



Oil India Limited

(A Govt. of India Enterprise)

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Tender No. & Date : SDG 4344 P15/08 of 24.07.2014

Tender Fee : INR 4,500.00 OR USD 100.00

Bid Security : Applicable

Bidding Type : SINGLE STAGE TWO BID SYSTEM

Bid Closing on : As mentioned in the Basic Data of the tender in OIL's e-portal.

Bid Opening on : As mentioned in the Basic Data of the tender in OIL's e-portal.

Performance Guarantee : Applicable

OIL INDIA LIMITED invites Global Tenders for item detailed below:

Item No. /Mat. Code	Material Description	QTY.	UOM
1.	Cableless 2D/3D Seismic Data Acquisition system as per Section I to V attached.	1	No.

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Special Notes :

1.0 The tender will be governed by “General Terms & Conditions” for e-Procurement as per Booklet No. MM/GLOBAL/E-01/2005 for E-procurement (ICB Tenders) including Amendments & Addendum to “General Terms & Conditions” for e-Procurement.

2.0 Technical Check list and Commercial Check list are furnished . Please ensure that both the check lists are properly filled up and uploaded along with Technical bid.

3.0 The item qualifies for Nil duty / Deemed Export benefits. For Deemed Export benefits, please refer Addendum to the General terms and conditions for Global tender.

4.0 Please note that all tender forms and supporting documents are to be submitted through OIL’s e-Procurement site only except following documents which are to be submitted manually in sealed envelope super scribed with tender no. and due date to The **Head Materials, Materials Department, Oil India Limited, Duliajan- 786602, Assam** on or before the Bid Closing Date and Time mentioned in the Tender.

a) **Original Bid Security.**

b) **Detailed Catalogue and any other document which have been specified to be submitted in original.**

5.0 In case of SINGLE STAGE-TWO BID SYSTEM, bidders shall prepare the “Techno-commercial Unpriced Bid” and “Priced Bid” separately and shall upload through electronic form in the OIL’s e-Tender portal within the Bid Closing Date and Time stipulated in the e-Tender. The “Techno-commercial Unpriced Bid” shall contain all technical and commercial details except the prices which shall be kept blank. Details of prices as per Bid format / Commercial bid to be uploaded as attachment in the Attachment Tab “Notes and Attachments”.

A screen shot in this regard is given below.

Any offer not complying with above submission procedure will be rejected as per Bid Rejection Criteria mentioned in the tender.

Go to this Tab “Technical RFX Response” for Uploading “Techno-commercial Unpriced Bid”.

Go to this Tab “Notes and Attachments” for Uploading “Priced Bid” files.

On “EDIT” Mode- The following screen will appear. Bidders are advised to Upload “Techno-Commercial Unpriced Bid” and “Priced Bid” in the places as indicated above:

Edit RFX Response:

Submit | Read Only | Print Preview | Check | Technical RFX Response | Close | Save

RFX Response Number 60006452 RFX Number TEST2 Status Withdrawn Submission Deadline 13.04.2013 11:00:00 INDIA
 RFX Owner WIPRO_TEST1 Total Value 0.00 INR RFX Response Version Number 2 RFX Version Number 5

RFX Information | Items | **Notes and Attachments** | Conditions

Area for uploading Techno-Commercial Unpriced Bid*

▼ Notes

Add | Clear

Assigned To	Category	Text Preview

▼ Attachments

Sign Attachment | Add Attachment | Edit Description | Versioning | Delete | Create Qual

Assigned To	Category	Description	File Name	Version	Processor	Checked
The table does not contain any data						

Area for uploading Priced Bid**

Note :

- * The “Techno-Commercial Unpriced Bid” shall contain all techno-commercial details **except the prices.**
- ** The “Price bid” must contain the price schedule and the bidder’s commercial terms and conditions. For uploading Price Bid, first click on Sign Attachment, a browser window will open, select the file from the PC and click on Sign to sign the Sign. On Signing a new file with extension .SSIG will be created. Close that window. Next click on Add Attachment, a browser window will open, select the .SSIG signed file from the PC and name the file under Description, Assigned to General Data and clock on OK to save the File.

6.0 Bidders are requested to examine all instructions, forms, terms and specifications in the bid. Failure to furnish all information required as per the bid or submission of offers not substantially responsive to the bid in every respect will be at the bidders risk and may result in the rejection of its offer without seeking any clarifications.

7.0 The Integrity Pact is applicable against this tender. OIL shall be entering into an Integrity Pact with the bidders as per format enclosed vide Annexure XII 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. Any bid not accompanied by Integrity Pact Proforma duly signed (digitally) by the bidder shall be rejected straightway. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact has been signed by the bidder’s authorized signatory who sign the Bid.

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

**(I) SHRI N. GOPALASWAMI, I.A.S (Retd) ,
Former Chief Election Commissioner of India**

E-mail Id : gopaldaswamin@gmail.com

**(II) SHRI RAMESH CHANDRA AGARWAL , IPS(Retd)
Former Director General of Police**

E-mail Id : rcagarwal@rediffmail.com

8.0 Pre –Bid Conference :

- (A) A Pre-Bid Conference with the Parties will be held at New Delhi , India on 2nd , 3rd and 4th September '2014 to discuss on the technical specifications and other terms and conditions of the tender. All the Parties who purchase the Tender Document within the closing date of sale of the tender will be eligible to attend the Pre-Bid Conference. The exact venue and time of the Pre-Bid conference will be intimated to the Parties at a later date.
- (B) Clarification on the technical specifications and other terms & conditions shall be provided to the parties during the Pre-bid Conference. Parties should come fully prepared to the Pre-bid Conference and submit their queries to OIL in the Pre-bid Conference for clarification. More than two persons will not be allowed from each party and they should depute representatives who are competent enough and authorized to take spot decision . The set of queries may also be sent to OIL well in advance for study by OIL.
- (C) Any changes in the technical specifications and other terms & conditions arising out of discussion in the Pre-bid Conference shall also form part of the tender document.
- (D) Parties, immediately after the purchase of the Tender documents, shall inform OIL at the following address about their participation in the Pre-Bid Conference with details of the persons to enable OIL to make arrangement for the Pre-Bid Conference.

HEAD – MATERIALS

OIL INDIA LIMITED

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OIL INDIA LIMITED

DULIAJAN, ASSAM

TENDER DOCUMENT FOR PROCUREMENT OF ONE (1) NUMBER OF 2D/3D CABLE LESS SEISMIC DATA ACQUISITION SYSTEM

TENDER NO.SDG4344P15/08

DEATAILS OF ENCLOSURES

1. Technical specifications	-	Section I
Main Seismic Data Equipment	-	IA
Data Harvesting Equipment	-	IB
Generator	-	IC
Peripherals items	-	ID
Recorder Cabin and Truck	-	IE
Spare and Repair Kit	-	IF
Pre dispatch Inspection, Delivery Installation and Commissioning & Training	-	IG
Warranty & AMC	-	IH
2. Bid Rejection Criteria and Bid Evaluation Criteria.	-	Section II
3. Technical Check List	-	Section III
4. Price Schedule	-	Section IV
5. Commercial Check list	-	Section V

Section- I

TECHNICAL SPECIFICATION OF ONE (1) NUMBER OF 2D/3D CABLE LESS SEISMIC DATA ACQUISITION SYSTEM

1.0 SCOPE

One (1) no. of new generation, field proven state of-the-art, 24 bit delta sigma technologies or higher Land Cable less Seismic Data Acquisition System is required for acquiring 2D/3D seismic data in different terrain/basins. The detailed specifications of the equipment are as follows:

2.0 GENERAL

- 2.1 The seismic data acquisition system should be complete as per specifications/detail requirement given herewith (underneath) and be ready for the deployment in the field. The system should comprise of all basic components and other necessary ancillary hardware & software components fully compatible with offered ground electronics, shooting system, data harvesting device and communication devices etc. for full-fledged multiline field operation.
- 2.2 Irrespective of the specifications/detail requirement given herewith (underneath) vendor should ensure that the system is fully operational with the deployment of 3000 channels. If any additional items are required for the purpose, vendors need to provide / quote the same.
- 2.3 The central recording system(including human-machine interface /operator console) should be duly interfaced and compatible with the seismic data storage device (Rugged Internal Storage devices or External Storage Devices with RAID 5 & RAID 1 or higher available configuration respectively), data harvesting system ,shooting systems, radios for two way communication, peripheral equipments like printer (s), LED TFT monitors (to display operational spread management, field QC test results etc.), and other modules / accessories necessary to operate the system optimally as per the specifications/requirements. The Central recording system should be mounted on suitable shock mounts so as to withstand the shocks & vibrations encountered during transportation in cross country. The entire central recording system should be mounted in an adequately & properly air-conditioned cabin.
- 2.4 The seismic data acquisition system should be capable of multi-line operations and allow selection of requisite nos. of channels per line/swath for 2D/3D seismic work. The system implies, unless otherwise explicitly mentioned, cable less seismic data equipment (**Section – IA**, item 3.0), recording equipment (**Section–IA**, item 4.0) , ground electronics {(**Section – IA**, item 5.0) , data harvesting unit (**Section–IB**, item 9.0 & 10.0) and product support (**Section–IH**, item 23.0 & 24.0) capable of recording 2D/3D seismic data.

- 2.5 The system should have the capability of up gradation to higher channel capacity (minimum 6000 channels) & should also offer the facility to upgrade central recording unit and software accordingly.
- 2.6 The system should work on a user-friendly menu driven software. The details of the software along with number of channels supported per license for data acquisition should be enclosed in the documentation with the offer. The details of all the other offered software required for field QC status, field management, shooting operation and data harvesting / data transcription etc. along with licenses should also be documented & enclosed with the offer.
- 2.7 Easy to use graphical user Interface with capability of providing graphical & numeric display of the acquisition spread configuration and on the fly QC status and fault detection of data acquisition station units/links (GPS, Battery , WLAN frequency signal, self-diagnostic test) , Power Supply Units, Batteries, Geophones etc. at the ground station unit level.
- 2.8 Appropriate number of Data Acquisition Station Units should be supplied as mentioned vide **Section-IA**, item 5.1.
- 2.9 The data acquisition station units, ground electronics for land seismic should be rugged for field use and should be waterproof.
- 2.10 Central Controlling/recording unit should be capable of initializing and setting up of recording parameters of the data acquisition units/Links.
- 2.11 The acquisition system should have the facility to record 2D/3D data in cable less mode.
- 2.12 The acquisition system inclusive of all the ground electronics offered should be of the latest make & model available at the time of bid submission.
- 2.13 All the peripheral equipments and accessories offered along with the seismic data acquisition system and ground electronics should also be of the latest make & model available at the time of bid submission if otherwise not stated specifically.
- 2.14 If the company desires to buy any additional items (manufacturer items) quoted in the bid after the placement of firm order to the respective bidder, the bidder shall provide the items at the same rate, terms & condition to Oil India Limited (OIL) irrespective of the quantum. However, this order will be placed within two years from the date of placement of firm order.
- 2.15 The acquisition system should support impulsive energy source (Dynamite) controller as well as non-impulsive energy source (Vibrator) controller during seismic data acquisition.

- 2.16 The system must be fully scalable. It should offer the facility for recording data using single point analog sensors.

Section- IA

Main Cableless Seismic Data Equipment

3.0 Cable less Seismic Data Equipment

General

- a) Acquisition units : 3000 Channels cable-less
- b) Number of channels per ground station : 1(One) analog channel (high fidelity)
- c) Sources Compatibility : Impulsive (Dynamite) & non Impulsive (Vibrator)
- d) No. of bit digitization : 24 bit or higher digitization
- e) Operation Mode : Autonomous
- f) Recording Mode : Continuous
- g) Sensor Compatibility : Analog
- h) Clock Synchronization : GPS
- i) Timing Accuracy : $\leq 20\mu\text{s}$
- j) Communication type : Nodes/Wi-Fi*
(*For equipments communicating QC status between ground station and central recording system)
- k) Internal Memory size(CRU) : not less than 16GB extendable up to 32GB
- l) Battery : (Internal / External) Optimized as per power requirement of proposed 3000 channel Cable-less ground station units for smooth running of field operation plus 20 % spare
- m) Quantity of battery chargers : Optimized as per requirement estimated for proposed nos. of batteries against serial no. (l) plus 20 % spare
- n) Battery charger specifications : Smart battery chargers as required.
- o) Operating temperature range : -20°C to $+60^{\circ}\text{C}$

- p) Field QC tools : At least 50 numbers of Field QC tools compatible with ground station units proposed for wireless field status collection need to be provided wherever applicable.(Communicate Field QC Status to Central Recording System or available at ground station level)
- q) The proposed equipment need to have minimum following features to be communicated to doghouse or available through human intervention at ground station level:
- i. GPS /Battery/Position/ available memory/station unit identification log status
 - ii. Noise/harmonic distortion/channel response
 - iii. Common Mode Rejection
 - iv. Sensor resistance, leakage, harmonic distortion , natural frequency , damping ,distortion, power line pick up

4.0 **RECORDING EQUIPMENT**

4.1 **CENTRAL RECORDING / CONTROLLING UNIT (CRU) – 2 Nos.**

The central recording system with minimum components:

- a) *Central Station Computer*
 - b) *Quality Control Computer (Applicable for equipments sending spread QC test results to Central Recording Unit)*
 - c) *Central Radio Unit*
 - d) *Suitable Communication Tool*
 - e) *Source Encoder/Decoder*
- 4.1.1 **Channel capacity** - Software License for recording minimum 4000 channels at 2ms Sample Interval (SI) for both impulsive and non-impulsive operation.
- 4.1.2 **Multiline capacity** - atleast 10 seismic lines.
- 4.1.3 **Sample rate** - 0.25, 0.5,1, 2 and 4 milliseconds.
- 4.1.4 **Auxiliaries Channels** - > 4
- 4.1.5 **Instruments Test** - Selected and auto analyzed in field; Facility for self-diagnostic and fault detection for Central Recording Unit. Provision with tools for testing of QC programed parameters for individual field units along with instrument test data analysis.
- 4.1.6 **Recording Length** - Selectable up to 25 seconds @ 2ms Sample interval (SI).
- 4.1.7 **External Storage (1 no.)**- Ground Electronics QC status / Log file data storage facility to be provided with suitable external storage device compatible with the main central recording equipment with having actual storage capacity of minimum 5TB or more.

Note: It is a prerequisite that redundancy & integrity of the Ground Electronics QC status / Log file data is to be maintained.

4.1.8 **Recording Format** - SEG Y and / or SEG D.

4.1.9 **SPS Import & Export** - System and the associated application software should have the facility for Import & Export of Receiver, Source & Relation files in industry standard formats (viz. SPS, SEG-P1, etc.), logging of observer's parameters etc.

4.1.10 **Acquisition Spread Configuration**-(applicable in coordination of **Section-IA**, item 4.1.b only)
(Applicable for Cable less equipments sending spread QC test results to Central Recording Unit only)

a) Central Station Computer must have graphical user interface (GUI) based system management facility. The computer must have the capability of providing graphical & numeric display of the acquisition spread configuration. Provide on the fly QC (Quality) status and fault detection of various field units.

b) Minimum three numbers (3 Nos.) of color LED monitors [size 20 inch flat screen (viewable or bigger)] should be provided to the observer for spread management, source operation control, monitoring of external storage utilities, spread quality control by analysis of spread status data etc.

4.1.11 a) Central Station Computer must have graphical user interface (GUI) based system management facility. The computer must have the capability of providing graphical and numerical display of the acquisition spread configuration.

b) Minimum two numbers (2 Nos.) color LED monitors [size 20 inch flat screen (viewable or bigger)] should be provided to the observer mandatory for spread management and source operation control. Moreover it is preferred that the Central Station Computer have the capability for analysis of Spread Quality control test data acquired by Cableless equipments having standard line tester for acquisition spread configuration. (Applicable for Autonomous node based Cable less equipments not sending spread QC test results to Central Recording Unit only)

Section-IA, item no. 4.1.10 & 4.1.11 are mutually exclusive depending on type of equipment.

4.1.12 **System & Application Software**

a) The system should be complete with hardware & application software, required for operations, maintenance and management of acquisition spread deployed in the field. The system should have extensive line management facility.

b) The system & application software should be capable of providing real time source positions when used with GPS based shooting systems. However normal shooting option via SPS file/ industry standard relation file with pre surveyed points has to be available with proposed system.

c) All software must be supplied on CD-ROMS/DVD.

4.1.13 **Ground Station Unit self-diagnostic test:** The following system tests including data quality control must be available at ground station level during complete layout of the spread through standard line tester at ground station level:

- a) Leakage, continuity,
- b) Impulse response,
- c) Sensor resistance,
- d) Battery voltage status,
- e) Noise and distortion,
- f) Hardware diagnostic tests etc.
- g) GPS status (if applicable)
- h) WLAN frequency signal strength (if applicable)

4.1.14 The necessary interface, hardware, software, drivers, licenses or dongle as may be required to display the field QC status data (**Section-ID**, item no. 12. 4.2) should be provided.

4.1.15 **DVD Writer** - DVD R/W or DVD R drive should be interfaced with the system to load application software as and when required.

4.1.16 **User Interface** -Graphical Users Interface with keyboard, mouse and color LED monitor [size 20 inch (viewable or bigger)] and all other associated accessories.

4.1.17 **Blaster support** -The system should support GPS based multiple radio blasters and the GPS based shooting systems should enable precision in positioning of shot co-ordinates with a positional accuracy of less than 2m (meters).

4.1.18 **Power Requirement**

- a) SMPS should be provided for operating the system on 220 V AC $\pm 10\%$ & 50 Hz ± 1 Hz.
- b) Additionally the power system should also provide 12VDC required for operating equipments mounted in the cabin viz. Shooting system, communication radio etc.

4.1.19 **Operating Environment**- The central controlling / recording unit should be able to withstand operating temperature from -20°C to 60 degree celcius and 0% to 100% relative humidity (non condensing).

4.1.20 **Vibrator support**

a) The CRU should have all the hardware & software for recording Vibroseis data. It should have the capability to generate source-correlated data that will be recorded as Shot records in the disk or in the recording media during data acquisition in field.

b) The system should have all the hardware and necessary software for carrying out spread quality control while acquiring vibroseis dataset (wherever applicable).

c) The hardware of the CRU should have all the necessary interface facility for supporting and connecting Vibrator Control electronics so that if required by the user in future, it is possible to connect vibrator control electronics to the CRU by additional hardware or software if any.

Note 1: Irrespective of the specification/detail requirement given herewith vendor should ensure that the system is fully operational with the deployment of 3000 channels. If any additional items required for the purpose, vendor need to provide / quote the same.

5.0 GROUND ELECTRONICS

5.1 **DATA ACQUISITION STATION UNIT** –Data Acquisition Station Unit required to layout a total of 3000 channels for seismic data acquisition and should be compatible with standard Geophone string

- a) Channels Capacity : 1 channel per Data Acquisition Station Unit
- b) Frequency response : 5 Hz (or less) to 750Hz.
- c) Sample Interval : ¼, ½, 1, 2 and 4 milliseconds.
- d) Preamp Gain Constant : at least two out of 0/12/24/30/36 dB remote selectable with 12 dB as essential.
- e) Equivalent Input Noise : 0.70 μ VRMS (or less) at 12 dB preamp gain
- f) Anti Alias Filter : Linear or Minimum Phase Response
 - Minimum 750 Hz at 1/2 ms sample rate
 - Minimum 375 Hz at 1 ms sample rate
 - Minimum 187.5 Hz at 2 ms sample rate
 - Minimum 94 Hz at 4 ms sample rate
 - Rejection above Nyquist frequency: 130 dB
- g) Dynamic Range : Not less than 120dB at 0 dB preamp gain,
Total Dynamic Range 140 dB or more at 2ms
- h) Input Impedance : 20 K ohm or more in differential mode.
- i) A/D converter : \geq 24 bits DELTA SIGMA technology.
- j) Harmonic Distortion : 0.0001 % or better
- k) Common mode rejection : $>$ 90 dB or greater (or 0.001%)
- l) Gain Accuracy : 1 % or less
- m) Power Supply : Suitable Batteries as per requirement of proposed station unit
- n) Operating Environment : Operating temperature between -20°c to+ 60°c
- o) Humidity Range : 0 to 100%

- p) i). Time Stamping : GPS disciplined clock synchronization
- ii). Communication medium with CRU*: VHF Radio disciplined
(*Applicable for Cableless equipments sending LAT results to Central Recording Unit)
- q) Flash Memory per Station Unit: Minimum 8 GB or Higher
- r) Indicator : LED Status Indicator

(As per the system architecture where the Data Acquisition Station Units are powered through individual batteries then adequate numbers of the same with additional 20% of batteries as spares should be provided with all the accessories (The total quantum provided should be rounded to the next higher whole number).

5.2 SINGLE GEOPHONE (Analogue) – 3000 nos.

5.2.1 3000 nos. of high Performance & high Fidelity low distortion (LD) Industry standards single geophone only should be provided. The single element geophone provided have to be comparable to the output sensitivity of a parallel /series element array. The quoted Geophone should be fully compatible with seismic data acquisition system along with interface / station unit.

The geophone offered should have the following technical specifications:

- Geophone Type : Low Distortion ($\leq 0.1\%$)
- Geophones : Single sensor
- Length of Geophone connector: 2-3 meters (Cable length of Geophone connector)
(Applicable for external geophone's takeout only)
- Natural frequency : 5 Hz or less, Tolerance $\pm 2.5\%$,
- Tilt : 0^0 to 10^0 ,
- Coil Resistance : $1850\Omega \pm 5\%$, (Bidders to mention the specific value of the coil resistance)
- Open Circuit Damping : $0.60 \pm 5.0\%$
- Sensitivity : $80V/m/s \pm 5.0\%$.
- Polarity : Standard SEG
- Operating Temperature : $-20^{\circ}c$ to $+60^{\circ}c$

Note 2: a) As the geophones are used in difficult field conditions, the bidder should quote rugged field proven industry standard products. In case, the bidders of main seismic data acquisition system (or their

subsidiary) are manufacturing and selling their own geophones, the same should be offered. However, these should meet the technical specification as given above.

b) In case, the single sensor geophones are not manufactured by the bidders of the main seismic data acquisition system, the bidder should offer fully compatible, rugged and field proven industry standard products only (M/s Sensor or M/s Geospace Make or M/s Sercel Make) which have been used by exploration and / or geophysical service company (ies) successfully during last three years. The geophones offered should comply with the technical specifications as given above. The bidder to submit certificate from the user(s) in this regard. The responsibility of such products will rest with the main bidder.

6.0 GPS based Radio blasting system-The radio blasting system should be interfaced with the system. It will include following parameters:

- Firing accuracy- better than 20 μ s
- Decoder Operating – at 12 Volt standard battery
- Firing voltage 400 V
- Sample rate 0.5 millisecond
- Firing current > 200A (0.5 Ohm load)
- Charging Time < 1 second
- CAP and Geophone test
- Operating temp. -40° to +60°C

- (a) The GPS based radio blasting systems should provide positional accuracy less than 2 meters and the operational range will be for 8-10 Km.
- (b) The GPS based radio blasting system should have the facility for co-ordinate transformation from WGS-84 to local projection system (based on Survey of India map) and offer the facility for uploading location (positioning) information in industry standard format.
- (c) The necessary hardware and software interfaces are required to synchronize and control the shot sequence.
- (d) These should be complete with all the accessories and peripherals viz. battery, battery charger, mounting bracket, antenna, GPS device, firing line & Uphole line cable, Uphole Geophone, radio power cable, etc. ready to be used for deployment in the field. The encoder should operate on 12VDC power supply voltage and the decoders should operate on 12VDC portable batteries.

- (e) The Radio controlled blasting systems should operate with industry standard safety features. It should have VHF radio communication link (both voice & data) between the 'recorder end' and 'shot end' electronics.
- (f) For safety and security at least six security codes should be provided on the **encoder & decoder**.
- (g) The integrated blasting system should have necessary voltage and current capacity to detonate industry standard detonating devices.
- (h) The 'Record end' system must take the command from **CRU** (Central Controlling / Recording Unit) and return back the 'Time Break' and 'Uphole' signals to be recorded by the seismic data acquisition system. Moreover, the encoder and decoders should display all the relevant information viz. Uphole, privacy setting etc.
- (i) The radio blasting system should be interfaced with the system including encoders and decoders. The bidder has to provide **two (2) nos. of encoder and six (6) nos. of decoder**.

7.0 Two way Professional Radios (10 nos.) -Suitable two-way professional radios should be attached to the Blasters and recording equipment for to and fro communication. The power of the VHF Radios should be **25 watts** and should be able to operate in the range of 136 to 174 MHZ. The exact spot frequency within this range shall be communicated to the successful bidder at the time of placement of firm order. The radios should be complete with all the accessories and peripherals viz. microphone, antenna, chargers, cables & connectors etc.

8.0 COMMUNICATION

8.1 HF Sets (Motorola/ Kenwood or equivalent) - 02 nos.

8.1.1 Maximum Power - 150 W

8.1.2 Frequency - to be specified with firm order by OIL.

8.1.3 Power requirement - 12 V DC.

8.1.4 Each set should be complete with dipole antenna, connecting co-axial wires, power cables etc.

8.1.5 The bidder has to provide necessary documents and all the assistance to OIL to get the frequency licenses from the licensing authority in India corresponding to such offered & supplied items in case frequency is not license free.

8.2 Walkie-talkie sets (multi-channel VHF sets, Motorola 340/GP-328 or higher)-50 nos.

8.2.1 Output power - 5 watts

- 8.2.2 Frequency - to be specified with firm order by OIL
- 8.2.3 Each walkie-talkie set should have antenna, two rechargeable battery packs and necessary chargers.
- 8.2.4 The bidder has to provide necessary documents and all the assistance to OIL to get the frequency licenses from the licensing authority in India corresponding to such offered & supplied items in case frequency is not license free.

Section –IB

9.0 Data Harvesting Equipment : The proposed cableless seismic data acquisition equipment should have the adequate no. of Rack mounted Data Harvesting device commensurate with our requirement of data harvesting of at least 600 channels simultaneously. The system has to be offered with Field Data Management system comprising of LED monitor [size 24 inch flat screen (viewable or bigger)] capable of data archiving along with necessary hardware provided which should include following minimum parameters:

- a) Internal storage capacity of 5TB or greater with minimum RAID 5 configuration or better
- b) External Storage devices (NAS storage or equivalent) with minimum RAID 1 configuration or better and storage capacity of minimum 5TB or more- **01 no.**
- c) Constructed of Solid State Drive (SSDs) for internal data storage
- d) eSATA interface for writing data to delivery media
- e) Compatible with LTO-IV or higher having both read & write capacity – **4 nos.**
- f) Inventory Management of Ground Electronics and data as well as geophysical QC functions.
- g) The necessary interface, hardware, software, drivers, licenses or dongle as may be required to **copy the data recorded** (SEG Y and / or SEG D De-multiplexed) on internal & External storage devices of data harvesting equipment , to (LTO media) provided along with the data harvesting unit.
- h) The necessary interface, software, drivers, licenses or dongle as may be required for harvesting of acquired seismic and **navigational data/ sorting of data/ merging navigational data** with raw seismic file and display the shot gathers/ writing to LTO-IV or higher should be provided.

Note 3: Irrespective of the specification/detail requirement given herewith vendor should ensure that the data harvesting system is fully operational for data harvesting of at least 600 channels

simultaneously. If any additional items required for the purpose, vendor need to provide / quote the same.

10.0 BATTERY & BATTERY CHARGERS

i). The bidder has to supply suitable compatible batteries required for deployment of 3000 channels in the field plus 20 % spare with power consumption of proposed ground station units considering minimum 15 days of continuous field operation with 24 hours of operation time/day.

ii). The bidder need to provide adequate number plus 20% spare of compatible rack mounted battery chargers considering at least 10 % of batteries deployed in the field for recording 3000 channels, simultaneously need to be charged on daily basis.

The following criterion has to be followed for the battery chargers.

1. Input Power - (220 VAC, 50 Hz) or suitable for power requirement of battery chargers & data harvesting devices.
2. Separate Current and Voltage meters to be provided along with the battery charger.

iii) **Cabin of Data harvesting & battery Charger device:** Both the data harvesting device and the battery chargers (as per specifications provided under **Section-IB**, item 9.0 and 10.0) should be **housed in a suitable size of cabin mounted on a suitable trailer vehicle (truck as per section-IE, item 14.2)**. The cabin may be of either Indian make or imported .The aforesaid trailer should be supplied with provision of power input from the trolley mounted genset (,Section-IC, item 11.3) as per Annexure-1 (Specifications and terms & Conditions), having a **minimum 15KVA (or higher)** rating to operate all the data harvesting equipment, battery chargers & peripherals, air conditioners and all the other accessories in order to ensure smooth functioning of both the data harvesting device and the battery chargers. At least two numbers of high quality, rugged wall-mounted air-conditioners should be fitted in the cabin and should be capable of maintaining cabin temperature below 20°C. Ambient temperature is from 10 to 45 degree C with humidity upto 80%, non-condensing. The AC's are to be mounted on the wall of the cabin between the driver cabin and aforesaid cabin. Safety of all the electronic equipment installed in the cabin should be ensured by taking adequate precautions in the cabin design, AC fitting etc. so as to prevent moisture, water etc. from entering into the cabin either from AC trays or from rains. The cabin should have necessary waterproof fittings, good thermal insulation on all sides especially rooftop should be well insulated, sufficient lighting arrangements, safety fixtures, work furniture, main breakers board and sufficient blocks of 220 VAC plugs, 12 VDC plugs, ground post, proper wiring inside the cabin and earthing wires. The door of the cabin should be provided with suitable gaskets / seals to prevent water seepage during rains. The door will be placed at the rear end of the recording cabin and approx. size will be 250mm less from either sides & top of the cabin for proper strengthening of the cabin. The vendor has to ensure optimized cabin size and suitable trailer vehicle with provision of Driver's cabin to house the same keeping provision for space

requirement against battery charging device and data harvesting devices apart from adequate working space.

Section- IC

11.0 Generator (3 Nos.) - Suitable 4 stroke 3 Phase AC silent power generators (diesel) 220/230 VAC, 50HZ \pm 1HZ based power system to operate all the equipment & peripherals, Air Conditioners and all the other cabin accessories. **The generators should preferably be of Indian origin.** The generator set should be environmentally compliant. The detailed specifications are enclosed as Annexure-1 (Specifications and terms & Conditions).

11.1 **One no.** of genset should be **mounted on a suitable vehicle (truck)** as per **Section–IE, item 14.2**

11.2 The **second** genset should be **trolley mounted** and have a facility to be towed with safety.

11.3 The **third** genset should also be **trolley mounted** to the power requirement of entire data harvesting unit and battery charging devices and have a facility to be towed with safety.

Note 4: Both the data harvesting device and the battery chargers will be housed in a suitable size of cabin mounted on a suitable trailer vehicle (truck) as per **Section–IE, item 14.2** with provision of Driver's cabin. The power requirement input for this cabin shall be provided by trolley mounted genset in order to ensure smooth functioning of both the data harvesting device and the battery chargers.

Annexure-1

DETAILED TECHNICAL SPECIFICATION, SPECIAL NOTES AND OTHER TERMS AND CONDITIONS FOR PROCUREMENT OF 15 KVA ACCOUSTIC DIESEL ENGINE DRIVEN SINGLE GENERATING SET

SCOPE OF SUPPLY:

15 KVA, 3 Phase, 415 Volts, 50 Hz, 0.8 Power Factor, 1500 R.P.M. Electric Start Diesel Generating Set (Single) under N.T.P. conditions having Engine and Alternator directly coupled to each other through a Tyre Flex or equivalent make flexible coupling suitably Guarded. Each 15KVA DG set should comprise in Acoustic Enclosure (ARAI, Pune approved) mounted on to common base frame.

1.0 PRIME MOVER (DIESEL ENGINE):

The prime mover should be a four Cylinder, four Stroke cycle naturally aspirated Air-Cooled, vertical, in-line Diesel Engine, developing minimum 21.5 H.P for continuous running (24 Hrs.) with an overload capacity of 10% for a period not exceeding One Hour in any 12 hours running when running at 1500 R.P.M. as per site conditions given below and shall conform to specifications IS:10000/BS:5514. The Governing is to be in accordance with Class A-2 specifications to IS:10000/BS:5514.

Maximum Temperature : 40 Deg C

Minimum Temperature : 5 Deg C

Maximum Relative Humidity at 35 Deg C : 95%

Maximum Altitude above mean Sea Level : 150M

HSD conforming to IS: 1593:1982 and having the following specifications:

Cetane number : 42.5

Gross calorific Value : 19480 BTU/CFT (10000 CAL/GM)

The Engine shall comprise of the following system:

A) Cooling System: The Cooling System of the air cooled engine should comprise of Belt/ Pulley Driven Blower Fan Assembly.

B) Air Intake System: The Air Intake System should comprise of: Heavy duty Oil Bath type Air Cleaner and Air intake manifold.

C) Starting System: The Starting System should be a 12 volt electric starting system comprising of a maintenance free lead acid type battery (housed in a hard rubber or polypropylene case with venting provision) of reputed make, battery leads having minimum diameter of 70 sq. mm, Engine mounted Battery charging Alternator (Make: LUCAS TVS). 12 Volt Starter (Make: LUCAS TVS/ DELCO REMY) and Starting ring fitted to the Engine Flywheel.

D) Exhaust System: The Exhaust System should comprise of: Exhaust Manifold, Stainless steel Exhaust Flexible connection, Exhaust Silencer, Spark Arrestor and associated Piping connections with proper clamping arrangement.

E) Fuel System: The Fuel System should comprise of Mechanical Governor, Fuel Injectors, Fuel Pump, Fuel Filter Assembly, Fuel lines and Fuel Tank having storage capacity to meet the Fuel requirements of 12 hours of full load operations.

F) Lubricating System: The Lubricating System should comprise of Gear driven lubricating Oil Pump. Lubricating Oil Filter with a replaceable Filter Element. Lubricating Oil Cooler, Lubricating Oil Pan, Oil level dipstick and Crankcase breather.

G) Instrument Panel: The instrument Panel should include the following:

- i) Lubricating oil pressure gauge
- ii) Lubricating oil temperature gauge
- iii) Starting Switch
- iv) Ignition Switch
- v) Digital/Mechanical Tachometer and Hour Meter
- vi) Ammeter
- vii) Engine "Low Lube Oil Pressure" indication display red lamp

H) **Engine Safety Controls:** Safety shut off/trip system for tripping the Engine in the event of:

- i) Low Lubricating oil pressure
- ii) Engine over speed

I) Other Features will be as under

- i) Flywheel
- ii) Flexible Coupling
- iii) Lifting eyes
- iv) Standard Guards over Belt Drives (Blower Fan Drive, charging Alternator drives pulley and flexible coupling).
- v) Standard Painting
- vi) SAE standard rotation

1.1 GENERAL NOTES:

a) The bidder should submit the following information along with relevant performance rating curves and engine product catalogues.

- i) Gross HP developed at rated RPM
- ii) Deduction of blower fan, charging alternator and other ancillary equipment
- iii) Net HP developed at rated RPM
- iv) Fuel consumption at rated power as 110%, 75%, and 50% of rated load.

b) A suitably selected flexible coupling should be incorporated to transfer power from the engine to the alternator.

c) The set should be ready for operation after carrying out initial servicing and making provision for fuel.

d) The engine and alternator should be mounted on suitably selected and sized Anti vibration Mounting onto a common skid and coupled to each other through a flexible coupling to make the DG set vibration free.

2.0. DETAIL OF ELECTRICAL PART OF THE UNIT

15 KVA ALTERNATORS WITH CONTROL PANEL

ALTERNATOR SHALL BE OF INDUSTRIAL TYPE FOR CONTINUOUS DUTY, SELF EXCITED, SELF REGULATED, BRUSH LESS TYPE WITH AUTOMATIC VOLTAGE REGULATOR (AVR) AND SUITABLE FOR PARALLEL OPERATION.

2.1 ALTERNATOR DETAILS

2.1.1. MAKE/MODEL : KIRLOSKAR / STAMFORD/ CROMPTON /GREAVES

2.1.2 RATED VOLTAGE : 415V, 3 phase

2.1.3 RATED OUTPUT / PF : 15 KVA/ 0.8(leg) (continuous duty)

- 2.1.4. RATED CURRENT : 20.9 Amps
- 2.1.5 TYPE : Brush less with bearing at DE & NDE.
- 2.1.6 SPEED : 1500 RPM
- 2.1.7. FREQUENCY : 50 HZ.
- 2.1.8 NO. OF POLES : 4
- 2.1.9 CLASS OF INSULATION : CLASS F
- 2.1.10 PHASE SEQUENCE : UVW
- 2.1.11 CONFORM TO : IS: 4722 /92, VDE 0530 AND BS 5000
- 2.1.12 RATING : CONTINUOUS
- 2.1.13 CONNECTION :Y (STAR) connected stator winding with brought out terminals (Three for phases & one for neutral) with suitable insulation inside the terminal box.
- 2.1.14 AMBIENT TEMPERATURE : 40⁰ C
- 2.1.15 ALTERNATOR INTERNAL PROTECTION : IP 23 (ENCLOSURE)
- 2.1.16 ALTERNATOR TERMINAL BOX PROTECTION : IP 54 , terminal box should have suitable cable entry Glands .
- 2.1.17 AMPLITUDE OF VIBRATION AT NO LOAD : 100 MICRON (Max),(Horizontal).
- 2.1.18 EXCITATION SYSTEM : BRUSH LESS SELF EXCITED AND SELF REGULATED
- 2.1.19 MOUNTING : HORIZONTAL FOOT MOUNTED
- 2.1.20 PERMISSIBLE VOLTAGE VARIATION AT RATED KVA , SPEED AND PF : +/- 2 %
- 2.1 21. PERMISSIBLE FREQUENCY VARIATION AT RATED KVA , SPEED AND PF : +/- 2 %
- 2.1.22 VOLTAGE SWING(TRANSIENT RESPONSE) : WHEN RATED LOAD IS SUDDENLY SWITCHED-ON VOLTAGE DIP – 5 TO 10% AND CORRECTED WITHIN 0.2 TO 0.7 SEC.
- 2.1.23 THE RESPONSE RATIO OF EXCITATION SYSTEM SHALL NOT BE LESS THAN 0.5 (time).
- 2.1.24 THE ALTERNATOR SHOULD BE CAPABLE OF OPERATION OVER A RANGE OF 110% OF RATED VOLTAGE.
- 2.1.25 THE EXCITATION SYSTEM SHOULD BE SO DESIGNED AND/OR PROTECTED THAT HARMFUL OVER VOLTAGE CANNOT OCCUR AT THE MAIN EXCITER DUE TO COMBINED EFFECT OF MAX. EXCITER FIELD CURRENT AND MACHINE OVERSPEED.

2.1.26 THE ALTERNATOR SHOULD BE PROVIDED WITH TWO GROUNDING TERMINALS WITH THREADED BOLTS FOR CONNECTION TO GROUNDING GRID.

2.1.28. THE ALTERNATOR SHOULD BE PROVIDED WITH TWO NUMBERS OF EYE HOOKS FOR LIFTING.

2.1.29. WAVE FORM : SINUSOIDAL(Total Harmonic distortion-less
than 3% at no load)

2.1.30. CONDUCTOR MATERIAL.: COPPER (Electrolytic grade 99.9% pure)

2.1.31. PHASE AND NEUTRAL TERMINAL BOX : ONE

2.1.32. VOLTAGE REGULATION : + / - 1%

2.2 TESTING OF ALTERNATOR AT MANUFACTURERS WORKS :

ALL THE ROUTINE TESTS AND LOAD TESTS SHALL BE CARRIED OUT Y AT MANUFACTURERS WORKS SITE AND ALL THE TEST CERTIFICATE FROM OEM SHALL BE FURNISHED WITH SUPPLY. THE ROUTINE TEST WILL INCLUDE THE FOLLOWING TESTS/MEASUREMENTS:-

- i) MEASUREMENT OF WINDING RESISTANCES FOR GENERATOR ARMATURE, FIELD, EXCITER ARMATURE AND EXCITER FIELD.
- ii) MEASUREMENT OF INSULATION RESISTANCE TESTS (BEFORE AND AFTER HV TESTS) FOR GENERATOR ARMATURE AND FIELD, EXCITER ARMATURE AND FIELD.
- iii) HIGH VOLTAGE (HV) TEST.
- iv) PHASE SEQUENCE TEST.
- v) VOLTAGE REGULATION TEST.
- vi) VIBRATION MEASUREMENT.
- vii) MEASUREMENT OF NOISE LEVEL.
- viii) OVERLOAD TEST.

2.3 AUTOMATIC VOLTAGE REGULATOR

- i) ACCURACY (STEADY STATE) : +- 1%
- ii) RESPONSE TIME : 300 M SEC
- iii) ADJUSTMENT RANGE : +- 10%
- iv) VOLTAGE MONITOR : OKAY

v) EXCITATION MINOTOR : OKAY

2.4 EARTHING SYSTEM :

EARTHING SYSTEM FOR THE ALTERNATORS BOTH BODY AND NEUTRAL SHOULD BE AS PER THE IS :3043.

2.5 NAME PLATE (RATING PLATE)

NAME PLATE SHALL BE FIXED ON THE ALTERNATOR FRAME CONTAINING THE FOLLOWING MINIMUM INFORMATION IN ENGLISH LANGUAGE. MANUFACTURERS NAME, APPLICABLE STANDARDS, SERIAL NO. TYPE AND FRAME REFERENCE, RATED OUTPUT IN KVA AND KW, RATED POWER FACTOR, DUTY, RATED FREQUENCY, RATED VOLTAGE, NO. OF PHASES AND TYPE OF CONNECTION, RATED STATOR CURRENT, RATED SPEED IN RPM, CLASS OF INSULATION, EXCITATION CURRENT AND VOLTAGE AT RATED OUTPUT, PHASE ROTATION, TEMPERATURE RISE, YEAR OF MANUFACTURE.

2.6 STANDARDS :

THE ALTERNATOR SHALL CONFORM TO THE FOLLOWING STANDARDS:

IS : 12065 ----- NOISE LIMIT

IS : 12075 -----VIBRATION

IS : 4722 -----GOVERNING STANDARDS

IS : 4691 ----- ENCLOSURE

IS : 6362 ----- COOLING

IS : 2253 ----- MOUNTING

3.0 CONTROL PANEL:

The control panel should be fabricated with 14SWG CRCA sheet steel. Enclosure should be dust and vermin proof, self supporting, indoor mounting industrial type 9. Enclosure as per IP-54. The frame should be fabricated from suitable size of rigid M.S. angle iron/M.S. Channel frame work to have sufficient strength. Panel door should be in double leaf with heavy duty hinges and lockable. A neoprene gasket is to be provided around the periphery of panel door to make it dust and vermin proof. Panel should be suitable for floor mounting with necessary vibration dampers. An earth bar of 50mm x 6mm of G.I. strap to be provided on the backside of the control panel for earth connection. Danger plates are to be provided on front and rear side of control panels. Detachable gland plate is to be provided for glanding of incoming and outgoing cables. The panel should be mounted on a frame of height 60 cm from ground level for easy cable termination. The total height of the control panel should be less than 1.8 meters. There should be stand alone self supporting type. Sufficient space should be provided in the bottom cable base for proper cable termination.

3.1 PANEL PAINTING :

Panels should be thoroughly cleaned before applying two coats of rust preventive paints. This shall be followed by three coats of paint light grey shade No. 631 as per IS: 5, thickness - 50 Microns.

3.2 PANEL DESIGN :

Panels shall be designed complying with following points.

- a) For operating each alternator independently.
- b) All control wiring is to be done with single core **2.5 sq.mm** flexible copper PVC insulated and PVC sheathed wires of 1100 V grade .Wire to be approved by ISI.
- c) Control wires will not have any joint. Terminal blocks should be used whatever required for jointing purpose.
- d) All wires are to be numbered (using ferrule) for ease of identification.
- e) Suitable size of cable gland are to be provided at cable entry points of the panels.
- f) The indicating meters are to be mounted on the front side of the panels and shall be of flush type.
- g) There should be sufficient space inside the panel for maintenance.
- h) The power wiring should be done with single core, multistrand, PVC insulated and PVC sheathed circular **10.0** sq.mm copper cable. All connections should be terminated with suitably rated tinned copper lugs and nuts & bolts.
- i) The layout of the component should be systematic and arranged in such a way that the components can be easily approached for maintenance.

3.3 SPECIFICATION OF CONTROL PANEL FOR 15 KVA GENERATOR :

- 3.3.1. 32 Amp, 415 V, TPN, Fuse switch unit with 32 Amp HRC fuses and rupturing capacity of 80 KA, Qty - 1 No.
- 3.3.2. 32 Amp, 415V MCCB, four poles breaking capacity - 15KA, with adjustable overload alongwith 230V shunt trip coil. Qty - 1 No. Door inter lock should be provided for MCCB to ensure that door can be opened only when MCCB is in OFF position. MCCB should trip in case of earth leakage.
- 3.3.3. Core balance current transformer with earth leakage relay, relay range 0.3 amp to 3.0 amp with indication circuit, Test and Reset push button. The earth leakage relay should be connected to MCCB for tripping in case of earth leakage. Make:MEI / MDS legrand/Prayag - 1 no.
- 3.3.4. M.I. A.C. Voltmeter, Range (0-500V), Size : 96 mm x 96 mm - 1 No. Make : Automatic Electric Industries Ltd or equivalent reputed make .
- 3.3.5. Voltmeter selector switch with 4 position. (OFF, RY, YB -BR) - 1 No., Make : Kaycee / L & T / sieman
- 3.3.6. Current Transformer, resin cast **C.T. Ratio-30/5 A, Burden 15VA**, Accuracy Class 1 for ammeter - 3 Nos., Make : A.E. Ltd/Kappa/Schneider
- 3.3.7. Control Fuses for protection of voltmeter which require 1 set of fuse carrier and base, Fuses - type NS4, Rating - 4 Amp., Make – GE/bussman .
- 3.3.8. Busbar - A suitable length of 4 Nos. electrolytic grade high conductivity aluminum busbar of **100** Amp rating, material - E 91 E- W.P. as per IS-5082-1969 for incoming and outgoing feeders. Busbar support should be of non-hygroscopic materials and should have superior electrical resistance and fire resistance properties. Busbar should be capable of withstand short circuit fault level of **50KA**. Busbar support should be made of solid moulded compound (SMC) and busbar temperature should not exceed 85 degree centigrade. Bus bar should be insulated with heat shrinkable PVC sleeves. Make: Kappa/A.E. Ltd.
- 3.3.9. M.I. AC ammeter, CT operated, Range (0-30) A, Size : 96mm x 96mm - 1 No. CT ratio:30/5 A, Make : A.E. Ltd.
- 3.3.10. Ammeter selector switch with 4 position (OFF-R-Y-B) Make: Kaycee - 1 No.

- 3.3.11. LED indication of incoming power - 3 nos.
- 3.3.12. Automatic voltage regulator suitable for offered alternator.
- 3.3.13. 2 Nos. of separate earthing points are to be provided on the panel.
- 3.3.14. Cable gland suitable for 31/2 core x 10 Sq.mm PVC insulated armoured aluminum cable fitted in bottom detachable gland plate. Quantity: 2 nos.
- 3.3.15. 2 Nos. Eye Hooks for lifting of panel.
- 3.3.16. AVR type and mounting should be as per Genset specification. In case, control panel is mounting type, then AVR should be provided inside the panel in an approachable location. In case of Generator is mounting type, wiring facility should be incorporated in the panel.

NOTE:

- a) Alternator being a specialized item , only the makes detailed below will be acceptable:
 - i **Kirloskar**
 - ii **Crompton Greaves**
 - iii **Stamford**

- b) The bidder should provide following information regarding alternator along with the offer failing which offer may be rejected.
 - i **Frame size**
 - ii **Dimensional drawing**
 - iii **Technical datasheet**
 - iv **Catalogue**

- c) The bidder should provide following information regarding alternator control panel along with the offer failing which offer may be rejected.
 - i **Dimensional drawing**
 - ii **General arrangement drawing**
 - iii **Power and control circuit drawing**
 - iv **Component details of control panel**

- d) Offered alternator should be of proven design / model.
- e) Spare parts list along with the price should be provided with the quotation.
- f) Alternator and control panel are to be guaranteed for a period of 12 months against any manufacturing defects.
- g) Guaranty certificate should be submitted at the time of delivery of alternator and control panel.
- h) The Alternator should be procured from the original manufacturer of alternator or from the authorized dealer/assembler of alternator manufacturer (for generating set application). Bidders should confirm the same in their offer.

- i) Test certificate of alternator should be furnished at the time of delivery of alternator.
- j) Bidder should get the drawing of control panel approved from OIL on placement of order but before manufacturing the control panel.
- k) Packing should be adequate to avoid ingress of moisture and transit damage.
- L) Ten sets of control circuit diagram of control panel and commissioning cum maintenance manual for alternator should be provided along with the material.

4.0 ACOUSTIC ENCLOSURE:

The salient features of the acoustic enclosure shall be as follows:

- i. The acoustic enclosure packages should be portable and should house the engine, alternator and control panel.
- ii. The acoustic enclosure should be designed and manufactured to suit the most stringent noise specifications offering attenuation to a minimum of 70dBA at 7 meters.
- iii. There should be carefully designed inlet and outlet baffles / attenuators with corresponding weather louvers and bird mesh allowing sufficient air flow, for the set to operate even under the harshest ambient conditions whilst maintaining specified noise levels.
- iv. The canopies should be base frame mounted, made from corrosion resistant sheet steel duly surface treated and lined with sound absorbing materials retained by powder coated perforated zinc sheet.
- v. Each canopy should have a pitched roof, guttering and a panel-viewing window. Readings of indicating meters must be visible from outside. Side opening access doors should be provided on either side with lockable recessed handles to facilitate maintenance operations. Cable glands should be provided to avoid necessity of cutting into the canopy. The enclosure should have sufficient space around the generating set, so that operating personnel can carry out inspection of the same. There should also be provisions for taking out the generating set or the panel for maintenance / overhauling jobs.
- vi. The residential type silencer and spark arrestor should be roof mounted with all internal pipe work including flexible bellows already connected. The silencer should be designed to give minimum back pressure and high sound attenuation.
- vii. The canopy should be finished in synthetic enamel paint incorporating rust inhibitors and aluminum sprayed silencers and spark arrestors to guarantee a superior and long lasting finish. A separate thermostatically controlled blower must be provided for eliminating excessive heat dissipated by the engine within the acoustic enclosure.

- viii. There must be two numbers of earthing points on both sides for connecting the enclosure to the ground.
- ix. The alternator and control panel should be interconnected with 4 core 10 sq. mm PVC insulated, PVC sheathed armoured copper cable and cable should be terminated with proper size of tinned copper sweating socket and cable glands at alternator and panel end.

N.B.: Bidders should submit layout drawing of the acoustic enclosure indicating positions of engine, alternator, control panel, etc along with the wiring diagram of the package. The enclosure should be provided with internal wiring for illumination. There should be one number 15 amps MCB , one number switchboard with 5 amps/ 15 amps combined switch / socket, 1 numbers 20 watt tube light fitting with lamp for lighting circuit. Wiring of lighting circuit should through the PVC conduit. Main switch, changeover switch, control panel and alternator should be interconnected with 25 mm X 6 mm G-I strip.

5.0 SPARE PARTS LIST, INSTRUCTION MANUAL & DRAWINGS :

- i. The supplier should provide two sets each of parts list, operators instruction manual and workshop maintenance manual covering all the items along with each generating set.
- ii. One set of drawing showing installation details of the generating set, oilfield type skid, wiring diagram for the control panel and wiring drawing between the alternator and control panel should be provided with each generating set. All control panel diagram and schematic diagram are to be sent to OIL and duly approved prior to placement of order.
- iii. The supplier have to provide installation diagram of the set , performance and SCAN data sheet along with the quotation.
- iv. The supplier should provide one additional set of AVR and rotating diode.
- v. The supplier should provide along with the set:-
 - a. Dynamic load
 - b. Static load
 - c. Any unbalanced load
- vi. List of spares along with their part numbers that shall be required for normal operation and maintenance of the generating sets and accessories for a period of two years should be submitted along with the offer. Item- wise breakdown price of spares should also be provided. However cost of these spares will not be considered for evaluation of the offer.

6.0 INSPECTION AND TESTS

6.1 The generating sets including the control panels shall be inspected and tested at manufacture's works by OIL's engineer prior to despatch. Such inspection shall however not relieve the supplier of his responsibility to ensure that the equipment supplied is free from all manufacturing and other defects and conforms to correct specifications. Intimation must be sent to OIL in advance, for deputing personnel to carry out the inspection of equipment at manufacturer's works.

- 6.2 Pre-despatch inspection of the sets shall be carried out by OIL through its designated representative at the works of manufacturer. Full load testing of the generator sets for output and performance shall be carried out in presence of the purchaser or his representative appointed for the purpose and to his satisfaction.
- 6.3 The generating set shall be acceptable to the purchaser only after satisfactory full load test.

7.0 TEST CERTIFICATES:

The supplier shall submit detailed records and certificates of the foregoing tests as well as all relevant test certificates, to the purchaser, along with the delivery of the generating etc. The certificates/records shall be supplied in quadruplicate and those for electrical equipment shall be endorsed "suitable for use in the climatic conditions specified".

Section -ID

12.0 PERIPHERALS

12.1 Uninterrupted Power Supply (2 Nos.)- Suitable online UPS of sufficient capacity & rating with at least 10minutes back up time should be offered. The UPS should be able to cater to the safety requirement of all the Electronic Hardware installed in the recorder Cabin as well as provide ample time to the observer for proper shutdown of the seismic data acquisition system and all the associated peripherals. One UPS will be installed in the recording cabin for above requirement and the other will be kept as ready standby (kept at the base camp) with all the accessories so that it is ready to be interfaced with the recording cabin as and when required.

12.2 Laser Printer (1 No.) - One no. of Laser Colour Printer with the following minimum specification or higher.

- Print Quality: up to 1200 x 1200 dpi (Black & Colour)
- Compatible operating systems: Windows 7 professional/XP/Ultimate or equivalent
- Print Technology: Laser
- Processor Speed: 800 MHz
- Print Speed best quality mode: Black (35ppm), Color (35 ppm)

- Memory Standard: 1GB
- Media Supported: Paper (Plain, inkjet, photo, banner), envelopes, transparencies etc.
- Input capacity Standard: 150 Sheet or more
- Duplex Printing
- Connectivity: USB 2.0, 1Gigabit Ethernet
- Power: 220/230 V AC, 50 Hz

12.2.1 The printer should be complete with all the accessories & peripherals viz. User's Guide, printer Documentation, software on CD/DVD media, Network guide, power cord etc

12.2.2 At least 5 nos. of colour cartridges should be provided for the item mentioned in **Section –ID**, item no. 12.2

12.3 **DC Power Supply** - 12 Volts DC power supply for powering up peripheral **(4 Nos.)** Equipment in the recording cabin/data harvesting & battery charging cabin should be provided. One no. of DC power supply to be interfaced with the CRU / peripheral equipment and other will be kept as ready standby with all the accessories

12.4 TEST & MEASURING EQUIPMENTS

12.4.1 **A complete PC/workstation based Test and Maintenance equipment (one no.)** along with necessary operating and interface software specific to the offered ground electronics (if applicable) should be provided for testing, calibration and troubleshooting of field ground electronics including complete workshop facilities (toolkits, oscilloscopes, soldering etc.) should be provided. The Test & Maintenance Equipment should be able to test, calibrate and diagnose the ground electronics without the help of Central Controlling /Recording Unit (CRU).

12.4.2 **Field QC tool (at least 50 numbers)** for positioning of offered ground station units in advance for ensuring error-free acquisition spread and capable of performing all the standard sensor tests independently (sending of sensor test command and display of sensor test results with event log storage option).

12.4.3 **Two (2) nos. of rugged geophone testers** with all accessories and peripherals. The geophone tester should be capable of testing the industry standard geophone element & geophone strings in the field environment and in the seismic workshop. The tester should have library for retaining the fed parameters of the geophones. The geophone tester should have sufficient memory so as to store the system software and results of various analyses in memory/Hard Disk of the system. A suitable printer should also be provided to print out the test results on paper if the printer is not a part and parcel of the system. The geophone tester should be fully compatible with the quoted geophone and should be a portable system having the capability for measurement of the following parameters:

- Sensitivity, Natural Frequency, Damping Coefficient
- Distortion, AC Impedance
- Polarity Test, DC Resistance, Leakage etc.

Note 5: Irrespective of the specification/detail requirement given herewith vendor need to provide / quote the same, if any additional software & hardware items required for the purpose.

13.0 PC BASED WORKSTATIONS:

13.1 **PC WORKSTATION (2 nos.)** - Should be quoted (only branded systems viz. HP, LENOVO & DELL to be quoted) with the following specifications or higher.

Processor	Intel® Xeon® E5-1620 3.60 GHz, 10MB cache, 4 Core or higher
Chipset	Intel(R) 5520 Chipset or <i>higher</i> .
RAM	Minimum 16GB (4x4GB) DDR3 1333 MHZ ECC expandable up to 64 GB with at least 8 DIMM Slots,
Graphic Card	2GB NVIDIA QUADRO
Slots	Minimum 3 nos. of PCIe Series Slots
Ports	(1) USB 2.0 (two on front panel, four on I/O back panel), (1) PS/2, (1) ESATA port on back panel (Other ports to be provided by vendor as per compatibility with system, if any.)
Optical Drives	Minimum 16X DVD + /-RW with Dual Layer Drive Write Capabilities (Preferably same make & colour as CPU box) Complete with driver software on CD/DVD media, standard accessories and cables.
HDD	Minimum 2 x 1TB (7200RPM) SATA Drive , RAID 0 Configuration
Display	OEM 22-24 inch (diagonal) Flat Panel LCD/LED Monitor with standard accessories and cables
Keyboard /Mouse	14 keys keyboard & 3 button USB Optical Mouse with mouse pads.
Network	Integrated 10/100/1000 Mbps Ethernet Controller and IPV6 compliant.
Operating System	System has to be preloaded with the latest version of operating system (Windows 7 professional 64 bit & Red Hat® Linux® or as per system compatibility).

Note: A copy of Latest version of operating system preloaded in the workstation (mentioned above) including latest service

packs/patches/drivers along with licenses is to be provided in CD/DVD media & documentation.

Drivers	<i>All the Drivers for the latest operating software as mentioned have to supply on DVD media.</i>
Antivirus	Norton Internet Security 2010 antivirus software on DVD Media with minimum 15 months subscription shall be provided. In case of Linux operating system, anti-virus software will not be required.
Chassis	Vertical Tower or Inbuilt in system
Others Peripheral	<ul style="list-style-type: none"> a) Power Cables b) Power Extension spike guard with 6 Nos. of 5 or 15 Amps output or both as per the system requirement c) Patch Cord- Min 3m length with branded factory made d) All drivers on CD/DVD media e) Energy star 5.0 certified

13.2 **Laptop (1 No.)** - Should be quoted (only branded systems viz. HP, Lenovo and DELL to be quoted) with the following specifications or higher:

Processor	: 3 Generation Intel Core i7 3820QM Processor (2.7 GHz, 8MB cache, 1333 MHz FSB) equivalent or higher.
OS	: Windows 7 Ultimate 64
Memory	: up to 32 GB DDR3 SDRAM at 1600 MHz
Storage	: Minimum 500 GB (7200 rpm), 128 GB SSD SATA 3
Graphics	: NVIDIA Quadro K3000 2GB GDDR5 video memory
Display	: Minimum 15.6" diagonal FHD (1920x1080)
Optical Drive	: Minimum DVD/CD RW combo drive
Keyboard	: Standard keyboard with touchpad & backlight
Mouse	: External Optical USB Mouse
Connectivity	: 2 USB 3.0 ports, 2 USB 2.0 ports, eSATA/USB 2.0 combo port, 1 RJ 45 Ethernet, security lock slot
Audio	: Stereo sound with internal speakers, Integrated Microphone

Battery	: Minimum 8 cell Li-Ion Battery,
Adapter	: External AC adapter with Power cord
Others	: All Drivers on CD/DVD media, carrying case, users' manual in English Only. Power and all other interconnecting cables to be provided, Power extension spike guard with six nos. of 5 or 15 amps output or both as per the system requirement.

Section -IE

14.0 RECORDER CABIN and TRUCK

14.1 RECORDER CABIN: One (1)

- 14.1.1 The whole system i.e. Central Recording Unit and peripherals should be installed in a suitable, sturdy and field worthy air conditioned cabin.
- 14.1.2 This cabin should be installed on a truck (**Section – IE**, item 14.2). The necessary hardware like mounting brackets, shock absorbers etc. should be offered for mounting the entire equipment in the cabin and also for mounting the cabin on truck chassis etc. The shock absorber system should be adequately designed so as to control vibration. Cabin mounting on the truck chassis will have to be through heavy-duty U-bolts and adequate numbers of underneath cross member channels of appropriate size. Flooring of the cabin will be done using min. 5mm thick chequered plate.
- 14.1.3 The recorder cabin may be of either Indian make or imported. The cabin will be powered by external genset (**Section – IC**, item no. 11.1/11.2), having a minimum 15 KVA (or higher) rating to operate all the equipment & peripherals, Air Conditioners and all the other cabin accessories. The generator set should be environment compliant.
- 14.1.4 The length x width x height (L x W x H) of the cabin should be 3.25m x 2m x 2.3m ($\pm 2\%$).
- 14.1.5 Atleast two numbers of high quality, rugged wall-mounted air-conditioners should be fitted in the cabin and should be capable of maintaining cabin temperature below 20°C. Ambient temperature is

from 10 to 45 degree C with humidity upto 80%, non-condensing. The AC's are to be mounted on the wall of the instrument cabin between the driver cabin and the instrument cabin.

- 14.1.6 Safety of all the electronic equipment installed in the recorder cabin should be ensured by taking adequate precautions in the cabin design, AC fitting etc. so as to prevent moisture, water etc. from entering into the cabin either from AC trays or from rains. The cabin should have necessary waterproof fittings, good thermal insulation on all sides especially rooftop should be well insulated, sufficient lighting arrangements, safety fixtures, work furniture, main breakers board, sufficient blocks of 220 VAC plugs, 12 VDC plugs and ground post. The door of the cabin should be provided with suitable gaskets / seals to prevent water seepage during rains. The door will be placed at the rear end of the recording cabin and approx. size will be 250mm less from either sides & top of the cabin for proper strengthening of the cabin.
- 14.1.7 The cabin should have seismic input panels, with good thermal insulation, on one side for connecting seismic cables and earthing wires.
- 14.1.8 The cabin should have antenna fitting installed for VHF radios.
- 14.1.9 The vendor to provide complete layout diagram and the mounting details of the cabin and the accessories like sockets for generator power panel etc.
- 14.1.10 A tool kit comprising of all the essential tools like Screw Drivers, Pliers, Cutters, Solder/Desolder kit, Allen keys, Spanner set, Digital Multi-meter etc. required for checking/mounting/dismounting of modules and general maintenance of offered equipment.

14.2 TRUCK: Three (3) nos. (One for Instrument cabin, one for Generator & one for carrying the cabin mounted data harvesting unit)

- 14.2.1 These three truck should accommodate the recorder cabin (**Section – IE**, item 14.1), **one no.** of mounted genset (**Section – IC**, item 11.1) and suitable size cabin mounted data harvesting unit (**Section – IB**, item 10(iii)) respectively.
- 14.2.2 Mounting of the recorder cabin, truck mounted genset and cabin mounted data harvesting & battery charging unit on the truck chassis is responsibility of the supplier.
- 14.2.3 The truck should be two wheel drive with the following specifications
(Suitable Make & Model: Tata 709 or equivalent)
- 4 x 2 drive (4 X 4 drive, if possible)
 - Max. Permissible GVW will be approx. 7000Kg (Total weight of the unit must be well within the GVW).
 - Full Forward Control Cabin (Cowl) and Dual Cabin.
 - Dual Cab length approx. 2750mm.
 - Overall length should be approximately 6.75 meters.

(Overall length shall be as minimum as possible. Accordingly, unit with suitable wheelbase shall be selected)

- Overall width of the vehicle should be within 2.25 meters.
- Overall height should be within 12 feet (~ 3.65 meters).
- Truck Chassis
- Minimum BS III /Euro III emission norms compliant water-cooled diesel engine developing approx. 70 HP at 2000-3000 rpm.
- Two wheels at front and four wheels at rear and one wheel spare
- Rear Overhang (ROH) as per the original design. No overhang of cabin beyond chassis; extension of chassis to accommodate cabin is not acceptable.

14.2.4 **Driver's Cabin:** Dual Cab drivers cabin- preferably factory built i.e. originally built/fabricated in all respects at chassis manufacture's factory that comes along with the chassis & without requiring any subsequent additional fabrication, fitment job on it. It will have following features:

- All steel structure construction
- Seating capacity as min. 6 (six) persons excluding driver
- 1(one) Bench Seat for 2(two) passengers at front & parallel to driver's seat. In addition, 1(one) Bench Seat with adequate leg space behind & parallel to driver's seat.
- In addition all standard windows, 1(one) sliding glass window with wire-mesh guard from outside at rear. Non-splinter/toughen glass-panes lockable from inside for windows.
- Additional passenger door with suitable foot step.

14.2.5 Other features:

- Lockable fuel tank, Standard Tool Kit, Jack with handle, Wheel wrench, Rear-view mirrors, Mud flaps, Well-covered battery box, Tool box, Suitable storage box under rear passenger seat etc.
- Suitable towing hook(s), mounting arrangement for spare wheel
- Reversing Alarm/Horn.
- A gap of approx. 100mm between the driver's cab and the Rear Instrument Cab.
- First Aid Box, Fire Extinguisher etc. as per MV Act.
- Supply of 2(two) sets of Spare Parts Catalogue, Workshop & Service Manual for the chassis along with the unit.
- Exterior painting to be filled up at bidder's end (We use Imperial Crimson – not Cherry)
- Interior painting as per the standard (light shade)
- Rust proof painting for Chassis & undercarriage
- For painting works, min. 1(one) coat of primer and 3(three) coats of paints shall be applied.

14.2.6 Documentation:

- The following documents/literatures shall be submitted along with the bid:-
 - Technical Leaflet of chassis clearly indicating the Make & Model of the chassis to support the specifications provided in the bid. All the specifications as desired, as well as Make & Model description of the chassis shall clearly be defined in the bid; submission of technical Leaflet alone is not sufficient.

- Dimensional & construction details drawing with material description showing Driver's cabin, Rear Instrument cabin, Rear Overhang (ROH) and seating arrangement etc.
- The documents/literature regarding Temporary registration, Insurance, Road Tax, Sale Letter, Engine Emission Certificate etc. in Form 21 & 22(A) as per MV Act shall be submitted along with the supply for onward registration of the unit in the name of M/s OIL INDIA LIMITED, Duliajan.
- 2 (two) sets of Spare Parts Catalogue, Workshop & Service Manual for chassis.

14.2.7 Notwithstanding any clause mentioned elsewhere in the NIT/Tender, the invoice for the complete unit shall be submitted in 2(two) parts separately as under: -

- Invoice for truck chassis and cabins: It shall include the cost of truck chassis with Driver's Cabin and Rear Instrument Cabin only.
- Invoice for other instruments & components: It shall include cost of all other equipment/components mounted on the truck as well as supplied separately, if any, as part of the complete offer.

14.2.8 **Warranty/ Guarantee:** Notwithstanding any Guaranty / Warranty clause(s) mentioned elsewhere in the NIT, the truck unit shall be under guarantee / warranty by the bidder for min. period of 1 (one) year from the date of successful commissioning of the complete unit at site.

14.2.9 The truck (**Section – IE**, item 14.2) should preferably be of India origin.

15.0 DOCUMENTATION & MANUALS

15.1 Two (2) sets of detailed hardcopy technical manuals (viz. User and maintenance, all standard Schematics, part list, software maintenance, diagnostic manuals etc.) in ENGLISH only, should be provided for all the vendors items. However, for all the third party or bought out items the bidders have to provide all pertaining documents, manuals etc mentioned above as provided by the OEM.

15.2 Additionally, two (2) set for vendor items mentioned above in item 15.1 should be provided on CD media. For third party or bought out items whatever is available on CD media should be provided.

15.3 Technical literature/brochure in respect of the offered equipments should be enclosed to evidence that the quoted equipment meets the desired specifications. The referred/ relevant portion of the literature/brochure should be properly numbered and underlined/highlighted for verification against each and every technical specification clause.

15.3.1 The corresponding page number of the literature/brochure so underlined/highlighted should be Indicated in column five (05) of the checklist against the relevant clauses of the specifications.

15.3.2 Only if any parameter is either not mentioned in the literature/brochure enclosed with the bid , or mentioned in such a way that the particular parameter of the technical specification cannot be explicitly and unambiguously verified against OIL specification requirements, a specific certificate shall be enclosed by the bidder confirming full compliance of the clause & page number where the specific certificate is enclosed should be indicated in column five(05) of the check list against the relevant clause of the specification.

- This is a sample copy **similar to FORM 21 of Indian Motor Vehicle Act** only. The certificate to be issued by supplier shall contain following minimum information. -

SALE CERTIFICATE

Certified that (brand name of the vehicle) has been delivered by us to on (date).

Name of the buyer

Address

The details of the vehicles are as under :-

1. Class of vehicle
2. Maker's name & address
3. Chassis No.

- 4. Engine No.
- 5. Horse power or cubic capacity
- 6. Fuel used
- 7. Number of cylinders
- 8. Month and year of manufacturing
- 9. Seating capacity (including driver)
- 10. Unladen weight
- 11. Maximum axle weight, number and description of tyres –
 - (a) Front axle
 - (b) Rear axle/axles
 - (c) Any other axle
- 12. Colour (s) of the body
- 13. Gross vehicle weight
- 14. Type of body

Date:

Signature of the manufacturer / dealer

- This is a sample copy similar to FORM 22(A) of Indian Motor Vehicle Act only. The certificate to be issued by supplier shall contain following minimum information. -

CERTIFICATE OF COMPLIANCE WITH POLLUTION STANDARDS /

SAFETY STANDARDS OF COMPONENTS AND ROAD WORTHINESS

Certified that (brand name of the vehicle) bearing Chassis number and Engine number complies with the (name of Emission Standard – Euro II, etc.) Emission standard as well as other Safety & Road Worthiness Standards as per provisions of the (name of Motor Vehicles Act of country of origin).

It is also certified that body of the above vehicle has been fabricated by us and the same complies with the provisions of the (name of Motor Vehicles Act of country of origin).

Signatures of Manufacturer / Body Builder

Section -IF

16.0 SPARES and REPAIR KIT

16.1 SPARE KIT FOR CENTRAL RECORDING UNIT AND PERIPHERALS

16.1.1 Spare kit for onsite repair for the CRU including the man-machine interface should include one complete set of spare boards / PCB's used in the data acquisition module of the CRU, man-machine interface, (or the complete module in lieu thereof)

16.1.2 **One complete set** of interconnecting cables used for interconnecting various modules in the CRU, viz. CRU to workstation/PC/Operator console to various peripherals (like Printer, External Storage System etc.) to QC systems (if applicable 4.1b) and other power cables.

16.1.3 Complete list of spares to be supplied, against **Section – I F**, clause 16.1, along with individual price should be attached separately.

16.2 Complete Tool Kit with carrying case, meters etc. for field units- **One set**.

16.3 All types of connectors (viz. geophone takeouts, adapters, etc.) used in the spread which includes all the field units/links of 1 set each (i.e.: 1set each means at least 15% of connectors used in spread of 3000 nos. of channels for each category, rounded to the next higher whole number).

Section – IG

17.0 Pre-dispatch/shipment inspection

- 17.1 Three OIL personnel will visit the vendor's site for a maximum duration of ten working days for carrying out item wise physical inspection of imported items as per specification of the system, channel capacity of the equipment, checking of spares, peripherals, manuals, catalogues, software and other documents before the dispatch of the consignment. For the Indian make items the inspection will be done in India.
- 17.2 The bidder/supplier should intimate the date of inspection to OIL atleast forty five (45) days advance to complete the necessary internal formalities for OIL's personnel to visit the vendor site , Cost of traveling, boarding and lodging of OIL's personnel will be borne by OIL.

18.0 Delivery

- 18.1 The system is urgently required by the buyer for its operations. Bidders are requested to quote their best shortest delivery period.

18.2 The delivery of all the items of the system including all accessories and peripherals should be shipped by suitable mode (Air) to port of disembarkation in India and from there by road to Duliajan, Assam, India.

19.0 Installation & Commissioning

19.1 The bidder should undertake to completely assemble the system including shock proof, mounting of the same in cabin on the truck along with integration of different peripherals/items such as printers, tape drives, external storage systems, power supplies generator etc. so that the system becomes ready for deployment in the field after commissioning. The bidder should undertake to completely assemble the Data harvesting and Charging device including shock mounting of the same in cabin on the suitable trailer vehicle with provision of Driver's cabin along with integration of different peripherals/items such as printers, LTO drives, external storage systems, power supplies generator etc. so that the system becomes ready for deployment in the field after commissioning.

19.2 The system will be installed and commissioned by the supplier at Oil India Ltd. specified location in Duliajan, Assam only. Charges if any should be quoted in the enclosed price schedule.

19.3 The commissioning engineers should be available at site within 45 days of the intimation given by the company for commissioning the equipment and the commissioning should be completed within four weeks.

19.4 The following points are to verify at the consignee's premises jointly by the representative of the bidder & OIL's representative(s):

- Quantity & Physical condition of each of the modules/items supplied.
- Cabin & Generator including condition of fittings
- Manuals, Catalogues
- Software media and manuals
- Necessary Test /Warranty/ Guarantee Certificates
- Any other details as per complete system specifications.

19.5 The commissioning of the equipment other than (**Section – IG** item 19.4) includes physical, testing/checking of all the equipment & delivered spares.

19.6 Comprehensive Acceptance tests as per the acceptance protocol are to be carried out during the commissioning of each item of the system including all accessories & peripherals by the representative(s) of the supplier in fully working condition after duly interfacing all the supplied items in the presence of OIL's representatives within a month followed by documentation and joint certification of the test results. The all acceptance tests will be carried out in OIL's operational area. An installation and commissioning certificate duly signed by the authorized representatives of the OIL shall be issued certifying that the fully integrated system is functioning satisfactorily as per the Supply order.

19.7 At least one of the engineers is required at commissioning site for additional two weeks after the system is commissioned successfully, to ensure smooth deployment and functioning in the field for trouble free operation.

20.0 TRAINING

20.1 In order to ensure optimal utilization of new technology and efficient in-house maintenance of the sophisticated system training has to be imparted to OIL's personal. The charges for training, if any should be quoted in the enclosed price schedule.

20.2 Equipment operation user Training should include User Operation, Hardware maintenance, spread QC tools, standard instrument tests, troubleshooting, shooting system, harvesting unit , advanced capabilities of system etc. for the seismic data acquisition system. Hardware maintenance training should include central controlling /recording unit, ground electronics, data harvester and peripherals such as Radio blasting system, work station, GPS Test & Maintenance Equipment etc. The training should also be imparted on software applications viz. updating patches, OS & software loading etc. The complete training has to be imparted to Six (6) numbers of Geophysicists and should be of minimum 15 working days duration. The bidder has to quote for conducting this training at vendor's site.

20.3 The details of the training should be enclosed along with the offer.

20.4 The travel and living expenses of OIL personnel for the training organized at suppliers work site/factory will be borne by OIL.

Section – IH

21.0 WARRANTY:

21.1 All the equipment including third party items shall have to be covered by a warranty for 12 months after successful commissioning at site.

21.2 Warranty should also include supply of all the software upgrades with necessary additional; hardware, if any, free of cost.

21.3 In case of any defect (as per the General terms & conditions under Warranty clause), during warranty, the supplier shall arrange to replace/repair the defective part at his own cost at users' site.

21.4 All the necessary expanses and other arrangements for travel, accommodation of supplier's engineer, and transportation of equipments during warranty period will be borne by the supplier.

21.5 For warranty services, OIL will liaise only with a single point of contact of the bidder.

21.6 In case of problem (either hardware or software related) in central controlling /recording unit and its peripherals and standalone work stations, data harvesting devices & other peripherals etc, the supplier shall send his engineer along with relevant spares to rectify the problem at site . The necessary travel and boarding expenses of the service engineer will be borne by the supplier. However, the necessary arrangements for boarding & lodging shall be arranged by OIL on a chargeable basis. The system shall have to be repaired within a period of ten days from the time it is reported.

22.0 ANNUAL MAINTENANCE AND SUPPORT CONTRACT

22.1 AMC will start after successful completion of warranty period.

22.1.1 The bidder has to quote for four years of comprehensive AMC for items supplied against this tender as given in Annexure-2. Unless explicitly mentioned all the items required to be covered under the AMC are those as listed in Annexure-2.

22.1.2 The bidder has to quote the total AMC charges per year separately for four years after expiry of one year warranty period. AMC charges will be paid quarterly after successful completion of the AMC services for that period .Any penalty amount on the bidder will be adjusted from that AMC charge.

22.1.3 The AMC will include Preventive as well as corrective maintenance.

22.1.4 The scope involves supply and replacement of all the parts damaged in normal field operating conditions only.

22.1.5 The charges quoted against AMC for four(4) years will be considered for commercial evaluation.

22.1.6 The supplier has to identify any other critical items/spares required to be covered under AMC apart from items as listed in Annexure-2 and the same has to be mentioned in their quote. The bidder has to quote the total AMC charges accordingly.

22.1.7 The supplier will depute one of their trained / OEM certified maintenance engineers on as and when required basis to Duliajan during 4 years AMC period. The engineer should be qualified and should have minimum 2 years experience with similar systems.

22.1.8 The supplier at his own cost shall arrange the clearance of the spare parts, equipment etc. from customs and port authorities in India and shall pay all requisite duties including customs duty, demurrages, if any, clearance fee/ charges, inland transport charges etc.

22.1.9 OIL will provide accommodation and local transport to the supplier's maintenance engineers during their stay at Duliajan. Any other charges which are required during maintenance will be borne by supplier.

22.1.10 During the AMC period routine maintenance, repairing/replacement of all the supplied equipment should be done twice as required by OIL and the bidder's engineer(s) must visit Duliajan/Operational site twice in the year for a period of minimum four (4) working days. All the repairing, maintenance, should be OEM certified.

22.1.11 No cannibalization of any system will be permitted for carrying out maintenance services.

- 22.1.12 For AMC services, OIL will liaise only with a single point of contact of the bidder. The bidder has to mention the contact address, phone number of the contact person who will be responsible for AMC support.
- 22.1.13 Any tools and equipments needed for carrying out the jobs under AMC has to be provided by the supplier. However, OIL will provide help with tools available with them.
- 22.1.14 In case the contractor fails to repair any equipment supplied by them during the AMC period, within 120 hours from the time of reporting the breakdown, a penalty of 1/2% of yearly AMC charges for each day of delay will be levied subject to a maximum amount of 7.1/2 % of AMC charges within a calendar year. If for any reason, the bidder fails to repair the equipment within eleven successive days from the date of reporting, the period of AMC will be extended by the said period at no extra cost in addition to the above penalty.
- 22.1.15 In case of any system integration problem during the AMC period, it will be the responsibility of the supplier to rectify the same.
- 22.1.16 The supplier will have to follow the preventive maintenance schedule of each equipment supplied, during the AMC period.
- 22.1.17 The AMC should include supply and installation of all the software upgrades with necessary additional hardware, if any, free of cost at the earliest.
- 22.1.18 In case of any breakdown during AMC period, the supplier shall arrange to replace/repair the defective part at his own cost at user's site.
- 22.1.19 All the items covered under Annual Maintenance Contract (AMC) should be maintained in such a way that all the items are ready for deployment and use in the field as per the Clause 22.0 of this tender document. The item description to be covered under comprehensive AMC is mentioned below in table as an Annexure -2

Annexure-2

SL. NO.	<u>NIT ITEM NO.</u>	<u>ITEM DESCRIPTION</u> <u>(TO BE COVERED UNDER COMPREHENSIVE AMC)</u>	<u>QTY.</u>
1	4.1	Central Controlling / Recording Unit (CRU) (Complete Hardware & software) as per NIT Section – IA , clause 4.1	02
2	4.1.7	External Storage	01
3	5.1	Data Acquisition Station Units	3000 nos.
4	6.0	Encoders	02

5	6.0	Decoders	06
6	9.0	Data Harvesting Equipment Unit (Complete Hardware & software)	01
7	9.0(e)	LTO Drives	04
8	10.0	Battery Chargers (complete set)	01
9	12.4	Test & Measuring Equipment including Field QC tools(Complete hardware & software)	01

Note 6: The supplier has to identify any other critical items/spares required to be covered under AMC apart from items as listed in Annexure-2 and the same has to be mentioned in their quote. The bidder has to quote the total AMC charges accordingly.

23.0 PRODUCT SUPPORT (HARDWARE)

23.1 Future support for service, supply of spare & consumable parts of the vendors items should be for minimum 7 (seven) years from the date of commissioning with regard to service, spares and consumables. However, for bought out items other than those covered under AMC, the bidder has to ensure full support for 7 (seven) years from date of commissioning. Certificate to these effects should be enclosed with the bid document.

23.1.1 Any hardware/software modification required for removal of bugs, if any, should be provided during the warranty period, AMC and beyond till the full life cycle of the seismic data acquisition system at no additional cost to OIL.

24.0 PRODUCT SUPPORT (SOFTWARE)

24.1 The Operating software and the application software need to be supplied with perpetual license (full life time license minimum 20 years). Third party software, if any, should also be supplied with perpetual license.

24.2 Any software upgrades if released within the warranty period, AMC would be provided at no additional cost to OIL.

24.3 Software patches for general improvement in the function of the system and also for the removal of the bugs if any, during the warranty period, AMC and beyond till the full life cycle of the system shall be supplied by the supplier at no additional cost to OIL.

24.4 Information about revision/up gradation should be provided by the bidder from time to time at no cost to OIL.

24.5 Dongle/ Hardware locks (keys), password / license operating keys corresponding to Host IDs of various intelligent devices, workstations, PCB's, printers, transcriber, data harvester devices etc. Requiring

licenses or authorization or password) integrated/ to be integrated into the system should be provided for smooth utilization/maintenance during the life cycle of the equipment. This will include the supplied/ to be supplied spares also.

25.0 Payment: Payment shall be released as follows:

a) Payment shall be released as follows:

- i) 80 % value shall be released on supply against proof of despatch/shipment of the goods .
- ii) Remaining 20 % along with installation & commissioning charges shall be paid after successful commissioning and acceptance by OIL at site.

OIL may consider making 100 % payment of the goods value against proof of dispatch/shipment provided bidders agree to pay interest @ 1% above prevailing Bank Rate (CC rate) of State Bank of India for 20 % of the goods and also submit Bank Guarantee for the equivalent amount plus interest valid till successful commissioning . This is in addition to the 10 % of the order value towards Performance Security as per the tender requirement.

b) Training charges will be paid only after successful completion of training.

c) AMC charges quoted will be released in quarterly basis in equal installments after successful completion of each quarter i.e. payment @ 25% of AMC charges will be released at the end of 1st, 2nd, 3rd and 4th quarter of each year. OIL will enter into separate contract for AMC and the rate quoted by the bidder for the AMC should be kept valid for the entire period of AMC.

26. Oil India Purchase Order No. must be engraved on the body of the recording cabin. Bidder must confirm the same categorically in their quotation.

IMPORTANT NOTE : NO PRICE SHOULD BE INDICTAED IN TECHNICAL BID.

Section-II

BID REJECTION CRITERIA (BRC)/ BID EVALUATION CRITERIA (BEC)

1) BID REJECTION CRITERIA

The bid shall conform generally to the specifications and terms and conditions given in the tender. Bids shall be rejected in case the goods offered do not conform to the required minimum/maximum parameters stipulated in the technical specifications and to the respective international/national standards where ever stipulated /applicable.

Notwithstanding with 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.

(A) TECHNICAL

Bids not satisfying the following criteria will be rejected.

1.1.1 BIDDER'S QUALIFICATION

The bidder shall be an Original Equipment Manufacturer (OEM) of cable less seismic data acquisition system. However, local agents may be allowed for logistics & liaison jobs.

OR

1.1.2 The bidder shall be an authorized dealer of the original equipment manufacturer (OEM) of cable less seismic data acquisition system. Necessary certificate of this effect duly signed and stamped by OEM must be submitted by the bidder along with the bid.

1.2 BIDDER'S EXPERIENCE:

1.2.1 In case, the bidder is an Original Equipment Manufacturer (OEM) of the offered item, the following criteria shall be met by the bidder:

1.2.1.1 The bidder shall be in the business of manufacturing **cable less seismic data acquisition system** and shall have the experience of successful execution of selling at least 02 (two) such latest state of the art systems with minimum 3000 channels each in the international market within last five (5) years preceding to the bid closing date of this tender . The setting-up of such seismic data equipment will essentially mean installation, commissioning and integration of the seismic data recording modules/ software on requisite hardware supplied by the bidder along with the ground station units & other necessary ancillary components viz. chargers , harvesting units , shooting system, communication device and other peripherals . Necessary documentary proof must be provided to this effect along with the offer. System sold to its own subsidiary will not be accounted for the purpose.

1.2.2 In case the bidder is an authorized dealer of OEM of cable less seismic data acquisition system, the following criteria shall be met by the bidder:

1.2.2.1 The bidder shall confirm supply of at least one such cable less seismic data acquisition system with minimum 3000 channels within last five years preceding to the bid closing date of this tender along with installation & commissioning of the equipment in collaboration with OEM. System sold to the subsidiary of the OEM or authorized dealer will not be accounted for the purpose.

1.2.2.2 The bidder shall enclose a certificate in original in support of authorization of dealership with back up warranty from original equipment manufacturer of cable less seismic data acquisition system (OEM) to quote for this tender.

1.2.2.3 A minimum 01 no. of such cable less seismic data acquisition system with minimum 3000 channels must have been supplied & commissioned by the OEM of the authorized dealer within last five years preceding to the bid closing date of this tender. This particular system has to be other than the one installed and commissioned through the authorized dealer.

1.3 The bidder shall be rejected in case of any change of the proposed OEM after submission of the bid. The bidder has to confirm in writing that there shall be no change of OEM after submission without this confirmation the bid shall be rejected.

1.4 SUPPORTING DOCUMENTS:

1.4.1 In support of the experience as noted in Para 1.2.1.1 and 1.2.2.1 above, the bidder shall submit the supporting documents of purchase order, invoice and successful commissioning report for supply of cable less seismic data acquisition system.

1.5 GENERAL:

1.6.1 All the materials as indicated in the material description of the enquiry should be offered. If any of the items are not offered by the bidder, the offer will be considered as non-responsive and rejected.

1.6.2 Bidders must submit a written undertaking that, in case of an order, they will provide services for installation/commissioning of the entire system including the third party items in Duliajan, Assam, India and comprehensive annual maintenance contract (AMC) as per the tender requirements. Any bidder not offering the same shall be considered as non responsive and rejected. The bidder should guarrranty support for the same for minimum 7 (seven) years from the date of commissioning with regard to providing service, spares and consumables.

(B) COMMERCIAL :

1.0 Bids are invited under Single Stage Two Bid System. Bidders shall quote accordingly under Single Stage Two Bid System. 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 which shall be kept blank. The "Priced Bid" must contain the price schedule and the bidder's commercial terms and conditions. Bidder not complying with above submission procedure will be rejected.

2.0 Bid security of US \$ 1,13,000.00 or Rs. 50,00,000.00 shall be furnished as a part of the TECHNICAL BID. Any bid not accompanied by a proper bid security in ORIGINAL will be rejected without any

further consideration. For exemption for submission of Bid Security, please refer Clause No. 9.8 (Section A) of General Terms and Conditions for Global Tender. The Bid Security shall be valid till 23/09/2015 (dd/mm/yy) .

- 3.0 Bidders must confirm that Goods, materials or plant(s) to be supplied shall be new of recent make and of the best quality and workmanship and shall be guaranteed for a period of twelve months from the date of commissioning of the complete package at site against any defects arising from faulty materials, workmanship or design. Defective goods/materials or parts rejected by OIL shall be replaced immediately by the supplier at the supplier's expenses at no extra cost to OIL.
- 4.0 Successful bidder will be required to furnish a Performance Bank Guarantee @10% of the order value. The Performance Bank Guarantee must be valid for one year from the date of successful commissioning of the complete package at site. Bidder must confirm the same in their Technical Bid. Offers not complying with this clause will be rejected.
- 5.0 The prices offered will have to be firm through delivery and not subject to variation on any account. A bid submitted with an adjustable price will be treated as non-responsive and rejected.
- 6.0 Validity of the bid shall be minimum 180 days. Bids with lesser validity will be rejected.
- 7.0 Bids received after the bid closing date and time will be rejected. Similarly, modifications to bids received after the bid closing date & time will not be considered.
- 8.0 Bidders shall quote directly and not through Agents in India. Offers made by Indian Agents on behalf of their foreign principals will be rejected. Similarly offers from unsolicited bidders will be rejected.
- 9.0 Bids containing incorrect statement will be rejected.
- 10.0 Offers received without Integrity Pact duly signed by the authorised signatory of the bidder will be rejected.
- 11.0 No offers should be sent by Telex, Cable, E-mail or Fax. Such offers will not be accepted.

12.0 Bidders are required to submit the summary of the prices in their commercial bids as per bid format (Summary), given below :

(i) **Commercial Bid Format (SUMMARY) for Foreign Bidders :**

- (A) Total material cost
- (B) Packing & FOB Charges
- (C) Total FOB Port of Shipment value, (A + B) above
- (D) Freight Charges upto Kolkata, India
- (E) Insurance Charges
- (F) Total CIF Kolkata value, (C+D+E)
- (G) Pre-shipment Inspection charges, if any
- (H) Training charges, if any
- (I) Installation & Commissioning charges
- (J) Total AMC Charges for (1st yr. + 2nd yr.+3rd yr. +4th yr.)
- (K) Total Value, (F + G + H + I + J) above
- (L) Total value in words :
- (M) Gross Weight :
- (N) Gross Volume :

(iii) **Commercial Bid Format (SUMMARY) for Indigenous Bidders :**

- (A) Total material cost
- (B) Packing and Forwarding Charges
- (C) Total Ex-works value, (A + B) above
- (D) Excise Duty including Cess, (Please indicate applicable rate of Duty & Cess)
- (E) Sales Tax, (Please indicate applicable rate of Tax)
- (F) Total FOR Despatching station price, (C + D + E) above
- (G) Road Transportation charges to Duliajan
- (H) Insurance Charges
- (I) Total FOR Duliajan value, (F + G + H) above
- (J) Pre-shipment Inspection charges, if any
- (K) Training charges, if any
- (L) Installation & Commissioning charges
- (M) Total AMC Charges for (1st yr. + 2nd yr.+3rd yr. +4th yr.)
- (N) Total Value, (I + J + K + L + M) above
- (O) Total value in words :
- (P) Gross Weight :
- (Q) Gross Volume :

NOTES :

1. The 2D/3D system covered under this tender will be used by OIL in the PEL/ML areas issued/renewed after 01/04/99, applicable Customs Duty for import of goods shall be ZERO. Indigenous bidders shall be eligible for Deemed Export and should quote Deemed Export prices. Excise Duty under Deemed Export exempted.
2. Installation/Commissioning charges must be quoted separately on lumpsum basis which shall be considered for evaluation of the offers. These charges should include amongst others to and fro fares, boarding/lodging, local transport at Duliajan and other expenses of supplier's commissioning personnel during their stay at Duliajan, Assam(India). All Income, Service, Corporate Taxes etc. towards the services provided under installation / commissioning shall be borne by the supplier and will be deducted at source at the time of releasing the payment. Bidder should also confirm about providing all these services in the Technical Bid.
3. Successful bidder shall offer the system for Pre-despatch/shipment Inspection by OIL's team of technical/commercial executives. Pre-despatch/shipment Inspection and Training charges, if any, must be quoted separately on lumpsum basis which shall be considered for evaluation of the offers. The to and fro fares, boarding/lodging and other enroute expenses of OIL's personnel shall be borne by OIL.

Bidders must categorically indicate the Installation / Commissioning, Pre-despatch/shipment Inspection, Training and AMC charges in their offers and must confirm about providing the same in their Technical bids.

4. All Income, Service, Corporate Taxes etc. towards the services provided under Training and AMC shall be borne by the supplier and will be deducted at source at the time of releasing the payment.
5. Banking charges in the country of the foreign bidder shall be borne by the bidder

(II) **BID EVALUATION CRITERIA :**

The bids conforming to the specifications, terms and conditions stipulated in the tender and considered to be responsive after subjecting to the Bid Rejection Criteria will be considered for further evaluation as per the Bid Evaluation Criteria given below:

A. COMMERCIAL :

- 1.0 The evaluation of bids will be done as per the Commercial Bid Format (SUMMARY) detailed vide Para 12.0 of BRC.

- 2.0 If there is any discrepancy between the unit price and the total price, the unit price will prevail and the total price shall be corrected. Similarly, if there is any discrepancy between words and figure, the amounts in words shall prevail and will be adopted for evaluation.
- 3.0 For conversion of foreign currency into Indian currency, B.C. selling (Market) rate declared by State Bank of India, one day prior to the date of price bid opening shall be considered. However, if the time lag between the opening of the bids and final decision exceed 3(three) months, then B.C. Selling(Market) rate of exchange declared by SBI on the date prior to the date of final decision shall be adopted for conversion and evaluation.
- 4.0 Offers not complying with the payment terms indicated in the enquiry shall be loaded with one percent above the prevailing Bank rate (CC rate) of State Bank of India for duration of commissioning time indicated in the tender plus transit time (3 months) for evaluation purpose.
- 5.0 To ascertain the inter-se-ranking, the comparison of the responsive bids will be made as under, subject to corrections / adjustments given herein.

6.1 **When only foreign bidders are involved :**

Comparison of bids will be done on the basis of “ TOTAL VALUE” which is estimated as under :

- (A) Total material cost
- (B) Packing & FOB Charges
- (C) Total FOB Port of Shipment value, (A + B) above
- (D) Freight Charges upto Kolkata, India
- (E) Insurance Charges @ 1% of Total FOB Value vide (I) above
- (F) Banking Charges @ 0.5% of Total FOB Value vide (I) above in case of payment through Letter of Credit (If confirmed L/C at buyer's account is required, 1.5% of Total FOB Value will be loaded)
- (G) Total CIF Kolkata Value, (C + D + E + F) above
- (H) Pre-shipment Inspection charges
- (I) Training charges
- (J) Installation & Commissioning charges
- (K) Total AMC Charges for 4 years
- (L) Total Value, (G + H + I + J + K) above

NOTE : Banking charge in the country of the foreign bidder shall be borne by the bidder.

6.2 When only domestic bidders are involved or when more than one domestic bidders are in contention in case of mixed response :

Comparison of bids will be done on the basis of “ TOTAL VALUE” which is estimated as under :

- (A) Total material cost
- (B) Packing and Forwarding Charges
- (C) Total Ex-works value, (A + B) above
- (D) Excise Duty including Cess
- (E) Sales Tax
- (F) Total FOR Despatching station price, (C+ D + E) above
- (G) Road Transportation charges to Duliajan
- (H) Insurance Charges @0.5% of Total FOR Despatching Station Value () above
- (I) Assam Entry tax
- (J) Total FOR Duliajan value, (F + G + H + I) above
- (K) Pre-shipment Inspection charges
- (L) Training charges
- (M) Installation & Commissioning charges
- (N) Total AMC Charges for 4 years
- (O) Total Value, (J + K + L + M + N) above

NOTE: Excise Duty in case of the indigenous bidder is EXEMPTED.

6.3 When both foreign and domestic bidders are involved :

The Total Value of domestic bidder (inclusive of customs duty on imported raw material and components etc, and applicable terminal excise duty on the finished products and Sales Tax) excluding inland transportation to destination and Insurance charges worked out as per Para 6.2 above and Total Value of the foreign bidder worked out as per Para 6.1 above excluding inland transportation to destination will be compared. No price preference will be allowed to indigenous bidders except that for capital goods, the domestic manufacturers would be accorded a price preference to offset CST to the extent of 4 % or actuals, whichever is less subject to 30 % local content norms as stipulated for World Bank Funded project to the satisfaction of OIL. When more than one domestic bidders fall within price preference range, inter-se-ranking will be done on Grand Total Value basis.

Note: If the Government of India revises these evaluation criteria the same as applicable on the bid closing date will be adopted for evaluation of the offers.

7.0 Other terms and conditions of the enquiry shall be as per General Terms and Conditions for Global Tender. However, if any of the Clauses of the Bid Rejection Criteria / Bid Evaluation Criteria (BEC / BRC) mentioned here contradict the Clauses in the General Terms & Conditions of Global Tender of the tender and/or elsewhere, those mentioned in this BEC / BRC shall prevail.

Section -III

TECHNICAL CHECK LIST FOR THE BIDDER

Important: Please tick relevant box and specify remarks, if any. Use additional sheets for remarks if required. Any deviation in terms with * will make the bid liable for rejection.

NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure, (Reference Page No.)
2.1				
2.2				
2.3				
2.4				
2.5				
2.6				
2.7				
2.8				
2.9				
2.10				
2.11				
2.12				
2.13				
2.14				
2.15				
2.16				
3.0 (a)				
3.0 (b)				
3.0 (c)				
3.0 (d)				
3.0 (e)				

NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure, (Reference Page No.)
3.0 (f)				
3.0 (g)				
3.0 (h)				
3.0 (i)				
3.0 (j)				
3.0 (k)				
3.0 (l)				
3.0 (m)				
3.0 (n)				
3.0 (o)				
3.0 (p)				
3.0 (q)				
4.1				
4.1(a)				
4.1(b)				
4.1(c)				
4.1(d)				
4.1(e)				
4.1.1				
4.1.2				
4.1.3				
4.1.4				
4.1.5				
4.1.6				

4.1.7				
NIT item no	Agree	Not Agree	Remarks	Technical Literature / Brochure (Reference Page No.)
4.1.8				
4.1.9				
4.1.10				
4.1.11(a)				
4.1.11(b)				
4.1.12(a)				
4.1.12(b)				
4.1.12(c)				
4.1.13				
4.1.14				
4.1.15				
4.1.16				
4.1.17				
4.1.18				
4.1.19				
4.1.20(a)				
4.1.20(b)				
4.1.20(c)				
Note 1				
5.1 (a)				
5.1 (b)				
5.1 (c)				

5.1 (d)				
5.1 (e)				
5.1(f)				

NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure (Reference Page No.)
5.1(g)				
5.1(h)				
5.1 (i)				
5.1 (j)				
5.1 (k)				
5.1 (l)				
5.1 (m)				
5.1 (n)				
5.1 (o)				
5.1 (p)				
5.1 (q)				
5.1 (r)				
5.2.1				
Note 2 (a)				
Note 2 (b)				
6.0				
6.0 (a)				
6.0 (b)				
6.0 (c)				
6.0 (d)				
6.0 (e)				

6.0 (f)				
6.0(g)				
6.0(h)				
NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure (Reference Page No.)
6.0(i)				
7.0				
8.1				
8.1.1				
8.1.2				
8.1.3				
8.1.4				
8.1.5				
8.2				
8.2.1				
8.2.2				
8.2.3				
8.2.4				
9.0				
9(a)				
9(b)				
9(c)				
9(d)				
9(e)				
9(f)				
9(g)				

9(h)				
Note 3				
10(i)				
NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure (Reference Page No.)
10(ii)				
10(iii)				
11.0				
11.1				
11.2				
11.3				
Note 4				
Annexure 1				
12.1				
12.2				
12.2.1				
12.2.2				
12.3				
12.4.1				
12.4.2				
12.4.3				
Note 5				
13.1				
13.2				
14.1				

14.1.1				
14.1.2				
14.1.3				
14.1.4				
14.1.5				
14.1.6				
NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure (Reference Page No.)
14.1.7				
14.1.8				
14.1.9				
14.1.10				
14.2				
14.2.1				
14.2.2				
14.2.3				
14.2.4				
14.2.5				
14.2.6				
14.2.7				
14.2.8				
14.2.9				
15.1				
15.2				
15.3				
15.3.1				
15.3.2				

16.1				
16.1.1				
16.1.2				
16.1.3				
16.2				

NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure (Reference Page No.)
16.3				
17.1				
17.2				
18.1				
18.2				
19.1				
19.2				
19.3				
19.4				
19.5				
19.6				
19.7				
20.1				
20.2				
20.3				
20.4				
21.1				

21.2				
21.3				
21.4				
21.5				
21.6				
22.1				
22.1.1				
NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure (Reference Page No.)
22.1.2				
22.1.3				
22.1.4				
22.1.5				
22.1.6				
22.1.7				
22.1.8				
22.1.9				
22.1.10				
22.1.11				
22.1.12				
22.1.13				
22.1.14				
22.1.15				
22.1.16				
22.1.17				

22.1.18				
22.1.19				
Annexure-2				
Note 6				
23.1				
23.1.1				
24.1				
24.2				
24.3				
24.4				
NIT item No	Agree	Not Agree	Remarks	Technical Literature / Brochure (Reference Page No.)
24.5				
25(a)				
25(a)(i)				
25(a)(ii)				
25(a)(iii)				
25(a)(iv)				
25(a)				
25(b)				
25(c)				
26				

Section - IV

PRICE SCHEDULE OF EQUIPMENT

Sl. No.	NIT Item no.	ITEM DESCRIPTION	Qty required	Qty quoted	Unit cost	Total cost	Remarks
A	CENTRAL CONTROLLING/RECORDING UNIT (CRU)						
	4.1	Central Recording Controlling / Unit (CRU) with all required hardware accessories as mentioned under item no. 4.1	Two (2)				
	GROUND ELECTRONICS						
	5.1	Data Acquisition Station Units (Cable less Mode) as mentioned under item no. 5.1 (a to r)	For a total of 3000 numbers of channels				
5.2	Single Geophone (Analogue) as mentioned under item no. 5.2.1	3000 Nos.					

6.0(i)	GPS based Radio blasting system						
	Encoders	Two (2)Nos.					
	Decoders	Six (6) nos.					
7.0	Two way Professional Radios	Ten (10 Nos.)					
8.0	COMMUNICATION						
8.1	HF Sets (Motorola/ Kenwood or equivalent)	Two (2 nos)					
8.2	Walkie-talkie sets (multi-channel VHF sets, Motorola 340, GP- 328 or higher)	Fifty (50Nos.)					

Note:.. All Indian items should be quoted in the table provided separately with appropriate remark in the above table.

SUBTOTAL OF A	
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SUBTOTAL OF A in words	
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Signature of the bidder: _____

PRICE SCHEDULE OF EQUIPMENT

Sl. No.	NIT Item no.	ITEM DESCRIPTION	Qty required	Qty quoted	Unit cost	Total cost	Remarks
B	9.0	Complete Data Harvesting Equipment Unit as mentioned under item no. 9. (a to f)	One (01 no.) Unit				
	10.0	Battery and Battery Chargers as mentioned under item no. 10.0 (i to ii)	For 3000 channels + 20 % spares				
		Suitable size of cabin for entire data harvesting unit & battery chargers as mentioned under item no. 10(iii)	One (1no.) unit				

Note:. All Indian items should be quoted in the table provided separately with appropriate remark in the above table.

SUBTOTAL OF B	
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SUBTOTAL OF B in words	
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Signature of the bidder: _____

PRICE SCHEDULE OF EQUIPMENT

Sl. No.	NIT Item no.	ITEM DESCRIPTION	Qty required	Qty quoted	Unit cost	Total cost	Remarks
C	11.0	Generators Three (3) nos. (As per Annexure-1)					
	11.1	One no. of genset should be mounted on a suitable vehicle(truck)	One (1)				
	11.2	The second genset should be trolley mounted and have a facility to be towed with safety	One(1)				

	11.3	The third genset should also be trolley mounted to the power requirement of entire data harvesting unit and battery charging devices.	One(1)				
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Note: All Indian items should be quoted in the table provided separately with appropriate remark in the above table.

SUBTOTAL OF C	
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SUBTOTAL OF C in words	
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Signature of the bidder: _____

PRICE SCHEDULE OF EQUIPMENT

Sl. No.	NIT Item no.	ITEM DESCRIPTION	Qty required	Qty quoted	Unit cost	Total cost	Remarks
D	12.0	PERIPHERALS					
	12.1	Uninterrupted Power Supply	Two (2 Nos.)				
	12.2	Laser Printer	One (1 No.)				
	12.3	DC Power Supply	Four (4nos.)				
	12.4	Test and Measuring Equipments					

	12.4.1	Complete PC/workstation based Test and Maintenance equipment	One (01 no.)				
	12.4.2	Field QC tool	Fifty (50 nos.)				
	12.4.3	Geophone testers	Two (02 nos.)				
	13.0	PC BASED WORKSTATIONS					
	13.1	PC WORKSTATION	Two (2 nos.)				
	13.2	Laptop	One (1 No.)				

Note: All Indian items should be quoted in the table provided separately with appropriate remark in the above table.

SUBTOTAL OF D	
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SUBTOTAL OF D in words	
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Signature of the bidder: _____

PRICE SCHEDULE OF EQUIPMENT

Sl. No.	NIT Item no.	ITEM DESCRIPTION	Qty required	Qty quoted	Unit cost	Total cost	Remarks
	RECORDER CABIN & TRUCK						
E	14.1	Recorder Cabin as mentioned under item no. 14.1 (14.1.1 to 14.1.10)	One (1)				
	14.2	Truck as mentioned under item no. 14.2 (14.2.1 to 14.2.9)	Three (3)				

	15.0	Documentation & Manuals as mentioned under item no. (15.1 to 15.3.2)	As per Clause no.15.0				
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Note: All Indian items should be quoted in the table provided separately with appropriate remark in the above table.

SUBTOTAL OF E	
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SUBTOTAL OF E in words	
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Signature of the bidder: _____

PRICE SCHEDULE OF EQUIPMENT

Sl. No.	NIT Item no.	ITEM DESCRIPTION	Qty required	Qty quoted	Unit cost	Total cost	Remarks
	16.0	Spares and Repair Kit					
F		Spare Kit for Central Recording Unit Peripherals as mentioned under item no. (16.1 to 16.3)	As per Clause no.16.1 to 16.3				

Note: All Indian items should be quoted in the table provided separately with appropriate remark in the above table.

SUBTOTAL OF F	
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SUBTOTAL OF F in words	
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Signature of the bidder: _____

PRICE SCHEDULE OF EQUIPMENT

SOFTWARE ITEMS

Sl. No.	NIT item no	Item Description	Qty required	Qty quoted	Unit cost	Total cost	Remarks
	4.1	Software for CRU	One (1)				

G

4.1(b)	Spread Quality Control Software as mentioned under item no. 4.1(b) & 4.1.10	One (1)				Applicable for Equipments communicating spread QC test result to CRU
4.1.20 (a)	Necessary software for recording & source correlation of vibroseis data	One (1)				
4.1.20 (b)	Necessary software for spread data quality control while acquiring vibroseis dataset	One (1)				Applicable for Equipments communicating spread QC test result to CRU
4.1.20 (c)	Necessary interface facility for supporting and connecting Vibrator Control electronics.	One (1)				
9(g)	Software for Copying Data recorded on internal & External storage devices of data harvesting equipment to LTO media	One (1)				
9(h)	Software for sorting of seismic data/ merging navigational data with raw seismic file/ seismic data harvest and display the shot gathers/ writing to LTO-IV or higher	One (1)				

12.4	Software for PC based Test & Maintenance equipment, individual Field QC tools & geophone testers.	One (1)				
13.1	OS for each PC based work -station mentioned in item no. 13.1	One (1)				
13.2	OS for Laptop	One (1)				

Note: All Indian items should be quoted in the table provided separately with appropriate remark in the above table.

SUBTOTAL OF G	
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SUBTOTAL OF G in words	
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Signature of the bidder: _____

PRICE SCHEDULE OF EQUIPMENT

All Software components provided on separate media other than mentioned in section IV from serial no. A to G should be quoted in the space& format provided below with complete details.

Sl. No.	NIT item	Item Description	Qty	Qty	Unit cost	Total	Remarks
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	no		required	quoted		cost	
H							

Note: All Indian items should be quoted in the table provided separately with appropriate remark in the above table.

SUBTOTAL OF H	
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SUBTOTAL OF H in words	
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Signature of the bidder: _____

PRICE SCHEDULE OF EQUIPMENT

Sl.	NIT Item no.	ITEM DESCRIPTION	Qty required	Qty quoted	Unit cost	Total cost	Remarks
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No.							
I	17.0	Pre-dispatch/shipment inspection, if any					
J	19.0	Installation & Commissioning Charges	One (1)				
K	20.0	Training as mentioned under item no. 20.1 to 20.4	LOT				
L	22.0	Comprehensive Annual Maintenance Contract of items as per Annexure- 2					
		Charges for 1 st Year					
		Charges for 2 nd Year					
		Charges for 3 rd Year					
		Charges for 4 th Year					

SUBTOTAL OF I TO L	
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SUBTOTAL OF PAGE I TO L in words	
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All Indian items should be quoted in the table below:

SL.No.	NIT Item no	Item Description	Qty required	Qty quoted	Unit Cost	Total Cost	Excise duty	CST	Remarks

(i)	Total Material Value, Indian Items	
(ii)	Crating and Handling, Indian Items	
(iii)	Total Cost, FOB (i+ii)	
(iv)	Freight up to Duliajan, India	
(v)	Insurance Charges up to Duliajan, India	
(vi)	Total Cost FOR at Duliajan, India, Indian Items (T2) = (iii + iv + v)	

B)	TOTAL COST (T2) in words	
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Signature of the bidder: _____

THE CHECK LIST MUST BE COMPLETED AND RETURNED WITH YOUR OFFER. PLEASE ENSURE THAT ALL THESE POINTS ARE COVERED IN YOUR OFFER. THESE WILL ENSURE THAT YOUR OFFER IS PROPERLY EVALUATED. PLEASE MARK 'YES' OR 'NO' OR SPECIFY AGAINST THE FOLLOWING QUESTIONS, IN THE RIGHT HAND COLUMN.

1	Whether bid submitted under Two Bid System ?	
2	Whether ORIGINAL Bid Bond(not copy of Bid Bond) submitted exactly as per format ? If YES, provide details	
	(a) Amount :	
	(b) Name of issuing Bank :	
	(c) Validity of Bid Bond :	
	(d) Whether Bid Bond is valid till	
3	Whether offered firm prices ?	
4	Whether quoted offer validity of 180 days from the date of closing of tenders ?	
5	Whether quoted a firm delivery period? Please indicate .	
6	Whether quoted as per tender (without any deviations) ?	
7	Whether quoted any deviation ?	
8	Whether deviation separately highlighted ?	
9	Whether agreed to the Warranty clause ?	
10	Whether Price Bid submitted as per Price Schedule (refer Para 12.0 of BRC)	
11	Whether quoted all the items/qty. of tender ?	
12	Whether indicated the country of origin for the items quoted?	

13	Whether technical literature / catalogue enclosed?	
14	Whether confirmed acceptance of tender Payment Terms .	
15	For Foreign Bidders - Whether offered FOB / FCA port of despatch including sea / air worthy packing & forwarding?	
16	For Foreign Bidders – Whether port of shipment indicated. To specify:	
17	For Indian bidders – Whether indicated the place from where the goods will be dispatched. To specify :	
18	For Indian bidders – Whether road transportation charges up to Duliajan quoted ?	
19	For Indian Bidders only - Whether offered Ex-works price including packing/forwarding charges ?	
20	Whether Indian Agent applicable ?	
21	If YES, whether following details of Indian Agent provided ?	
	(a) Name & address of the agent in India – To indicate	
	(b) Amount of agency commission – To indicate	
	(c) Whether agency commission included in quoted material value?	
22	Whether weight & volume of items offered indicated ?	
23	Whether confirmed to submit PBG as asked for in tender ?	
24	Whether agreed to submit PBG within 30 days of placement of order ?	
25	For Indian Bidders only - Whether indicated import content in the offer ?	

26	For Indian Bidders only - Whether deemed export quoted?	
27	For Indian Bidders only – Whether all applicable Taxes & Duties have been quoted ?	
28	Whether all BRC/BEC clauses accepted ?	
29	Whether Pre-dispatch inspection , training and Installation & Commissioning quoted separately ? Whether Income Tax , Services taxes included wherever applicable ?	
30	Whether 4 years AMC Charges quoted with taxes ?	
31	Whether Integrity pact exactly as per format and with digital signature uploaded and all the clauses have been accepted?	

OFFER REF	
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NAME OF THE BIDDER	
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