



DIRECTORATE GENERAL OF HYDROCARBONS
(Ministry of Petroleum & Natural Gas)
Plot No.2, OIDB Bhawan, Sector 73, Noida-201301
Ph: 0120 – 247 2000. E-mail: mm@dghindia.gov.in

(E-Tender Notice)

INVITATION TO BID–National Competitive Bid (Open E-Tender under Two Bid System)

Directorate General of Hydrocarbons, Noida invites Competitive Bids for “Setting up of private cloud infrastructure at DGH Noida and SDC Bhubaneswar”, under two bid system (Techno-commercial bid and price bid).

The detailed e-tender document for the above is available at DGH's website www.dghindia.gov.in and Government of India's Public Procurement Portal <http://eprocure.gov.in/cppp/>. The prospective bidders can participate in the tender by downloading the tender document from the aforementioned website, and submit their bid online only at GOI e-bidding portal <https://eprocure.gov.in/eprocure/app> with required bid security, documents, confirming the eligibility criteria, along with the other documents as stated in the tender document, before tender closing date and time. No physical bids will be accepted.

Bids shall be submitted by **1400 hrs on 12.09.2019**.

E-Tender No.	Description
MM-12018(30)/1/2019-DGH/ENQ-163	Setting up of private cloud infrastructure at DGH Noida and SDC Bhubaneswar

Bidders are requested to go through the complete bid documents and the eligibility criteria under the Bid Rejection Criteria, Scope of work/ Technical Specifications etc. in particular before bidding.

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DIRECTORATE GENERAL OF HYDROCARBONS

MINISTRY OF PETROLEUM & NATURAL GAS

GOVERNMENT OF INDIA

NOIDA

E-TENDER NO.: MM-12018(30)/1/2019-DGH/ENQ-163

TENDER DOCUMENT

FOR

**Setting up of private cloud infrastructure at
DGH Noida and SDC Bhubaneswar**

**Directorate General of Hydrocarbons
Ministry of Petroleum & Natural Gas
Govt. Of India, India**

Phone No : (+91)-120-2472000
Tele Fax : (+91)-120-2472049

Office of : Director General-DGH
OIDB Bhawan, Tower A, Plot No. 2, Sector 73,
NOIDA-201301, INDIA

FORWARDING LETTER

To,

Sub: E-Tender for Setting up of private cloud infrastructure at DGH Noida and SDC Bhubaneswar

Dear Sir,

1.0 Open national Competitive Basis tender under two bid system are invited in e-form from prospective Bidders through CPP e-bidding portal at <https://eprocure.gov.in/eprocure/app> for the above said service/work/supply/job, as per **Annexure-IV** at DGH, Noida at OIDB Bhawan. The salient features of the tender are:

1	E-Tender No.	MM-12018(30)/1/2019-DGH/ENQ-163
2	Brief Description of the Services / Scope of Supply	Setting up of private cloud infrastructure at DGH Noida and SDC Bhubaneswar.
3	Type of Bid	Open E-Tender under two Bid System (Techno-commercial Bid & Price Bid)
4	Pre Bid Conference	On 28.08.2019 at 11-00 hrs at Directorate General of Hydrocarbons (DGH), OIDB Bhawan, Tower A, Plot No. 2, Sector-73, Noida -201301, India.
5	Last date for submission of Pre Bid Queries(To be mailed to mm@dghindia.gov.in)	23.08.2019 at 14-00 hrs.(IST)
6	E-Bid and Original documents submission closing Date & Time	12.09.2019 at 14-00 hrs.(IST)
7	Place of Submission of original documents	Tender Box at Gr. Floor, Directorate General of Hydrocarbons (DGH), OIDB Bhawan, Tower A, Plot No. 2, Sector – 73, Noida -201301, India.
8	Bid Opening Time, Date & Place	Techno-commercial bid: 1500 Hrs. (IST) on the next date of Bid Closing date and at the same address as above. Price bid: Opening time and date shall be intimated to technically qualified bidders.
9	Bid validity	90 days from bid closing date.

10	Bid Bond/ Earnest Money Deposit Amount(original Bid Bond valid for 45 days beyond the validity of the bids asked for in the tender to be enclosed with Techno-commercial Bid only)	INR 29,00,000.00
11	Performance Guarantee to be submitted only by the Successful Bidder	7.5% of total order value valid for a period of 02 months beyond warranty and AMC period.
12	Liquidated damage	At the rate of ½ % of the order value per week or part thereof subject to a maximum of 5 %, for the period extending beyond the scheduled delivery date and/or Commissioning date.
13	Eligibility Criteria	As per Annexure-III of Tender document.

2.0 Complete bid document can be downloaded from DGH's web site www.dghindia.gov.in and Government of India's Public Procurement Portal <http://eprocure.gov.in/cppp/>. The prospective bidders can participate in the tender by downloading the tender document from the aforementioned website, and submit their bid online only at GOI e-bidding portal <https://eprocure.gov.in/eprocure/app> with required bid security, documents, confirming the eligibility criteria, along with the other documents as stated in the e-tender document, before tender closing date and time. No physical bids will be accepted.

3.0 Addendum/ Corrigendum, if any, to the tender documents shall be uploaded on aforementioned websites only. Hence, bidders may view the same regularly till the bid submission date.

4.0 Bidders must submit their bid online at Government of India's Public Procurement Portal <https://eprocure.gov.in/eprocure/app>. No physical bids will be accepted.

5.0 Bidders are requested to go through the complete bid documents and the eligibility criteria under the Bid Rejection Criteria, Scope of work/supply etc. in particular before bid submission.

6.0 Two Bid system is being followed in this tender. Bidders should take due care to submit their bids in accordance with the requirement and as per the instructions given in the tender document(s). Instructions to bidders regarding "Submission of bid" are described at Cl. No. 8.0 of Annexure-I of bid document.

List of documents to be uploaded/submitted along with techno-commercial bid are also mentioned at Appendix-9 of Annexure-I of Bid document.

7.0 Bid Evaluation Criteria (BEC) shall be the basis for evaluation of bids. Prices should be quoted strictly as per Price Bid Format given.

8.0 DGH reserves the right to cancel the tender or reject / accept any/ all bids without assigning any reason.

9.0 DGH expects the bidders to comply with the tender specifications, terms & conditions of the tender and submit their bid accordingly without any exceptions / deviations. Conditional bids indicating exceptions/ deviations to the tender clauses shall be rejected summarily.

10.0 Other details and terms/conditions are as per the following **Annexure I-VII**.

You are invited to submit your e-bid against the above tender.

Thanking you,

HoD(MM)
For Directorate General of Hydrocarbons

Encl: As above

INSTRUCTIONS TO BIDDERS

A. INTRODUCTION

1.0 ELIGIBILITY AND EXPERIENCE OF THE BIDDER:- (Please refer to “Technical & Commercial Rejection Criteria under **Annexure-III**).

2.0 PRE BID CONFERENCE: Pre Bid Conference shall be held on 28.08.2019 at 1100 Hrs at DGH Office Noida. Two (2) representatives of each bidder shall be allowed to participate in the pre bid conference. Bidder must send email confirmation regarding their participation in pre bid conference along with their queries to mm@dghindia.gov.in on or before 2 PM of 23.08.2019

3.0 TRANSFER OF BIDDING DOCUMENT

The Bidding document is not transferable.

4.0 COST OF BIDDING

The bidder shall be solely liable to bear all costs and expenses associated with the preparation and submission of its bid, and DGH will in no case be held responsible or liable for payment of any costs associated with the preparation or submission of the said bids irrespective of the outcome of the bidding process as also in case the entire bidding process or part thereof is nullified/ cancelled due to any reason whatsoever.

B. THE BIDDING DOCUMENT

5.0 CONTENT OF BIDDING DOCUMENTS

5.1 The services/scope of supply required, bidding procedures and contract terms are described in the bidding document. In addition to the Invitation for Bids, the bidding documents include:

ANNEXURE-I : Instructions to Bidders with following Appendices.

Appendix 1: Bid submission proforma.

Appendix 2: Proforma of Authorization Letter for Attending Tender Opening.

Appendix 3: Proforma Certificate on relatives of DG/Directors of DGH

Appendix 4: Proforma for Changes/Modifications Sought by Bidders.

Appendix 5: Bid Bond Bank Guarantee proforma.

Appendix 6: Bank Guarantee for Performance Security

Appendix 7: Undertaking / Declaration

Appendix 8: Proforma for bidders past experience declaration

Appendix 9: List of documents to be uploaded/ submitted along with techno-commercial bid

ANNEXURE-II : General Terms & Conditions

ANNEXURE-III : Bid Evaluation Criteria

ANNEXURE-IV : Scope of Work, Technical Specifications & Special Conditions

ANNEXURE-V : Price Format/Price Schedule

ANNEXURE-VI : E-Bidding Instructions to Bidders

ANNEXURE-VII : Integrity Pact

5.2 The bidder is expected to examine all instructions, forms, terms and specifications in the bidding documents. Failure to furnish all information required by the bidding documents will be at the bidder's risk. Tenders not complying with tender conditions and not conforming to tender specifications will result in the rejection of its bid without seeking any clarifications.

6.0 CLARIFICATION ON BID DOCUMENT

A bidder requiring any clarification of Bid Document should notify DGH in writing at the address provided in the forwarding letter. Clarifications, if any, shall in no case be sought later than **5 days prior** to the deadline prescribed herein for the submission of Bids. However, DGH may at its discretion provide clarifications on any relevant or crucial issue regarding the bid document and such clarifications shall not automatically cause any extensions of prescribed dates unless otherwise notified by DGH in writing within the original prescribed dates. In case no such extension of time is notified by DGH in writing then the original prescribed dates shall deem to apply.

7.0 AMENDMENT OF BID DOCUMENT

7.1 At any time prior to the deadline for submission of bids, DGH may at its own discretion and for any reason whatsoever whether at its own initiative or in response to a clarification requested by a bidder, modify the Bid Documents by the issuance of an Addendum.

7.2 The Addendum will be hoisted on DGH's website and Gol's Public Procurement Portal only and all bidders are advised to visit aforesaid websites till the bid submission date to update themselves about modifications to the Bid documents, if any, in order to submit their offer accordingly.

7.3 In order to allow the bidders reasonable time to take the amendment into account in preparing their bids, the DGH may at its discretion, extend the deadline for the submission of Bids and any such extension will be conveyed to the bidders through DGH's website.

C. PREPARATION OF BIDS

8.0 SUBMISSION OF BID

8.1 The bidders shall submit the bids electronically and sign digitally.

8.2 Tenders are invited online through Single stage and two envelope or bid systems. The first electronic envelope/bid is techno-commercial bid envelope and second electronic envelope is financial bid envelope.

8.3 The bidder shall submit Techno-Commercial & Financial bids simultaneously.

Note: Techno-Commercial bid will be evaluated first and thereafter financial bids of qualified bidders only shall be opened.

8.3.1 The techno-commercial bid electronic envelope will contain the follows:

- a. Scanned copy of the following original documents:

- i. DD/Bid Bond for EMD.
- ii. Power of attorney or authorisation, or any other document consisting of adequate proof of the ability of the signatory to bind the bidder.
- b. Bid document (without indicating price in Price format/Price schedule) and corrigendum/addendum, if any.
- c. Duly signed and scanned copies of required documents as mentioned at Appendix-9.

All the uploaded documents shall be digitally signed by the authorized signatory of the bidder.

8.3.2 The Financial bid electronic envelope will contain: Scheduled of Rate/Price Schedule.

Note: Detailed instructions regarding online bid submission are available in Annexure-VI of Tender Document as “E-Tendering instructions to the bidders”.

- 8.4** Bidder shall submit the following original documents offline to HOD (MM) at Directorate General of Hydrocarbons office in Noida, on or before the date and time of closing of bids specified in NIT, in a properly sealed envelope:
- i) DD/Bid Bond (Original) for EMD/Bid security.
 - ii) Power of Attorney for authorized signatory of the bid, or any other document consisting of adequate proof of the ability of the signatory to bind the bidder.
 - iii) Any other document, if specified, in the tender.

The envelope shall bear the name of the firm, Physical documents against e- Tender No. MM -12018(30)/1/2019-DGH/ENQ-163, name of work and the phrase “Do Not Open Before (Due date & time of opening of tender)”

Note: The responsibility for ensuring that envelope is delivered in time would be vested with the bidder. DGH shall not be responsible if the envelope is lost/ delivered elsewhere or late.

8.5 The bid prepared by the bidder and all correspondence and documents relating to the bid exchanged by the Bidder and the DGH shall be written in English language. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the bid, the translation shall prevail. However, the said translations should be certified by some official translator.

8.6 Bids shall be submitted in the prescribed bid proforma as per **appendices-1 to 8 of Annexure-I & Price schedule at Annexure-V**. The prescribed proforma at Appendices of **Annexure-I**, duly filled in and signed should be uploaded intact.

8.7 In the event of the space on the bid proforma being insufficient for the required purpose, additional pages may be added. Each such additional page must be numbered consecutively, showing the tender number and should be duly signed. In such cases reference to the additional page(s) must be made in the bid.

8.8 The bid proforma referred to above, if not returned or if returned but not duly filled in will be liable to result in rejection of the bid.

8.9 The Bidders are advised in their own interest to ensure that all the documents mentioned at Appendix-9 should be uploaded with their techno-commercial bid failing which the offer is liable to be rejected.

8.10 The bid papers, duly filled in and complete in all respects shall be submitted together with requisite information and Annexure / Appendices. It shall be complete and free from ambiguity, change or interlineations.

8.11 The bidder should indicate at the time of quoting against this tender their full postal and telegraphic/telex /fax addresses and also similar information in respect of their authorized agents in India, if any.

8.12 The Bidder shall sign its bid with the exact name of the firm to whom the contract is to be issued. The bid shall be signed by a duly authorised officer and in the case of a Company, the same shall be sealed with the company seal or otherwise appropriately executed under seal.

8.13 The bidder shall clearly indicate their legal constitution and the person signing the bid shall state his capacity and also source of his ability to bind the Bidder.

8.14 The power of attorney or authorization, or any other document consisting of adequate proof of the ability of the signatory to bind the bidder, shall be annexed to the bid.

9.0 COMPLIANCE WITH THE REQUIREMENTS OF BID EVALUATION CRITERIA (BEC) AND ALL OTHER TENDER CONDITIONS:

9.1 Advice to bidders for avoiding rejection of their offers:

DGH has to finalize its purchase / contracts within a limited time schedule. Therefore, it may not be feasible for DGH to seek clarifications in respect of incomplete offers. Prospective bidders are advised to ensure that their bids are complete in all respects and conform to DGH's terms, conditions and bid evaluation criteria of the tender. Bids not complying with DGH's requirement may be rejected without seeking any clarification.

9.2 Prevailing Government guidelines regarding Tender Fee /Bid Security /Performance Security / Purchase or Price Preference shall be applicable, provided the bidder submits necessary evidence for eligibility, along with the bid.

10.0 BID PRICES

10.1 The bidders shall indicate on the appropriate price schedule the net unit prices (wherever applicable).

10.2 Unit prices must be quoted by the bidder. Price quoted must remain firm during its performance of the Contract and is not subject to variation on any account. All duties and taxes payable by the bidder under the Contract, for which this Bidding Document is being issued, shall be included in the rates, prices and total Bid Price submitted by the bidder, and the evaluation of bid shall be made accordingly.

10.3 Prices quoted by the bidder shall be firm during the bidder's performance of the contract and not subject to variation on any account.

10.4 Discount: Bidders are advised not to indicate any separate discount. Discount, if any, should be merged with the quoted prices. Discount of any type, indicated separately, will not be taken into account for evaluation purpose. However, in the event of such an offer, without

considering discount, is found to be lowest, DGH shall avail such discount at the time of award of contract.

10.5 Concessions permissible under statutes:

Bidder, while quoting against this tender, must take cognizance of all concessions permissible under the statutes including the benefit under existing Tax Acts, failing which it will have to bear extra cost where Bidder does not avail exemptions/ concessional rates of levies. DGH will not take responsibility towards this. However, DGH may provide necessary assistance, wherever possible, in this regard.

10.5.1 Bidders may take note there would be NO customs duty/GST exemption available for business tendered with DGH.

10.6 Income Tax Liability

The bidder will have to bear all Income Tax liability both corporate and personal tax.

10.7 GST Liability:

10.7.1 The bidder will have to bear all GST liability, as applicable except in case of services provided by Goods Transport Agency (GTA) and Services provided by a service provider from outside India not having a fixed establishment or permanent address in India as prescribed under GST Law (amended from time to time)

10.7.2 The Bidder should quote the applicable GST, clearly indicating the rate and the amount of GST included in the bid and the classification of the respective service (as per GST law) under which the GST is payable.

10.7.3 In the contracts involving multiple services or involving supply of certain goods / materials along with the services, the Bidder should give separate break-up for cost of goods and cost of various services, and accordingly quote GST as applicable for the taxable services.

10.7.4 In case the applicability of GST is not quoted explicitly in the offer by the Bidder, the offer will be considered as inclusive of all liabilities of GST. DGH will not entertain any future claim in respect of GST against such offers.

10.7.5 In case, the quoted information related to various taxes and duties subsequently proves wrong, incorrect or misleading:-

- a) DGH will have no liability to reimburse the difference in duty / tax, if the finally assessed amount is on the higher side.
- b) DGH will have the right to recover the difference in case the rate of duty / tax finally assessed is on the lower side.

10.7.6 The service provider should have a valid registration with the concerned authorities of GST and a copy of such registration certificate should be submitted along with the offer. In case the registration certificate for the quoted category of service is not available at the time of submission of offer, an undertaking should be furnished for submission of copy of requisite GSTIN certificate along with the first invoice under the contract.

10.7.7 GST on contracts for transportation of goods by road in a goods carriage (Applicable for Goods Transport where the contract is for transportation / logistics and not the service/ turnkey contracts where transportation is a part):

In this case, since the liability to pay GST is on DGH as receiver of service, the Bidder shall not include GST in the quoted prices.

10.7.8 As the above statutory provisions are frequently reviewed by the Government, the bidders are advised to check the latest position in their own interest and DGH will not bear any responsibilities for incorrect assessment of statutory levies by any bidder.

11.0 PAYMENT TERMS: As mention is Annexure IV

12.0 MODE OF PAYMENT

In all cases, DGH shall make payments only through Electronic Payment mechanism (viz. NEFT/RTGS /ECS). Bidders should invariably provide the following particulars along with their offers:

1. Name & Complete Address of the Supplier / Contractor as per Bank records.
2. Name & Complete Address of the Bank with Branch details.
3. Type of Bank account (Current / Savings/Cash Credit).
4. Bank Account Number (indicate 'Core Bank Account Number', if any).
5. IFSC / NEFT Code (11 digit code) / MICR code, as applicable, alongwith a cancelled cheque leaf.
6. Permanent Account Number (PAN) under Income Tax Act;
7. GST Registration Number.
8. E-mail address of the vendor / authorized official (for receiving the updates on status of payments)."
9. Confirmation as to whether the bidder belong to the category of Micro, Small and Medium Enterprises as defined in the "Micro, Small and Medium Enterprises Development Act, 2006 (MSMEDA)". If yes, specify the category of Micro, Small or Medium Enterprises and whether the enterprise is in manufacturing or service industry, along with valid documentary evidence.
10. Any other details as required by the remitting bank.

For receiving payment through NEFT / RTGS, the bank/branch in which the bidder is having account and intends to have the payment should be either an NEFT enabled bank or SBI branch with core banking facility.

13.0 VAGUE AND INDEFINITE EXPRESSIONS

13.1 Bids qualified by vague and indefinite expressions such as "Subject to availability" etc. will not be considered.

14.0 PERIOD OF VALIDITY OF BIDS

14.1 The Bid shall be valid for **90 days** after the date of bid opening for acceptance for the period as indicated in the "Invitation for Bid" (hereinafter referred to as validity period) and shall not be withdrawn on or after the opening of bids till the expiration of the validity period or any extension agreed thereof.

14.2 In exceptional circumstances, prior to expiry of the original bid validity period, the DGH may request the bidder for a specified extension in the period of validity. The requests and the responses shall be made in writing. The Bidder will undertake not to vary/modify the bid during the validity period or any extension agreed thereof. Bidder agreeing to the request for extension of validity of offer shall be required to extend the validity of Bid Security correspondingly.

15.0 BID SECURITY

15.1 The Bid Security is required to protect the DGH against the risk of Bidder's conduct which would warrant the security's forfeiture in pursuance to clause **15.7**.

15.2 MSEs eligible as per Ministry of MSME's guidelines, and Government Departments will be exempted from Bid Security, provided the bidder submits necessary evidence for eligibility, along with the bid.

15.3 The Bidders not covered under Para **15.2** above must enclose the bid security with their offer with the techno-commercial bid. The amount for bid security has been indicated in the "Invitation For Bid".

15.4 The Bid Security shall be acceptable in any of the following forms:

(i) An account payee Demand Draft in favour of "Directorate General of Hydrocarbons" payable at New Delhi valid for **90 days** from its date of issue.

In case a bidder submits demand draft in USD as Bid Security, the bidder must agree to the following condition and submits an undertaking as under:

"We understand that DGH has rupee account in India. USD receipt value cannot be maintained in foreign currency terms. We confirm to bear the cost/loss on account of different currency conversion rate prevailing at two different occasions i.e. receipt by DGH and refund by DGH. We understand that the interest free refund can be equal to or less than the submitted draft amount in lieu of prescribed USD value for Bid Bond for variation in currency conversion rates"

(ii) A Bank Guarantee as per **Appendix 5**.

For Indian Bidders: Bank Guarantee issued from any of the Nationalised / scheduled Bank in India on non-judicial stamp paper of requisite value, as per Indian Stamp Act, purchased in the name of the Banker valid for **45 days** beyond the validity of the bids asked for in the tender.

For Foreign Bidders: Bank Guarantee issued from any of the Indian scheduled Bank situated in their country, valid for **45 days** beyond the validity of the bids asked for in the tender.

15.5 DGH shall not be liable to pay any bank charges, commission or interest on the amount of Bid Security.

15.6 Subject to provisions in para**15.2** above, offers without Bid Security will be ignored.

15.7 The Bid Security shall be forfeited:

a) If Bid is withdrawn during the validity period or any extension thereof duly agreed by the Bidder.

b) If Bid is varied or modified in a manner not acceptable to DGH during the validity period or any extension of the validity duly agreed by the Bidder.

c) If a Bidder, having been notified of the acceptance of its bid, fails to furnish Security Deposit/Performance Bank Guarantee (Performance Security) within 21 days of notification of such acceptance.

15.8 The Bid Security of unsuccessful Bidders will be returned on finalization of the bid. The Bid Security of successful bidder will be returned on receipt of Security Deposit/Performance Bond (Performance Security).

16.0 TELEFAX /e-MAIL /XEROX/PHOTOCOPY BIDS AND THE BIDS CONTAINING SCANNED SIGNATURE:

16.1 Telefax / e-mail / Xerox / Photocopy bids and bids with scanned signature will not be considered.

Original bids should be signed manually failing which they shall be rejected.

d. SUBMISSION AND OPENING OF BIDS

17.0 SEALING AND MARKING OF BIDS.

17.1 Offers are to be submitted in electronically. The first electronic cover/envelope will contain Techno-Commercial bids having all details but with price column blanked out. **However a tick mark (✓) shall be provided against each item of the price bid format to indicate that there is a quote against this item in the Price bid.** The second sealed electronic cover/envelope will contain only the price schedule duly filled in and digitally signed. Physical documents as mentioned in the bid document must be reached at DGH office before bid closing date and time.

17.2 DGH reserves the right to ignore any offer which fails to comply with the above instructions.

17.3 DGH will not be held responsible for any loss or late received of e-bid due to server problem and others.

17.4 DGH will not be held responsible for the loss of or for the delay in postal transit.

18.0 DEADLINE FOR SUBMISSION OF BIDS

18.1 The e-bid must be received by the DGH electronically not later than **1400 Hrs** (IST) on the notified date of closing of the tender. Required original documents, as mentioned at 7.4 of Annexure-I, must be reached before the tender closing date and hours at the following address:

**HOD (MM)
Directorate General of Hydrocarbons
OIDB Bhawan,
Tower A, Plot No.2, Sector-73,
NOIDA-201301**

Original documents sent by hand delivery should be put in the Tender Box at the specified office not later than **1400 Hrs.** (IST) on the specified date. **Original documents received by post without proper superscription of Physical Documents against Tender number MM - 12018(30)/1/2019-DGH/ENQ-163, Bid Closing Date and other details on the outer envelope will be opened in DGH office as ordinary mail and may not be considered.**

19.0 LATE BIDS

19.1 Bidders are advised in their own interest to ensure that e-bid and required physical documents against tender must reach the specified office well before the closing date and time of the bid.

19.2 Physical documents received after closing date and time of the bid, will be rejected and returned unopened.

20.0 MODIFICATION AND WITHDRAWAL OF BIDS

20.1 No e-bid may be modified after the dead line for submission of bids.

21.0 OPENING OF BIDS

21.1 The bid will be opened at **1500 Hrs.** (IST) on the date of opening indicated in "Invitation for Bid". The Bidder or his authorized representative may be present at the time of opening of bid on the specified date, but a letter in the form annexed at **Appendix- 2** hereto must be forwarded to this office along with bid and a copy of this letter must be produced in the office by the person attending the opening of bid. Unless this letter is presented by him, he may not be allowed to attend the opening of bid.

21.2 Price Bids of the technically qualified Bidders will be opened on a specific date in presence of interested qualified bidders. Bidders will be intimated about the bid opening date in advance.

21.3 In case of unscheduled holiday on the closing/opening day of bid, the next working day will be treated as scheduled prescribed day of closing/opening of bid, the time notified remaining the same.

e. EVALUATION OF BIDS

22.0 EVALUATION AND COMPARISON OF BIDS

22.1 Evaluation and comparison of bids will be done as per provisions of Bid Evaluation Criteria at **Annexure-III**.

23.0 UNSOLICITED POST TENDER MODIFICATIONS

23.1 Unsolicited post-tender modification will lead to straight away rejection of the offer.

24.0 EXAMINATION OF BID

24.1 The DGH will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed and whether the bids are generally in order.

24.2 **DGH will determine the conformity of each bid to the bidding documents. Bids falling under the purview of "Rejection Criteria" of the bid Evaluation Criteria of the bidding document will be rejected.**

25.0 SPECIFICATIONS

25.1 The Bidder must note that its Bid will be rejected in case the tender stipulations are not complied with strictly or the services offered do not conform to the required specifications indicated therein. The lowest Bid will be determined from among those Bids which are in full conformity with the required specifications.

26.0 PURCHASE PREFERENCE

26.1 Purchase preference to Micro and Small Enterprises registered with District Industry Centers or Khadi and Village Industries Commission or Khadi and Village Industries Board or Coir Board or National Small Industries Corporation or Directorate of Handicrafts and Handloom or any other body specified by Ministry of MSME.

26.2 Purchase preference policy-linked with Local Content (PP-LC) notified vide letter No O-27011/44/2015-ONG/II/FP dated 25.04.2017 of MoPNG and Public Procurement (Preference to

Make in India) order 2017 notified vide letter No 33(1)/2017/IPHW dated: 14.09.2017 of Ministry of Electronics & Information Technology and subsequent relevant order/s shall be applicable in this tender. Bidders seeking benefits under Purchase Preference Policy shall have to submit all undertakings/documents applicable to this policy.

26.3 In case a bidder is eligible to seek benefits under PP-LC policy as well as Public Procurement Policy for MSEs – Order 2012, then the bidders should categorically seek benefits against only one of the two policies i.e. either PP-LC or MSE policy. If a bidder seeks free of cost tender document under the MSE policy, and then it shall be considered that the bidder has sought benefit against the MSE policy and this option once exercised cannot be modified subsequently.

26.4 Bidders seeking Purchase preference (linked with local content) (PP-LC) shall be required to meet / exceed the target of Local Content (LC).

f. AWARD OF CONTRACT

27.0 AWARD CRITERIA

DGH will award the Contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined as the lowest evaluated bid, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.

28.0 DGH'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS.

28.1 DGH reserves the right to reject, accept or prefer any bid and to annul the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the ground for DGH's action. The DGH also reserves to itself the right to accept any bid in part or split the order between two or more bidders.

29.0 NOTIFICATION OF AWARD (NOA)

29.1 Prior to the expiration of the period of bid validity, DGH will notify the successful bidder in writing that its bid has been accepted.

29.2 The notification of award will constitute the formation of the contract.

29.3 Upon the successful bidder's furnishing performance security, pursuant to clause 30, the Purchaser will promptly notify each unsuccessful bidder and discharge their bid securities.

30.0 BID CURRENCIES

30.1 The bidders are to quote firm prices. They have to bid in Indian Rupees

31.0 PERFORMANCE SECURITY:

Successful bidder shall submit the performance security, 7.5% of Total contract value with validity 02months beyond the warranty and AMC period, within 21 days of placement of Letter of Award (LoA)/ Notification of Award (NoA).The successful bidder shall furnish to DGH the Performance Security for an amount specified above or the amount mentioned in Letter of Award, issued by DGH to Contractor awarding the contract, as per **Appendix-6** in the form of Bank Guarantee(BG).For Indian Bidders: Bank Guarantee is to be issued from any of the Nationalised / scheduled Bank in India on non-judicial stamp paper of requisite value, as per

Indian Stamp Act, purchased in the name of the Banker. For Foreign Bidders: Bank Guarantee is to be issued from any of the Indian scheduled Bank situated in their country.

31.1 The performance security specified above must be valid as per time period mentioned above at 29.1, to cover the warranty obligations indicated in **clause 7.0** of General Terms & Conditions hereof. The same will be discharged by DGH not later than 30 days following its expiry. In the event of any extension of the Contract period, Bank Guarantee should be extended by Contractor by the period equivalent to the extended period.

31.2 The performance security shall be payable to DGH as compensation for any loss resulting from Contractor's failure to fulfil its obligations under the Contract.

31.3 The Performance Security will not accrue any interest during its period of validity or extended validity.

32.0 SIGNING OF CONTRACT:

At the same time as Purchaser notifies the successful Bidder that its bid has been accepted, the Purchaser will send the Bidder the contract/supply order in duplicate. The contract against this tender will be governed in accordance with the General Terms & Conditions of Contract at **Annexure-II**. The successful Bidder will return one copy of the supply order/contract duly signed on each page as token of confirmation/acceptance.

BID SUBMISSION PERFORMA

Tender No.....

Bidder's Telegraphic Address :

Telephone No :

FAX NO :

Directorate General of Hydrocarbons.

OIDB Bhawan, Tower A, Plot No. 2, Sector – 73, Noida -201 301.

Dear Sirs,

1. I/We hereby offer to supply the services detailed in schedule hereto or such portion thereof as you specify in the Acceptance of Tender at the price given in the said schedule and agree to hold this offer open for the period as per the Forwarding letter or till **90 days from the date of closing of bid.**

2. I/We hereby confirm that the quoted prices will remain firm for the entire contract duration.

3. I/We have understood and complied with the "Instructions to Bidders" at **Annexure-I**, "Bid Evaluation Criteria" at **Annexure-III**, and accepted the "General Terms and Conditions" at **Annexure-II** for providing services/work/job, and have thoroughly examined and complied with the Scope of Supply/Schedule of Rates etc at **Annexure-IV & V**, hereto and am/are fully aware of the nature of the service/work/job required and my/our offer is to provide services strictly in accordance with the requirements.

4. I/We have signed the Integrity Pact with the bid for necessary compliances

Yours faithfully,

Signature of the Bidder

Name_____

Seal of the Company

Dated

Signature of witness

Address

Note: This form should be returned along with offer duly signed.

AUTHORISATION LETTER FOR ATTENDING TENDER OPENING

No. _____ Date.....

To,
The
Directorate General of Hydrocarbons.
OIDB Bhawan, Tower A, Plot No. 2, Sector – 73, Noida -201 301,India.

Subject :**Tender No.**----- **due on**-----

Sir,

Mr..... has been authorised to be present at the time of opening of above tender due on..... at, on my/our behalf.

Yours faithfully

Signature of Bidder

Copy to: Mr.for information and for production before the HoD (MM) at the time of opening of bids.

**PROFORMA CERTIFICATE ON RELATIVES
OF DIRECTOR OF DGH**

This has reference to our proposed contract regarding to be entered into with Directorate General of Hydrocarbons (DGH).

We certify that to the best of my/our knowledge:

- (i) I am not a relative of any DG / Director of DGH;
- (ii) We are not a firm in which a DG / Director of DGH or his relative is a partner;
- (iii) I am not a partner in a firm in which a DG / Director of DGH or his relative is a partner;
- (iv) We are not a private company in which a DG / Director of DGH is a Member or Director;
- (v) We are not a company in which DG / Directors of DGH hold more than 2 % of the paid-up share capital of our company or vice-versa.

**Authorised Signatory of
The Contracting Party**

Place...

Date...

PROFORMA FOR CHANGES/ MODIFICATIONS SOUGHT BY BIDDERS TO THE BIDDING CONDITIONS

DGH expects the bidders to fully accept the terms and conditions of the bidding documents. However, changes/ modifications to the terms and conditions of bidding documents, if any proposed, can be communicated in the following proforma, in case pre-bid is not held. This can be used even in cases where pre-bid is held, to inform about the proposals in advance to the pre-bid date.

Clause No. of Bidding Document	Full compliance/ not agreed	Changes/ modifications proposed by the Bidders	REMARKS

Note: If left blank, it will be construed that bidder has **not taken** any exceptions/ deviations to the terms and conditions of the bid document.

Signature of the Bidder

.....

Name.....

Seal of the Company

.....

Note: - Bids maintaining or taking exceptions/deviations beyond the bid closing date shall be rejected straightaway.

**Proforma of Bank Guarantee towards Bid Security
BID BOND**

Ref. No..... Bank Guarantee No.....

Dated

To,

Directorate General of Hydrocarbons
OIDB Bhawan, Tower A, Plot No. 2, Sector – 73, Noida -201 301, India.

Dear Sirs,

1. Whereas Directorate General of Hydrocarbons, having its office at OIDB Bhawan, Tower A, Plot No. 2, Sector – 73, Noida -201 301, India. (hereinafter called 'DGH' which expression unless repugnant to the context or meaning thereof shall mean and include all its successors, administrators, executors and assignees) has floated a Tender No. _____ and M/s _____ having Head/Registered office at _____ (hereinafter called the 'Bidder' which expression unless repugnant to the context or meaning thereof shall mean and include all its successors, administrators, executors and permitted assignees) have submitted a bid Reference No..... and Bidder having agreed to furnish as a condition precedent for participation in the said tender an unconditional and irrevocable Bank Guarantee of Indian Rupees (in figures)_____ (Indian Rupees (in words)_____ only) for the due performance of Bidder's obligations as contained in the terms of the Notice Inviting Tender (NIT) and other terms and conditions contained in the Bidding documents supplied by DGH which amount is liable to be forfeited on the happening of any contingencies mentioned in said documents.

2. We (name of the bank)_____ registered under the laws of_____ having its head/registered office at _____ (hereinafter referred to as "the Bank" which expression, unless repugnant to the context or meaning thereof, shall mean and include all its successors, administrators, executors and permitted assignees) do hereby guarantee and undertake to pay immediately on the first demand by DGH, the amount of Indian Rs. (in figures) _____ (Indian Rupees (in words) _____ only) in aggregate at any time without any demur and recourse, and without DGH having to substantiate the demand. Any such demand made by DGH shall be conclusive and binding on the Bank irrespective of any dispute or difference raised by the Bidder.

3. The Bank confirms that this guarantee has been issued with observance of appropriate laws of the country of issue.

4. The Bank also agree that this guarantee shall be irrevocable and governed and construed in accordance with Indian Laws and subject to exclusive jurisdiction of Indian Courts of the place from where the Bank Guarantee has been issued.

5. This guarantee shall be irrevocable and shall remain in force up to _____ which **includes forty-five days** after the period of bid validity and any demand in respect thereof should reach the Bank not later than the aforesaid date.

6. Notwithstanding anything contained hereinabove, our liability under this Guarantee is limited to Indian Rs (in figures) _____ (Indian Rupees (in words) _____ only) and our guarantee shall remain in force until (indicate the date of expiry of bank guarantee) _____.

Any claim under this Guarantee must be received by us before the expiry of this Bank Guarantee. If no such claim has been received by us by the said date, the rights of DGH under this Guarantee will cease. However, if such a claim has been received by us by the said date, all the rights of DGH under this Guarantee shall be valid and shall not cease until we have satisfied that claim. In witness whereof, the Bank, through its authorized officer, has set its hand and stamp on this day of at

WITNESS NO. 1

(Signature)
Full name and official
address (in legible letters)

(Signature)
Full name, designation and
official address (in legible
letters) with Bank stamp.

Attorney as per Power of
Attorney No.....

Dated

WITNESS NO. 2

(Signature)
Full name and official
address (in legible letters)

Notes: The expiry date as mentioned in clause **5 & 6** should be arrived at by adding **45** days to the date of expiry of the bid validity unless otherwise specified in the bidding documents.

Proforma of Bank Guarantee towards Performance Security.
PERFORMANCE GUARANTEE

Ref. No. Bank Guarantee No. Dated.

To,
Directorate General of Hydrocarbons,
OIDB Bhawan, Tower A, Plot No. 2, Sector – 73, Noida -201 301.

Dear Sirs,

1.1 In consideration of Directorate General of Hydrocarbons, having its Office at OIDB Bhawan, Tower A, Plot No. 2, Sector – 73, Noida -201 301, India, (hereinafter referred to as 'DGH', which expression shall, unless repugnant to the context or meaning thereof, include all its successors, administrators, executors and assignees) having entered into a CONTRACT No. _____ dated _____ (hereinafter called 'the CONTRACT' which expression shall include all the amendments thereto) with M/s _____ having its registered/head office at _____ (hereinafter referred to as the 'CONTRACTOR') which expression shall, unless repugnant to the context or meaning thereof include all its successors, administrators, executors and assignees) and DGH having agreed that the CONTRACTOR shall furnish to DGH a performance guarantee for Indian Rupees for the faithful performance of the entire CONTRACT.

1.2 We (name of the bank) _____ registered under the laws of _____ having head/registered office at _____ (hereinafter referred to as "the Bank", which expression shall, unless repugnant to the context or meaning thereof, include all its successors, administrators, executors and permitted assignees) do hereby guarantee and undertake to pay immediately on first demand in writing any /all moneys to the extent of Indian Rs (in figures) _____ (Indian Rupees (in words) _____) without any demur, reservation, contest or protest and/or without any reference to the CONTRACTOR. Any such demand made by DGH on the Bank by serving a written notice shall be conclusive and binding, without any proof, on the bank as regards the amount due and payable, notwithstanding any dispute(s) pending before any Court, Tribunal, Arbitrator or any other authority and/or any other matter or thing whatsoever, as liability under these presents being absolute and unequivocal. We agree that the guarantee herein contained shall be irrevocable and shall continue to be enforceable until it is discharged by DGH in writing. This guarantee shall not be determined, discharged or affected by the liquidation, winding up, dissolution or insolvency of the CONTRACTOR and shall remain valid, binding and operative against the bank.

1.3 The Bank also agrees that DGH at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance, without proceeding against the CONTRACTOR and notwithstanding any security or other guarantee that DGH may have in relation to the CONTRACTOR's liabilities.

1.4 The Bank further agrees that DGH shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of

the terms and conditions of the said CONTRACT or to extend time of performance by the said CONTRACTOR(s) from time to time or to postpone for any time or from time to time exercise of any of the powers vested in DGH against the said CONTRACTOR(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said CONTRACTOR(s) or for any forbearance, act or omission on the part of DGH or any indulgence by DGH to the said CONTRACTOR(s) or any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

1.5 The Bank further agrees that the Guarantee herein contained shall remain in full force during the period that is taken for the performance of the CONTRACT and all dues of DGH under or by virtue of this CONTRACT have been fully paid and its claim satisfied or discharged or till DGH discharges this guarantee in writing, whichever is earlier.

1.6 This Guarantee shall not be discharged by any change in our constitution, in the constitution of DGH or that of the CONTRACTOR.

1.7 The Bank confirms that this guarantee has been issued with observance of appropriate laws of the country of issue.

1.8 The Bank also agrees that this guarantee shall be governed and construed in accordance with Indian Laws and subject to the exclusive jurisdiction of Indian Courts of the place from where the Bank Guarantee has been issued.

1.9 Notwithstanding anything contained herein above, our liability under this Guarantee is limited to Indian Rs. (in figures) _____ (Indian Rupees (in words) _____) and our guarantee shall remain in force until _____.(indicate the date of expiry of bank guarantee).

Any claim under this Guarantee must be received by us before the expiry of this Bank Guarantee. If no such claim has been received by us by the said date, the rights of DGH under this Guarantee will cease. However, if such a claim has been received by us within the said date, all the rights of DGH under this Guarantee shall be valid and shall not cease until we have satisfied that claim.

In witness whereof, the Bank through its authorised officer has set its hand and stamp on thisday of20__ at

WITNESS NO. 1

(Signature)
Full name and official
address (in legible letters)
stamp

(Signature)
Full name, designation and
address (in legible letters) with Bank
stamp

Attorney as per power of
Attorney No.....
Dated

WITNESS NO. 2

(Signature)

Full name and official address (in legible letters)

Undertakings / Declaration (To be submitted at Company's letter head)

Tender No. MM-12018(30)/1/2019-DGH/ENQ-163 for "Setting up of private cloud infrastructure at DGN Noida and SDC Bhubaneswar".

1. GST Tax Registration (*strike off whichever is not applicable*)

We have submitted a copy of valid GST registration certificate under Goods and Service tax rules.

OR

We undertake to submit copy of requisite Goods and Service tax registration certificate along with the first invoice under the contract.

- 2.** We declare that neither we, the bidders, nor any of our allied concerns, partners or associates or directors or proprietors involved in any capacity with this tender, are currently serving any banning orders issued by DGH debarring them from carrying on business dealings with DGH.
- 3.** We hereby undertake that all the documents/certificates/information submitted by them against the tender are genuine.

Signature of the Bidder

.....

Name.....

Seal of the Company

.....

1.0 BIDDER'S EXPERIENCE**BIDDERS PAST EXPERIENCE PROFORMA FOR SIMILAR JOBS**

Sl. No.	Name & Address of parties with whom jobs were carried out	Purchase / Work order details - Purchase / work order No., date and value	Year of Supply & period of work executed with date	Make / Model No. supplied	Quantity	Contact details (Name, Phone No., Designation , email id) of persons with whom references can be made

NOTE: The copy of Purchase / work order in support of the above should be attached, failing which the bid shall be considered as incomplete and rejected.

SIGNATURE: -----

DESIGNATION: -----

COMPANY: -----

COMPANY SEAL

DATE: -----

LIST OF THE DOCUMENTS TO BE UPLOADED/SUBMITTED ALONG WITH TECHNICAL-COMMERCIAL BID

A. List of Documents to be uploaded in Techno-commercial electronic envelope:

The bidder shall upload the following digitally signed documents along with techno-commercial bid. Any bid not accompanying the below mentioned documents shall be liable for rejection:

1. DD/Bid bond as EMD in the prescribed format as mentioned in the bid document.
2. Duly signed and scanned copy of Experience Certificate in accordance with clause no. B.1(Technical Rejection Criteria) at Annexure-III of tender document.
3. Duly signed and scanned copy of PAN Card/TAN.
4. Duly signed and scanned copy of registration of firm in case of registered firm / company/proprietorship, partnership deed in cases of partnership firm.
5. Duly filled, signed and scanned copy of required Appendices (Appendix-1, 2, 3, 4 & 7) at Annexure-I.
6. The power of attorney or authorisation, or any other document consisting of adequate proof of the ability of the signatory to bind the bidder, in original, when the power of attorney is a special "Power of Attorney" relating to the specific tender of DGH only.

A notarized true copy of the "Power of Attorney" shall also be accepted in lieu of the original, if the power of attorney is a general "Power of Attorney". However, photocopy of such notarized true copy shall not be accepted.

7. Self-attested copy of GST registration certificate or undertaking as per Appendix-7 of Annexure-I.
8. Undertaking on the company's letter head and duly signed by the signatory of the bid that all the documents/ certificates / information submitted by them against the tender are genuine.
9. Declaration on the company's letter head and duly signed by the signatory of the bid that neither the bidders themselves, nor any of its allied concerns, partners or associates or directors or proprietors involved in any capacity, are currently serving any banning orders issued by DGH debarring them from carrying on business dealings with DGH

B. List of Documents to be submitted offline in original:

DD/Bid Bond for EMD (Sr. No. 1 above) and Power of attorney (Sr. No. 6 above) are also to be submitted offline in original before tender closing date and time.

GENERAL TERMS AND CONDITIONS

1. DEFINITIONS :

Unless inconsistent with or otherwise indicated by the context, the following terms stipulated in this ORDER shall have the meaning as defined hereunder.

1.1 ORDER/CONTRACT

Shall mean a written Purchase Order issued by DGH to the successful bidder including subsequent amendments to ORDER in writing thereto.

1.1.1 RELEASE ORDER :

Shall mean Individual delivery orders issued with reference to a Rate Contract during its validity specifying items , quantities and delivery period.

1.2 DGH/PURCHASER :

Shall mean DIRECTORATE GENERAL OF HYDROCARBONS, Noida, India and shall include all their legal representatives, successors and assignees.

1.3 SUPPLIER/CONTRACTOR :

Shall mean any person or persons or firm or company in India as well as abroad whose bid has been accepted by DGH and the legal representation, representatives, successors and permitted assignees of such person, persons, firm or company.

1.4 SUB-CONTRACT:

Shall mean ORDER placed by the SUPPLIER for any portion of the ORDER or work sublet with necessary written consent of DGH on third party. Such sub-letting shall not relieve the contractor from any obligation, duty or responsibility under the Contract.

1.5 SUB-CONTRACTOR :

Shall mean any person or persons or firm or their legal representatives, successors, assignees to whom part of ORDER has been sublet by the SUPPLIER after necessary consent of DGH.

1.6 ORDER PRICE:

Shall mean the sum accepted or the sum calculated in accordance with the rates accepted by DGH and amendments thereof, and shall include all fees, registration and other charges paid to statutory authorities without any liability on DGH for any of these charges. The prices will remain firm during currency of the ORDER unless specifically agreed to in writing by DGH.

1.7 (a) GST - means any tax imposed on the supply of goods and/or services under GST Law.

1.7 (b) Cess – means any applicable cess, existing or future on the supply of Goods and Services as per Goods and Services Tax (Compensation to States) Act, 2017.

1.7 (c) GST Law- means IGST Act 2017, CGST Act 2017, UTGST Act, 2017 and SGST Act, 2017 and all related ancillary Rules and Notifications issued in this regard from time to time.

1.8 DELIVERY PERIOD :

Shall mean the time period by which delivery of ordered goods at DGH, Noida, as indicated in the ORDER, is to be effected.

1.9 DESTINATION :

Shall mean the location of the consignee for which this ORDER has been issued.

1.10 EQUIPMENT/MATERIALS/GOODS :

Shall mean and include any equipment, machinery, instruments, stores, goods which SUPPLIER is required to supply to the PURCHASER for/under the ORDER/CONTRACT and amendments thereto.

1.11 SERVICES:

Shall mean those services ancillary to the supply of goods, such as transportation and insurance and any other incidental services, such as installation, commissioning, provision of technical assistance, training and other such obligations of the SUPPLIER covered under the contract.

1.12 DRAWINGS :

Shall mean and include all Engineering sketches, general arrangements/ layout drawings, sectional plans, all elevations, etc. related to the ORDER together with modification and revision thereto.

1.13 SPECIFICATIONS :

Shall mean and include detailed description, statements to technical data, performance characteristics, and standards (Indian as well as International) as applicable and as specified in the ORDER.

1.14 INSPECTORS :

Shall mean any person or outside Agency nominated by DGH to inspect equipment, materials and services, if any, in the contract stage wise as well as final before despatch at SUPPLIER's Works and on receipt at destination as per the terms of the ORDER.

1.15 TESTS :

Shall mean such process or processes to be carried out by the SUPPLIER as are prescribed in the ORDER considered necessary by DGH or their representative in order to ascertain quality, workmanship, performance and efficiency of equipment or part thereof.

1.16 APPROVAL :

Shall mean and include the written consent either manuscript, type written or printed statement under or over signature or seal as the case may be of the DGH or their representative or documents, drawings or other particulars in relation to the ORDER.

1.17 EFFECTIVE DATE OF CONTRACT/SUPPLY ORDER

Unless otherwise specified to the contrary, the date of LoA indicating following details will be start of the contract for all practical purposes.

- (i) Prices
- (ii) Price basis
- (iii) Delivery Schedule
- (iv) Liquidated Damages
- (v) Performance Guarantee
- (vi) Payment terms
- (vii) Special conditions and deviations, if any, taken by SUPPLIER/CONTRACTOR but not agreed by DGH.

2. SCOPE OF ORDER :

2.1 Scope of the ORDER shall be as defined in the ORDER, specifications, drawings and annexures thereto.

2.2 Completeness of the EQUIPMENT shall be the responsibility of the SUPPLIER. Any equipment, fittings and accessories, which may not be specifically mentioned in the specification or drawing(s) but which are usual or necessary for the satisfactory functioning of the EQUIPMENTS (successful operation and functioning of the equipment being SUPPLIER's responsibility), shall be provided by the SUPPLIER without any extra cost.

2.3 The EQUIPMENT shall be manufactured in accordance with sound engineering and good industry standards and also the SUPPLIER shall in all respect design, engineer, manufacture and supply the same within delivery period to the same within delivery period to the entire satisfaction of DGH.

2.4 WORK TO BE CARRIED OUT UNDER THE ORDER :

All equipment to be supplied and work to be carried out under the ORDER shall conform to and comply with the provision of relevant regulation/Acts (State Govt. or Central Govt.) as may be applicable to the type of equipment/work carried out and necessary certificate shall be furnished.

2.5 LEGAL RIGHT TO TRANSFER OWNERSHIP OF EQUIPMENT/ MATERIALS:

The SUPPLIER/SUB-CONTRACTOR hereby represents that it has full legal right, power and authority to transfer the ownership of the equipment/materials to DGH.

3. SPECIFICATION, DRAWING, TECHNICAL MANUALS :

3.1 The SUPPLIER shall furnish copies of technical documents, final drawing, preservation instructions, operation and maintenance manuals, test certificates, spare parts catalogue before despatch of the equipment to HoD (MM), DGH

3.2 The SUPPLIER shall be responsible for any loss to DGH consequent to the furnishing of the incorrect data/drawings.

4. ACCEPTANCE OF OFFER

4.1 With the acceptance of the Bidder's offer, which is as per the terms and conditions of the tender, by DGH, by means of LoA/purchase Order, the contract is concluded.

4.2 The LoA / Purchase Order being itself an acceptance of the offer, does not have to be accepted by the Bidder. But the Bidder must acknowledge a receipt of the order within 15 days from the date of mailing of the purchase order in its entirety by returning one copy of the purchase order duly signed without any qualification.

4.3 Any delay in acknowledging the receipt of the purchase order within the specified time limit or any qualification or modification of the order in the acknowledgement of the order by the SUPPLIER shall be a breach of the contract on the part of the SUPPLIER. Compensation for the loss caused by the breach will be recovered by DGH by forfeiting the earnest money/ bid security / bid bond given by the SUPPLIER. If the SUPPLIER's bid contains any condition and any correspondence containing conditions which are contrary to the NIT then they shall be considered as superseded and void on the acceptance of the bid by DGH.

4.4 Recovery of liquidated damages by the DGH from the SUPPLIER by forfeiting the earnest money/ bid security or by invoking the bid bond shall be regarded as cancellation of the contract which had come into existence on the acceptance of the offer by DGH.

5. NOTICES & ADDRESSES :

5.1 For the purposes of this CONTRACT, the addresses of the parties will be as follows and all correspondence and notices in relations to the present CONTRACT sent to the parties at the addresses mentioned below shall be deemed to be sufficient service of notice on the parties. All such notices as well as reports, invoices and other relevant material shall be addressed to the parties as per the address given below:

5.2 Directorate general of Hydrocarbons

HoD (MM)
Directorate General of Hydrocarbons,
OIDB Bhawan, Tower A, Plot No. 2, Sector-73, Noida -201301.
Fax : +91 120 2472049

CONTRACTOR'S REGISTERED OFFICE AND ADDRESS

.....
.....
.....

Fax:.....

6. MODIFICATION IN ORDER :

6.1 All modifications leading to changes in the order with respect to technical and/or commercial aspects, including terms of delivery, shall be considered valid only when accepted in writing by DGH by issuing amendment to the ORDER.

6.2 DGH shall not be bound by any printed conditions, provisions in the SUPPLIER's BID, forms of acknowledgement of ORDER, invoice, packing list and other documents which purport to impose any condition at variance with or supplement to ORDER.

7. JOINT AND SEVERAL RESPONSIBILITY :

7.1 Where SUPPLIER's EQUIPMENT or any part thereof are to be used jointly with other equipment supplied by another manufacturer (the name of the manufacturer will be communicated separately to SUPPLIER) DGH will hold SUPPLIER and the manufacturer jointly and severally responsible for the perfect operation of the entire group or section of equipment as regard the technical and mechanical characteristics stipulated in the specification. Such responsibility shall include the mechanical coupling as well as dynamic and starting moment.

7.2 Consequently, SUPPLIER shall establish and maintain all necessary contact with the manufacturer to be indicated by DGH with a view to ensuring the exchange of all relevant data and information.

8. PERFORMANCE SECURITY /PERFORMANCE BOND

8.1 The successful Bidder, within 21 days from the date of issue of LOA/NOA from the Purchaser, will be required to send Performance Security in the form of Bank Draft or in lieu thereof, Performance Bond for 7.5 % of the contract value in the form of Bank Guarantee from a nationalized /scheduled Bank. Detailed P.O. shall be placed only after receipt of acceptable Contract Security (i.e. Security Deposit/Performance Bond).

8.2 DGH shall not be liable to pay any bank charges, commissions or interest on the amount of Performance Security / Performance Bond.

8.3 Performance Security/ Performance Bond shall be refunded/returned to the SUPPLIER after completion of supplies/after satisfactory execution of the order.

8.4 In the event of non performance of the contract, if the losses suffered by DGH are more than the value of the Performance Security/Performance bond, DGH in addition to forfeiting the performance security/ performance bond, reserves the right to claim the balance amount of damages/losses suffered by DGH.

8.5 The performance security/performance bond shall remain at the entire disposal of DGH as a security for the satisfactory completion of the supply in accordance with the conditions of the contract.

9. WARRANTIES AND GUARANTEES : (MATERIALS AND WORKMANSHIP)

9.1 SUPPLIER shall fully warrant that all the stores, EQUIPMENT and components supplied under the ORDER shall be new and of first quality according to the specifications and shall be free from defects (even concealed fault, deficiency in design, Materials and Workmanship).

9.2 Should any defects be noticed in design, material and/or workmanship within 12 months after the goods, or any portion thereof, as the case may be, have been delivered (and commissioned) to the final destination indicated in the contract or for 18 months after the date of shipment from the port of loading in the source country, whichever periods conclude earlier unless specified otherwise in the special conditions of contract, DGH shall inform SUPPLIER and SUPPLIER shall immediately on receipt of such intimation, depute their personnel within 14 days to investigate the causes of defects and arrange rectification/ replacement/ modification of

the defective equipment at site without any cost to DGH within a reasonable period. However, supplier shall not be liable for the labour or any other costs involved in removal or reinstallation of the goods. If the SUPPLIER fails to take proper corrective action to repair/replace defects satisfactorily within a reasonable period DGH shall be free to take such corrective action as may be deemed necessary at SUPPLIER's risk and cost after giving notice to the SUPPLIER.

10. PERFORMANCE GUARANTEE

10.1 SUPPLIER shall guarantee that the "performance of the EQUIPMENT/MATERIAL" supplied under the order shall be strictly in conformity with the specifications and shall perform the duties specified under the ORDER.

10.2 Materials/equipment that shall be purchased from the subcontractor(s) shall have to fulfill the requirement as laid down vide para 9 above.

11. REJECTION

If DGH finds that the goods supplied are not in accordance with the specification and other conditions stated in the order or its sample(s) are received in damaged condition (of which matters DGH will be the sole judge), DGH shall be entitled to reject the whole of the goods or the part, as the case may be, and intimate within 14 from the date of receipt at site/store house as per terms of Contract to the SUPPLIER the rejection without prejudice to DGH other rights and remedies to recover from the SUPPLIER any loss which the DGH may be put to, also reserving the right to forfeit the performance security/performance Bond if any, made for the due fulfilment of the contract. The goods shall be removed by the SUPPLIER and if not removed within 14 days of the date of communication of the rejection, DGH will be entitled to dispose-of the same on account and at the risk of the SUPPLIER and after recovering the storage charges at the rate of 5% of the value of goods for each month or part of a month and the loss and expenses if any caused to DGH, pay balance to the SUPPLIER.

12. FAILURE AND TERMINATION CLAUSE/LIQUIDATED DAMAGES CLAUSE

12.1 Time and date of delivery shall be the essence of the contract. If the contractor/supplier fails to deliver and/or commission the stores, or any installment thereof within the period fixed for such delivery and/or commissioning in the schedule or any time repudiates the contract before the expiry of such period, the purchaser may, without prejudice to any other right or remedy available to him to recover damages for breach of the contract,:

(a) Recover from the Contractor/Supplier as agreed liquidated damages and not by way of penalty, a sum equivalent to 1/2% (half percent) of the contract / PO price **per week** for such delay or part thereof (this is an agreed, genuine pre-estimate of damages duly agreed by the parties) which the contractor has failed to deliver and/or commission within the period fixed for delivery and/or commissioning in the schedule, where delivery and/or commissioning thereof is accepted after expiry of the aforesaid period. It may be noted that such recovery of liquidated damages may be upto a ceiling of 5% of contract / PO price of the whole unit of stores which the contractor/supplier has failed to deliver and/or commission within the period fixed for delivery and/or commissioning.

OR

(b) Cancel the contract/supply order or a portion thereof by serving prior notice to the contractor/supplier.

12.2 Liquidated damages for delay in supplies thus accrued will be recovered by the paying authorities of the purchaser specified in the supply order, from the bill for payment of the cost of the materials submitted by the contractor/supplier in accordance with the terms of supply order/contract or otherwise. Notwithstanding anything stated above, equipment and materials will be deemed to have been delivered only when all its components and parts are also delivered. If certain components are not delivered in time the equipment and material will be considered as delayed until such time all the missing parts are also delivered.

12.3 Liquidated damages will be calculated on the basis of contract/ supply order price of services/materials excluding duties and taxes, where such duties/taxes have been shown separately in contract/supply order.

13. ACCEPTANCE OF HIGHER OFFER BY IGNORING LOWER OFFER FOR TIMELY DELIVERY-LIQUIDATED DAMAGES IN CASE OF DELAY

In the cases where initially lower offer has been ignored on account of loading and a higher offer has been accepted for timely delivery, the differential prices will be treated as price preference for earlier delivery. In the event of delay in completion of supply/project the extra expenditure paid on account of above price preference will be recoverable from the party towards liquidated damages. This is without prejudice to other rights under terms of contract.

14. INSPECTION/TESTING OF MATERIAL :

The inspection of material will be carried out by the authority specified in the purchase order. The material will be accepted only after the same has been found satisfactory after inspection and duly marked and sealed by the inspecting authority.

15. SUB-STANDARD MATERIAL/REPLACEMENT OF REJECTED GOODS

15.1 If DGH finds that material supplied are not of the correct quality or not according to specifications required or otherwise not satisfactory owing to any reason of which DGH will be the sole judge, DGH will be entitled to reject materials, cancel the contract and buy its requirement in the open market at the risk and cost of SUPPLIER, reserving always to itself the right to forfeit the performance security/Performance Bond placed by the SUPPLIER for the due fulfillment of the contract.

15.2 Rejected goods should be removed and replaced within 14 days of the date of communication of rejection.

16. SUBLETTING AND ASSIGNMENT

The Contractor shall not, save with the previous consent in writing of the Purchase Authority, sublet, transfer or assign the contract or any part thereof or interest therein or benefit or advantage thereof in any manner whatsoever, provided nevertheless that any such consent shall not relieve the Contractor from any obligation, duty or responsibility under the contract.

17. VARIATION IN QUANTITY

DGH is entitled to increase or decrease the quantities against any/all the items of the tender while placing the order.

18. TERMINATION FOR INSOLVENCY:

The Purchaser may at any time terminate the contract by giving written notice to the SUPPLIER if the SUPPLIER becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the SUPPLIER, provided that such termination will not prejudice or

affect any right of action or remedy which has accrued or will accrue thereafter to the Purchaser.

19. INTER-CHANGEABILITY OF PARTS :

19.1 If against any item it becomes necessary to supply spare parts other than specified, the SUPPLIER shall be required to give the following certificate to DGH before arranging supply of spare parts bearing different part numbers. If there is any obvious typographical or clerical error in the part number and/or description of any item, the SUPPLIER will supply the correct part. The aforesaid certificate should be supplied in such cases also. The SUPPLIER will furnish this certificate in either case, to the paying authority. No formal amendment is necessary in such cases.

"The changed part numbers are exact replacement of parts ordered and are suitable for and will fit in the machines and the existing fittings for which they are intended."

19.2 If, however the substitute spare part (s) is not a bare replacement of the part originally ordered and involves a purchase of other items in addition, as would be the case when a kit, is offered instead of one small item (s) forming part of the kit, the supply of the kit, would be subject to the following conditions:

a. The supply of the kit will be accompanied with a certificate that the manufacturer, have definitely stopped supply of the spare parts but are supplying only a kit.

b. The spares will not be supplied as kit unless prior acceptance of the same has been obtained from the purchaser.

c. In case the supply of the kit involves any change in the price and if so, the revised price would be stated for scrutiny and incorporation of the same in the supply order, if found acceptable.

19.3 Provided further, that if any part numbers are declared by the Purchaser to be unsuitable to the machines for which they have been supplied within 30 days from the date of arrival of the stores at site, the SUPPLIER will take them back at their own cost and expenses.

20. BREAKAGE/SHORTAGE :

Claim in respect of breakage/shortages, if any, shall be preferred on the SUPPLIER within thirty days from the date of receipt of materials by the Port/Ultimate consignee which shall be replaced/made good by the SUPPLIER at his own cost. All risk of loss or damage to the material shall be upon the SUPPLIER till it is delivered in accordance with the terms and conditions of the supply order.

21. DESIGNS, PATENTS AND ROYALTIES :

If any material used or methods or processes practised or employed in the manufacture of items to conform with the requirements of the contract is/are covered by a patent(s) in respect of which CONTRACTOR is not licensed, the CONTRACTOR shall, before using the material, method or process, as the case may be, obtain such licence(s) and pay such royalty(ies) and licence-fee(s) as may be necessary. The CONTRACTOR shall keep DGH indemnified from and against any and all claims, actions, demands and proceedings whatsoever brought or made against DGH on the basis of any patent or infringement thereof claimed or otherwise relating to and arising from any method or process employed or matter or thing done to or in connection with any work executed by the CONTRACTOR shall, at their own risk and expense

defend any suit for infringement of patent or like suit brought against DGH (whether with or without the CONTRACTOR being a party thereto) and shall pay any damages and costs awarded in such suit, and keep DGH indemnified from and against all consequence thereof.

22. FORCE MAJEURE

In the event of either party being rendered unable by Force Majeure to perform any obligation required to be performed by them under the contract, the relative obligation of the party affected by such Force Majeure shall be suspended for the period during which such cause lasts. The term " Force Majeure" as employed herein shall mean acts of God, War, Civil Riots, Fire directly affecting the performance of the Contract, Flood and Acts and Regulations of respective government of the two parties, namely DGH and the CONTRACTOR. Upon the occurrence of such cause and upon its termination, the party alleging that it has been rendered unable as aforesaid thereby, shall notify the other party in writing, the beginning of the cause amounting to Force Majeure as also the ending of the said clause by giving notice to the other party within 72 (seventy two) hours of the alleged beginning and ending of the cause respectively. If deliveries are suspended by Force Majeure conditions lasting for more than 2 (two) months, DGH shall have the option of cancelling this contract in whole or part at its discretion without any liability at its part. Time for performance of the relative obligation suspended by Force Majeure shall then stand extended by the period for which such cause lasts.

23. LANGUAGE/TERMINOLOGY :

The SUPPLIER shall ensure that the language/terminology/Description of goods used in supply order/ Bill of Lading/ Airway Bill/Invoice is verbatim in English and not at variance.

24. PACKING & MARKING :

The SUPPLIER shall consign/ship the materials in worthy packing conforming to the prescribed standards in force to withstand journey and ensuring the safety of cargo en-route and also arrival of materials at ultimate destination in good condition. The consignment shall be comprehensively insured against all risks by the SUPPLIER in case of FOR destination contracts from CONTRACTOR's ware-house to ultimate consignee's ware-house basis and each case/packing shall have on its outer side the following marking in English in indelible ink:

- (a) Supply Order No. and date
- (b) Name of SUPPLIER.
- (c) Case number (running number upon total number of boxes).
- (d) Gross and net weight in Kilogram on each box.
- (e) Dimension of packages
- (f) Consignee
- (g) TOP/DON'T TURNOVER/HANDLE WITH CARE
- (h) The equipment which cannot be packed shall bear metal tags with above marking indicated thereon. Each box shall contain one copy of packing list in English.

24.1 In case of hazardous chemicals / materials the bidder will provide material safety data sheets along with quotation and also while dispatching the materials. The bidder will also provide special hazard identification symbols / markings on each packing of hazardous chemicals.

25. PAYMENT OF GST (ON ULTIMATE PRODUCTS), CUSTOMS DUTY (where applicable).

25.1 Supplier / Contractor, unless specified otherwise in the CONTRACT, shall bear all tax liabilities, duties, Govt. levies etc. including GST, Customs Duty, Corporate and Personal Taxes levied or imposed on the Supplier / Contractor on account of payments received by it from the DGH for the work done under this CONTRACT. It shall be the responsibility of the Supplier / Contractor to submit to the concerned Indian authorities, the returns and all other concerned documents required for this purpose and to comply in all respects with the requirements of the laws in this regard, in time.

25.2 The rates quoted by the Supplier/Contractor is inclusive of all taxes, duties and levies. However, Supplier/Contractor is required to provide separately the rate and amount of all types of taxes, duties and levies. In case, the quoted information related to various taxes, duties & levies subsequently proves wrong, incorrect or misleading, DGH will have no liability to reimburse the difference in the duty/ tax, if the finally assessed amount is on the higher side and DGH will have to right to recover the difference in case the rate of duty/taxes finally assessed is on the lower side. Further, it is the responsibility of the Supplier/Contractor to make all possible efforts to make their accounting/IT system GST compliant in order to ensure availability of Input Tax Credit (ITC) to DGH.

25.3 Offers without giving any of the details of the taxes (Including rates and amounts) as specified above will be considered as inclusive of all taxes including GST. When a Supplier/Contractor mentions taxes as extra without specifying the rates & amount, the offer will be loaded with maximum value towards taxes received against the tender for comparison purposes. If the Supplier/Contractor emerges as lowest Supplier/Contractor after such loading, in the event of order on that Supplier/Contractor, taxes mentioned by DGH on the Purchase Order/Contracts will be binding on the Supplier/ Contractor.

25.4 Supplier / Contractor is required to pass on the benefit arising out of introduction of GST, including seamless flow of Input Tax Credit, reduction in Tax Rate on inputs as well as final goods by way of reduction of price as contemplated in the provision relating to Anti-Profiteering Measure vide Section 171 of the CGST Act, 2017. Accordingly, for supplies made under GST, the Supplier / Contractor should confirm that benefit of lower costs has been passed on to DGH by way of lower prices/taxes and also provide details of the same as applicable. DGH reserves the right to examine such details about costs of inputs/input services of the Supplier / Contractor to ensure that the intended benefits of GST have been passed on to DGH.

25.5 DGH shall declare the value of free issue of materials and services, if any, involved in the execution of the contract. The Supplier/Contractor has considered the same while working out the GST liability, if any. Further in cases where GST is leviable on any facilities provided by DGH and used by Supplier / Contractor and the consideration for which is recovered by DGH in the form of reduction in the invoice raised by Supplier / Contractor then DGH will raise GST invoices on such transactions and the same will be reimbursed by bidders.

25.6 Supplier / Contractor agrees to do all things not limited to providing GST compliant Tax Invoices or other documentation as per GST law relating to the supply of goods and/or services covered in the instant contract like raising of and /or acceptance or rejection of credit notes / debit notes as the case may be, payment of taxes, timely filing of valid statutory Returns for the tax period on the Goods and Service Tax Network (GSTN), submission of general information as and when called for by DGH in the customized format shared by DGH in order to enable DGH to update its database etc. that may be necessary to match the invoices on GSTN common portal and enable DGH to claim input tax credit in relation to any GST payable under this Contract or in respect of any supply under this Contract.

25.7 In case Input Tax Credit of GST is denied or demand is recovered from DGH by the Central / State Authorities on account of any non-compliance by Supplier / Contractor, including non-payment of GST charged and recovered, the Supplier / Contractor shall indemnify DGH in respect of all claims of tax, penalty and/or interest, loss, damages, costs, expenses and liability

that may arise due to such non-compliance. DGH, at its discretion, may also withhold/recover such disputed amount from the pending payments of the Supplier / Contractor.

25.8 GST liability, if any, on account of supply of free samples against any tender shall be to bidder's account.

25.9 In the event of introduction of any new legislation or any change or amendment or enforcement of any Act or Law, rules or regulations of Government of India or State Government or Public Body which becomes effective after the date of submission of Price Bid but within the contractual delivery/completion period, the 'net impact' of any variation (both plus and minus) in the value of supply order / contract through increased / decreased liability of taxes/duties (i.e. the amount of taxes/duties payable minus eligible credit of taxes / duties paid on inputs / input services) will be to the account of DGH.

25.10 Any increase in 'net impact' of any variation in Customs Duty/GST or introduction of any new taxes/duties/levy by the Govt. of India or State Government(s) or Public Body, during extended period of the contract / supply order will be to SUPPLIER's /Contractor's account where such an extension in delivery of the material/completion of the project is due to the delay attributable to the SUPPLIER/Contractor. However, any decrease in 'net impact' of any variation in Custom Duty/GST during extended period of the contract/ supply order will be to the account of DGH.

25.11 In order to ascertain the net impact of the revisions/enactment of various provisions of taxes/duties, the SUPPLIER is liable to provide following disclosure to DGH:

- (i) Details of Inputs (material/consumable) used/required in manufacturing/ supplying the ordered materials, including estimated monthly value of input and GST payable on purchase of inputs.
- (ii) Details of each of the input services used/required in manufacturing/ supplying the ordered materials, including estimated monthly value of input service and GST amount.

26. CONCESSION PERMISSIBLE UNDER STATUTES

The Supplier/Contractor must take cognizance of all concessions permissible under the statutes including the benefit under Central Sales Tax Act, 1956, failing which he will have to bear extra cost where SUPPLIER/Contractor does not avail concessional rates of levies like customs duty, sales tax, etc. DGH does not take any responsibility towards this. However, DGH may provide necessary assistance wherever possible, in this regard.

27. PROGRESS ON MANUFACTURING OF ITEMS:

27.1 From the date of receipt of order, the manufacturer will send report on monthly basis to the Purchase Authority about the progress on manufacturing of item (s) ordered on him. The monthly progress report will be sent on regular basis till completion of entire supply as per delivery date indicated in supply order.

27.2 In case any part of the order is sub-contracted to a Micro or Small Enterprise as per contract conditions then the supplier shall provide complete details (i.e. name of the subcontractor, value of sub-contacted work, copy of valid MSE registration certificate etc.) of the sub-contractor to DGH.

28. TERMS OF PAYMENTS

The terms of payment shall be as stipulated in main body of the purchase order. Payment shall be subject to Tax Deduction at source as per Indian Tax Laws. The original invoice should accompany the following documents/details:

- a) Copy of valid registration certificate under the GST rules.

- b) Particulars required for making payments through 'Electronic Payment Mechanism', in accordance with the clause on 'MODE OF PAYMENT' appearing in Annexure-I (i.e. 'Instructions to bidders') of bid document.
- c) Tax Invoice (Original and duplicate) issued under relevant rules of GST(as applicable), clearly indicating rates and amount of various taxes/ duties shown separately.
- d) Proof of delivery in case of direct/door delivery.
- g) Warranty/Guarantee Certificate.
- h) Any other document specifically mentioned in the Purchase Order, or supporting documents in respect of other claims (if any), permissible under the Purchase Order.

29. CORPORATE TAXES:

29.0 The SUPPLIER shall bear all direct taxes, levied or imposed on the SUPPLIER under the laws of India, as in force from time to time.

29.1 The SUPPLIER shall also be responsible for ensuring compliance with all provisions of the direct tax laws of India including, but not limited to, the filing of appropriate Returns and shall promptly provide all information required by the DGH for discharging any of its responsibilities under such laws in relation to or arising out of the SUPPLY ORDER.

29.2 Tax shall be deducted at source by DGH from all sums due to an Indian tax resident Contractor in accordance with the provisions of the Income Tax Act, 1961, as in force at the relevant point of time.

29.3 As per the provisions of Section 206AA of Indian Income Tax Act, 1961, effective from 01.04.2010, any person entitled to receive any sum or income or amount, on which tax is deductible under the provisions of Act, is required to furnish his Permanent Account Number (PAN) to the person responsible for deducting tax at source. In case the SUPPLIER does not furnish its PAN, DGH shall deduct tax at source as provided in the Income Tax Act, 1961, or in the relevant Finance Act, or at such higher rate as may be required by Section 206AA of Indian Income Tax Act, 1961, from time to time.

29.4 For the lapses, if any, on the part of the SUPPLIER and consequential penal action taken by the Income Tax department, the DGH shall not take any responsibility whether financial or otherwise.

30. ARBITRATION

30.0 Except as otherwise provided elsewhere in the contract, if any dispute or difference arises between the parties hereto or the respective representatives or assignees at any time in connection with operation, interpretation or out of CONTRACT or breach thereof shall be decided in accordance with Indian Arbitration and Conciliation Act, 1996 by an Arbitral Tribunal consisting of three arbitrators. Each party shall appoint one arbitrator and the Arbitrators so appointed shall appoint third arbitrator, who shall act as the presiding arbitrator.

30.1 In case a party fails to appoint an arbitrator within 30 days from the receipt of request to do so by the other party or the two arbitrators so appointed fail to agree on the appointment of the third arbitrator within 30 days of the appointment of second Arbitrator, the Chief Justice of Supreme Court/High Court as the case may be or any other person or institution designated by him within whose jurisdiction the subject CONTRACT has been made, shall appoint the arbitrator/presiding arbitrator upon request of any of the parties.

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

30.3 It is agreed between the parties that the party invoking arbitration shall specify all disputes to be referred to arbitration at the time of invocation of arbitration and not thereafter.

30.4 It is also agreed between the parties that neither party to the arbitration shall be entitled to the interest on the amount of award.

30.5 The Arbitral tribunal shall give a reasoned award and the same shall be final, conclusive and binding on the parties.

30.6 The venue of the arbitration shall be New Delhi, India and shall be conducted in English language. The Courts in Delhi will have the jurisdiction to deal with such arbitration award if required.

30.7 The fees of the arbitrators shall be borne by the respective parties nominating them and the fee of the presiding arbitrator, cost and other expenses incidental to the arbitration proceedings shall be borne equally by the parties. Subject to aforesaid, the provisions of Indian Arbitration and Conciliation Act, 1996 and any statutory modification or re-enactment in lieu thereof shall apply to the arbitration proceedings under this clause.

31. APPLICABLE LAW AND JURISDICTION

The supply order, including all matters connected with this supply order shall be governed by the Indian law both substantive and procedural, for the time being in force and shall be subject to the exclusive jurisdiction of Indian Courts at the place from where the Purchase Order has been placed.

32. REFERENCE OF SUPPLY ORDER IN ALL CORRESPONDENCE

Reference of this supply order should invariably be quoted in all correspondence relating to this supply order.

33. LIABILITY UNDER THE CONTRACT

The total liability of the supplier arising out of sale or use of the equipment/material/goods supplied by them, if the same is found defective, shall be limited to the contract value of such defective unit(s) and associated tools. In no event shall either party be liable to the other whether in contract, tort or otherwise for any consequential loss or damage, loss of use, loss of production, or loss of profit or interest costs or environmental pollution damage whatsoever arising.

34.0 CHANGE IN LAW

34.1 In the event of introduction of any new legislation or any change or amendment or enforcement of any Act or Law, rules or regulations of Government of India or State Government(s) or Public Body which becomes effective after the date of submission of Price Bid or revised price bid, if any, for this CONTRACT and which results in increased cost of the works under the CONTRACT through increased liability of taxes, (other than personnel and Corporate taxes), duties, the CONTRACTOR shall be indemnified for any such increased cost by the DGH subject to the production of documentary proof to the satisfaction of the DGH to the

extent which directly is attributable to such introduction of new legislation or change or amendment as mentioned above and adjudication by the competent authority & the courts wherever levy of such taxes / duties are disputed by DGH.

34.2 Similarly, in the event of introduction of new legislation or any change or amendment or enforcement of any Act or Law, rules or regulations of Government of India or State Government(s) or Public Body which becomes effective after the date of submission of Price Bid or revised price bid, if any, for this CONTRACT and which results in any decrease in the cost of the works through reduced liability of taxes, (other than personnel and Corporate taxes) duties, the CONTRACTOR shall pass on the benefits of such reduced cost, taxes or duties to the DGH, to the extent which is directly attributable to such introduction of new legislation or change or amendment as mentioned above.

34.3 All duties, taxes (except where otherwise expressly provided in the Contract) as may be levied / imposed in consequences of execution of the Works/Services or in relation thereto or in connection therewith as per the Acts, Laws, Rules, Regulations in force on the date of submission of Price Bid or revised price bid, if any, for this CONTRACT shall be to CONTRACTOR's account. Any increase / decrease in such duties, taxes after the date of submission of price bid or revised price bid, if any, but within the contractual completion / mobilization date as stipulated in the CONTRACT will be to the account of DGH.

34.4 Any increase in the duties and taxes after the contractual completion / mobilization date during the extended period will be to the contractor's account, where delay in completion /mobilization period is attributable to the CONTRACTOR. However, any decrease of duties and taxes after the contractual completion / mobilization date will be to DGH's account.

34.5 The Contract Price and other prices given in the Price Format are based on the applicable tariff as indicated by the CONTRACTOR in the Price Format. In case this information subsequently proves to be wrong, incorrect or misleading, DGH will have no liability to reimburse/pay to the CONTRACTOR the excess duties, taxes, fees, if any finally levied / imposed by the concerned authorities. However, in such an event, DGH will have the right to recover the difference in case the rate of duty/tax finally assessed is on the lower side.

34.6 Notwithstanding the provision contained in clause **34.1 to 34.4** above, the DGH shall not bear any liability in respect of:

- (i) Personal taxes on the personnel deployed by CONTRACTOR, his sub-contractor / sub-sub contractors and Agents etc.
- (ii) Corporate taxes and Fringe benefit tax in respect of contractor and all of their sub-contractors, agents etc.
- (iii) Other taxes & duties including new taxes etc. in respect of sub-contractors, vendors, agents etc of the CONTRACTOR.

35.0 Integrity Pact

The Integrity Pact, duly signed by the authorized official of DGH and contractor, will form part of this contract/supply order.

The person signing the Integrity Pact shall not approach the Courts while representing the matters to IEM/s and he/she will await his/their decision in the matter.

Bid Evaluation Criteria

A. VITAL CRITERIA FOR ACCEPTANCE of BIDS:

Bidders are advised not to take any exception/deviations to the bid document. The exceptions/deviations along with suggested changes are to be communicated to DGH within the date specified in the NIT and bid document. DGH after processing such suggestions may, through an addendum to the bid document, communicate to the bidders the changes in its bid document, if any. However, during evaluation of bids, DGH may ask the bidder for clarifications/ confirmations/deficient documents of its bid. Any exception/ deviation not agreed by DGH after evaluation shall result into rejection of such bids.

B. REJECTION CRITERIA

B 1 Technical rejection criteria

The following vital technical conditions should be strictly complied with failing which the bid will be rejected:

1. Bid should be complete in all aspects covering entire scope of work, supply and should completely fulfill the technical specifications indicated in the bid document, duly supported with technical catalogues/ literatures, wherever applicable. Incomplete and non-conforming bids will be rejected outright.
2. Bidders have to be “Original Equipment Manufacturer (OEM) of offered Hardware Equipment” **OR** “Original Equipment Manufacturer (OEM) of G&G Software (DSG or Petrel) used for interpretation of Exploration & Production (E&P) data for Oil & Gas industry” **OR** “System Integrator (SI)”.
 - 2.1 In case bidder is **OEM of offered hardware or SI**, the bidder must submit a certificate from the OEMs of these software i.e Decision Space Geoscience (DSG) of M/s Halliburton and Petrel of M/s Schlumberger that the offered items as per the tender is certified on their latest version of application software. This is important because DGH is currently using the latest versions of DSG Suite of software from M/s Halliburton and Petrel Suite of software from M/s Schlumberger. Offers without certification from G&G software OEM(s) shall not be considered. Proforma for authorization to be submitted by OEM of Hardware/ SI attached as appendix C
 - 2.2 In case bidder is “**Original Equipment Manufacturer (OEM) of G&G Software** used for interpretation of Exploration & Production (E&P) data for Oil & Gas industry”, the bidder must provide tender specific relevant authorization letter from OEM(s) of their quoted products/ offering against this specific tender. Offers without authorization letter from OEM(s) shall not be considered.
 - 2.3 In case bidder is **SI**, the bidder must provide tender specific relevant authorization letter from OEM(s) for quoting/ offering their products against this specific tender. Offers without authorization letter from OEM(s) shall not be considered.

3. Experience in E&P Industry:

- 3.1 Bidder should be in the business of providing Maintenance & Support (M&S) of G&G application software (Data Interpretation & Visualization software like Petrel and DSG) for minimum 5 years from the date of bid closing. Documentary evidence such as orders and contracts in support of the above requirements must have been issued to the bidder by their clients 5 years before the bid closing date. Documentary evidence in respect of the above must be submitted along with the techno-commercial bids in the form of copies of relevant Purchase Orders/contracts issued on or before the bid closing date along with copies of any of the documents in respect of satisfactory execution of each of those Purchase Orders/contracts, such as-(i) Satisfactory supply, completion/Installation report (OR) (ii) any other documentary evidence that can substantiate the satisfactory execution of the purchase orders/contracts cited above.
- 3.2 Bidder should have minimum Two (02) implementations of G&G software running in a virtualized environment anywhere in India or globally during the last 5 years. Documentary evidence in respect of the above must be submitted in the form of a certificate from a client where their software is implemented/running in such a virtualized environment.

4. Experience in Cloud implementation:

Bidder or its affiliates should have successfully executed/commissioned at least One (01) Cloud based E&P application software project in Oil & Gas industry based on “Converged or Hyper Converged Infrastructure technology” in India or Globally in the past 5 years from the date of bid closing covering the following:

- a. Cloud solution on a Hyper Converged Infrastructure (HCI)/Converged Infrastructure (CI) in Oil & Gas Industry with at least 4 Nodes (Servers in cluster architecture) and 50 TB or Higher Disk Space based cloud solution.
- b. Running the cloud based Hyper Converged Infrastructure (HCI)/Converged Infrastructure (CI) with G&G Application for at least 1 year before the date of Tender opening.

Documentary evidence in respect of the above must be submitted along with the techno-commercial bids in the form of copies of relevant Purchase Orders/Contracts along with copies of any of the documents in respect of satisfactory execution of each of those Purchase Orders/contracts, such as-(i)Satisfactory supply, completion/Installation report (OR) (ii) Consignee Receipted Delivery Challans (OR)(iii) any other documentary evidence that can substantiate the satisfactory execution of each of the purchase orders/contracts cited above.

5. **Acceptance of Terms and Conditions:** The bidder must submit an undertaking along with their techno-commercial bid that all instructions and conditions of the said tender document as well as the instructions contained in the website of the e-tender are acceptable to them unconditionally.

6. Financial eligibility criteria:

- a. The average turnover of the firm or its parent company in last three years (FY 2016-17, FY2017-18 and FY 2018-19) should not be less than INR 7.5 cr.
- b. Net worth of the bidder must be positive.

For Proof of Annual Turnover & Net worth any of the following documents /photocopy must be furnished.

- A Certificate issued by a practicing Chartered/Cost Accountant Firm, with membership number certifying the Annual Turnover and Net worth.
- Audited Balance Sheet and Profit & Loss account
- In case bidder does not have the audited financial statements for the year 2018-19, they may submit audited financial statements pertaining to FY 2015-16, 2016-17 and 2017-18

Note:

In case the bidder is not meeting the experience criteria against clause 3 & 4 above, experience of Parent / Subsidiary / Co-subsiary of any tier of same Group Company may be considered, provided (i) the bidder submits documentary evidence regarding existence of such a relationship between the Bidder and Parent / Subsidiary / Co-subsiary of any tier of same Group Company.

For clauses 3 & 4 regarding experience, the reckoned period shall be the period prior to the date of original closing of the techno-commercial bid of this tender.

7. Bidders to accept/comply with the following clauses as given in the tender document, failing which the offer will be rejected:

- a) Arbitration clause
- b) Tax liability clause
- c) LD/penalty clause
- d) Termination clause

B.2 COMMERCIAL REJECTION CRITERIA

The following vital commercial conditions should be strictly complied with, failing which the bid will be liable for rejection:

1.0 Bid should be submitted in Two Bid system in two separate electronic envelopes. The Techno Commercial bid shall contain all details but with the price column of the price bid format blanked out. However, a tick mark (✓) shall be provided against each item of the price bid format to indicate that there is a quote against this item in the techno-commercial bid. The Priced bid shall contain only the prices duly filled in as per the price bid format. The offers of the bidders indicating/disclosing prices in techno-commercial (un-priced bid) or at any stage before opening of price-bid shall be straightaway rejected.

2.0 Acceptance of terms & conditions:

The bidder must confirm unconditional acceptance of General Terms & Conditions at **Annexure-II** and Instruction to Bidders at **Annexure-I** by attaching digitally signed tender document.

3.0 Offers of following kinds will be rejected:

- a) Offers made without Bid Security/Bid Bond/Bank Guarantee.
- b) Offers which do not confirm unconditional validity of 90 Days of the bid as indicated in the "Invitation to Bid".
- c) Offers where prices are not firm during the entire duration of the contract and/or with any qualifications.

- d) Offers which do not conform to DGH's price bid format.
- e) Offers which do not confirm to the contract period indicated in the bid.
- f) The offers indicating/disclosing prices in techno-commercial (un-priced bid) or at any stage before opening of price-bid shall be straight away rejected.
- g) Offers not accompanied by copy of PAN Card will be rejected.
- h) Offers not accompanied with a declaration that neither the bidders themselves, nor any of its allied concerns, partners or associates or directors or proprietors involved in any capacity, are currently serving any banning orders issued by DGH debaring them from carrying on business dealings with DGH.
- i) Offers not accompanied with the undertaking on the company's letter head and duly signed by the signatory of the bid that all the documents/ certificates / information submitted by them against the tender are genuine.
- j) Non submission of Integrity pact along with the bid, duly signed by the same signatory who signs the bid even after giving an opportunity after opening of techno-commercial bids.

4.0 Bidder shall bear, within the quoted rates, the Personnel Tax as applicable in respect of their personnel and their sub-contractor's personnel, arising out of this contract. Bidder shall also bear, within the quoted rates, the Corporate Tax, as applicable, on the income arising out of this contract.

5.0 Indian agent is not permitted to represent more than one foreign bidder (Supplier/Manufacturer/Contractor) in a particular tender. In case an Indian agent represents more than one foreign bidder (Supplier/Manufacturer/Contractor) in a particular tender, then offers of such foreign bidders (Suppliers/Manufacturers/Contractors) shall be rejected in that tender.

C Price Evaluation Criteria

- 1. Evaluation of bids:** Evaluation will be made on the basis of FOR Destination i.e DGH Noida office and SDC, Bhubaneswar.
- 2.** Total price shall be inclusive of applicable Duties, GST, Cess or any other statutory levies, and transportation & insurance charges.
- 3.** If there is any discrepancy/calculation mistake between the unit price and Net amount, unit price will prevail and Net Amount shall be corrected.

D General:

- 1.** The BEC over-rides all other similar clauses operating anywhere in the Bid Documents.
- 2.** The bidder/contractor is prohibited to offer any service / benefit of any manner to any employee of DGH and that the contractor may suffer summary termination of contract / disqualification in case of violation.
- 3.** On site inspection will be carried out by DGH's officers / representative /Third Parties at the discretion of the DGH.
- 4.** To ascertain the substantial responsiveness of the bid DGH reserves the right to ask the Bidder for clarification in respect of clauses covered under BRC and such clarification fulfilling the BRC clauses must be received on or before the deadline given by DGH, failing which the offer will summarily rejected.

Scope of Work, Technical Specifications and Special conditions

1. Brief about Requirement

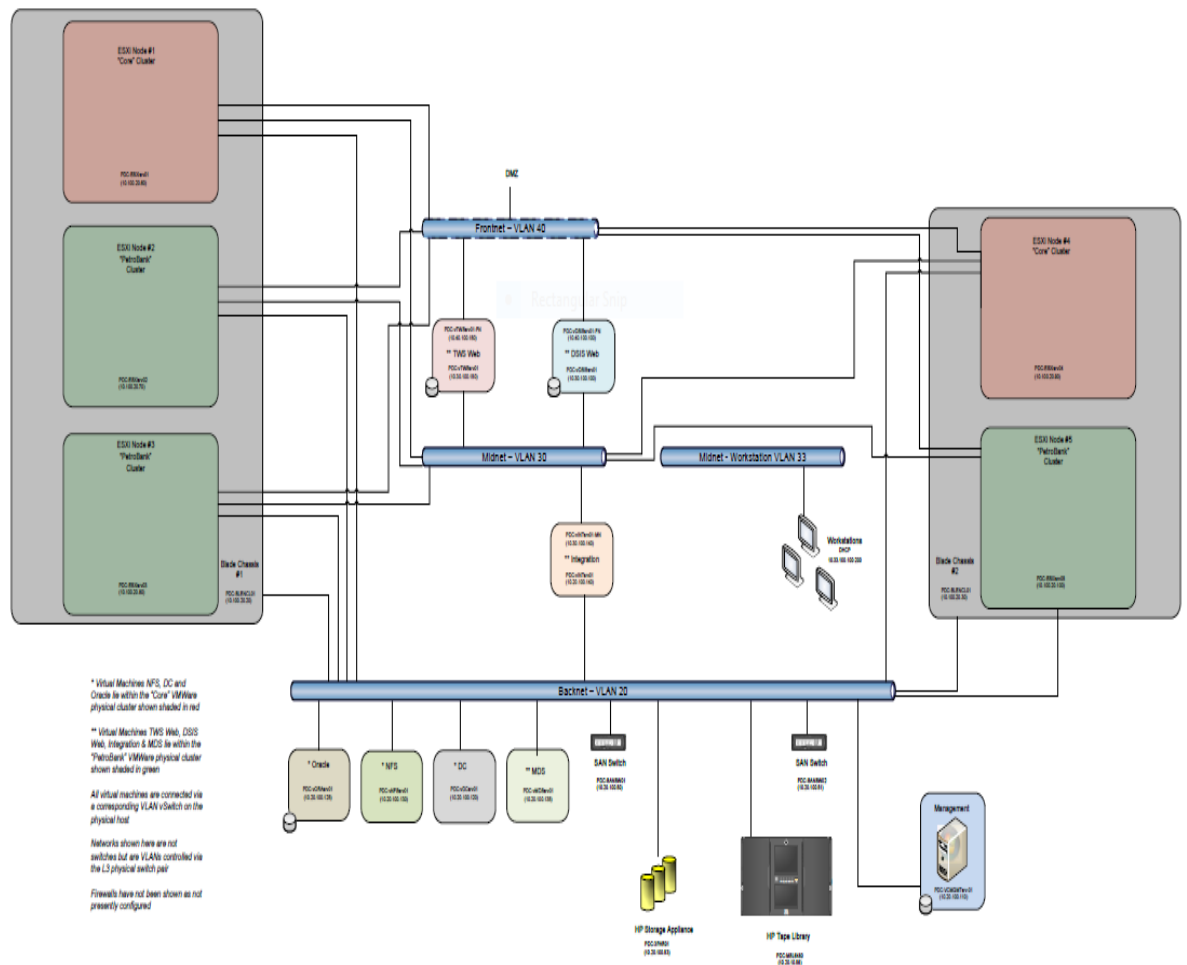
Directorate General of Hydrocarbons (DGH) is an upstream advisory & technical arm under Administrative control of the Ministry of Petroleum & Natural Gas to promote sound management of the Indian petroleum and natural gas resources. Its Office is located at Tower A, OIDB Bhawan, Sector- 73, Noida (UP). The Primary Data Centre (PDC) is located at 5th Floor, DGH, OIDB Bhawan, Plot No. 2, Sector – 73, NOIDA. The Secondary Data Centre (SDC) is located at Software Technology Park of India (STPI), Elite Building, Gothapatna, Near IIIT College, Bhubaneswar, Odisha.

NDR-DGH is aiming to expand its E&P Data Visualization and Interpretation (DVI) facilities available in physical Data Viewing Rooms at 6th Floor to online/anywhere/anytime data visualization and interpretation facility globally. For achieving this NDR-DGH is planning to set up a private cloud facility at its premises in the PDC & SDC thru open tendering. Cloud will host software(s) primarily related to Geology and Geophysics (G&G) fields of E&P industry on associated hardware for anytime and anywhere usage for promoting exploration blocks identified under various OALP/ DSF rounds for bidding. This facility of private cloud will help people located in remote locations to work on India's G&G data without the requirement of the participants to travel to DGH to access its DVI facilities. This will also empower different category of users viz E&P companies and academia to collaborate and innovate based upon the ready availability of the data, software and hardware.

2. Detailed Scope:

- 2.1. To supply, configure and implement complete solution in a high available, scalable, load balanced fail-over configuration, hosting G&G applications and work stations in a virtualized environment at NDR premises in DGH, Noida and Disaster Recovery (DR) solution at Secondary Data Centre (SDC), Bhubaneswar.
- 2.2. Proposed solution should be based on **Hyper Converged Infrastructure (HCI)** enterprise IT infrastructure solution that integrates Storage, Compute, Networking and Hypervisor with single system management software. The complete HCI solution along with associated Network Attached Storage (NAS) solution as per the technical specifications should be provided with de-duplication, compression with erasure coding OR equivalent with data encryption at rest and motion with no single point of failure (NSPOF) at any stage/ level of the implementation with optimization features along with powerful data management and disaster recovery capabilities at both PDC and SDC.

2.3. Integration of the existing NDR system at PDC and SDC should be implemented with the proposed HCI solution in terms of connectivity and data transfer/exchange facilities etc. A schematic diagram of existing setup is shown below:



- 2.4. The proposed solution should be designed and configured to provide seamless, optimal G&G application performance on LAN and across WAN/Internet with all security features as per the best industry practices.
- 2.5. The proposed HCI solution should support visualization of the data available from NDR over internet and on the proposed thin clients for performing basic interpretation operations on the data from anywhere in the world.
- 2.6. The proposed HCI solution should facilitate a virtualized environment using the HCI nodes to host E&P industry specific G&G software applications such as Schlumberger-Petrel & Landmark-Decision Space Geosciences (DSG) visualization & interpretation software(s) based projects and data which NDR-DGH is currently using for G&G evaluation. Later on DGH may at its discretion at a later stage decide to host data on IHS-Kingdom, Paradigm or similar G&G software in the cloud hosted environment. DGH may decide to include more G&G applications if needed, based on requirements.
- 2.7. Implementation of portal for registration of users, authentication and their management, Time Slot Management Tool with Integrated Payment Gateway,

Provisioning of ready to use Virtual Machines hosting G&G software(s) and relevant data as per user requirements.

- 2.8. Proposed HCI solution should provide 24 concurrent users access of multiple visualization & interpretation (V&I) applications such as DSG and Petrel sessions at PDC at any given point of time.
- 2.9. Proposed HCI solution should support scalability & operational flexibility to add more Virtual Machines (VMs) in future.
- 2.10. Proposed HCI solution should provide optimized performance for E&P applications when accessing data over the internet.
- 2.11. Proposed items as per technical specifications should not be end of sale (EOS) at the time of supply else equivalent or higher specifications of item has to be offered at no price implications to DGH, subject to proof from OEM of the item and acceptance by DGH.
- 2.12. International IT Security standards applicable for Cloud Security should be implemented at PDC and SDC. The successful bidder shall engage a third party CERT-IN empanelled IT Security audit agency to audit and certify the implemented solution from IT Security perspective annually at PDC and SDC.
- 2.13. Provisioning for backup of the data and activities on Cloud Servers as per backup policy to be decided from time to time by DGH based on requirements.
- 2.14. The successful bidder should design the solution as a separate network with a well-defined security policy to allow access to G&G applications/data only from authenticated/registered users/devices over LAN/ internet. Bidder should configure and implement various features asked for in technical specification, as per the requirement of DGH.
- 2.15. The implemented solution should provide the user computing power as per the technical specifications under (Technical compliance sheet) with all required networking hardware and associated Virtualization Software, Operating System Software, Back-up Software, System Management Software etc. The complete solution shall be delivered with extended OEM onsite warranty support for supplied hardware and software for five years with 24x7x365 support.
- 2.16. The Comprehensive hardware warranty support will include onsite repair/replacement of parts with updates and patches for all system software, firmware, drivers etc.
- 2.17. The software support should include 5 year subscriptions for updates, new releases etc., for all supplied software like Virtualization Software, Backup Software, System Management Software and Operating Systems etc.
- 2.18. Training should be provided for configuring and managing day-to-day operations of proposed HCI solution including VMWare software, Firewall, back-up recovery etc. The training should be provided at DGH/OEM premises. Bidder should provide training material. At least one hard copy manual should be provided for the complete training courses to be kept at PDC for reference.
- 2.19. At least one hardcopy along with softcopy of the proposed HCI and storage configuration, layout, installation parameter/ process etc should be provided.
- 2.20. Post deployment of the proposed HCI and Storage infrastructure, the bidder should serve as the single point of contact for support and services request from DGH.

- 2.21. The bidder should manage its support and services in line with industry best practice, aligned with the ITIL service management framework covering Service Design, Transition, Operation and Continuous Improvement.
- 2.22. Support is required to be provided for:
- a) IT Infrastructure Management on 24x7x365 for deployed Private Cloud Solution. Support engineers should have 3-year relevant experience in HCI infrastructure management with good working knowledge of VMware.
 - b) Application Management: G&G applications deployed on DGH private cloud. Support engineer should have prior experience of at least 3 years in managing G&G applications like Petrel / DSG.
- 2.23. Bidder must ensure the hardware, Software, Licenses and back to back OEM Support contracts for hardware and software procured by DGH under the tender must be registered in the name of DGH supplied email ID within the service consoles of respective OEM.
3. **Bill of Material:** Bidder to provide BOM as per technical evaluation matrix/ Technical Specifications (Appendix A).
4. **Technical Compliance sheet As attached vide Appendix B**
- 5 **Warranty and AMC Support**
- 5.1 **Warranty Support for Hardware, Network equipment & Cabling and Services (AMC) for Software, Network & Security Software etc.**
- 5.1.1 The bidder shall provide 05 year on-site comprehensive warranty support for all supplied Hardware , Network equipment & Cabling and 05 years support for all supplied Software (Virtualization software, Backup software, Operating Systems, Directory services etc.) and complete Network & Security Software etc. The warranty support for hardware and software services shall be valid for a period of 05 years from the Date of System installation and acceptance. The bidder shall maintain the supplied ICT infrastructure(which includes all supplied Hardware, software, Network equipment, Network & Security software, Cabling etc.) in good working order as per SLA defined in Section 6.3.
 - 5.1.2 Necessary support to be provided for G&G application software implementation on the HCI platform.
 - 5.1.3 The maintenance services shall consist of preventive and corrective maintenance and shall include all the below mentioned points.
 - 5.1.4 Maintenance coverage will be on 24x7x365 basis as per uptime requirements defined in Section 6.3.
 - 5.1.5 Bidder shall nominate an Account Manager based in NCR for coordination with DGH throughout the maintenance period.
 - 5.1.6 The bidder should support 24x7x365 on-call response to resolve the reported incident by DGH as per the SLA mentioned in Section 6.3. One on-site support personnel (L1) should be available at PDC premises on 24x7x365 basis. The bidder shall raise service request to OEM for any problem/incident reported and should

- follow the same till closure. The access to the Web login of the OEM support should also be provided to DGH.
- 5.1.7 Bidder shall allocate engineering manpower resources (L1, L2 and L3) to manage operations of HCI based cloud. The L2 & L3 team should be identified for each area of specialization. The Engineers provided for maintenance services (L1, L2 & L3) should have requisite qualifications and appropriate working knowledge. These resource persons shall provide on-site support in the event of problems/failures. The bidder will provide escalation mechanism with complete details including name, contact number, support Level (L1, L2 and L3) etc. of the allocated resources.
- 5.1.8 The bidder shall have back-to-back support with the respective OEMs for the entire period of Warranty support & software services. The bidder shall furnish documentary proof of backend support including software upgrades, availability of spares, availability of hardware/software module required for scalability for a period of 05 years from the respective OEMs of the products offered.
- 5.1.9 The bidder along with the respective OEMs shall provide and install patches, updates and upgrades for the entire set of ICT equipment/software as per the recommendations and releases done by the OEM. Software updates/upgrades shall also be done keeping in view advancement in technology, shortcomings of the system, security vulnerabilities or changes required for improving functional efficiency and security level of the system. The bidder shall ensure complete rollback to original status in case of problem and shall take necessary system backups before the activity.
- 5.1.10 The bidder shall carry out the configuration changes for the complete infrastructure as per requirement given by DGH and shall follow Change Control Process which shall be jointly defined with DGH.
- 5.1.11 The bidder shall maintain Site Management Guide for hardware, software, network & security configuration under maintenance and keep it in electronic as well as hard copy form in DGH premises. Bidder shall be responsible to update the Site Management Guide on regular basis and reflect the latest configuration and shall also maintain the Change documents.
- 5.1.12 In case of a failure or degraded performance, a detailed incident report including root cause analysis should be prepared in consultation with the OEM of the respective product(s) with an objective to avoid similar failures in future. Preliminary report should be submitted within 24 hours followed by detailed technical report, which has to be submitted to DGH within one week.
- 5.1.13 Bidder if required shall maintain their own inventory of spares so as to give fast and efficient service as per defined SLAs.
- 5.1.14 Bidder shall carry out a comprehensive performance analysis of all components half-yearly and shall submit a report. The report should include performance analysis for all components (Hardware, Software, Network equipment and Network & Security software) and the recommendations for change of parameters / configuration / Resource requirement etc. if any. The parameters to be monitored and the report format shall be jointly decided along with DGH and the OEMs resource.
- 5.1.15 Bidder shall depute resources for activity planned (e.g. UPS maintenance, electrical shutdown, Network upgrade etc.) in the Data centre affecting the System.

- 5.1.16 Bidder shall carry out Preventive Maintenance Schedule once in six months for complete ICT infrastructure in off-peak hours , which will include the following:
- a) Diagnostic tests to check all servers by running the console diagnostics tests to check hardware (CPU, Memory and I/O controllers).
 - b) Diagnostic tests to check and verify good health of all network and security equipment (CPU and/or other processors, Memory, network ports, Network cables and various functional modules etc.)
 - c) Shall use diagnostic software or alternative facility/facilities to diagnose and analyse predictive failures in the disk of servers and storage.
 - d) Check fan/blowers and power supplies for proper functioning.
 - e) A Preventive Maintenance (PM) report, which highlights the findings & follow-up actions, will be furnished to DGH within one week.
- 5.1.17 During warranty period, if it is observed that any of the supplied products is not able to handle traffic or its performance is not able to meet the specification/requirements given in the Tender, the bidder at its own cost shall replace that equipment with higher end equipment that meet the minimum technical specifications. The decision of DGH in this case would be final.
- 5.1.18 During warranty period bidder shall provide support for configuration of additional hardware, software or network equipment added in the HCI based Cloud solution.

5.2 Service Level Agreements for HCI based cloud.

The bidder shall provide the uptime for the system /equipment as detailed in section below:

- 5.2.1 **Total Service failure-** The bidder shall provide an uptime guarantee of 99.9% on monthly basis. The system will be treated “Total Service Failure” when there is a failure of HCI based Cloud in delivering IaaS due to failure of one or more components supplied by the bidder or total failure of cloud management layer (Self-service dashboard) or degradation in entire system performance on account of failure/mal-functioning of Cloud infrastructure being maintained by the bidder. In case of failures exceeding the defined down time for the month, it shall attract penalties as defined in Section 6.3.
- 5.2.2 The system will be considered as “Total service failure”, if more than one HCI node/servers fail and it shall attract penalty given in the “Total Service failure” of the Section 6.3
- 5.2.3 Irrespective of the duration of failures, if there are more than 02 Total service failures in a month, this too shall be treated as “Total service failure” and shall attract damages as defined in “Penalties in case of occurrence of more than 2 failures in a month” item of Section 6.3.
- 5.2.4 ICT Equipment Failure (Servers, HCI Node, SDN controller, Backup Setup, Switches etc.) / Part Failure (CPU/Memory etc.). In addition to the above, the bidder has to provide an uptime guarantee of 99.0 % on monthly basis for each equipment (including hardware, software & network) maintained by the bidder. If the number of failures of any Equipment exceeds 02 in a month or the duration of failure is more than 7.2 hours in a month, it shall attract penalties as defined in “Equipment

Failure” item of the Section 6.3. Further, in the event of a part failure of equipment i.e. CPU/ memory card/ Supervisor module/ Port module, etc. (which does not lead to failure of Equipment) the part should be installed/ replaced within 10.0 hours (subject to availability of downtime), beyond which the Equipment shall be considered as down and shall attract penalty as defined in “Part failure” item of the Section 6.3. For the purpose of calculating the penalty, the excess failure time shall be counted but in case number of failures are more than the permissible limit, complete failure period shall be counted for calculation of penalty.

5.2.5 The planned downtime will not be considered for calculating uptime but in case of planned downtime exceeding the allotted downtime or the activity resulting in some system failure /equipment failure then the system shall be treated as down and it shall attract penalty given in the “Total Service failure” item or the item “ICT Equipment failure” of the Section 6.3.

5.3 Penalty for Service & Equipment Failure

5.3.1 Penalties shall be calculated monthly on the basis of total Service failure as well as individual Equipment or Part failure. In case both are applicable for same duration, the higher one shall be charged. Penalties shall be deducted from the installment of amount due for payment under this contract. In case penalties exceed the invoice amount, the bidder shall have to deposit the due penalty amount within 1 week from the date of issue of demand letter. In case the bidder does not deposit the penalty amount within stipulated time, DGH reserves the right to recover the due amount as under:

- a) From subsequent bills for AMC/FMS charges etc. or any other bill pertaining to this contract
- b) From any other pending bills of the bidder in DGH,
- c) From PBG Bond furnished for this contract or any other contract by the bidder.

Penalties shall be as per table given below:-

Table : Penalties for HCI Cloud SLA

S.NO	Failure	% overall uptime target (Monthly)	Impact	Penalty per hour of downtime exceeding the defined SLA (or part thereof)
1	Total Service Failure	99.9%	<= 0.72 Hours of downtime	No Penalty
		< 99.9%	> 0.72 Hours of downtime	Rs. 50,000/- (fifty Thousand)
2	ICT Equipment failure (Not leading to total service	99%	<= 7.2 Hours of downtime	No Penalty

	failure)	< 99%	>7.2 Hours of downtime	Rs. 4,000/- (Four Thousand)
3	Part Failure of equipment (Not leading to failure defined at Sl. No. 1 & 2 above)	98.6%	10 Hours of downtime	No Penalty
		< 98.6%	>10 Hours of downtime	Rs. 1000/- (One Thousand)
4	Penalties in case of occurrence of more than 2 Total failures in a month	After 02 failures in a month.	Treated as Total Service failure	Rs. 75,000/- (Seventy Five Thousand) per occurrence. This shall be in addition to the damages for failure.

5.4 On-site Support for HCI cloud infrastructure management.

5.4.1 The bidder shall deploy Resident Engineer (RE) at NDR, DGH, NOIDA for carrying out day to day system maintenance and monitoring activities for the ICT infrastructure in NDR data centre used for HCI based Cloud. Bidder has to provide RE for a period of 05 year from the Date of System Commissioning and acceptance of HCI based Cloud system. The deployment of RE will be 24x7x365 basis on-site. In case of disaster at PDC site the support personnel needs to provide the requisite services at SDC site, where logistics charges will be at the cost of bidder.

5.4.2 Following shall be the minimum number of personnel present on-site to handle the support:

Number of Shifts	Shift period	Personnel In Shifts	Minimum Qualification	Minimum Experience
3 on all days (365 days)	8 hourly (On Site)	1	Engineer (BE/ B. Tech.)	3-year relevant experience in HCI infrastructure management with good working knowledge of VMware.

5.4.3 RE shall perform maintenance which shall include managing/ monitoring the system to proactively detect events, handling day to day issues and carrying out system administration activities including performance tuning & configuration changes for all components of HCI based cloud. For components procured through different sourcing process, DGH shall define the monitoring checks / guidelines, which need to be carried out by the RE.

5.4.4 RE shall act as single point of contact for reporting incidents and service requests raised by DGH. RE would immediately report incident to the (L2 & L3) team nominated by bidder wide requirement defined in section 6.1. DGH shall be responsible for arranging Level 2 and Level 3 team for the application software used

in NDR which are part of delivering HCI based Cloud but are not procured through this tender.

5.4.5 The RE shall maintain a record of all incidents reported and action taken for their resolution and a summarized monthly report for the same. RE shall also log case with the OEM and provide log/information required by the OEM.

5.4.6 The Bio-Data of the on-site support staff shall be submitted before deployment. Only the resources approved by DGH shall be deployed. The engineers selected as REs shall be involved by the bidder from day 1 of the implementation phase. All onsite resources deployed should be on bidder's payroll.

a) The details (phone number/contact no. /address) of man-power assigned shall be provided. There should be minimum changes in man-power assigned.

b) The bidder shall be responsible for any mishaps or security breaches that happen due to bidder's personnel / personnel appointed by bidder for execution of services.

c) All the concerned onsite staff shall log attendance on daily basis. The bidder shall submit the attendance records in a format as specified by DGH.

d) Bidder needs to submit daily and monthly reports as per formats jointly defined with DGH.

e) Bidder need to ensure hands on training of the resources deployed on products provided by bidder.

f) In case of change in man-power due to any reason, the bidder shall be responsible for handing over & taking over of the duties due to the change and also for imparting appropriate training to the new staff for performing the duties.

5.4.7 The list of activities to be carried out by the bidder during onsite shift manning shall include the following:

a) Shall carryout proactive monitoring, performance analysis of entire ICT infrastructure of HCI based Cloud (Entire H/W and S/W stack supplied by bidder) and shall submit a report of same which should also mention any problem noticed and corrective action i.e., the recommendation of change of parameters/configuration/Hardware Resource requirement etc. if any. The checks/monitoring of each component should be designed in coordination with respective OEMs. It should be as per based on the industry best practices / frameworks. The bidder shall also create and maintain adequate documentation / checklists for the same. The format of the report shall be jointly decided with the bidder and DGH.

b) Shall carry out maintenance in-line with DGH security policy e.g. policy for maintain logs, password change etc.

c) Shall carry out System Admin and Security Admin activities for the supplied products

d) Shall perform the task of house-keeping on the entire ICT infrastructure to maintain the state of each component healthy.

e) Shall carry out Backup and Restoration which includes following activities:

i. Creating the scripts for the backup policy defined by DGH. The periodicity of the backup will be provided by DGH and can be increased /decreased at the discretion of DGH.

ii. Taking the backup and restoration (in case of crash) of system configuration files/ databases, logs of all the system software including operating system, virtual machines, Hypervisor, images, IaaS services, monitoring data.

- iii. Take backup and restoration (in case of crash) of storage volumes used by applications hosted on HCI based Cloud.
- iv. Monitoring of various backup processes and taking appropriate action, if required
- v. Recovery of the data from the last backup in case of any system crash/failure.
- vi. Perform mock drill to restore various backups to validate the authenticity of the backup process. The periodicity of this activity will be provided by DGH and can be increased /decreased at the discretion of DGH.
- vii. Maintain process document for backup and restoration steps for each software layer.

5.4.8 On-site Support SLA

S.No	Measurement	Measurement Interval	Target	Penalty
1	Submission of monthly reports	Month	All reports for the previous month shall be submitted by the 7 th of next month	No Penalty
			Delay beyond the date of submission	Rs. 1000/- for everyday's delay on an incremental basis.
2	Manpower absence	Month	If equivalent skilled resource is provided, then no penalty will apply. Otherwise it would be treated as absence of resource and penalty will be applicable.	0 – 2 Shifts – Rs. 5,000/- per shift 3 – 5 Shifts – Rs. 10,000/- per shift >5 Shifts – Rs. 12,000/- per shift <i>Eg. Absence for 6 shifts will attract penalty of 6 x 12,000 = Rs. 72,000/-</i>

5.5 **On-site Support for G&G Application management**

- 5.5.1 The bidder shall deploy one personnel for G&G application management and support at NDR, DGH, NOIDA from 9:30 Hrs to 17:30 Hrs on all working days for carrying out day to day G&G application management in HCI cloud for a period of 05 year from the Date of System Commissioning and acceptance of HCI based Cloud

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system. In case of disaster at PDC site the support personnel needs to provide the requisite services at SDC site, where logistics charges will be at the cost of bidder. In addition to this, the G&G support person will also need to report on-site at other times in case of exigencies such as activities scheduled in night affecting HCI based Cloud, System failure and routine maintenance activities.

5.5.2 Following shall be the minimum number of personnel present on-site to handle the support:

Number of Shifts	Shift period	Personnel In Shifts	Minimum Qualification	Minimum Experience
1 shift on all working days	8 hourly (On Site)	1	Engineer (BE/ B. Tech.)	3-year relevant experience in G&G applications management for applications like Landmark, Petrel etc.

5.5.3 The Bio-Data of the G&G support staff shall be submitted before deployment. Only the resources approved by DGH shall be deployed. The engineers selected as G&G support shall be involved by the bidder from day 1 of the implementation phase. All onsite resources deployed should be on bidder's payroll.

- a) The details (phone number/contact no. /address) of man-power assigned shall be provided. There should be minimum changes in man-power assigned.
- b) The bidder shall be responsible for any mishaps or security breaches that happen due to bidder's personnel / personnel appointed by bidder for execution of services.
- c) All the concerned onsite staff shall log attendance on daily basis. The bidder shall submit the attendance records in a format as specified by DGH.
- d) Bidder needs to submit daily and monthly reports as per formats jointly defined with DGH.
- e) Bidder need to ensure hands on training of the resources deployed on G&G applications implemented on HCI.
- f) In case of change in man-power due to any reason, the bidder shall be responsible for handing over & taking over of the duties due to the change and also for imparting appropriate training to the new staff for performing the duties.

5.5.4 The list of activities to be carried out by the bidder during onsite shift manning shall include the following:

- a) Daily availability check of the deployed G&G applications on cloud.
- b) Creating projects for VMs in coordination with DGH personnel.
- c) Ensuring availability of DGH licenses on HCI platform.
- d) Monitoring of portal users for G&G applications and submitting a log/report on G&G activities carried out by user.
- e) Coordination with HCI cloud support personnel for backups.
- f) Any other report(s) in consultation with DGH.

5.5.5 **On-site Support SLA**

S.No	Measurement	Measurement Interval	Target	Penalty
1	Submission of monthly reports	Month	All reports for the previous month shall be submitted by the 7 th of next month	No Penalty
			Delay beyond the date of submission	Rs. 1000/- for everyday's delay on an incremental basis.
2	Manpower absence	Month	If equivalent skilled resource is provided, then no penalty will apply. Otherwise it would be treated as absence of resource and penalty will be applicable.	0 – 2 Shifts – Rs. 5,000/- per shift 3 – 5 Shifts – Rs. 10,000/- per shift >5 Shifts – Rs. 12,000/- per shift Eg. Absence for 6 shifts will attract penalty of 6 x 12,000 = Rs.72,000/-

5.6 **Portal Details:**

Portal:Overview:The Data access to the cloud based system should be via the NDR portal www.ndrdgh.gov.in. DGH will add a Virtual Data Room tab in the NDR Website. On clicking the tab, the user would be given the option to register for the virtual data access. Upon successful registration and based upon online time slot calendar, once the user selects the date/time/area of interest, then she/he can enter her/his email id and make the required payment via the Payment Gateway. As soon as a new registration request for a data is created, an email will be sent with the payment verification to the back office Cloud Management Team. The Virtual Data Team will then create a username and password for login and send a link to the Cloud Based Infrastructure for the user in her/ his registered Email. Once the User receives the email with her/ his login credentials, she /he can use it to access cloud data.

Details: User goes to page DGHindia.Gov.in then user get link to page ndrDGH.gov.in There he finds a link to ndrcloud.gov.in (Domain to be created especially for Cloud) where he gets an option to create request for remote visualization & interpretation.

Access to the hosted Cloud portal will be enabled through a secure HTTPS connection. The system will check incoming users against Authorization granted by DGH. If a user is entitled to access the Cloud environment, she/he should be able to connect to virtual machines by entering her/his Log-in and Password credentials that will be provided on approvals from DGH.

First time, user creates account in via ndrcloud MS Active Directory (AD). Once the user registration request is administratively approved via multiple level approval workflow, user gets an email for username & password along with verification link. I agree on registration page.

Returning users logs in via ndrcloud.gov.in website & logs into their account.

Self Service Password Mgmt to be implemented. (May be OTP / Email based).

Opens account with Landing Page where calendar slot booking with display of Policies of online visualization & interpretation. Here the request for a particular G&G software application & a text box for relevant data identification with a request number & date time stamp is created. Any special requirement for VM with special compute requirement may also be captured here.

Workflow, email based administrative two(2) level of approval of request with automatic escalation.

After the administrative approval, an email is sent to the requester to let them know of approval or rejection. If approved, same time a link is made available in user account for payment.

Payment gateway to be made available after & Integration with DGH Billdesk Payment gateway (Third party gateway).

On successful receipt of payment, Automatic resources provisioning based on approval with a cancellation option in their account with necessary 2/3 level approvals. Cancellation can be done from either side before beginning of Session – 24 Hours with necessary approvals and reasons. Refund Workflow to be defined.

Provisioning team make data available via Petrobank PE & other G&G data mgmt tools available within NDR in a CIFS/NFS cloud Volume & connects a requested VM to this data. The VM would be available to the user from requested time onwards and would cease to exist as soon as the allotted time is over, However the user should have a method to extend the session for another 24 hours multiples upto certain number of times based upon the policy and successful payment for additional 24 hours multiples. Their data should be saved by application every 15-30 minutes. Their project data should be saved on the volume for another 72 hours before being finally purged from the system. The remote viewing solution must ensure that the remote user is not able to copy the data to their local machine by drag-drop & cut/copy-paste operations. Right click of mouse should be disabled.

Once authorized for access, the user's machine should display back a virtualized Petrotechnical desktop with full 3D graphics capability. The specification of the virtual machine should be tailored to the user's workflow requirements or access requests of data and software as authorized by DGH.

Reporting & Dashboard for request statuses - addressed/pending etc. There should be an integration with CRM/Incident Management tool. Bidder to propose a good packaged industry standard (Non-Open Source) CRM/Incident Management tool which is accessible to the registered users of ndrcloud portal.

In case of scope for improvement in the portal implementation, the same to be mutually discussed and agreed before implementing the same.

5.7 **Documentation Deliverables:**

The key project deliverables are listed below:

- Project Plan and schedule. (To be submitted along with Technical Bid)
- Detailed Implementation/Solution Design Document. (To be submitted along with Technical Bid). How the entire solution will work along with role of each and every component to be specified in detail.
- Installation Reports
- Detailed system configuration document
- Commissioning & Integration Report
- Acceptance Testing Reports
- Onsite Warranty from OEM/Manufacturer for providing complete support of product (Hardware/Software) for a period of five years (post successful commissioning), as per Scope of Work.
- Relevant Manual and Literature
- Training and Course Material

Configuration and Troubleshooting Documentation

- A complete documentation on implementation and deployment for each component will be provided by the bidder. The documentation will cover but not limited to the following:
- Features installed and configured
- Hardware/Software Configuration of the Servers
- Deployment Architecture at NDR.
- Backup & Recovery plan
- Troubleshooting
- OEM product manuals, licenses, warranty documents etc.

Software Manuals: The Bidder must list the documentation (systems and user manuals) provided with the Application software solutions. Bidder shall provide DVDs/CDs for manuals, data sheets, etc.

5.8 **ACCEPTANCE TESTS**

On Site Acceptance Test (OSAT)

- a) On completion of supply, installation, configuration, and fine tuning of the solution but before commissioning, DGH and Implementation Vendor shall verify for the correctness and completeness of the configuration and completeness in the solution for acceptability.
- b) A schedule of all the acceptance tests and procedures shall be submitted by the bidder at least one week in advance before the acceptance test. The acceptance test and procedures shall

clearly indicate the specifications clause(s) to be verified and shall cover various features mentioned in scope of work. DGH has the right to make modifications or additions in the schedule as considered necessary.

- c) In the event of software/hardware/networking etc. failing to pass the acceptance test, a period not exceeding two weeks will be given to rectify the defects and clear the acceptance test, failing which DGH shall have the right to reject the supplied, installed, and/or commissioned goods, hardware, software, networking and services, etc.
- d) Success in the above OSAT is necessary for release of 30% Payment.

6 DGH's Responsibility:

- 6.1 DGH will be responsible for the management of the required data centre elements including; floor space, electrical, cooling etc.
- 6.2 DGH will be also responsible for physical security within their facility ensuring that processes and procedures for physical access to the provisioned infrastructure components are documented and implemented and only providing access for approved service personnel.
- 6.3 DGH will also ensure that it will provide necessary access to any existing infrastructure/ network to allow connectivity to storage or backup and disaster recovery for E&P data held in the cloud environment.
- 6.4 G&G data used in the cloud environment will be DGH's responsibility. It will be provided in the format which will be ready usable for hosting on the cloud environment with G&G applications like DSG, Petrel, IHS-Kingdom, Paradigm etc.
- 6.5 G&G software applications such as DSG, Petrel, IHS-Kingdom, Paradigm etc. and their licenses would be provided by DGH.

Technical specifications

Sr.No.	Item -1.01 of Price Bid	
	HCI Nodes for VDI - 5 No.s	
	Item	Vendor to specify Brand Make and Model offered.
a.	Hyper Converged Appliance (Essential Features)	Hyper converged appliance, which comes Factory Installed with various software including Software Defined Storage and Hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance.
		Offered Model to be Fully Software Defined Infrastructure (Compute, Storage and Management)
		The sizing defined below includes 10% HCI over head. if any solution requires more than that, then they should factor accordingly.
		Should also have capability to use Network Virtualization (SDN).
b.	Nodes Required	Min. 5 Nodes
c.	Processor	Latest Generation Intel® (Skylake/Cascadelake) Processors product family, ≥3.0 GHz per Core. Minimum 2 Sockets per Node. Both socket must be populated with 18 core or more per socket.
d.	Total Physical Cores	Minimum 180 Cores (Including all the Nodes)
e.	Processor Cache	Min. 22 MB L3 Cache per processor
f.	Total Physical RAM	Min. 1.5 TB DDR4 per node.
g.	Storage Cache	2 x 400 GB (SSD) or 1 x 800 GB (SSD) per Node. If SSD cache is not available then additional 10% RAM to be provided in each node.
h.	Total Usable Storage	Min. 20 TB Usable capacity with 1.9 TB SSD Disks or higher capacity disk without Deduplication and Compression.
i.	Network Throughput	Total Network throughput from HYPERCONVERGED Chassis should be configured with total 40 Gbps with no single point of failure. i.e (N+1) redundancy
j.	GPU	2 x Nvidia Tesla P40 Cards or Higher per Node
k.	Data Services	The solution should provide enterprise data services such as <u>de-duplication and compression with erasure coding</u> OR <u>equivalent</u> completely in software without dependence on any proprietary hardware. These should be delivered in all flash appliances. These functionalities should be part of the proposed solution and licensed.

l.	Hypervisor	VMWare ESX Hypervisor needs to be proposed with the HCI Appliance for this requirement.
m.	Scale Up and Scale Out	The solution should support non-disruptive Scale-Up (Upgrade by inserting additional drives in existing empty drive-slots) whenever required without any additional licensing cost and Scale-Out (Upgrade by adding nodes) upgrades to grow capacity and/or performance with no disruption to the workloads already running on the platform.
n.	Hybrid and Flash Support	HCI solution should support SSD disks.
o.	Cluster Scalability	Cluster architecture to be scalable upto 32 nodes wherein all the VM's should be capable to use compute, memory and storage resources from all the nodes in a cluster architecture through a single interface .
p.	Rack Unit	HCI Appliance should support different Rack Units depending upon the workload (2U4N or 1U1N or 2U1N)
q.	Data Integrity Check	The solution should support checksum of data to ensure data integrity & to enable automatic detection and resolution of silent disk errors.
r.	Encryption	Solution should provide Data at Rest Encryption
s.	Redundancy & Business Continuity	No Single Point of Failure with complete redundancy at all levels. Nodes should be configured to have atleast one copy of data available in cluster, in order to support data & cluster availability in event of One Node Failure
		Proposed solution should have replication software to DR site This replication should be granular in nature with Any Point-In-Time Recovery feature. Licenses for atleast 25 VM replication should be made available with capabilities of WAN bandwidth optimization using features like deduplication, compression. The solution should have capability to protect against data corruption
		Replication should be possible locally (same datacenter) and/or remote site; and, on any x86 platform with requisite number of resources, as long as the hypervisor is same.
		Replication software to be provided and should integrate with the hypervisor.
t.	Storage Feature	Storage policies should be enforced directly from hypervisor and managed directly from hypervisor
u.	Manageability & Security	Single Web Interface Central Management for Compute, Network, Storage and Clustering.
		Single Click Feature should be available for upgrade/update for all components of compute (including network adapter, BIOS), hypervisor and SDS.

		The Solution should be able to monitor end to end session of the user including giving the insight of the underlying infrastructure like server and Storage
		All Nodes supplied with the HCI appliance should support following security features. 1) Should have a cyber-resilient architecture for a hardened server design for protection, detection & recovery from cyber-attacks 2) Should protect against hardware firmware attacks which executes before OS boots. 3) Hardware should support Silicon / Hardware Root of Trust.
v.	Scalability	Proposed solution should be based on modular scalable architecture having the ability to add auto-discoverable Nodes. Node addition should be non-disruptive & seamless; and should allow simple ONE node scaling.
		Proposed solution must support automated cluster deployment, configuration and non-disruptive updates and migration
w.	Hypervisor Features	The solution should be able to support different generation of Intel processors in the same cluster for investment protection over the life of the proposed solution.
		The solution should provide integration of 3rd party endpoint security to secure the virtual machines with offloaded antivirus, anti-malware solutions without the need for agents inside the virtual machines.
		Shall distribute data intelligently across all nodes and capacity utilization across all nodes has to be uniform at all times .
		The solution should provide a virtual switch which can span across a virtual datacenter and multiple hosts should be able to connect to it. This in turn will simplify and enhance virtual machine networking in virtualized environments
		Should have all Virtualization benefits like High Availability, automated distribution of resources and automated live migration of Virtual Machines from one physical server to another in case of any failure.
x.	Performance IOPS	Minimum 70K IOPS or more with less than 5ms response time when using 8K/16K block size at 70:30 - Read Write Ratio
y.	Single Point of Support	Single point of support for HCI solution including virtualization
z.	OS Support	Windows 2012 and 2016 Standard/Data Center, SUSE Enterprise Linux, RHEL 6.x, (All latest flavors of Linux and Windows) in the Virtual Machines
aa.	Warranty	24X7X365 onsite for five years fulfilled directly by bidder. Single number

		support for all components of appliance (compute, hypervisor, software defined storage) for 5 years All SSD supplied must be covered and replacement must be provided during this 5 year period even if SSD have reached its wear level or usage limits.
bb.	Rack, PDU and Accessories	Required number of Industry Standard Rack and PDUs to be provided by bidder alongwith all accessories. Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system. Each node should have dedicated non-shared dual-power supplies and should be able to sustain single power supply failure.

Sr.No.	Item -1.02 of Price Bid	
	HCI Nodes for AD & DB - 5 No.s	
	Item	Vendor to specify Brand Make and Model offered.
a.	Hyper Converged Appliance (Features and Requirements)	Hyper converged appliance, which comes Factory Installed with various software including Software Defined Storage and Hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance.
		Offered Model to be Fully Software Defined Infrastructure (Compute, Storage and Management)
		The sizing defined below includes 10% HCI over head. if any solution requires more than that, then they should factor accordingly.
		Should also have capability to use Network Virtualization (SDN).
b.	Nodes Required	Min. 5 Nodes
c.	Processor	Latest Generation Intel® (Skylake/ Cascadelake) Processors product family, ≥ 2.7GHz per Core. Minimum 2 Sockets per Node. Both socket must be populated with 18 core or more per socket.
d.	Total Physical Cores	Minimum 180 Cores (Including all the Nodes)
e.	Processor Cache	Min. 22 MB L3 Cache per processor
f.	Total Physical RAM	Min. 1024 GB DDR4 per Node.
g.	Storage Cache	2 x 400 GB (SSD) or 1 x 800 GB (SSD) per Node. If SSD cache is not available then additional 10% RAM to be provided in each node.

h.	Total Usable Storage	Min. 50 TB Usable capacity with 1.9 TB SSD Disks or higher capacity without Deduplication and Compression.
i.	Network Throughput	Total Network throughput from HYPERCONVERGED Chassis should be configured with total 20 Gbps with no single point of failure. (N+1) redundancy
j.	Data Services	The solution should provide enterprise data services such as de-duplication and compression with erasure coding OR equivalent completely in software without dependence on any proprietary hardware. These should be delivered in all flash appliances. These functionalities should be part of the proposed solution and licensed.
k.	Hypervisor	VMWare ESX Hypervisor needs to be proposed with the HCI Appliance for this requirement
l.	Scale Up and Scale Out	The solution should support non-disruptive Scale-Up (Upgrade by inserting additional drives in existing empty drive-slots) whenever required without any additional licensing cost and Scale-Out (Upgrade by adding nodes) upgrades to grow capacity and/or performance with no disruption to the workloads already running on the platform.
m.	Hybrid and Flash Support	HCI solution should support SSD disks
n.	Cluster Scalability	Cluster architecture to be scalable upto 32 nodes wherein all the VM's should be capable to use compute, memory and storage resources from all the nodes in a cluster architecture through a single interface .
o.	Rack Unit	HCI Appliance should support different Rack Units depending upon the workload (2U4N or 1U1N or 2U1N)
p.	Data Integrity Check	The solution should support checksum of data to ensure data integrity & to enable automatic detection and resolution of silent disk errors.
q.	Encryption	Solution should provide Data at Rest Encryption
r.	Redundancy & Business Continuity	No Single Point of Failure with complete redundancy at all levels. Nodes should be configured to have at least one copy of data available in cluster, in order to support data & cluster availability in event of One Node Failure
		Proposed solution should have replication software to DR site This replication should be granular in nature with Any Point-In-Time Recovery feature. Licenses for at least 25 VM replication should be made available with capabilities of WAN bandwidth optimization using features like deduplication, compression. The solution should have capability to protect against data corruption
		Replication should be possible locally (same datacenter) and/or remote site; and, on any x86 platform with requisite number of resources, as long as the hypervisor is same.

		Replication software to be provided and should integrate with the hypervisor.
s.	Storage Feature	Storage policies should be enforced directly from hypervisor and managed directly from hypervisor.
t.	Manageability & Security	Single Web Interface Central Management for Compute, Network, Storage and Clustering.
		Single Click Feature should be available for upgrade/update for all components of compute (including network adapter, BIOS), hypervisor and SDS.
		The Solution should be able to monitor end to end session of the user including giving the insight of the underlying infrastructure like server and Storage
		All Nodes supplied with the HCI appliance should support following security features. 1) Should have a cyber-resilient architecture for a hardened server design for protection, detection & recovery from cyber-attacks 2) Should protect against hardware firmware attacks which executes before OS boots. 3) Hardware should support Silicon / Hardware Root of Trust.
u.	Scalability	Proposed solution should be based on modular scalable architecture having the ability to add auto-discoverable Nodes. Node addition should be non-disruptive & seamless; and should allow simple ONE node scaling.
		Proposed solution must support automated cluster deployment, configuration and non-disruptive updates and migration
v.	Hypervisor Features	The solution should be able to support different generation of Intel processors in the same cluster for investment protection over the life of the proposed solution.
		The solution should provide integration of 3rd party endpoint security to secure the virtual machines with offloaded antivirus, anti-malware solutions without the need for agents inside the virtual machines.
		Shall distribute data intelligently across all nodes and capacity utilization across all nodes has to be uniform at all times .
		The solution should provide a virtual switch which can span across a virtual datacenter and multiple hosts should be able to connect to it. This in turn will simplify and enhance virtual machine networking in virtualized environments
		Should have all Virtualization benefits like High Availability, automated distribution of resources and automated live migration of Virtual Machines from one physical server to another in case of any failure

w.	Performance IOPS	Minimum 70K IOPS or more with less than 5ms response time when using 8K/16K block size at 70:30 - Read Write Ratio
x.	Single Point of Support	Single point of support for HCI solution including virtualization
y.	OS Support	Windows 2012 and 2016 Standard/Data Center, SUSE Enterprise Linux, RHEL 6.x, (All latest flavors of Linux and Windows) in the Virtual Machines
z.	Warranty	24X7X365 onsite for five years fulfilled directly by bidder. Single number support for all components of appliance (compute, hypervisor, software defined storage) for 5 years All SSD supplied must be covered and replacement must be provided during this 5 year period even if SSD have reached its wear level or usage limits.
aa.	Rack, PDU and Accessories	Required number of Industry Standard Rack and PDUs to be provided by bidder alongwith all accessories. Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system. Each node should have dedicated non-shared dual-power supplies and should be able to sustain single power supply failure.

Sr.No.	Item -1.03 of Price Bid Unified Storage System- PDC- 1 No	
	Item	Vendor to specify Brand Make and Model offered.

a.	Controllers and Architecture	<p>Architecture: Storage should be Fully Symmetric OR Fully Distributed Clustered Architecture written for Scale-Out NAS operations. Hardware and software engineering, and support should be from the same OEM. The Scale-out-NAS must be based upon dedicated NAS appliance hardware. System should support linear scalability in Performance and Capacity, without any disruptions to production workflow. <u>The NAS appliance should have specialized Operating System, dedicated and tuned for serving data efficiently and written for scale-out architecture.</u> General purpose OS will not be acceptable for the NAS system. The architecture should have a single namespace.</p> <p>Controllers: Separated controllers are factored for SSD and SAS/NL-SAS/SATA a) Minimum 4 Active-Active Storage Controllers/ Nodes must be provided, serving all flash storage for cloud and b) Minimum 4 Active-Active Storage Controllers/ Nodes should be provided for serving NDR data requirements. Offered architecture should be upgradable to min 12 numbers of NAS Storage Controllers/ Nodes seamlessly, without any disruptions/downtime to production workflow for performance, capacity enhancement, software/firmware upgrades. All storage nodes/controllers must be active-active, contributing in performance and capacity of the system. In Active / Active cluster mode offered model should guarantee not more than 20% system degradation in case of controller failure.</p>
b.	Onboard Memory	Storage Solution to be configured with minimum 1TB DRAM based usable cache across NAS Storage Controller/ NAS Storage Node configured for read and write operations. If there are any controllers serving the disks separately then equal amount of DRAM based cache must be provided on those controllers to avoid any funnelling effect.
c.	Network Ports	Each Storage Controllers/ Storage node should have minimum of 2 x 40GbE for client connections for nodes/controllers serving all flash. Total 8 x 40 GbE. Each Storage Controllers/ Storage node should have minimum 2 x 10GbE for client connections for nodes/controllers serving NL-SAS/SATA. Total 8 x 10 GbE.
d.	Disk Type	Storage solution should have capability to support different kinds of disks types likes SSD and NL-SAS/SATA drives pools in same filesystem/ namespace in same storage Cluster.
e.	Operating System	Scale-Out Storage should have Fully Journaled, fully distributed, specialised Operating System by same OEM (as storage hardware) , dedicated for serving data efficiently and customised for True Scale-Out Storage. General purpose OS will not be acceptable for the NAS Appliance.
f.	Redundancy with No Single Point of Failure (SPOF)	The Scale-Out Storage System should be able to protect the data against simultaneous 2(Two) disk failures or have equivalent technology for data protection. The Scale-Out Storage should be configured to sustain atleast one

		<p>StorageController/Single Node failure in the storage system without data unavailability and performance drop of not more than 20%.</p> <ul style="list-style-type: none"> - Data should be striped across all storage controllers/ HA pair in the proposed storage system, so that performance of all controllers/ HA pairs can be utilized for all read and write operations. - The backend internal connectivity between storage controllers/storage nodes should be using high performance Infiniband or 40 GigE network with no single point of failure. - Redundant and Hot replaceable modules: Controllers, Hard Disk Drive and power supplies (230V AC, 50 Hz.) - The Complete multi-controller Storage System Solution should be fully redundant, configured in High Availability mode and should NOT have any Single Point of Failure (SPOF).
g.	Total Storage Capacity	<p>1 PB(Petabyte) usable capacity with single unified addressable namespace /single filesystem after required protection level on complete storage solution. The NAS Appliance should be scalable upto 60 PB usable as a single filesystem/or a single global namespace.</p> <p>Current Capacity to be configured as - a)250 TiB usable Flash Tier Capacity using SSD of size 7.6TB or less (1 TiB = 1024 x 1024 x 1024 x 1024 bytes) b) 750 TiB usable Tier Capacity using NL-SAS / SATA HDD of size 10TB or less. (1 TiB = 1024 x 1024 x 1024 x 1024 bytes)</p> <p>10% additional usable space must be provisioned as snapshot space for SSD and NL-SAS/SATA disk tier respectively. License for the same must be provided.</p> <p>5% additional usable space (in terms of HDD/ SSD must be provisioned for hot sparing apart from usable capacity based on OEM best practice. License for the same must be provided</p>
h.	Performance/Throughput Requirement	<p>For cloud portion of the storage, Throughput requirement should be of sustained Aggregate Performance of 8GB/sec on NFS, 70% read and 30% write in sequential file IO of 1 MB block size.</p> <p>For NDR portion of the storage, Throughput requirement should be of sustained Aggregate Performance of 1.4GB/sec on NFS, 70% read and 30% write in sequential file IO of 1 MB block size.</p> <p>Bidder needs to demonstrate this performance using free third party applications like IOmeter /FIO etc as part of User Acceptance test.</p> <p>While testing the cloud and NDR portions of the storage, host connectivity will be allowed only to the controllers serving cloud, or NDR storage dedicatedly. Rest of the controllers should be powered off/ disconnected. Cache of both storage and hosts must be cleared before test run by rebooting the controllers.</p> <p>The performance must be demonstrated with data at rest encryption feature switched on along with remote replication.</p>

	Capacity/performance Expansion	There should not be any downtime or migration activity required in the event it is needed to add additional capacity or additional performance to the storage system. Storage solution should enable independent and linear scalability of performance and capacity. The system must be able to support policy based tiering to different storage tiers with internal/external storage sub-system.
i.	Protocol Support	Must provide access for a variety of operating systems (Mac, Linux, Windows) using all standard protocols: NFS, SMB(CIFS) etc. All protocols supported by the storage must be licensed and provided from day one. All licenses must be perpetual in nature. Should support user security mechanisms like AD,LDAP and NIS.
j.	File Sharing	Should allow simultaneous access to the same file/data via SMB and NFS for data sharing between LINUX and Windows hosts. Data must be encrypted in motion during file sharing operations.
k.	File Locking & Filtering	File Locking for Data protection from corruption while sharing files between Linux (RHEL) and Windows users.
l.	Client Load Balancing	Storage System should have capability to load balance client connectivity across these multiple controllers so that all clients gets distributed across all existing controllers/nodes to avoid any performance hotspot. In case native functionality is not available in the storage, bidder must provide a mechanism such as redundant pair of hardware load balancer for the the same
m.	Heterogenous support for end user systems	Operating system support RedHat Linux, Suse Linux, Windows Servers 2003/2008 or later , Windows XP/7 or later.
n.	Management Interface software	Support the management, administration and configuration of the whole storage platform through a single management interface along with CLI
o.	Spare Disks:	Vendor will maintain at DGH-NDR site THREE (03) spare SSD disks and TEN (10) spare NL-SAS / SATA disks of same type and capacity (Cold spares) which may be required to meet immediate replacement for breakdown disks.
p.	Disaster Recovery	The storage system shall be able to support directory and file-level OR volume level asynchronous replication across WAN to another storage system of same type. The replication software shall have a comprehensive Volume/ file and directory selection criteria for replication. The storage system at the remote site shall be at the same protection level as the primary site and be able to sustain 2 disks failure or 1 controller failure after failover. The storage system must preserve bandwidth during replication else must provide redundant WAN optimiser to preserve the bandwidth.
q.	Data Security	Data must be securely encrypted at rest, in motion and while replication at SDC. Protection from ransomware etc. must be ensured.
r.	De-duplication and compression	Proposed storage must offer de-duplication and compression feature.
s.	Warranty	5 years comprehensive OEM onsite warranty

t.	Rack, PDU and Accessories	Required number of rack and PDUs to be provided by the Storage OEM alongwith all accessories. Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system.
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Sr.No.	Item -1.04 of Price Bid	
	TOR Switch – PDC- 2 Nos	
	Vendor to specify Brand Make and Model offered.	
a.	The offered switch should be datacenter class switch with redundant power supply & fan trays.	
	Switching capacity of 1.4Tbps or more, and throughput of 1070 Mbps or more.	
	48 nos. of 1/10 Gigabit Ethernet SFP+ ports or FCOE ports and at least 4 nos of the 40 Gigabit Ethernet QSFP +uplink ports	
	Following items shall be included in the supply (for each switch):	
b.	i. 2 nos. of 40 Gigabit Ethernet QSFP+ optical transceivers with required fibre patch cables for connectivity to TOR switches	
	ii. 8 nos. of 10GBASE-SR SFP+ transceivers	
	iii. 36 nos. of 1GBASE-T SFP transceivers	
c.	All required licenses and other optics/ accessories including jack panel, patch cords etc., shall be supplied for above ports	
d.	Layer 2 features	
	i. IEEE 802.1Q VLAN encapsulation	
	ii. Support for minimum 1000 VLANs	
	iii. Support for minimum 1000 access control list (ACL) entries	
	iv. Rapid Per-VLAN Spanning Tree Plus (PVRST+) (IEEE 802.1w compatible)	
	v. Multiple Spanning Tree Protocol (MSTP) (IEEE 802.1s): 64 instances	
	vi. Spanning Tree PortFast	
	vii. Spanning Tree root guard	
	viii. Spanning Tree Bridge Assurance/ loop guard	
	ix. Link Aggregation Control Protocol (LACP): IEEE 802.3ad	
	x. Advanced port-channel / LACP with load balancing	
	xi. Jumbo frames on all ports	
	xii. Pause frames (IEEE 802.3x)	

	xiii. Storm control (unicast, multicast, and broadcast)
	xiv. Private VLANs
	xv. Private VLAN over trunks (isolated and promiscuous)
	xvi. VLAN remapping
e.	Layer 3 features:
	i. Support for 1024 VLANs
	ii. 1000 ACL entries
	iii. Routing protocols: Static, Routing Information Protocol Version 2 (RIPv2), Open Shortest Path First Version 2 (OSPFv2), Border Gateway Protocol (BGP), and Intermediate System-to-Intermediate System (IS-IS)
	iv. IPv6 routing protocols: Static, OPFv3, BGPv6
	v. Virtual Router Redundancy Protocol (VRRP)
f.	Management Features:
	i. Switch management using 10/100/1000-Mbps management or console ports
	ii. CLI-based console to provide detailed out-of-band management
	iii. In-band switch management
	iv. Secure Shell Version 2 (SSHv2)
	v. Telnet
g.	Authentication, authorization, and accounting (AAA)
	i. RADIUS
	ii. TACACS+
	iii. Syslog
	iv. SNMPv1, v2, and v3 (IPv4 and IPv6)
	v. Remote monitoring (RMON)
	vi. RBAC
	vii. SPAN
	viii. Network Time Protocol (NTP)
h.	Warranty: 5 years comprehensive OEM onsite
i.	Accessories
	Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system.

Sr.No.	Item -1.05 of Price Bid	
	L3 Switch – PDC- 2 Nos	
	Item	Vendor to specify Brand Make and Model offered.
a.	Device Type:	Switch supporting Full Enterprise Layer 3 image supporting IPv6 and BGP with the latest Firmware as available with Line rate non-blocking performance.
b.	Ports Scalability	The switch should support 48x10GbE SFP+ ports and 6x40GbE QSFP+ ports for uplink from day-1. It should have option to upgrade to min. 4x100G ports without changing entire switch.
c.	High Availability	The switch should support HA options in Active - Active or Active Backup configuraiton as requiried, all supporting features and licenses to be provided to support the same.
d.	Performance	
	Switching Capacity	Minimum 1.76Tbps backplane or more for wire rate performance with 800 nano second latency or better
	Switching Throughput	Minimum 1320 million pps or better
	MAC Address Table Size	Minimum 256K MAC addresses
	802.1Q Vlans	4K 802.1Q vlans with 4K vlan ID support
e.	Networking Features	
	Data Link Protocol:	Ethernet, Fast Ethernet, Gigabit Ethernet, 10 Gigabit, 40 Gigabit, 25 Gigabit, 50 Gigabit, 100 Gigabit
		Should support 128K route table capacity for IPv4 & IPv6
	Routing Protocol:	Should have Static Route, OSPF, BGP, PBR from Day one for both IPv4 and IPv6 considering all License, software, hardware upgrades required if any.
	Storage protocols	Should support Data Center Infra, DCB, iSCSI, ETS considering all License.
	Fabric Features	Should support Spine-Leaf architecture using BGP EVPN from day-1
f.	Security Features	
		Should support all AAA functions with RADIUS and TACACS integration.
		Should support various strom control functions.
		Should support Intrusion Protection like functionality against various TCP/UDP attacks.
		Should support Control Plane / CPU protection using ACL and Qos.
		Should support 802.1x implementation using RADIUS, BFD, Object Tracking
g.	Management Function	
	Configuration	CLI automation, zero touch deployment. Should support encrypted communication between the user accessing the device namely using all access methods CLI or NMS via features like SSHv2, SSL, and SNMPv3 and Secure FTP/TFTP, SCP
		Control Plane Service APIs, Scripting Tools , streaming Telemetry, Ansible, pupper/chef/saltstack, OpenFlow 1.3, IEEE 1588v2
h.	Physical parameter of switch	

	Redundancy	The proposed switch should be offered with redundant FAN tray and Power supply Redundancy.
	operating specifications	Operating temperature: 41° to 104°F (5° to 40°C)
	Console/Management Port	1 RJ45 console port or 1 micro-USB-B console port, 1 RJ45 10/100/1000Base-T Out Of Band management port
i.	Compliant Standards:	
		Should be ROHS Compliant
	Immunity	EN 300 386, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6
		EN 60825-2 Safety of Laser Products Part 2: Safety of Optical Fibre Communication Systems
j.	Warranty and Support	OEM warranty for 5 year 24x7x365 support

Sr.No.	Item -1.06 of Price Bid	
	Management Switch – PDC 1 No	
	Item	Vendor to specify Brand Make and Model offered.
a.	Device Type:	Full managed gigabit ethernet 1RU layer 2 switch
b.	Ports Scalability	24x 10/100/1000Mbps half/full duplex RJ45 ports, 4x SFP/SFP+ 1/10GbE ports
c.	High Availability	The switch should support stacking from day-1
d.	Performance	
	Switching Capacity	Minimum 128Gbps backplane or more for wire rate performance
	Switching Throughput	Minimum 96 million pps or better
	MAC Address Table Size	Minimum 16K MAC addresses
	802.1Q Vlans	Minimum 500 VLANs, private VLAN
e.	Networking Features	
	Data Link Protocol:	802.1X Network Access Control, Auto VLAN, 802.2 Logical Link Control 802.3 10BASE-T, 802.3ab Gigabit Ethernet (1000BASE-T) 802.3ac Frame Extensions for VLAN Tagging 802.3ad Link Aggregation with LACP 802.3ae 10Gigabit Ethernet (10GBASE-X)
		802.3az Energy Efficient Ethernet, IGMP v1/v2/v3 snooping & querier
	Other features:	Time controlled ACLs, 40Gbps stacking, double VLAN tagging
f.	Security Features	
		Should support all AAA functions with RADIUS and TACACS integration.
		Should have broadcast storm control
		view based control model, user-based security model
		RSPAN, custom login banner
		Should support 802.1x monitor mode, dynamic arp inspection
g.	Management Function	
		Should support 64 Lag groups & min 8 ports per group

		CLI, Telnet, web GUI, SSH
		RMON, sflow, SNMP v1/v2/v3
h.	Physical parameter of switch	
	Redundancy	Should have redundant variable speed fans
	operating specifications	Operating temperature: 0° to 45°C
	Console/Management Port	1 RJ45 console port or 1 micro-USB-B console port
i.	Compliant Standards:	
		Should be ROHS Compliant
	Immunity	EN 61000-4-5: Surge
		USA: FCC Class A, EU WEEE
j.	Warranty and Support SLA	OEM warranty for 5 year 24x7x365 support

Sr.No.	Item -1.07 of Price Bid
	Firewall - PDC 2 nos
	Vendor to specify Brand Make and Model offered.
a.	Solution should be an integrated Next Gen Firewall platform which includes firewall, application control, IPS, Anti-Bot, Anti-Spyware, URL Filtering and Advanced Persistent threat Prevention capabilities in a single appliance, configured in High Availability Mode. Firewall should be provided with "Zero" day protection feature.
b.	The appliance should support at least 6 nos 10/100/1000 Gigabit ports
c.	Proposed appliance should have inbuilt redundant power supply.
d.	Firewall should have local in-built storage of minimum 100GB SSD
e.	Firewall should have minimum 8GB memory.
f.	Firewall must have minimum 1Gbps of real world multiprotocol throughput including firewall, IPS and application visibility
g.	Firewall should support 3DES/AES IPsec VPN throughput of at least 300 Mbps
h.	Proposed solution must include SSL VPN license for minimum 50 users
i.	Network Security Firewall should support "Stateful" policy inspection technology. It should also have application intelligence for commonly used TCP/IP protocols like telnet, ftp etc.
j.	It should support the Firewall and IPSEC VPN as integrated security functions
k.	Appliance should have granular visibility with respect to user and group policy.
l.	The Firewall should support authentication protocols like Active Directory, LDAP and have support for Firewall passwords token-based products and X.509 digital certificates or equivalent.
m.	The IPS should be constantly updated with new defences against emerging threats.
n.	IPS Engine should support Vulnerability and Exploit signatures, Protocol validation, Anomaly detection, Behaviour-based detection, Multi-element correlation.
o.	IPS should have the functionality of Geo Protection to Block the traffic country wise incoming as well as outgoing.
p.	IPS should be able to detect and prevent embedded threats with in SSL traffic.

q.	Application control must identify applications, its different categories, URLs, HTTPS inspection, Malware content sites, IP and/or user based policies.
r.	The proposed solution must be able to support DoS protection
s.	The proposed solution shall support DNS proxy or DNS security and DNS sinkhole which can block the DNS black listed domains and URLs.
t.	Inspect content to protect networks. Protect the network against known and unknown threats including vulnerability exploits and malware embedded in all types of traffic.
u.	Application control database should contain more than 3000 known web 2.0 applications and social network widgets. Bidder to confirm the current application database and social network widgets.
v.	Proposed solution support Multi Link Management and should support more than two ISPs.
w.	Solution must have a URL categorization and URLs filtering database. Should have predefined more than 50+ categories. The solution should have the capabilities to block, permit, allow & log, protocols other than HTTP, HTTPS, FTP
x.	The solution should also have the scalability to scan & secure SSL encrypted traffic passing through gateway. Should perform inspection to detect & block malicious content downloaded through SSL.
y.	Should scan outbound URL requests and ensure users do not visit websites that are known to distribute malware.
z.	Granularly define exceptions for SSL inspection to protect user privacy and comply with corporate policy.
aa.	Solution should be able to detect & Prevent bot outbreaks and APT attacks
bb.	Solution should be able to detect & Prevent the Bot infected machine
cc.	Solution should be able to detect & Prevent Unique communication patterns used by BOTs i.e. Information about Botnet family
dd.	Solution should be able to detect & Prevent attack types i.e., such as spam sending click fraud or self-distribution, that are associated with Bots
ee.	Solution should be able to block traffic between infected Host and Remote Operator and not to legitimate destination
ff.	The solution should provide the protection from zero day attacks, known & un-known attacks.
gg.	It should be able to scan SSL & TLS traffic.
hh.	The solution should support detection & prevention of Cryptors & ransomware and variants (Cryptlocker , CryptoWall etc) through use of static and/or dynamic analysis
ii.	The solution should be able to scan & find for unknown threats in executable, archive files ,documents, JAVA and flash like: 7z ,cab, csv, doc, pdf, ppt, pptx, rar, rtf, scr, swf, tar, docx, , jar, xls, , xlsx, ,xlw, zip etc.
jj.	The solution should eliminate threats and detect and block exploitable content, including active content and embedded objects
kk.	Upon malicious files detection, a detailed report should be generated for each one of the malicious files.
ll.	Firewall central management reporting, logging and analyzer solution has to be in dedicated appliance foot print
mm.	Centralized Firewall management should be able to manage all functions specified in Firewall, NIPS, AntiBot specification from central console

nn.	Firewall should be able to provide central logging, Analysis and granular reporting
oo.	Management (Management , reporting, analysis) System Support for role based administration of firewall
pp.	Solution should support analysis of traffic pattern using graphs and charts
qq.	Should provide clear indications that highlight regulations with serious indications of potential breaches with respect to Access Policies, Intrusion, Malwares, BOT, URL, Applications etc.
rr.	Required software license for providing above features shall be included in the solution.
ss.	Above hardware items shall be installed in OEM supplied industry standard rack with required PDU for dual power supply, other accessories.

Sr.No.	Item -1.08 of Price Bid Thin Clients with Dual Monitors (12 Nos + 24 Nos Monitors) for PDC	
	Vendor to specify Brand Make and Model offered.	Qty
a.	30/32 inch Monitor with 3840 x 2160 resolution	24
b.	OS - Windows Embedded Standard 7 (64bit) or higher	12
c.	CPU - Intel/AMD 2.0 GHz quad core or higher	12
d.	Memory - 32 GB or higher Flash / 4GB RAM DDR3	12
e.	Graphics - Built-in Graphics controller	
f.	I/O - 4 x USB 2.0, 2 x USB 3.0, universal headset jack, 1 x RJ-5, 2 x Display Ports	12
g.	Networking -10/100/1000Mbps Ethernet (RJ45).	12
h.	OEM USB Keyboard and Mouse	12
i.	All Accessories required to make the system functional needs to be provided	
j.	Five years comprehensive OEM warranty	

S.No.	Item -1.09 of Price Bid Disk Based Appliance/ storage and Backup Software for PDC 1 No	
	Vendor to specify Brand Make and Model offered.	

a.	D2D Appliance/ storage	<p>DGH wants to implement backup-to-disk solution using disk based backup appliances/ storage to simplify operations and improve overall backup/restore performance. The solution should consist of Enterprise backup software and disk based backup appliances/ storage.</p> <p>The Disk based appliance/ storage and Backup Software supplied must be from Single OEM.</p> <p>The solution should be capable of integration with active directory infrastructure for ease of user rights management along with role based access control to regulate the level of management.</p> <p>The solution must have capability to do trend analysis for capacity planning of backup environment not limiting to Backup Application/Clients, Virtual Environment etc.</p>
b.	Backup Software	<p>Bidder must provide capacity/socket -20 base licenses.</p> <p>The Software must be able to provide VMWARE VM machines image based backups and restore a single VM, single file from a VM, a VMDK restore from the same management console for ease of use.</p> <p>Backup software should have the capability for Block based backups with granular recovery capability for Windows, Linux, Hyper-V, VMWARE</p> <p>The backup software should be available on various OS platforms like Windows, Linux, etc</p> <p>The backup solution should also support online LAN Free SAN based backups of databases through appropriate agents for Oracle, MS SQL Server, Exchange, SharePoint, IBM DB2 , Informix, MySQL, SAP HANA & Sybase etc.</p> <p>The software must support integration with VMWare vRealize Automation for complete orchestration and bidder has to intergrate with VRA.</p> <p>Must support NAS and storage array based snapshot backup for off host zero downtime and zero load on the primary backup client with wizard based configuration.</p> <p>The offered software should support disk-to-disk backup and disk-to-tape backup.</p>

c.	Capacity	<p>The disk based backup appliance/ storage must be sized appropriately for backup of 70TB of (FileSystem,Database & VM Data) as per below backup policies</p> <ul style="list-style-type: none"> a. Daily Incremental Backup – retained for 4 weeks in disk based appliance/ storage b. Weekly Full Backup for all data types – retained for 3 month in disk based appliance/ storage c. Monthly Full Backups – Retained for 12 Months in the same appliance/ storage <p>The solution should be quoted with a minimum usable capacity of 110 TB and should be scalable upto 240 TB or higher for long term retention. Any additional capacity required as per above mentioned retention policy sizing needs to be provided by the bidder/OEM for an entire warranty period of the disk appliance/ storage without adding any new shelf and controller.</p>
d.	RAID Level and storage	<p>The appliance/ storage should be offered RAID-6 with SATA/NL-SAS disk drives along with hot-spare disks in the ratio of 15:1 or better.</p>
	Features	<p>The appliance/ storage should provide global and inline data duplication using automated variable block length deduplication technology.</p>
		<p>Appliance/ storage must be able to provisioned as target device via LAN/SAN and as VTL/ disk volume simultaneously</p>
		<p>Use of Source and Target Based De-duplication for Backups. In order to improve the backup performance and reduce the disk footprint for storing backup data, the disk-appliance solution proposed by the Bidder must provide inline global de-duplication and must integrate with the backup software to facilitate client direct backups to the backup disk with source based de-duplication to reduce data transfer over IP and FC Networks.</p>
		<p>The appliance/ storage should be offered with protocols like VTL/ disk volume. All of the protocols should be available to use concurrently with global deduplication for data ingested across all of them.</p>
		<p>The appliance/ storage should support industry leading backup software like Symantec Netbackup/ Commvault/ DELL EMC Networker/ Microfocus Data Protector etc and should provide deduplication at host / application level so that only changed blocks travel through network to backup device.</p>

e.		The appliance/ storage should Support Enterprise Applications and Database Backups without integration with Backup Software, for better visibility of Backups to Application and database Owners, thus ensuring faster and direct recovery on application/database level. This integration should be available for Oracle, SAP, SAP HANA, DB2, MS SQL, Hadoop, MongoDB, Cassandra etc.
		The appliance/ storage should support 256 bit AES encryption for data at rest and data-in-flight during replication. It should offer internal and external key management for encryption.
		The appliance/ storage should support different retentions for Backup at primary and DR and must support for transmitting only deduplicated unique data in encrypted format to remote sites.
f.	Ports	<p>The appliance/ storage should have the ability to perform different backup, restore, replication jobs simultaneously and Must supports communications and data transfers through 8/16 GB SAN, 10 Gb & 1 Gb ethernet LAN over copper and SFP+.</p> <p>The backup appliance/ storage should be offered with min. 2 x 1Gbps NIC, 4 x 10Gbps NIC and 4 x 16Gbps FC ports.</p>
g.	Performance	<p>The appliance/ storage must support minimum backup throughput of 30 TB/hr RAID 6 and without using hot spare disk.</p> <p>The solution must ensure that the Backup of entire data (70TB) should be complete within 8 hours of backup window. Incase any hardware/software along license is required to delvier this must be supplied by bidder.</p>
h.	Scalability	<p>The appliance/ storage must be proposed with No Single Point Of Failure (NSPOF) like controller, fans, power system etc.</p> <p>The appliance/ storage must support High Availability by adding additional controller to meet future needs.</p>
		The appliance/ storage must support Data In Place upgrade to higher model for increasing backup capacities and performance.
i.	Warranty	The appliance/ storage and Backup Software should offered with 24x7-5 years onsite warranty support.
j.	License	Requisite licenses as per specifications

S.No.	Item -1.10 of Price Bid Tape Library for PDC 1 No	
	Vendor to specify Brand Make and Model offered.	Qty
a.	Rack mountable 24 slot Tape Library with four LTO-7 SAS Tape Drive	1
b.	LTO 7 Media	100

c.	SAS Card to connect with backup server	1
d.	LTO -7 Cleaning cartridges	5
e.	5 Years comprehensive OEM Warranty	
f.	Licenses	As required

S.No.	Item -1.11 of Price Bid		
	VMware Licenses 1 Set		
	Vendor to specify Brand Make and Model offered.		
	Part No.	Description	Qty
a.	H7NX-ED-C10-C	VMware Horizon 7 Enterprise & NSX Data Center Enterprise Plus for Desktop: 10 Pack (CCU)	3
b.	VR18-ADV-C	VMware vRealize Suite 2018 Advanced (Per PLU)	10
c.	VCS6-STD-C	VMware vCenter Server 6 Standard for vSphere 6 (Per Instance)	1
d.	VS6-EPL-C	VMware vSphere 6 Enterprise Plus for 1 processor	10
e.	ST6-EN-C	VMware vSAN 6 Enterprise for 1 processor	10

Item No.	Software License Feature 1 set	No. of Licenses
1.12	NVidia Grid vWS	24
1.13	Windows Server Operating System (Data Center Edition 16 core license) 2012 or later (64 Bit)	24
1.14	Windows VDA Lic	24
1.15	Windows Server Cal	24
1.16	Redhat Enterprise Linux	20
1.17	Antivirus software (TrendMicro or equivalent)	40
1.18	SSL Certificate - 256 bit encryption	1
Note: Software subscription for items 1.12 to 1.18 wherever required must be provided for five years from date of acceptance.		

Sr.No	Item -2.01 of Price Bid
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.	HCI Nodes for SDC - 4 Nos	
	Item	Vendor to specify Brand Make and Model offered.
a.	Hyper Converged Appliance (Essential Features)	Hyper converged appliance, which comes Factory Installed with various software including Software Defined Storage and Hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance.
		Offered Model to be Fully Software Defined Infrastructure (Compute, Storage and Management)
		The sizing defined below includes 10% HCI over head. if any solution requires more than that, then they should factor accordingly.
		Should also have capability to use Network Virtualization (SDN).
b.	Nodes Required	Min. 4 Nodes
c.	Processor	Latest Generation Intel® (Skylake/ Cascadelake) Processors product family,min. 2.7 GHz per Core. Minimum 2 Sockets per Node. Both socket must be populated with 18 core or more per socket.
d.	Total Physical Cores	Minimum 144 Cores (Including all the Nodes)
e.	Processor Cache	Min. 22 MB L3 Cache per processor
f.	Total Physical RAM	Min. 1.5 TB DDR4 per node.
g.	Storage Cache	2 x 400 GB (SSD) or 1 x 800 GB (SSD) per Node. If SSD cache is not available then additional 10% RAM to be provided in each node.
h.	Total Usable Storage	Min. 20 TB Usable capacity with 1.9 TB SSD Disks or higher capacity without Deduplication and Compression.
i.	Network Throughput	Total Network throughput from HYPERCONVERGED Chassis should be configured with total 20 Gbps with no single point of failure. (N+1) redundancy.
j.	GPU	2 x Nvidia Tesla P40 Cards or Higher per Node
k.	Data Services	The solution should provide enterprise data services such as de-duplication and compression with erasure coding OR equivalent completely in software without dependence on any proprietary hardware. These should be delivered in all flash appliances. These functionalities should be part of the proposed solution and licensed.
l.	Hypervisor	VMWare ESX Hypervisor needs to be proposed with the HCI Appliance for this requirement.

m.	Scale Up and Scale Out	The solution should support non-disruptive Scale-Up (Upgrade by inserting additional drives in existing empty drive-slots) whenever required without any additional licensing cost and Scale-Out (Upgrade by adding nodes) upgrades to grow capacity and/or performance with no disruption to the workloads already running on the platform.
n.	Hybrid and Flash Support	HCI solution should support SSD disks.
o.	Cluster Scalability	Cluster architecture to be scalable upto 32 nodes wherein all the VM's should be capable to use compute, memory and storage resources from all the nodes in a cluster architecture through a single interface .
p.	Rack Unit	HCI Appliance should support different Rack Units depending upon the workload (2U4N or 1U1N or 2U1N)
q.	Data Integrity Check	The solution should support checksum of data to ensure data integrity & to enable automatic detection and resolution of silent disk errors.
r.	Encryption	Solution should provide Data at Rest Encryption
s.	Redundancy & Business Continuity	No Single Point of Failure with complete redundancy at all levels. Nodes should be configured to have atleast one copy of data available in cluster, in order to support data & cluster availability in event of One Node Failure
		Proposed solution should have replication software to DR site This replication should be granular in nature with Any Point-In-Time Recovery feature. Licenses for atleast 20 VM replication should be made available with capabilities of WAN bandwidth optimization using features like deduplication, compression. The solution should have capability to protect against data corruption
		Replication should be possible locally (same datacenter) and/or remote site; and, on any x86 platform with requisite number of resources, as long as the hypervisor is same.
		Replication software to be provided and should integrate with the hypervisor.
t.	Storage Feature	Storage policies should be enforced directly from hypervisor and managed directly from hypervisor
u.	Manageability & Security	Single Web Interface Central Management for Compute, Network, Storage and Clustering.
		Single Click Feature should be available for upgrade/update for all components of compute (including network adapter, BIOS), hypervisor and SDS.
		The Solution should be able to monitor end to end session of the user including giving the insight of the underlying infrastructure like server and Storage

		All Nodes supplied with the HCI appliance should support following security features. 1) Should have a cyber-resilient architecture for a hardened server design for protection, detection & recovery from cyber-attacks 2) Should protect against hardware firmware attacks which executes before OS boots. 3) Hardware should support Silicon / Hardware Root of Trust.
v.	Scalability	Proposed solution should be based on modular scalable architecture having the ability to add auto-discoverable Nodes. Node addition should be non-disruptive & seamless; and should allow simple ONE node scaling.
		Proposed solution must support automated cluster deployment, configuration and non-disruptive updates and migration
w.	Hypervisor Features	The solution should be able to support different generation of Intel processors in the same cluster for investment protection over the life of the proposed solution.
		The solution should provide integration of 3rd party endpoint security to secure the virtual machines with offloaded antivirus, anti-malware solutions without the need for agents inside the virtual machines.
		Shall distribute data intelligently across all nodes and capacity utilization across all nodes has to be uniform at all times .
		The solution should provide a virtual switch which can span across a virtual datacenter and multiple hosts should be able to connect to it. This in turn will simplify and enhance virtual machine networking in virtualized environments
		Should have all Virtualization benefits like High Availability, automated distribution of resources and automated live migration of Virtual Machines from one physical server to another in case of any failure
x.	Performance IOPS	Minimum 70K IOPS or more with less than 5ms response time when using 8K/16K block size at 70:30 - Read Write Ratio
y.	Single Point of Support	Single point of support for HCI solution including virtualization
z.	OS Support	Windows 2012 and 2016 Standard/Data Center, SUSE Enterprise Linux, RHEL 6.x, (All latest flavors of Linux and Windows) in the Virtual Machines
aa.	Warranty	24X7X365 onsite for five years fulfilled directly by bidder. Single number support for all components of appliance (compute, hypervisor, software defined storage) for 5 years All SSD supplied must be covered and replacement must be provided during this 5 year period even if SSD have reached its wear level or usage limits.

bb.	Rack, PDU and Accessories	Required number of Industry Standard Rack and PDUs to be provided by bidder alongwith all accessories. Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system. Each node should have dedicated non-shared dual-power supplies and should be able to sustain single power supply failure.
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Sr.No.	Item -2.02 of Price Bid Unified Storage System for SDC- 1 no	
	Item	Vendor to specify Brand Make and Model offered.
a.	Controllers and Architecture	<p>Architecture: Storage should be Fully Symmetric OR Fully Distributed Clustered Architecture written for Scale-Out NAS operations. Hardware and software engineering, and support should be from the same OEM. The Scale-out-NAS must be based upon dedicated NAS appliance hardware. System should support linear scalability in Performance and Capacity, without any disruptions to production workflow. <u>The NAS appliance should have specialized Operating System, dedicated and tuned for serving data efficiently and written for scale-out architecture.</u> General purpose OS will not be acceptable for the NAS system. The architecture should have a single namespace.</p> <p>Controllers: Separated controllers are factored for SSD and SAS/NL-SAS/SATA a) Minimum 4 Active-Active Storage Controllers/ Nodes must be provided, serving all flash storage for cloud and b) Minimum 4 Active-Active Storage Controllers/ Nodes should be provided for serving NDR data requirements. Offered architecture should be upgradable to min 12 numbers of NAS Storage Controllers/ Nodes seamlessly, without any disruptions/downtime to production workflow for performance, capacity enhancement, software/firmware upgrades. All storage nodes/controllers must be active-active, contributing in performance and capacity of the system. In Active / Active cluster mode offered model should guarantee not more than 20% system degradation in case of controller failure.</p>
b.	Onboard Memory	Storage Solution to be configured with minimum 1TB DRAM based usable cache across NAS Storage Controller/ NAS Storage Node configured for read and write operations. If there are any controllers serving the disks seperately then equal amount of DRAM based cache must be provided on those controllers to avoid any funnelling effect.

c.	Network Ports	<p>Each Storage Controllers/ Storage node should have minimum of 2 x 40GbE for client connections for nodes/controllers serving all flash. Total 8 x 40 GbE.</p> <p>Each Storage Controllers/ Storage node should have minimum 2 x 10GbE for client connections for nodes/controllers serving NL-SAS/SATA. Total 8 x 10 GbE.</p>
d.	Disk Type	Storage solution should have capability to support different kinds of disks types likes SSD and NL-SAS/SATA drives pools in same filesystem/ namespace in same storage Cluster.
e.	Operating System	Scale-Out Storage should have Fully Journaled, fully distributed, specialised Operating System by same OEM (as storage hardware) , dedicated for serving data efficiently and customised for True Scale-Out Storage. General purpose OS will not be acceptable for the NAS Appliance.
f.	Redundancy with No Single Point of Failure (SPOF)	<p>The Scale-Out Storage System should be able to protect the data against simultaneous 2(Two) disk failures or have equivalent technology for data protection.</p> <p>The Scale-Out Storage should be configured to sustain atleast one Storage Controller/Single Node failure in the storage system without data unavailability and performance drop of not more than 20%.</p> <ul style="list-style-type: none"> - Data should be striped across all storage controllers/ HA pair in the proposed storage system, so that performance of all controllers/ HA pairs can be utilized for all read and write operations. - The backend internal connectivity between storage controllers/storage nodes should be using high performance Infiniband or 40 GigE network with no single point of failure. - Redundant and Hot replaceable modules: Controllers, Hard Disk Drive and power supplies (230V AC, 50 Hz.) - The Complete multi-controller Storage System Solution should be fully redundant, configured in High Availability mode and should NOT have any Single Point of Failure (SPOF).

g.	Total Storage Capacity	<p>550 TB usable capacity with single unified addressable namespace /single filesysytem after required protection level on complete storage solution.</p> <p>The NAS Appliance should be scalable upto 60 PB usable as a single file system/or a single global namespace.</p> <p>Current Capacity to be configured as - a)100 TiB usable Flash Tier Capacity using SSD of size 7.6TB or less (1 TiB = 1024 x 1024 x 1024 x 1024 bytes) b) 450 TiB usable Tier Capacity using NL-SAS / SATA HDD of size 10TB or less. (1 TiB = 1024 x 1024 x 1024 x 1024 bytes)</p> <p>10% additional usable space must be provisioned as snapshot space for SSD and NL-SAS/SATA disk tier respectively. License for the same must be provided</p> <p>5% additional usable space (in terms of HDD/ SSD must be provisioned for hot sparing apart from usable capacity based on OEM best practice. License for the same must be provided</p>
h.	Performance/ Throughput Requirement	<p>For cloud portion of the storage, Throughput requirement should be of sustained Aggregate Performance of 8GB/sec on NFS, 70% read and 30% write in sequential file IO of 1 MB block size.For NDR portion of the storage, Throughput requirement should be of sustained Aggregate Performance of 1.4GB/sec on NFS, 70% read and 30% write in sequential file IO of 1 MB block size.Bidder needs to demonstrate this performance using free third party applications like IOmeter /FIO etc as part of User Acceptance test. While testing the cloud and NDR portions of the storage, host connectivity will be allowed only to the controllers serving cloud, or NDR storage dedicatedly. Rest of the controllers should be powered off/ disconnected. Cache of both storage and hosts must be cleared before test run by rebooting the controllers.The performance must be demonstrated with data at rest encryption feature switched on along with remote replication.</p>
i.	Capacity/perf ormance Expansion	<p>There should not be any downtime or migration activity required in the event it is needed to add additional capacity or additional performance to the storage system.Storage solution should enable independent and linear scalability of performance and capacity.The system must be able to support policy based tiering to different storage tiers with internal/external storage sub-system.</p>
j.	Protocol Support	<p>Must provide access for a variety of operating systems (Mac, Linux, Windows) using all standard protocols: NFS, SMB(CIFS) etc. All protocols supported by the storage must be licensed and provided from day one. All licenses must be perpetual in nature. Should support user security mechanisms like AD,LDAP and NIS.</p>
k.	File Sharing	<p>Should allow simultaneous access to the same file/data via SMB and NFS for data sharing between LINUX and Windows hosts. Data must be encrypted in motion during file sharing operations.</p>
l.	File Locking & Filtering	<p>File Locking for Data protection from corruption while sharing files between Linux (RHEL) and Windows users.</p>

m.	Client Load Balancing	Storage System should have capability to load balance client connectivity across these multiple controllers so that all clients gets distributed across all existing controllers/nodes to avoid any performance hotspot. In case native functionality is not available in the storage, bidder must provide a mechanism such as redundant pair of hardware load balancer for the the same
n.	Heterogenous support for end user systems	Operating system support RedHat Linux, Suse Linux, Windows Servers 2003/2008 or later , Windows XP/7 or later.
o.	Management Interface software	Support the management, administration and configuration of the whole storage platform through a single management interface along with CLI
p.	Spare Disks:	Vendor will maintain at DGH-NDR site TWO (02) spare SSD disks and FIVE (05) spare NL-SAS / SATA disks of same type and capacity (Cold spares) which may be required to meet immediate replacement for breakdown disks.
q.	Disaster Recovery	The storage system shall be able to support directory and file-level OR volume level asynchronous replication across WAN to another storage system of same type. The replication software shall have a comprehensive Volume/ file and directory selection criteria for replication. The storage system at the remote site shall be at the same protection level as the primary site and be able to sustain 2 disks failure or 1 controller failure after failover. The storage system must preserve bandwidth during replication else must provide redundant WAN optimiser to preserve the bandwidth.
r.	Data Security	Data must be securely encrypted at rest, in motion and while replication at SDC. Protection from ransomware etc. must be ensured.
s.	De-duplication and compression	Proposed storage must offer de-duplication and compression feature.
t.	Warranty	5 years comprehensive OEM onsite warranty
u.	Rack, PDU and Accessories	Required number of rack and PDUs to be provided by the Storage OEM alongwith all accessories. Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system.

Sr.No.	Item -2.03 of Price Bid
	TOR Switch – SDC – 2 Nos
a.	Vendor to specify Brand Make and Model offered.

	The offered switch should be datacenter class switch with redundant power supply & fan trays.
	Switching capacity of 1.4Tbps or more, and throughput of 1070 Mbps or more.
	48 nos. of 1/10 Gigabit Ethernet SFP+ ports or FCOE ports and at least 4 nos of the 40 Gigabit Ethernet QSFP +uplink ports
	Following items shall be included in the supply (for each switch):
b.	i. 2 nos. of 40 Gigabit Ethernet QSFP+ optical transceivers with required fibre patch cables for connectivity to TOR switches
	ii. 8 nos. of 10GBASE-SR SFP+ transceivers
	iii. 36 nos. of 1GBASE-T SFP transceivers
c.	All required licenses and other optics/ accessories including jack panel, patch cords etc., shall be supplied for above ports
d.	Layer 2 features
	xvii. IEEE 802.1Q VLAN encapsulation
	xviii. Support for minimum 1000 VLANs
	xix. Support for minimum 1000 access control list (ACL) entries
	xx. Rapid Per-VLAN Spanning Tree Plus (PVRST+) (IEEE 802.1w compatible)
	xxi. Multiple Spanning Tree Protocol (MSTP) (IEEE 802.1s): 64 instances
	xxii. Spanning Tree PortFast
	xxiii. Spanning Tree root guard
	xxiv. Spanning Tree Bridge Assurance/ loop guard
	xxv. Link Aggregation Control Protocol (LACP): IEEE 802.3ad
	xxvi. Advanced port-channel / LACP with load balancing
	xxvii. Jumbo frames on all ports
	xxviii. Pause frames (IEEE 802.3x)
	xxix. Storm control (unicast, multicast, and broadcast)
	xxx. Private VLANs
	xxxi. Private VLAN over trunks (isolated and promiscuous)
	xxxii. VLAN remapping
e.	Layer 3 features:
	vi. Support for 1024 VLANs
	vii. 1000 ACL entries
	viii. Routing protocols: Static, Routing Information Protocol Version 2 (RIPv2), Open Shortest Path First Version 2 (OSPFv2), Border Gateway Protocol (BGP), and Intermediate System-to-Intermediate System (IS-IS)

	ix. IPv6 routing protocols: Static, OPFv3, BGPv6
	x. Virtual Router Redundancy Protocol (VRRP)
f.	Management Features:
	vi. Switch management using 10/100/1000-Mbps management or console ports
	vii. CLI-based console to provide detailed out-of-band management
	viii. In-band switch management
	ix. Secure Shell Version 2 (SSHv2)
	x. Telnet
g.	Authentication, authorization, and accounting (AAA)
	ix. RADIUS
	x. TACACS+
	xi. Syslog
	xii. SNMPv1, v2, and v3 (IPv4 and IPv6)
	xiii. Remote monitoring (RMON)
	xiv. RBAC
	xv. SPAN
	xvi. Network Time Protocol (NTP)
h.	Warranty: 5 years comprehensive OEM onsite
i.	Accessories
	Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system.

Sr.No.	Item -4 of Price Bid	
	Training	
a.	Module-1	5 Days
	No. of participants	5
	Coverage	
	Basics of VMware	
	Site specific configuration & Operation of the VMware implementation at DGH	
	Troubleshooting	
b.	Module -2	5 Days
	No. of participants	5
	Coverage	
	Fundamentals of HCI	
	System administration of HCI	
	Backup and Restoration	

	Troubleshooting	
c.	Module - 3	3 Days
	No. of participants	5
	Coverage	
	Introduction to G&G applications and implementation on HCI	
	Operations on HCI with G&G modules	
	Troubleshooting	

Technical Specifications Check List

Sr.No.	Item -1.01 of Price Bid HCI Nodes for VDI - 5 No.s		Brand/Make/Model offered Yes/ No	Reference in Bid Document of Bidder
	Item	Vendor to specify Brand Make and Model offered.		
a.	Hyper Converged Appliance (Essential Features)	Hyper converged appliance, which comes Factory Installed with various software including Software Defined Storage and Hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance.		
		Offered Model to be Fully Software Defined Infrastructure (Compute, Storage and Management)		
		The sizing defined below includes 10% HCI overhead. if any solution requires more than that, then they should factor accordingly.		
		Should also have capability to use Network Virtualization (SDN).		
b.	Nodes Required	Min. 5 Nodes		
c.	Processor	Latest Generation Intel® (Skylake/ Cascadelake) Processors product family, ≥3.0 GHz per Core. Minimum 2 Sockets per Node. Both socket must be populated with 18 core or more per socket.		
d.	Total Physical Cores	Minimum 180 Cores (Including all the Nodes)		
e.	Processor Cache	Min. 22 MB L3 Cache per processor		
f.	Total Physical RAM	Min. 1.5 TB DDR4 per node.		
g.	Storage Cache	2 x 400 GB (SSD) or 1 x 800 GB (SSD) per Node. If SSD cache is not available then additional 10% RAM to be provided in each node.		
h.	Total Usable Storage	Min. 20 TB Usable capacity with 1.9 TB SSD Disks or higher capacity disk without Deduplication and Compression.		
i.	Network Throughput	Total Network throughput from HYPERCONVERGED Chassis should be configured with total 40 Gbps with no single point of failure. i.e (N+1) redundancy		

j.	GPU	2 x Nvidia Tesla P40 Cards or Higher per Node		
k.	Data Services	The solution should provide enterprise data services such as <u>de-duplication and compression with erasure coding</u> OR <u>equivalent</u> completely in software without dependence on any proprietary hardware. These should be delivered in all flash appliances. These functionalities should be part of the proposed solution and licensed.		
l.	Hypervisor	VMWare ESX Hypervisor needs to be proposed with the HCI Appliance for this requirement.		
m.	Scale Up and Scale Out	The solution should support non-disruptive Scale-Up (Upgrade by inserting additional drives in existing empty drive-slots) whenever required without any additional licensing cost and Scale-Out (Upgrade by adding nodes) upgrades to grow capacity and/or performance with no disruption to the workloads already running on the platform.		
n.	Hybrid and Flash Support	HCI solution should support SSD disks.		
o.	Cluster Scalability	Cluster architecture to be scalable upto 32 nodes wherein all the VM's should be capable to use compute, memory and storage resources from all the nodes in a cluster architecture through a single interface .		
p.	Rack Unit	HCI Appliance should support different Rack Units depending upon the workload (2U4N or 1U1N or 2U1N)		
q.	Data Integrity Check	The solution should support checksum of data to ensure data integrity & to enable automatic detection and resolution of silent disk errors.		
r.	Encryption	Solution should provide Data at Rest Encryption		
s.	Redundancy & Business Continuity	No Single Point of Failure with complete redundancy at all levels. Nodes should be configured to have atleast one copy of data available in cluster, in order to support data & cluster availability in event of One Node Failure		
		Proposed solution should have replication software to DR site This replication should be granular in nature with Any Point-In-Time Recovery feature. Licenses for atleast 25 VM replication should be made available with capabilities of WAN bandwidth optimization using features like deduplication, compression. The solution should have capability to protect against data corruption		
		Replication should be possible locally (same datacenter) and/or remote site; and, on any x86 platform with requisite number of resources, as long as the hypervisor is same.		

		Replication software to be provided and should integrate with the hypervisor.		
t.	Storage Feature	Storage policies should be enforced directly from hypervisor and managed directly from hypervisor		
u.	Manageability & Security	Single Web Interface Central Management for Compute, Network, Storage and Clustering.		
		Single Click Feature should be available for upgrade/update for all components of compute (including network adapter, BIOS), hypervisor and SDS.		
		The Solution should be able to monitor end to end session of the user including giving the insight of the underlying infrastructure like server and Storage		
		All Nodes supplied with the HCI appliance should support following security features. 1) Should have a cyber-resilient architecture for a hardened server design for protection, detection & recovery from cyber-attacks 2) Should protect against hardware firmware attacks which executes before OS boots. 3) Hardware should support Silicon / Hardware Root of Trust.		
v.	Scalability	Proposed solution should be based on modular scalable architecture having the ability to add auto-discoverable Nodes. Node addition should be non-disruptive & seamless; and should allow simple ONE node scaling.		
		Proposed solution must support automated cluster deployment, configuration and non-disruptive updates and migration		
w.	Hypervisor Features	The solution should be able to support different generation of Intel processors in the same cluster for investment protection over the life of the proposed solution.		
		The solution should provide integration of 3rd party endpoint security to secure the virtual machines with offloaded antivirus, anti-malware solutions without the need for agents inside the virtual machines.		
		Shall distribute data intelligently across all nodes and capacity utilization across all nodes has to be uniform at all times .		

		The solution should provide a virtual switch which can span across a virtual datacenter and multiple hosts should be able to connect to it. This in turn will simplify and enhance virtual machine networking in virtualized environments		
		Should have all Virtualization benefits like High Availability, automated distribution of resources and automated live migration of Virtual Machines from one physical server to another in case of any failure.		
x.	Performance IOPS	Minimum 70K IOPS or more with less than 5ms response time when using 8K/16K block size at 70:30 - Read Write Ratio		
y.	Single Point of Support	Single point of support for HCI solution including virtualization		
z.	OS Support	Windows 2012 and 2016 Standard/Data Center, SUSE Enterprise Linux, RHEL 6.x, (All latest flavors of Linux and Windows) in the Virtual Machines		
aa.	Warranty	24X7X365 onsite for five years fulfilled directly by bidder. Single number support for all components of appliance (compute, hypervisor, software defined storage) for 5 years All SSD supplied must be covered and replacement must be provided during this 5 year period even if SSD have reached its wear level or usage limits.		
bb.	Rack, PDU and Accessories	Required number of Industry Standard Rack and PDUs to be provided by bidder alongwith all accessories. Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system. Each node should have dedicated non-shared dual-power supplies and should be able to sustain single power supply failure.		

Sr.No.	Item -1.02 of Price Bid HCI Nodes for AD & DB - 5 No.s		Brand/Make/Model offered Yes/ No	Reference in Bid Document of Bidder
	Item	Vendor to specify Brand Make and Model offered.		
a.	Hyper	Hyper converged appliance, which comes		

	Converged Appliance (Features and Requirements)	Factory Installed with various software including Software Defined Storage and Hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance.		
		Offered Model to be Fully Software Defined Infrastructure (Compute, Storage and Management)		
		The sizing defined below includes 10% HCI over head. if any solution requires more than that, then they should factor accordingly.		
		Should also have capability to use Network Virtualization (SDN).		
b.	Nodes Required	Min. 5 Nodes		
c.	Processor	Latest Generation Intel® (Skylake/ Cascadelake) Processors product family, \geq 2.7GHz per Core. Minimum 2 Sockets per Node. Both socket must be populated with 18 core or more per socket.		
d.	Total Physical Cores	Minimum 180 Cores (Including all the Nodes)		
e.	Processor Cache	Min. 22 MB L3 Cache per processor		
f.	Total Physical RAM	Min. 1024 GB DDR4 per Node.		
g.	Storage Cache	2 x 400 GB (SSD) or 1 x 800 GB (SSD) per Node. If SSD cache is not available then additional 10% RAM to be provided in each node.		
h.	Total Usable Storage	Min. 50 TB Usable capacity with 1.9 TB SSD Disks or higher capacity without Deduplication and Compression.		
i.	Network Throughput	Total Network throughput from HYPERCONVERGED Chassis should be configured with total 20 Gbps with no single point of failure. (N+1) redundancy		
j.	Data Services	The solution should provide enterprise data services such as de-duplication and compression with erasure coding OR equivalent completely in software without dependence on any proprietary hardware. These should be delivered in all flash appliances. These functionalities should be		

		part of the proposed solution and licensed.		
k.	Hypervisor	VMWare ESX Hypervisor needs to be proposed with the HCI Appliance for this requirement		
l.	Scale Up and Scale Out	The solution should support non-disruptive Scale-Up (Upgrade by inserting additional drives in existing empty drive-slots) whenever required without any additional licensing cost and Scale-Out (Upgrade by adding nodes) upgrades to grow capacity and/or performance with no disruption to the workloads already running on the platform.		
m.	Hybrid and Flash Support	HCI solution should support SSD disks		
n.	Cluster Scalability	Cluster architecture to be scalable upto 32 nodes wherein all the VM's should be capable to use compute, memory and storage resources from all the nodes in a cluster architecture through a single interface.		
o.	Rack Unit	HCI Appliance should support different Rack Units depending upon the workload (2U4N or 1U1N or 2U1N)		
p.	Data Integrity Check	The solution should support checksum of data to ensure data integrity & to enable automatic detection and resolution of silent disk errors.		
q.	Encryption	Solution should provide Data at Rest Encryption		
r.	Redundancy & Business Continuity	No Single Point of Failure with complete redundancy at all levels. Nodes should be configured to have atleast one copy of data available in cluster, in order to support data & cluster availability in event of One Node Failure		
		Proposed solution should have replication software to DR site This replication should be granular in nature with Any Point-In-Time Recovery feature. Licenses for atleast 25 VM replication should be made available with capabilities of WAN bandwidth optimization using features like deduplication,		

		compression. The solution should have capability to protect against data corruption		
		Replication should be possible locally (same datacenter) and/or remote site; and, on any x86 platform with requisite number of resources, as long as the hypervisor is same.		
		Replication software to be provided and should integrate with the hypervisor.		
s.	Storage Feature	Storage policies should be enforced directly from hypervisor and managed directly from hypervisor.		
t.	Manageability & Security	Single Web Interface Central Management for Compute, Network, Storage and Clustering.		
		Single Click Feature should be available for upgrade/update for all components of compute (including network adapter, BIOS), hypervisor and SDS.		
		The Solution should be able to monitor end to end session of the user including giving the insight of the underlying infrastructure like server and Storage		
		All Nodes supplied with the HCI appliance should support following security features. 1) Should have a cyber-resilient architecture for a hardened server design for protection, detection & recovery from cyber-attacks 2) Should protect against hardware firmware attacks which executes before OS boots. 3) Hardware should support Silicon / Hardware Root of Trust.		
u.	Scalability	Proposed solution should be based on modular scalable architecture having the ability to add auto-discoverable Nodes. Node addition should be non-disruptive & seamless; and should allow simple ONE node scaling.		
		Proposed solution must support automated cluster deployment, configuration and non-disruptive updates and migration		
v.	Hypervisor	The solution should able to support different		

	Features	generation of Intel processors in the same cluster for investment protection over the life of the proposed solution.		
		The solution should provide integration of 3rd party endpoint security to secure the virtual machines with offloaded antivirus, anti-malware solutions without the need for agents inside the virtual machines.		
		Shall distribute data intelligently across all nodes and capacity utilization across all nodes has to be uniform at all times .		
		The solution should provide a virtual switch which can span across a virtual datacenter and multiple hosts should be able to connect to it. This in turn will simplify and enhance virtual machine networking in virtualized environments		
		Should have all Virtualization benefits like High Availability, automated distribution of resources and automated live migration of Virtual Machines from one physical server to another in case of any failure		
w.	Performance IOPS	Minimum 70K IOPS or more with less than 5ms response time when using 8K/16K block size at 70:30 - Read Write Ratio		
x.	Single Point of Support	Single point of support for HCI solution including virtualization		
y.	OS Support	Windows 2012 and 2016 Standard/Data Center, SUSE Enterprise Linux, RHEL 6.x, (All latest flavors of Linux and Windows) in the Virtual Machines		
z.	Warranty	24X7X365 onsite for five years fulfilled directly by bidder. Single number support for all components of appliance (compute, hypervisor, software defined storage) for 5 years All SSD supplied must be covered and replacement must be provided during this 5 year period even if SSD have reached its wear level or usage limits.		

aa.	Rack, PDU and Accessories	Required number of Industry Standard Rack and PDUs to be provided by bidder alongwith all accessories. Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system. Each node should have dedicated non-shared dual-power supplies and should be able to sustain single power supply failure.		
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Sr.No.	Item -1.03 of Price Bid Unified Storage System- PDC – 1 No		Brand/Make/Model offered Yes/ No	Reference in Bid Document of Bidder
	Item	Vendor to specify Brand Make and Model offered.		
a.	Controllers and Architecture	<p>Architecture: Storage should be Fully Symmetric OR Fully Distributed Clustered Architecture written for Scale-Out NAS operations. Hardware and software engineering, and support should be from the same OEM. The Scale-out-NAS must be based upon dedicated NAS appliance hardware. System should support linear scalability in Performance and Capacity, without any disruptions to production workflow. <u>The NAS appliance should have specialized Operating System, dedicated and tuned for serving data efficiently and written for scale-out architecture.</u> General purpose OS will not be acceptable for the NAS system. The architecture should have a single namespace.</p> <p>Controllers: Separated controllers are factored for SSD and SAS/NL-SAS/SATA a) Minimum 4 Active-Active Storage Controllers/ Nodes must be provided, serving all flash storage for cloud and b) Minimum 4 Active-Active Storage Controllers/ Nodes should be provided for serving NDR data requirements.</p> <p>Offered architecture should be upgradable to min 12 numbers of NAS Storage Controllers/ Nodes seamlessly, without any disruptions/downtime to production workflow for performance, capacity enhancement, software/firmware upgrades. All storage nodes/controllers must be active-active, contributing in performance and capacity of the system. In Active / Active cluster mode offered model should guarantee not more than 20% system degradation in case of controller failure.</p>		
b.	Onboard Memory	Storage Solution to be configured with minimum 1TB DRAM based usable cache across NAS Storage Controller/ NAS Storage Node configured for read and write operations. If there are any controllers serving the disks separately then equal amount of DRAM based cache must be provided on those controllers to avoid any funnelling effect.		

c.	Network Ports	<p>Each Storage Controllers/ Storage node should have minimum of 2 x 40GbE for client connections for nodes/controllers serving all flash. Total 8 x 40 GbE.</p> <p>Each Storage Controllers/ Storage node should have minimum 2 x 10GbE for client connections for nodes/controllers serving NL-SAS/SATA. Total 8 x 10 GbE.</p>		
d.	Disk Type	Storage solution should have capability to support different kinds of disks types likes SSD and NL-SAS/SATA drives pools in same file system/ namespace in same storage Cluster.		
e.	Operating System	Scale-Out Storage should have Fully Journaled, fully distributed, specialised Operating System by same OEM (as storage hardware) , dedicated for serving data efficiently and customised for True Scale-Out Storage. General purpose OS will not be acceptable for the NAS Appliance.		
f.	Redundancy with No Single Point of Failure (SPOF)	<p>The Scale-Out Storage System should be able to protect the data against simultaneous 2(Two) disk failures or have equivalent technology for data protection.</p> <p>The Scale-Out Storage should be configured to sustain atleast one StorageController/Single Node failure in the storage system without data unavailability and performance drop of not more than 20%.</p> <ul style="list-style-type: none"> - Data should be striped across all storage controllers/ HA pair in the proposed storage system, so that performance of all controllers/ HA pairs can be utilized for all read and write operations. - The backend internal connectivity between storage controllers/storage nodes should be using high performance Infiniband or 40 GigE network with no single point of failure. - Redundant and Hot replaceable modules: Controllers, Hard Disk Drive and power supplies (230V AC, 50 Hz.) - The Complete multi-controller Storage System Solution should be fully redundant, configured in High Availability mode and should NOT have any Single Point of Failure (SPOF). 		

g.	Total Storage Capacity	<p>1 PB(Petabyte) usable capacity with single unified addressable namespace /single filesystem after required protection level on complete storage solution. The NAS Appliance should be scalable upto 60 PB usable as a single filesystem/or a single global namespace. Current Capacity to be configured as - a)250 TiB usable Flash Tier Capacity using SSD of size 7.6TB or less (1 TiB = 1024 x 1024 x 1024 x 1024 bytes)b) 750 TiB usable Tier Capacity using NL-SAS / SATA HDD of size 10TB or less. (1 TiB = 1024 x 1024 x 1024 x 1024 bytes)10% additional usable space must be provisioned as snapshot space for SSD and NL-SAS/SATA disk tier respectively. License for the same must be provided5% additional usable space (in terms of HDD/ SSD must be provisioned for hot sparing apart from usable capacity based on OEM best practice. License for the same must be provided</p>		
h.	Performance/Throughput Requirement	<p>For cloud portion of the storage, Throughput requirement should be of sustained Aggregate Performance of 8GB/sec on NFS, 70% read and 30% write in sequential file IO of 1 MB block size.</p> <p>For NDR portion of the storage, Throughput requirement should be of sustained Aggregate Performance of 1.4GB/sec on NFS, 70% read and 30% write in sequential file IO of 1 MB block size.</p> <p>Bidder needs to demonstrate this performance using free third party applications like IOMeter /FIO etc as part of User Acceptance test.</p> <p>While testing the cloud and NDR portions of the storage, host connectivity will be allowed only to the controllers serving cloud, or NDR storage dedicatedly. Rest of the controllers should be powered off/ disconnected. Cache of both storage and hosts must be cleared before test run by rebooting the controllers. The performance must be demonstrated with data at rest encryption feature switched on along with remote replication.</p>		
	Capacity/performance Expansion	<p>There should not be any downtime or migration activity required in the event it is needed to add additional capacity or additional performance to the storage system. Storage solution should enable independent and linear scalability of performance and capacity. The system must be able to support policy based tiering to different storage tiers with</p>		

		internal/external storage sub-system.		
i.	Protocol Support	Must provide access for a variety of operating systems (Mac, Linux, Windows) using all standard protocols: NFS, SMB(CIFS) etc. All protocols supported by the storage must be licensed and provided from day one. All licenses must be perpetual in nature. Should support user security mechanisms like AD,LDAP and NIS.		
j.	File Sharing	Should allow simultaneous access to the same file/data via SMB and NFS for data sharing between LINUX and Windows hosts. Data must be encrypted in motion during file sharing operations.		
k.	File Locking & Filtering	File Locking for Data protection from corruption while sharing files between Linux (RHEL) and Windows users.		
l.	Client Load Balancing	Storage System should have capability to load balance client connectivity across these multiple controllers so that all clients gets distributed across all existing controllers/nodes to avoid any performance hotspot. In case native functionality is not available in the storage, bidder must provide a mechanism such as redundant pair of hardware load balancer for the the same		
m.	Heterogenous support for end user systems	Operating system support RedHat Linux, Suse Linux, Windows Servers 2003/2008 or later , Windows XP/7 or later.		
n.	Management Interface software	Support the management, administration and configuration of the whole storage platform through a single management interface along with CLI		
o.	Spare Disks:	Vendor will maintain at DGH-NDR site THREE (03) spare SSD disks and TEN (10) spare NL-SAS / SATA disks of same type and capacity (Cold spares) which may be required to meet immediate replacement for breakdown disks.		

p.	Disaster Recovery	The storage system shall be able to support directory and file-level OR volume level asynchronous replication across WAN to another storage system of same type. The replication software shall have a comprehensive Volume/ file and directory selection criteria for replication. The storage system at the remote site shall be at the same protection level as the primary site and be able to sustain 2 disks failure or 1 controller failure after failover. The storage system must preserve bandwidth during replication else must provide redundant WAN optimiser to preserve the bandwidth.		
q.	Data Security	Data must be securely encrypted at rest, in motion and while replication at SDC. Protection from ransomware etc. must be ensured.		
r.	De-duplication and compression	Proposed storage must offer de-duplication and compression feature.		
s.	Warranty	5 years comprehensive OEM onsite warranty		
t.	Rack, PDU and Accessories	Required number of rack and PDUs to be provided by the Storage OEM alongwith all accessories. Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system.		

Sr.No.	Item -1.04 of Price Bid TOR Switch – PDC – 2 nos	Brand/Make/Model offered Yes/ No	Reference in Bid Document of Bidder
a.	Vendor to specify Brand Make and Model offered.		
	The offered switch should be datacenter class switch with redundant power supply & fan trays.		
	Switching capacity of 1.4Tbps or more, and throughput of 1070 Mbps or more.		
	48 nos. of 1/10 Gigabit Ethernet SFP+ ports or FCOE ports and at least 4 nos of the 40 Gigabit Ethernet QSFP +uplink ports		
b.	Following items shall be included in the supply (for each switch):		
	i. 2 nos. of 40 Gigabit Ethernet QSFP+ optical transceivers with required fibre patch cables for connectivity to TOR switches		

	ii. 8 nos. of 10GBASE-SR SFP+ transceivers		
	iii. 36 nos. of 1GBASE-T SFP transceivers		
c.	All required licenses and other optics/ accessories including jack panel, patch cords etc., shall be supplied for above ports		
d.	Layer 2 features		
	xxxiii. IEEE 802.1Q VLAN encapsulation		
	xxxiv. Support for minimum 1000 VLANs		
	xxxv. Support for minimum 1000 access control list (ACL) entries		
	xxxvi. Rapid Per-VLAN Spanning Tree Plus (PVRST+) (IEEE 802.1w compatible)		
	xxxvii. Multiple Spanning Tree Protocol (MSTP) (IEEE 802.1s): 64 instances		
	xxxviii. Spanning Tree PortFast		
	xxxix. Spanning Tree root guard		
	xl. Spanning Tree Bridge Assurance/ loop guard		
	xli. Link Aggregation Control Protocol (LACP): IEEE 802.3ad		
	xlii. Advanced port-channel / LACP with load balancing		
	xliii. Jumbo frames on all ports		
	xliv. Pause frames (IEEE 802.3x)		
	xlv. Storm control (unicast, multicast, and broadcast)		
	xlvi. Private VLANs		
	xlvii. Private VLAN over trunks (isolated and promiscuous)		
	xlviii. VLAN remapping		
e.	Layer 3 features:		
	xi. Support for 1024 VLANs		
	xii. 1000 ACL entries		
	xiii. Routing protocols: Static, Routing Information Protocol Version 2 (RIPv2), Open Shortest Path First Version 2 (OSPFv2), Border Gateway Protocol (BGP), and Intermediate System-to-Intermediate System (IS-IS)		
	xiv. IPv6 routing protocols: Static, OPFv3, BGPv6		
	xv. Virtual Router Redundancy Protocol (VRRP)		
f.	Management Features:		
	xi. Switch management using 10/100/1000-Mbps management or console ports		
	xii. CLI-based console to provide detailed out-of-band management		
	xiii. In-band switch management		
	xiv. Secure Shell Version 2 (SSHv2)		
	xv. Telnet		
g.	Authentication, authorization, and accounting (AAA)		

	xvii. RADIUS		
	xviii. TACACS+		
	xix. Syslog		
	xx. SNMPv1, v2, and v3 (IPv4 and IPv6)		
	xxi. Remote monitoring (RMON)		
	xxii. RBAC		
	xxiii. SPAN		
	xxiv. Network Time Protocol (NTP)		
h.	Warranty: 5 years comprehensive OEM onsite		
	Accessories		
i.	Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system.		

Sr.No.	Item -1.05 of Price Bid L3 Switch – PDC – 2 Nos		Brand/Make/Model offered Yes/ No	Reference in Bid Document of Bidder
	Item	Vendor to specify Brand Make and Model offered.		
a.	Device Type:	Switch supporting Full Enterprise Layer 3 image supporting IPv6 and BGP with the latest Firmware as available with Line rate non-blocking performance.		
b.	Ports Scalability	The switch should support 48x10GbE SFP+ ports and 6x40GbE QSFP+ ports for uplink from day-1. It should have option to upgrade to min. 4x100G ports without changing entire switch.		
c.	High Availability	The switch should support HA options in Active - Active or Active Backup configuraiton as requried, all supporting features and licenses to be provided to support the same.		
d.	Performance			
	Switching Capacity	Minimum 1.76Tbps backplane or more for wire rate performance with 800 nano second latency or better		
	Switching Throughput	Minimum 1320 million pps or better		
	MAC Address Table Size	Minimum 256K MAC addresses		
	802.1Q Vlans	4K 802.1Q vlans with 4K vlan ID support		
e.	Networking Features			
	Data Link Protocol:	Ethernet, Fast Ethernet, Gigabit Ethernet, 10 Gigabit, 40 Gigabit, 25 Gigabit, 50 Gigabit, 100 Gigabit		
		Should support 128K route table capacity for IPv4 & IPv6		
	Routing Protocol:	Should have Static Route, OSPF, BGP, PBR from Day one for both IPv4 and IPv6 considering all License, software, hardware upgrades required if any.		
	Storage protocols	Should support Data Center Infra, DCB, iSCSI, ETS considering all License.		
	Fabric Features	Should support Spine-Leaf architecture using BGP EVPN from day-1		
f.	Security Features			
		Should support all AAA functions with RADIUS and TACACS integration.		
		Should support various strom control functions.		
		Should support Intrusion Protection like functionality against various TCP/UDP		

		attacks.		
		Should support Control Plane / CPU protection using ACL and Qos.		
		Should support 802.1x implementation using RADIUS, BFD, Object Tracking		
		Should support 128 Lag groups & min 32 ports per group		
g.	Management Function			
	Configuration	CLI automation, zero touch deployment. Should support encrypted communication between the user accessing the device namely using all access methods CLI or NMS via features like SSHv2, SSL, and SNMPv3 and Secure FTP/TFTP, SCP		
		Control Plane Service APIs, Scripting Tools , streaming Telemetry, Ansible, pupper/chef/saltstack, OpenFlow 1.3, IEEE 1588v2		
h.	Physical parameter of switch			
	Redundancy	The proposed switch should be offered with redundant FAN tray and Power supply Redundancy.		
	operating specifications	Operating temperature: 41° to 104°F (5° to 40°C)		
	Console/Management Port	1 RJ45 console port or 1 micro-USB-B console port, 1 RJ45 10/100/1000Base-T Out Of Band management port		
i.	Compliant Standards:			
		Should be ROHS Compliant		
	Immunity	EN 300 386, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6		
		EN 60825-2 Safety of Laser Products Part 2: Safety of Optical Fibre Communication Systems		
j.	Warranty and Support	OEM warranty for 5 year 24x7x365 support		

Sr.No.	Item -1.06 of Price Bid Management Switch – PDC 1 No		Brand/Make/ Model offered Yes/ No	Reference in Bid Document of Bidder
	Item	Vendor to specify Brand Make and Model offered.		
a.	Device Type:	Full managed gigabit ethernet 1RU layer 2 switch		
b.	Ports Scalability	24x 10/100/1000Mbps half/full duplex RJ45 ports, 4x SFP/SFP+ 1/10GbE ports		
c.	High Availability	The switch should support stacking from day-1		
d.	Performance			
	Switching Capacity	Minimum 128Gbps backplane or more for wire rate performance		
	Switching Throughput	Minimum 96 million pps or better		
	MAC Address Table Size	Minimum 16K MAC addresses		
	802.1Q Vlans	Minimum 500 VLANs, private VLAN		
e.	Networking Features			
	Data Link Protocol:	802.1X Network Access Control, Auto VLAN, 802.2 Logical Link Control 802.3 10BASE-T, 802.3ab Gigabit Ethernet (1000BASE-T) 802.3ac Frame Extensions for VLAN Tagging 802.3ad Link Aggregation with LACP 802.3ae 10Gigabit Ethernet (10GBASE-X)		
		802.3az Energy Efficient Ethernet, IGMP v1/v2/v3 snooping & querier		
	Other features:	Time controlled ACLs, 40Gbps stacking, double VLAN tagging		
f.	Security Features			
		Should support all AAA functions with RADIUS and TACACS integration.		
		Should have broadcast storm control		
		view based control model, user-based security model		
		RSPAN, custom login banner		
		Should support 802.1x monitor mode, dynamic arp inspection		
		Should support 64 Lag groups & min 8 ports per group		
g.	Management Function			
		CLI, Telnet, web GUI, SSH		
		RMON, sflow, SNMP v1/v2/v3		
h.	Physical parameter of switch			
	Redundancy	Should have redundant variable speed fans		
	operating	Operating temperature: 0° to 45°C		

	specifications			
	Console/Management Port	1 RJ45 console port or 1 micro-USB-B console port		
i.	Compliant Standards:			
		Should be ROHS Compliant		
	Immunity	EN 61000-4-5: Surge		
		USA: FCC Class A, EU WEEE		
j.	Warranty and Support SLA	OEM warranty for 5 year 24x7x365 support		

Sr.No.	Item -1.07 of Price Bid Firewall - PDC – 2 Nos	Brand/Make/Model offered Yes/ No	Reference in Bid Document of Bidder
	Vendor to specify Brand Make and Model offered.		
a.	Solution should be an integrated Next Gen Firewall platform which includes firewall, application control, IPS, Anti-Bot, Anti-Spyware, URL Filtering and Advanced Persistent threat Prevention capabilities in a single appliance, configured in High Availability Mode. Firewall should be provided with "Zero" day protection feature.		
b.	The appliance should support at least 6 nos 10/100/1000 Gigabit ports		
c.	Proposed appliance should have inbuilt redundant power supply.		
d.	Firewall should have local in-built storage of minimum 100GB SSD		
e.	Firewall should have minimum 8GB memory.		
f.	Firewall must have minimum 1Gbps of real world multiprotocol throughput including firewall, IPS and application visibility		
g.	Firewall should support 3DES/AES IPsec VPN throughput of at least 300 Mbps		
h.	Proposed solution must include SSL VPN license for minimum 50 users		
i.	Network Security Firewall should support "Stateful" policy inspection technology. It should also have application intelligence for commonly used TCP/IP protocols like telnet, ftp etc.		
j.	It should support the Firewall and IPSEC VPN as integrated security functions		
k.	Appliance should have granular visibility with respect to user and group policy.		
l.	The Firewall should support authentication protocols like Active Directory, LDAP and have support for Firewall passwords token-based products and X.509 digital certificates or equivalent.		

m.	The IPS should be constantly updated with new defences against emerging threats.		
n.	IPS Engine should support Vulnerability and Exploit signatures, Protocol validation, Anomaly detection, Behaviour-based detection, Multi-element correlation.		
o.	IPS should have the functionality of Geo Protection to Block the traffic country wise incoming as well as outgoing.		
p.	IPS should be able to detect and prevent embedded threats with in SSL traffic.		
q.	Application control must identify applications, its different categories, URLs, HTTPS inspection, Malware content sites, IP and/or user based policies.		
r.	The proposed solution must be able to support DoS protection		
s.	The proposed solution shall support DNS proxy or DNS security and DNS sinkhole which can block the DNS black listed domains and URLs.		
t.	Inspect content to protect networks. Protect the network against known and unknown threats including vulnerability exploits and malware embedded in all types of traffic.		
u.	Application control database should contain more than 3000 known web 2.0 applications and social network widgets. Bidder to confirm the current application database and social network widgets.		
v.	Proposed solution support Multi Link Management and should support more than two ISPs.		
w.	Solution must have a URL categorization and URLs filtering database. Should have predefined more than 50+ categories. The solution should have the capabilities to block, permit, allow & log, protocols other than HTTP, HTTPS, FTP		
x.	The solution should also have the scalability to scan & secure SSL encrypted traffic passing through gateway. Should perform inspection to detect & block malicious content downloaded through SSL.		
y.	Should scan outbound URL requests and ensure users do not visit websites that are known to distribute malware.		
z.	Granularly define exceptions for SSL inspection to protect user privacy and comply with corporate policy.		
aa.	Solution should be able to detect & Prevent bot outbreaks and APT attacks		
bb.	Solution should be able to detect & Prevent the Bot infected machine		
cc.	Solution should be able to detect & Prevent Unique communication patterns used by BOTs i.e. Information about Botnet family		
dd.	Solution should be able to detect & Prevent attack types i.e., such as spam sending click fraud or self-distribution, that are associated with Bots		

ee.	Solution should be able to block traffic between infected Host and Remote Operator and not to legitimate destination		
ff.	The solution should provide the protection from zero day attacks, known & un-known attacks.		
gg.	It should be able to scan SSL & TLS traffic.		
hh.	The solution should support detection & prevention of Cryptors & ransomware and variants (Cryptlocker , CryptoWall etc) through use of static and/or dynamic analysis		
ii.	The solution should be able to scan & find for unknown threats in executable, archive files ,documents, JAVA and flash like: 7z ,cab, csv, doc, pdf, ppt, pptx, rar, rtf, scr, swf, tar, docx, , jar, xls, , xlsx, , xlw, zip etc.		
jj.	The solution should eliminate threats and detect and block exploitable content, including active content and embedded objects		
kk.	Upon malicious files detection, a detailed report should be generated for each one of the malicious files.		
ll.	Firewall central management reporting, logging and analyzer solution has to be in dedicated appliance foot print		
mm.	Centralized Firewall management should be able to manage all functions specified in Firewall, NIPS, AntiBot specification from central console		
nn.	Firewall should be able to provide central logging, Analysis and granular reporting		
oo.	Management (Management , reporting, analysis) System Support for role based administration of firewall		
pp.	Solution should support analysis of traffic pattern using graphs and charts		
qq.	Should provide clear indications that highlight regulations with serious indications of potential breaches with respect to Access Policies, Intrusion, Malwares, BOT, URL, Applications etc.		
rr.	Required software license for providing above features shall be included in the solution.		
ss.	Above hardware items shall be installed in OEM supplied industry standard rack with required PDU for dual power supply, other accessories.		

Sr.No.	Item -1.08 of Price Bid Thin Clients with Dual Monitors (12 Nos + 24 Nos Monitors) for PDC		Brand/Make/Model offered Yes/ No	Reference in Bid Document of Bidder
	Vendor to specify Brand Make and Model offered.	Qty		
a.	30/32 inch Monitor with 3840 x 2160 resolution	24		
b.	OS - Windows Embedded Standard 7 (64bit) or higher	12		

c.	CPU - Intel/AMD 2.0 GHz quad core or higher	12		
d.	Memory - 32 GB or higher Flash / 4GB RAM DDR3	12		
e.	Graphics - Built-in Graphics controller			
f.	I/O - 4 x USB 2.0, 2 x USB 3.0, universal headset jack, 1 x RJ-5, 2 x Display Ports	12		
g.	Networking -10/100/1000Mbps Ethernet (RJ45).	12		
h.	OEM USB Keyboard and Mouse	12		
i.	All Accessories required to make the system functional needs to be provided			
j.	Five years comprehensive OEM warranty			

S.No.	Item -1.09 of Price Bid Disk Based Appliance/ storage and Backup Software for PDC- 1 No		Brand/Make/Model offered Yes/ No	Reference in Bid Document of Bidder
	Vendor to specify Brand Make and Model offered.			
a.	D2D Appliance/ storage	<p>DGH wants to implement backup-to-disk solution using disk based backup appliances/ storage to simplify operations and improve overall backup/restore performance. The solution should consist of Enterprise backup software and disk based backup appliances/ storage.</p> <p>The Disk based appliance/ storage and Backup Software supplied must be from Single OEM.</p> <p>The solution should be capable of integration with active directory infrastructure for ease of user rights management along with role based access control to regulate the level of management.</p> <p>The solution must have capability to do trend analysis for capacity planning of backup environment not limiting to Backup Application/Clients, Virtual Environment etc.</p>		

b.	Backup Software	<p>Bidder must provide capacity/socket - 20 base licenses.</p> <p>The Software must be able to provide VMWARE VM machines image based backups and restore a single VM, single file from a VM, a VMDK restore from the same management console for ease of use.</p> <p>Backup software should have the capability for Block based backups with granular recovery capability for Windows, Linux, Hyper-V, VMWARE</p> <p>The backup software should be available on various OS platforms like Windows, Linux, etc</p> <p>The backup solution should also support online LAN Free SAN based backups of databases through appropriate agents for Oracle, MS SQL Server, Exchange, SharePoint, IBM DB2 , Informix, MySQL, SAP HANA & Sybase etc.</p> <p>The software must support integration with VMWare vRealize Automation for complete orchestration and bidder has to intergrate with VRA.</p> <p>Must support NAS and storage array based snapshot backup for off host zero downtime and zero load on the primary backup client with wizard based configuration.</p> <p>The offered software should support disk-to-disk backup and disk-to-tape backup.</p>		
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c.	Capacity	<p>The disk based backup appliance/ storage must be sized appropriately for backup of 70TB of (FileSystem,Database & VM Data) as per below backup policies</p> <p>a. Daily Incremental Backup – retained for 4 weeks in disk based appliance/ storage</p> <p>b. Weekly Full Backup for all data types – retained for 3 month in disk based appliance/ storage</p> <p>c. Monthly Full Backups – Retained for 12 Months in the same appliance/ storage</p> <p>The solution should be quoted with a minimum usable capacity of 110 TB and should be scalable upto 240 TB or higher for long term retention. Any additional capacity required as per above mentioned retention policy sizing needs to be provided by the bidder/OEM for an entire warranty period of the disk appliance/ storage without adding any new shelf and controller.</p>		
d.	RAID Level and storage	The appliance/ storage should be offered RAID-6 with SATA/NL-SAS disk drives along with hot-spare disks in the ratio of 15:1 or better.		
e.	Features	The appliance/ storage should provide global and inline data duplication using automated variable block length deduplication technology.		
		Appliance/ storage must be able to provisioned as target device via LAN/SAN and as VTL/ disk volume simultaneously		
		Use of Source and Target Based De-duplication for Backups. In order to improve the backup performance and reduce the disk footprint for storing backup data, the disk-appliance solution proposed by the Bidder must provide inline global de-duplication and must integrate with the backup software to facilitate client direct backups to the backup disk with source based de-duplication to reduce data transfer over IP and FC Networks.		

		The appliance/ storage should be offered with protocols like VTL/ disk volume. All of the protocols should be available to use concurrently with global deduplication for data ingested across all of them.		
		The appliance/ storage should support industry leading backup software like Symantec Netbackup/ Commvault/ DELL EMC Networker/ Microfocus Data Protector etc and should provide deduplication at host / application level so that only changed blocks travel through network to backup device.		
		The appliance/ storage should Support Enterprise Applications and Database Backups without integration with Backup Software, for better visibility of Backups to Application and database Owners, thus ensuring faster and direct recovery on application/database level. This integration should be available for Oracle, SAP, SAP HANA, DB2, MS SQL, Hadoop, MongoDB, Cassandra etc.		
		The appliance/ storage should support 256 bit AES encryption for data at rest and data-in-flight during replication. It should offer internal and external key management for encryption.		
		The appliance/ storage should support different retentions for Backup at primary and DR and must support for transmitting only deduplicated unique data in encrypted format to remote sites.		
f.	Ports	<p>The appliance/ storage should have the ability to perform different backup, restore, replication jobs simultaneously and Must supports communications and data transfers through 8/16 GB SAN, 10 Gb & 1 Gb ethernet LAN over copper and SFP+.</p> <p>The backup appliance/ storage should be offered with min. 2 x 1Gbps NIC, 4 x 10Gbps NIC and 4 x 16Gbps FC ports.</p>		

g.	Performance	The appliance/ storage must support minimum backup throughput of 30 TB/hr RAID 6 and without using hot spare disk.		
		The solution must ensure that the Backup of entire data (70TB) should be complete within 8 hours of backup window. In case any hardware/software along license is required to deliver this must be supplied by bidder.		
h.	Scalability	The appliance/ storage must be proposed with No Single Point Of Failure (NSPOF) like controller, fans, power system etc. The appliance/ storage must support High Availability by adding additional controller to meet future needs.		
		The appliance/ storage must support Data In Place upgrade to higher model for increasing backup capacities and performance.		
i.	Warranty	The appliance/ storage and Backup Software should be offered with 24x7- 5 years onsite warranty support.		
j.	License	Requisite licenses as per specifications		

S.No.	Item -1.10 of Price Bid Tape Library for PDC – 1 No		Brand/Make/ Model offered Yes/ No	Reference in Bid Document of Bidder
	Vendor to specify Brand Make and Model offered.	Qty		
a.	Rack mountable 24 slot Tape Library with four LTO-7 SAS Tape Drive	1		
b.	LTO 7 Media	100		
c.	SAS Card to connect with backup server	1		
d.	LTO -7 Cleaning cartridges	5		
e.	5 Years comprehensive OEM Warranty			
f.	Licenses	As required		

S.No.	Item -1.11 of Price Bid VMware Licenses -1 set		Brand/Make/ Model offered Yes/ No	Reference in Bid Document of Bidder
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	Vendor to specify Brand Make and Model offered.				
	Part No.	Description	Qty		
a	H7NX-ED-C10-C	VMware Horizon 7 Enterprise & NSX Data Center Enterprise Plus for Desktop: 10 Pack (CCU)	3		
b	VR18-ADV-C	VMware vRealize Suite 2018 Advanced (Per PLU)	10		
c	VCS6-STD-C	VMware vCenter Server 6 Standard for vSphere 6 (Per Instance)	1		
d	VS6-EPL-C	VMware vSphere 6 Enterprise Plus for 1 processor	10		
e	ST6-EN-C	VMware vSAN 6 Enterprise for 1 processor	10		

Item No.	Software License Feature	No. of Licenses	Brand/Make/Model offered Yes/ No	Reference in Bid Document of Bidder
1.12	NVidia Grid vWS	24		
1.13	Windows Server Operating System (Data Center Edition 16 core license) 2012 or later (64 Bit)	24		
1.14	Windows VDA Lic	24		
1.15	Windows Server Cal	24		
1.16	Redhat Enterprise Linux	20		
1.17	Antivirus software (TrendMicro or equivalent)	40		
1.18	SSL Certificate - 256 bit encryption	1		
Note: Software subscription for items 1.12 to 1.18 wherever required must be provided for five years from date of acceptance.				

Sr.No	Item -2.01 of Price Bid HCI Nodes for SDC - 4 Nos		Brand/Make/Model offered Yes/ No	Reference in Bid Document of Bidder
	Item	Vendor to specify Brand Make and Model offered.		

a.	Hyper Converged Appliance (Essential Features)	Hyper converged appliance, which comes Factory Installed with various software including Software Defined Storage and Hypervisor. SDS should NOT be top-up or add-on software license bundled on generic x86 server. It should be an integral part of appliance.		
		Offered Model to be Fully Software Defined Infrastructure (Compute, Storage and Management)		
		The sizing defined below includes 10% HCI over head. if any solution requires more than that, then they should factor accordingly.		
		Should also have capability to use Network Virtualization (SDN).		
b.	Nodes Required	Min. 4 Nodes		
c.	Processor	Latest Generation Intel® (Skylake/Cascadelake) Processors product family,min. 2.7 GHz per Core. Minimum 2 Sockets per Node. Both socket must be populated with 18 core or more per socket.		
d.	Total Physical Cores	Minimum 144 Cores (Including all the Nodes)		
e.	Processor Cache	Min. 22 MB L3 Cache per processor		
f.	Total Physical RAM	Min. 1.5 TB DDR4 per node.		
g.	Storage Cache	2 x 400 GB (SSD) or 1 x 800 GB (SSD) per Node. If SSD cache is not available then additional 10% RAM to be provided in each node.		
h.	Total Usable Storage	Min. 20 TB Usable capacity with 1.9 TB SSD Disks or higher capacity without Deduplication and Compression.		
i.	Network Throughput	Total Network throughput from HYPERCONVERGED Chassis should be configured with total 20 Gbps with no single point of failure. (N+1) redundancy.		
j.	GPU	2 x Nvidia Tesla P40 Cards or Higher per Node		
k.	Data Services	The solution should provide enterprise data services such as de-duplication and compression with erasure coding OR equivalent completely in software without dependence on any proprietary hardware. These should be delivered in all flash appliances. These functionalities should be part of the proposed solution and licensed.		
l.	Hypervisor	VMWare ESX Hypervisor needs to be proposed with the HCI Appliance for this		

		requirement.		
m.	Scale Up and Scale Out	The solution should support non-disruptive Scale-Up (Upgrade by inserting additional drives in existing empty drive-slots) whenever required without any additional licensing cost and Scale-Out (Upgrade by adding nodes) upgrades to grow capacity and/or performance with no disruption to the workloads already running on the platform.		
n.	Hybrid and Flash Support	HCI solution should support SSD disks.		
o.	Cluster Scalability	Cluster architecture to be scalable upto 32 nodes wherein all the VM's should be capable to use compute, memory and storage resources from all the nodes in a cluster architecture through a single interface .		
p.	Rack Unit	HCI Appliance should support different Rack Units depending upon the workload (2U4N or 1U1N or 2U1N)		
q.	Data Integrity Check	The solution should support checksum of data to ensure data integrity & to enable automatic detection and resolution of silent disk errors.		
r.	Encryption	Solution should provide Data at Rest Encryption		
s.	Redundancy & Business Continuity	No Single Point of Failure with complete redundancy at all levels. Nodes should be configured to have atleast one copy of data available in cluster, in order to support data & cluster availability in event of One Node Failure		
		Proposed solution should have replication software to DR site This replication should be granular in nature with Any Point-In-Time Recovery feature. Licenses for atleast 20 VM replication should be made available with capabilities of WAN bandwidth optimization using features like deduplication, compression. The solution should have capability to protect against data corruption		
		Replication should be possible locally (same datacenter) and/or remote site; and, on any x86 platform with requisite number of resources, as long as the hypervisor is same.		

		Replication software to be provided and should integrate with the hypervisor.		
t.	Storage Feature	Storage policies should be enforced directly from hypervisor and managed directly from hypervisor		
u.	Manageability & Security	Single Web Interface Central Management for Compute, Network, Storage and Clustering.		
		Single Click Feature should be available for upgrade/update for all components of compute (including network adapter, BIOS), hypervisor and SDS.		
		The Solution should be able to monitor end to end session of the user including giving the insight of the underlying infrastructure like server and Storage		
		All Nodes supplied with the HCI appliance should support following security features. 1) Should have a cyber-resilient architecture for a hardened server design for protection, detection & recovery from cyber-attacks 2) Should protect against hardware firmware attacks which executes before OS boots. 3) Hardware should support Silicon / Hardware Root of Trust.		
v.	Scalability	Proposed solution should be based on modular scalable architecture having the ability to add auto-discoverable Nodes. Node addition should be non-disruptive & seamless; and should allow simple ONE node scaling.		
		Proposed solution must support automated cluster deployment, configuration and non-disruptive updates and migration		
w.	Hypervisor Features	The solution should be able to support different generation of Intel processors in the same cluster for investment protection over the life of the proposed solution.		
		The solution should provide integration of 3rd party endpoint security to secure the virtual machines with offloaded antivirus, anti-malware solutions without the need for agents inside the virtual machines.		
		Shall distribute data intelligently across all nodes and capacity utilization across all nodes has to be uniform at all times .		

		The solution should provide a virtual switch which can span across a virtual datacenter and multiple hosts should be able to connect to it. This in turn will simplify and enhance virtual machine networking in virtualized environments		
		Should have all Virtualization benefits like High Availability, automated distribution of resources and automated live migration of Virtual Machines from one physical server to another in case of any failure		
x.	Performance IOPS	Minimum 70K IOPS or more with less than 5ms response time when using 8K/16K block size at 70:30 - Read Write Ratio		
y.	Single Point of Support	Single point of support for HCI solution including virtualization		
z.	OS Support	Windows 2012 and 2016 Standard/Data Center, SUSE Enterprise Linux, RHEL 6.x, (All latest flavors of Linux and Windows) in the Virtual Machines		
aa.	Warranty	24X7X365 onsite for five years fulfilled directly by bidder. Single number support for all components of appliance (compute, hypervisor, software defined storage) for 5 years All SSD supplied must be covered and replacement must be provided during this 5 year period even if SSD have reached its wear level or usage limits.		
bb.	Rack, PDU and Accessories	Required number of Industry Standard Rack and PDUs to be provided by bidder alongwith all accessories. Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system. Each node should have dedicated non-shared dual-power supplies and should be able to sustain single power supply failure.		

Sr.No.	Item -2.02 of Price Bid Unified Storage System for SDC- 1 No		Brand/Make/ Model offered Yes/ No	Reference in Bid Document of Bidder
	Item	Vendor to specify Brand Make and Model offered.		

a.	Controllers and Architecture	<p>Architecture: Storage should be Fully Symmetric OR Fully Distributed Clustered Architecture written for Scale-Out NAS operations. Hardware and software engineering, and support should be from the same OEM. The Scale-out-NAS must be based upon dedicated NAS appliance hardware. System should support linear scalability in Performance and Capacity, without any disruptions to production workflow. <u>The NAS appliance should have specialized Operating System, dedicated and tuned for serving data efficiently and written for scale-out architecture.</u> General purpose OS will not be acceptable for the NAS system. The architecture should have a single namespace.</p> <p>Controllers: Separated controllers are factored for SSD and SAS/NL-SAS/SATA a) Minimum 4 Active-Active Storage Controllers/ Nodes must be provided, serving all flash storage for cloud and b) Minimum 4 Active-Active Storage Controllers/ Nodes should be provided for serving NDR data requirements. Offered architecture should be upgradable to min 12 numbers of NAS Storage Controllers/ Nodes seamlessly, without any disruptions/downtime to production workflow for performance, capacity enhancement, software/firmware upgrades. All storage nodes/controllers must be active-active, contributing in performance and capacity of the system. In Active / Active cluster mode offered model should guarantee not more than 20% system degradation in case of controller failure.</p>		
b.	Onboard Memory	<p>Storage Solution to be configured with minimum 1TB DRAM based usable cache across NAS Storage Controller/ NAS Storage Node configured for read and write operations. If there are any controllers serving the disks separately then equal amount of DRAM based cache must be provided on those controllers to avoid any funnelling effect.</p>		

c.	Network Ports	Each Storage Controllers/ Storage node should have minimum of 2 x 40GbE for client connections for nodes/controllers serving all flash. Total 8 x 40 GbE. Each Storage Controllers/ Storage node should have minimum 2 x 10GbE for client connections for nodes/controllers serving NL-SAS/SATA. Total 8 x 10 GbE.		
d.	Disk Type	Storage solution should have capability to support different kinds of disks types likes SSD and NL-SAS/SATA drives pools in same filesystem/ namespace in same storage Cluster.		
e.	Operating System	Scale-Out Storage should have Fully Journalled, fully distributed, specialised Operating System by same OEM (as storage hardware) , dedicated for serving data efficiently and customised for True Scale-Out Storage. General purpose OS will not be acceptable for the NAS Appliance.		
f.	Redundancy with No Single Point of Failure (SPOF)	<p>The Scale-Out Storage System should be able to protect the data against simultaneous 2(Two) disk failures or have equivalent technology for data protection.</p> <p>The Scale-Out Storage should be configured to sustain atleast one StorageController/Single Node failure in the storage system without data unavailability and performance drop of not more than 20%.</p> <ul style="list-style-type: none"> - Data should be striped across all storage controllers/ HA pair in the proposed storage system, so that performance of all controllers/ HA pairs can be utilized for all read and write operations. - The backend internal connectivity between storage controllers/storage nodes should be using high performance Infiniband or 40 GigE network with no single point of failure. - Redundant and Hot replaceable modules: Controllers, Hard Disk Drive and power supplies (230V AC, 50 Hz.) - The Complete multi-controller Storage System Solution should be fully redundant, configured in High Availability mode and should NOT have any Single Point of Failure (SPOF). 		

g.	Total Storage Capacity	<p>550 TB usable capacity with single unified addressable namespace /single filesystem after required protection level on complete storage solution.</p> <p>The NAS Appliance should be scalable upto 60 PB usable as a single filesystem/or a single global namespace.</p> <p>Current Capacity to be configured as - a)100 TiB usable Flash Tier Capacity using SSD of size 7.6TB or less (1 TiB = 1024 x 1024 x 1024 bytes) b) 450 TiB usable Tier Capacity using NL-SAS / SATA HDD of size 10TB or less. (1 TiB = 1024 x 1024 x 1024 x 1024 bytes)</p> <p>10% additional usable space must be provisioned as snapshot space for SSD and NL-SAS/SATA disk tier respectively. License for the same must be provided</p> <p>5% additional usable space (in terms of HDD/ SSD must be provisioned for hot sparing apart from usable capacity based on OEM best practice. License for the same must be provided</p>		
h.	Performance/ Throughput Requirement	<p>For cloud portion of the storage, Throughput requirement should be of sustained Aggregate Performance of 8GB/sec on NFS, 70% read and 30% write in sequential file IO of 1 MB block size.For NDR portion of the storage, Throughput requirement should be of sustained Aggregate Performance of 1.4GB/sec on NFS, 70% read and 30% write in sequential file IO of 1 MB block size.Bidder needs to demonstrate this performance using free third party applications like IOmeter /FIO etc as part of User Acceptance test. While testing the cloud and NDR portions of the storage, host connectivity will be allowed only to the controllers serving cloud, or NDR storage dedicatedly. Rest of the controllers should be powered off/ disconnected. Cache of both storage and hosts must be cleared before test run by rebooting the controllers.The performance must be demonstrated with data at rest encryption feature switched on along with remote replication.</p>		

i.	Capacity/performance Expansion	There should not be any downtime or migration activity required in the event it is needed to add additional capacity or additional performance to the storage system.Storage solution should enable independent and linear scalability of performance and capacity.The system must be able to support policy based tiering to different storage tiers with internal/external storage sub-system.		
j.	Protocol Support	Must provide access for a variety of operating systems (Mac, Linux, Windows) using all standard protocols: NFS, SMB(CIFS) etc. All protocols supported by the storage must be licensed and provided from day one. All licenses must be perpetual in nature. Should support user security mechanisms like AD,LDAP and NIS.		
k.	File Sharing	Should allow simultaneous access to the same file/data via SMB and NFS for data sharing between LINUX and Windows hosts. Data must be encrypted in motion during file sharing operations.		
l.	File Locking & Filtering	File Locking for Data protection from corruption while sharing files between Linux (RHEL) and Windows users.		
m.	Client Load Balancing	Storage System should have capability to load balance client connectivity across these multiple controllers so that all clients gets distributed across all existing controllers/nodes to avoid any performance hotspot. In case native functionality is not available in the storage, bidder must provide a mechanism such as redundant pair of hardware load balancer for the the same		
n.	Heterogenous support for end user systems	Operating system support RedHat Linux, Suse Linux, Windows Servers 2003/2008 or later , Windows XP/7 or later.		
o.	Management Interface software	Support the management, administration and configuration of the whole storage platform through a single management interface along with CLI		
p.	Spare Disks:	Vendor will maintain at DGH-NDR site TWO (02) spare SSD disks and FIVE (05) spare NL-SAS / SATA disks of same type and capacity (Cold spares) which may be required to meet immediate replacement for breakdown disks.		

q.	Disaster Recovery	The storage system shall be able to support directory and file-level OR volume level asynchronous replication across WAN to another storage system of same type. The replication software shall have a comprehensive Volume/ file and directory selection criteria for replication. The storage system at the remote site shall be at the same protection level as the primary site and be able to sustain 2 disks failure or 1 controller failure after failover. The storage system must preserve bandwidth during replication else must provide redundant WAN optimiser to preserve the bandwidth.		
r.	Data Security	Data must be securely encrypted at rest, in motion and while replication at SDC. Protection from ransomware etc. must be ensured.		
s.	De-duplication and compression	Proposed storage must offer de-duplication and compression feature.		
t.	Warranty	5 years comprehensive OEM onsite warranty		
u.	Rack, PDU and Accessories	Required number of rack and PDUs to be provided by the Storage OEM alongwith all accessories. Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system.		

Sr.No.	Item -2.03 of Price Bid TOR Switch – SDC – 2 Nos	Brand/Make/Model offered Yes/ No	Reference in Bid Document of Bidder
a.	Vendor to specify Brand Make and Model offered.		
	The offered switch should be datacenter class switch with redundant power supply & fan trays.		
	Switching capacity of 1.4Tbps or more, and throughput of 1070 Mbps or more.		
	48 nos. of 1/10 Gigabit Ethernet SFP+ ports or FCOE ports and at least 4 nos of the 40 Gigabit Ethernet QSFP +uplink ports		
b.	Following items shall be included in the supply (for each switch):		

	i. 2 nos. of 40 Gigabit Ethernet QSFP+ optical transceivers with required fibre patch cables for connectivity to TOR switches		
	ii. 8 nos. of 10GBASE-SR SFP+ transceivers		
	iii. 36 nos. of 1GBASE-T SFP transceivers		
c.	All required licenses and other optics/ accessories including jack panel, patch cords etc., shall be supplied for above ports		
	Layer 2 features		
	xlx. IEEE 802.1Q VLAN encapsulation		
	l. Support for minimum 1000 VLANs		
	li. Support for minimum 1000 access control list (ACL) entries		
	lii. Rapid Per-VLAN Spanning Tree Plus (PVRST+) (IEEE 802.1w compatible)		
d.	liii. Multiple Spanning Tree Protocol (MSTP) (IEEE 802.1s): 64 instances		
	liv. Spanning Tree PortFast		
	lv. Spanning Tree root guard		
	lvi. Spanning Tree Bridge Assurance/ loop guard		
	lvii. Link Aggregation Control Protocol (LACP): IEEE 802.3ad		
	lviii. Advanced port-channel / LACP with load balancing		
	lix. Jumbo frames on all ports		
	lx. Pause frames (IEEE 802.3x)		
	lxi. Storm control (unicast, multicast, and broadcast)		
	lxii. Private VLANs		
	lxiii. Private VLAN over trunks (isolated and promiscuous)		
	lxiv. VLAN remapping		
	Layer 3 features:		
	xvi. Support for 1024 VLANs		
	xvii. 1000 ACL entries		
e.	xviii. Routing protocols: Static, Routing Information Protocol Version 2 (RIPv2), Open Shortest Path First Version 2 (OSPFv2), Border Gateway Protocol (BGP), and Intermediate System-to-Intermediate System (IS-IS)		
	xix. IPv6 routing protocols: Static, OPFv3, BGPv6		
	xx. Virtual Router Redundancy Protocol (VRRP)		
	Management Features:		
f.	xvi. Switch management using 10/100/1000-Mbps management or console ports		
	xvii. CLI-based console to provide detailed out-of-band management		
	xviii. In-band switch management		

	xix. Secure Shell Version 2 (SSHv2)		
	xx. Telnet		
	Authentication, authorization, and accounting (AAA)		
	xxv. RADIUS		
	xxvi. TACACS+		
	xxvii. Syslog		
	xxviii. SNMPv1, v2, and v3 (IPv4 and IPv6)		
	xxix. Remote monitoring (RMON)		
	xxx. RBAC		
	xxxi. SPAN		
	xxxii. Network Time Protocol (NTP)		
h.	Warranty: 5 years comprehensive OEM onsite		
	Accessories		
i.	Bidder will be responsible to integrate all the hardware on the rack. All cables, connectors, network cards, SFP, SFP+ etc that are required to make the system fully functional needs to be provided along with the system.		

Sr.No.	Item -4 of Price Bid Training		Yes/ No	Training Details
	Module-1	5 Days		
	No. of participants	5		
	Coverage			
a.	Basics of VMware			
	Site specific configuration & Operation of the VMware implementation at DGH			
	Troubleshooting			
	Module -2	5 Days		
	No. of participants	5		
	Coverage			
	Fundamentals of HCI			
	System administration of HCI			
	Backup and Restoration			
	Troubleshooting			
	Module - 3	3 Days		
	No. of participants	5		
	Coverage			
c.	Introduction to G&G applications and implementation on HCI			
	Operations on HCI with G&G modules			
	Troubleshooting			

Proforma for Authorisation to be submitted by OEM of Hardware/ SI as per clause Clause 2.1 of Technical Rejection criteria of Annexure –III

This is to certify that the hardware/ software offered by M/s _____ against Tender No. **MM-12018(30)/1/2019-DGH/ENQ-163** is certified on our application software i.e Petrel Suite of software from M/s Schlumberger/ DSG Suite of software from M/s Halliburton.

Dated: _____ **(Authorised Signatory of G&G Software OEM with seal)**

Place: _____

Note: The above certificate should be provided on the letterhead of the G&G software OEM i.e M/s Schlumberger/ M/s Halliburton.

Special Terms and Conditions

1. Delivery/ Completion Schedule

FOR SUPPLY PORTION: The supply of all the hardware and software items should be completed within 60 days from date of issue of LOA.

FOR INSTALLTION & COMMISSIONING: Installation, Configuration, Integration and Commissioning of the complete solution are to be completed within 30 days from date of supply.

TRAININGS: To be completed within 60 days of successful installation and commissioning.

Delivery Address for PDC, NOIDA:

National Data Repository,
5th Floor, Directorate General of Hydrocarbons,
(Under Ministry of Petroleum & Natural Gas)
OIDB Bhawan, Plot No. 2, Sector – 73, Noida
Uttar Pradesh – 201301

Delivery Address for SDC, Bhubaneswar:

Secondary Data Centre, DGH
5th Floor, Elite Building
Software Technology Park of India (STPI)
Gothapatna, Near IIIT College
Bhubaneswar, Odisha - 751003

2. Payment Terms:

- a. Payment for 70% of material cost including taxes after receipt of all the Items as per Scope of Supply and terms and conditions of DGH supply order. The materials upon receipt will be jointly visually inspected by DGH & the vendor. If any hardware/software material received at specified delivery locations of DGH i.e PDC and SDC is found be in physically damaged condition and/or is found to have undergone water leakage, then the same will be considered dead on arrival & has to be replaced for delivery of materials to be considered complete for release of 70% payment.
- b. Balance 30% of material value along with the 100% installation, commissioning charges including taxes will be released after issue of (i) successful completion of installation & commissioning report by HOD(NDR) or its authorized representative and (ii) successful completion of one month's user acceptance testing (UAT) period post commissioning date as per the scope of work.

- c. Payment towards training will be released after completion of the training program as per the specified terms.
- d. Payment towards AMC for the software services and on-site support will be made after completion of every quarter.

3. Liquidated Damage:

At the rate of ½ % of the order value per week or part there of subject to a maximum of 5 %, for the period extending beyond the scheduled delivery date and/or Commissioning date.

4. Performance Bank Guarantee

- (i) Bidder must confirm to submit Performance Bank Guarantee (PBG) of amount 7.5 % of the total order value valid for 2 months beyond warranty period equipment.

5. Note for rate Contract Items:

Items listed under rate contract will be considered for evaluation of tender. The items listed under this rate contract may be procured as and when required by DGH.

Price Format/BOQ

<u>PRICE SCHEDULE</u> (This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)								
Sl. No.	Item Description	Quantity	Units	BASIC RATE In Figures To be entered by the Bidder in Rs. P	GST in %	TOTAL AMOUNT Without GST in Rs. P	TOTAL AMOUNT With GST in Rs. P	TOTAL AMOUNT In Words
1	For PDC							
1.01	HCI Node(VDI) as per technical specification	5	No.					
1.02	HCI Node(AD + DB) as per technical specification	5	No.					
1.03	Unified Storage System for PDC as per technical specifications	1	No.					
1.04	TOR Switch as per technical specifications	2	No.					
1.05	L3 switch as per technical specification	2	No.					
1.06	Management Switch as per technical specifications	1	No.					
1.07	Firewall as per technical specification	2	No.					
1.08	Thin Clients per technical specifications	12	No.					
1.09	Disk based backup appliance and backup software as per technical specifcations	1	No.					
1.10	Tape Library as per technical specifications	1	No.					
1.11	VmWare Suite as per specifications	1	Set					
1.12	NVidia Grid vWS	24	No.					

1.13	Windows Server Operating System (Data Center Edition 16 core license) 2012 or later (64 Bit)	24	No.					
1.14	Windows VDA Lic	24	No.					
1.15	Windows Server Cal	24	No.					
1.16	Redhat Enterprise Linux	20	No.					
1.17	Antivirus software (TrendMicro or equivalent)	40	No.					
1.18	SSL Certificate - 256 bit encryption	1	No.					
2	For SDC							
2.01	HCI Node - SDC as per technical specification	4	No.					
2.02	Unified Storage System for SDC as per technical specifications	1	No.					
2.03	TOR Switch as per technical specifications	2	No.					
3	Installation and Commissioning							
3.01	System installation, configuration and integration services as per the scope of work	1	Lumpsum					
4	Training for 13 days as per details	1	Lumpsum					
5	AMC For Software & On-site support							
5.01	First Year Software AMC	1	Yearly					
5.02	First Year On-site support	1	Yearly					
5.03	Second Year Software AMC	1	Yearly					
5.04	Second Year On-site support	1	Yearly					
5.05	Third Year Software AMC	1	Yearly					

5.06	Third Year On-site support	1	Yearly					
5.07	Fourth Year Software AMC	1	Yearly					
5.08	Fourth Year On-site support	1	Yearly					
5.09	Fifth Year Software AMC	1	Yearly					
5.10	Fifth Year On-site support	1	Yearly					
6	Rate Contract Items							
6.01	HCI Appliance 3D Node for Apps as per technical specifications of Item No.1 .01	1	No.					
6.02	HCI Appliance AD&DB Node for Apps as per technical specifications of item no. 1.02	1	No.					
6.03	HCI Appliance 3D Node for Apps as per technical specifications of item no. 2.01	1	No.					
6.04	5 TB Usable for HCI	1	No.					
6.05	10 TB Usable for HCI	1	No.					
6.06	200TB Usable - NL-SAS/SATA for NAS	1	No.					
6.07	400TB Usable - NL-SAS/SATA for NAS	1	No.					
6.08	800TB Usable - NL-SAS/SATA for NAS	1	No.					
6.09	100 TB Usable FLASH based for NAS	1	No.					
6.10	200 TB Usable FLASH based for NAS	1	No.					
6.11	400 TB Usable FLASH based for NAS	1	No.					
7	Any other item (if required to meet the scope of work)	1	Lumpsum					
Total in Figures								

Quoted Rate in Words							

Notes:

1. Bidder has to quote in the above mentioned price format only.
2. Prices should be inclusive of all taxes & duties, packing & forwarding charges etc. for door delivery at DGH, Noida office and Bhubaneswar.
3. Offers shall be evaluated on FOR Destination basis at destination i.e. DGH Noida office and SDC Bhubaneswar.
4. Bidder to quote price inclusive of 5 Years extended onsite Warranty Support
5. All the necessary tools, tackles, cables, H/w & S/w, Licenses, accessories etc., (including any item not specified in BOM), but required to complete the Scope of Work as per tender document shall be provided by the bidder at no extra cost to DGH

Signature of Bidder

E-tendering Instructions to Bidders

General:

These are the special Instructions (for e-Tendering) as supplement to „Instruction to Bidders“ as available in Annexure-I of the tender document. Submission of Bids only through online process is mandatory for this Tender.

For conducting electronic tendering, Directorate General of Hydrocarbons, Noida is using the **Central Public Procurement Portal (CPPP)**(<http://www.eprocure.gov.in>) of NIC, a Government of India Undertaking.

1. Tender Bidding Methodology:

Sealed Bid System –Two Envelopes.

Financial & Techno-commercial bids shall be submitted by the bidder at the same time.

2. Broad outline of activities from Bidders prospective:

- i) Procure a Digital Signing Certificate (DSC).
- ii) Register on Central Public Procurement Portal (CPPP).
- iii) Create Users and assign roles on CPPP.
- iv) View Notice Inviting Tender (NIT) on CPPP.
- v) Download Official Copy of Tender Documents from CPPP.
- vi) Prepare & arrange all document/paper for submission of bid online/offline.
- vii) Bid-Submission on CPPP.
- viii) Attend Public Online Tender Opening Event (TOE) on CPPP (Opening of Techno-Commercial Part).
- ix) Attend Public Online Tender Opening Event (TOE) on CPPP (Opening of Financial-Part) {only for Technically Responsive Bidders}

3. Digital Certificates:

For participation in e-tendering, it is mandatory for all bidders to have a Digital Certificate (DC) also referred to as Digital Signature Certificate (DSC), of Class 2 or above (in the name of person who will sign the Bid), issued by a Certifying Authority (CA) licensed by Controller of Certifying Authorities (CCA) [refer <http://www.cca.gov.in>].

4. Registration:

To use the Central Public Procurement Portal (<http://www.eprocure.gov.in>), bidder needs to register on the portal. The bidder should visit the home-page of the portal (www.eprocure.gov.in) and go to the e-procure link then go to “Online Bidder Enrollment”.

5. Bid related information for this Tender (Sealed Bid):

The entire bid-submission would be online on CPPP (<http://www.eprocure.gov.in>) Broad outline of submission are as follows:

- (I) Submission of Bid Security (EMD).
- (II) Submission of digitally signed copy of Tender Documents/ Addendum/Corrigendum.
- (III) Two Envelopes.
 - Techno- Commercial Bid
 - Financial Bid

6. Offline submissions of some documents:

It is mandatory for all bidders to submit following documents offline (physically) to HOD (MM), Grd Floor, DGH office, OADB Bhawan, Sector-73, Noida-201301 on or before the date & time of bids closing as specified in NIT of this tender document, in a properly sealed envelope:

- (I) DD/ Bid Bond (In Original) for EMD (Bid Security).
- (II) Power of Attorney (in Original) for authorized signatory of bid.

(III) Any other document, if specified, in the tender.

The envelope shall bear the name of the firm, tender number, name of work and the phrase — Do Not Open Before (Due date & time of opening of tender) —

Note:

- A. The responsibility for ensuring that envelope is delivered in time would be vested with the bidder. The DGH shall not be responsible if the envelope is delivered elsewhere or late.
- B. Document submitted physically to DGH and the scanned copies furnished at the time of online bid submission should be the same otherwise the bid will be summarily rejected.

7. Other Instructions:

For participating in this tender online, the following instructions are to be read carefully. These instructions are supplemented with more detailed guidelines on the relevant screens of the CPPP.

The bidder should visit the home-page of the CPP portal (www.eprocure.gov.in), and go to the link “eprocure”, then “Bidders Manual Kit” and “Help for Contractors” link.

- (I) Please take care to scan documents that total size of documents to be uploaded remains minimum. If required, documents may be scanned at lower resolutions say at 150 dpi. However, it shall be sole responsibility of bidder that the uploaded documents remain legible.
- (II) Utmost care may be taken to name the files/documents to be uploaded on CPPP. These should be no special character or space in the name of file.
- (III) It is advised that all the documents to be submitted (See Appendix-9 at Annexure-I of tender document) are kept scanned or converted to PDF format in a separate folder on your computer before starting online submission.
- (IV) Utmost care may kindly be taken to upload **Price schedule/ Price Format / BOQ/ BOM**. Any change in the format of price schedule / BOQ file shall render it unfit for bidding. Following steps may be followed:
 - a. Download Price schedule /Price format/ BOM/ BOQ in XLS format.
 - b. Fill rates in downloaded price schedule / BOQ as specified in XLS format only in sky blue background cells. Don't fill in white background cells.
 - c. BOQ/BOM file is password protected XLS file. Don't unprotect the file. Price has to be filled in the same file and the same has to be uploaded.
 - d. Save filled copy of downloaded BOM/BOQ file in your computer and remember its name & location for uploading correct file (duly filled in) when required.
- (V) The compatible support software (PDF Converter, Java, etc.) for online bid submission may be downloaded from CPP Portal.
- (VI) If some document is not applicable for the bidder then he has to upload scanned copy of paper mentioning, The document <name> called vide clause _____ is not applicable on us.
- (VII) If document asked for contains more than one page then all those pages may be uploaded in one PDF file.

PRE CONTRACT INTEGRITY PACT

General

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on ____ day of the month of ____ 2019, between, on one hand, through Shri. , Head of Department (Materials Management/____) Directorate General of Hydrocarbons (hereinafter called the "BUYER", which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s_____ represented by Shri _____, Designation of person Chief Executive Officer (hereinafter called the "BIDDER/Seller" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to procure (Name of the Stores/Equipment/Item) and the BIDDER/Seller is willing to offer/has offered the stores and

WHEREAS the BIDDER is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER is a Ministry/Department of the Government of India/PSU performing its functions on behalf of the President of India.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to :-

Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into, this Integrity Pact and agree as follows:

Commitments of the BUYER

- 1.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.
- 1.2 The BUYER will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.

1.3 All the officials of the BUYER will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

2. In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.

Commitments of BIDDERS

3. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following: -

3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organisation or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

3.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or dis favour to any person in relation to the contract or any other contract with, the Government.

3.3* BIDDERS shall disclose the name and address of agents and representatives and Indian BIDDERS shall disclose their foreign principals or associates.

3.4* BIDDERS shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.

3.5* The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacturer/integrator/authorised government sponsored export entity of the stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

3.6 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

3.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

3.9 The BIDDER shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information · provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.

3.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filing of tender.

The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act 1956.

3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

4. Previous Transgression

4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.

4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

5. Earnest Money (Security Deposit)

5.1 While submitting commercial bid, the BIDDER shall deposit an amount ____ (to be specified in RFP) as Earnest Money/Security Deposit, with the BUYER through any of the following instruments:

- (i) Bank Draft or a Pay Order in favour of _____
- (ii) A confirmed guarantee by an Indian Nationalised Bank, promising payment of the guaranteed sum to the BUYER on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the BUYER shall be treated as conclusive proof of payment.
- (iii) Any other mode or through any other instrument (to be specified in the RFP).

5.2 The Earnest Money/Security Deposit shall be valid upto a period of five years or the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and the BUYER, including warranty period, whichever is later.

5.3 In case of the successful BIDDER as per clause incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

5.4 No interest shall be payable by the BUYER to the BIDDER on Earnest Money/Security Deposit for the period of its currency.

6. Sanctions for Violations

6.1 Any breach of the aforesaid provisions by the BIDDER or anyone employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required: -

(i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.

(ii) The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.

(iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.

(iv) To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilised to recover the aforesaid sum and interest.

(v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.

(vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

(vii) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the BUYER.

(viii) To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.

(ix) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.

(x) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

6.2 The BUYER will be entitled to take all or any of the actions mentioned at para 6.1 (i) to (x) of this Pact also on the Commission by the BIDDER or anyone employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.

6.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.

7. Fall Clause

7.1 The BIDDER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub systems was supplied by the BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

8. Independent Monitor/s

8.1 The BUYER has appointed Mr Siva Prasad Rao Ex-MD, SAIL as Independent Monitor (hereinafter referred to as Monitor) for this Pact in consultation with the Central Vigilance Commission. Contact Details of Independent Monitor are as under:

E-Mail: sivaprasadrao1950@gmail.com

(Communications can also be concurrently addressed to)

IEM Office C/o HoD(IT) -IEM Coordinator
Directorate General of Hydrocarbons,
OIDB Bhawan, Tower –A, Plot No 2, Sector -73, Noida-201301.

8.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

8.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

8.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project procurement, including minutes of meetings.

8.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.

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

8.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

8.8 The Monitor will submit a written report to the designated Authority of BUYER/Secretary in the Department/ within 8 to 10 weeks from the date of reference or intimation to him by the BUYER / BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

9. Facilitation of Investigation

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

10. Law and Place of Jurisdiction

This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat of the BUYER.

11. Other Legal Actions

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

12. Validity

12.1 The validity of this Integrity Pact shall be from date of its signing and extended upto 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

12.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

13. The parties hereby sign this Integrity Pact, at _____ on _____

BUYER

BIDDER

Name of the Officer.

CHIEF EXECUTIVE OFFICER

Designation

Directorate General of Hydrocarbons.

Witness

1. _____

2. _____

Witness

1. _____

2. _____

* Provisions of these clauses could be amended/ deleted for applicability in respective tender by DGH.