity whose beneficial owner is situated in such a country; or
- **e.** An Indian (or other) agent of such an entity; or
- **f.** A natural person who is a citizen of such a country; or
- **g.** A consortium or joint venture where any member of the consortium or joint venture falls under any of the above

(4) The beneficial owner for the purpose of para (3) above will be as under:

(i) In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808613
EMAIL: **materials@oilindia.in** | **f_sathiyaraj@oilindia.in**

Explanation:

a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five percent of shares or capital or profits of the company.

b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholder's agreements or voting agreements.

(ii) In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;

(iii) In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;

(iv) Where no natural person is identified under (i) or (ii) or (iii) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;

(v) In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

(5) An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

(6) The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

(7) Validity of Registration:

The registration should be valid at the time of submission of bid and at the time of acceptance of bid. If the bidder was validly registered at the time of acceptance/placement of order, registration shall not be a relevant consideration during contract execution.

(8) Undertaking regarding compliance:

The bidders are required to provide undertakings as per **PROFORMA – E(I), PROFORMA – E(II) & PROFORMA – E(III)** along with their bid towards compliance of the above guidelines for participation in this tender. If the undertakings given by a bidder whose bid is accepted is found to be false, this would be a ground for debarment/action as per OIL's Banning Policy and further legal action in accordance with law.

9.0 SETTLEMENT OF COMMERCIAL DISPUTES BETWEEN CENTRAL PUBLIC ENTERPRISES (CPSES) INTER-SE AND CPSE(S) AND GOVERNMENT DEPARTMENT(S)/ORGANISATIONS(S) - ADMINISTRATIVE MECHANISM FOR RESOLUTION OF CPSES DISPUTES (AMRCD).

In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract(s) between Central Public Sector Enterprises (CPSEs) / Port Trusts inter se and also between CPSEs and Government Department/Organisations (excluding disputes relating to Railways, Income Tax, Customs and Excise Departments), such dispute or difference shall be taken up by either party for its resolution through AMRCD as mentioned in DPE OM No. 05/003/2019-FTS- 10937 dated 14th December, 2022 and the decision of AMRCD on the said dispute will be binding on both the parties.

10.0 TAX COLLECTIBLE AT SOURCE (TCS):

Tax Collectible at Source (TCS) applicable under the Income-tax Law and charged by the SUPPLIER shall also be payable by OIL along with consideration for procurement of goods/materials/ equipment. If TCS is collected by the SUPPLIER, a TCS certificate in prescribed Form shall be issued by the SUPPLIER to OIL within the statutory time limit.

Payment towards applicable TCS u/s 206C (IH) of Income Tax Act, 1961 will be made to the supplier provided they are claiming it in their invoice and on submission of following undertaking along with the invoice stating that:

a. TCS is applicable on supply of goods invoiced to OIL as turnover of the supplier in previous year was more than Rs. 10 Cr. And

b. Total supply of goods to OIL in FY …….. (As applicable) exceeds Rs. 50 Lakh and

c. TCS as charged in the invoice has already been deposited (duly indicating the details such as challan No. and date) or would be deposited with Exchequer on or before the due date and

d. TCS certificate as provided in the Income Tax Act will be issued to OIL in time.

However, Performance Security deposit will be released only after the TCS certificate for the amount of tax collected is provided to OIL. Supplier will extend the performance bank guarantee (PBG), wherever required, till the receipt of TCS certificate or else the same will be forfeited to the extent of amount of TCS, if all other conditions of Purchase order are fulfilled.

The above payment condition is applicable only for release of TCS amount charged by supplier u/s 206C (I H) of Income tax Act, 1961.

11.0 CONCESSIONAL GST (IF APPLICABLE)

The items covered in this Tender shall be used by Oil India Limited in the Petroleum Exploration License (PEL) and Mining Lease (ML) areas and hence concessional **GST @ 12%** will be applicable as per Govt. Policy in vogue. *Concessional GST @ 12% will be applicable only if total material value is more than Rs.1,00,000 (i.e. 1 Lakh & above). Otherwise, GST at actuals / merit rate will be reimbursed against submission of documentary evidence. Bidder is advised to take note of above and accordingly submit price bid.*

Note:

Successful bidder shall arrange to provide all necessary documents (invoice etc.) to OIL for applying Essentiality Certificate on receipt of request from OIL or at least 45 days prior to their readiness for despatch, whichever is earlier. Further, successful bidder shall affect dispatch only on receipt of relevant certificates/shipment clearance from OIL, failing which all related liabilities shall be to supplier's account.

12.0 APPLICABILITY OF BANNING POLICY OF OIL INDIA LIMITED:

OIL's Banning Policy, 2023 will be applicable against the tender (and order in case of award) to deal with any agency (bidder/contractor/supplier/ vendor/service provider) who commits deception, default, fraud or indulged in other misconduct of whatsoever nature in the tendering process and/or order execution processes.

The bidders who are on Holiday/Banning/Suspension list of OIL on due date of submission of bid/ during the process of evaluation of the bids, the offers of such bidders shall not be considered for bid opening/evaluation/award. If the bidding documents were issued inadvertently/downloaded from website, the offers submitted by such bidders shall also not be considered for bid opening/evaluation/ Award of Work.

12.1 The bidder shall fill up and submit proforma of declaration of **Blacklisting / Holiday Listing/ NCLT / NCLAT /DRT /DRAT/ COURT RECEIVERSHIP/ LIQUIDATION** (as per **Proforma–N**) along with the technical bid).

13.0 PERFORMANCE SECURITY

Successful bidder will be required to furnish a Performance Bank Guarantee @ **5%** of the order value with validity as mentioned in the tender document. The Performance Security must be submitted exactly as per **PROFORMA – F**. Bidder must confirm the same in their Technical Bid.

The Bank Guarantee issued by the bank must be routed through SFMS platform as per the following details:

(i) MT 760/MT 760 COV for issuance of bank guarantee.
(ii) MT 760/MT 767 COV for amendment of bank guarantee.
[Order Number should reflect in the SFMS text under MT 760/MT 760 COV]

The above message/intimation shall be sent through SFMS by the BG issuing Bank branch to ICICI Bank, Duliajan Branch, IFSC Code- ICIC0000213, Branch Address.: ICICI Bank Ltd, Kunja Bhavan, Daily Bazaar, Duliajan, Dibrugarh, Assam - 786602. The Bank details are as under:

Bank Details of Beneficiary	
Bank Name	ICICI BANK LTD.
Branch Name	DULIAJAN
Branch Address	KUNJA BHAVAN, DAILY BAZAAR, DULIAJAN, DIBRUGARH, ASSAM - 786602
IFSC Code	ICIC0000213
Unique identifier code (Field 7037)	OIL503988890
Company name	Oil India Limited

The vendor shall submit to OIL the copy of the SFMS message as sent by the issuing bank branch along with the original bank guarantee.

13.1 Performance Security shall be issued from any scheduled Indian Bank or any branch of an International Bank situated in India and registered with the Reserve Bank of India as scheduled foreign Bank in case of domestic suppliers.

13.2 Bank Guarantees issued by a Bank in India should be on non-judicial Stamp Paper/Franking receipt of requisite value, as per Indian Stamp Act, purchased in the name of the Banker or the Seller.

13.3 Bank Guarantee with condition other than those mentioned in OIL's prescribed format shall not be accepted.

13.4 The Bank Guarantee issued by a Bank amongst others shall contain the complete address of the Bank including Phone Nos., Fax Nos., E-mail address, Code Nos. of the authorized signatory with full name and designation and Branch Code.

13.5 The Performance Security shall be payable to Purchaser as compensation for any breach or loss resulting from Supplier's failure to fulfil its obligations under the Purchase Order/Contract. In the event of such default on the part of Seller, the Performance Security shall be encashed unconditionally, and the proceeds thereof shall be forfeited without any further reference to the Seller. In such an eventuality, the Seller shall be liable to face penal actions including debarment as per OIL's Banning Policy, 2023.

13.6 The Performance Security shall be discharged by Purchaser not later than 30 days following its expiry after completion of obligations under the order/contract. In the event of any extension to the contractual validity or delay in supply/ execution or extension of Warranty Period of the Purchase Order/Contract, validity of the Performance Security shall be extended by the Seller/Contractor by the equivalent period.

13.7 The Performance Security shall not accrue any interest during its period of validity or extended validity. OIL shall not be liable to pay any bank charges, commission or interest on the amount of Performance Security.

13.8 Failure of the successful Bidder to comply with the requirements of above clauses shall constitute sufficient grounds for annulment of the award and forfeiture of their Bid Security or Performance Security. The defaulting party shall also be debarred from business as per OIL's Banning Policy, 2023.

13.9 In case, the Performance Security in the form of a Bank Guarantee is found to be not genuine or issued by a fake banker or issued under the fake signatures, the Purchase Order placed on the bidder shall be treated as cancelled forthwith and the bidder shall be banned from participating in future tenders in accordance with the provisions of Company's Banning Policy, 2023. Further, the Bid Security submitted by such bidder shall be invoked without any further reference, besides other penal action, as the Company may think appropriate.

13.10 In case Annual Maintenance Contract (AMC) is required and OIL intends to enter into a separate contract with the successful bidder for AMC, the Successful bidder must undertake to submit separate Performance Security against the AMC at the applicable rate & validity to be stipulated in the contract. (10% of annualized contract value valid for three months beyond entire execution period).

14.0 BID SECURITY (IF APPLICABLE):

If Bid Security /Earnest Money Deposit (EMD) is applicable. Bids must be accompanied by Bid Security for the amount as mentioned in the tender and shall be in the prescribed format **(PROFORMA – G(A))** as Bank Guarantee (BG) or Online payment. *(Refer GeM GTC for details).*

In case of the Bid Security is submitted in the form of Bank Guarantee, scanned copy of Bank Guarantee shall be uploaded by the bidder in the online bid and **Original Bank Guarantee will have to be submitted directly to OIL on or before the Bid closing date and time, failing which the bid may be treated as incomplete and may lead to rejection of the bid by OIL without making any reference to the bidder**.

The Original Bid Security shall be submitted manually in sealed envelope **superscribed** with tender no., tendered item detail and due date to: **GM-MATERIALS, MATERIALS DEPARTMENT, KIND ATTENTION – Mr. F.SATHIYARAJ, SENIOR MANAGER MATERIALS, OIL INDIA LIMITED, DULIAJAN P.O., DIBRUGARH DIST., ASSAM-786602.**

In case of Online payment of Bid Security, bidder shall provide the Online transaction details in their online bid as proof of submission of Bid Security to OIL. The online payment of Bid Security amount should be received in OIL's bank account on or before the Bid closing date and time failing which the offer will be rejected outright without any further reference.

OIL's Bank account Details for Online submission of Bid Security	
Name	Oil India Limited
Bank	State Bank of India
Branch	Duliajan
Account Number	10494832599
Account Type	Current
IFSC Code	SBIN0002053

14.1 Bid Security shall be issued from any scheduled Indian Bank or any branch of an International Bank situated in India and registered with the Reserve Bank of India as scheduled foreign Bank in case of domestic suppliers.

14.2 Bank Guarantee issued by a scheduled Bank in India at the request of some other non-scheduled Bank in India shall not be accepted.

14.3 Bank Guarantees issued by a Bank in India should be on non-judicial Stamp Paper/Franking receipt of requisite value, as per Indian Stamp Act, purchased in the name of the Banker or the Seller.

14.4 Bank Guarantee with condition other than those mentioned in OIL's prescribed format/GeM Bank Guarantee format shall not be accepted.

14.5 The Bank Guarantee issued by a Bank amongst others shall contain the complete address of the Bank including Phone Nos., Fax Nos., E-mail address, Code Nos. of the authorized signatory with full name and designation and Branch Code.

14.6 The bidders will extend the validity of the Bid Security, if and whenever specifically advised by OIL, at the bidder's cost.

14.7 The Bid Security shall not accrue any interest during its period of validity or extended validity. OIL shall not be liable to pay any bank charges, commission or interest on the amount of Bid Security.

14.8 In case, the Bid Security in the form of a Bank Guarantee is found to be not genuine or issued by a fake banker or issued under the fake signatures, the bid submitted by the concerned bidder shall be rejected and the bidder shall be banned from participating in future tenders in accordance with the provisions of OIL's Banning Policy. Further, the Bid Security submitted by such bidder shall be invoked without any further reference, besides other penal action, as OIL may think appropriate.

14.9 In case of Bank Guarantee, the Bank Guarantee issuing bank branch must ensure the following:

The Bank Guarantee issued by the bank must be routed through SFMS platform as per the following details:

(i) MT 760/MT 760 COV for issuance of bank guarantee.
(ii) MT 760/MT 767 COV for amendment of bank guarantee.

[Tender Number should reflect in the SFMS text under MT 760/MT 760 COV]

The above message/intimation shall be sent through SFMS by the BG issuing Bank branch to ICICI Bank, Duliajan Branch, IFSC Code- ICIC0000213, Branch Address: ICICI Bank Ltd, Kunja Bhavan, Daily Bazaar, Duliajan, Dibrugarh, Assam – 786602. The Bank details are as under:

Bank Details of Beneficiary	
Bank Name	ICICI BANK LTD.
Branch Name	DULIAJAN
Branch Address	KUNJA BHAVAN, DAILY BAZAAR, DULIAJAN, DIBRUGARH, ASSAM – 786602
IFSC Code	ICIC0000213
Unique identifier code (Field 7037)	OIL503988890
Company name	Oil India Limited

The bidder shall submit to OIL the copy of the SFMS message as sent by the issuing bank branch along with the original bank guarantee.

14.10 The Bid Security of the unsuccessful bidders will be returned after finalization of tender whereas the Bid Security of the successful bidder will be discharged on such bidder's furnishing the Performance Security to OIL against the Purchase Order secured by the bidder within the stipulated time frame. The successful bidder will, however, extend validity of the Bid Security till such time the Performance Security is furnished.

14.11 For timely return of Bid Security, bidders shall submit following details along with their technical bid.

- For Bank Guarantee((BG): Name, Email id, Phone number and Address where the Bid Security is to be returned by Courier.
- Online payment: Name, Email id, Phone number and Bank details (Bank Name, Branch Name, Branch Address, IFSC Code, Unique identifier code, Company name) where the Bid Security amount shall be returned by Online transfer.

In case of non-submission of above details, return of Bid Security may be delayed.

14.12 If Bid Security /Earnest Money Deposit (EMD) is not applicable. Instead of EMD /Bid Security, all the bidders shall be required to sign a "Bid Security Declaration" accepting that if they withdraw or modify their Bids during the period of validity, or if they are awarded the contract and they fail to sign the contract, or to submit a performance security before the deadline defined in the NIT/ Purchase order, they shall be suspended for the period of 2 (two) years. This suspension of two years shall be automatic without conducting any enquiry. Bidders shall submit "Bid Securing Declaration" as per enclosed PROFORMA - GB along with their technical bids.

14.13 Submission of Bid Security and Performance Security in the form of Electronic Bank Guarantee (e-BG)

Oil India Ltd. has now adopted Electronic Bank Guarantee (e-BG) for Bid Security and Performance Security in addition to the existing provisions. Electronic Bank Guarantee (e-BG) is a digitally signed BG issued by banks which is transmitted directly from banks to beneficiaries in electronic form through a platform provided by National E-Governance Services Limited (NeSL).

Submission of Bid Security/Performance Security, as applicable, in the form of Electronic Bank Guarantee (e-BG) is also acceptable:

Sl. No.	Bank name	Sl. No.	Bank name
1	AU Small Finance Bank	12	IDFC First Bank
2	Axis Bank	13	Indian Bank
3	Bank of Baroda	14	Indian Overseas Bank
4	Bank of India	15	IndusInd Bank
5	Canara Bank	16	Karur Vysya Bank
6	City Union Bank	17	Kotak Mahindra Bank
7	Federal Bank	18	Punjab National Bank
8	HDFC Bank	19	RBL Bank
9	HSBC Bank	20	State Bank of India
10	ICICI Bank	21	South Indian Bank
11	IDBI Bank	22	Yes Bank

Beneficiary details for issue of e-BG are:

Sl. No.	Particulars	Details
1	Name	Oil India Limited
2	PAN	AAACO2352C
3	Date of Incorporation	18-02-1959
4	Email ID	
5	Mobile No.	
6	Local Address	
7	Registered Address	Duliajan, Dibrugarh, Assam-786602

15.0 FINANCING OF TRADE RECEIVABLES OF MICRO AND SMALL ENTERPRISES (MSEs) THROUGH TRADE RECEIVABLES DISCOUNTING SYSTEM (TREDS) PLATFORM:

Based on the initiatives of Government of India to help MSE vendors get immediate access to liquid fund based on Buyers credit rating by discounting, OIL has registered itself on TReDS platform with M/s RXIL and M/s A TREDS Ltd. (Invoice Mart). MSE vendors can avail this benefit by registering themselves with any of the exchanges providing e-discounting/electronic factoring services on TReDS platform and following the procedures defined therein, provided OIL is also participating in such TReDS Platform as a Buyer.

i) MSE Vendor should be aware that all costs relating to availing the facility of discounting on TReDS platform including but not limited to Registration charges, Transaction charges for financing, Discounting Charges, Interest on financing, or any other charges known by any name shall be borne by MSE Vendor.

ii) MSE Vendor hereby agrees to indemnify, hold harmless and keep OIL and its affiliates, Directors, officers, representatives, agents and employees indemnified, from any and all damages, losses, claims and liabilities (including legal costs) which may arise from Sellers submission, posting or display, participation, in any manner, on the TReDS Platform or from the use of Services or from the Buyer's breach of any of the terms and conditions of the Usage Terms or of this Agreement and any Applicable Law on a full indemnity basis.

iii) OIL shall not be liable for any special, indirect, punitive, incidental, or consequential damages or any damages whatsoever (including but not limited to damages for loss of profits or savings, business interruption, loss of information), whether in contract, tort, equity or otherwise or any other damages resulting from using TReDS platform for discounting their (MSE Vendor's) invoices.

Note:

(i) Buyer means OIL who has placed Purchase Order/ Contract on a MSE Vendor (Seller).
(ii) Seller means a MSE vendor, who has been awarded Purchase Order/ Contract by OIL (Buyer).

16.0 UNLOADING FOR BULKY/HEAVY ITEMS:

All the Goods in the GeM shall be offered on Free Delivery at Site basis including unloading. **HOWEVER, OIL SHALL PROVIDE CRANE FOR UNLOADING OF BULKY/HEAVY ITEMS ONLY**. Supplier shall depute adequate crew, who has experience of unloading of such items at Destination (Duliajan) with necessary safety gears i.e. helmet, safety boots, hand gloves etc. at unloading point.

The safety of the crew deputed by the supplier shall entirely be the responsibility of supplier and therefore they shall take all necessary measures/precautions to ensure that no injuries occur to personnel or property. Supplier must ensure that the crew involved for unloading are properly trained on the procedures and aware of the potential hazards while handling the items.

16.1 OIL reserves the right to divert any truck / trailer originally booked for a particular destination to nearby areas within a distance of 50 km from Duliajan.

17.0 UNLOADING OF TUBULARS:

All the Goods in the GeM shall be offered on Free Delivery at Site basis including unloading. **HOWEVER, OIL SHALL PROVIDE CRANE FOR UNLOADING OF TUBULARS ONLY**. Supplier shall depute adequate crew, who has experience of unloading of tubulars, at Destination (Duliajan) with necessary safety gears i.e. helmet, safety boots, hand gloves etc. at unloading point. **THE ONLY RESPONSIBILITY OF THE CREW TO BE DEPUTED BY THE SUPPLIER IS TO FASTEN/FIX CRANE'S HOOK SLING TO BUNDLES ON THE LOADED VEHICLE**. Once the hook sling is securely fastened complying to the safety instructions, OIL's Crane shall lift and unload tubulars from the vehicle. Following points are to be noted and complied in this connection:

(a) Supplier to ensure that height of the loaded tubular is below the cabin height of the vehicle for safe off-loading.

MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808613
EMAIL: **materials@oilindia.in** | **f_sathiyaraj@oilindia.in**

(b) Supplier to ensure that tubular bundles are securely fastened by very strong material to withstand the rigors of road transportation and capable of lifting by Crane. In the case tubular bundles are found loosened and/or tubulars found completely resting on the side support/bales of vehicle in way that it may free fall upon unshackling, OIL will not unload such vehicle due to safety reasons.

The safety of the crew deputed by the supplier shall entirely be the responsibility of supplier and therefore they shall take all necessary measures/precautions to ensure that no injuries occur to personnel or property. Supplier must ensure that the crew involved for unloading are properly trained on the procedures and aware of the potential hazards while handling tubulars.

17.1 OIL reserves the right to divert any truck / trailer originally booked for a particular destination to nearby areas within a distance of 50 km from Duliajan.

18.0 UNLOADING OF CONSIGNMENT RECEIVED THROUGH RAIL:

Unloading of consignment from Railway Wagons at Destination **(Duliajan)** shall be completely in OIL's scope.

19.0 QUANTITY TOLERANCE FOR TUBULARS (IF APPLICABLE):

Bidders should note that, in the event of order, quantity tolerance of +0%/-2% of order quantity will be applicable.

20.0 SET-OFF:

Any sum of money due and payable to the Seller (including Security Deposit refundable to them) under any purchase order may be appropriated by Oil India Limited and set-off against any claim of Oil India Limited (or such other person or persons contracting through Oil India Limited) for payment of a sum of money arising out of any other purchase order made by the Seller with Oil India Limited (or such other person or persons contracting through Oil India Limited).

21.0 FURNISHING FRAUDULENT INFORMATION/ DOCUMENT:

If it is found that a Bidder has furnished fraudulent document/information, the Bid Security/ Performance Security shall be forfeited and necessary action as per OIL's Banning Policy, 2023 shall be taken, besides the legal action. In this regard, bidders are requested to submit an Undertaking as per **PROFORMA - H** along with their offer failing which their offer shall be liable for rejection.

22.0 GENERAL CONDITIONS OF CONTRACT FOR SERVICES (ANNEXURE - V)

General Conditions of Contract FOR SERVICES (GCC - SERVICES) shall be applicable for all services to be rendered including AMC (as and when entered into).

23.0 MODIFICATION/AMENDMENT OF TENDER DOCUMENT:

At any time prior to the deadline for submission of bids, the Company may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the tender Documents through issuance of Corrigendum(s)/Addendum(s). Bidders are expected to take the Corrigendum(s)/ Addendum(s) into account in preparation and submission of their bid. No separate intimation for Corrigendum(s)/Addendum(s) published by OIL shall be sent to the Bidders.

24.0 THIRD PARTY INSPECTION (TPI) (IF APPLICABLE)

i) Third Party Inspection (TPI) will be under the scope of seller at seller's cost.

MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808613
EMAIL: **materials@oilindia.in** | **f_sathiyaraj@oilindia.in**

ii) All ordered goods shall be inspected by any one of OIL's approved Third-party inspection agencies (viz. M/S Lloyds or M/S Bureau Veritas or M/S RITES or M/S DNGL or M/S IRS or M/S Tuboscope Vecto only Third-party party inspection report shall be submitted along with supply of the materials.

iii) Supplier shall arrange for inspection (TPI) of the materials through OIL's approved Third-Party Inspection Agency at Bidder's/Manufacturer's plant/premises as per the broad Scope of Work mentioned in the tender. All cost towards the engagement of Third-Party Inspection Agency shall be borne by Supplier. **Bidder shall quote/include the cost of Third-Party Inspection in their offer**.

iv) At present, there are six OIL's empaneled Third Party Inspection Agency as under:

(1) M/s. Lloyds
(2) M/s. BureauVeritas
(3) M/s. RITES
(4) M/s. IR CLASS System and Solutions Private Limited
(5) M/s. Tuboscope Vetco
(6) M/s. DNV MES India Private Limited

v) Bidder shall clearly indicate in the technical bid the place/plant where Third-Party Inspection of the materials shall be conducted, in the event of an order.

vi) The bidder shall confirm that the Third-party inspection shall be covering the Scope of Inspection mentioned as part of the material specification / description.

vii) The bidder shall confirm that the bidder shall submit following documents (unless or otherwise specified in order / contract) along with material supply:

(1) OEM's Warranty / Guarantee certificate for performance at the specified operating conditions
(2) Test certificates (As applicable) from the manufacturer
(3) TPI reports
(4) Certified copy of Mill Test Certificates for raw material
(5) Heat treatment graph / certificate
(6) Hydraulic Test Report

viii) The supplier shall provide, without any extra charge to OIL, all materials, tools, labour and assistance of every kind which the OIL nominated TPI Agency may demand for any test or examination required at supplier's premises. The supplier shall also provide and deliver sample from the material under inspection, free of charge, at any such place other than their premises as the TPI Agency may specify for acceptance tests for which the supplier does not have the facilities for such tests at their premises. In the event of testing outside owing to lack of test facility at supplier's premises, the supplier shall bear cost of such test, if any.

ix) The supplier shall not be entitled to object on any ground whatsoever to the method of testing adopted by the OIL nominated TPI Agency.

x) Unless otherwise provided for in the Purchase Order, the quantity of materials expended in test will be borne by supplier.

xi) The decision of the Third-Party Inspection Agency nominated by OIL regarding acceptance/rejection of material shall be final and binding on the supplier.

xii) Upon successful completion of the TPI and acceptance of the TPI reports by OIL, Bidder/Supplier shall be intimated by OIL for dispatch of the materials. The materials should be despatched only after receipt of dispatch clearance from OIL.

xiii) Acceptance of the TPI reports and receipt of dispatch intimation from OIL do not absolve the bidder from any warranty obligations or waive the bidder from OIL's right for rejection of the materials after receipt at site.

xiv) Notwithstanding clauses contained herein above, in the event the materials under inspection fails to conform to purchase order specification and are rejected by OIL nominated Third Party Inspection agency, OIL may recover all cost incurred for re-inspection of the materials from the supplier.

25.0 DOCUMENTATION (FOR DOMESTIC/INDIGENOUS SUPPLIERS):

25.1 Preparation and submission of proper documents by Seller is one of the very important requirements. The Seller must strictly follow the instructions.

25.2 Seller shall ensure that all the documents have clear reference of OIL's Purchase Order number.

25.3 Seller shall forward the documents, as mentioned below, by courier service immediately after the dispatch is made:

(I) WHERE PAYMENT AGAINST DIRECT SUBMISSION OF DESPATCH DOCUMENTS TO COMPANY:

A)	General Manager (A/P), Finance & Accounts Department Oil India Limited, Duliajan, PIN - 786602	**i)** Bill in original + one copy. **ii)** Copy of the C-Note/RR. **iii)** Copy of Mill Inspection Certificate, if any. **iv)** Copy of Third-Party Inspection Certificate, if any. **v)** Copy of Delivery Challan. **vi)** Copy of TPI Declaration **vii)** Copy of Tax Invoice. **viii)** Copy of packing list. **ix)** Documentary evidence of payment of Customs Duty, if any.
B)	GM - Materials (Receiving), Materials Department Oil India Limited, Duliajan, PIN - 786602	**i)** Clear Consignee copy of RR/C-Note - Original + 1 copy. **ii)** Copy of Tax Invoice. **iii)** Delivery Challan (Original). **iv)** Packing list (Original). **v)** Mill inspection certificate, if any (Original). **vi)** Copy of Third-Party Inspection certificate, if any. **vii)** Copy of TPI Declaration **viii)** Warranty Certificate (Original)
C)	Senior Manager - Materials (FP) Materials Department Oil India Limited, Duliajan, PIN - 786602	One set consisting copies of all the documents as mentioned in (B) above.

Note:
Where payment term is after receipt and acceptance of materials, the complete set of documents meant for General Manager (A/P) as indicated in (A) above should be submitted to Dy. General Manager Materials (Receiving).

27.0 FORCE MAJEURE:

27.1. In the event of either party being rendered unable by Force Majeure to perform any obligations required to be performed by them under the purchase order the relative obligations of the party affected by such force majeure shall upon notification to the other party be suspended for the period during which force majeure event lasts. The cost and loss sustained by the either party shall be borne by the respective parties.

27.2. The term force majeure as employed herein shall mean Acts of God such as earthquake, hurricane, typhoon, flood, volcanic activity etc.; war (declared /undeclared); riot, revolts, rebellion, terrorism, sabotage by persons other than the SELLER's Personnel; fires, explosions, ionizing radiation or contamination by radio-activity or noxious gas, if not caused by SELLER's fault; declared epidemic/pandemic or disaster; acts and regulations of respective Govt. of the two parties, namely the PURCHASER and the SELLER and civil commotions, lockout not attributable to the SELLER.

27.3. Upon occurrence of such cause(s) and upon its termination, the party alleging that it has been rendered unable as aforesaid thereby, shall notify the other party by a registered letter duly certified by the statutory authorities immediately but not later than 7(seven) days of the alleged beginning and ending thereof giving full particulars and satisfactory evidence in support of its claim.

27.4. Time for performance of the relative obligations suspended by the force majeure shall then be extended by the period for which such cause lasts. The extension of time shall be the sole remedy of the Seller for any delay under this clause and the Seller shall not be entitled in addition to or in lieu of such extension to claim any damages or compensation on any account whatsoever whether under the law governing contracts or any other law in force, and the Seller hereby waives and disclaims any and all contrary rights.

27.5. If the force majeure conditions persist for a period exceeding two (2) months, the Purchaser reserves the right to cancel the purchase order in full or in part.

28.0 SIGNING OF BIDS:

Bids are to be submitted online in GeM portal. The bid including all uploaded documents shall be signed by duly authorized representative of the bidder holding a Power of Attorney to bind the Bidder to the contract. The letter of authorization **(as per Proforma-L)** shall be indicated by written Power of Attorney accompanying the Bid.

29.0 BIDDERS FINANCIAL STANDING:

The bidder should not be under liquidation, court receivership or similar proceedings, should not be bankrupt. Bidder to upload undertaking (**as per Proforma-M**) to this effect with bid.

30.0 SETTLEMENT OF DISPUTES:

30.1. Arbitration (Applicable for Suppliers/CONTRACTORs other than PSU and MSME):

1) Except as otherwise provided elsewhere in the contract, if any dispute, difference, question or disagreement arises between the parties hereto or their respective representatives or assignees, in connection with construction, meaning, operation, effect, interpretation of the contract or breach thereof which parties are unable to settle mutually, the same shall be referred to Arbitration as provided hereunder:

2) A party wishing to commence arbitration proceeding shall invoke Arbitration Clause by giving 30 days' notice to the other party. The notice invoking arbitration shall specify all the points of dispute with details of the amount claimed to be referred to arbitration at the time of invocation of arbitration and not thereafter. If the claim is in foreign currency, the claimant shall indicate its value in Indian Rupee for the purpose of constitution of the arbitral tribunal.

3) It is agreed and undertaken by the Parties that irrespective of country of origin of the CONTRACTOR, the arbitration proceedings shall be governed by the Arbitration and Conciliation Act, 1996 and under no circumstances, the proceedings shall be construed as International Arbitration.

4) The number of arbitrators and the appointing authority will be as under:

Claim Amount (Excluding claim for interest and counter claim, if any)	**Number of Arbitrator**	**Appointing Authority**
Upto Rs.25.00 Lakh	Not applicable	Not applicable
Above Rs.25.00 Lakh Upto Rs.25 Crore	Sole Arbitrator	OIL
Above Rs. 25 Crore	3 Arbitrators	One Arbitrator by each party and the 3rd Arbitrator, who shall be the presiding Arbitrator, by the two Arbitrators.

5) The parties agree that they shall appoint only those persons as arbitrators who accept the conditions of the arbitration clause. No person shall be appointed as Arbitrator or Presiding Arbitrator who does not accept the conditions of the arbitration clause.

6) If any of the Arbitrators so appointed dies, resigns, becomes incapacitated or withdraws for any reason from the proceedings, it shall be lawful for the concerned party/arbitrators to appoint another person in his place in the same manner as aforesaid. Such person shall proceed with the reference from the stage where his predecessor had left if both parties consent for the same; otherwise, he shall proceed de novo.

7) Parties agree and undertake that neither shall be entitled for any pre-reference or pendente-lite interest on its claims. Parties agree that any claim for such interest made by any party shall be void.

8) The arbitral tribunal shall complete the proceedings, make and publish the award within time stipulated in the Arbitration and Conciliation Act, 1996 (as amended)

9) If after commencement of the arbitration proceedings, the parties agree to settle the dispute mutually or refer the dispute to conciliation, the arbitrators shall put the proceedings in abeyance until such period as requested by the parties. Where the proceedings are put in abeyance or terminated on account of mutual settlement of dispute by the parties, the fees payable to the arbitrators shall be determined as under:

(i) 20% of the fees if the claimant has not submitted statement of claim.
(ii) 40% of the fees if the pleadings are complete.
(iii) 60% of the fees if the hearing has commenced.
(iv) 80% of the fees if the hearing is concluded but the award is yet to be passed.

10) Each party shall be responsible to make arrangements for the travel and stay etc. of the arbitrator appointed by it. Claimant shall also be responsible for making arrangements for travel/stay arrangements of the Presiding Arbitrator and the expenses incurred shall be shared equally by the parties. In case of sole arbitrator, both parties shall equally share all expenditures that may be required to be incurred.

11) The fees and other administrative/secretarial expenses of the arbitrator(s) shall not exceed the model fee as stipulated in Schedule of the Act and such expenses shall be equally borne by the parties.

12) The Place/Seat of Arbitration shall be Guwahati or the place where the contract is executed. The venue of the arbitration shall be decided by the Arbitrator(s) in discussion with the parties. The cost of arbitration sittings shall be equally borne by the parties.

13) The Arbitrator(s) shall give reasoned and speaking award and it shall be final and binding on the parties.

14) Subject to aforesaid, provisions of the Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof shall apply to the arbitration proceedings under this clause.

30.2 Arbitration (Applicable in case of Contract awarded on Public Sector Enterprise):

a) In the event of any dispute or difference relating to the interpretation and application of the provisions of commercial contract (s) between Central Public Sector Enterprises (CPSEs) and also between CPSEs and Government Departments/Organizations (excluding disputes -concerning Railways, Income Tax, Customs & Excise Departments), such dispute or difference shall be taken up by either party for resolution through AMRCD as mentioned in OPE OM No.4(1)/2013-DPE(GM)/FTS-1835 dated 22-05-2018.

b) A party wishing to commence arbitration proceeding shall invoke Arbitration Clause and refer the dispute(s) to AMRCD with a copy to the other party. The notice invoking arbitration shall specify all the points of dispute with details of the amount claimed to be referred to arbitration at the time of invocation of arbitration and not thereafter.

c) Upon such reference, the dispute shall be decided by the Competent Authority appointed under the AMRCD, whose decision shall bind the parties finally and conclusively. The parties in the dispute will share equally the cost of the arbitration as intimated by the Arbitrator.

30.3 Arbitration (Applicable to Micro, Small and Medium Enterprise)

In the event of any dispute or difference relating to, arising from or connected with the Contract, efforts shall be made to resolve the dispute(s) amicably by mutual consultation and in case such dispute(s) cannot be resolved through mutual consultation, then same shall be resolved through the procedure as prescribed in Section-18 of the Micro, Small and Medium Enterprises Development Act, 2006.

30.4 Resolution of disputes through conciliation by OEC *(Not Applicable in cases where value of dispute is less than Rs. 25 Lakhs and more than 2 Crore)*

If any dispute, difference, question or disagreement arises between the parties hereto or their respective representatives or assignees, in connection with construction, meaning, operation, effect, interpretation of the contract or breach thereof which parties are unable to settle mutually, Company at its discretion, on its own or on the request of the CONTRACTOR, may refer the dispute to Outside Expert Committee ("OEC") to be constituted by Corporate Business Committee (CBC), OIL as provided hereunder :

a) The party desirous of resorting to conciliation shall send a notice of 30 (thirty) days to the other party of its intention of referring the dispute for resolution through OEC. The notice invoking conciliation shall specify all the points of disputes with details of the amount claimed to be referred to OEC and the party concerned shall not raise any new issue thereafter.

b) OIL shall nominate three outside experts, one each from Financial/commercial, Technical and Legal fields from the Panel of Outside Experts maintained by OIL who shall together be referred to as OEC (Outside Experts Committee).

c) Parties shall not claim any interest on claims/counterclaims from the date of notice invoking conciliation till execution of settlement agreement, if so arrived at. In case, parties are unable to reach a settlement, no interest shall be claimed by either party for the period from the date of notice invoking conciliation till the date of OEC recommendations in any further proceeding.

MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
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EMAIL: **materials@oilindia.in** | **f_sathiyaraj@oilindia.in**

d) The Proceedings of the OEC shall be broadly governed by Part III of the Arbitration and Conciliation Act, 1996 including any modifications thereof. Notwithstanding above, the proceedings shall be summary in nature and Parties agree to rely only upon documentary evidence in support of their claims and not to bring any oral evidence in the OEC proceedings.

e) OEC shall hear both the parties and recommend possible terms of settlement between the parties. The recommendations of OEC shall be non-binding and the parties may decide to accept or not to accept the same. Parties shall be at liberty to accept the OEC recommendation with any modification they may deem fit.

f) Where recommendations are acceptable to both the parties, a settlement agreement will be drawn up in terms of the OEC recommendations or with such modifications as may be agreed upon by the parties. The settlement agreement shall be signed by both the parties and authenticated by all the OEC members either in person or through circulation. This settlement agreement shall have the same legal status and effect as that of an arbitration award on agreed terms on the substance of the dispute rendered by an arbitral tribunal under Section 30 of the Arbitration and Conciliation Act, 1996.

g) OIL will share all other guidelines regarding reconciliation through OEC with the CONTRACTOR when it resorts to settlement through OEC. Both parties agree to adhere to these guidelines.

h) All the expenditure incurred in the OEC proceedings shall be shared by the parties in equal proportion. The parties shall maintain account of expenditure and present to the other for the purpose of sharing on conclusion of the OEC proceedings.

i) The OEC proceedings must be completed within a period of 3(three) months from the date of constitution of the OEC with a provision of extension of one months, subject to mutual agreement. The Place of OEC shall be either at New Delhi or Guwahati.

j) If the parties are not able to resolve the dispute through OEC or do not opt for conciliation through OEC, the party may invoke arbitration clause as provided in the contract.

k) The parties shall be represented by their in-house employees/executives. No party shall bring any advocate or outside consultant/advisor/agent. Ex-officers of OIL who have handled the matter in any capacity directly or indirectly shall not be allowed to attend and present the case before OEC on behalf of Contractor. However, ex- employees of parties may represent their respective organizations.

l) Solicitation or any attempt to bring influence of any kind on either OEC Members or OIL is completely prohibited in conciliation proceedings and OIL reserves the absolute right to close the conciliation proceedings at its sole discretion if it apprehends any kind of such attempt made by the Contractor or its representatives.

30.5 Exclusions

Parties agree that following matters shall not be referred to conciliation or arbitration:

(i) Any claim, difference or dispute relating to, connected with or arising out of OIL's decision to initiate any proceedings for suspension or debarment or banning, or decision to suspend or to ban or to debar business dealings with the bidder/CONTRACTOR and/or with any other person involved or connected or dealing with bid/contract/bidder/CONTRACTOR.

(ii) Any claim, difference or dispute relating to, connected with or arising out of OIL's decision under the provisions of Integrity Pact executed between OIL and the Bidder / Contractor.

(iii) Any claim, difference or dispute relating to, connected with or arising out of OIL's decision to comply with any order or directive of any statutory or government authority.

(iv) Any claim which is less than Rs. 25 Lakh.

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31.0 DISCLAIMERS AND RIGHTS OF BUYER (OIL INDIA LIMITED):

a) The issue of the tender document does not imply that the buyer (Oil India Limited) is bound to select bid(s), and it reserves the right without assigning any reason to:

i) reject any or all of the Bids, or
ii) cancel the tender process; or
iii) abandon the procurement of the Goods; or
iv) issue another tender for identical or similar goods

b) Oil India Limited reserves its right to accept or reject any or all Bids, abandon/ cancel the Tender process, and issue another tender for the same or similar Goods at any time before the award of the contract. It would have no liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for such action(s).

c) Oil India Limited ('Buyer') reserves the right to reject goods which do not conform to the specifications / terms / conditions mentioned in the contract.

32.0 ACKNOWLEDGEMENT OF CONTRACT BY SUCCESSFUL BIDDER AND EXECUTION

a) After the successful bidder is issued Purchase Order, the supplier should submit the Purchase Order acceptance format duly filled, signed and sealed, within 14 (fourteen) days from the date of issue of the Purchase Order in case of Open Tender / GeM Tender (OTE) and 28 (twenty-eight) days in case of Global Tender Enquiry (GTE).

b) The successful bidder shall furnish the required performance security (if applicable) within the stipulated timeline mentioned in the contract.

c) The successful bidder, in case does not furnish the required performance security (if applicable) or does not accept the Purchase Order within the stipulated target dates, such noncompliance will constitute sufficient ground for forfeiture of its bid security / EMD (if applicable) and processing the case for further action against it (the successful bidder) as per the provision of Company's Banning Policy.

d) The seller must pay all applicable taxes by the contractor or supplier towards execution of contract by Oil India Limited (if awarded).

33.0 FORFEITURE OR ENCASHMENT OF BID SECURITY/EMD (IF APPLICABLE):

The bid security will be forfeited in the following condition:

(1) The bidder withdraws the bid within its original/extended validity.
(2) The bidder modifies/revises their bid sumoto.
(3) Bidder does not accept the order/contract.
(4) Bidder does not furnish Performance Security Deposit (if applicable) within the stipulated time as per tender/order/contract.
(5) If it is established that the bidder has submitted fraudulent documents or has indulged into corrupt and fraudulent practice, the bid security shall be forfeited after due process in addition to other action against the bidder as specified in OIL's banning Policy.

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ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्यम)
Oil India Limited
(A Government of India Enterprise)

MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808613
EMAIL: **materials@oilindia.in** | **f_sathiyaraj@oilindia.in**

TECHNICAL SPECIFICATIONS & SCOPE OF SUPPLY

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI

SPECIFICATION OF THE TENDERED ITEM

Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system		
Location	**:**	**OCS-1**
Tender Quantity	**:**	**1**
Unit of Measure	**:**	**Lot**
Installation & Commissioning	**:**	**Applicable**
Pre-Dispatch Inspection	**:**	**Applicable**
Training	**:**	**Applicable (1 Day Onsite Training)**
Delivery Period		
(1) Maximum allowable delivery period in months after receipt of Purchase Order for the case of supply	**:**	**36 weeks**
(2) Maximum allowable period to complete Installation and Commissioning of supplied goods upon receipt of communication from Buyer Organisation	**:**	**4 months**

AA) TECHNICAL SPECIFICATIONS

1.0 PREAMBLE

This document together with the attachment defines and covers the guidelines for Design, Engineering, selection of equipment, equipment specification, scope of work, Installation and commissioning requirements complete with all accessories and materials for the supply and installation and commissioning of Wireless Process Monitoring system at location in below Table.

This project has been taken up to replace the old-wired data acquisition system.

Item No	Item Description	Total Qty (In Nos)
1	**Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system at OCS-1.**	**1 Lot**

Contd ... 2

2.0 LOCATION DETAILS

All the above ten installations are situated at 130 kms radius from Field Head Quarter at Duliajan, Assam. The site is approachable via motor-able roads.

3.0 ENVIRONMENTAL CONDITIONS

The general climatic conditions are as stated below:

(i) Maximum Ambient Temperature 42 DegC
(ii) Minimum Ambient Temperature 7 DegC
(iii) Relative Humidity
(iv) At 21 Deg C : 100 %
(v) At 32 Deg C : 95%
(vi) At 41 Deg C: 70%
(vii) Elevation Above Mean Sea Level: 170 metres
(viii) Seismic Zone: V
(ix) Yearly Average Rainfall: 300 mm

4.0 SCOPE OF OIL INDIA LIMITED SUPPLY

(a) Electrical Power Supply:
Rated voltage: 230 V-AC (± 10%), single (1) phase,
Rated frequency: 50 Hz (± 5 Hz) shall be made available.

5.0 SCOPE OF BIDDERS SUPPLY

1) Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.

2) Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.

3) Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.

4) Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also needs to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.

Contd ... 3

5) Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.

6) Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.

7) Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.

8) Configuration of the supplied system shall be under the bidder's scope.

9) Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.

6.0 DESIGN PHILOSOPHY

1) The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.

2) Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s.Emerson, M/s.E&H, M/s.Vega, M/s.Siemens.

3) Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.

4) For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.

5) Tagging of instruments in SS plates will be in the scope of the bidder.

6) There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.

7) There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.

8) There shall be provision of alarms for process variables.

9) There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.

Contd ... 4

10) There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.

11) There shall be a provision of configuring the transmitters through the supplied PC.

12) The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.

13) The gateway and antennae shall be redundant.

14) The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.

15) The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.

16) Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.

17) Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.

18) The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.

19) The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.

20) SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.

21) The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.

22) Necessary cables (power /signal) shall be of reputed brands.

23) Supply of UPS will be in OIL's scope.

Contd ... 5

7.0 DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:

1) Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.
2) Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.
3) The bidder must submit their proposed network architecture during bid submission.
4) Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.

8.0 DETAILED ENGINEERING:

1) Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.
2) Successful bidder shall submit the following documents for approval from Oil India Limited:
a) Architecture of the system.
b) General Arrangement drawing of the wall mounted panel.

Note:

Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.

9.0 TECHNICAL SPECIFICATIONS:

9.1 PRESSURE TRANSMITTER:

1) Type: Wireless Gauge pressure transmitter
2) Make and Model: Bidder to specify.
3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}
4) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH
5) Accuracy: +/- 0.075 % of the span or better
6) Stability: +/- 0.2 % of span for 10 years
7) Rangeability: 50:1 or better
8) Over range protection: 130% of full range
9) Tx. diaphragm & other wetted parts: SS316 or better
10) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3
11) Enclosure: IP 65 rating or better.
12) Local display: Required
13) Process media: Natural Gas

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14) Process temperature: up to 80 Deg C

15) **Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary upto 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**

16) **Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**

17) Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.

18) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

19) Transmitter output: Wireless

20) Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.

21) Transmitter update rate: Selectable between 10 seconds to 60 minutes.

22) Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

23) Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required.

25) Security: should comply basic industrial standards necessary documents should be provided.

26) Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

27) Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.

9.2 TEMPERATURE TRANSMITTER:

1) Type: Wireless Temperature transmitter

2) Make and Model: Bidder to specify.

3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}

4) Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.

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5) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH

6) Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.

7) Process media: Natural Gas

8) Process temperature: up to 80 Deg C

9) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3

10) Enclosure: IP 65 rating or better.

11) Local display: Required

12) Cable Entry: ½ in NPT (F)

13) Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting

14) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

15) Transmitter output: Wireless

16) Frequency: 2.4GHz Range (license free ISM Band)

17) Wireless protocol: Wireless HART/ ISA 100.11a

18) Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.

19) Separate Antennae with cable is not acceptable.

20) Transmitter update rate: Selectable between 5 seconds to 60 minutes.

21) Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

22) Transmitter configuration: Local/via gateway over the network

23) Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required

25) Sensor Specification: 3 Wire, Pt-100, Dual Element.

26) Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.

27) Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).

28) Security: Should comply basic industrial standards necessary documents should be provided.

29) Documentation: Necessary documentation for installation, maintenance and trouble-shooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

30) Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.

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9.3 FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER

1) The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.

2) Make and Model: **Bidder to specify**.

3) The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.

4) Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar

5) Antenna Type : Cone type. / Drip off type

6) Material exposed to Tank atmosphere : SS316L

7) Housing/Enclosure : Suitable for hazardous area.

8) Nozzle connection size & rating (Process Connection) :
Flanged 4" NB, 150 Class, SS316L

9) Nozzle length : Up to 15 cms.

10) Service : Crude Oil (hydrocarbon based)

11) Mounting : Tank Top

12) Ingress Protection : IP65 Minimum

13) Area classification : Zone-1, IIA/IIB, T3

14) Measuring Range : 0-10 metres

15) Instrument Accuracy : ±2 mm

16) Repeatability : + /-1mm

17) Power Supply : 24V DC.

18) Power Consumption : < 1.5 W

19) Outputs : HART 4-20mA

20) Cable Entry : 1/2" NPT(F)

21) Lightning Protection : To be provided.

22) Accessories to be supplied :

(a) Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.

(b) Canopy for the Radar transmitter.

(c) One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.

(d) Field junction box (Hazardous area approved) for cable as per requirement.

Note:

The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.

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9.4 CONTROL CABLE & CABLE TRAY SPECIFICATIONS:

CONDUCTOR:	
Material	: Tinned copper
Cross-sectional area of each core	: 1.5 mm2
No. of cores	: 04 (Four)
No. of strands in each core	: 07 (seven)
Diameter of each strand	: 0.5 mm
Core colour	: Black
Core identification	: White numbering on each core with 50 mm gap between two numbers.
INSULATION:	
Material	: Flame retardant PVC
Thickness	: 0.64 mm (Nominal) Continuous
Temperature rating	: 85 Degree C
Voltage grade	: 500 V
Insulation resistance (Min)	: 20 Mega Ohms/Km at 20 DegC
ARMOURING:	
Material	: Galvanized steel
Magnetic/Non-Magnetic	: Magnetic
Round wire/ Flat strip	: Round wire
SHIELDING:	
Material	: Mylar backed Aluminium foil
Thickness	: 0.0635 mm (63 Micron)
Drain wire (for shield Continuity)	: Required
Material of Drain wire	: Tinned copper
Shielding of individual cores	: Not required
Overall shielding	: Aluminium Mylar screen
OUTER SHEATH:	
Material	: Flame retardant PVC
Thickness (Min.)	: 2.03 mm
Colour	: Black
SIZE:	
Outer diameter	: Not more than 18 mm "
Quantity	**: 12 core cable: 300 metres.** **4 core cable: 3000 metres.**

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Cable tray

(a) Type: Perforated, hot dip galvanized

(b) Size: As required,16 SWG

(c) Shape of perforation/ hole: Oval shape

(d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise)

(e) Accessories: Coupling plates, nuts, bolts and washers

9.5 LARGE VIDEO SCREEN (LED TV):

1) Type: LED Full HD

2) Speaker: 20 W (02 nos.)

3) HDMI port: 02 nos.

4) USB Port: 01 no.

5) Resolution: 4K Ultra HD (3840 x 2160)

6) Accessories: Wall mounting clamp, Remote with battery etc.

7) Size: Minimum 43”

8) Make and Model: Bidder to specify.

9.6 WIRELESS GATEWAY:

1) Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.

2) Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.

3) Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.

4) Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.

5) Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)

6) Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.

7) Input power supply: 24 V DC

8) Electronic housing / protection: Suitable for safe area, control room installation

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9.7 DESKTOP COMPUTER:

1)	Operating System	: Latest Licensed windows professional version
2)	Processor	: Intel i5 minimum
3)	RAM	: 8 GB minimum
4)	HardDisk	: 500 GB minimum
5)	Antivirus	: 1 year validity
6)	Monitor Screen Size	: 23 inches minimum
7)	Optical Drive	: DVD +/-RW
8)	Ports	: HDMI, Ethernet and USB
9)	Accessories	:

Keyboard, Mouse and good quality of Speakers (these speakers will be used for process alarms)

10.0 INSTALLATION AND COMMISSIONING:

1) Bidder is responsible for dismantling of existing wired instruments at all five installations.

2) Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.

3) Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.

4) Installation and Commissioning job will take place at OCS-1.

5) Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.

6) While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.

7) OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.

8) Laying of signal / power cables through trench / trays will be in bidder's scope.

9) OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.

10) The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.

11.0 NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES

1) Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.

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2) The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.

3) NUISANCE: - The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.

4) CARE OF WORKS: - From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.

5) The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.

6) Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.

7) Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.

8) The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.

9) In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.

10) When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.

11) All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.

12) The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.

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13) If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.

14) The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.

15) The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.

12.0 FACTORY ACCEPTANCE TEST (FAT):

1) OIL reserves the right to involve and satisfy itself at each and every stage of testing.

2) Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.

3) The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.

4) Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.

5) The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:

(i) Checking of Graphics and customization as per our requirement.

(ii) Checking of all datasheets and certificates.

(iii) Typical wireless configuration of the system.

(iv) Panel wiring

13.0 SITE ACCEPTANCE TEST (SAT):

OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.

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14.0 WARRANTY/ GUARANTEE:

The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.

15.0 TRAINING:

Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.

16.0 SPECIAL NOTES:

1) All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:

(a) Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.

(b) Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.

(c) In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.

2) Penalty clause:

To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a period of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of notification then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.

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3) The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

4) Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
3.0	**ENVIRONMENTAL CONDITIONS**		
	The general climatic conditions are as stated below:		
(i)	Maximum Ambient Temperature 42 DegC		
(ii)	Minimum Ambient Temperature 7 DegC		
(iii)	Relative Humidity		
(iv)	At 21 Deg C : 100 %		
(v)	At 32 Deg C : 95%		
(vi)	At 41 Deg C: 70%		
(vii)	Elevation Above Mean Sea Level: 170 metres		
(viii)	Seismic Zone: V		
(ix)	Yearly Average Rainfall: 300 mm		

4.0	**SCOPE OF OIL INDIA LIMITED SUPPLY**		
(a)	**Electrical Power Supply:**		
	Rated voltage: 230 V-AC (± 10%), single (1) phase,		
	Rated frequency: 50 Hz (± 5 Hz) shall be made available.		

(SIGNATURE COMPANY SEAL OF BIDDER)

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Duliajan, Assam, India – 786602
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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5.0	**SCOPE OF BIDDERS SUPPLY**		
1)	Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.		
2)	Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.		
3)	Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.		
4)	Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also need to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.		
5)	Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.		
6)	Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.		

(SIGNATURE COMPANY SEAL OF BIDDER)

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
7)	Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.		
8)	Configuration of the supplied system shall be under the bidder's scope.		
9)	Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.		

6.0	**DESIGN PHILOSOPHY**		
1)	The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.		
2)	Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s Emerson, M/s E&H, M/s Vega, M/s Siemens.		

(SIGNATURE COMPANY SEAL OF BIDDER)

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.		
4)	For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.		
5)	Tagging of instruments in SS plates will be in the scope of the bidder.		
6)	There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.		
7)	There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.		
8)	There shall be provision of alarms for process variables.		
9)	There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.		
10)	There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.		
11)	There shall be a provision of configuring the transmitters through the supplied PC.		

(SIGNATURE COMPANY SEAL OF BIDDER)

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12)	The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.		
13)	The gateway and antennae shall be redundant.		
14)	The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.		
15)	The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.		
16)	Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.		

(SIGNATURE COMPANY SEAL OF BIDDER)

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Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
17)	Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.		
18)	The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.		
19)	The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.		
20)	SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.		
21)	The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.		
22)	Necessary cables (power /signal) shall be of reputed brands.		
23)	Supply of UPS will be in OIL's scope.		

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7.0	**DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:**		
1)	Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.		
2)	Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.		
3)	The bidder must submit their proposed network architecture during bid submission.		
4)	Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.		

8.0	**DETAILED ENGINEERING:**		
1)	Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.		
2)	Successful bidder shall submit the following documents for approval from Oil India Limited:		
(a)	Architecture of the system.		
(b)	General Arrangement drawing of the wall mounted panel.		
	Note: Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
9.0	**TECHNICAL SPECIFICATIONS:**		
9.1	**PRESSURE TRANSMITTER:**		
1)	Type: Wireless Gauge pressure transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}		
4)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
5)	Accuracy: +/- 0.075 % of the span or better		
6)	Stability: +/- 0.2 % of span for 10 years		
7)	Rangeability: 50:1 or better		
8)	Over range protection: 130% of full range		
9)	Tx. diaphragm & other wetted parts: SS316 or better		
10)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		
11)	Enclosure: IP 65 rating or better.		
12)	Local display: Required		
13)	Process media: Natural Gas		
14)	Process temperature: up to 80 Deg C		
15)	**Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary up-to 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
16)	**Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**		
17)	Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.		
18)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
19)	Transmitter output: Wireless		
20)	Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.		
21)	Transmitter update rate: Selectable between 10 seconds to 60 minutes.		
22)	Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
23)	Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.		
24)	Self-diagnostic: Required.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
25)	Security: should comply basic industrial standards necessary documents should be provided.		
26)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
27)	Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.		

9.2	**TEMPERATURE TRANSMITTER:**		
1)	Type: Wireless Temperature transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B) {Refer Bill of Materials}**		
4)	Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.		
5)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
6)	Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.		
7)	Process media: Natural Gas		
8)	Process temperature: up to 80 Deg C		
9)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
10)	Enclosure: IP 65 rating or better.		
11)	Local display: Required		
12)	Cable Entry: ½ in NPT (F)		
13)	Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting		
14)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
15)	Transmitter output: Wireless		
16)	Frequency: 2.4GHz Range (license free ISM Band)		
17)	Wireless protocol: Wireless HART/ ISA 100.11a		
18)	Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.		
19)	Separate Antennae with cable is not acceptable.		
20)	Transmitter update rate: Selectable between 5 seconds to 60 minutes.		
21)	Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
22)	Transmitter configuration: Local/via gateway over the network		
23)	Device programming: Tx to have capability to work both as input device and repeater.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
24)	Self-diagnostic: Required		
25)	Sensor Specification: 3 Wire, Pt-100, Dual Element.		
26)	Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.		
27)	Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).		
28)	Security: Should comply basic industrial standards necessary documents should be provided.		
29)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
30)	Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.		

9.3	**FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER**		
1)	The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.		
2)	Make and Model: **Bidder to specify**.		

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3)	The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.		
4)	Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar		
5)	Antenna Type : Cone type. / Drip off type		
6)	Material exposed to Tank atmosphere : SS316L		
7)	Housing/Enclosure : Suitable for hazardous area		
8)	Nozzle connection size & rating (Process Connection) : Flanged 4" NB, 150 Class, SS316L		
9)	Nozzle length : Up to 15 cms.		
10)	Service : Crude Oil (hydrocarbon based)		
11)	Mounting: Tank Top		
12)	Ingress Protection : IP65 Minimum		
13)	Area classification : Zone-1, IIA/IIB, T3		
14)	Measuring Range : 0-10 metres		
15)	Instrument Accuracy : ±2 mm		
16)	Repeatability :+ /-1mm		
17)	Power Supply :24Vdc.		
18)	Power Consumption :< 1.5 W		
19)	Outputs:		
20)	Cable Entry		
21)	Lightning Protection: To be provided.		

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22)	Accessories to be supplied:		
(a)	Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.		
(b)	Canopy for the Radar transmitter.		
(c)	One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.		
(d)	Field junction box (Hazardous area approved) for cable as per requirement.		
	Note: The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.		

9.4	**CONTROL CABLE & CABLE TRAY SPECIFICATIONS:**		
	CONDUCTOR:		
	Material: Tinned copper Cross-sectional area of each core: 1.5 mm2 No. of cores: 04 (Four) No. of strands in each core: 07 (seven) Diameter of each strand: 0.5 mm Core colour: Black Core identification: White numbering on each core with 50 mm gap between two numbers.		

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	INSULATION:		
	Material : Flame retardant PVC Thickness : 0.64 mm (Nominal) Continuous Temperature rating : 85 Degree C Voltage grade : 500 V Insulation resistance (Min) : 20 Mega Ohms/Km at 20 DegC		
	ARMOURING:		
	Material□Galvanized steel Magnetic/Non-Magnetic□Magnetic Round wire/ Flat strip□Round wire		
	SHIELDING:		
	Material□Mylar backed Aluminium foil Thickness□0.0635 mm (63 Micron) Drain wire (for shield Continuity)□Required Material of Drain wire□Tinned copper Shielding of individual cores□Not required Overall shielding□Aluminium Mylar screen		
	OUTER SHEATH:		
	Material□Flame retardant PVC Thickness (Min.)□2.03 mm Colour□Black		
	SIZE:		
	Outer diameter : Not more than 18 mm " Quantity: 12 core cable: 300 metres. 4 core cable: 3000 metres.		

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	Cable tray		
	(a) Type: Perforated, hot dip galvanized (b) Size: As required,16 SWG (c) Shape of perforation/ hole: Oval shape (d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise) (e) Accessories: Coupling plates, nuts, bolts and washers		

9.5	**LARGE VIDEO SCREEN (LED TV):**		
1)	Type: LED Full HD		
2)	Speaker: 20 W (02 nos.)		
3)	HDMI port: 02 nos.		
4)	USB Port: 01 no.		
5)	Resolution: 4K Ultra HD (3840 x 2160)		
6)	Accessories: Wall mounting clamp, Remote with battery etc.		
7)	Size: Minimum 43"		
8)	Make and Model: Bidder to specify.		

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9.6	**WIRELESS GATEWAY:**		
1)	Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.		
2)	Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.		
3)	Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.		
4)	Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.		
5)	Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)		
6)	Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.		
7)	Input power supply: 24 V DC		

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8)	Electronic housing / protection: Suitable for safe area, control room installation		

9.7	**DESKTOP COMPUTER:**		
1)	Operating System: Latest Licensed windows professional version		
2)	Processor: Intel i5 minimum		
3)	RAM: 8 GB minimum		
4)	HardDisk: 500 GB minimum		
5)	Antivirus: 1 year validity		
6)	Monitor Screen Size: 23 inches minimum		
7)	Optical Drive: DVD +/-RW		
8)	Ports: HDMI, Ethernet and USB		
9)	Accessories: Keyboard, Mouse and good quality of Speakers (this speakers will be used for process alarms)		

10.0	**INSTALLATION AND COMMISSIONING:**		
1)	Bidder is responsible for dismantling of existing wired instruments at all five installations.		
2)	Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.		
3)	Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.		
4)	Installation and Commissioning job will take place at **OCS-1.**		

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5)	Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.		
6)	While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.		
7)	OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.		
8)	Laying of signal / power cables through trench / trays will be in bidder's scope.		
9)	OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.		
10)	The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.		

11.0	**NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES**		
1)	Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.		
2)	The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.		

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3)	**NUISANCE:** The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.		
4)	**CARE OF WORKS:** From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.		

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5)	The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.		
6)	Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.		
7)	Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.		
8)	The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.		
9)	In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.		

(SIGNATURE COMPANY SEAL OF BIDDER)

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
10)	When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.		
11)	All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.		
12)	The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.		
13)	If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.		
14)	The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.		
15)	The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.		

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12.0	**FACTORY ACCEPTANCE TEST (FAT):**		
1)	OIL reserves the right to involve and satisfy itself at each and every stage of testing.		
2)	Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.		
3)	The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.		
4)	Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.		
5)	The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:		
(i)	Checking of Graphics and customization as per our requirement.		
(ii)	Checking of all datasheets and certificates.		
(iii)	Typical wireless configuration of the system.		
(iv)	Panel wiring		

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
13.0	**SITE ACCEPTANCE TEST (SAT):**		
	OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.		
14.0	**WARRANTY/ GUARANTEE:**		
	The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.		
15.0	**TRAINING:**		
	Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.		

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ANNEXURE-VI (A)

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
16.0	**SPECIAL NOTES:**		
1)	All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:		
(a)	Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.		
(b)	Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.		
(c)	In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.		

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ANNEXURE-VI (A)

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
		BIDDER'S RESPONSE	
		(TO BE FILLED BY THE BIDDER)	
Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
2)	**Penalty clause:**		
	To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a pe-riod of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of noti-fication then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.		
3)	The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		
4)	Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		

(SIGNATURE COMPANY SEAL OF BIDDER)

ANNEXURE-VI (B)

BILL OF MATERIALS

LOCATION-WISE BILL OF MATERIALS **ANNEXURE-VI(B)**

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QNTY/UNIT (B)	TOTAL (A*B)	REMARKS
OCS-1	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	5	5	Remote seal type
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	1	1	Remote seal type
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	IH	3	Temperature Transmitter	0-100 Deg C	2	6	RTD with Thermowell is required
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	GU-III	1	Pressure Transmitter	0-21 kg/cm2	1	1	
	ET (RTD with Thermwell is reqd)	1	Pressure Transmitter	0-10 kg/cm2	1	1	
			Temperature Transmitter	0-100 Deg C	1	0	
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1	
	LPMS	2	Pressure Transmitter	0-10 kg/cm2	1	2	
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1	
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	LP Flare	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Tank (Crude)	3	Level Transmitter	0-10 meter	1	3	FMCW type non contact radar
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1	Remote seal type
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1	
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	10 psi Flare	1	Pressure Transmitter	0-2 kg/cm2	1	1	
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT	
			Desktop computer with HM		1 LOT	1 LOT	
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT	

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Duliajan, Assam, India – 786602
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ANNEXURE-VI

SPECIFICATION OF THE TENDERED ITEM

Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system		
Location	**:**	**OCS-8**
Tender Quantity	**:**	**1**
Unit of Measure	**:**	**Lot**
Installation & Commissioning	**:**	**Applicable**
Pre-Dispatch Inspection	**:**	**Applicable**
Training	**:**	**Applicable (1 Day Onsite Training)**
Delivery Period		
(1) Maximum allowable delivery period in months after receipt of Purchase Order for the case of supply	**:**	**36 weeks**
(2) Maximum allowable period to complete Installation and Commissioning of supplied goods upon receipt of communication from Buyer Organisation	**:**	**4 months**

AA) TECHNICAL SPECIFICATIONS

1.0 PREAMBLE

This document together with the attachment defines and covers the guidelines for Design, Engineering, selection of equipment, equipment specification, scope of work, Installation and commissioning requirements complete with all accessories and materials for the supply and installation and commissioning of Wireless Process Monitoring system at location in below Table.

This project has been taken up to replace the old-wired data acquisition system.

Item No	Item Description	Total Qty (In Nos)
1	**Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system at OCS-8.**	**1 Lot**

Contd ... 2

2.0 LOCATION DETAILS

All the above ten installations are situated at 130 kms radius from Field Head Quarter at Duliajan, Assam. The site is approachable via motor-able roads.

3.0 ENVIRONMENTAL CONDITIONS

The general climatic conditions are as stated below:

(i) Maximum Ambient Temperature 42 DegC
(ii) Minimum Ambient Temperature 7 DegC
(iii) Relative Humidity
(iv) At 21 Deg C : 100 %
(v) At 32 Deg C : 95%
(vi) At 41 Deg C: 70%
(vii) Elevation Above Mean Sea Level: 170 metres
(viii) Seismic Zone: V
(ix) Yearly Average Rainfall: 300 mm

4.0 SCOPE OF OIL INDIA LIMITED SUPPLY

(a) Electrical Power Supply:
Rated voltage: 230 V-AC (± 10%), single (1) phase,
Rated frequency: 50 Hz (± 5 Hz) shall be made available.

5.0 SCOPE OF BIDDERS SUPPLY

1) Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.

2) Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.

3) Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.

4) Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also needs to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.

Contd ... 3

5) Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.

6) Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.

7) Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.

8) Configuration of the supplied system shall be under the bidder's scope.

9) Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.

6.0 DESIGN PHILOSOPHY

1) The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.

2) Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s.Emerson, M/s.E&H, M/s.Vega, M/s.Siemens.

3) Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.

4) For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.

5) Tagging of instruments in SS plates will be in the scope of the bidder.

6) There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.

7) There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.

8) There shall be provision of alarms for process variables.

9) There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.

Contd ... 4

10) There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.

11) There shall be a provision of configuring the transmitters through the supplied PC.

12) The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.

13) The gateway and antennae shall be redundant.

14) The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.

15) The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.

16) Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.

17) Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.

18) The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.

19) The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.

20) SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.

21) The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.

22) Necessary cables (power /signal) shall be of reputed brands.

23) Supply of UPS will be in OIL's scope.

Contd ... 5

7.0 DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:

1) Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.
2) Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.
3) The bidder must submit their proposed network architecture during bid submission.
4) Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.

8.0 DETAILED ENGINEERING:

1) Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.
2) Successful bidder shall submit the following documents for approval from Oil India Limited:
a) Architecture of the system.
b) General Arrangement drawing of the wall mounted panel.

Note:

Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.

9.0 TECHNICAL SPECIFICATIONS:

9.1 PRESSURE TRANSMITTER:

1) Type: Wireless Gauge pressure transmitter
2) Make and Model: Bidder to specify.
3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}
4) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH
5) Accuracy: +/- 0.075 % of the span or better
6) Stability: +/- 0.2 % of span for 10 years
7) Rangeability: 50:1 or better
8) Over range protection: 130% of full range
9) Tx. diaphragm & other wetted parts: SS316 or better
10) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3
11) Enclosure: IP 65 rating or better.
12) Local display: Required
13) Process media: Natural Gas

Contd ... 6

14) Process temperature: up to 80 Deg C

15) **Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary upto 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**

16) **Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**

17) Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.

18) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

19) Transmitter output: Wireless

20) Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.

21) Transmitter update rate: Selectable between 10 seconds to 60 minutes.

22) Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

23) Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required.

25) Security: should comply basic industrial standards necessary documents should be provided.

26) Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

27) Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.

9.2 TEMPERATURE TRANSMITTER:

1) Type: Wireless Temperature transmitter

2) Make and Model: Bidder to specify.

3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}

4) Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.

Contd ... 7

5) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH

6) Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.

7) Process media: Natural Gas

8) Process temperature: up to 80 Deg C

9) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3

10) Enclosure: IP 65 rating or better.

11) Local display: Required

12) Cable Entry: ½ in NPT (F)

13) Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting

14) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

15) Transmitter output: Wireless

16) Frequency: 2.4GHz Range (license free ISM Band)

17) Wireless protocol: Wireless HART/ ISA 100.11a

18) Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.

19) Separate Antennae with cable is not acceptable.

20) Transmitter update rate: Selectable between 5 seconds to 60 minutes.

21) Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

22) Transmitter configuration: Local/via gateway over the network

23) Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required

25) Sensor Specification: 3 Wire, Pt-100, Dual Element.

26) Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.

27) Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).

28) Security: Should comply basic industrial standards necessary documents should be provided.

29) Documentation: Necessary documentation for installation, maintenance and trouble-shooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

30) Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.

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9.3 FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER

1) The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.

2) Make and Model: **Bidder to specify**.

3) The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.

4) Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar

5) Antenna Type : Cone type. / Drip off type

6) Material exposed to Tank atmosphere : SS316L

7) Housing/Enclosure : Suitable for hazardous area.

8) Nozzle connection size & rating (Process Connection) :
Flanged 4" NB, 150 Class, SS316L

9) Nozzle length : Up to 15 cms.

10) Service : Crude Oil (hydrocarbon based)

11) Mounting : Tank Top

12) Ingress Protection : IP65 Minimum

13) Area classification : Zone-1, IIA/IIB, T3

14) Measuring Range : 0-10 metres

15) Instrument Accuracy : ±2 mm

16) Repeatability : + /-1mm

17) Power Supply : 24V DC.

18) Power Consumption : < 1.5 W

19) Outputs : HART 4-20mA

20) Cable Entry : 1/2" NPT(F)

21) Lightning Protection : To be provided.

22) Accessories to be supplied :

(a) Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.

(b) Canopy for the Radar transmitter.

(c) One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.

(d) Field junction box (Hazardous area approved) for cable as per requirement.

Note:

The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.

Contd ... 9

9.4 CONTROL CABLE & CABLE TRAY SPECIFICATIONS:

CONDUCTOR:	
Material	: Tinned copper
Cross-sectional area of each core	: 1.5 mm2
No. of cores	: 04 (Four)
No. of strands in each core	: 07 (seven)
Diameter of each strand	: 0.5 mm
Core colour	: Black
Core identification	: White numbering on each core with 50 mm gap between two numbers.
INSULATION:	
Material	: Flame retardant PVC
Thickness	: 0.64 mm (Nominal) Continuous
Temperature rating	: 85 Degree C
Voltage grade	: 500 V
Insulation resistance (Min)	: 20 Mega Ohms/Km at 20 DegC
ARMOURING:	
Material	: Galvanized steel
Magnetic/Non-Magnetic	: Magnetic
Round wire/ Flat strip	: Round wire
SHIELDING:	
Material	: Mylar backed Aluminium foil
Thickness	: 0.0635 mm (63 Micron)
Drain wire (for shield Continuity)	: Required
Material of Drain wire	: Tinned copper
Shielding of individual cores	: Not required
Overall shielding	: Aluminium Mylar screen
OUTER SHEATH:	
Material	: Flame retardant PVC
Thickness (Min.)	: 2.03 mm
Colour	: Black
SIZE:	
Outer diameter	: Not more than 18 mm "
Quantity	**: 12 core cable: 300 metres.** **4 core cable: 3000 metres.**

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Cable tray

(a) Type: Perforated, hot dip galvanized

(b) Size: As required,16 SWG

(c) Shape of perforation/ hole: Oval shape

(d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise)

(e) Accessories: Coupling plates, nuts, bolts and washers

9.5 LARGE VIDEO SCREEN (LED TV):

1) Type: LED Full HD

2) Speaker: 20 W (02 nos.)

3) HDMI port: 02 nos.

4) USB Port: 01 no.

5) Resolution: 4K Ultra HD (3840 x 2160)

6) Accessories: Wall mounting clamp, Remote with battery etc.

7) Size: Minimum 43”

8) Make and Model: Bidder to specify.

9.6 WIRELESS GATEWAY:

1) Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.

2) Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.

3) Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.

4) Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.

5) Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)

6) Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.

7) Input power supply: 24 V DC

8) Electronic housing / protection: Suitable for safe area, control room installation

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9.7 DESKTOP COMPUTER:

1)	Operating System	: Latest Licensed windows professional version
2)	Processor	: Intel i5 minimum
3)	RAM	: 8 GB minimum
4)	HardDisk	: 500 GB minimum
5)	Antivirus	: 1 year validity
6)	Monitor Screen Size	: 23 inches minimum
7)	Optical Drive	: DVD +/-RW
8)	Ports	: HDMI, Ethernet and USB
9)	Accessories	:

Keyboard, Mouse and good quality of Speakers (these speakers will be used for process alarms)

10.0 INSTALLATION AND COMMISSIONING:

1) Bidder is responsible for dismantling of existing wired instruments at all five installations.

2) Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.

3) Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.

4) Installation and Commissioning job will take place at OCS-8.

5) Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.

6) While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.

7) OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.

8) Laying of signal / power cables through trench / trays will be in bidder's scope.

9) OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.

10) The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.

11.0 NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES

1) Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.

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2) The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.

3) NUISANCE: - The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.

4) CARE OF WORKS: - From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.

5) The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.

6) Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.

7) Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.

8) The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.

9) In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.

10) When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.

11) All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.

12) The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.

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13) If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.

14) The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.

15) The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.

12.0 FACTORY ACCEPTANCE TEST (FAT):

1) OIL reserves the right to involve and satisfy itself at each and every stage of testing.

2) Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.

3) The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.

4) Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.

5) The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:

(i) Checking of Graphics and customization as per our requirement.

(ii) Checking of all datasheets and certificates.

(iii) Typical wireless configuration of the system.

(iv) Panel wiring

13.0 SITE ACCEPTANCE TEST (SAT):

OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.

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14.0 WARRANTY/ GUARANTEE:

The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.

15.0 TRAINING:

Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.

16.0 SPECIAL NOTES:

1) All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:

(a) Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.

(b) Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.

(c) In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.

2) Penalty clause:

To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a period of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of notification then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.

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3) The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

4) Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
3.0	**ENVIRONMENTAL CONDITIONS**		
	The general climatic conditions are as stated below:		
(i)	Maximum Ambient Temperature 42 DegC		
(ii)	Minimum Ambient Temperature 7 DegC		
(iii)	Relative Humidity		
(iv)	At 21 Deg C : 100 %		
(v)	At 32 Deg C : 95%		
(vi)	At 41 Deg C: 70%		
(vii)	Elevation Above Mean Sea Level: 170 metres		
(viii)	Seismic Zone: V		
(ix)	Yearly Average Rainfall: 300 mm		

4.0	**SCOPE OF OIL INDIA LIMITED SUPPLY**		
(a)	**Electrical Power Supply:**		
	Rated voltage: 230 V-AC (± 10%), single (1) phase,		
	Rated frequency: 50 Hz (± 5 Hz) shall be made available.		

(SIGNATURE COMPANY SEAL OF BIDDER)

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5.0	**SCOPE OF BIDDERS SUPPLY**		
1)	Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.		
2)	Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.		
3)	Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.		
4)	Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also need to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.		
5)	Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.		
6)	Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.		

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Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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7)	Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.		
8)	Configuration of the supplied system shall be under the bidder's scope.		
9)	Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.		

6.0	**DESIGN PHILOSOPHY**		
1)	The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.		
2)	Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s Emerson, M/s E&H, M/s Vega, M/s Siemens.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.		
4)	For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.		
5)	Tagging of instruments in SS plates will be in the scope of the bidder.		
6)	There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.		
7)	There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.		
8)	There shall be provision of alarms for process variables.		
9)	There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.		
10)	There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third party software like MODSCAN to the full satisfaction of OIL.		
11)	There shall be a provision of configuring the transmitters through the supplied PC.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12)	The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.		
13)	The gateway and antennae shall be redundant.		
14)	The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.		
15)	The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.		
16)	Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
17)	Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.		
18)	The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.		
19)	The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.		
20)	SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.		
21)	The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.		
22)	Necessary cables (power /signal) shall be of reputed brands.		
23)	Supply of UPS will be in OIL's scope.		

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7.0	**DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:**		
1)	Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.		
2)	Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.		
3)	The bidder must submit their proposed network architecture during bid submission.		
4)	Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.		

8.0	**DETAILED ENGINEERING:**		
1)	Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.		
2)	Successful bidder shall submit the following documents for approval from Oil India Limited:		
(a)	Architecture of the system.		
(b)	General Arrangement drawing of the wall mounted panel.		
	Note: Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.		

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9.0	**TECHNICAL SPECIFICATIONS:**		
9.1	**PRESSURE TRANSMITTER:**		
1)	Type: Wireless Gauge pressure transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}		
4)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
5)	Accuracy: +/- 0.075 % of the span or better		
6)	Stability: +/- 0.2 % of span for 10 years		
7)	Rangeability: 50:1 or better		
8)	Over range protection: 130% of full range		
9)	Tx. diaphragm & other wetted parts: SS316 or better		
10)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		
11)	Enclosure: IP 65 rating or better.		
12)	Local display: Required		
13)	Process media: Natural Gas		
14)	Process temperature: up to 80 Deg C		
15)	**Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary up-to 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
16)	**Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**		
17)	Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.		
18)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
19)	Transmitter output: Wireless		
20)	Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.		
21)	Transmitter update rate: Selectable between 10 seconds to 60 minutes.		
22)	Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
23)	Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.		
24)	Self-diagnostic: Required.		

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Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
25)	Security: should comply basic industrial standards necessary documents should be provided.		
26)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
27)	Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.		

9.2	**TEMPERATURE TRANSMITTER:**		
1)	Type: Wireless Temperature transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B) {Refer Bill of Materials}**		
4)	Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.		
5)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
6)	Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.		
7)	Process media: Natural Gas		
8)	Process temperature: up to 80 Deg C		
9)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		

(SIGNATURE COMPANY SEAL OF BIDDER)

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Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
10)	Enclosure: IP 65 rating or better.		
11)	Local display: Required		
12)	Cable Entry: ½ in NPT (F)		
13)	Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting		
14)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
15)	Transmitter output: Wireless		
16)	Frequency: 2.4GHz Range (license free ISM Band)		
17)	Wireless protocol: Wireless HART/ ISA 100.11a		
18)	Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.		
19)	Separate Antennae with cable is not acceptable.		
20)	Transmitter update rate: Selectable between 5 seconds to 60 minutes.		
21)	Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
22)	Transmitter configuration: Local/via gateway over the network		
23)	Device programming: Tx to have capability to work both as input device and repeater.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
24)	Self-diagnostic: Required		
25)	Sensor Specification: 3 Wire, Pt-100, Dual Element.		
26)	Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.		
27)	Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).		
28)	Security: Should comply basic industrial standards necessary documents should be provided.		
29)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
30)	Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.		

9.3	**FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER**		
1)	The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.		
2)	Make and Model: **Bidder to specify**.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.		
4)	Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar		
5)	Antenna Type : Cone type. / Drip off type		
6)	Material exposed to Tank atmosphere : SS316L		
7)	Housing/Enclosure : Suitable for hazardous area		
8)	Nozzle connection size & rating (Process Connection) : Flanged 4" NB, 150 Class, SS316L		
9)	Nozzle length : Up to 15 cms.		
10)	Service : Crude Oil (hydrocarbon based)		
11)	Mounting: Tank Top		
12)	Ingress Protection : IP65 Minimum		
13)	Area classification : Zone-1, IIA/IIB, T3		
14)	Measuring Range : 0-10 metres		
15)	Instrument Accuracy : ±2 mm		
16)	Repeatability :+ /-1mm		
17)	Power Supply :24Vdc.		
18)	Power Consumption :< 1.5 W		
19)	Outputs:		
20)	Cable Entry		
21)	Lightning Protection: To be provided.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
22)	Accessories to be supplied:		
(a)	Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.		
(b)	Canopy for the Radar transmitter.		
(c)	One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.		
(d)	Field junction box (Hazardous area approved) for cable as per requirement.		
	Note: The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.		

9.4	**CONTROL CABLE & CABLE TRAY SPECIFICATIONS:**		
	CONDUCTOR:		
	Material: Tinned copper Cross-sectional area of each core: 1.5 mm2 No. of cores: 04 (Four) No. of strands in each core: 07 (seven) Diameter of each strand: 0.5 mm Core colour: Black Core identification: White numbering on each core with 50 mm gap between two numbers.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
	INSULATION:		
	Material : Flame retardant PVC Thickness : 0.64 mm (Nominal) Continuous Temperature rating : 85 Degree C Voltage grade : 500 V Insulation resistance (Min) : 20 Mega Ohms/Km at 20 DegC		
	ARMOURING:		
	Material: Galvanized steel Magnetic/Non-Magnetic: Magnetic Round wire/ Flat strip: Round wire		
	SHIELDING:		
	Material: Mylar backed Aluminium foil Thickness: 0.0635 mm (63 Micron) Drain wire (for shield Continuity): Required Material of Drain wire: Tinned copper Shielding of individual cores: Not required Overall shielding: Aluminium Mylar screen		
	OUTER SHEATH:		
	Material: Flame retardant PVC Thickness (Min.): 2.03 mm Colour: Black		
	SIZE:		
	Outer diameter : Not more than 18 mm " Quantity: 12 core cable: 300 metres. 4 core cable: 3000 metres.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
	Cable tray		
	(a) Type: Perforated, hot dip galvanized (b) Size: As required,16 SWG (c) Shape of perforation/ hole: Oval shape (d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise) (e) Accessories: Coupling plates, nuts, bolts and washers		

9.5	**LARGE VIDEO SCREEN (LED TV):**		
1)	Type: LED Full HD		
2)	Speaker: 20 W (02 nos.)		
3)	HDMI port: 02 nos.		
4)	USB Port: 01 no.		
5)	Resolution: 4K Ultra HD (3840 x 2160)		
6)	Accessories: Wall mounting clamp, Remote with battery etc.		
7)	Size: Minimum 43"		
8)	Make and Model: Bidder to specify.		

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9.6	**WIRELESS GATEWAY:**		
1)	Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.		
2)	Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.		
3)	Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.		
4)	Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.		
5)	Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)		
6)	Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.		
7)	Input power supply: 24 V DC		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
8)	Electronic housing / protection: Suitable for safe area, control room installation		

9.7	**DESKTOP COMPUTER:**		
1)	Operating System: Latest Licensed windows professional version		
2)	Processor: Intel i5 minimum		
3)	RAM: 8 GB minimum		
4)	HardDisk: 500 GB minimum		
5)	Antivirus: 1 year validity		
6)	Monitor Screen Size: 23 inches minimum		
7)	Optical Drive: DVD +/-RW		
8)	Ports: HDMI, Ethernet and USB		
9)	Accessories: Keyboard, Mouse and good quality of Speakers (this speakers will be used for process alarms)		

10.0	**INSTALLATION AND COMMISSIONING:**		
1)	Bidder is responsible for dismantling of existing wired instruments at all five installations.		
2)	Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.		
3)	Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.		
4)	Installation and Commissioning job will take place at **OCS-8.**		

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5)	Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.		
6)	While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.		
7)	OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.		
8)	Laying of signal / power cables through trench / trays will be in bidder's scope.		
9)	OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.		
10)	The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.		

11.0	**NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES**		
1)	Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.		
2)	The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.		

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3)	**NUISANCE:** The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.		
4)	**CARE OF WORKS:** From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.		

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5)	The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.		
6)	Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.		
7)	Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.		
8)	The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.		
9)	In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.		

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10)	When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.		
11)	All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.		
12)	The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.		
13)	If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.		
14)	The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.		
15)	The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.		

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12.0	**FACTORY ACCEPTANCE TEST (FAT):**		
1)	OIL reserves the right to involve and satisfy itself at each and every stage of testing.		
2)	Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.		
3)	The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.		
4)	Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.		
5)	The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:		
(i)	Checking of Graphics and customization as per our requirement.		
(ii)	Checking of all datasheets and certificates.		
(iii)	Typical wireless configuration of the system.		
(iv)	Panel wiring		

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13.0	**SITE ACCEPTANCE TEST (SAT):**		
	OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.		
14.0	**WARRANTY/ GUARANTEE:**		
	The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.		
15.0	**TRAINING:**		
	Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.		

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16.0	**SPECIAL NOTES:**		
1)	All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:		
(a)	Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.		
(b)	Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.		
(c)	In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.		

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2)	**Penalty clause:**		
	To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a pe-riod of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of noti-fication then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.		
3)	The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		
4)	Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		

(SIGNATURE COMPANY SEAL OF BIDDER)

ANNEXURE-VI (B)

BILL OF MATERIALS

ANNEXURE-VI (B)

LOCATION-WISE BILL OF MATERIALS

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QNTY/UNIT (B)	TOTAL (A*B)	REMARKS
OCS-8	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	5	5	Remote seal type
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	5	5	Remote seal type
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	IH	1	Temperature Transmitter	0-100 Deg C	4	4	RTD with Thermowell is required
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	GU-III	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1	
			Temperature Transmitter	0-100 Deg C	1	1	RTD with Thermowell is required
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1	
	VLPMS	1	Pressure Transmitter	0-5 kg/cm2	1	1	
	LPMS	2	Pressure Transmitter	0-21 kg/cm2	1	2	
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1	
	LP Flare	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Tank (Crude)	3	Level Transmitter	0-10 meter	1	3	
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1	Remote seal type
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1	
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	10 psi Flare	1	Pressure Transmitter	0-2 kg/cm2	1	1	
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT	
			Desktop computer with		1 LOT	1 LOT	
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT	

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI

SPECIFICATION OF THE TENDERED ITEM

Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system		
Location	**:**	**JOYPUR-OCS**
Tender Quantity	**:**	**1**
Unit of Measure	**:**	**Lot**
Installation & Commissioning	**:**	**Applicable**
Pre-Dispatch Inspection	**:**	**Applicable**
Training	**:**	**Applicable (1 Day Onsite Training)**
Delivery Period		
(1) Maximum allowable delivery period in months after receipt of Purchase Order for the case of supply	**:**	**36 weeks**
(2) Maximum allowable period to complete Installation and Commissioning of supplied goods upon receipt of communication from Buyer Organisation	**:**	**4 months**

AA) TECHNICAL SPECIFICATIONS

1.0 PREAMBLE

This document together with the attachment defines and covers the guidelines for Design, Engineering, selection of equipment, equipment specification, scope of work, Installation and commissioning requirements complete with all accessories and materials for the supply and installation and commissioning of Wireless Process Monitoring system at location in below Table.

This project has been taken up to replace the old-wired data acquisition system.

Item No	Item Description	Total Qty (In Nos)
1	**Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system at JOYPUR-OCS**	**1 Lot**

Contd ... 2

2.0 LOCATION DETAILS

All the above ten installations are situated at 130 kms radius from Field Head Quarter at Duliajan, Assam. The site is approachable via motor-able roads.

3.0 ENVIRONMENTAL CONDITIONS

The general climatic conditions are as stated below:

(i) Maximum Ambient Temperature 42 DegC
(ii) Minimum Ambient Temperature 7 DegC
(iii) Relative Humidity
(iv) At 21 Deg C : 100 %
(v) At 32 Deg C : 95%
(vi) At 41 Deg C: 70%
(vii) Elevation Above Mean Sea Level: 170 metres
(viii) Seismic Zone: V
(ix) Yearly Average Rainfall: 300 mm

4.0 SCOPE OF OIL INDIA LIMITED SUPPLY

(a) Electrical Power Supply:
Rated voltage: 230 V-AC (± 10%), single (1) phase,
Rated frequency: 50 Hz (± 5 Hz) shall be made available.

5.0 SCOPE OF BIDDERS SUPPLY

1) Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.

2) Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.

3) Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.

4) Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also needs to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.

Contd ... 3

5) Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.

6) Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.

7) Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.

8) Configuration of the supplied system shall be under the bidder's scope.

9) Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.

6.0 DESIGN PHILOSOPHY

1) The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.

2) Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s.Emerson, M/s.E&H, M/s.Vega, M/s.Siemens.

3) Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.

4) For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.

5) Tagging of instruments in SS plates will be in the scope of the bidder.

6) There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.

7) There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.

8) There shall be provision of alarms for process variables.

9) There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.

Contd ... 4

10) There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.

11) There shall be a provision of configuring the transmitters through the supplied PC.

12) The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.

13) The gateway and antennae shall be redundant.

14) The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.

15) The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.

16) Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.

17) Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.

18) The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.

19) The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.

20) SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.

21) The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.

22) Necessary cables (power /signal) shall be of reputed brands.

23) Supply of UPS will be in OIL's scope.

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7.0 DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:

1) Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.
2) Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.
3) The bidder must submit their proposed network architecture during bid submission.
4) Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.

8.0 DETAILED ENGINEERING:

1) Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.
2) Successful bidder shall submit the following documents for approval from Oil India Limited:
a) Architecture of the system.
b) General Arrangement drawing of the wall mounted panel.

Note:

Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.

9.0 TECHNICAL SPECIFICATIONS:

9.1 PRESSURE TRANSMITTER:

1) Type: Wireless Gauge pressure transmitter
2) Make and Model: Bidder to specify.
3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}
4) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH
5) Accuracy: +/- 0.075 % of the span or better
6) Stability: +/- 0.2 % of span for 10 years
7) Rangeability: 50:1 or better
8) Over range protection: 130% of full range
9) Tx. diaphragm & other wetted parts: SS316 or better
10) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3
11) Enclosure: IP 65 rating or better.
12) Local display: Required
13) Process media: Natural Gas

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14) Process temperature: up to 80 Deg C

15) **Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary upto 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**

16) **Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**

17) Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.

18) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

19) Transmitter output: Wireless

20) Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.

21) Transmitter update rate: Selectable between 10 seconds to 60 minutes.

22) Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

23) Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required.

25) Security: should comply basic industrial standards necessary documents should be provided.

26) Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

27) Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.

9.2 TEMPERATURE TRANSMITTER:

1) Type: Wireless Temperature transmitter

2) Make and Model: Bidder to specify.

3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}

4) Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.

Contd ... 7

5) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH

6) Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.

7) Process media: Natural Gas

8) Process temperature: up to 80 Deg C

9) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3

10) Enclosure: IP 65 rating or better.

11) Local display: Required

12) Cable Entry: ½ in NPT (F)

13) Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting

14) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

15) Transmitter output: Wireless

16) Frequency: 2.4GHz Range (license free ISM Band)

17) Wireless protocol: Wireless HART/ ISA 100.11a

18) Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.

19) Separate Antennae with cable is not acceptable.

20) Transmitter update rate: Selectable between 5 seconds to 60 minutes.

21) Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

22) Transmitter configuration: Local/via gateway over the network

23) Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required

25) Sensor Specification: 3 Wire, Pt-100, Dual Element.

26) Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.

27) Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).

28) Security: Should comply basic industrial standards necessary documents should be provided.

29) Documentation: Necessary documentation for installation, maintenance and trouble-shooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

30) Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.

Contd ... 8

9.3 FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER

1) The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.

2) Make and Model: **Bidder to specify**.

3) The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.

4) Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar

5) Antenna Type : Cone type. / Drip off type

6) Material exposed to Tank atmosphere : SS316L

7) Housing/Enclosure : Suitable for hazardous area.

8) Nozzle connection size & rating (Process Connection) :
Flanged 4" NB, 150 Class, SS316L

9) Nozzle length : Up to 15 cms.

10) Service : Crude Oil (hydrocarbon based)

11) Mounting : Tank Top

12) Ingress Protection : IP65 Minimum

13) Area classification : Zone-1, IIA/IIB, T3

14) Measuring Range : 0-10 metres

15) Instrument Accuracy : ±2 mm

16) Repeatability : + /-1mm

17) Power Supply : 24V DC.

18) Power Consumption : < 1.5 W

19) Outputs : HART 4-20mA

20) Cable Entry : 1/2" NPT(F)

21) Lightning Protection : To be provided.

22) Accessories to be supplied :

(a) Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.

(b) Canopy for the Radar transmitter.

(c) One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.

(d) Field junction box (Hazardous area approved) for cable as per requirement.

Note:

The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.

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9.4 CONTROL CABLE & CABLE TRAY SPECIFICATIONS:

CONDUCTOR:	
Material	: Tinned copper
Cross-sectional area of each core	: 1.5 mm2
No. of cores	: 04 (Four)
No. of strands in each core	: 07 (seven)
Diameter of each strand	: 0.5 mm
Core colour	: Black
Core identification	: White numbering on each core with 50 mm gap between two numbers.
INSULATION:	
Material	: Flame retardant PVC
Thickness	: 0.64 mm (Nominal) Continuous
Temperature rating	: 85 Degree C
Voltage grade	: 500 V
Insulation resistance (Min)	: 20 Mega Ohms/Km at 20 DegC
ARMOURING:	
Material	: Galvanized steel
Magnetic/Non-Magnetic	: Magnetic
Round wire/ Flat strip	: Round wire
SHIELDING:	
Material	: Mylar backed Aluminium foil
Thickness	: 0.0635 mm (63 Micron)
Drain wire (for shield Continuity)	: Required
Material of Drain wire	: Tinned copper
Shielding of individual cores	: Not required
Overall shielding	: Aluminium Mylar screen
OUTER SHEATH:	
Material	: Flame retardant PVC
Thickness (Min.)	: 2.03 mm
Colour	: Black
SIZE:	
Outer diameter	: Not more than 18 mm "
Quantity	**: 12 core cable: 300 metres.** **4 core cable: 3000 metres.**

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Cable tray

(a) Type: Perforated, hot dip galvanized

(b) Size: As required,16 SWG

(c) Shape of perforation/ hole: Oval shape

(d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise)

(e) Accessories: Coupling plates, nuts, bolts and washers

9.5 LARGE VIDEO SCREEN (LED TV):

1) Type: LED Full HD

2) Speaker: 20 W (02 nos.)

3) HDMI port: 02 nos.

4) USB Port: 01 no.

5) Resolution: 4K Ultra HD (3840 x 2160)

6) Accessories: Wall mounting clamp, Remote with battery etc.

7) Size: Minimum 43”

8) Make and Model: Bidder to specify.

9.6 WIRELESS GATEWAY:

1) Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.

2) Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.

3) Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.

4) Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.

5) Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)

6) Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.

7) Input power supply: 24 V DC

8) Electronic housing / protection: Suitable for safe area, control room installation

Contd ... 11

9.7 DESKTOP COMPUTER:

1)	Operating System	: Latest Licensed windows professional version
2)	Processor	: Intel i5 minimum
3)	RAM	: 8 GB minimum
4)	HardDisk	: 500 GB minimum
5)	Antivirus	: 1 year validity
6)	Monitor Screen Size	: 23 inches minimum
7)	Optical Drive	: DVD +/-RW
8)	Ports	: HDMI, Ethernet and USB
9)	Accessories	:

Keyboard, Mouse and good quality of Speakers (these speakers will be used for process alarms)

10.0 INSTALLATION AND COMMISSIONING:

1) Bidder is responsible for dismantling of existing wired instruments at all five installations.

2) Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.

3) Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.

4) Installation and Commissioning job will take place at Joypur OCS.

5) Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.

6) While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.

7) OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.

8) Laying of signal / power cables through trench / trays will be in bidder's scope.

9) OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.

10) The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.

11.0 NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES

1) Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.

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2) The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.

3) NUISANCE: - The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.

4) CARE OF WORKS: - From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.

5) The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.

6) Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.

7) Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.

8) The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.

9) In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.

10) When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.

11) All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.

12) The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.

Contd ... 13

13) If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.

14) The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.

15) The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.

12.0 FACTORY ACCEPTANCE TEST (FAT):

1) OIL reserves the right to involve and satisfy itself at each and every stage of testing.

2) Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.

3) The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.

4) Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.

5) The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:

(i) Checking of Graphics and customization as per our requirement.

(ii) Checking of all datasheets and certificates.

(iii) Typical wireless configuration of the system.

(iv) Panel wiring

13.0 SITE ACCEPTANCE TEST (SAT):

OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.

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14.0 WARRANTY/ GUARANTEE:

The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.

15.0 TRAINING:

Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.

16.0 SPECIAL NOTES:

1) All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:

(a) Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.

(b) Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.

(c) In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.

2) Penalty clause:

To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a period of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of notification then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.

Contd ... 15

3) The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

4) Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
3.0	**ENVIRONMENTAL CONDITIONS**		
	The general climatic conditions are as stated below:		
(i)	Maximum Ambient Temperature 42 DegC		
(ii)	Minimum Ambient Temperature 7 DegC		
(iii)	Relative Humidity		
(iv)	At 21 Deg C : 100 %		
(v)	At 32 Deg C : 95%		
(vi)	At 41 Deg C: 70%		
(vii)	Elevation Above Mean Sea Level: 170 metres		
(viii)	Seismic Zone: V		
(ix)	Yearly Average Rainfall: 300 mm		

4.0	**SCOPE OF OIL INDIA LIMITED SUPPLY**		
(a)	**Electrical Power Supply:**		
	Rated voltage: 230 V-AC (± 10%), single (1) phase,		
	Rated frequency: 50 Hz (± 5 Hz) shall be made available.		

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5.0	**SCOPE OF BIDDERS SUPPLY**		
1)	Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.		
2)	Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.		
3)	Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.		
4)	Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also need to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.		
5)	Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.		
6)	Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.		

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7)	Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.		
8)	Configuration of the supplied system shall be under the bidder's scope.		
9)	Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.		

6.0	**DESIGN PHILOSOPHY**		
1)	The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.		
2)	Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s Emerson, M/s E&H, M/s Vega, M/s Siemens.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.		
4)	For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.		
5)	Tagging of instruments in SS plates will be in the scope of the bidder.		
6)	There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.		
7)	There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.		
8)	There shall be provision of alarms for process variables.		
9)	There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.		
10)	There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.		
11)	There shall be a provision of configuring the transmitters through the supplied PC.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12)	The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.		
13)	The gateway and antennae shall be redundant.		
14)	The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.		
15)	The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.		
16)	Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
17)	Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.		
18)	The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.		
19)	The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.		
20)	SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.		
21)	The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.		
22)	Necessary cables (power /signal) shall be of reputed brands.		
23)	Supply of UPS will be in OIL's scope.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
7.0	**DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:**		
1)	Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.		
2)	Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.		
3)	The bidder must submit their proposed network architecture during bid submission.		
4)	Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.		

8.0	**DETAILED ENGINEERING:**		
1)	Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.		
2)	Successful bidder shall submit the following documents for approval from Oil India Limited:		
(a)	Architecture of the system.		
(b)	General Arrangement drawing of the wall mounted panel.		
	Note: Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
9.0	**TECHNICAL SPECIFICATIONS:**		
9.1	**PRESSURE TRANSMITTER:**		
1)	Type: Wireless Gauge pressure transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}		
4)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
5)	Accuracy: +/- 0.075 % of the span or better		
6)	Stability: +/- 0.2 % of span for 10 years		
7)	Rangeability: 50:1 or better		
8)	Over range protection: 130% of full range		
9)	Tx. diaphragm & other wetted parts: SS316 or better		
10)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		
11)	Enclosure: IP 65 rating or better.		
12)	Local display: Required		
13)	Process media: Natural Gas		
14)	Process temperature: up to 80 Deg C		
15)	**Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary up-to 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
16)	**Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**		
17)	Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.		
18)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
19)	Transmitter output: Wireless		
20)	Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.		
21)	Transmitter update rate: Selectable between 10 seconds to 60 minutes.		
22)	Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
23)	Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.		
24)	Self-diagnostic: Required.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
25)	Security: should comply basic industrial standards necessary documents should be provided.		
26)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
27)	Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.		

9.2	**TEMPERATURE TRANSMITTER:**		
1)	Type: Wireless Temperature transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B) {Refer Bill of Materials}**		
4)	Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.		
5)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
6)	Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.		
7)	Process media: Natural Gas		
8)	Process temperature: up to 80 Deg C		
9)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
10)	Enclosure: IP 65 rating or better.		
11)	Local display: Required		
12)	Cable Entry: ½ in NPT (F)		
13)	Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting		
14)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
15)	Transmitter output: Wireless		
16)	Frequency: 2.4GHz Range (license free ISM Band)		
17)	Wireless protocol: Wireless HART/ ISA 100.11a		
18)	Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.		
19)	Separate Antennae with cable is not acceptable.		
20)	Transmitter update rate: Selectable between 5 seconds to 60 minutes.		
21)	Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
22)	Transmitter configuration: Local/via gateway over the network		
23)	Device programming: Tx to have capability to work both as input device and repeater.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
24)	Self-diagnostic: Required		
25)	Sensor Specification: 3 Wire, Pt-100, Dual Element.		
26)	Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.		
27)	Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).		
28)	Security: Should comply basic industrial standards necessary documents should be provided.		
29)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
30)	Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.		

9.3	**FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER**		
1)	The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.		
2)	Make and Model: **Bidder to specify**.		

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3)	The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.		
4)	Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar		
5)	Antenna Type : Cone type. / Drip off type		
6)	Material exposed to Tank atmosphere : SS316L		
7)	Housing/Enclosure : Suitable for hazardous area		
8)	Nozzle connection size & rating (Process Connection) : Flanged 4" NB, 150 Class, SS316L		
9)	Nozzle length : Up to 15 cms.		
10)	Service : Crude Oil (hydrocarbon based)		
11)	Mounting: Tank Top		
12)	Ingress Protection : IP65 Minimum		
13)	Area classification : Zone-1, IIA/IIB, T3		
14)	Measuring Range : 0-10 metres		
15)	Instrument Accuracy : ±2 mm		
16)	Repeatability :+ /-1mm		
17)	Power Supply :24Vdc.		
18)	Power Consumption :< 1.5 W		
19)	Outputs:		
20)	Cable Entry		
21)	Lightning Protection: To be provided.		

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22)	Accessories to be supplied:		
(a)	Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.		
(b)	Canopy for the Radar transmitter.		
(c)	One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.		
(d)	Field junction box (Hazardous area approved) for cable as per requirement.		
	Note: The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.		

9.4	**CONTROL CABLE & CABLE TRAY SPECIFICATIONS:**		
	CONDUCTOR:		
	Material: Tinned copper Cross-sectional area of each core: 1.5 mm2 No. of cores: 04 (Four) No. of strands in each core: 07 (seven) Diameter of each strand: 0.5 mm Core colour: Black Core identification: White numbering on each core with 50 mm gap between two numbers.		

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Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
	INSULATION:		
	Material : Flame retardant PVC Thickness : 0.64 mm (Nominal) Continuous Temperature rating : 85 Degree C Voltage grade : 500 V Insulation resistance (Min) : 20 Mega Ohms/Km at 20 DegC		
	ARMOURING:		
	Material□Galvanized steel Magnetic/Non-Magnetic□Magnetic Round wire/ Flat strip□Round wire		
	SHIELDING:		
	Material□Mylar backed Aluminium foil Thickness□0.0635 mm (63 Micron) Drain wire (for shield Continuity)□Required Material of Drain wire□Tinned copper Shielding of individual cores□Not required Overall shielding□Aluminium Mylar screen		
	OUTER SHEATH:		
	Material□Flame retardant PVC Thickness (Min.)□2.03 mm Colour□Black		
	SIZE:		
	Outer diameter : Not more than 18 mm " Quantity: 12 core cable: 300 metres. 4 core cable: 3000 metres.		

(SIGNATURE COMPANY SEAL OF BIDDER)

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
	Cable tray		
	(a) Type: Perforated, hot dip galvanized (b) Size: As required,16 SWG (c) Shape of perforation/ hole: Oval shape (d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise) (e) Accessories: Coupling plates, nuts, bolts and washers		

9.5	**LARGE VIDEO SCREEN (LED TV):**		
1)	Type: LED Full HD		
2)	Speaker: 20 W (02 nos.)		
3)	HDMI port: 02 nos.		
4)	USB Port: 01 no.		
5)	Resolution: 4K Ultra HD (3840 x 2160)		
6)	Accessories: Wall mounting clamp, Remote with battery etc.		
7)	Size: Minimum 43"		
8)	Make and Model: Bidder to specify.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
9.6	**WIRELESS GATEWAY:**		
1)	Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.		
2)	Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.		
3)	Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.		
4)	Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.		
5)	Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)		
6)	Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.		
7)	Input power supply: 24 V DC		

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		BIDDER'S RESPONSE	
		(TO BE FILLED BY THE BIDDER)	
Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
8)	Electronic housing / protection: Suitable for safe area, control room installation		

9.7	**DESKTOP COMPUTER:**		
1)	Operating System: Latest Licensed windows professional version		
2)	Processor: Intel i5 minimum		
3)	RAM: 8 GB minimum		
4)	HardDisk: 500 GB minimum		
5)	Antivirus: 1 year validity		
6)	Monitor Screen Size: 23 inches minimum		
7)	Optical Drive: DVD +/-RW		
8)	Ports: HDMI, Ethernet and USB		
9)	Accessories: Keyboard, Mouse and good quality of Speakers (this speakers will be used for process alarms)		

10.0	**INSTALLATION AND COMMISSIONING:**		
1)	Bidder is responsible for dismantling of existing wired instruments at all five installations.		
2)	Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.		
3)	Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.		
4)	Installation and Commissioning job will take place at **JOYPUR-OCS.**		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5)	Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.		
6)	While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.		
7)	OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.		
8)	Laying of signal / power cables through trench / trays will be in bidder's scope.		
9)	OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.		
10)	The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.		

11.0	**NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES**		
1)	Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.		
2)	The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	**NUISANCE:** The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.		
4)	**CARE OF WORKS:** From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5)	The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.		
6)	Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.		
7)	Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.		
8)	The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.		
9)	In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
10)	When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.		
11)	All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.		
12)	The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.		
13)	If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.		
14)	The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.		
15)	The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12.0	**FACTORY ACCEPTANCE TEST (FAT):**		
1)	OIL reserves the right to involve and satisfy itself at each and every stage of testing.		
2)	Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.		
3)	The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.		
4)	Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.		
5)	The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:		
(i)	Checking of Graphics and customization as per our requirement.		
(ii)	Checking of all datasheets and certificates.		
(iii)	Typical wireless configuration of the system.		
(iv)	Panel wiring		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
13.0	**SITE ACCEPTANCE TEST (SAT):**		
	OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.		
14.0	**WARRANTY/ GUARANTEE:**		
	The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.		
15.0	**TRAINING:**		
	Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
16.0	**SPECIAL NOTES:**		
1)	All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:		
(a)	Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.		
(b)	Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.		
(c)	In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.		

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Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
2)	**Penalty clause:**		
	To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a pe-riod of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of noti-fication then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.		
3)	The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		
4)	Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		

(SIGNATURE COMPANY SEAL OF BIDDER)

ANNEXURE-VI (B)

BILL OF MATERIALS

ANNEXURE-VI (B)

LOCATION-WISE BILL OF MATERIALS

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QNTY/UNIT (B)	TOTAL (A*B)	REMARKS
Joypur OCS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	5	5	Remote seal type
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	5	5	Remote seal type
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	IH	3	Temperature Transmitter	0-100 Deg C	2	6	RTD with Thermowell is required
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1	
			Temperature Transmitter	0-100 Deg C	1	1	RTD with Thermowell is required
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1	
	LPMS	2	Pressure Transmitter	0-21 kg/cm2	1	2	
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1	
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	LP Flare	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Tank (Crude)	4	Level Transmitter	0-10 meter	1	4	
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1	Remote seal type
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1	
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	10 psi Flare	1	Pressure Transmitter	0-2 kg/cm2	1	1	
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT	
			Desktop computer with HM		1 LOT	1 LOT	
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT	

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ANNEXURE-VI

SPECIFICATION OF THE TENDERED ITEM

Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system		
Location	**:**	**BAGHJAN EPS**
Tender Quantity	**:**	**1**
Unit of Measure	**:**	**Lot**
Installation & Commissioning	**:**	**Applicable**
Pre-Dispatch Inspection	**:**	**Applicable**
Training	**:**	**Applicable (1 Day Onsite Training)**
Delivery Period		
(1) Maximum allowable delivery period in months after receipt of Purchase Order for the case of supply	**:**	**36 weeks**
(2) Maximum allowable period to complete Installation and Commissioning of supplied goods upon receipt of communication from Buyer Organisation	**:**	**4 months**

AA) TECHNICAL SPECIFICATIONS

1.0 PREAMBLE

This document together with the attachment defines and covers the guidelines for Design, Engineering, selection of equipment, equipment specification, scope of work, Installation and commissioning requirements complete with all accessories and materials for the supply and installation and commissioning of Wireless Process Monitoring system at location in below Table.

This project has been taken up to replace the old-wired data acquisition system.

Item No	Item Description	Total Qty (In Nos)
1	**Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system at BAGHJAN EPS**	**1 Lot**

Contd ... 2

2.0 LOCATION DETAILS

All the above ten installations are situated at 130 kms radius from Field Head Quarter at Duliajan, Assam. The site is approachable via motor-able roads.

3.0 ENVIRONMENTAL CONDITIONS

The general climatic conditions are as stated below:

(i) Maximum Ambient Temperature 42 DegC
(ii) Minimum Ambient Temperature 7 DegC
(iii) Relative Humidity
(iv) At 21 Deg C : 100 %
(v) At 32 Deg C : 95%
(vi) At 41 Deg C: 70%
(vii) Elevation Above Mean Sea Level: 170 metres
(viii) Seismic Zone: V
(ix) Yearly Average Rainfall: 300 mm

4.0 SCOPE OF OIL INDIA LIMITED SUPPLY

(a) Electrical Power Supply:
Rated voltage: 230 V-AC (± 10%), single (1) phase,
Rated frequency: 50 Hz (± 5 Hz) shall be made available.

5.0 SCOPE OF BIDDERS SUPPLY

1) Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.

2) Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.

3) Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.

4) Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also needs to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.

Contd ... 3

5) Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.

6) Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.

7) Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.

8) Configuration of the supplied system shall be under the bidder's scope.

9) Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.

6.0 DESIGN PHILOSOPHY

1) The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.

2) Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s.Emerson, M/s.E&H, M/s.Vega, M/s.Siemens.

3) Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.

4) For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.

5) Tagging of instruments in SS plates will be in the scope of the bidder.

6) There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.

7) There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.

8) There shall be provision of alarms for process variables.

9) There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.

Contd ... 4

10) There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.

11) There shall be a provision of configuring the transmitters through the supplied PC.

12) The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.

13) The gateway and antennae shall be redundant.

14) The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.

15) The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.

16) Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.

17) Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.

18) The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.

19) The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.

20) SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.

21) The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.

22) Necessary cables (power /signal) shall be of reputed brands.

23) Supply of UPS will be in OIL's scope.

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7.0 DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:

1) Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.
2) Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.
3) The bidder must submit their proposed network architecture during bid submission.
4) Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.

8.0 DETAILED ENGINEERING:

1) Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.
2) Successful bidder shall submit the following documents for approval from Oil India Limited:
a) Architecture of the system.
b) General Arrangement drawing of the wall mounted panel.

Note:

Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.

9.0 TECHNICAL SPECIFICATIONS:

9.1 PRESSURE TRANSMITTER:

1) Type: Wireless Gauge pressure transmitter
2) Make and Model: Bidder to specify.
3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}
4) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH
5) Accuracy: +/- 0.075 % of the span or better
6) Stability: +/- 0.2 % of span for 10 years
7) Rangeability: 50:1 or better
8) Over range protection: 130% of full range
9) Tx. diaphragm & other wetted parts: SS316 or better
10) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3
11) Enclosure: IP 65 rating or better.
12) Local display: Required
13) Process media: Natural Gas

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14) Process temperature: up to 80 Deg C

15) **Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary upto 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**

16) **Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**

17) Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.

18) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

19) Transmitter output: Wireless

20) Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.

21) Transmitter update rate: Selectable between 10 seconds to 60 minutes.

22) Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

23) Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required.

25) Security: should comply basic industrial standards necessary documents should be provided.

26) Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

27) Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.

9.2 TEMPERATURE TRANSMITTER:

1) Type: Wireless Temperature transmitter

2) Make and Model: Bidder to specify.

3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}

4) Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.

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5) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH

6) Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.

7) Process media: Natural Gas

8) Process temperature: up to 80 Deg C

9) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3

10) Enclosure: IP 65 rating or better.

11) Local display: Required

12) Cable Entry: ½ in NPT (F)

13) Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting

14) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

15) Transmitter output: Wireless

16) Frequency: 2.4GHz Range (license free ISM Band)

17) Wireless protocol: Wireless HART/ ISA 100.11a

18) Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.

19) Separate Antennae with cable is not acceptable.

20) Transmitter update rate: Selectable between 5 seconds to 60 minutes.

21) Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

22) Transmitter configuration: Local/via gateway over the network

23) Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required

25) Sensor Specification: 3 Wire, Pt-100, Dual Element.

26) Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.

27) Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).

28) Security: Should comply basic industrial standards necessary documents should be provided.

29) Documentation: Necessary documentation for installation, maintenance and trouble-shooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

30) Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.

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9.3 FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER

1) The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.

2) Make and Model: **Bidder to specify**.

3) The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.

4) Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar

5) Antenna Type : Cone type. / Drip off type

6) Material exposed to Tank atmosphere : SS316L

7) Housing/Enclosure : Suitable for hazardous area.

8) Nozzle connection size & rating (Process Connection) :
Flanged 4" NB, 150 Class, SS316L

9) Nozzle length : Up to 15 cms.

10) Service : Crude Oil (hydrocarbon based)

11) Mounting : Tank Top

12) Ingress Protection : IP65 Minimum

13) Area classification : Zone-1, IIA/IIB, T3

14) Measuring Range : 0-10 metres

15) Instrument Accuracy : ±2 mm

16) Repeatability : + /-1mm

17) Power Supply : 24V DC.

18) Power Consumption : < 1.5 W

19) Outputs : HART 4-20mA

20) Cable Entry : 1/2" NPT(F)

21) Lightning Protection : To be provided.

22) Accessories to be supplied :

(a) Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.

(b) Canopy for the Radar transmitter.

(c) One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.

(d) Field junction box (Hazardous area approved) for cable as per requirement.

Note:

The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.

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9.4 CONTROL CABLE & CABLE TRAY SPECIFICATIONS:

CONDUCTOR:	
Material	: Tinned copper
Cross-sectional area of each core	: 1.5 mm2
No. of cores	: 04 (Four)
No. of strands in each core	: 07 (seven)
Diameter of each strand	: 0.5 mm
Core colour	: Black
Core identification	: White numbering on each core with 50 mm gap between two numbers.
INSULATION:	
Material	: Flame retardant PVC
Thickness	: 0.64 mm (Nominal) Continuous
Temperature rating	: 85 Degree C
Voltage grade	: 500 V
Insulation resistance (Min)	: 20 Mega Ohms/Km at 20 DegC
ARMOURING:	
Material	: Galvanized steel
Magnetic/Non-Magnetic	: Magnetic
Round wire/ Flat strip	: Round wire
SHIELDING:	
Material	: Mylar backed Aluminium foil
Thickness	: 0.0635 mm (63 Micron)
Drain wire (for shield Continuity)	: Required
Material of Drain wire	: Tinned copper
Shielding of individual cores	: Not required
Overall shielding	: Aluminium Mylar screen
OUTER SHEATH:	
Material	: Flame retardant PVC
Thickness (Min.)	: 2.03 mm
Colour	: Black
SIZE:	
Outer diameter	: Not more than 18 mm "
Quantity	**: 12 core cable: 300 metres.** **4 core cable: 3000 metres.**

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Cable tray

(a) Type: Perforated, hot dip galvanized

(b) Size: As required,16 SWG

(c) Shape of perforation/ hole: Oval shape

(d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise)

(e) Accessories: Coupling plates, nuts, bolts and washers

9.5 LARGE VIDEO SCREEN (LED TV):

1) Type: LED Full HD

2) Speaker: 20 W (02 nos.)

3) HDMI port: 02 nos.

4) USB Port: 01 no.

5) Resolution: 4K Ultra HD (3840 x 2160)

6) Accessories: Wall mounting clamp, Remote with battery etc.

7) Size: Minimum 43”

8) Make and Model: Bidder to specify.

9.6 WIRELESS GATEWAY:

1) Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.

2) Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.

3) Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.

4) Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.

5) Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)

6) Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.

7) Input power supply: 24 V DC

8) Electronic housing / protection: Suitable for safe area, control room installation

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9.7 DESKTOP COMPUTER:

1)	Operating System	: Latest Licensed windows professional version
2)	Processor	: Intel i5 minimum
3)	RAM	: 8 GB minimum
4)	HardDisk	: 500 GB minimum
5)	Antivirus	: 1 year validity
6)	Monitor Screen Size	: 23 inches minimum
7)	Optical Drive	: DVD +/-RW
8)	Ports	: HDMI, Ethernet and USB
9)	Accessories	:

Keyboard, Mouse and good quality of Speakers (these speakers will be used for process alarms)

10.0 INSTALLATION AND COMMISSIONING:

1) Bidder is responsible for dismantling of existing wired instruments at all five installations.

2) Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.

3) Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.

4) Installation and Commissioning job will take place at Baghjan EPS.

5) Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.

6) While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.

7) OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.

8) Laying of signal / power cables through trench / trays will be in bidder's scope.

9) OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.

10) The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.

11.0 NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES

1) Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.

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2) The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.

3) NUISANCE: - The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.

4) CARE OF WORKS: - From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.

5) The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.

6) Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.

7) Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.

8) The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.

9) In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.

10) When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.

11) All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.

12) The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.

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13) If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.

14) The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.

15) The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.

12.0 FACTORY ACCEPTANCE TEST (FAT):

1) OIL reserves the right to involve and satisfy itself at each and every stage of testing.

2) Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.

3) The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.

4) Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.

5) The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:

(i) Checking of Graphics and customization as per our requirement.

(ii) Checking of all datasheets and certificates.

(iii) Typical wireless configuration of the system.

(iv) Panel wiring

13.0 SITE ACCEPTANCE TEST (SAT):

OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.

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14.0 WARRANTY/ GUARANTEE:

The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.

15.0 TRAINING:

Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.

16.0 SPECIAL NOTES:

1) All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:

(a) Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.

(b) Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.

(c) In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.

2) Penalty clause:

To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a period of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of notification then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.

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3) The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

4) Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
3.0	**ENVIRONMENTAL CONDITIONS**		
	The general climatic conditions are as stated below:		
(i)	Maximum Ambient Temperature 42 DegC		
(ii)	Minimum Ambient Temperature 7 DegC		
(iii)	Relative Humidity		
(iv)	At 21 Deg C : 100 %		
(v)	At 32 Deg C : 95%		
(vi)	At 41 Deg C: 70%		
(vii)	Elevation Above Mean Sea Level: 170 metres		
(viii)	Seismic Zone: V		
(ix)	Yearly Average Rainfall: 300 mm		

4.0	**SCOPE OF OIL INDIA LIMITED SUPPLY**		
(a)	**Electrical Power Supply:**		
	Rated voltage: 230 V-AC (± 10%), single (1) phase,		
	Rated frequency: 50 Hz (± 5 Hz) shall be made available.		

(SIGNATURE COMPANY SEAL OF BIDDER)

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5.0	**SCOPE OF BIDDERS SUPPLY**		
1)	Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.		
2)	Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.		
3)	Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.		
4)	Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also need to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.		
5)	Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.		
6)	Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.		

(SIGNATURE COMPANY SEAL OF BIDDER)

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
7)	Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.		
8)	Configuration of the supplied system shall be under the bidder's scope.		
9)	Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.		

6.0	**DESIGN PHILOSOPHY**		
1)	The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.		
2)	Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s Emerson, M/s E&H, M/s Vega, M/s Siemens.		

(SIGNATURE COMPANY SEAL OF BIDDER)

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.		
4)	For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.		
5)	Tagging of instruments in SS plates will be in the scope of the bidder.		
6)	There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.		
7)	There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.		
8)	There shall be provision of alarms for process variables.		
9)	There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.		
10)	There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.		
11)	There shall be a provision of configuring the transmitters through the supplied PC.		

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Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12)	The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.		
13)	The gateway and antennae shall be redundant.		
14)	The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.		
15)	The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.		
16)	Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
17)	Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.		
18)	The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.		
19)	The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.		
20)	SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.		
21)	The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.		
22)	Necessary cables (power /signal) shall be of reputed brands.		
23)	Supply of UPS will be in OIL's scope.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
7.0	**DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:**		
1)	Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.		
2)	Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.		
3)	The bidder must submit their proposed network architecture during bid submission.		
4)	Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.		

8.0	**DETAILED ENGINEERING:**		
1)	Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.		
2)	Successful bidder shall submit the following documents for approval from Oil India Limited:		
(a)	Architecture of the system.		
(b)	General Arrangement drawing of the wall mounted panel.		
	Note: Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
9.0	**TECHNICAL SPECIFICATIONS:**		
9.1	**PRESSURE TRANSMITTER:**		
1)	Type: Wireless Gauge pressure transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}		
4)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
5)	Accuracy: +/- 0.075 % of the span or better		
6)	Stability: +/- 0.2 % of span for 10 years		
7)	Rangeability: 50:1 or better		
8)	Over range protection: 130% of full range		
9)	Tx. diaphragm & other wetted parts: SS316 or better		
10)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		
11)	Enclosure: IP 65 rating or better.		
12)	Local display: Required		
13)	Process media: Natural Gas		
14)	Process temperature: up to 80 Deg C		
15)	**Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary up-to 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
16)	**Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**		
17)	Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.		
18)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
19)	Transmitter output: Wireless		
20)	Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.		
21)	Transmitter update rate: Selectable between 10 seconds to 60 minutes.		
22)	Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
23)	Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.		
24)	Self-diagnostic: Required.		

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Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
25)	Security: should comply basic industrial standards necessary documents should be provided.		
26)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
27)	Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.		

9.2	**TEMPERATURE TRANSMITTER:**		
1)	Type: Wireless Temperature transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B) {Refer Bill of Materials}**		
4)	Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.		
5)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
6)	Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.		
7)	Process media: Natural Gas		
8)	Process temperature: up to 80 Deg C		
9)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
10)	Enclosure: IP 65 rating or better.		
11)	Local display: Required		
12)	Cable Entry: ½ in NPT (F)		
13)	Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting		
14)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
15)	Transmitter output: Wireless		
16)	Frequency: 2.4GHz Range (license free ISM Band)		
17)	Wireless protocol: Wireless HART/ ISA 100.11a		
18)	Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.		
19)	Separate Antennae with cable is not acceptable.		
20)	Transmitter update rate: Selectable between 5 seconds to 60 minutes.		
21)	Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
22)	Transmitter configuration: Local/via gateway over the network		
23)	Device programming: Tx to have capability to work both as input device and repeater.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
24)	Self-diagnostic: Required		
25)	Sensor Specification: 3 Wire, Pt-100, Dual Element.		
26)	Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.		
27)	Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).		
28)	Security: Should comply basic industrial standards necessary documents should be provided.		
29)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
30)	Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.		

9.3	**FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER**		
1)	The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.		
2)	Make and Model: **Bidder to specify**.		

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3)	The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.		
4)	Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar		
5)	Antenna Type : Cone type. / Drip off type		
6)	Material exposed to Tank atmosphere : SS316L		
7)	Housing/Enclosure : Suitable for hazardous area		
8)	Nozzle connection size & rating (Process Connection) : Flanged 4" NB, 150 Class, SS316L		
9)	Nozzle length : Up to 15 cms.		
10)	Service : Crude Oil (hydrocarbon based)		
11)	Mounting: Tank Top		
12)	Ingress Protection : IP65 Minimum		
13)	Area classification : Zone-1, IIA/IIB, T3		
14)	Measuring Range : 0-10 metres		
15)	Instrument Accuracy : ±2 mm		
16)	Repeatability :+ /-1mm		
17)	Power Supply :24Vdc.		
18)	Power Consumption :< 1.5 W		
19)	Outputs:		
20)	Cable Entry		
21)	Lightning Protection: To be provided.		

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22)	Accessories to be supplied:		
(a)	Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.		
(b)	Canopy for the Radar transmitter.		
(c)	One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.		
(d)	Field junction box (Hazardous area approved) for cable as per requirement.		
	Note: The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.		

9.4	**CONTROL CABLE & CABLE TRAY SPECIFICATIONS:**		
	CONDUCTOR:		
	Material: Tinned copper Cross-sectional area of each core: 1.5 mm2 No. of cores: 04 (Four) No. of strands in each core: 07 (seven) Diameter of each strand: 0.5 mm Core colour: Black Core identification: White numbering on each core with 50 mm gap between two numbers.		

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	INSULATION:		
	Material : Flame retardant PVC Thickness : 0.64 mm (Nominal) Continuous Temperature rating : 85 Degree C Voltage grade : 500 V Insulation resistance (Min) : 20 Mega Ohms/Km at 20 DegC		
	ARMOURING:		
	Material□Galvanized steel Magnetic/Non-Magnetic□Magnetic Round wire/ Flat strip□Round wire		
	SHIELDING:		
	Material□Mylar backed Aluminium foil Thickness□0.0635 mm (63 Micron) Drain wire (for shield Continuity)□Required Material of Drain wire□Tinned copper Shielding of individual cores□Not required Overall shielding□Aluminium Mylar screen		
	OUTER SHEATH:		
	Material□Flame retardant PVC Thickness (Min.)□2.03 mm Colour□Black		
	SIZE:		
	Outer diameter : Not more than 18 mm " Quantity: 12 core cable: 300 metres. 4 core cable: 3000 metres.		

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	Cable tray		
	(a) Type: Perforated, hot dip galvanized (b) Size: As required,16 SWG (c) Shape of perforation/ hole: Oval shape (d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise) (e) Accessories: Coupling plates, nuts, bolts and washers		

9.5	**LARGE VIDEO SCREEN (LED TV):**		
1)	Type: LED Full HD		
2)	Speaker: 20 W (02 nos.)		
3)	HDMI port: 02 nos.		
4)	USB Port: 01 no.		
5)	Resolution: 4K Ultra HD (3840 x 2160)		
6)	Accessories: Wall mounting clamp, Remote with battery etc.		
7)	Size: Minimum 43"		
8)	Make and Model: Bidder to specify.		

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9.6	**WIRELESS GATEWAY:**		
1)	Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.		
2)	Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.		
3)	Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.		
4)	Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.		
5)	Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)		
6)	Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.		
7)	Input power supply: 24 V DC		

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8)	Electronic housing / protection: Suitable for safe area, control room installation		

9.7	**DESKTOP COMPUTER:**		
1)	Operating System: Latest Licensed windows professional version		
2)	Processor: Intel i5 minimum		
3)	RAM: 8 GB minimum		
4)	HardDisk: 500 GB minimum		
5)	Antivirus: 1 year validity		
6)	Monitor Screen Size: 23 inches minimum		
7)	Optical Drive: DVD +/-RW		
8)	Ports: HDMI, Ethernet and USB		
9)	Accessories: Keyboard, Mouse and good quality of Speakers (this speakers will be used for process alarms)		

10.0	**INSTALLATION AND COMMISSIONING:**		
1)	Bidder is responsible for dismantling of existing wired instruments at all five installations.		
2)	Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.		
3)	Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.		
4)	Installation and Commissioning job will take place at **BAGHJAN EPS.**		

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5)	Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.		
6)	While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.		
7)	OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.		
8)	Laying of signal / power cables through trench / trays will be in bidder's scope.		
9)	OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.		
10)	The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.		

11.0	**NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES**		
1)	Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.		
2)	The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.		

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Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	**NUISANCE:** The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.		
4)	**CARE OF WORKS:** From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.		

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Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5)	The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.		
6)	Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.		
7)	Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.		
8)	The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.		
9)	In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.		

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Materials Department – Field Head Quarters
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ANNEXURE-VI (A)

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
10)	When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.		
11)	All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.		
12)	The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.		
13)	If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.		
14)	The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.		
15)	The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.		

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ANNEXURE-VI (A)

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12.0	**FACTORY ACCEPTANCE TEST (FAT):**		
1)	OIL reserves the right to involve and satisfy itself at each and every stage of testing.		
2)	Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.		
3)	The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.		
4)	Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.		
5)	The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:		
(i)	Checking of Graphics and customization as per our requirement.		
(ii)	Checking of all datasheets and certificates.		
(iii)	Typical wireless configuration of the system.		
(iv)	Panel wiring		

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
13.0	**SITE ACCEPTANCE TEST (SAT):**		
	OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.		
14.0	**WARRANTY/ GUARANTEE:**		
	The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.		
15.0	**TRAINING:**		
	Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.		

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ANNEXURE-VI (A)

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
16.0	**SPECIAL NOTES:**		
1)	All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:		
(a)	Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.		
(b)	Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.		
(c)	In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.		

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Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
		BIDDER'S RESPONSE	
		(TO BE FILLED BY THE BIDDER)	
Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
2)	**Penalty clause:**		
	To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a pe-riod of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of noti-fication then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.		
3)	The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		
4)	Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		

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ANNEXURE-VI (B)

BILL OF MATERIALS

ANNEXURE-VI (B)

LOCATION-WISE BILL OF MATERIALS

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QNTY/ UNIT (B)	TOTAL (A*B)	REMARKS
Baghjan EPS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	10	10	Remote seal type
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	15	15	Remote seal type
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	IH	4	Temperature Transmitter	0-100 Deg C	2	8	RTD with Thermowell is required
	GU-I	3	Pressure Transmitter	0-50 KG/CM2	1	3	
	GU-II	3	Pressure Transmitter	0-21 kg/cm2	1	3	
	ET	2	Pressure Transmitter	0-10 kg/cm2	1	2	
			Temperature Transmitter	0-100 Deg C	1	2	RTD with Thermowell is required
	HPMS	2	Pressure Transmitter	0-42 kg/cm2	1	2	
	VLPMS	1	Pressure Transmitter	0-5 kg/cm2	1	1	
	LPMS	2	Pressure Transmitter	0-21 kg/cm2	1	2	
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Stabilizer	2	Pressure Transmitter	0-10 Kg/cm2	1	2	
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	LP Flare	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Tank (Crude)	3	Level Transmitter	0-10 meter	1	3	
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1	Remote seal type
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	10 psi Flare	1	Pressure Transmitter	0-2 kg/cm2	1	1	
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT	
			Desktop computer with HMI		1 LOT	1 LOT	
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT	

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Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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ANNEXURE-VI

SPECIFICATION OF THE TENDERED ITEM

Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system		
Location	**:**	**KHUMCHAI EPS**
Tender Quantity	**:**	**1**
Unit of Measure	**:**	**Lot**
Installation & Commissioning	**:**	**Applicable**
Pre-Dispatch Inspection	**:**	**Applicable**
Training	**:**	**Applicable (1 Day Onsite Training)**
Delivery Period		
(1) Maximum allowable delivery period in months after receipt of Purchase Order for the case of supply	**:**	**36 weeks**
(2) Maximum allowable period to complete Installation and Commissioning of supplied goods upon receipt of communication from Buyer Organisation	**:**	**4 months**

AA) TECHNICAL SPECIFICATIONS

1.0 PREAMBLE

This document together with the attachment defines and covers the guidelines for Design, Engineering, selection of equipment, equipment specification, scope of work, Installation and commissioning requirements complete with all accessories and materials for the supply and installation and commissioning of Wireless Process Monitoring system at location in below Table.

This project has been taken up to replace the old-wired data acquisition system.

Item No	Item Description	Total Qty (In Nos)
1	**Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system at KHUMCHAI EPS**	**1 Lot**

Contd ... 2

2.0 LOCATION DETAILS

All the above ten installations are situated at 130 kms radius from Field Head Quarter at Duliajan, Assam. The site is approachable via motor-able roads.

3.0 ENVIRONMENTAL CONDITIONS

The general climatic conditions are as stated below:

(i) Maximum Ambient Temperature 42 DegC
(ii) Minimum Ambient Temperature 7 DegC
(iii) Relative Humidity
(iv) At 21 Deg C : 100 %
(v) At 32 Deg C : 95%
(vi) At 41 Deg C: 70%
(vii) Elevation Above Mean Sea Level: 170 metres
(viii) Seismic Zone: V
(ix) Yearly Average Rainfall: 300 mm

4.0 SCOPE OF OIL INDIA LIMITED SUPPLY

(a) Electrical Power Supply:
Rated voltage: 230 V-AC (± 10%), single (1) phase,
Rated frequency: 50 Hz (± 5 Hz) shall be made available.

5.0 SCOPE OF BIDDERS SUPPLY

1) Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.

2) Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.

3) Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.

4) Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also needs to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.

Contd ... 3

5) Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.

6) Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.

7) Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.

8) Configuration of the supplied system shall be under the bidder's scope.

9) Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.

6.0 DESIGN PHILOSOPHY

1) The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.

2) Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s.Emerson, M/s.E&H, M/s.Vega, M/s.Siemens.

3) Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.

4) For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.

5) Tagging of instruments in SS plates will be in the scope of the bidder.

6) There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.

7) There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.

8) There shall be provision of alarms for process variables.

9) There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.

Contd ... 4

10) There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.

11) There shall be a provision of configuring the transmitters through the supplied PC.

12) The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.

13) The gateway and antennae shall be redundant.

14) The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.

15) The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.

16) Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.

17) Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.

18) The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.

19) The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.

20) SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.

21) The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.

22) Necessary cables (power /signal) shall be of reputed brands.

23) Supply of UPS will be in OIL's scope.

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7.0 DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:

1) Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.
2) Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.
3) The bidder must submit their proposed network architecture during bid submission.
4) Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.

8.0 DETAILED ENGINEERING:

1) Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.
2) Successful bidder shall submit the following documents for approval from Oil India Limited:
a) Architecture of the system.
b) General Arrangement drawing of the wall mounted panel.

Note:

Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.

9.0 TECHNICAL SPECIFICATIONS:

9.1 PRESSURE TRANSMITTER:

1) Type: Wireless Gauge pressure transmitter
2) Make and Model: Bidder to specify.
3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}
4) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH
5) Accuracy: +/- 0.075 % of the span or better
6) Stability: +/- 0.2 % of span for 10 years
7) Rangeability: 50:1 or better
8) Over range protection: 130% of full range
9) Tx. diaphragm & other wetted parts: SS316 or better
10) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3
11) Enclosure: IP 65 rating or better.
12) Local display: Required
13) Process media: Natural Gas

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14) Process temperature: up to 80 Deg C

15) **Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary upto 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**

16) **Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**

17) Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.

18) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

19) Transmitter output: Wireless

20) Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.

21) Transmitter update rate: Selectable between 10 seconds to 60 minutes.

22) Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

23) Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required.

25) Security: should comply basic industrial standards necessary documents should be provided.

26) Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

27) Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.

9.2 TEMPERATURE TRANSMITTER:

1) Type: Wireless Temperature transmitter

2) Make and Model: Bidder to specify.

3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}

4) Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.

Contd ... 7

5) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH

6) Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.

7) Process media: Natural Gas

8) Process temperature: up to 80 Deg C

9) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3

10) Enclosure: IP 65 rating or better.

11) Local display: Required

12) Cable Entry: ½ in NPT (F)

13) Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting

14) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

15) Transmitter output: Wireless

16) Frequency: 2.4GHz Range (license free ISM Band)

17) Wireless protocol: Wireless HART/ ISA 100.11a

18) Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.

19) Separate Antennae with cable is not acceptable.

20) Transmitter update rate: Selectable between 5 seconds to 60 minutes.

21) Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

22) Transmitter configuration: Local/via gateway over the network

23) Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required

25) Sensor Specification: 3 Wire, Pt-100, Dual Element.

26) Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.

27) Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).

28) Security: Should comply basic industrial standards necessary documents should be provided.

29) Documentation: Necessary documentation for installation, maintenance and trouble-shooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

30) Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.

Contd ... 8

9.3 FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER

1) The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.

2) Make and Model: **Bidder to specify**.

3) The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.

4) Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar

5) Antenna Type : Cone type. / Drip off type

6) Material exposed to Tank atmosphere : SS316L

7) Housing/Enclosure : Suitable for hazardous area.

8) Nozzle connection size & rating (Process Connection) :
Flanged 4" NB, 150 Class, SS316L

9) Nozzle length : Up to 15 cms.

10) Service : Crude Oil (hydrocarbon based)

11) Mounting : Tank Top

12) Ingress Protection : IP65 Minimum

13) Area classification : Zone-1, IIA/IIB, T3

14) Measuring Range : 0-10 metres

15) Instrument Accuracy : ±2 mm

16) Repeatability : + /-1mm

17) Power Supply : 24V DC.

18) Power Consumption : < 1.5 W

19) Outputs : HART 4-20mA

20) Cable Entry : 1/2" NPT(F)

21) Lightning Protection : To be provided.

22) Accessories to be supplied :

(a) Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.

(b) Canopy for the Radar transmitter.

(c) One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.

(d) Field junction box (Hazardous area approved) for cable as per requirement.

Note:

The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.

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9.4 CONTROL CABLE & CABLE TRAY SPECIFICATIONS:

CONDUCTOR:	
Material	: Tinned copper
Cross-sectional area of each core	: 1.5 mm2
No. of cores	: 04 (Four)
No. of strands in each core	: 07 (seven)
Diameter of each strand	: 0.5 mm
Core colour	: Black
Core identification	: White numbering on each core with 50 mm gap between two numbers.
INSULATION:	
Material	: Flame retardant PVC
Thickness	: 0.64 mm (Nominal) Continuous
Temperature rating	: 85 Degree C
Voltage grade	: 500 V
Insulation resistance (Min)	: 20 Mega Ohms/Km at 20 DegC
ARMOURING:	
Material	: Galvanized steel
Magnetic/Non-Magnetic	: Magnetic
Round wire/ Flat strip	: Round wire
SHIELDING:	
Material	: Mylar backed Aluminium foil
Thickness	: 0.0635 mm (63 Micron)
Drain wire (for shield Continuity)	: Required
Material of Drain wire	: Tinned copper
Shielding of individual cores	: Not required
Overall shielding	: Aluminium Mylar screen
OUTER SHEATH:	
Material	: Flame retardant PVC
Thickness (Min.)	: 2.03 mm
Colour	: Black
SIZE:	
Outer diameter	: Not more than 18 mm "
Quantity	**: 12 core cable: 300 metres.** **4 core cable: 3000 metres.**

Contd ... 10

Cable tray

(a) Type: Perforated, hot dip galvanized

(b) Size: As required,16 SWG

(c) Shape of perforation/ hole: Oval shape

(d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise)

(e) Accessories: Coupling plates, nuts, bolts and washers

9.5 LARGE VIDEO SCREEN (LED TV):

1) Type: LED Full HD

2) Speaker: 20 W (02 nos.)

3) HDMI port: 02 nos.

4) USB Port: 01 no.

5) Resolution: 4K Ultra HD (3840 x 2160)

6) Accessories: Wall mounting clamp, Remote with battery etc.

7) Size: Minimum 43”

8) Make and Model: Bidder to specify.

9.6 WIRELESS GATEWAY:

1) Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.

2) Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.

3) Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.

4) Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.

5) Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)

6) Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.

7) Input power supply: 24 V DC

8) Electronic housing / protection: Suitable for safe area, control room installation

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9.7 DESKTOP COMPUTER:

1)	Operating System	: Latest Licensed windows professional version
2)	Processor	: Intel i5 minimum
3)	RAM	: 8 GB minimum
4)	HardDisk	: 500 GB minimum
5)	Antivirus	: 1 year validity
6)	Monitor Screen Size	: 23 inches minimum
7)	Optical Drive	: DVD +/-RW
8)	Ports	: HDMI, Ethernet and USB
9)	Accessories	:

Keyboard, Mouse and good quality of Speakers (these speakers will be used for process alarms)

10.0 INSTALLATION AND COMMISSIONING:

1) Bidder is responsible for dismantling of existing wired instruments at all five installations.

2) Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.

3) Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.

4) Installation and Commissioning job will take place at Khumchai EPS.

5) Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.

6) While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.

7) OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.

8) Laying of signal / power cables through trench / trays will be in bidder's scope.

9) OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.

10) The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.

11.0 NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES

1) Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.

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2) The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.

3) NUISANCE: - The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.

4) CARE OF WORKS: - From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.

5) The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.

6) Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.

7) Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.

8) The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.

9) In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.

10) When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.

11) All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.

12) The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.

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13) If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.

14) The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.

15) The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.

12.0 FACTORY ACCEPTANCE TEST (FAT):

1) OIL reserves the right to involve and satisfy itself at each and every stage of testing.

2) Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.

3) The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.

4) Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.

5) The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:

(i) Checking of Graphics and customization as per our requirement.

(ii) Checking of all datasheets and certificates.

(iii) Typical wireless configuration of the system.

(iv) Panel wiring

13.0 SITE ACCEPTANCE TEST (SAT):

OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.

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14.0 WARRANTY/ GUARANTEE:

The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.

15.0 TRAINING:

Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.

16.0 SPECIAL NOTES:

1) All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:

(a) Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.

(b) Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.

(c) In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.

2) Penalty clause:

To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a period of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of notification then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.

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3) The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

4) Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
3.0	**ENVIRONMENTAL CONDITIONS**		
	The general climatic conditions are as stated below:		
(i)	Maximum Ambient Temperature 42 DegC		
(ii)	Minimum Ambient Temperature 7 DegC		
(iii)	Relative Humidity		
(iv)	At 21 Deg C : 100 %		
(v)	At 32 Deg C : 95%		
(vi)	At 41 Deg C: 70%		
(vii)	Elevation Above Mean Sea Level: 170 metres		
(viii)	Seismic Zone: V		
(ix)	Yearly Average Rainfall: 300 mm		

4.0	**SCOPE OF OIL INDIA LIMITED SUPPLY**		
(a)	**Electrical Power Supply:**		
	Rated voltage: 230 V-AC (± 10%), single (1) phase,		
	Rated frequency: 50 Hz (± 5 Hz) shall be made available.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5.0	**SCOPE OF BIDDERS SUPPLY**		
1)	Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.		
2)	Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.		
3)	Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.		
4)	Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also need to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.		
5)	Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.		
6)	Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.		

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Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
7)	Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.		
8)	Configuration of the supplied system shall be under the bidder's scope.		
9)	Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.		

6.0	DESIGN PHILOSOPHY		
1)	The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.		
2)	Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s Emerson, M/s E&H, M/s Vega, M/s Siemens.		

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Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.		
4)	For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.		
5)	Tagging of instruments in SS plates will be in the scope of the bidder.		
6)	There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.		
7)	There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.		
8)	There shall be provision of alarms for process variables.		
9)	There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.		
10)	There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.		
11)	There shall be a provision of configuring the transmitters through the supplied PC.		

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Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12)	The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.		
13)	The gateway and antennae shall be redundant.		
14)	The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.		
15)	The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.		
16)	Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.		

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Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
17)	Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.		
18)	The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.		
19)	The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.		
20)	SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.		
21)	The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.		
22)	Necessary cables (power /signal) shall be of reputed brands.		
23)	Supply of UPS will be in OIL's scope.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
7.0	**DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:**		
1)	Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.		
2)	Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.		
3)	The bidder must submit their proposed network architecture during bid submission.		
4)	Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.		

8.0	**DETAILED ENGINEERING:**		
1)	Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.		
2)	Successful bidder shall submit the following documents for approval from Oil India Limited:		
(a)	Architecture of the system.		
(b)	General Arrangement drawing of the wall mounted panel.		
	Note: Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.		

(SIGNATURE COMPANY SEAL OF BIDDER)

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
9.0	**TECHNICAL SPECIFICATIONS:**		
9.1	**PRESSURE TRANSMITTER:**		
1)	Type: Wireless Gauge pressure transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}		
4)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
5)	Accuracy: +/- 0.075 % of the span or better		
6)	Stability: +/- 0.2 % of span for 10 years		
7)	Rangeability: 50:1 or better		
8)	Over range protection: 130% of full range		
9)	Tx. diaphragm & other wetted parts: SS316 or better		
10)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		
11)	Enclosure: IP 65 rating or better.		
12)	Local display: Required		
13)	Process media: Natural Gas		
14)	Process temperature: up to 80 Deg C		
15)	**Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary up-to 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**		

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Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
16)	**Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**		
17)	Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.		
18)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
19)	Transmitter output: Wireless		
20)	Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.		
21)	Transmitter update rate: Selectable between 10 seconds to 60 minutes.		
22)	Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
23)	Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.		
24)	Self-diagnostic: Required.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
25)	Security: should comply basic industrial standards necessary documents should be provided.		
26)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
27)	Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.		

9.2	**TEMPERATURE TRANSMITTER:**		
1)	Type: Wireless Temperature transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B) {Refer Bill of Materials}**		
4)	Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.		
5)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
6)	Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.		
7)	Process media: Natural Gas		
8)	Process temperature: up to 80 Deg C		
9)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
10)	Enclosure: IP 65 rating or better.		
11)	Local display: Required		
12)	Cable Entry: ½ in NPT (F)		
13)	Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting		
14)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
15)	Transmitter output: Wireless		
16)	Frequency: 2.4GHz Range (license free ISM Band)		
17)	Wireless protocol: Wireless HART/ ISA 100.11a		
18)	Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.		
19)	Separate Antennae with cable is not acceptable.		
20)	Transmitter update rate: Selectable between 5 seconds to 60 minutes.		
21)	Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
22)	Transmitter configuration: Local/via gateway over the network		
23)	Device programming: Tx to have capability to work both as input device and repeater.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
24)	Self-diagnostic: Required		
25)	Sensor Specification: 3 Wire, Pt-100, Dual Element.		
26)	Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.		
27)	Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).		
28)	Security: Should comply basic industrial standards necessary documents should be provided.		
29)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
30)	Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.		

9.3	**FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER**		
1)	The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.		
2)	Make and Model: **Bidder to specify**.		

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3)	The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.		
4)	Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar		
5)	Antenna Type : Cone type. / Drip off type		
6)	Material exposed to Tank atmosphere : SS316L		
7)	Housing/Enclosure : Suitable for hazardous area		
8)	Nozzle connection size & rating (Process Connection) : Flanged 4" NB, 150 Class, SS316L		
9)	Nozzle length : Up to 15 cms.		
10)	Service : Crude Oil (hydrocarbon based)		
11)	Mounting: Tank Top		
12)	Ingress Protection : IP65 Minimum		
13)	Area classification : Zone-1, IIA/IIB, T3		
14)	Measuring Range : 0-10 metres		
15)	Instrument Accuracy : ±2 mm		
16)	Repeatability :+ /-1mm		
17)	Power Supply :24Vdc.		
18)	Power Consumption :< 1.5 W		
19)	Outputs:		
20)	Cable Entry		
21)	Lightning Protection: To be provided.		

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22)	Accessories to be supplied:		
(a)	Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.		
(b)	Canopy for the Radar transmitter.		
(c)	One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.		
(d)	Field junction box (Hazardous area approved) for cable as per requirement.		
	Note: The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.		

9.4	**CONTROL CABLE & CABLE TRAY SPECIFICATIONS:**		
	CONDUCTOR:		
	Material: Tinned copper Cross-sectional area of each core: 1.5 mm2 No. of cores: 04 (Four) No. of strands in each core: 07 (seven) Diameter of each strand: 0.5 mm Core colour: Black Core identification: White numbering on each core with 50 mm gap between two numbers.		

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Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
	INSULATION:		
	Material : Flame retardant PVC Thickness : 0.64 mm (Nominal) Continuous Temperature rating : 85 Degree C Voltage grade : 500 V Insulation resistance (Min) : 20 Mega Ohms/Km at 20 DegC		
	ARMOURING:		
	Material: Galvanized steel Magnetic/Non-Magnetic: Magnetic Round wire/ Flat strip: Round wire		
	SHIELDING:		
	Material: Mylar backed Aluminium foil Thickness: 0.0635 mm (63 Micron) Drain wire (for shield Continuity): Required Material of Drain wire: Tinned copper Shielding of individual cores: Not required Overall shielding: Aluminium Mylar screen		
	OUTER SHEATH:		
	Material: Flame retardant PVC Thickness (Min.): 2.03 mm Colour: Black		
	SIZE:		
	Outer diameter : Not more than 18 mm " Quantity: 12 core cable: 300 metres. 4 core cable: 3000 metres.		

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	Cable tray		
	(a) Type: Perforated, hot dip galvanized (b) Size: As required,16 SWG (c) Shape of perforation/ hole: Oval shape (d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise) (e) Accessories: Coupling plates, nuts, bolts and washers		

9.5	**LARGE VIDEO SCREEN (LED TV):**		
1)	Type: LED Full HD		
2)	Speaker: 20 W (02 nos.)		
3)	HDMI port: 02 nos.		
4)	USB Port: 01 no.		
5)	Resolution: 4K Ultra HD (3840 x 2160)		
6)	Accessories: Wall mounting clamp, Remote with battery etc.		
7)	Size: Minimum 43"		
8)	Make and Model: Bidder to specify.		

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9.6	**WIRELESS GATEWAY:**		
1)	Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.		
2)	Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.		
3)	Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.		
4)	Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.		
5)	Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)		
6)	Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.		
7)	Input power supply: 24 V DC		

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8)	Electronic housing / protection: Suitable for safe area, control room installation		

9.7	**DESKTOP COMPUTER:**		
1)	Operating System: Latest Licensed windows professional version		
2)	Processor: Intel i5 minimum		
3)	RAM: 8 GB minimum		
4)	HardDisk: 500 GB minimum		
5)	Antivirus: 1 year validity		
6)	Monitor Screen Size: 23 inches minimum		
7)	Optical Drive: DVD +/-RW		
8)	Ports: HDMI, Ethernet and USB		
9)	Accessories: Keyboard, Mouse and good quality of Speakers (this speakers will be used for process alarms)		

10.0	**INSTALLATION AND COMMISSIONING:**		
1)	Bidder is responsible for dismantling of existing wired instruments at all five installations.		
2)	Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.		
3)	Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.		
4)	Installation and Commissioning job will take place at **KHUMCHAI EPS.**		

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5)	Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.		
6)	While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.		
7)	OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.		
8)	Laying of signal / power cables through trench / trays will be in bidder's scope.		
9)	OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.		
10)	The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.		

11.0	**NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES**		
1)	Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.		
2)	The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.		

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3)	**NUISANCE:** The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.		
4)	**CARE OF WORKS:** From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.		

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5)	The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.		
6)	Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.		
7)	Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.		
8)	The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.		
9)	In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.		

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10)	When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.		
11)	All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.		
12)	The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.		
13)	If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.		
14)	The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.		
15)	The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.		

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12.0	**FACTORY ACCEPTANCE TEST (FAT):**		
1)	OIL reserves the right to involve and satisfy itself at each and every stage of testing.		
2)	Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.		
3)	The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.		
4)	Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.		
5)	The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:		
(i)	Checking of Graphics and customization as per our requirement.		
(ii)	Checking of all datasheets and certificates.		
(iii)	Typical wireless configuration of the system.		
(iv)	Panel wiring		

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13.0	**SITE ACCEPTANCE TEST (SAT):**		
	OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.		
14.0	**WARRANTY/ GUARANTEE:**		
	The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.		
15.0	**TRAINING:**		
	Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.		

(SIGNATURE COMPANY SEAL OF BIDDER)

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
		BIDDER'S RESPONSE	
		(TO BE FILLED BY THE BIDDER)	
Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
16.0	**SPECIAL NOTES:**		
1)	All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:		
(a)	Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.		
(b)	Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.		
(c)	In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.		

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ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
		BIDDER'S RESPONSE	
		(TO BE FILLED BY THE BIDDER)	
Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
2)	**Penalty clause:**		
	To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a pe-riod of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of noti-fication then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.		
3)	The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		
4)	Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		

(SIGNATURE COMPANY SEAL OF BIDDER)

ANNEXURE-VI (B)

BILL OF MATERIALS

ANNEXURE-VI (B)

LOCATION-WISE BILL OF MATERIALS

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QNTY/ UNIT (B)	TOTAL (A*B)	REMARKS
Kumchai EPS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	1	1	Remote seal type
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	2	2	Remote seal type
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	IH	2	Temperature Transmitter	0-100 Deg C	2	4	RTD with Thermowell is required
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	GU-II	1	Pressure Transmitter	0-21 kg/cm2	1	1	
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1	
			Temperature Transmitter	0-100 Deg C	1	1	RTD with Thermowell is required
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1	
	LPMS	1	Pressure Transmitter	0-21 kg/cm2	1	1	
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	LP Flare	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Tank (Crude)	2	Level Transmitter	0-10 meter	1	2	
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1	Remote seal type
	Lifter Delivery/Injected gas pressure	1	Pressure Transmitter	0-120 KG/CM2	1	1	
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT	
			Desktop computer with HM		1 LOT	1 LOT	
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT	

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Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI

SPECIFICATION OF THE TENDERED ITEM

Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system		
Location	**:**	**USHAPUR OCS**
Tender Quantity	**:**	**1**
Unit of Measure	**:**	**Lot**
Installation & Commissioning	**:**	**Applicable**
Pre-Dispatch Inspection	**:**	**Applicable**
Training	**:**	**Applicable (1 Day Onsite Training)**
Delivery Period		
(1) Maximum allowable delivery period in months after receipt of Purchase Order for the case of supply	**:**	**36 weeks**
(2) Maximum allowable period to complete Installation and Commissioning of supplied goods upon receipt of communication from Buyer Organisation	**:**	**4 months**

AA) TECHNICAL SPECIFICATIONS

1.0 PREAMBLE

This document together with the attachment defines and covers the guidelines for Design, Engineering, selection of equipment, equipment specification, scope of work, Installation and commissioning requirements complete with all accessories and materials for the supply and installation and commissioning of Wireless Process Monitoring system at location in below Table.

This project has been taken up to replace the old-wired data acquisition system.

Item No	Item Description	Total Qty (In Nos)
1	**Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system at USHAPUR OCS**	**1 Lot**

Contd ... 2

2.0 LOCATION DETAILS

All the above ten installations are situated at 130 kms radius from Field Head Quarter at Duliajan, Assam. The site is approachable via motor-able roads.

3.0 ENVIRONMENTAL CONDITIONS

The general climatic conditions are as stated below:

(i) Maximum Ambient Temperature 42 DegC
(ii) Minimum Ambient Temperature 7 DegC
(iii) Relative Humidity
(iv) At 21 Deg C : 100 %
(v) At 32 Deg C : 95%
(vi) At 41 Deg C: 70%
(vii) Elevation Above Mean Sea Level: 170 metres
(viii) Seismic Zone: V
(ix) Yearly Average Rainfall: 300 mm

4.0 SCOPE OF OIL INDIA LIMITED SUPPLY

(a) Electrical Power Supply:
Rated voltage: 230 V-AC (± 10%), single (1) phase,
Rated frequency: 50 Hz (± 5 Hz) shall be made available.

5.0 SCOPE OF BIDDERS SUPPLY

1) Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.

2) Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.

3) Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.

4) Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also needs to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.

Contd ... 3

5) Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.

6) Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.

7) Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.

8) Configuration of the supplied system shall be under the bidder's scope.

9) Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.

6.0 DESIGN PHILOSOPHY

1) The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.

2) Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s.Emerson, M/s.E&H, M/s.Vega, M/s.Siemens.

3) Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.

4) For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.

5) Tagging of instruments in SS plates will be in the scope of the bidder.

6) There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.

7) There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.

8) There shall be provision of alarms for process variables.

9) There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.

Contd ... 4

10) There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.

11) There shall be a provision of configuring the transmitters through the supplied PC.

12) The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.

13) The gateway and antennae shall be redundant.

14) The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.

15) The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.

16) Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.

17) Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.

18) The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.

19) The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.

20) SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.

21) The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.

22) Necessary cables (power /signal) shall be of reputed brands.

23) Supply of UPS will be in OIL's scope.

Contd ... 5

7.0 DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:

1) Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.
2) Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.
3) The bidder must submit their proposed network architecture during bid submission.
4) Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.

8.0 DETAILED ENGINEERING:

1) Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.
2) Successful bidder shall submit the following documents for approval from Oil India Limited:
a) Architecture of the system.
b) General Arrangement drawing of the wall mounted panel.

Note:
Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.

9.0 TECHNICAL SPECIFICATIONS:

9.1 PRESSURE TRANSMITTER:

1) Type: Wireless Gauge pressure transmitter
2) Make and Model: Bidder to specify.
3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}
4) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH
5) Accuracy: +/- 0.075 % of the span or better
6) Stability: +/- 0.2 % of span for 10 years
7) Rangeability: 50:1 or better
8) Over range protection: 130% of full range
9) Tx. diaphragm & other wetted parts: SS316 or better
10) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3
11) Enclosure: IP 65 rating or better.
12) Local display: Required
13) Process media: Natural Gas

Contd ... 6

14) Process temperature: up to 80 Deg C

15) **Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary upto 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**

16) **Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**

17) Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.

18) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

19) Transmitter output: Wireless

20) Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.

21) Transmitter update rate: Selectable between 10 seconds to 60 minutes.

22) Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

23) Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required.

25) Security: should comply basic industrial standards necessary documents should be provided.

26) Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

27) Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.

9.2 TEMPERATURE TRANSMITTER:

1) Type: Wireless Temperature transmitter

2) Make and Model: Bidder to specify.

3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}

4) Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.

Contd ... 7

5) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH

6) Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.

7) Process media: Natural Gas

8) Process temperature: up to 80 Deg C

9) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3

10) Enclosure: IP 65 rating or better.

11) Local display: Required

12) Cable Entry: ½ in NPT (F)

13) Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting

14) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

15) Transmitter output: Wireless

16) Frequency: 2.4GHz Range (license free ISM Band)

17) Wireless protocol: Wireless HART/ ISA 100.11a

18) Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.

19) Separate Antennae with cable is not acceptable.

20) Transmitter update rate: Selectable between 5 seconds to 60 minutes.

21) Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

22) Transmitter configuration: Local/via gateway over the network

23) Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required

25) Sensor Specification: 3 Wire, Pt-100, Dual Element.

26) Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.

27) Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).

28) Security: Should comply basic industrial standards necessary documents should be provided.

29) Documentation: Necessary documentation for installation, maintenance and trouble-shooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

30) Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.

Contd ... 8

9.3 FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER

1) The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.

2) Make and Model: **Bidder to specify**.

3) The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.

4) Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar

5) Antenna Type : Cone type. / Drip off type

6) Material exposed to Tank atmosphere : SS316L

7) Housing/Enclosure : Suitable for hazardous area.

8) Nozzle connection size & rating (Process Connection) :
Flanged 4" NB, 150 Class, SS316L

9) Nozzle length : Up to 15 cms.

10) Service : Crude Oil (hydrocarbon based)

11) Mounting : Tank Top

12) Ingress Protection : IP65 Minimum

13) Area classification : Zone-1, IIA/IIB, T3

14) Measuring Range : 0-10 metres

15) Instrument Accuracy : ±2 mm

16) Repeatability : + /-1mm

17) Power Supply : 24V DC.

18) Power Consumption : < 1.5 W

19) Outputs : HART 4-20mA

20) Cable Entry : 1/2" NPT(F)

21) Lightning Protection : To be provided.

22) Accessories to be supplied :

(a) Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.

(b) Canopy for the Radar transmitter.

(c) One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.

(d) Field junction box (Hazardous area approved) for cable as per requirement.

Note:

The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.

Contd ... 9

9.4 CONTROL CABLE & CABLE TRAY SPECIFICATIONS:

CONDUCTOR:	
Material	: Tinned copper
Cross-sectional area of each core	: 1.5 mm2
No. of cores	: 04 (Four)
No. of strands in each core	: 07 (seven)
Diameter of each strand	: 0.5 mm
Core colour	: Black
Core identification	: White numbering on each core with 50 mm gap between two numbers.
INSULATION:	
Material	: Flame retardant PVC
Thickness	: 0.64 mm (Nominal) Continuous
Temperature rating	: 85 Degree C
Voltage grade	: 500 V
Insulation resistance (Min)	: 20 Mega Ohms/Km at 20 DegC
ARMOURING:	
Material	: Galvanized steel
Magnetic/Non-Magnetic	: Magnetic
Round wire/ Flat strip	: Round wire
SHIELDING:	
Material	: Mylar backed Aluminium foil
Thickness	: 0.0635 mm (63 Micron)
Drain wire (for shield Continuity)	: Required
Material of Drain wire	: Tinned copper
Shielding of individual cores	: Not required
Overall shielding	: Aluminium Mylar screen
OUTER SHEATH:	
Material	: Flame retardant PVC
Thickness (Min.)	: 2.03 mm
Colour	: Black
SIZE:	
Outer diameter	: Not more than 18 mm "
Quantity	**: 12 core cable: 300 metres.** **4 core cable: 3000 metres.**

Contd ... 10

Cable tray

(a) Type: Perforated, hot dip galvanized

(b) Size: As required,16 SWG

(c) Shape of perforation/ hole: Oval shape

(d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise)

(e) Accessories: Coupling plates, nuts, bolts and washers

9.5 LARGE VIDEO SCREEN (LED TV):

1) Type: LED Full HD

2) Speaker: 20 W (02 nos.)

3) HDMI port: 02 nos.

4) USB Port: 01 no.

5) Resolution: 4K Ultra HD (3840 x 2160)

6) Accessories: Wall mounting clamp, Remote with battery etc.

7) Size: Minimum 43”

8) Make and Model: Bidder to specify.

9.6 WIRELESS GATEWAY:

1) Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.

2) Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.

3) Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.

4) Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.

5) Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)

6) Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.

7) Input power supply: 24 V DC

8) Electronic housing / protection: Suitable for safe area, control room installation

Contd ... 11

9.7 DESKTOP COMPUTER:

1)	Operating System	: Latest Licensed windows professional version
2)	Processor	: Intel i5 minimum
3)	RAM	: 8 GB minimum
4)	HardDisk	: 500 GB minimum
5)	Antivirus	: 1 year validity
6)	Monitor Screen Size	: 23 inches minimum
7)	Optical Drive	: DVD +/-RW
8)	Ports	: HDMI, Ethernet and USB
9)	Accessories	:

Keyboard, Mouse and good quality of Speakers (these speakers will be used for process alarms)

10.0 INSTALLATION AND COMMISSIONING:

1) Bidder is responsible for dismantling of existing wired instruments at all five installations.

2) Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.

3) Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.

4) Installation and Commissioning job will take place at Ushapur OCS.

5) Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.

6) While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.

7) OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.

8) Laying of signal / power cables through trench / trays will be in bidder's scope.

9) OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.

10) The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.

11.0 NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES

1) Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.

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2) The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.

3) NUISANCE: - The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.

4) CARE OF WORKS: - From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.

5) The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.

6) Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.

7) Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.

8) The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.

9) In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.

10) When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.

11) All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.

12) The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.

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13) If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.

14) The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.

15) The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.

12.0 FACTORY ACCEPTANCE TEST (FAT):

1) OIL reserves the right to involve and satisfy itself at each and every stage of testing.

2) Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.

3) The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.

4) Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.

5) The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:

(i) Checking of Graphics and customization as per our requirement.

(ii) Checking of all datasheets and certificates.

(iii) Typical wireless configuration of the system.

(iv) Panel wiring

13.0 SITE ACCEPTANCE TEST (SAT):

OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.

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14.0 WARRANTY/ GUARANTEE:

The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.

15.0 TRAINING:

Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.

16.0 SPECIAL NOTES:

1) All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:

(a) Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.

(b) Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.

(c) In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.

2) Penalty clause:

To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a period of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of notification then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.

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3) The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

4) Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
3.0	**ENVIRONMENTAL CONDITIONS**		
	The general climatic conditions are as stated below:		
(i)	Maximum Ambient Temperature 42 DegC		
(ii)	Minimum Ambient Temperature 7 DegC		
(iii)	Relative Humidity		
(iv)	At 21 Deg C : 100 %		
(v)	At 32 Deg C : 95%		
(vi)	At 41 Deg C: 70%		
(vii)	Elevation Above Mean Sea Level: 170 metres		
(viii)	Seismic Zone: V		
(ix)	Yearly Average Rainfall: 300 mm		

4.0	**SCOPE OF OIL INDIA LIMITED SUPPLY**		
(a)	**Electrical Power Supply:**		
	Rated voltage: 230 V-AC (± 10%), single (1) phase,		
	Rated frequency: 50 Hz (± 5 Hz) shall be made available.		

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5.0	**SCOPE OF BIDDERS SUPPLY**		
1)	Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.		
2)	Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.		
3)	Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.		
4)	Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also need to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.		
5)	Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.		
6)	Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.		

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7)	Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.		
8)	Configuration of the supplied system shall be under the bidder's scope.		
9)	Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.		

6.0	**DESIGN PHILOSOPHY**		
1)	The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.		
2)	Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s Emerson, M/s E&H, M/s Vega, M/s Siemens.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.		
4)	For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.		
5)	Tagging of instruments in SS plates will be in the scope of the bidder.		
6)	There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.		
7)	There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.		
8)	There shall be provision of alarms for process variables.		
9)	There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.		
10)	There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.		
11)	There shall be a provision of configuring the transmitters through the supplied PC.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12)	The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.		
13)	The gateway and antennae shall be redundant.		
14)	The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.		
15)	The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.		
16)	Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.		

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17)	Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.		
18)	The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.		
19)	The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.		
20)	SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.		
21)	The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.		
22)	Necessary cables (power /signal) shall be of reputed brands.		
23)	Supply of UPS will be in OIL's scope.		

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7.0	**DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:**		
1)	Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.		
2)	Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.		
3)	The bidder must submit their proposed network architecture during bid submission.		
4)	Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.		

8.0	**DETAILED ENGINEERING:**		
1)	Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.		
2)	Successful bidder shall submit the following documents for approval from Oil India Limited:		
(a)	Architecture of the system.		
(b)	General Arrangement drawing of the wall mounted panel.		
	Note: Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.		

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9.0	**TECHNICAL SPECIFICATIONS:**		
9.1	**PRESSURE TRANSMITTER:**		
1)	Type: Wireless Gauge pressure transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}		
4)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
5)	Accuracy: +/- 0.075 % of the span or better		
6)	Stability: +/- 0.2 % of span for 10 years		
7)	Rangeability: 50:1 or better		
8)	Over range protection: 130% of full range		
9)	Tx. diaphragm & other wetted parts: SS316 or better		
10)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		
11)	Enclosure: IP 65 rating or better.		
12)	Local display: Required		
13)	Process media: Natural Gas		
14)	Process temperature: up to 80 Deg C		
15)	**Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary up-to 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
16)	**Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**		
17)	Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.		
18)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
19)	Transmitter output: Wireless		
20)	Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.		
21)	Transmitter update rate: Selectable between 10 seconds to 60 minutes.		
22)	Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
23)	Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.		
24)	Self-diagnostic: Required.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
25)	Security: should comply basic industrial standards necessary documents should be provided.		
26)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
27)	Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.		

9.2	**TEMPERATURE TRANSMITTER:**		
1)	Type: Wireless Temperature transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B) {Refer Bill of Materials}**		
4)	Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.		
5)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
6)	Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.		
7)	Process media: Natural Gas		
8)	Process temperature: up to 80 Deg C		
9)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
10)	Enclosure: IP 65 rating or better.		
11)	Local display: Required		
12)	Cable Entry: ½ in NPT (F)		
13)	Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting		
14)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
15)	Transmitter output: Wireless		
16)	Frequency: 2.4GHz Range (license free ISM Band)		
17)	Wireless protocol: Wireless HART/ ISA 100.11a		
18)	Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.		
19)	Separate Antennae with cable is not acceptable.		
20)	Transmitter update rate: Selectable between 5 seconds to 60 minutes.		
21)	Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
22)	Transmitter configuration: Local/via gateway over the network		
23)	Device programming: Tx to have capability to work both as input device and repeater.		

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24)	Self-diagnostic: Required		
25)	Sensor Specification: 3 Wire, Pt-100, Dual Element.		
26)	Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.		
27)	Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).		
28)	Security: Should comply basic industrial standards necessary documents should be provided.		
29)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
30)	Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.		

9.3	**FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER**		
1)	The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.		
2)	Make and Model: **Bidder to specify**.		

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ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.		
4)	Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar		
5)	Antenna Type : Cone type. / Drip off type		
6)	Material exposed to Tank atmosphere : SS316L		
7)	Housing/Enclosure : Suitable for hazardous area		
8)	Nozzle connection size & rating (Process Connection) : Flanged 4" NB, 150 Class, SS316L		
9)	Nozzle length : Up to 15 cms.		
10)	Service : Crude Oil (hydrocarbon based)		
11)	Mounting: Tank Top		
12)	Ingress Protection : IP65 Minimum		
13)	Area classification : Zone-1, IIA/IIB, T3		
14)	Measuring Range : 0-10 metres		
15)	Instrument Accuracy : ±2 mm		
16)	Repeatability :+ /-1mm		
17)	Power Supply :24Vdc.		
18)	Power Consumption :< 1.5 W		
19)	Outputs:		
20)	Cable Entry		
21)	Lightning Protection: To be provided.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
22)	Accessories to be supplied:		
(a)	Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.		
(b)	Canopy for the Radar transmitter.		
(c)	One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.		
(d)	Field junction box (Hazardous area approved) for cable as per requirement.		
	Note: The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.		

9.4	**CONTROL CABLE & CABLE TRAY SPECIFICATIONS:**		
	CONDUCTOR:		
	Material: Tinned copper Cross-sectional area of each core: 1.5 mm2 No. of cores: 04 (Four) No. of strands in each core: 07 (seven) Diameter of each strand: 0.5 mm Core colour: Black Core identification: White numbering on each core with 50 mm gap between two numbers.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
	INSULATION:		
	Material : Flame retardant PVC Thickness : 0.64 mm (Nominal) Continuous Temperature rating : 85 Degree C Voltage grade : 500 V Insulation resistance (Min) : 20 Mega Ohms/Km at 20 DegC		
	ARMOURING:		
	Material□Galvanized steel Magnetic/Non-Magnetic□Magnetic Round wire/ Flat strip□Round wire		
	SHIELDING:		
	Material□Mylar backed Aluminium foil Thickness□0.0635 mm (63 Micron) Drain wire (for shield Continuity)□Required Material of Drain wire□Tinned copper Shielding of individual cores□Not required Overall shielding□Aluminium Mylar screen		
	OUTER SHEATH:		
	Material□Flame retardant PVC Thickness (Min.)□2.03 mm Colour□Black		
	SIZE:		
	Outer diameter : Not more than 18 mm " Quantity: 12 core cable: 300 metres. 4 core cable: 3000 metres.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
	Cable tray		
	(a) Type: Perforated, hot dip galvanized (b) Size: As required,16 SWG (c) Shape of perforation/ hole: Oval shape (d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise) (e) Accessories: Coupling plates, nuts, bolts and washers		

9.5	**LARGE VIDEO SCREEN (LED TV):**		
1)	Type: LED Full HD		
2)	Speaker: 20 W (02 nos.)		
3)	HDMI port: 02 nos.		
4)	USB Port: 01 no.		
5)	Resolution: 4K Ultra HD (3840 x 2160)		
6)	Accessories: Wall mounting clamp, Remote with battery etc.		
7)	Size: Minimum 43"		
8)	Make and Model: Bidder to specify.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
9.6	**WIRELESS GATEWAY:**		
1)	Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.		
2)	Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.		
3)	Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.		
4)	Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.		
5)	Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)		
6)	Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.		
7)	Input power supply: 24 V DC		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
8)	Electronic housing / protection: Suitable for safe area, control room installation		

9.7	**DESKTOP COMPUTER:**		
1)	Operating System: Latest Licensed windows professional version		
2)	Processor: Intel i5 minimum		
3)	RAM: 8 GB minimum		
4)	HardDisk: 500 GB minimum		
5)	Antivirus: 1 year validity		
6)	Monitor Screen Size: 23 inches minimum		
7)	Optical Drive: DVD +/-RW		
8)	Ports: HDMI, Ethernet and USB		
9)	Accessories: Keyboard, Mouse and good quality of Speakers (this speakers will be used for process alarms)		

10.0	**INSTALLATION AND COMMISSIONING:**		
1)	Bidder is responsible for dismantling of existing wired instruments at all five installations.		
2)	Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.		
3)	Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.		
4)	Installation and Commissioning job will take place at **USHAPUR OCS.**		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5)	Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.		
6)	While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.		
7)	OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.		
8)	Laying of signal / power cables through trench / trays will be in bidder's scope.		
9)	OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.		
10)	The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.		

11.0	**NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES**		
1)	Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.		
2)	The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	**NUISANCE:** The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.		
4)	**CARE OF WORKS:** From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5)	The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.		
6)	Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.		
7)	Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.		
8)	The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.		
9)	In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
10)	When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.		
11)	All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.		
12)	The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.		
13)	If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.		
14)	The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.		
15)	The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.		

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12.0	**FACTORY ACCEPTANCE TEST (FAT):**		
1)	OIL reserves the right to involve and satisfy itself at each and every stage of testing.		
2)	Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.		
3)	The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.		
4)	Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.		
5)	The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:		
(i)	Checking of Graphics and customization as per our requirement.		
(ii)	Checking of all datasheets and certificates.		
(iii)	Typical wireless configuration of the system.		
(iv)	Panel wiring		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
13.0	**SITE ACCEPTANCE TEST (SAT):**		
	OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.		
14.0	**WARRANTY/ GUARANTEE:**		
	The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.		
15.0	**TRAINING:**		
	Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.		

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16.0	**SPECIAL NOTES:**		
1)	All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:		
(a)	Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.		
(b)	Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.		
(c)	In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.		

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		BIDDER'S RESPONSE	
		(TO BE FILLED BY THE BIDDER)	
Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
2)	**Penalty clause:**		
	To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a pe-riod of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of noti-fication then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.		
3)	The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		
4)	Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		

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ANNEXURE-VI (B)

BILL OF MATERIALS

ANNEXURE-VI (B)

LOCATION-WISE BILL OF MATERIALS

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QNTY/ UNIT (B)	TOTAL (A*B)	REMARKS
Ushapur OCS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	3	3	Remote seal type
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	1	1	Remote seal type
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	IH	3	Temperature Transmitter	0-100 Deg C	2	6	(RTD with Thermowell is reqd)
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	GU-II	1	Pressure Transmitter	0-21 kg/cm2	1	1	
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1	
			Temperature Transmitter	0-100 Deg C	1	1	(RTD with Thermowell is reqd)
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1	
	VLPMS	1	Pressure Transmitter	0-5 kg/cm2	1	1	
	LPMS	2	Pressure Transmitter	0-21 kg/cm2	1	2	
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1	
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	LP Flare	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Tank (Crude)	2	Level Transmitter	0-10 meter	1	2	
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1	
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1	
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	10 psi Flare	1	Pressure Transmitter	0-2 kg/cm2	1	1	
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT	
			Desktop computer with HMI		1 LOT	1 LOT	
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT	

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ANNEXURE-VI

SPECIFICATION OF THE TENDERED ITEM

Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system		
Location	**:**	**LANGKASHI OCS**
Tender Quantity	**:**	**1**
Unit of Measure	**:**	**Lot**
Installation & Commissioning	**:**	**Applicable**
Pre-Dispatch Inspection	**:**	**Applicable**
Training	**:**	**Applicable (1 Day Onsite Training)**
Delivery Period		
(1) Maximum allowable delivery period in months after receipt of Purchase Order for the case of supply	**:**	**36 weeks**
(2) Maximum allowable period to complete Installation and Commissioning of supplied goods upon receipt of communication from Buyer Organisation	**:**	**4 months**

AA) TECHNICAL SPECIFICATIONS

1.0 PREAMBLE

This document together with the attachment defines and covers the guidelines for Design, Engineering, selection of equipment, equipment specification, scope of work, Installation and commissioning requirements complete with all accessories and materials for the supply and installation and commissioning of Wireless Process Monitoring system at location in below Table.

This project has been taken up to replace the old-wired data acquisition system.

Item No	Item Description	Total Qty (In Nos)
1	**Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system at LANGKASHI OCS**	**1 Lot**

Contd ... 2

2.0 LOCATION DETAILS

All the above ten installations are situated at 130 kms radius from Field Head Quarter at Duliajan, Assam. The site is approachable via motor-able roads.

3.0 ENVIRONMENTAL CONDITIONS

The general climatic conditions are as stated below:

(i) Maximum Ambient Temperature 42 DegC
(ii) Minimum Ambient Temperature 7 DegC
(iii) Relative Humidity
(iv) At 21 Deg C : 100 %
(v) At 32 Deg C : 95%
(vi) At 41 Deg C: 70%
(vii) Elevation Above Mean Sea Level: 170 metres
(viii) Seismic Zone: V
(ix) Yearly Average Rainfall: 300 mm

4.0 SCOPE OF OIL INDIA LIMITED SUPPLY

(a) Electrical Power Supply:
Rated voltage: 230 V-AC (± 10%), single (1) phase,
Rated frequency: 50 Hz (± 5 Hz) shall be made available.

5.0 SCOPE OF BIDDERS SUPPLY

1) Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.

2) Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.

3) Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.

4) Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also needs to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.

Contd ... 3

5) Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.

6) Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.

7) Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.

8) Configuration of the supplied system shall be under the bidder's scope.

9) Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.

6.0 DESIGN PHILOSOPHY

1) The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.

2) Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s.Emerson, M/s.E&H, M/s.Vega, M/s.Siemens.

3) Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.

4) For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.

5) Tagging of instruments in SS plates will be in the scope of the bidder.

6) There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.

7) There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.

8) There shall be provision of alarms for process variables.

9) There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.

Contd ... 4

10) There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.

11) There shall be a provision of configuring the transmitters through the supplied PC.

12) The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.

13) The gateway and antennae shall be redundant.

14) The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.

15) The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.

16) Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.

17) Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.

18) The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.

19) The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.

20) SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.

21) The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.

22) Necessary cables (power /signal) shall be of reputed brands.

23) Supply of UPS will be in OIL's scope.

Contd ... 5

7.0 DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:

1) Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.
2) Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.
3) The bidder must submit their proposed network architecture during bid submission.
4) Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.

8.0 DETAILED ENGINEERING:

1) Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.
2) Successful bidder shall submit the following documents for approval from Oil India Limited:
a) Architecture of the system.
b) General Arrangement drawing of the wall mounted panel.

Note:
Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.

9.0 TECHNICAL SPECIFICATIONS:

9.1 PRESSURE TRANSMITTER:

1) Type: Wireless Gauge pressure transmitter
2) Make and Model: Bidder to specify.
3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}
4) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH
5) Accuracy: +/- 0.075 % of the span or better
6) Stability: +/- 0.2 % of span for 10 years
7) Rangeability: 50:1 or better
8) Over range protection: 130% of full range
9) Tx. diaphragm & other wetted parts: SS316 or better
10) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3
11) Enclosure: IP 65 rating or better.
12) Local display: Required
13) Process media: Natural Gas

Contd ... 6

14) Process temperature: up to 80 Deg C

15) **Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary upto 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**

16) **Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**

17) Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.

18) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

19) Transmitter output: Wireless

20) Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.

21) Transmitter update rate: Selectable between 10 seconds to 60 minutes.

22) Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

23) Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required.

25) Security: should comply basic industrial standards necessary documents should be provided.

26) Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

27) Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.

9.2 TEMPERATURE TRANSMITTER:

1) Type: Wireless Temperature transmitter

2) Make and Model: Bidder to specify.

3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}

4) Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.

Contd ... 7

5) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH

6) Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.

7) Process media: Natural Gas

8) Process temperature: up to 80 Deg C

9) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3

10) Enclosure: IP 65 rating or better.

11) Local display: Required

12) Cable Entry: ½ in NPT (F)

13) Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting

14) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

15) Transmitter output: Wireless

16) Frequency: 2.4GHz Range (license free ISM Band)

17) Wireless protocol: Wireless HART/ ISA 100.11a

18) Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.

19) Separate Antennae with cable is not acceptable.

20) Transmitter update rate: Selectable between 5 seconds to 60 minutes.

21) Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

22) Transmitter configuration: Local/via gateway over the network

23) Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required

25) Sensor Specification: 3 Wire, Pt-100, Dual Element.

26) Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.

27) Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).

28) Security: Should comply basic industrial standards necessary documents should be provided.

29) Documentation: Necessary documentation for installation, maintenance and trouble-shooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

30) Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.

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9.3 FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER

1) The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.

2) Make and Model: **Bidder to specify**.

3) The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.

4) Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar

5) Antenna Type : Cone type. / Drip off type

6) Material exposed to Tank atmosphere : SS316L

7) Housing/Enclosure : Suitable for hazardous area.

8) Nozzle connection size & rating (Process Connection) :
Flanged 4" NB, 150 Class, SS316L

9) Nozzle length : Up to 15 cms.

10) Service : Crude Oil (hydrocarbon based)

11) Mounting : Tank Top

12) Ingress Protection : IP65 Minimum

13) Area classification : Zone-1, IIA/IIB, T3

14) Measuring Range : 0-10 metres

15) Instrument Accuracy : ±2 mm

16) Repeatability : + /-1mm

17) Power Supply : 24V DC.

18) Power Consumption : < 1.5 W

19) Outputs : HART 4-20mA

20) Cable Entry : 1/2" NPT(F)

21) Lightning Protection : To be provided.

22) Accessories to be supplied :

(a) Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.

(b) Canopy for the Radar transmitter.

(c) One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.

(d) Field junction box (Hazardous area approved) for cable as per requirement.

Note:

The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.

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9.4 CONTROL CABLE & CABLE TRAY SPECIFICATIONS:

CONDUCTOR:	
Material	: Tinned copper
Cross-sectional area of each core	: 1.5 mm2
No. of cores	: 04 (Four)
No. of strands in each core	: 07 (seven)
Diameter of each strand	: 0.5 mm
Core colour	: Black
Core identification	: White numbering on each core with 50 mm gap between two numbers.
INSULATION:	
Material	: Flame retardant PVC
Thickness	: 0.64 mm (Nominal) Continuous
Temperature rating	: 85 Degree C
Voltage grade	: 500 V
Insulation resistance (Min)	: 20 Mega Ohms/Km at 20 DegC
ARMOURING:	
Material	: Galvanized steel
Magnetic/Non-Magnetic	: Magnetic
Round wire/ Flat strip	: Round wire
SHIELDING:	
Material	: Mylar backed Aluminium foil
Thickness	: 0.0635 mm (63 Micron)
Drain wire (for shield Continuity)	: Required
Material of Drain wire	: Tinned copper
Shielding of individual cores	: Not required
Overall shielding	: Aluminium Mylar screen
OUTER SHEATH:	
Material	: Flame retardant PVC
Thickness (Min.)	: 2.03 mm
Colour	: Black
SIZE:	
Outer diameter	: Not more than 18 mm "
Quantity	**: 12 core cable: 300 metres.** **4 core cable: 3000 metres.**

Contd ... 10

Cable tray

(a) Type: Perforated, hot dip galvanized

(b) Size: As required,16 SWG

(c) Shape of perforation/ hole: Oval shape

(d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise)

(e) Accessories: Coupling plates, nuts, bolts and washers

9.5 LARGE VIDEO SCREEN (LED TV):

1) Type: LED Full HD

2) Speaker: 20 W (02 nos.)

3) HDMI port: 02 nos.

4) USB Port: 01 no.

5) Resolution: 4K Ultra HD (3840 x 2160)

6) Accessories: Wall mounting clamp, Remote with battery etc.

7) Size: Minimum 43”

8) Make and Model: Bidder to specify.

9.6 WIRELESS GATEWAY:

1) Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.

2) Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.

3) Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.

4) Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.

5) Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)

6) Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.

7) Input power supply: 24 V DC

8) Electronic housing / protection: Suitable for safe area, control room installation

Contd ... 11

9.7 DESKTOP COMPUTER:

1)	Operating System	: Latest Licensed windows professional version
2)	Processor	: Intel i5 minimum
3)	RAM	: 8 GB minimum
4)	HardDisk	: 500 GB minimum
5)	Antivirus	: 1 year validity
6)	Monitor Screen Size	: 23 inches minimum
7)	Optical Drive	: DVD +/-RW
8)	Ports	: HDMI, Ethernet and USB
9)	Accessories	:

Keyboard, Mouse and good quality of Speakers (these speakers will be used for process alarms)

10.0 INSTALLATION AND COMMISSIONING:

1) Bidder is responsible for dismantling of existing wired instruments at all five installations.

2) Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.

3) Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.

4) Installation and Commissioning job will take place at Langkashi OCS.

5) Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.

6) While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.

7) OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.

8) Laying of signal / power cables through trench / trays will be in bidder's scope.

9) OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.

10) The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.

11.0 NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES

1) Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.

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2) The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.

3) NUISANCE: - The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.

4) CARE OF WORKS: - From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.

5) The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.

6) Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.

7) Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.

8) The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.

9) In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.

10) When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.

11) All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.

12) The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.

Contd ... 13

13) If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.

14) The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.

15) The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.

12.0 FACTORY ACCEPTANCE TEST (FAT):

1) OIL reserves the right to involve and satisfy itself at each and every stage of testing.

2) Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.

3) The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.

4) Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.

5) The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:

(i) Checking of Graphics and customization as per our requirement.

(ii) Checking of all datasheets and certificates.

(iii) Typical wireless configuration of the system.

(iv) Panel wiring

13.0 SITE ACCEPTANCE TEST (SAT):

OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.

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14.0 WARRANTY/ GUARANTEE:

The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.

15.0 TRAINING:

Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.

16.0 SPECIAL NOTES:

1) All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:

(a) Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.

(b) Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.

(c) In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.

2) Penalty clause:

To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a period of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of notification then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.

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3) The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

4) Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
3.0	**ENVIRONMENTAL CONDITIONS**		
	The general climatic conditions are as stated below:		
(i)	Maximum Ambient Temperature 42 DegC		
(ii)	Minimum Ambient Temperature 7 DegC		
(iii)	Relative Humidity		
(iv)	At 21 Deg C : 100 %		
(v)	At 32 Deg C : 95%		
(vi)	At 41 Deg C: 70%		
(vii)	Elevation Above Mean Sea Level: 170 metres		
(viii)	Seismic Zone: V		
(ix)	Yearly Average Rainfall: 300 mm		

4.0	**SCOPE OF OIL INDIA LIMITED SUPPLY**		
(a)	**Electrical Power Supply:**		
	Rated voltage: 230 V-AC (± 10%), single (1) phase,		
	Rated frequency: 50 Hz (± 5 Hz) shall be made available.		

(SIGNATURE COMPANY SEAL OF BIDDER)

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5.0	**SCOPE OF BIDDERS SUPPLY**		
1)	Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.		
2)	Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.		
3)	Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.		
4)	Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also need to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.		
5)	Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.		
6)	Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.		

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7)	Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.		
8)	Configuration of the supplied system shall be under the bidder's scope.		
9)	Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.		

6.0	**DESIGN PHILOSOPHY**		
1)	The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.		
2)	Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s Emerson, M/s E&H, M/s Vega, M/s Siemens.		

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3)	Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.		
4)	For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.		
5)	Tagging of instruments in SS plates will be in the scope of the bidder.		
6)	There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.		
7)	There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.		
8)	There shall be provision of alarms for process variables.		
9)	There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.		
10)	There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.		
11)	There shall be a provision of configuring the transmitters through the supplied PC.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12)	The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.		
13)	The gateway and antennae shall be redundant.		
14)	The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.		
15)	The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.		
16)	Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
17)	Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.		
18)	The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.		
19)	The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.		
20)	SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.		
21)	The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.		
22)	Necessary cables (power /signal) shall be of reputed brands.		
23)	Supply of UPS will be in OIL's scope.		

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7.0	**DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:**		
1)	Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.		
2)	Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.		
3)	The bidder must submit their proposed network architecture during bid submission.		
4)	Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.		

8.0	**DETAILED ENGINEERING:**		
1)	Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.		
2)	Successful bidder shall submit the following documents for approval from Oil India Limited:		
(a)	Architecture of the system.		
(b)	General Arrangement drawing of the wall mounted panel.		
	Note: Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
9.0	**TECHNICAL SPECIFICATIONS:**		
9.1	**PRESSURE TRANSMITTER:**		
1)	Type: Wireless Gauge pressure transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}		
4)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
5)	Accuracy: +/- 0.075 % of the span or better		
6)	Stability: +/- 0.2 % of span for 10 years		
7)	Rangeability: 50:1 or better		
8)	Over range protection: 130% of full range		
9)	Tx. diaphragm & other wetted parts: SS316 or better		
10)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		
11)	Enclosure: IP 65 rating or better.		
12)	Local display: Required		
13)	Process media: Natural Gas		
14)	Process temperature: up to 80 Deg C		
15)	**Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary up-to 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
16)	**Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**		
17)	Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.		
18)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
19)	Transmitter output: Wireless		
20)	Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.		
21)	Transmitter update rate: Selectable between 10 seconds to 60 minutes.		
22)	Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
23)	Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.		
24)	Self-diagnostic: Required.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
25)	Security: should comply basic industrial standards necessary documents should be provided.		
26)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
27)	Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.		

9.2	**TEMPERATURE TRANSMITTER:**		
1)	Type: Wireless Temperature transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B) {Refer Bill of Materials}**		
4)	Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.		
5)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
6)	Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.		
7)	Process media: Natural Gas		
8)	Process temperature: up to 80 Deg C		
9)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
10)	Enclosure: IP 65 rating or better.		
11)	Local display: Required		
12)	Cable Entry: ½ in NPT (F)		
13)	Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting		
14)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
15)	Transmitter output: Wireless		
16)	Frequency: 2.4GHz Range (license free ISM Band)		
17)	Wireless protocol: Wireless HART/ ISA 100.11a		
18)	Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.		
19)	Separate Antennae with cable is not acceptable.		
20)	Transmitter update rate: Selectable between 5 seconds to 60 minutes.		
21)	Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
22)	Transmitter configuration: Local/via gateway over the network		
23)	Device programming: Tx to have capability to work both as input device and repeater.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
24)	Self-diagnostic: Required		
25)	Sensor Specification: 3 Wire, Pt-100, Dual Element.		
26)	Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.		
27)	Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).		
28)	Security: Should comply basic industrial standards necessary documents should be provided.		
29)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
30)	Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.		

9.3	**FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER**		
1)	The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.		
2)	Make and Model: **Bidder to specify**.		

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3)	The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.		
4)	Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar		
5)	Antenna Type : Cone type. / Drip off type		
6)	Material exposed to Tank atmosphere : SS316L		
7)	Housing/Enclosure : Suitable for hazardous area		
8)	Nozzle connection size & rating (Process Connection) : Flanged 4" NB, 150 Class, SS316L		
9)	Nozzle length : Up to 15 cms.		
10)	Service : Crude Oil (hydrocarbon based)		
11)	Mounting: Tank Top		
12)	Ingress Protection : IP65 Minimum		
13)	Area classification : Zone-1, IIA/IIB, T3		
14)	Measuring Range : 0-10 metres		
15)	Instrument Accuracy : ±2 mm		
16)	Repeatability :+ /-1mm		
17)	Power Supply :24Vdc.		
18)	Power Consumption :< 1.5 W		
19)	Outputs:		
20)	Cable Entry		
21)	Lightning Protection: To be provided.		

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22)	Accessories to be supplied:		
(a)	Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.		
(b)	Canopy for the Radar transmitter.		
(c)	One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.		
(d)	Field junction box (Hazardous area approved) for cable as per requirement.		
	Note: The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.		

9.4	**CONTROL CABLE & CABLE TRAY SPECIFICATIONS:**		
	CONDUCTOR:		
	Material: Tinned copper Cross-sectional area of each core: 1.5 mm2 No. of cores: 04 (Four) No. of strands in each core: 07 (seven) Diameter of each strand: 0.5 mm Core colour: Black Core identification: White numbering on each core with 50 mm gap between two numbers.		

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	INSULATION:		
	Material : Flame retardant PVC Thickness : 0.64 mm (Nominal) Continuous Temperature rating : 85 Degree C Voltage grade : 500 V Insulation resistance (Min) : 20 Mega Ohms/Km at 20 DegC		
	ARMOURING:		
	Material□Galvanized steel Magnetic/Non-Magnetic□Magnetic Round wire/ Flat strip□Round wire		
	SHIELDING:		
	Material□Mylar backed Aluminium foil Thickness□0.0635 mm (63 Micron) Drain wire (for shield Continuity)□Required Material of Drain wire□Tinned copper Shielding of individual cores□Not required Overall shielding□Aluminium Mylar screen		
	OUTER SHEATH:		
	Material□Flame retardant PVC Thickness (Min.)□2.03 mm Colour□Black		
	SIZE:		
	Outer diameter : Not more than 18 mm " Quantity: 12 core cable: 300 metres. 4 core cable: 3000 metres.		

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	Cable tray		
	(a) Type: Perforated, hot dip galvanized (b) Size: As required,16 SWG (c) Shape of perforation/ hole: Oval shape (d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise) (e) Accessories: Coupling plates, nuts, bolts and washers		

9.5	**LARGE VIDEO SCREEN (LED TV):**		
1)	Type: LED Full HD		
2)	Speaker: 20 W (02 nos.)		
3)	HDMI port: 02 nos.		
4)	USB Port: 01 no.		
5)	Resolution: 4K Ultra HD (3840 x 2160)		
6)	Accessories: Wall mounting clamp, Remote with battery etc.		
7)	Size: Minimum 43"		
8)	Make and Model: Bidder to specify.		

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9.6	**WIRELESS GATEWAY:**		
1)	Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.		
2)	Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.		
3)	Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.		
4)	Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.		
5)	Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)		
6)	Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.		
7)	Input power supply: 24 V DC		

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Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
8)	Electronic housing / protection: Suitable for safe area, control room installation		

9.7	**DESKTOP COMPUTER:**		
1)	Operating System: Latest Licensed windows professional version		
2)	Processor: Intel i5 minimum		
3)	RAM: 8 GB minimum		
4)	HardDisk: 500 GB minimum		
5)	Antivirus: 1 year validity		
6)	Monitor Screen Size: 23 inches minimum		
7)	Optical Drive: DVD +/-RW		
8)	Ports: HDMI, Ethernet and USB		
9)	Accessories: Keyboard, Mouse and good quality of Speakers (this speakers will be used for process alarms)		

10.0	**INSTALLATION AND COMMISSIONING:**		
1)	Bidder is responsible for dismantling of existing wired instruments at all five installations.		
2)	Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.		
3)	Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.		
4)	Installation and Commissioning job will take place at **LANGKASHI OCS.**		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5)	Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.		
6)	While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.		
7)	OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.		
8)	Laying of signal / power cables through trench / trays will be in bidder's scope.		
9)	OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.		
10)	The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.		

11.0	**NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES**		
1)	Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.		
2)	The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	**NUISANCE:** The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.		
4)	**CARE OF WORKS:** From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.		

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Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5)	The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.		
6)	Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.		
7)	Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.		
8)	The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.		
9)	In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.		

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Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
10)	When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.		
11)	All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.		
12)	The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.		
13)	If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.		
14)	The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.		
15)	The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12.0	**FACTORY ACCEPTANCE TEST (FAT):**		
1)	OIL reserves the right to involve and satisfy itself at each and every stage of testing.		
2)	Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.		
3)	The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.		
4)	Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.		
5)	The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:		
(i)	Checking of Graphics and customization as per our requirement.		
(ii)	Checking of all datasheets and certificates.		
(iii)	Typical wireless configuration of the system.		
(iv)	Panel wiring		

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Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
13.0	**SITE ACCEPTANCE TEST (SAT):**		
	OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.		
14.0	**WARRANTY/ GUARANTEE:**		
	The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.		
15.0	**TRAINING:**		
	Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.		

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Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
16.0	**SPECIAL NOTES:**		
1)	All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:		
(a)	Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.		
(b)	Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.		
(c)	In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.		

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
		BIDDER'S RESPONSE	
		(TO BE FILLED BY THE BIDDER)	
Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
2)	**Penalty clause:**		
	To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a pe-riod of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of noti-fication then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.		
3)	The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		
4)	Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		

(SIGNATURE COMPANY SEAL OF BIDDER)

ANNEXURE-VI (B)

BILL OF MATERIALS

ANNEXURE-VI (B)

LOCATION-WISE BILL OF MATERIALS

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QNTY/ UNIT (B)	TOTAL (A*B)	REMARKS
LangKashi OCS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	3	3	Remote seal type
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	3	3	Remote seal type
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	IH	3	Temperature Transmitter	0-100 Deg C	2	6	(RTD with Thermowell is reqd)
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1	
			Temperature Transmitter	0-100 Deg C	1	1	(RTD with Thermowell is reqd)
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1	
	LPMS	3	Pressure Transmitter	0-21 kg/cm2	1	3	
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1	
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	LP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	Tank (Crude)	3	Level Transmitter	0-10 meter	1	3	
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1	
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1	
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1	
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT	
			Desktop computer with HM		1 LOT	1 LOT	
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT	

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ANNEXURE-VI

SPECIFICATION OF THE TENDERED ITEM

Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system		
Location	**:**	**JORAJAN OCS**
Tender Quantity	**:**	**1**
Unit of Measure	**:**	**Lot**
Installation & Commissioning	**:**	**Applicable**
Pre-Dispatch Inspection	**:**	**Applicable**
Training	**:**	**Applicable (1 Day Onsite Training)**
Delivery Period		
(1) Maximum allowable delivery period in months after receipt of Purchase Order for the case of supply	**:**	**36 weeks**
(2) Maximum allowable period to complete Installation and Commissioning of supplied goods upon receipt of communication from Buyer Organisation	**:**	**4 months**

AA) TECHNICAL SPECIFICATIONS

1.0 PREAMBLE

This document together with the attachment defines and covers the guidelines for Design, Engineering, selection of equipment, equipment specification, scope of work, Installation and commissioning requirements complete with all accessories and materials for the supply and installation and commissioning of Wireless Process Monitoring system at location in below Table.

This project has been taken up to replace the old-wired data acquisition system.

Item No	Item Description	Total Qty (In Nos)
1	**Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system at JORAJAN OCS**	**1 Lot**

Contd ... 2

2.0 LOCATION DETAILS

All the above ten installations are situated at 130 kms radius from Field Head Quarter at Duliajan, Assam. The site is approachable via motor-able roads.

3.0 ENVIRONMENTAL CONDITIONS

The general climatic conditions are as stated below:

(i) Maximum Ambient Temperature 42 DegC
(ii) Minimum Ambient Temperature 7 DegC
(iii) Relative Humidity
(iv) At 21 Deg C : 100 %
(v) At 32 Deg C : 95%
(vi) At 41 Deg C: 70%
(vii) Elevation Above Mean Sea Level: 170 metres
(viii) Seismic Zone: V
(ix) Yearly Average Rainfall: 300 mm

4.0 SCOPE OF OIL INDIA LIMITED SUPPLY

(a) Electrical Power Supply:
Rated voltage: 230 V-AC (± 10%), single (1) phase,
Rated frequency: 50 Hz (± 5 Hz) shall be made available.

5.0 SCOPE OF BIDDERS SUPPLY

1) Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.

2) Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.

3) Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.

4) Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also needs to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.

Contd ... 3

5) Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.

6) Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.

7) Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.

8) Configuration of the supplied system shall be under the bidder's scope.

9) Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.

6.0 DESIGN PHILOSOPHY

1) The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.

2) Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s.Emerson, M/s.E&H, M/s.Vega, M/s.Siemens.

3) Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.

4) For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.

5) Tagging of instruments in SS plates will be in the scope of the bidder.

6) There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.

7) There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.

8) There shall be provision of alarms for process variables.

9) There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.

Contd ... 4

10) There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.

11) There shall be a provision of configuring the transmitters through the supplied PC.

12) The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.

13) The gateway and antennae shall be redundant.

14) The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.

15) The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.

16) Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.

17) Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.

18) The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.

19) The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.

20) SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.

21) The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.

22) Necessary cables (power /signal) shall be of reputed brands.

23) Supply of UPS will be in OIL's scope.

Contd ... 5

7.0 DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:

1) Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.
2) Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.
3) The bidder must submit their proposed network architecture during bid submission.
4) Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.

8.0 DETAILED ENGINEERING:

1) Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.
2) Successful bidder shall submit the following documents for approval from Oil India Limited:
a) Architecture of the system.
b) General Arrangement drawing of the wall mounted panel.

Note:

Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.

9.0 TECHNICAL SPECIFICATIONS:

9.1 PRESSURE TRANSMITTER:

1) Type: Wireless Gauge pressure transmitter
2) Make and Model: Bidder to specify.
3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}
4) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH
5) Accuracy: +/- 0.075 % of the span or better
6) Stability: +/- 0.2 % of span for 10 years
7) Rangeability: 50:1 or better
8) Over range protection: 130% of full range
9) Tx. diaphragm & other wetted parts: SS316 or better
10) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3
11) Enclosure: IP 65 rating or better.
12) Local display: Required
13) Process media: Natural Gas

Contd ... 6

14) Process temperature: up to 80 Deg C

15) **Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary upto 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**

16) **Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**

17) Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.

18) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

19) Transmitter output: Wireless

20) Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.

21) Transmitter update rate: Selectable between 10 seconds to 60 minutes.

22) Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

23) Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required.

25) Security: should comply basic industrial standards necessary documents should be provided.

26) Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

27) Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.

9.2 TEMPERATURE TRANSMITTER:

1) Type: Wireless Temperature transmitter

2) Make and Model: Bidder to specify.

3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}

4) Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.

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5) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH

6) Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.

7) Process media: Natural Gas

8) Process temperature: up to 80 Deg C

9) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3

10) Enclosure: IP 65 rating or better.

11) Local display: Required

12) Cable Entry: ½ in NPT (F)

13) Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting

14) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

15) Transmitter output: Wireless

16) Frequency: 2.4GHz Range (license free ISM Band)

17) Wireless protocol: Wireless HART/ ISA 100.11a

18) Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.

19) Separate Antennae with cable is not acceptable.

20) Transmitter update rate: Selectable between 5 seconds to 60 minutes.

21) Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

22) Transmitter configuration: Local/via gateway over the network

23) Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required

25) Sensor Specification: 3 Wire, Pt-100, Dual Element.

26) Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.

27) Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).

28) Security: Should comply basic industrial standards necessary documents should be provided.

29) Documentation: Necessary documentation for installation, maintenance and trouble-shooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

30) Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.

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9.3 FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER

1) The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.

2) Make and Model: **Bidder to specify**.

3) The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.

4) Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar

5) Antenna Type : Cone type. / Drip off type

6) Material exposed to Tank atmosphere : SS316L

7) Housing/Enclosure : Suitable for hazardous area.

8) Nozzle connection size & rating (Process Connection) :
Flanged 4" NB, 150 Class, SS316L

9) Nozzle length : Up to 15 cms.

10) Service : Crude Oil (hydrocarbon based)

11) Mounting : Tank Top

12) Ingress Protection : IP65 Minimum

13) Area classification : Zone-1, IIA/IIB, T3

14) Measuring Range : 0-10 metres

15) Instrument Accuracy : ±2 mm

16) Repeatability : + /-1mm

17) Power Supply : 24V DC.

18) Power Consumption : < 1.5 W

19) Outputs : HART 4-20mA

20) Cable Entry : 1/2" NPT(F)

21) Lightning Protection : To be provided.

22) Accessories to be supplied :

(a) Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.

(b) Canopy for the Radar transmitter.

(c) One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.

(d) Field junction box (Hazardous area approved) for cable as per requirement.

Note:

The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.

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9.4 CONTROL CABLE & CABLE TRAY SPECIFICATIONS:

CONDUCTOR:	
Material	: Tinned copper
Cross-sectional area of each core	: 1.5 mm2
No. of cores	: 04 (Four)
No. of strands in each core	: 07 (seven)
Diameter of each strand	: 0.5 mm
Core colour	: Black
Core identification	: White numbering on each core with 50 mm gap between two numbers.
INSULATION:	
Material	: Flame retardant PVC
Thickness	: 0.64 mm (Nominal) Continuous
Temperature rating	: 85 Degree C
Voltage grade	: 500 V
Insulation resistance (Min)	: 20 Mega Ohms/Km at 20 DegC
ARMOURING:	
Material	: Galvanized steel
Magnetic/Non-Magnetic	: Magnetic
Round wire/ Flat strip	: Round wire
SHIELDING:	
Material	: Mylar backed Aluminium foil
Thickness	: 0.0635 mm (63 Micron)
Drain wire (for shield Continuity)	: Required
Material of Drain wire	: Tinned copper
Shielding of individual cores	: Not required
Overall shielding	: Aluminium Mylar screen
OUTER SHEATH:	
Material	: Flame retardant PVC
Thickness (Min.)	: 2.03 mm
Colour	: Black
SIZE:	
Outer diameter	: Not more than 18 mm "
Quantity	**: 12 core cable: 300 metres.** **4 core cable: 3000 metres.**

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Cable tray

(a) Type: Perforated, hot dip galvanized

(b) Size: As required,16 SWG

(c) Shape of perforation/ hole: Oval shape

(d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise)

(e) Accessories: Coupling plates, nuts, bolts and washers

9.5 LARGE VIDEO SCREEN (LED TV):

1) Type: LED Full HD

2) Speaker: 20 W (02 nos.)

3) HDMI port: 02 nos.

4) USB Port: 01 no.

5) Resolution: 4K Ultra HD (3840 x 2160)

6) Accessories: Wall mounting clamp, Remote with battery etc.

7) Size: Minimum 43”

8) Make and Model: Bidder to specify.

9.6 WIRELESS GATEWAY:

1) Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.

2) Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.

3) Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.

4) Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.

5) Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)

6) Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.

7) Input power supply: 24 V DC

8) Electronic housing / protection: Suitable for safe area, control room installation

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9.7 DESKTOP COMPUTER:

1)	Operating System	: Latest Licensed windows professional version
2)	Processor	: Intel i5 minimum
3)	RAM	: 8 GB minimum
4)	HardDisk	: 500 GB minimum
5)	Antivirus	: 1 year validity
6)	Monitor Screen Size	: 23 inches minimum
7)	Optical Drive	: DVD +/-RW
8)	Ports	: HDMI, Ethernet and USB
9)	Accessories	:

Keyboard, Mouse and good quality of Speakers (these speakers will be used for process alarms)

10.0 INSTALLATION AND COMMISSIONING:

1) Bidder is responsible for dismantling of existing wired instruments at all five installations.

2) Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.

3) Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.

4) Installation and Commissioning job will take place at Jorajan OCS.

5) Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.

6) While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.

7) OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.

8) Laying of signal / power cables through trench / trays will be in bidder's scope.

9) OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.

10) The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.

11.0 NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES

1) Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.

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2) The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.

3) NUISANCE: - The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.

4) CARE OF WORKS: - From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.

5) The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.

6) Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.

7) Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.

8) The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.

9) In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.

10) When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.

11) All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.

12) The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.

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13) If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.

14) The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.

15) The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.

12.0 FACTORY ACCEPTANCE TEST (FAT):

1) OIL reserves the right to involve and satisfy itself at each and every stage of testing.

2) Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.

3) The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.

4) Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.

5) The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:

(i) Checking of Graphics and customization as per our requirement.

(ii) Checking of all datasheets and certificates.

(iii) Typical wireless configuration of the system.

(iv) Panel wiring

13.0 SITE ACCEPTANCE TEST (SAT):

OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.

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14.0 WARRANTY/ GUARANTEE:

The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.

15.0 TRAINING:

Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.

16.0 SPECIAL NOTES:

1) All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:

(a) Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.

(b) Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.

(c) In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.

2) Penalty clause:

To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a period of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of notification then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.

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3) The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

4) Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
3.0	**ENVIRONMENTAL CONDITIONS**		
	The general climatic conditions are as stated below:		
(i)	Maximum Ambient Temperature 42 DegC		
(ii)	Minimum Ambient Temperature 7 DegC		
(iii)	Relative Humidity		
(iv)	At 21 Deg C : 100 %		
(v)	At 32 Deg C : 95%		
(vi)	At 41 Deg C: 70%		
(vii)	Elevation Above Mean Sea Level: 170 metres		
(viii)	Seismic Zone: V		
(ix)	Yearly Average Rainfall: 300 mm		

4.0	**SCOPE OF OIL INDIA LIMITED SUPPLY**		
(a)	**Electrical Power Supply:**		
	Rated voltage: 230 V-AC (± 10%), single (1) phase,		
	Rated frequency: 50 Hz (± 5 Hz) shall be made available.		

(SIGNATURE COMPANY SEAL OF BIDDER)

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Duliajan, Assam, India – 786602
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Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5.0	**SCOPE OF BIDDERS SUPPLY**		
1)	Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.		
2)	Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.		
3)	Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.		
4)	Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also need to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.		
5)	Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.		
6)	Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.		

(SIGNATURE COMPANY SEAL OF BIDDER)

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
7)	Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.		
8)	Configuration of the supplied system shall be under the bidder's scope.		
9)	Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.		

6.0	**DESIGN PHILOSOPHY**		
1)	The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.		
2)	Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s Emerson, M/s E&H, M/s Vega, M/s Siemens.		

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ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.		
4)	For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.		
5)	Tagging of instruments in SS plates will be in the scope of the bidder.		
6)	There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.		
7)	There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.		
8)	There shall be provision of alarms for process variables.		
9)	There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.		
10)	There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.		
11)	There shall be a provision of configuring the transmitters through the supplied PC.		

(SIGNATURE COMPANY SEAL OF BIDDER)

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Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12)	The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.		
13)	The gateway and antennae shall be redundant.		
14)	The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.		
15)	The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.		
16)	Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.		

(SIGNATURE COMPANY SEAL OF BIDDER)

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ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
17)	Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.		
18)	The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.		
19)	The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.		
20)	SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.		
21)	The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.		
22)	Necessary cables (power /signal) shall be of reputed brands.		
23)	Supply of UPS will be in OIL's scope.		

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Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
7.0	**DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:**		
1)	Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.		
2)	Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.		
3)	The bidder must submit their proposed network architecture during bid submission.		
4)	Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.		

8.0	**DETAILED ENGINEERING:**		
1)	Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.		
2)	Successful bidder shall submit the following documents for approval from Oil India Limited:		
(a)	Architecture of the system.		
(b)	General Arrangement drawing of the wall mounted panel.		
	Note: Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.		

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9.0	**TECHNICAL SPECIFICATIONS:**		
9.1	**PRESSURE TRANSMITTER:**		
1)	Type: Wireless Gauge pressure transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}		
4)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
5)	Accuracy: +/- 0.075 % of the span or better		
6)	Stability: +/- 0.2 % of span for 10 years		
7)	Rangeability: 50:1 or better		
8)	Over range protection: 130% of full range		
9)	Tx. diaphragm & other wetted parts: SS316 or better		
10)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		
11)	Enclosure: IP 65 rating or better.		
12)	Local display: Required		
13)	Process media: Natural Gas		
14)	Process temperature: up to 80 Deg C		
15)	**Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary up-to 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
16)	**Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**		
17)	Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.		
18)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
19)	Transmitter output: Wireless		
20)	Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.		
21)	Transmitter update rate: Selectable between 10 seconds to 60 minutes.		
22)	Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
23)	Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.		
24)	Self-diagnostic: Required.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
25)	Security: should comply basic industrial standards necessary documents should be provided.		
26)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
27)	Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.		

9.2	**TEMPERATURE TRANSMITTER:**		
1)	Type: Wireless Temperature transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B) {Refer Bill of Materials}**		
4)	Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.		
5)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
6)	Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.		
7)	Process media: Natural Gas		
8)	Process temperature: up to 80 Deg C		
9)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
10)	Enclosure: IP 65 rating or better.		
11)	Local display: Required		
12)	Cable Entry: ½ in NPT (F)		
13)	Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting		
14)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
15)	Transmitter output: Wireless		
16)	Frequency: 2.4GHz Range (license free ISM Band)		
17)	Wireless protocol: Wireless HART/ ISA 100.11a		
18)	Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.		
19)	Separate Antennae with cable is not acceptable.		
20)	Transmitter update rate: Selectable between 5 seconds to 60 minutes.		
21)	Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
22)	Transmitter configuration: Local/via gateway over the network		
23)	Device programming: Tx to have capability to work both as input device and repeater.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
24)	Self-diagnostic: Required		
25)	Sensor Specification: 3 Wire, Pt-100, Dual Element.		
26)	Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.		
27)	Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).		
28)	Security: Should comply basic industrial standards necessary documents should be provided.		
29)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
30)	Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.		

9.3	**FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER**		
1)	The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.		
2)	Make and Model: **Bidder to specify**.		

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3)	The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.		
4)	Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar		
5)	Antenna Type : Cone type. / Drip off type		
6)	Material exposed to Tank atmosphere : SS316L		
7)	Housing/Enclosure : Suitable for hazardous area		
8)	Nozzle connection size & rating (Process Connection) : Flanged 4" NB, 150 Class, SS316L		
9)	Nozzle length : Up to 15 cms.		
10)	Service : Crude Oil (hydrocarbon based)		
11)	Mounting: Tank Top		
12)	Ingress Protection : IP65 Minimum		
13)	Area classification : Zone-1, IIA/IIB, T3		
14)	Measuring Range : 0-10 metres		
15)	Instrument Accuracy : ±2 mm		
16)	Repeatability :+ /-1mm		
17)	Power Supply :24Vdc.		
18)	Power Consumption :< 1.5 W		
19)	Outputs:		
20)	Cable Entry		
21)	Lightning Protection: To be provided.		

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22)	Accessories to be supplied:		
(a)	Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.		
(b)	Canopy for the Radar transmitter.		
(c)	One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.		
(d)	Field junction box (Hazardous area approved) for cable as per requirement.		
	Note: The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.		

9.4	**CONTROL CABLE & CABLE TRAY SPECIFICATIONS:**		
	CONDUCTOR:		
	Material: Tinned copper Cross-sectional area of each core: 1.5 mm2 No. of cores: 04 (Four) No. of strands in each core: 07 (seven) Diameter of each strand: 0.5 mm Core colour: Black Core identification: White numbering on each core with 50 mm gap between two numbers.		

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	INSULATION:		
	Material : Flame retardant PVC Thickness : 0.64 mm (Nominal) Continuous Temperature rating : 85 Degree C Voltage grade : 500 V Insulation resistance (Min) : 20 Mega Ohms/Km at 20 DegC		
	ARMOURING:		
	Material□Galvanized steel Magnetic/Non-Magnetic□Magnetic Round wire/ Flat strip□Round wire		
	SHIELDING:		
	Material□Mylar backed Aluminium foil Thickness□0.0635 mm (63 Micron) Drain wire (for shield Continuity)□Required Material of Drain wire□Tinned copper Shielding of individual cores□Not required Overall shielding□Aluminium Mylar screen		
	OUTER SHEATH:		
	Material□Flame retardant PVC Thickness (Min.)□2.03 mm Colour□Black		
	SIZE:		
	Outer diameter : Not more than 18 mm " Quantity: 12 core cable: 300 metres. 4 core cable: 3000 metres.		

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	Cable tray		
	(a) Type: Perforated, hot dip galvanized (b) Size: As required,16 SWG (c) Shape of perforation/ hole: Oval shape (d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise) (e) Accessories: Coupling plates, nuts, bolts and washers		

9.5	**LARGE VIDEO SCREEN (LED TV):**		
1)	Type: LED Full HD		
2)	Speaker: 20 W (02 nos.)		
3)	HDMI port: 02 nos.		
4)	USB Port: 01 no.		
5)	Resolution: 4K Ultra HD (3840 x 2160)		
6)	Accessories: Wall mounting clamp, Remote with battery etc.		
7)	Size: Minimum 43"		
8)	Make and Model: Bidder to specify.		

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9.6	**WIRELESS GATEWAY:**		
1)	Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.		
2)	Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.		
3)	Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.		
4)	Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.		
5)	Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)		
6)	Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.		
7)	Input power supply: 24 V DC		

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8)	Electronic housing / protection: Suitable for safe area, control room installation		

9.7	**DESKTOP COMPUTER:**		
1)	Operating System: Latest Licensed windows professional version		
2)	Processor: Intel i5 minimum		
3)	RAM: 8 GB minimum		
4)	HardDisk: 500 GB minimum		
5)	Antivirus: 1 year validity		
6)	Monitor Screen Size: 23 inches minimum		
7)	Optical Drive: DVD +/-RW		
8)	Ports: HDMI, Ethernet and USB		
9)	Accessories: Keyboard, Mouse and good quality of Speakers (this speakers will be used for process alarms)		

10.0	**INSTALLATION AND COMMISSIONING:**		
1)	Bidder is responsible for dismantling of existing wired instruments at all five installations.		
2)	Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.		
3)	Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.		
4)	Installation and Commissioning job will take place at **JORAJAN OCS.**		

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5)	Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.		
6)	While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.		
7)	OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.		
8)	Laying of signal / power cables through trench / trays will be in bidder's scope.		
9)	OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.		
10)	The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.		

11.0	**NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES**		
1)	Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.		
2)	The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.		

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3)	**NUISANCE:** The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.		
4)	**CARE OF WORKS:** From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.		

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5)	The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.		
6)	Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.		
7)	Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.		
8)	The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.		
9)	In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
10)	When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.		
11)	All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.		
12)	The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.		
13)	If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.		
14)	The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.		
15)	The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.		

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Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12.0	**FACTORY ACCEPTANCE TEST (FAT):**		
1)	OIL reserves the right to involve and satisfy itself at each and every stage of testing.		
2)	Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.		
3)	The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.		
4)	Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.		
5)	The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:		
(i)	Checking of Graphics and customization as per our requirement.		
(ii)	Checking of all datasheets and certificates.		
(iii)	Typical wireless configuration of the system.		
(iv)	Panel wiring		

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
13.0	**SITE ACCEPTANCE TEST (SAT):**		
	OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.		
14.0	**WARRANTY/ GUARANTEE:**		
	The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.		
15.0	**TRAINING:**		
	Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.		

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ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
16.0	**SPECIAL NOTES:**		
1)	All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:		
(a)	Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.		
(b)	Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.		
(c)	In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.		

(SIGNATURE COMPANY SEAL OF BIDDER)

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
		BIDDER'S RESPONSE	
		(TO BE FILLED BY THE BIDDER)	
Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
2)	**Penalty clause:**		
	To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a pe-riod of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of noti-fication then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.		
3)	The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		
4)	Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		

(SIGNATURE COMPANY SEAL OF BIDDER)

ANNEXURE-VI (B)

BILL OF MATERIALS

ANNEXURE-VI (B)

LOCATION-WISE BILL OF MATERIAL

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QNTY/ UNIT (B)	TOTAL (A*B)	REMARKS
Jorajan OCS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	2	2	Remote seal type
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	2	2	Remote seal type
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	IH (RTD with Thermwell is reqd)	4	Temperature Transmitter	0-100 Deg C	2	8	(RTD with Thermowell is reqd)
	GU-I	2	Pressure Transmitter	0-50 KG/CM2	1	2	
	ET (RTD with Thermwell is reqd)	1	Pressure Transmitter	0-10 kg/cm2	1	1	
			Temperature Transmitter	0-100 Deg C	1	1	(RTD with Thermowell is reqd)
	HPMS	2	Pressure Transmitter	0-42 kg/cm2	1	2	
	VLPMS	1	Pressure Transmitter	0-5 kg/cm2	1	1	
	LPMS	2	Pressure Transmitter	0-21 kg/cm2	1	2	
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1	
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	LP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	Tank (Crude)	3	Level Transmitter	0-10 meter	1	3	
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1	Remote seal type
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1	
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1	
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT	
			Desktop computer with HM		1 LOT	1 LOT	
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT	

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ANNEXURE-VI

SPECIFICATION OF THE TENDERED ITEM

Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system		
Location	**:**	**NAGAJAN OCS**
Tender Quantity	**:**	**1**
Unit of Measure	**:**	**Lot**
Installation & Commissioning	**:**	**Applicable**
Pre-Dispatch Inspection	**:**	**Applicable**
Training	**:**	**Applicable (1 Day Onsite Training)**
Delivery Period		
(1) Maximum allowable delivery period in months after receipt of Purchase Order for the case of supply	**:**	**36 weeks**
(2) Maximum allowable period to complete Installation and Commissioning of supplied goods upon receipt of communication from Buyer Organisation	**:**	**4 months**

AA) TECHNICAL SPECIFICATIONS

1.0 PREAMBLE

This document together with the attachment defines and covers the guidelines for Design, Engineering, selection of equipment, equipment specification, scope of work, Installation and commissioning requirements complete with all accessories and materials for the supply and installation and commissioning of Wireless Process Monitoring system at location in below Table.

This project has been taken up to replace the old-wired data acquisition system.

Item No	Item Description	Total Qty (In Nos)
1	**Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system at NAGAJAN OCS**	**1 Lot**

Contd ... 2

2.0 LOCATION DETAILS

All the above ten installations are situated at 130 kms radius from Field Head Quarter at Duliajan, Assam. The site is approachable via motor-able roads.

3.0 ENVIRONMENTAL CONDITIONS

The general climatic conditions are as stated below:

(i) Maximum Ambient Temperature 42 DegC
(ii) Minimum Ambient Temperature 7 DegC
(iii) Relative Humidity
(iv) At 21 Deg C : 100 %
(v) At 32 Deg C : 95%
(vi) At 41 Deg C: 70%
(vii) Elevation Above Mean Sea Level: 170 metres
(viii) Seismic Zone: V
(ix) Yearly Average Rainfall: 300 mm

4.0 SCOPE OF OIL INDIA LIMITED SUPPLY

(a) Electrical Power Supply:
Rated voltage: 230 V-AC (± 10%), single (1) phase,
Rated frequency: 50 Hz (± 5 Hz) shall be made available.

5.0 SCOPE OF BIDDERS SUPPLY

1) Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.

2) Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.

3) Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.

4) Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also needs to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.

Contd ... 3

5) Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.

6) Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.

7) Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.

8) Configuration of the supplied system shall be under the bidder's scope.

9) Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.

6.0 DESIGN PHILOSOPHY

1) The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.

2) Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s.Emerson, M/s.E&H, M/s.Vega, M/s.Siemens.

3) Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.

4) For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.

5) Tagging of instruments in SS plates will be in the scope of the bidder.

6) There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.

7) There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.

8) There shall be provision of alarms for process variables.

9) There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.

Contd ... 4

10) There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.

11) There shall be a provision of configuring the transmitters through the supplied PC.

12) The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.

13) The gateway and antennae shall be redundant.

14) The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.

15) The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.

16) Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.

17) Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.

18) The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.

19) The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.

20) SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.

21) The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.

22) Necessary cables (power /signal) shall be of reputed brands.

23) Supply of UPS will be in OIL's scope.

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7.0 DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:

1) Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.
2) Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.
3) The bidder must submit their proposed network architecture during bid submission.
4) Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.

8.0 DETAILED ENGINEERING:

1) Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.
2) Successful bidder shall submit the following documents for approval from Oil India Limited:
a) Architecture of the system.
b) General Arrangement drawing of the wall mounted panel.

Note:
Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.

9.0 TECHNICAL SPECIFICATIONS:

9.1 PRESSURE TRANSMITTER:

1) Type: Wireless Gauge pressure transmitter
2) Make and Model: Bidder to specify.
3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}
4) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH
5) Accuracy: +/- 0.075 % of the span or better
6) Stability: +/- 0.2 % of span for 10 years
7) Rangeability: 50:1 or better
8) Over range protection: 130% of full range
9) Tx. diaphragm & other wetted parts: SS316 or better
10) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3
11) Enclosure: IP 65 rating or better.
12) Local display: Required
13) Process media: Natural Gas

Contd ... 6

14) Process temperature: up to 80 Deg C

15) **Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary upto 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**

16) **Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**

17) Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.

18) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

19) Transmitter output: Wireless

20) Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.

21) Transmitter update rate: Selectable between 10 seconds to 60 minutes.

22) Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

23) Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required.

25) Security: should comply basic industrial standards necessary documents should be provided.

26) Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

27) Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.

9.2 TEMPERATURE TRANSMITTER:

1) Type: Wireless Temperature transmitter

2) Make and Model: Bidder to specify.

3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}

4) Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.

Contd ... 7

5) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH

6) Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.

7) Process media: Natural Gas

8) Process temperature: up to 80 Deg C

9) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3

10) Enclosure: IP 65 rating or better.

11) Local display: Required

12) Cable Entry: ½ in NPT (F)

13) Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting

14) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

15) Transmitter output: Wireless

16) Frequency: 2.4GHz Range (license free ISM Band)

17) Wireless protocol: Wireless HART/ ISA 100.11a

18) Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.

19) Separate Antennae with cable is not acceptable.

20) Transmitter update rate: Selectable between 5 seconds to 60 minutes.

21) Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

22) Transmitter configuration: Local/via gateway over the network

23) Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required

25) Sensor Specification: 3 Wire, Pt-100, Dual Element.

26) Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.

27) Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).

28) Security: Should comply basic industrial standards necessary documents should be provided.

29) Documentation: Necessary documentation for installation, maintenance and trouble-shooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

30) Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.

Contd ... 8

9.3 FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER

1) The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.

2) Make and Model: **Bidder to specify**.

3) The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.

4) Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar

5) Antenna Type : Cone type. / Drip off type

6) Material exposed to Tank atmosphere : SS316L

7) Housing/Enclosure : Suitable for hazardous area.

8) Nozzle connection size & rating (Process Connection) :
Flanged 4" NB, 150 Class, SS316L

9) Nozzle length : Up to 15 cms.

10) Service : Crude Oil (hydrocarbon based)

11) Mounting : Tank Top

12) Ingress Protection : IP65 Minimum

13) Area classification : Zone-1, IIA/IIB, T3

14) Measuring Range : 0-10 metres

15) Instrument Accuracy : ±2 mm

16) Repeatability : + /-1mm

17) Power Supply : 24V DC.

18) Power Consumption : < 1.5 W

19) Outputs : HART 4-20mA

20) Cable Entry : 1/2" NPT(F)

21) Lightning Protection : To be provided.

22) Accessories to be supplied :

(a) Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.

(b) Canopy for the Radar transmitter.

(c) One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.

(d) Field junction box (Hazardous area approved) for cable as per requirement.

Note:

The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.

Contd ... 9

9.4 CONTROL CABLE & CABLE TRAY SPECIFICATIONS:

CONDUCTOR:	
Material	: Tinned copper
Cross-sectional area of each core	: 1.5 mm2
No. of cores	: 04 (Four)
No. of strands in each core	: 07 (seven)
Diameter of each strand	: 0.5 mm
Core colour	: Black
Core identification	: White numbering on each core with 50 mm gap between two numbers.
INSULATION:	
Material	: Flame retardant PVC
Thickness	: 0.64 mm (Nominal) Continuous
Temperature rating	: 85 Degree C
Voltage grade	: 500 V
Insulation resistance (Min)	: 20 Mega Ohms/Km at 20 DegC
ARMOURING:	
Material	: Galvanized steel
Magnetic/Non-Magnetic	: Magnetic
Round wire/ Flat strip	: Round wire
SHIELDING:	
Material	: Mylar backed Aluminium foil
Thickness	: 0.0635 mm (63 Micron)
Drain wire (for shield Continuity)	: Required
Material of Drain wire	: Tinned copper
Shielding of individual cores	: Not required
Overall shielding	: Aluminium Mylar screen
OUTER SHEATH:	
Material	: Flame retardant PVC
Thickness (Min.)	: 2.03 mm
Colour	: Black
SIZE:	
Outer diameter	: Not more than 18 mm "
Quantity	**: 12 core cable: 300 metres.** **4 core cable: 3000 metres.**

Contd ... 10

Cable tray

(a) Type: Perforated, hot dip galvanized

(b) Size: As required,16 SWG

(c) Shape of perforation/ hole: Oval shape

(d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise)

(e) Accessories: Coupling plates, nuts, bolts and washers

9.5 LARGE VIDEO SCREEN (LED TV):

1) Type: LED Full HD

2) Speaker: 20 W (02 nos.)

3) HDMI port: 02 nos.

4) USB Port: 01 no.

5) Resolution: 4K Ultra HD (3840 x 2160)

6) Accessories: Wall mounting clamp, Remote with battery etc.

7) Size: Minimum 43”

8) Make and Model: Bidder to specify.

9.6 WIRELESS GATEWAY:

1) Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.

2) Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.

3) Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.

4) Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.

5) Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)

6) Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.

7) Input power supply: 24 V DC

8) Electronic housing / protection: Suitable for safe area, control room installation

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9.7 DESKTOP COMPUTER:

1)	Operating System	: Latest Licensed windows professional version
2)	Processor	: Intel i5 minimum
3)	RAM	: 8 GB minimum
4)	HardDisk	: 500 GB minimum
5)	Antivirus	: 1 year validity
6)	Monitor Screen Size	: 23 inches minimum
7)	Optical Drive	: DVD +/-RW
8)	Ports	: HDMI, Ethernet and USB
9)	Accessories	:

Keyboard, Mouse and good quality of Speakers (these speakers will be used for process alarms)

10.0 INSTALLATION AND COMMISSIONING:

1) Bidder is responsible for dismantling of existing wired instruments at all five installations.

2) Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.

3) Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.

4) Installation and Commissioning job will take place at Nagajan OCS.

5) Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.

6) While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.

7) OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.

8) Laying of signal / power cables through trench / trays will be in bidder's scope.

9) OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.

10) The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.

11.0 NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES

1) Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.

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2) The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.

3) NUISANCE: - The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.

4) CARE OF WORKS: - From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.

5) The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.

6) Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.

7) Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.

8) The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.

9) In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.

10) When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.

11) All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.

12) The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.

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13) If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.

14) The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.

15) The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.

12.0 FACTORY ACCEPTANCE TEST (FAT):

1) OIL reserves the right to involve and satisfy itself at each and every stage of testing.

2) Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.

3) The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.

4) Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.

5) The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:

(i) Checking of Graphics and customization as per our requirement.

(ii) Checking of all datasheets and certificates.

(iii) Typical wireless configuration of the system.

(iv) Panel wiring

13.0 SITE ACCEPTANCE TEST (SAT):

OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.

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14.0 WARRANTY/ GUARANTEE:

The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.

15.0 TRAINING:

Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.

16.0 SPECIAL NOTES:

1) All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:

(a) Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.

(b) Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.

(c) In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.

2) Penalty clause:

To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a period of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of notification then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.

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3) The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

4) Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
3.0	**ENVIRONMENTAL CONDITIONS**		
	The general climatic conditions are as stated below:		
(i)	Maximum Ambient Temperature 42 DegC		
(ii)	Minimum Ambient Temperature 7 DegC		
(iii)	Relative Humidity		
(iv)	At 21 Deg C : 100 %		
(v)	At 32 Deg C : 95%		
(vi)	At 41 Deg C: 70%		
(vii)	Elevation Above Mean Sea Level: 170 metres		
(viii)	Seismic Zone: V		
(ix)	Yearly Average Rainfall: 300 mm		

4.0	**SCOPE OF OIL INDIA LIMITED SUPPLY**		
(a)	**Electrical Power Supply:**		
	Rated voltage: 230 V-AC (± 10%), single (1) phase,		
	Rated frequency: 50 Hz (± 5 Hz) shall be made available.		

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5.0	**SCOPE OF BIDDERS SUPPLY**		
1)	Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.		
2)	Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.		
3)	Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.		
4)	Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also need to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.		
5)	Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.		
6)	Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.		

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Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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7)	Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.		
8)	Configuration of the supplied system shall be under the bidder's scope.		
9)	Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.		

6.0	**DESIGN PHILOSOPHY**		
1)	The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.		
2)	Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s Emerson, M/s E&H, M/s Vega, M/s Siemens.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.		
4)	For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.		
5)	Tagging of instruments in SS plates will be in the scope of the bidder.		
6)	There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.		
7)	There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.		
8)	There shall be provision of alarms for process variables.		
9)	There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.		
10)	There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.		
11)	There shall be a provision of configuring the transmitters through the supplied PC.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12)	The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.		
13)	The gateway and antennae shall be redundant.		
14)	The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.		
15)	The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.		
16)	Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
17)	Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.		
18)	The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.		
19)	The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.		
20)	SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.		
21)	The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.		
22)	Necessary cables (power /signal) shall be of reputed brands.		
23)	Supply of UPS will be in OIL's scope.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
7.0	**DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:**		
1)	Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.		
2)	Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.		
3)	The bidder must submit their proposed network architecture during bid submission.		
4)	Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.		

8.0	**DETAILED ENGINEERING:**		
1)	Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.		
2)	Successful bidder shall submit the following documents for approval from Oil India Limited:		
(a)	Architecture of the system.		
(b)	General Arrangement drawing of the wall mounted panel.		
	Note: Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.		

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9.0	**TECHNICAL SPECIFICATIONS:**		
9.1	**PRESSURE TRANSMITTER:**		
1)	Type: Wireless Gauge pressure transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}		
4)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
5)	Accuracy: +/- 0.075 % of the span or better		
6)	Stability: +/- 0.2 % of span for 10 years		
7)	Rangeability: 50:1 or better		
8)	Over range protection: 130% of full range		
9)	Tx. diaphragm & other wetted parts: SS316 or better		
10)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		
11)	Enclosure: IP 65 rating or better.		
12)	Local display: Required		
13)	Process media: Natural Gas		
14)	Process temperature: up to 80 Deg C		
15)	**Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary up-to 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**		

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Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
16)	**Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**		
17)	Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.		
18)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
19)	Transmitter output: Wireless		
20)	Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.		
21)	Transmitter update rate: Selectable between 10 seconds to 60 minutes.		
22)	Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
23)	Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.		
24)	Self-diagnostic: Required.		

(SIGNATURE COMPANY SEAL OF BIDDER)

Oil India Limited
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Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
25)	Security: should comply basic industrial standards necessary documents should be provided.		
26)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
27)	Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.		

9.2	**TEMPERATURE TRANSMITTER:**		
1)	Type: Wireless Temperature transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B) {Refer Bill of Materials}**		
4)	Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.		
5)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
6)	Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.		
7)	Process media: Natural Gas		
8)	Process temperature: up to 80 Deg C		
9)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		

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ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
10)	Enclosure: IP 65 rating or better.		
11)	Local display: Required		
12)	Cable Entry: ½ in NPT (F)		
13)	Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting		
14)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
15)	Transmitter output: Wireless		
16)	Frequency: 2.4GHz Range (license free ISM Band)		
17)	Wireless protocol: Wireless HART/ ISA 100.11a		
18)	Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.		
19)	Separate Antennae with cable is not acceptable.		
20)	Transmitter update rate: Selectable between 5 seconds to 60 minutes.		
21)	Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
22)	Transmitter configuration: Local/via gateway over the network		
23)	Device programming: Tx to have capability to work both as input device and repeater.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
24)	Self-diagnostic: Required		
25)	Sensor Specification: 3 Wire, Pt-100, Dual Element.		
26)	Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.		
27)	Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).		
28)	Security: Should comply basic industrial standards necessary documents should be provided.		
29)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
30)	Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.		

9.3	**FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER**		
1)	The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.		
2)	Make and Model: **Bidder to specify**.		

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3)	The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.		
4)	Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar		
5)	Antenna Type : Cone type. / Drip off type		
6)	Material exposed to Tank atmosphere : SS316L		
7)	Housing/Enclosure : Suitable for hazardous area		
8)	Nozzle connection size & rating (Process Connection) : Flanged 4" NB, 150 Class, SS316L		
9)	Nozzle length : Up to 15 cms.		
10)	Service : Crude Oil (hydrocarbon based)		
11)	Mounting: Tank Top		
12)	Ingress Protection : IP65 Minimum		
13)	Area classification : Zone-1, IIA/IIB, T3		
14)	Measuring Range : 0-10 metres		
15)	Instrument Accuracy : ±2 mm		
16)	Repeatability :+ /-1mm		
17)	Power Supply :24Vdc.		
18)	Power Consumption :< 1.5 W		
19)	Outputs:		
20)	Cable Entry		
21)	Lightning Protection: To be provided.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
22)	Accessories to be supplied:		
(a)	Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.		
(b)	Canopy for the Radar transmitter.		
(c)	One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.		
(d)	Field junction box (Hazardous area approved) for cable as per requirement.		
	Note: The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.		

9.4	**CONTROL CABLE & CABLE TRAY SPECIFICATIONS:**		
	CONDUCTOR:		
	Material: Tinned copper Cross-sectional area of each core: 1.5 mm2 No. of cores: 04 (Four) No. of strands in each core: 07 (seven) Diameter of each strand: 0.5 mm Core colour: Black Core identification: White numbering on each core with 50 mm gap between two numbers.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
	INSULATION:		
	Material : Flame retardant PVC Thickness : 0.64 mm (Nominal) Continuous Temperature rating : 85 Degree C Voltage grade : 500 V Insulation resistance (Min) : 20 Mega Ohms/Km at 20 DegC		
	ARMOURING:		
	Material□Galvanized steel Magnetic/Non-Magnetic□Magnetic Round wire/ Flat strip□Round wire		
	SHIELDING:		
	Material□Mylar backed Aluminium foil Thickness□0.0635 mm (63 Micron) Drain wire (for shield Continuity)□Required Material of Drain wire□Tinned copper Shielding of individual cores□Not required Overall shielding□Aluminium Mylar screen		
	OUTER SHEATH:		
	Material□Flame retardant PVC Thickness (Min.)□2.03 mm Colour□Black		
	SIZE:		
	Outer diameter : Not more than 18 mm " Quantity: 12 core cable: 300 metres. 4 core cable: 3000 metres.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
	Cable tray		
	(a) Type: Perforated, hot dip galvanized (b) Size: As required,16 SWG (c) Shape of perforation/ hole: Oval shape (d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise) (e) Accessories: Coupling plates, nuts, bolts and washers		

9.5	**LARGE VIDEO SCREEN (LED TV):**		
1)	Type: LED Full HD		
2)	Speaker: 20 W (02 nos.)		
3)	HDMI port: 02 nos.		
4)	USB Port: 01 no.		
5)	Resolution: 4K Ultra HD (3840 x 2160)		
6)	Accessories: Wall mounting clamp, Remote with battery etc.		
7)	Size: Minimum 43"		
8)	Make and Model: Bidder to specify.		

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9.6	**WIRELESS GATEWAY:**		
1)	Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.		
2)	Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.		
3)	Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.		
4)	Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.		
5)	Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)		
6)	Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.		
7)	Input power supply: 24 V DC		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
8)	Electronic housing / protection: Suitable for safe area, control room installation		

9.7	**DESKTOP COMPUTER:**		
1)	Operating System: Latest Licensed windows professional version		
2)	Processor: Intel i5 minimum		
3)	RAM: 8 GB minimum		
4)	HardDisk: 500 GB minimum		
5)	Antivirus: 1 year validity		
6)	Monitor Screen Size: 23 inches minimum		
7)	Optical Drive: DVD +/-RW		
8)	Ports: HDMI, Ethernet and USB		
9)	Accessories: Keyboard, Mouse and good quality of Speakers (this speakers will be used for process alarms)		

10.0	**INSTALLATION AND COMMISSIONING:**		
1)	Bidder is responsible for dismantling of existing wired instruments at all five installations.		
2)	Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.		
3)	Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.		
4)	Installation and Commissioning job will take place at **NAGAJAN OCS.**		

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5)	Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.		
6)	While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.		
7)	OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.		
8)	Laying of signal / power cables through trench / trays will be in bidder's scope.		
9)	OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.		
10)	The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.		

11.0	**NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES**		
1)	Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.		
2)	The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.		

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3)	**NUISANCE:** The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.		
4)	**CARE OF WORKS:** From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.		

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5)	The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.		
6)	Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.		
7)	Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.		
8)	The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.		
9)	In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.		

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10)	When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.		
11)	All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.		
12)	The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.		
13)	If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.		
14)	The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.		
15)	The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.		

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12.0	**FACTORY ACCEPTANCE TEST (FAT):**		
1)	OIL reserves the right to involve and satisfy itself at each and every stage of testing.		
2)	Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.		
3)	The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.		
4)	Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.		
5)	The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:		
(i)	Checking of Graphics and customization as per our requirement.		
(ii)	Checking of all datasheets and certificates.		
(iii)	Typical wireless configuration of the system.		
(iv)	Panel wiring		

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13.0	**SITE ACCEPTANCE TEST (SAT):**		
	OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.		
14.0	**WARRANTY/ GUARANTEE:**		
	The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.		
15.0	**TRAINING:**		
	Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.		

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16.0	**SPECIAL NOTES:**		
1)	All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:		
(a)	Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.		
(b)	Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.		
(c)	In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.		

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		(TO BE FILLED BY THE BIDDER)	
Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
2)	**Penalty clause:**		
	To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a pe-riod of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of noti-fication then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.		
3)	The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		
4)	Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		

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ANNEXURE-VI (B)

BILL OF MATERIALS

ANNEXURE-VI (B)

LOCATION-WISE BILL OF MATERIAL

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QNTY/ UNIT (B)	TOTAL (A*B)	REMARKS
Nagajan OCS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	1	1	Remote seal type
	HP Manifold	0	Pressure Transmitter	0-60 kg/cm2	1	0	Remote seal type
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	TU-II	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	IH	3	Temperature Transmitter	0-100 Deg C	1	3	(RTD with Thermowell is reqd)
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1	
			Temperature Transmitter	0-100 Deg C	1	1	(RTD with Thermowell is reqd)
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1	
	VLPMS	1	Pressure Transmitter	0-5 kg/cm2	1	1	
	LPMS	1	Pressure Transmitter	0-21 kg/cm2	1	1	
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	TPS	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1	
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	LP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	Tank (Crude)	3	Level Transmitter	0-10 meter	1	3	
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1	Remote seal type
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1	
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1	
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT	
			Desktop computer with HM		1 LOT	1 LOT	
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT	

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI

SPECIFICATION OF THE TENDERED ITEM

Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system		
Location	**:**	**BHEKULAJAN EPS**
Tender Quantity	**:**	**1**
Unit of Measure	**:**	**Lot**
Installation & Commissioning	**:**	**Applicable**
Pre-Dispatch Inspection	**:**	**Applicable**
Training	**:**	**Applicable (1 Day Onsite Training)**
Delivery Period		
(1) Maximum allowable delivery period in months after receipt of Purchase Order for the case of supply	**:**	**36 weeks**
(2) Maximum allowable period to complete Installation and Commissioning of supplied goods upon receipt of communication from Buyer Organisation	**:**	**4 months**

AA) TECHNICAL SPECIFICATIONS

1.0 PREAMBLE

This document together with the attachment defines and covers the guidelines for Design, Engineering, selection of equipment, equipment specification, scope of work, Installation and commissioning requirements complete with all accessories and materials for the supply and installation and commissioning of Wireless Process Monitoring system at location in below Table.

This project has been taken up to replace the old-wired data acquisition system.

Item No	Item Description	Total Qty (In Nos)
1	**Design, Engineering, Supply of all materials and accessories along with Installation and commissioning of Wireless Process Monitoring system at BHEKULAJAN EPS**	**1 Lot**

Contd ... 2

2.0 LOCATION DETAILS

All the above ten installations are situated at 130 kms radius from Field Head Quarter at Duliajan, Assam. The site is approachable via motor-able roads.

3.0 ENVIRONMENTAL CONDITIONS

The general climatic conditions are as stated below:

(i) Maximum Ambient Temperature 42 DegC
(ii) Minimum Ambient Temperature 7 DegC
(iii) Relative Humidity
(iv) At 21 Deg C : 100 %
(v) At 32 Deg C : 95%
(vi) At 41 Deg C: 70%
(vii) Elevation Above Mean Sea Level: 170 metres
(viii) Seismic Zone: V
(ix) Yearly Average Rainfall: 300 mm

4.0 SCOPE OF OIL INDIA LIMITED SUPPLY

(a) Electrical Power Supply:
Rated voltage: 230 V-AC (± 10%), single (1) phase,
Rated frequency: 50 Hz (± 5 Hz) shall be made available.

5.0 SCOPE OF BIDDERS SUPPLY

1) Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.

2) Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.

3) Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.

4) Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also needs to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.

Contd ... 3

5) Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.

6) Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.

7) Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.

8) Configuration of the supplied system shall be under the bidder's scope.

9) Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.

6.0 DESIGN PHILOSOPHY

1) The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.

2) Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s.Emerson, M/s.E&H, M/s.Vega, M/s.Siemens.

3) Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.

4) For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.

5) Tagging of instruments in SS plates will be in the scope of the bidder.

6) There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.

7) There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.

8) There shall be provision of alarms for process variables.

9) There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.

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10) There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.

11) There shall be a provision of configuring the transmitters through the supplied PC.

12) The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.

13) The gateway and antennae shall be redundant.

14) The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.

15) The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.

16) Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.

17) Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.

18) The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.

19) The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.

20) SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.

21) The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.

22) Necessary cables (power /signal) shall be of reputed brands.

23) Supply of UPS will be in OIL's scope.

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7.0 DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:

1) Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.
2) Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.
3) The bidder must submit their proposed network architecture during bid submission.
4) Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.

8.0 DETAILED ENGINEERING:

1) Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.
2) Successful bidder shall submit the following documents for approval from Oil India Limited:
a) Architecture of the system.
b) General Arrangement drawing of the wall mounted panel.

Note:

Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.

9.0 TECHNICAL SPECIFICATIONS:

9.1 PRESSURE TRANSMITTER:

1) Type: Wireless Gauge pressure transmitter
2) Make and Model: Bidder to specify.
3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}
4) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH
5) Accuracy: +/- 0.075 % of the span or better
6) Stability: +/- 0.2 % of span for 10 years
7) Rangeability: 50:1 or better
8) Over range protection: 130% of full range
9) Tx. diaphragm & other wetted parts: SS316 or better
10) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3
11) Enclosure: IP 65 rating or better.
12) Local display: Required
13) Process media: Natural Gas

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14) Process temperature: up to 80 Deg C

15) **Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary upto 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**

16) **Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**

17) Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.

18) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

19) Transmitter output: Wireless

20) Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.

21) Transmitter update rate: Selectable between 10 seconds to 60 minutes.

22) Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

23) Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required.

25) Security: should comply basic industrial standards necessary documents should be provided.

26) Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

27) Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.

9.2 TEMPERATURE TRANSMITTER:

1) Type: Wireless Temperature transmitter

2) Make and Model: Bidder to specify.

3) Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}

4) Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.

Contd ... 7

5) Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH

6) Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.

7) Process media: Natural Gas

8) Process temperature: up to 80 Deg C

9) Area Classification Certification: In accordance with OMR- 2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3

10) Enclosure: IP 65 rating or better.

11) Local display: Required

12) Cable Entry: ½ in NPT (F)

13) Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting

14) Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.

15) Transmitter output: Wireless

16) Frequency: 2.4GHz Range (license free ISM Band)

17) Wireless protocol: Wireless HART/ ISA 100.11a

18) Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.

19) Separate Antennae with cable is not acceptable.

20) Transmitter update rate: Selectable between 5 seconds to 60 minutes.

21) Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.

22) Transmitter configuration: Local/via gateway over the network

23) Device programming: Tx to have capability to work both as input device and repeater.

24) Self-diagnostic: Required

25) Sensor Specification: 3 Wire, Pt-100, Dual Element.

26) Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.

27) Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).

28) Security: Should comply basic industrial standards necessary documents should be provided.

29) Documentation: Necessary documentation for installation, maintenance and trouble-shooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.

30) Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.

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9.3 FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER

1) The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.

2) Make and Model: **Bidder to specify**.

3) The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.

4) Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar

5) Antenna Type : Cone type. / Drip off type

6) Material exposed to Tank atmosphere : SS316L

7) Housing/Enclosure : Suitable for hazardous area.

8) Nozzle connection size & rating (Process Connection) :
Flanged 4" NB, 150 Class, SS316L

9) Nozzle length : Up to 15 cms.

10) Service : Crude Oil (hydrocarbon based)

11) Mounting : Tank Top

12) Ingress Protection : IP65 Minimum

13) Area classification : Zone-1, IIA/IIB, T3

14) Measuring Range : 0-10 metres

15) Instrument Accuracy : ±2 mm

16) Repeatability : + /-1mm

17) Power Supply : 24V DC.

18) Power Consumption : < 1.5 W

19) Outputs : HART 4-20mA

20) Cable Entry : 1/2" NPT(F)

21) Lightning Protection : To be provided.

22) Accessories to be supplied :

(a) Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.

(b) Canopy for the Radar transmitter.

(c) One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.

(d) Field junction box (Hazardous area approved) for cable as per requirement.

Note:

The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.

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9.4 CONTROL CABLE & CABLE TRAY SPECIFICATIONS:

CONDUCTOR:	
Material	: Tinned copper
Cross-sectional area of each core	: 1.5 mm2
No. of cores	: 04 (Four)
No. of strands in each core	: 07 (seven)
Diameter of each strand	: 0.5 mm
Core colour	: Black
Core identification	: White numbering on each core with 50 mm gap between two numbers.
INSULATION:	
Material	: Flame retardant PVC
Thickness	: 0.64 mm (Nominal) Continuous
Temperature rating	: 85 Degree C
Voltage grade	: 500 V
Insulation resistance (Min)	: 20 Mega Ohms/Km at 20 DegC
ARMOURING:	
Material	: Galvanized steel
Magnetic/Non-Magnetic	: Magnetic
Round wire/ Flat strip	: Round wire
SHIELDING:	
Material	: Mylar backed Aluminium foil
Thickness	: 0.0635 mm (63 Micron)
Drain wire (for shield Continuity)	: Required
Material of Drain wire	: Tinned copper
Shielding of individual cores	: Not required
Overall shielding	: Aluminium Mylar screen
OUTER SHEATH:	
Material	: Flame retardant PVC
Thickness (Min.)	: 2.03 mm
Colour	: Black
SIZE:	
Outer diameter	: Not more than 18 mm "
Quantity	**: 12 core cable: 300 metres.** **4 core cable: 3000 metres.**

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Cable tray

(a) Type: Perforated, hot dip galvanized

(b) Size: As required,16 SWG

(c) Shape of perforation/ hole: Oval shape

(d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise)

(e) Accessories: Coupling plates, nuts, bolts and washers

9.5 LARGE VIDEO SCREEN (LED TV):

1) Type: LED Full HD

2) Speaker: 20 W (02 nos.)

3) HDMI port: 02 nos.

4) USB Port: 01 no.

5) Resolution: 4K Ultra HD (3840 x 2160)

6) Accessories: Wall mounting clamp, Remote with battery etc.

7) Size: Minimum 43”

8) Make and Model: Bidder to specify.

9.6 WIRELESS GATEWAY:

1) Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.

2) Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.

3) Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.

4) Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.

5) Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)

6) Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.

7) Input power supply: 24 V DC

8) Electronic housing / protection: Suitable for safe area, control room installation

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9.7 DESKTOP COMPUTER:

1)	Operating System	: Latest Licensed windows professional version
2)	Processor	: Intel i5 minimum
3)	RAM	: 8 GB minimum
4)	HardDisk	: 500 GB minimum
5)	Antivirus	: 1 year validity
6)	Monitor Screen Size	: 23 inches minimum
7)	Optical Drive	: DVD +/-RW
8)	Ports	: HDMI, Ethernet and USB
9)	Accessories	:

Keyboard, Mouse and good quality of Speakers (these speakers will be used for process alarms)

10.0 INSTALLATION AND COMMISSIONING:

1) Bidder is responsible for dismantling of existing wired instruments at all five installations.

2) Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.

3) Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.

4) Installation and Commissioning job will take place at Bhekulajan EPS.

5) Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.

6) While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.

7) OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.

8) Laying of signal / power cables through trench / trays will be in bidder's scope.

9) OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.

10) The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.

11.0 NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES

1) Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.

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2) The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.

3) NUISANCE: - The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.

4) CARE OF WORKS: - From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.

5) The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.

6) Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.

7) Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.

8) The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.

9) In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.

10) When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.

11) All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.

12) The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.

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13) If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.

14) The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.

15) The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.

12.0 FACTORY ACCEPTANCE TEST (FAT):

1) OIL reserves the right to involve and satisfy itself at each and every stage of testing.

2) Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.

3) The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.

4) Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.

5) The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:

(i) Checking of Graphics and customization as per our requirement.

(ii) Checking of all datasheets and certificates.

(iii) Typical wireless configuration of the system.

(iv) Panel wiring

13.0 SITE ACCEPTANCE TEST (SAT):

OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.

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14.0 WARRANTY/ GUARANTEE:

The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.

15.0 TRAINING:

Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.

16.0 SPECIAL NOTES:

1) All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:

(a) Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.

(b) Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.

(c) In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.

2) Penalty clause:

To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a period of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of notification then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.

Contd ... 15

3) The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

4) Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
3.0	**ENVIRONMENTAL CONDITIONS**		
	The general climatic conditions are as stated below:		
(i)	Maximum Ambient Temperature 42 DegC		
(ii)	Minimum Ambient Temperature 7 DegC		
(iii)	Relative Humidity		
(iv)	At 21 Deg C : 100 %		
(v)	At 32 Deg C : 95%		
(vi)	At 41 Deg C: 70%		
(vii)	Elevation Above Mean Sea Level: 170 metres		
(viii)	Seismic Zone: V		
(ix)	Yearly Average Rainfall: 300 mm		

4.0	**SCOPE OF OIL INDIA LIMITED SUPPLY**		
(a)	**Electrical Power Supply:**		
	Rated voltage: 230 V-AC (± 10%), single (1) phase,		
	Rated frequency: 50 Hz (± 5 Hz) shall be made available.		

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5.0	**SCOPE OF BIDDERS SUPPLY**		
1)	Bidder shall be responsible for the design and supply of the complete system including but not limited to the selection and supply of transmitters of appropriate ranges, selection and supply of gateways and repeaters to achieve redundancy of communication paths, selection of additional instruments and equipment to meet the functionality specified in the specification document.		
2)	Bidder shall supply suitable power supply to power the gateway through suitably sized SMPS.		
3)	Bidder shall supply the suitably sized wall mounted panel which will house the power supply for the gateways and network switches. Bidder shall also supply all the accessories needed to mount the panel on the wall. Make of the panel shall be of Rittal / Hoffman / R. Sthal.		
4)	Bidder shall supply Frequency Modulated Continuous Wave (FMCW) based non-contact type Radar Level Transmitters as per attached Bill of materials. The bidder also need to supply HART to wireless adapter so that the wired level transmitter can be accommodated in the wireless environment.		
5)	Bidder shall supply all the necessary cables to meet the functionality specified in the specification document.		
6)	Bidder shall supply all the necessary tubing and fittings to meet the functionality specified in the specification document.		

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7)	Bidder shall be responsible for the complete installation and commissioning of the supplied wireless process monitoring system at location mentioned in the table at point no.1 above. The scope of installation and commissioning shall include physical installation of transmitters, gateways, antennae, repeaters (if any) and any other components of the wireless process monitoring system including PC, large video screen (TV), network switches and wall mounted panel etc.		
8)	Configuration of the supplied system shall be under the bidder's scope.		
9)	Proper functioning of the supplied system as per the design philosophy shall be bidder's responsibility and bidder has to supply any other component required to meet functionality specified in the design philosophy.		

6.0	**DESIGN PHILOSOPHY**		
1)	The system designed shall be complete in all respect to measure the pressure of various vessels in KG/cm2 and temperature in Deg C and level of crude oil storage tanks in meters.		
2)	Level transmitters (LT) shall be installed at crude oil storage tanks. The LT shall be suitable for mount on 4" x 150 Class nozzle. The bidder shall also provide tank side indicator for each of the LTs. Laying of cables through trench /tray from the control room / operator's room to the LT will be in bidder's scope. Preferred make of level transmitters shall be of M/s Emerson, M/s E&H, M/s Vega, M/s Siemens.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	Bidders may visit the site before bid submission for correct estimation of the insertion length of temperature probes, requirement of impulse tubings, isolation valves etc.		
4)	For installation of pressure transmitters, the existing process connection is ½ " NPTF. Necessary needle valve (SS make) shall be in the scope of the bidder.		
5)	Tagging of instruments in SS plates will be in the scope of the bidder.		
6)	There shall be a provision to display the measured parameters- pressure, temperature and level on the supplied PC as well as in the large video screen.		
7)	There shall be a provision to display the trends of the measured pressure, temperature and level reading. There shall be facility to access historical trends. Historical trends for each measured value shall be available for minimum of 180 days at 60 seconds sampling rate.		
8)	There shall be provision of alarms for process variables.		
9)	There shall be a provision for remote access of the readings. Bidder shall include the necessary hardware for this functionality in the supplied system.		
10)	There shall be a provision of serial RS485 MODBUS communication from the supplied system to Oil India Limited's existing SCADA. The supplier shall provide the MODBUS address as well as to populate the data in any third-party software like MODSCAN to the full satisfaction of OIL.		
11)	There shall be a provision of configuring the transmitters through the supplied PC.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12)	The supplied PC shall be provided with network manager for configuration of the network, scheduling communication between wireless devices, device communication routing and network diagnostics to monitor and report.		
13)	The gateway and antennae shall be redundant.		
14)	The system supplied shall be scalable up to minimum of 20 numbers of additional measuring devices without adding gateway at later stage and shall be expandable to accommodate future wireless field instrument of the same protocol.		
15)	The wireless field devices must be microprocessor based with the capability to perform basic sensor diagnostics. Wireless transmitters should include an LCD that displays the process variable and other relevant status signals. Transmitter's transmit rate shall be user selectable and configurable between 1sec to 60 sec or more. Every field device can have different transmit rate configured as per requirement.		
16)	Wireless network shall be a two way communication link operating in the 2.4GHz ISM band. Network shall be purely wireless and no cable work will be allowed at field instruments to complete the network and proper functioning of the field devices. However, Level transmitters may be connected to the system via cables and adapters.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
17)	Wireless network shall be secure, robust and password protected. The wireless devices shall be located and installed in such a way that continuous communication with gateway is established. Supplier shall ensure redundant path of communication from each device to gateway. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice-versa and there should not be any requirement of human interference for the same.		
18)	The system shall have the necessary encryption to communicate only with the device configured in the network and avoid interference from other nearby wireless devices which are not configured in the same network.		
19)	The cable used to connect the antennae to the gateway shall be routed through suitable good quality conduit supplied by the bidder providing adequate protection to the cables.		
20)	SS tubing and SS fittings shall be used of Swagelok, Parker, Hoke, DK-Loc, Fittok, Hylok or Sandvik make.		
21)	The gateway shall have detachable antennae. It shall be installed in a safe area within the control room and the antennae shall be installed outside in such a way to get the proper line of sight.		
22)	Necessary cables (power /signal) shall be of reputed brands.		
23)	Supply of UPS will be in OIL's scope.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
7.0	**DOCUMENTS TO BE SUBMITTED ALONG WITH THE BID:**		
1)	Tentative Bill of Materials to meet the scope specified in the specification document. Reference BOM has been attached as **Annexure-VI (B)** and this list is not exhaustive.		
2)	Filled up BEC BRC **(Annexure-VIII)** & technical check-sheet attached as **Annexure-VI (A)**.		
3)	The bidder must submit their proposed network architecture during bid submission.		
4)	Datasheets of the gateway, repeater, antennae, wireless adapter, level transmitter, pressure transmitter, temperature transmitter and large video screen.		

8.0	**DETAILED ENGINEERING:**		
1)	Successful bidder shall visit the site to gauge the actual requirement before starting detailed engineering.		
2)	Successful bidder shall submit the following documents for approval from Oil India Limited:		
(a)	Architecture of the system.		
(b)	General Arrangement drawing of the wall mounted panel.		
	Note: Representatives from OIL may visit the successful bidder's premise for document approval and configuring the HMI as per their requirement. OIL shall bear the cost towards travelling and accommodation of their representative.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
9.0	**TECHNICAL SPECIFICATIONS:**		
9.1	**PRESSURE TRANSMITTER:**		
1)	Type: Wireless Gauge pressure transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B)** {**Refer Bill of Materials**}		
4)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
5)	Accuracy: +/- 0.075 % of the span or better		
6)	Stability: +/- 0.2 % of span for 10 years		
7)	Rangeability: 50:1 or better		
8)	Over range protection: 130% of full range		
9)	Tx. diaphragm & other wetted parts: SS316 or better		
10)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		
11)	Enclosure: IP 65 rating or better.		
12)	Local display: Required		
13)	Process media: Natural Gas		
14)	Process temperature: up to 80 Deg C		
15)	**Process Connection for flow line PT: ½" NPT(F) with remote seal and capillary up-to 5 metres. The connection may include vent/ flush ports as applicable. Makes of remote seal shall be of OEM / Badotherm / Wika.**		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
16)	**Process Connection for process vessel PT: ½" NPT(F). Connection may include vent/flush ports as applicable.**		
17)	Mounting bracket: (304 SS) with plate and nuts for 2-inch pipe mounting. Transmitter shall be provided with 2-valve manifold. The process and vent/drain shall be provided with 1/2" OD double compression type fittings.		
18)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
19)	Transmitter output: Wireless		
20)	Wireless protocol: Wireless HART/ ISA 100.11a Frequency: 2.4GHz Range (license free ISM Band) Antenna: Internal within the Sensor Housing/ Integrally mounted/ Integral threaded type antenna with transmitter. Separate Antenna with cable is not acceptable.		
21)	Transmitter update rate: Selectable between 10 seconds to 60 minutes.		
22)	Network: Wireless network, must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
23)	Transmitter configuration: Local/via gateway over the network Device programming: Tx to have capability to work both as input device and repeater.		
24)	Self-diagnostic: Required.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
25)	Security: should comply basic industrial standards necessary documents should be provided.		
26)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
27)	Accessories: Bidder shall provide mounting accessories for 2 inch pipe and suitable 2 valve SS Manifold. The approved makes of manifold shall be the same make as that of the transmitter / M/s Micro Precision / M/s Wika / M/s General Instruments.		

9.2	**TEMPERATURE TRANSMITTER:**		
1)	Type: Wireless Temperature transmitter		
2)	Make and Model: Bidder to specify.		
3)	Range: As per **Annexure-VI (B) {Refer Bill of Materials}**		
4)	Input type: Input type should be selectable: Thermocouples, 3/ 4-wire RTDs.		
5)	Ambient temperature & Humidity: 0 to 60 Deg C & 50 to 99% RH		
6)	Accuracy: +/-0.5 Deg Celsius(Digital Accuracy) for PT100 RTD Input at 20 °C reference condition.		
7)	Process media: Natural Gas		
8)	Process temperature: up to 80 Deg C		
9)	Area Classification Certification: In accordance with OMR-2017 Guidelines for use in Zone-2 Gr. IIA/IIB, T3		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
10)	Enclosure: IP 65 rating or better.		
11)	Local display: Required		
12)	Cable Entry: ½ in NPT (F)		
13)	Mounting bracket: (304 SS) with plate and nuts for 2-inch NB pipe mounting		
14)	Transmitter power: Transmitter to be supplied with easy to replace battery. With an update time of 1min, required battery life is min. 7 years or more with devices configured as I/O + Repeaters or visa-vis for seamless communication. Any additional Battery to serve this requirement shall be offered by vendor in their BOM.		
15)	Transmitter output: Wireless		
16)	Frequency: 2.4GHz Range (license free ISM Band)		
17)	Wireless protocol: Wireless HART/ ISA 100.11a		
18)	Antenna type: Internal within the Sensor Housing/ integrally mounted/ integral threaded type antennae with transmitter.		
19)	Separate Antennae with cable is not acceptable.		
20)	Transmitter update rate: Selectable between 5 seconds to 60 minutes.		
21)	Network: Wireless network must be field configurable in star or mesh or combination of both topologies based on site requirement. Freely Configurable as IO or Repeater or IO+ Repeater or in Auto mode.		
22)	Transmitter configuration: Local/via gateway over the network		
23)	Device programming: Tx to have capability to work both as input device and repeater.		

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		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
24)	Self-diagnostic: Required		
25)	Sensor Specification: 3 Wire, Pt-100, Dual Element.		
26)	Thermowell Specification: SS 316 Material, Solid Drilled and Tapered construction.		
27)	Thermowell Insertion length: Thermowell Insertion length: 150 mm (process connection: 1" NPTM; TE connection: ½" NPTM).		
28)	Security: Should comply basic industrial standards necessary documents should be provided.		
29)	Documentation: Necessary documentation for installation, maintenance and troubleshooting to be provided. Calibration certificate, IP Protection Certificate, Hazardous Area Classification certificate, Material Certificates to 3.1 as per EN10204, etc. need to be provided at the time of delivery.		
30)	Accessories: FLP cable glands (as applicable), Thermowell and temperature sensor (thermocouple/ RTD as applicable), mounting accessories for 2-inch pipe.		

9.3	**FMCW BASED NON-CONTACT TYPE RADAR LEVEL TRANSMITTER**		
1)	The transmitter shall be microprocessor based smart type. The transmitter shall incorporate a non-volatile memory, which shall store complete configuration data of the transmitter. All necessary signal conversions, including conversion to produce output with the required protocol shall be carried out in the transmitter electronics.		
2)	Make and Model: **Bidder to specify**.		

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3)	The instrument shall be top mounted on the vessel on a flange of size 4" NB, 150 Class, SS316L and the Instrument Flange shall be supplied by the Bidder.		
4)	Operating Principle : Frequency Modulated Continuous Wave (FMCW) Radar		
5)	Antenna Type : Cone type. / Drip off type		
6)	Material exposed to Tank atmosphere : SS316L		
7)	Housing/Enclosure : Suitable for hazardous area		
8)	Nozzle connection size & rating (Process Connection) : Flanged 4" NB, 150 Class, SS316L		
9)	Nozzle length : Up to 15 cms.		
10)	Service : Crude Oil (hydrocarbon based)		
11)	Mounting: Tank Top		
12)	Ingress Protection : IP65 Minimum		
13)	Area classification : Zone-1, IIA/IIB, T3		
14)	Measuring Range : 0-10 metres		
15)	Instrument Accuracy : ±2 mm		
16)	Repeatability :+ /-1mm		
17)	Power Supply :24Vdc.		
18)	Power Consumption :< 1.5 W		
19)	Outputs:		
20)	Cable Entry		
21)	Lightning Protection: To be provided.		

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22)	Accessories to be supplied:		
(a)	Suitable SS316L instrument flange of Class 150 with studs, nuts & gasket for the Antenna to fit on the top of the tank.		
(b)	Canopy for the Radar transmitter.		
(c)	One Loop Power Indicator (Tank side indicator) with mounting kit to be supplied with each Radar Tank Level gauge which shall be of the same make as that of the transmitter.		
(d)	Field junction box (Hazardous area approved) for cable as per requirement.		
	Note: The supplied Radar transmitter shall be configurable using existing M/s Emerson make Trex communicator.		

9.4	**CONTROL CABLE & CABLE TRAY SPECIFICATIONS:**		
	CONDUCTOR:		
	Material: Tinned copper Cross-sectional area of each core: 1.5 mm2 No. of cores: 04 (Four) No. of strands in each core: 07 (seven) Diameter of each strand: 0.5 mm Core colour: Black Core identification: White numbering on each core with 50 mm gap between two numbers.		

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	INSULATION:		
	Material : Flame retardant PVC Thickness : 0.64 mm (Nominal) Continuous Temperature rating : 85 Degree C Voltage grade : 500 V Insulation resistance (Min) : 20 Mega Ohms/Km at 20 DegC		
	ARMOURING:		
	Material□Galvanized steel Magnetic/Non-Magnetic□Magnetic Round wire/ Flat strip□Round wire		
	SHIELDING:		
	Material□Mylar backed Aluminium foil Thickness□0.0635 mm (63 Micron) Drain wire (for shield Continuity)□Required Material of Drain wire□Tinned copper Shielding of individual cores□Not required Overall shielding□Aluminium Mylar screen		
	OUTER SHEATH:		
	Material□Flame retardant PVC Thickness (Min.)□2.03 mm Colour□Black		
	SIZE:		
	Outer diameter : Not more than 18 mm " Quantity: 12 core cable: 300 metres. 4 core cable: 3000 metres.		

(SIGNATURE COMPANY SEAL OF BIDDER)

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Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VI (A)

TECHNICAL SPECIFICATION EVALUATION MATRIX / TECHNICAL CHECKLIST

(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
	Cable tray		
	(a) Type: Perforated, hot dip galvanized (b) Size: As required,16 SWG (c) Shape of perforation/ hole: Oval shape (d) Gap between two consecutive/ adjacent holes: 8mm (length wise) 20mm (breadth wise) (e) Accessories: Coupling plates, nuts, bolts and washers		

9.5	**LARGE VIDEO SCREEN (LED TV):**		
1)	Type: LED Full HD		
2)	Speaker: 20 W (02 nos.)		
3)	HDMI port: 02 nos.		
4)	USB Port: 01 no.		
5)	Resolution: 4K Ultra HD (3840 x 2160)		
6)	Accessories: Wall mounting clamp, Remote with battery etc.		
7)	Size: Minimum 43"		
8)	Make and Model: Bidder to specify.		

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		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
9.6	**WIRELESS GATEWAY:**		
1)	Type: Gateway shall be with detachable remote antenna mounting for seamless communication. Gateway shall be redundant with maximum change over time of 30 sec. Gateway shall be provided with detachable remote antenna along with cable between gateway and antenna and all accessories. The bidder must mention the maximum distance up-to which the antenna may be extended which should not be less than 20 meters and must supply the extension cable along with the gateway.		
2)	Update rate: Update rate shall be user selectable. Minimum range for selecting update rate shall be 1sec to 1 minute.		
3)	Gateway output: Modbus TCP/IP or as per system requirement and to fulfil the other technical requirement.		
4)	Network: Wireless network communication shall be field configurable to establish star/mesh/ combination of both topologies to optimize the network usage. The communication must have self-healing capability and after failure of some established communication, system must automatically re-establish communication via the redundant paths and vice versa and there should not be any requirement of human interference for the same.		
5)	Protocol: Wireless HART/ ISA 100.11a Frequency: 2.4 GHz range (license free ISM band)		
6)	Security: Should comply basic industrial standards, necessary documents should be provided. Gateway Capacity: The system shall be scalable up-to minimum 20 nos. of input device without any addition of gateway with update rates of max. 16 seconds.		
7)	Input power supply: 24 V DC		

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Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance**
8)	Electronic housing / protection: Suitable for safe area, control room installation		

9.7	**DESKTOP COMPUTER:**		
1)	Operating System: Latest Licensed windows professional version		
2)	Processor: Intel i5 minimum		
3)	RAM: 8 GB minimum		
4)	HardDisk: 500 GB minimum		
5)	Antivirus: 1 year validity		
6)	Monitor Screen Size: 23 inches minimum		
7)	Optical Drive: DVD +/-RW		
8)	Ports: HDMI, Ethernet and USB		
9)	Accessories: Keyboard, Mouse and good quality of Speakers (this speakers will be used for process alarms)		

10.0	**INSTALLATION AND COMMISSIONING:**		
1)	Bidder is responsible for dismantling of existing wired instruments at all five installations.		
2)	Bidder shall be responsible for the physical installation of the field instruments, gateway, wall mounted LVS and PC.		
3)	Bidder shall be responsible for the configuration of the entire system including setting up of Desktop Computer.		
4)	Installation and Commissioning job will take place at **BHEKULAJAN EPS.**		

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5)	Installation and Commissioning charges must be quoted separately (should not be clubbed together with main equipment) on lump sum basis which shall be considered for evaluation of the offers.		
6)	While quoting Installation/Commissioning charges above, bidder should take into account all charges including to and fro fares, boarding/lodging, local transport at Duliajan, Assam other expenses of supplier's personnel during their stay at Duliajan.		
7)	OIL will provide 230 VAC power inside the control room. Rectification to 24 VDC required for gateway, field instruments etc. will be in the bidder's scope.		
8)	Laying of signal / power cables through trench / trays will be in bidder's scope.		
9)	OIL shall intimate the supplier within 15 days of receipt of materials at site for starting installation and commissioning.		
10)	The supplier needs to complete the installation and commissioning job to the full satisfaction of OIL within four months from the date of intimation from OIL.		

11.0	**NOTES TO INSTALLATION AND COMMISSIONING AND SAFETY MEASURES**		
1)	Work will be done normally during day light hours & irrespective of holidays, Sundays etc. However, in case of emergency, work may have to be done beyond normal working hours with prior permission from Installation Managers/user department/CISF.		
2)	The successful bidder must obtain "Entry Permit" from CISF Commandant/ Head-Security of OIL for all his workers to enable them to work inside the installations.		

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
3)	**NUISANCE:** The successful bidder or his representative shall not at any time cause any nuisance on the site or do anything which shall cause un-necessary disturbance in the installation. OIL reserves the right to reject any one or all the personnel deployed by the successful bidder on the basis of their performance, conduct and discipline. If any replacement is sought by Engineer-in-Charge, the same shall have to be arranged by the successful bidder within 24 Hours or as per instruction of Engineer-in-Charge. In case of any dispute the decision of Engineer in-Charge shall be final and binding.		
4)	**CARE OF WORKS:** From the commencement to completion of work, the successful bidder shall take full responsibility for the care of all equipment and pipelines including all temporary works and in case any damage, loss or injury shall happen to the equipment/work/person or to a part thereof due to negligence of the successful bidder, the same shall be rectified/compensated by the successful bidder without any extra claim.		

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
5)	The successful bidder shall abide by all safety and security rules and regulations existing in the OIL's Installations. The successful bidder shall observe the safety measures required to be undertaken for safety of persons, labour, public and properties at work site/ plant premises/ residential premises/ public places etc. The successful bidder shall be required to take work permit from respective shift in charges for each day and each shift for all kind of jobs. There can be instances of not getting permits, withdrawing of permits already issued at any stage of work due some operational safety and security reasons. For any stoppage of work for such reasons no claim whatsoever will not be considered.		
6)	Any compensation arising out of the job carried out by the successful bidder whether related to pollution, Safety or Health will be paid by the successful bidder only.		
7)	Any compensation arising due to accident of the successful bidder's personnel while carrying out the job, will be payable by the successful bidder.		
8)	The successful bidder shall have to report all incidents including near miss to Installation Manager/ departmental representative of the concerned department of OIL.		
9)	In case the successful bidder is found non-compliant of HSE laws as required, the company will have the right for directing the successful bidder to take action to comply with the requirements, and for further non-compliance, the successful bidder will be penalized as per prevailing relevant Acts/ Rules/ Regulations.		

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Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
10)	When there is a significant risk to health, environment or safety of a person or place arising because of a non-compliance of HSE measures, Company will have the right to direct the successful bidder to cease work until the non-compliance is corrected.		
11)	All safety gears like safety boots, helmets, safety belts, hand gloves, safety goggles etc. required for carrying the job in a safe manner shall be arranged by the successful bidder.		
12)	The successful bidder shall maintain first aid facilities for its employees. All critical industrial injuries shall be reported promptly to Oil India Limited, and a copy of the successful bidder's report covering each personal injury requiring the attention of a physician shall be furnished to the Oil India Limited.		
13)	If the company arranges any safety class / training for the working personnel at site (company employee, contractor worker, etc.) the contractor will not have any objection to any such training.		
14)	The Contractor shall prepare written Safe Operating Procedures (SOP) for the works to be carried out, including an assessment of risk, wherever possible and safe methods to deal with it/them. The SOPs should clearly state the risk arising to men, machineries & material from the mining operation / operations to be done by the contractor and how it is to be managed. Before adoption, same to be approved by OIL.		
15)	The contractor shall keep the SOP up to date and shall provide a copy of the set of SOP to OIL for record.		

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
12.0	**FACTORY ACCEPTANCE TEST (FAT):**		
1)	OIL reserves the right to involve and satisfy itself at each and every stage of testing.		
2)	Before the system is delivered to the site, satisfactory performance of the entire system shall be demonstrated. OIL shall depute minimum two persons for witnessing the FAT. The system shall simulate the final onsite configuration as closely as possible.		
3)	The successful bidder shall intimate OIL atleast 30 days prior to FAT for deputing OIL's personnel, cost of travel, accommodation and other expenses of OIL's inspection team will be borne by OIL.		
4)	Detailed test schedules, including at least the tests listed below, shall be submitted for the Company's approval one month before the testing. The Bidder shall have a technician and test equipment available full time during testing.		
5)	The following minimum activities shall be part of the Factory Acceptance Test in addition to any tests recommended by the bidder:		
(i)	Checking of Graphics and customization as per our requirement.		
(ii)	Checking of all datasheets and certificates.		
(iii)	Typical wireless configuration of the system.		
(iv)	Panel wiring		

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
13.0	**SITE ACCEPTANCE TEST (SAT):**		
	OIL shall witness successful uninterrupted operation of the supplied system for a duration of minimum 72 hours at site. Any malfunctioning of the system components (supplied under this contract) shall be rectified free of cost. Once the failure in the control panel is detected, the test shall start all over again from the beginning. OIL shall take over the system for regular operation once the Site Acceptance Test is completed successfully.		
14.0	**WARRANTY/ GUARANTEE:**		
	The equipment/ materials will be guaranteed for a period of 18 (eighteen) months from the date of receipt of the material at OIL's depot or 12(twelve) months from the date of commissioning whichever is earlier. The supplier shall repair or replace any item or equipment found defective in materials or workmanship or performance within the above period free of cost. The warranty is applicable to bought out items and system software also. Any system/ software fault during warranty period, supplier has to attend after receiving of calls from M/s OIL free of charges.		
15.0	**TRAINING:**		
	Bidder shall provide onsite training to OIL's personnel for 1 day after successful installation and commissioning of the system.		

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	Description	BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
		Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
16.0	**SPECIAL NOTES:**		
1)	All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:		
(a)	Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.		
(b)	Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.		
(c)	In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.		

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Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
		BIDDER'S RESPONSE	
		(TO BE FILLED BY THE BIDDER)	
Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
2)	**Penalty clause:**		
	To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a pe-riod of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of noti-fication then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.		
3)	The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		
4)	Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		

(SIGNATURE COMPANY SEAL OF BIDDER)

ANNEXURE-VI (B)

BILL OF MATERIALS

ANNEXURE-VI(B)

LOCATION-WISE BILL OF MATERIAL

INSTALLATION NAME	LOCATION	NOS (A)	INSTRUMENTS	RANGE	QNTY/ UNIT (B)	TOTAL (A*B)	REMARKS
Bhekulajan EPS	LP Manifold	1	Pressure Transmitter	0-30 kg/cm2	4	4	Remote seal type
	HP Manifold	1	Pressure Transmitter	0-60 kg/cm2	5	5	Remote seal type
	TU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	IH	1	Temperature Transmitter	0-100 Deg C	4	8	(RTD with Thermowell is reqd)
	GU-I	1	Pressure Transmitter	0-50 KG/CM2	1	1	
	GU-II	1	Pressure Transmitter	0-21 kg/cm2	1	1	
	GU-III	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	ET	1	Pressure Transmitter	0-10 kg/cm2	1	1	
			Temperature Transmitter	0-100 Deg C	1	1	(RTD with Thermowell is reqd)
	HPMS	1	Pressure Transmitter	0-42 kg/cm2	1	1	
	LPMS	1	Pressure Transmitter	0-21 kg/cm2	1	1	
	Servo	1	Pressure Transmitter	0-10 kg/cm2	1	1	
	Stabilizer	1	Pressure Transmitter	0-10 Kg/cm2	1	1	
	HP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	LP Flare	1	Pressure Transmitter	0-30 kg/cm2	1	1	
	Tank (Crude)	1	Level Transmitter	0-10 meter	1	1	
	CODP	1	Pressure Transmitter	0-80 KG/CM2	1	1	Remote seal type
	Lifter Delivery	1	Pressure Transmitter	0-120 KG/CM2	1	1	
	Distribution Pressure	1	Pressure Transmitter	0-30 kg/cm2	1	1	
			Repeater, Adapter, Redundant Gateway, Antenna, Cables, JB and other accessories		1 LOT	1 LOT	
			Desktop computer with HM		1 LOT	1 LOT	
			Any additional items needed to fulfil the functional requirements		1 LOT	1 LOT	

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MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808613
EMAIL: **materials@oilindia.in** | **f_sathiyaraj@oilindia.in**

(PART-B) SPECIAL TERMS AND CONDITIONS (SCC) & MATRIX

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VII

(PART-B) SPECIAL TERMS AND CONDITIONS

EVALUATION MATRIX (TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
		BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
1)	All electronic/electrical instruments and equipment to be used in hazardous area shall fulfil the following:		
(a)	Item shall be of a type and specification conforming to the relevant standards as specified in the Regulation 107(2) of Oil Mines Regulation-2017 and complying the provisions therein.		
(b)	Bidder shall provide documents specifying the type, details of specification, reference of the particular standard, test criteria as per the standards and status of testing, place of testing, copies of test reports from Indian Government Laboratory or NABL accredited laboratory or IECEx accredited laboratory or ATEX notified body which is not a part of manufacture's facilities along with their offer against this tender.		
(c)	In this regard, Bidder may refer OMR-2017, Notification dated 18th October 2017, published in the Gazette of India, under Ministry of Labour and Employment, Directorate General of Mines Safety, published on 2nd November 2017. Copy of the gazette notification is attached for reference.		

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ANNEXURE-VII

(PART-B) SPECIAL TERMS AND CONDITIONS

EVALUATION MATRIX (TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
		BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)	
Sl. No.	Description	Complied / Not Complied / Not Applicable	Relevant Location of their Bid to support the remarks / compliance
2)	**Penalty clause:**		
	To keep the system fully operational, in case of failure of any item during the warranty period, it shall be the supplier's responsibility to arrange rectification at site at their cost within a pe-riod of one (01) week from the date of notification of such failure and warranty of such items shall be extended accordingly. In case failure of any item is not rectified within 1 week of noti-fication then penalty @ 0.5% of Total material cost of the site / location per week subject to a maximum of 7.5% of Total material cost of the site / location shall be levied and warranty of such items shall be extended accordingly. This penalty amount shall be recovered from the performance security amount submitted by the successful bidder.		
3)	The BOM attached is indicative only, the bidder has to supply any additional items needed to fulfil the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		
4)	Make & Model to be quoted compulsorily for the items. Bidder should forward relevant Catalogue, Drawing, and Literature indicating the quoted items along with the technical bid, the functional requirements of the tender. The bidder may add the additional items in the BOM and price schedule (if any).		

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(भारत सरकार का उद्यम)
Oil India Limited
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MATERIALS DEPARTMENT - FIELD HEAD QUARTERS,
P.O., DULIAJAN, DIBRUGARH DISTRICT, ASSAM – 786602
TEL: (+91) 374 2808613
EMAIL: **materials@oilindia.in** | **f_sathiyaraj@oilindia.in**

BID REJECTION CRITERIA (BRC) / BID EVALUATION CRITERIA (BEC) & MATRIX

Oil India Limited
Materials Department – Field Head Quarters
Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
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ANNEXURE-VIII

BID REJECTION CRITERIA / BID EVALUATION CRITERIA

TECHNICAL EVALUATION MATRIX FOR BRC / BEC (TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance** (Reference of Document name / Serial number / Page number of bid for documentary evidence)
The bids shall broadly conform to the specifications and terms and conditions given in this bid document. Bids shall be rejected in case the items offered do not conform to required parameters stipulated in the technical specifications and to the respective international/national standards wherever stipulated. Notwithstanding the general conformity of the bids to the stipulated specifications and terms and conditions, the following requirements will have to be particularly met by the Bidders without which the same will be considered as non-responsive and rejected.			
I. BID REJECTION CRITERIA (BRC) **(A) TECHNICAL**			
1.0	**Qualification Criteria**		
1.1	The bidder shall be an Original Equipment Manufacturer (OEM) of the tendered item(s)		
	OR		
1.2	If the bidder is not the OEM of the tendered items, then the bidder must submit copy of authorization letter from their OEM to supply the tendered items with warranty/guarantee back from the principal (OEM).		
	Note:		
(a)	Bidder(s) other than OEM must submit a valid Authorization letter and backup warranty from the manufacturer. The Authorization and back-up warranty letter duly sealed & signed by the Manufacturer on their official letterhead must be submitted along with the technical bid.		

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Duliajan, Assam, India – 786602
Tel: +91-374-280 8741 | Email: materials@oilindia.in |f_sathiyaraj@oilindia.in
Website: www.oil-india.com

ANNEXURE-VIII

BID REJECTION CRITERIA / BID EVALUATION CRITERIA

TECHNICAL EVALUATION MATRIX FOR BRC / BEC (TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE** **(TO BE FILLED BY THE BIDDER)** **Complied / Not Complied / Not Applicable**	**Relevant Location of their Bid to support the remarks / compliance** (Reference of Document name / Serial number / Page number of bid for documentary evidence)
(b)	Bidder(s) other than OEM shall categorically confirm in their technical bid that there will be no change of the proposed OEM after submission of the bid.		
2.0	**Experience Criteria**		
2.1	Bidder must have supply experience of successfully executing at least one order of tendered item of value not less than **50% of the tendered value (i.e. Rs.2,21,96,720)** in preceding 8 (Eight) years from the original bid closing date of the tender.		
2.2	In case the bidder is OEM of the tendered items, then the bidder can either submit their own supply experience as per clause 2.1 above or they can submit supply experience of successfully executing their own manufactured 'tendered item' of value not less than **50% of tender value (i.e. Rs.2,21,96,720)** through their authorized agent / dealer / distributor / supply house / channel partner/reseller in preceding 8 (Eight) years from the original bid closing date of the tender.		
	Note:		
	"Wireless Instrumentation system" is defined as data acquisition system which shall comprise of Wireless Field Instruments like pressure transmitters, temperature transmitters; Gateways, Antenna, Power supply, Wireless adapters, desktop PC etc. together the process parameters from field and display it in the control room. The system shall have the facility to record/display trend and to incorporate user defined alarms.		

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Sl. No.	**Description**	**BIDDER'S RESPONSE** **(TO BE FILLED BY THE BIDDER)** **Complied / Not Complied / Not Applicable**	**Relevant Location of their Bid to support the remarks / compliance** (Reference of Document name / Serial number / Page number of bid for documentary evidence)
2.3	Bidder must submit the following documentary evidence in support of previous supply experience as applicable under clause 2.1 or 2.2 above:		
(i)	Copy) of Purchase Order(s) /Contract document(s)and		
(ii)	Any one or combination of the following documents that confirms the successful execution of the purchase order(s) / contract(s).		
(a)	Completion report / performance certificate from the clients		
(b)	Bill of lading		
(c)	Delivery challan / invoice etc		
(d)	Any other documentary evidence that can substantiate the successful execution of each of the Purchase Order(s) / contract(s) cited above		
	NOTE:		
(a)	The Purchase Order date need not be within 8 (Eight) years preceding original bid closing date of this tender. However, the execution of supply should be within 8 (Eight) years preceding original bid closing date of this tender.		
(b)	Satisfactory supply/completion/installation report should be issued on company's letterhead with signature/stamp.		

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TECHNICAL EVALUATION MATRIX FOR BRC / BEC (TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance** (Reference of Document name / Serial number / Page number of bid for documentary evidence)
3.0	Bidder should categorically confirm in the technical bid to deliver the items within **36 weeks** after receipt of formal order failing which their offer will be rejected.		
4.0	The date of purchase order/contract need not be within Eight (08) years preceding the original bid closing date of the tender, but installation & commissioning/ supply of required quantity must be within Eight (08) years preceding the original bid closing date of this tender.		
5.0	In case of extension to the scheduled Bid Closing date of this tender, if any, the Original scheduled Bid closing Date shall be considered for evaluation of Bids.		
6.0	Against all supporting documents submitted by the bidder along with the technical bid, originals must be kept ready and to be produced for verification of OIL, if called for.		
7.0	The purchase order / contract submitted as credential must bear the purchase order number / contract number which clearly indicate the scope of work and technical specifications of the item.		
8.0	The experience of the bidder's sister concern / subsidiary shall not be considered for evaluation.		

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BID REJECTION CRITERIA / BID EVALUATION CRITERIA

TECHNICAL EVALUATION MATRIX FOR BRC / BEC			
(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance** (Reference of Document name / Serial number / Page number of bid for documentary evidence)
The bids shall broadly conform to the specifications and terms and conditions given in this bid document. Bids shall be rejected in case the items offered do not conform to required parameters stipulated in the technical specifications and to the respective international/national standards wherever stipulated. Notwithstanding the general conformity of the bids to the stipulated specifications and terms and conditions, the following requirements will have to be particularly met by the Bidders without which the same will be considered as non-responsive and rejected.			
I. BID REJECTION CRITERIA (BRC)			
(B) FINANCIAL			
	Annual Turnover:		
1.0	The bidder shall have an annual financial turnover of minimum **50% of the tender value (i.e. INR 2,21,96,720)** during any of the preceding 03 (three) financial years reckoned from the original bid closing date, irrespective of whether their bid is for all the tendered items or not.		
2.0	"Net Worth" of the bidder should be positive for the financial/accounting year **just preceding** to the original bid closing date of the tender i.e. **(FY 2023-24).**		
3.0	Considering the time required for preparation of Financial Statements, if the last date of preceding financial / accounting year falls within the preceding six months reckoned from the original bid closing date and the Financial Statements of the preceding financial / accounting year are not available with the bidder, then the financial turnover of the previous three financial / accounting years excluding the preceding financial / accounting year will be considered. In such cases, the Net worth of the previous financial / accounting year excluding the preceding financial / accounting year will be considered.		

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TECHNICAL EVALUATION MATRIX FOR BRC / BEC			
(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance** (Reference of Document name / Serial number / Page number of bid for documentary evidence)
	However, the bidder has to submit an affidavit/undertaking certifying that 'the balance sheet/Financial Statements for the financial year …… (As the case may be) has actually not been audited as on original bid closing date' (**Proforma - A**).		
	Note:		
(a)	For proof of Annual Turnover & Net worth any one of the following document (s) must be submitted along with the bid: -		
	(i) A certificate issued by a practicing Chartered/Cost Accountant (with Membership Number and Firm Registration Number), certifying the Annual turnover & Net worth as per format prescribed in **PROFORMA-B**.		
	OR		
	(ii) Audited Balance Sheet along with Profit & Loss account. In case of foreign bidders, self-attested/digitally signed printed published accounts are also acceptable		
(b)	In case the bidder is a Central Govt. Organization/PSU/State Govt. Organization/Semi-State Govt. Organization or any other Central/State Govt. Undertaking, where the auditor is appointed only after the approval of Comptroller and Auditor General of India and the Central Government, their certificates may be accepted even though FRN is not available. However, bidder to provide documentary evidence for the same.		

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TECHNICAL EVALUATION MATRIX FOR BRC / BEC (TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE** **(TO BE FILLED BY THE BIDDER)** **Complied / Not Complied / Not Applicable**	**Relevant Location of their Bid to support the remarks / compliance** (Reference of Document name / Serial number / Page number of bid for documentary evidence)
4.0	In case the Audited Balance Sheet and Profit & Loss Account submitted along with the bid are in currencies other than INR or US$, the bidder shall have to convert the figures in equivalent INR, considering the prevailing conversion rate on the date of Balance Sheet and Profit & Loss Account. A Chartered Account (CA) certificate is to be submitted by the bidder regarding converted figures in equivalent INR.		
5.0	In case the Bidder is subsidiary company (should be 100% owned subsidiary of the parent/ultimate parent/holding company) who does not meet financial criteria by itself and submits its bid based on the strength of parent/ultimate parent/holding company, then following documents need to be submitted:		
	i) Turnover of the parent/ultimate parent/holding company should be in line with Para 1.0 above.		
	ii) Net Worth of the parent/ultimate parent/holding company should be positive in line with Para 2.0 above.		
	iii) Corporate Guarantee (**Proforma - C**) on parent/ultimate parent/holding company's company letter head signed by an authorized official undertaking that they would financially support their wholly owned subsidiary company for executing the project/job in case the same is awarded to them.		
	iv) Documents to substantiate that the bidder is as 100% subsidiary of the parent/ultimate parent / holding company.		

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance** (Reference of Document name / Serial number / Page number of bid for documentary evidence)
The bids shall broadly conform to the specifications and terms and conditions given in this bid document. Bids shall be rejected in case the items offered do not conform to required parameters stipulated in the technical specifications and to the respective international/national standards wherever stipulated. Notwithstanding the general conformity of the bids to the stipulated specifications and terms and conditions, the following requirements will have to be particularly met by the Bidders without which the same will be considered as non-responsive and rejected.			
I. BID REJECTION CRITERIA (BRC)			
(C) COMMERCIAL			
1.0	Bids are invited under **SINGLE STAGE TWO BID SYSTEM**. Bidders should upload Techno-Commercial Bid (Unpriced Bid) and Priced Bid separately at the designated fields assigned in GeM Portal. Please note that no price details should be furnished in the Technical (i.e. Unpriced) bid. The "Unpriced Bid" shall contain all techno-commercial details except the prices/costs. Bidder not complying with above submission procedure will be rejected.		
2.0	The prices/rates offered against the tender must remain firm through delivery and not subject to variation on any account. A bid submitted with an adjustable price condition shall be treated as non-responsive and rejected. No discount whatsoever should be quoted separately. Rates/prices quoted must be net of all discounts.		
3.0	Bids received in physical form shall be rejected (except the documents specifically called for in hard copies, if any). Also, modifications to bids received after the bid closing date & time shall not be entertained.		
4.0	Bids containing incorrect / false / misleading statement(s) shall be rejected.		

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(TO BE DULY FILLED IN BY BIDDER AND SIGNED)			
Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance** (Reference of Document name / Serial number / Page number of bid for documentary evidence)
5.0	The validity of the bid shall be a **minimum of 120 days** from the date of actual Bid Closing Date. Bids with lesser validity shall be straightway rejected.		
6.0	Bidders must confirm that goods/materials to be supplied against the order arising out of this tender shall be of recent make, unused, of the best quality & workmanship and free from defects. The Bidder must undertake to stand guaranteed for the materials as called for in the tender. Defective goods/materials rejected by OIL, whether the entire lot or part thereof, shall be replaced immediately by the supplier at the supplier's expenses at no extra cost to OIL.		
7.0	Successful bidder will be required to furnish Performance Bank Guarantees as below:		
	(i) PBG @ 5 % of cost for Materials during warranty period to be submitted after receipt of PO. The Performance Security must be valid for 3 (three) months beyond the Warranty period indicated in the Purchase Order/contract agreement.		
	(ii) The Performance Security must be valid for a period as called for in the tender document. Bidder must confirm the same in their Technical Bid. Offers not complying with this clause will be rejected.		

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Sl. No.	**Description**	**BIDDER'S RESPONSE (TO BE FILLED BY THE BIDDER)**	
		Complied / Not Complied / Not Applicable	**Relevant Location of their Bid to support the remarks / compliance** (Reference of Document name / Serial number / Page number of bid for documentary evidence)
8.0	Bids must be accompanied by Bid Security for the amount as mentioned in the tender document and shall be in the prescribed format (PROFORMA – G (A)) if submitted in the form of Bank Guarantee (BG). Bid Security may also be paid through online payment mode. Bid Security must be submitted within the scheduled Bid Closing date and time of the Tender. The amount of Bid Security (EMD) must be strictly as specified in the tender document.		
8.0	Bid Security if submitted in the form of BG/e-PBG must be valid at least for a period of 6 months from the date of original bid closing date of the tender. Bid shall be rejected without further reference, if the Bid Security (EMD) is not received strictly as above, except where exempted. OIL will not assume any responsibility whatsoever for submission of deficient/faulty Bid Security or for delay/non-delivery of the same.		
9.0	Bid must be uploaded together with the Integrity Pact (If applicable against the tender) and the same must be duly signed digitally. If any bidder refuses to sign Integrity Pact or declined to submit Integrity Pact, their bid shall be rejected straightway.		
10.0	Bidders shall accept and comply with the following clauses as given in the Bid Document, failing which bid shall be liable for rejection: **i)** Liquidated Damages **ii)** Warranty/Guarantee of material **iii)** Arbitration / Resolution of Dispute **iv)** Force Majeure **v)** Applicable Laws		
11.0	A bid shall be rejected straightway if it does not conform to any one of the following clauses:		

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Sl. No.	**Description**	**BIDDER'S RESPONSE** **(TO BE FILLED BY THE BIDDER)** **Complied / Not Complied / Not Applicable**	**Relevant Location of their Bid to support the remarks / compliance** (Reference of Document name / Serial number / Page number of bid for documentary evidence)
	a) Validity of bid shorter than the validity indicated in the Tender.		
	b) In case the party refuses to sign Integrity Pact.		
	c) Original Bid Security not received within the stipulated date & time mentioned in the Tender.		
	d) Bid Security with : **(i)** Validity shorter than the validity indicated in Tender and/or **(ii)** Bid Security amount lesser than the amount indicated in the Tender.		

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Report ID: GEM/GARPTS/08012025/ID1BOMMJ7NK8
Report Name: Wireless Process Monitoring System for 10 installations of Oil India Limited
Generated By: Sathiyaraj F , OIL INDIA Limited , Ministry of Petroleum and Natural Gas

Generated On: 08/01/2025
Valid till: 07/02/2025

GeM Availability Report and Past Transaction Summary

GeM Availability Report and past transaction summary report is generated based on the specifications searched by the Buyer. The specification may be modified appropriately for searching relevant categories on GeM. Buyer may navigate to GeM category page by clicking on the category link to view category specifications and products/services available in the category.

Order Count and Order Value displayed is on a cumulative basis since GeM inception.

1. Search String: Wireless Process Monitoring System

Search type: Product

1. There are categories available on GeM matching your requirements (as listed here). You can create a bid on GeM with a product closest matching your required specifications and add additional parameters in specifications through Corrigendum using RMS functionality.
2. If you feel that category TP needs updating you can submit category updating request also through RMS.
3. If you do not want to use any of the above option and want to proceed for procurement outside GeM, please suggest the specifications of the required product for creation of new category on GeM for future procurement.

Search Result: Category available/suggested on GeM but marked as "not matching requirements" by the buyer with undertaking as under:

It is certified that I have thoroughly checked all probable categories suggested by GeM and I am satisfied that the product required is not covered / does not fall in any of the suggested categories and can not be procured under any of these categories even after inclusion of List of Values(LOV) wherever possible in category specifications of suggested categories. It is also certified that the technical specification requirement are such that these can not be covered even by adding specification parameters using ATC in any of the GeM suggested categories. This is a one-time requirement hence new category creation is not proposed / or requirement is recurring but request for new category creation will be submitted separately post generation of GeMARPTS.

Category Name	Catalog Count	Order Count			Order Value (in Lakhs)		
		Direct Purchase	Reverse Auction	Bid	Direct Purchase	Reverse Auction	Bid
Wireless Attendant Calling System	61	214	1	5	64	2	6
Live Remote Temperature and Humidity Monitoring and Alert System	335	1,164	7	81	354	9	110
electronic physiogrowth monitoring system	4	0	0	9	0	0	55
intracompartmental pressure monitoring set accessories (Pressure Monitoring Line)	1,446	1,557	36	49	1,278	110	48

Category Name	Catalog Count	Order Count			Order Value (in Lakhs)		
		Direct Purchase	Reverse Auction	Bid	Direct Purchase	Reverse Auction	Bid
Water Purification System with UV (Ultra-Violet Process) or UV (Ultra-Violet Process)+UF (Ultra-Filtration Process)	0	0	0	0	0	0	0
Multipara Monitor - Low End	24,733	2,622	118	467	5,886	2,095	10,299
Continuous Ambient Particulate Monitoring System	18	2	1	1	9	7	6
Urodynamic System	16	0	1	4	0	33	289
media control systems or wireless presentation system	200	2,442	61	229	951	509	1,485
Accounts and Bill Monitoring Management System Software	35	201	0	11	72	0	98

2. Search String: Process Monitoring System

Search type: Product

1. There are categories available on GeM matching your requirements (as listed here). You can create a bid on GeM with a product closest matching your required specifications and add additional parameters in specifications through Corrigendum using RMS functionality.
2. If you feel that category TP needs updating you can submit category updating request also through RMS.
3. If you do not want to use any of the above option and want to proceed for procurement outside GeM, please suggest the specifications of the required product for creation of new category on GeM for future procurement.

Search Result: Category available/suggested on GeM but marked as "not matching requirements" by the buyer with undertaking as under:

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Category Name	Catalog Count	Order Count			Order Value (in Lakhs)		
		Direct Purchase	Reverse Auction	Bid	Direct Purchase	Reverse Auction	Bid
electronic physiogrowth monitoring system	4	0	0	9	0	0	55
Multipara Monitor - Low End	24,733	2,622	118	467	5,886	2,095	10,299
intracompartmental pressure monitoring set accessories (Pressure Monitoring Line)	1,446	1,557	36	49	1,278	110	48
Live Remote Temperature and Humidity Monitoring and Alert System	335	1,164	7	81	354	9	110
Water Purification System with UV (Ultra-Violet Process) or UV (Ultra-Violet Process)+UF (Ultra-Filtration Process)	0	0	0	0	0	0	0

Category Name	Catalog Count	Order Count			Order Value (in Lakhs)		
		Direct Purchase	Reverse Auction	Bid	Direct Purchase	Reverse Auction	Bid
RO Water Treatment System Above 50 LPH Filtration Capacity	3,038	547	26	82	820	111	1,218
Continuous Ambient Particulate Monitoring System	18	2	1	1	9	7	6
Accounts and Bill Monitoring Management System Software	35	201	0	11	72	0	98
Process Calibrator	33	2	0	14	2	0	32
Potable Water Purification System with Inbuilt Water Cooler	6,330	7,195	179	1,356	11,892	1,238	5,449

3. Search String: Wireless Monitoring System

Search type: Product

1. There are categories available on GeM matching your requirements (as listed here). You can create a bid on GeM with a product closest matching your required specifications and add additional parameters in specifications through Corrigendum using RMS functionality.
2. If you feel that category TP needs updating you can submit category updating request also through RMS.
3. If you do not want to use any of the above option and want to proceed for procurement outside GeM, please suggest the specifications of the required product for creation of new category on GeM for future procurement.

Search Result: Category available/suggested on GeM but marked as "not matching requirements" by the buyer with undertaking as under:

It is certified that I have thoroughly checked all probable categories suggested by GeM and I am satisfied that the product required is not covered / does not fall in any of the suggested categories and can not be procured under any of these categories even after inclusion of List of Values(LOV) wherever possible in category specifications of suggested categories. It is also certified that the technical specification requirement are such that these can not be covered even by adding specification parameters using ATC in any of the GeM suggested categories. This is a one-time requirement hence new category creation is not proposed / or requirement is recurring but request for new category creation will be submitted separately post generation of GeMARPTS.

Category Name	Catalog Count	Order Count			Order Value (in Lakhs)		
		Direct Purchase	Reverse Auction	Bid	Direct Purchase	Reverse Auction	Bid
Wireless Attendant Calling System	61	214	1	5	64	2	6
Multipara Monitor - Low End	24,733	2,622	118	467	5,886	2,095	10,299
electronic physiogrowth monitoring system	4	0	0	9	0	0	55
Live Remote Temperature and Humidity Monitoring and Alert System	335	1,164	7	81	354	9	110
intracompartmental pressure monitoring set accessories (Pressure Monitoring Line)	1,446	1,557	36	49	1,278	110	48
RO Water Treatment System Above 50 LPH Filtration Capacity	3,038	547	26	82	820	111	1,218
Continuous Ambient Particulate Monitoring System	18	2	1	1	9	7	6
Wireless Bridge	61	85	1	46	58	0	121

Category Name	Catalog Count	Order Count			Order Value (in Lakhs)		
		Direct Purchase	Reverse Auction	Bid	Direct Purchase	Reverse Auction	Bid
Potable Water Purification System with Inbuilt Water Cooler	6,330	7,195	179	1,356	11,892	1,238	5,449
Wireless Controller	156	54	35	51	132	727	461

Report ID: GEM/GARPTS/08012025/ID1BOMMJ7NK8
Report Name: Wireless Process Monitoring System for 10 installations of Oil India Limited
Generated By: Sathiyaraj F , OIL INDIA Limited , Ministry of Petroleum and Natural Gas

Generated On: 08/01/2025
Valid till: 07/02/2025

GeM Availability Report and Past Transaction Summary

GeM Availability Report and past transaction summary report is generated based on the specifications searched by the Buyer. The specification may be modified appropriately for searching relevant categories on GeM. Buyer may navigate to GeM category page by clicking on the category link to view category specifications and products/services available in the category.

Order Count and Order Value displayed is on a cumulative basis since GeM inception.

1. Search String: Wireless Process Monitoring System

Search type: Product

1. There are categories available on GeM matching your requirements (as listed here). You can create a bid on GeM with a product closest matching your required specifications and add additional parameters in specifications through Corrigendum using RMS functionality.
2. If you feel that category TP needs updating you can submit category updating request also through RMS.
3. If you do not want to use any of the above option and want to proceed for procurement outside GeM, please suggest the specifications of the required product for creation of new category on GeM for future procurement.

Search Result: Category available/suggested on GeM but marked as "not matching requirements" by the buyer with undertaking as under:

It is certified that I have thoroughly checked all probable categories suggested by GeM and I am satisfied that the product required is not covered / does not fall in any of the suggested categories and can not be procured under any of these categories even after inclusion of List of Values(LOV) wherever possible in category specifications of suggested categories. It is also certified that the technical specification requirement are such that these can not be covered even by adding specification parameters using ATC in any of the GeM suggested categories. This is a one-time requirement hence new category creation is not proposed / or requirement is recurring but request for new category creation will be submitted separately post generation of GeMARPTS.

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		Direct Purchase	Reverse Auction	Bid	Direct Purchase	Reverse Auction	Bid
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Live Remote Temperature and Humidity Monitoring and Alert System	335	1,164	7	81	354	9	110
electronic physiogrowth monitoring system	4	0	0	9	0	0	55
intracompartmental pressure monitoring set accessories (Pressure Monitoring Line)	1,446	1,557	36	49	1,278	110	48

Category Name	Catalog Count	Order Count			Order Value (in Lakhs)		
		Direct Purchase	Reverse Auction	Bid	Direct Purchase	Reverse Auction	Bid
Water Purification System with UV (Ultra-Violet Process) or UV (Ultra-Violet Process)+UF (Ultra-Filtration Process)	0	0	0	0	0	0	0
Multipara Monitor - Low End	24,733	2,622	118	467	5,886	2,095	10,299
Continuous Ambient Particulate Monitoring System	18	2	1	1	9	7	6
Urodynamic System	16	0	1	4	0	33	289
media control systems or wireless presentation system	200	2,442	61	229	951	509	1,485
Accounts and Bill Monitoring Management System Software	35	201	0	11	72	0	98

2. Search String: Process Monitoring System

Search type: Product

1. There are categories available on GeM matching your requirements (as listed here). You can create a bid on GeM with a product closest matching your required specifications and add additional parameters in specifications through Corrigendum using RMS functionality.
2. If you feel that category TP needs updating you can submit category updating request also through RMS.
3. If you do not want to use any of the above option and want to proceed for procurement outside GeM, please suggest the specifications of the required product for creation of new category on GeM for future procurement.

Search Result: Category available/suggested on GeM but marked as "not matching requirements" by the buyer with undertaking as under:

It is certified that I have thoroughly checked all probable categories suggested by GeM and I am satisfied that the product required is not covered / does not fall in any of the suggested categories and can not be procured under any of these categories even after inclusion of List of Values(LOV) wherever possible in category specifications of suggested categories. It is also certified that the technical specification requirement are such that these can not be covered even by adding specification parameters using ATC in any of the GeM suggested categories. This is a one-time requirement hence new category creation is not proposed / or requirement is recurring but request for new category creation will be submitted separately post generation of GeMARPTS.

Category Name	Catalog Count	Order Count			Order Value (in Lakhs)		
		Direct Purchase	Reverse Auction	Bid	Direct Purchase	Reverse Auction	Bid
electronic physiogrowth monitoring system	4	0	0	9	0	0	55
Multipara Monitor - Low End	24,733	2,622	118	467	5,886	2,095	10,299
intracompartmental pressure monitoring set accessories (Pressure Monitoring Line)	1,446	1,557	36	49	1,278	110	48
Live Remote Temperature and Humidity Monitoring and Alert System	335	1,164	7	81	354	9	110
Water Purification System with UV (Ultra-Violet Process) or UV (Ultra-Violet Process)+UF (Ultra-Filtration Process)	0	0	0	0	0	0	0

Category Name	Catalog Count	Order Count			Order Value (in Lakhs)		
		Direct Purchase	Reverse Auction	Bid	Direct Purchase	Reverse Auction	Bid
RO Water Treatment System Above 50 LPH Filtration Capacity	3,038	547	26	82	820	111	1,218
Continuous Ambient Particulate Monitoring System	18	2	1	1	9	7	6
Accounts and Bill Monitoring Management System Software	35	201	0	11	72	0	98
Process Calibrator	33	2	0	14	2	0	32
Potable Water Purification System with Inbuilt Water Cooler	6,330	7,195	179	1,356	11,892	1,238	5,449

3. Search String: Wireless Monitoring System

Search type: Product

1. There are categories available on GeM matching your requirements (as listed here). You can create a bid on GeM with a product closest matching your required specifications and add additional parameters in specifications through Corrigendum using RMS functionality.
2. If you feel that category TP needs updating you can submit category updating request also through RMS.
3. If you do not want to use any of the above option and want to proceed for procurement outside GeM, please suggest the specifications of the required product for creation of new category on GeM for future procurement.

Search Result: Category available/suggested on GeM but marked as "not matching requirements" by the buyer with undertaking as under:

It is certified that I have thoroughly checked all probable categories suggested by GeM and I am satisfied that the product required is not covered / does not fall in any of the suggested categories and can not be procured under any of these categories even after inclusion of List of Values(LOV) wherever possible in category specifications of suggested categories. It is also certified that the technical specification requirement are such that these can not be covered even by adding specification parameters using ATC in any of the GeM suggested categories. This is a one-time requirement hence new category creation is not proposed / or requirement is recurring but request for new category creation will be submitted separately post generation of GeMARPTS.

Category Name	Catalog Count	Order Count			Order Value (in Lakhs)		
		Direct Purchase	Reverse Auction	Bid	Direct Purchase	Reverse Auction	Bid
Wireless Attendant Calling System	61	214	1	5	64	2	6
Multipara Monitor - Low End	24,733	2,622	118	467	5,886	2,095	10,299
electronic physiogrowth monitoring system	4	0	0	9	0	0	55
Live Remote Temperature and Humidity Monitoring and Alert System	335	1,164	7	81	354	9	110
intracompartmental pressure monitoring set accessories (Pressure Monitoring Line)	1,446	1,557	36	49	1,278	110	48
RO Water Treatment System Above 50 LPH Filtration Capacity	3,038	547	26	82	820	111	1,218
Continuous Ambient Particulate Monitoring System	18	2	1	1	9	7	6
Wireless Bridge	61	85	1	46	58	0	121

Category Name	Catalog Count	Order Count			Order Value (in Lakhs)		
		Direct Purchase	Reverse Auction	Bid	Direct Purchase	Reverse Auction	Bid
Potable Water Purification System with Inbuilt Water Cooler	6,330	7,195	179	1,356	11,892	1,238	5,449
Wireless Controller	156	54	35	51	132	727	461