

Queries and their response related to commercial aspect

Response to Queries raised by participants during Pre-bid meeting on 13 Sept 2019 (IPR/TN/PUR/TPT/19-20/26)		
Sr. No.	Query/question	IPR Response
1	Contract value and basic value are same for bank guarantee purpose? Tax excluded?	For advance payment the bank guarantee shall be ex work cost and without tax.
2	60 % of payment is released after which stage?	60% of basic cost + 100 % other charges shall be released after site acceptance of delivery. Refer point no. 8 of deferred terms and condition.
3	Clarify the content of scope for Ex Works Price (cost)	Refer point no. 4 of deferred terms and condition and Bid format document.
4	For procurement of all bulk chambers, will it be new tender?	Query is out of scope of this tender at this stage.
5	UNDER ELIGIBILITY CRITERIA – It is mentioned that access to clean room facility of class 1 lakh is necessary. Under this criteria can dust restricted area be considered for eligibility	Documentary evidence for access to specified clean room shall be submitted along with bid documents as mentioned in Essential eligibility criteria. Mere dust restricted area is not valid.
6	Is there provision for any advance? Advance only against milestones	Advance payment is as mentioned in terms and condition at predefined stage against bank guarantee. Refer point no. 8 of deferred terms and condition.
7	Technical specifications 13.4, it is preferable to avoid splitting of BSC and HAM in order to offer the best price. If it's really desired we propose offering 2 different prices: 1. Unit price of BSC and HAM, if split between bidders. 2. Unit price of BSC and HAM, if both awarded to same bidder. Please confirm if same is acceptable. Also let us know what will be the impact on delivery period if BSC and HAM are split between two vendors.	Vendor shall submit their prices quote as per Price Bid Format included in this tender document. No other format is acceptable and may be rejected Vendor shall be shortlisted based on the terms and conditions mentioned in the tender document. Delivery period shall remain unchanged.
8	Can due date for submission of Tender bids be extended by 2 to 3 weeks	Vendor shall follow the time line included in the tender notice and tender document.
9	For prototype category work, there is upper limit of order value of Rs. 50000/- Clarify it.	Not applicable for procurement under this tender

Queries and their response related to technical aspect

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Sr. No.	Query/question	IPR Response
1	Demonstration of UHV, is it vendor's responsibility to arrange necessary equipment and hardware?	Yes. But those equipment's are not part of deliverables.
2	During transportation the 1.2 bar pressure is absolute pressure or gauge pressure	1.2 bar absolute pressure
3	To use standard thickness material what is critical dimension to look for material availability in the market? Can material thickness vary compared to that mentioned in drawings, especially on lower side?	Inner dimensions are critical to maintain for circular shaped components. If there is any change in material thickness on higher side, evaluation of its design implications on support structure shall be in scope of vendor. Choice of thickness on lower side will need justification along with associated design calculations and necessary analysis.
4	How the technical know-how developed by successful bidder is going to be continued in the next phase of chamber manufacturing	Query is unsolicited to the scope of this tender specifications
5	Which Activities shall be performed in the clean room area	Welding, Storage, Assembly, Testing and Packing before delivery are performed in clean room area
6	Vacuum demonstration is done how many times - at Factory and Site?	Vacuum demonstration to 1×10^{-9} mbar or better shall be done at factory during FAT. This is only time when the vacuum demonstration is performed
7	Is baking mandatory for demonstration of ultimate vacuum of the order of 10^{-9} mbar achievement	Baking is in aid to achieve UHV in chamber and is regular practice used in ultra-high vacuum applications
8	Shell material which is specified as Dual grade SS 304 / SS 304L material, which grade material should be used if dual grade is not available - SS 304 or SS 304L	Follow the specification mentioned in the tender document.
9	All weld material qualification is as per ASME section IX, except special welding. What is this special welding?	If any weld joint and welding procedure not specified in ASME, if identified shall be performed with mutual agreement
10	Why video recording of 1 hour is needed?	Video recording and its submission as deliverable is mandatory. Requirement of records as deliverables is included to store necessary information of manufacturing archived in different formats, and video recording is one of them.
11	Is the detector similar to LIGO US?	This question is not related to scope of work
12	Bellow specs are not provided in the drawings/tech specs.	Specs are included in the drawings provided along with tender documents. Material for construction is SS 304 L grade stainless steel in CRAP grade finish
13	For material procurement specification -	Best preferred option is VAR, then VOD.

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	melting process - all VOD, AOD and VAR are compulsory or any of them is acceptable?	Refer Annexure 1
14	HAM Drawings, Is metallic bellow in supplier's scope of FIM? If bellow is not FIM, please suggest approved supplier, if any. Please share technical requirements for the bellows.	Bellow is not a FIM from IPR. Bellow shall be manufactured as per drawing (VH01-005-R1, Sheet 5) provided. The bellow material shall be of ASTM SA240 standard in Cold rolled Annealed and Pickled (CRAP) finish.
15	Any special cleaning process required? Like Electro-polishing or Ultrasonic cleaning?	Follow the cleaning procedure as mentioned in the annexure 4 and 7. Any deviations, need prior approval
16	Annexure-4, What is the extent of design analysis required?	Refer to point no. 10.2 of technical specification.
17	VB01-001-R1, What is the material of O-rings/gaskets to be used with CF flanges? Are dimensions and technical details finalized? If yes, please share.	Refer to table no. 2 & 3 of technical specifications
18	Drawings of BSC and HAM, Due to large component sizes we understand that – 1. Any shell with developed length > 6000 mm will require additional long seam welds. 2. Any shell with length more than >1250mm will require additional circular seam welds. 3. F&D dished ends with blank diameter of >1250 mm will have long seam joints. 4. Flanges and other ring like components will be manufactured from 3-4 sectors.	Follow the standard manufacturing process, codes & standards and vacuum practices for systems operating in UHV environment Use of plates / sheets of higher size as much as possible
19	Technical specifications #10.2, - If vendor is using Autodesk Inventor, AutoCAD and PTC Creo at his works, can he supply 3D models in neutral (STEP/Parasolid/IGES/AutoCAD) format if required; we will supply drawings in PDF format? Please confirm if it's acceptable.	Refer to point no 10.2 and 10.3 of technical specification
20	Technical specifications #4.1, Please recommend a machining process to achieve surface finish of 0.8 Ra without Grinding/lapping on seal grooves.	For the surface requirement refer the drawings of Flanges and Annexure #2. Vendor need to look into the need and shall propose appropriate procedures in their technical part of the bids
21	Is it safe to understand that no site-work is in the scope of vendor? (e.g. baking at site, commissioning at site etc.)	Refer to point no 3 of technical specification, which specifies necessity
22	VB01-008-R1, Please share approved make/technical specifications for hoses and tubing.	Vendor shall propose the choices based on the specification provided in the tender document
23	VB01-001-R1, Who are the approved suppliers for ConFlat flanges?	Vendor are free to select the supplier and choose to meet the specifications as included

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		in the tender documents
24	Drawings, Any mandatory process required for F&D Dish end manufacturing? Or supplier can select the process?	Vendor shall decide based on the specification provided in the tender document
25	Technical specifications 4.2, Are there any approved supplier for machining fluid?	Vendor are free to select the supplier and choose to meet the specifications as included in the tender documents
26	Technical specifications Annexure-1: #3 - Plasma arc welding is mandatory or just an alternative? We have qualified SMAW/GTAW/TIG processes available.	Plasma arc welding is not mandatory. Refer Annexure 3
27	If 3D models are available please share them, as it will speed up process of estimating cost.	IPR cannot share them at this stage
28	VB01-004-R1, What is the grade of aluminium used in floor assembly? Our understanding is that it's standard Al 6061 12 inch C channels. But these aren't easily available in India. Is IPR open for changes in dimensions?	Refer drawing VB01-004-R1 and section C of Annexure 1. IPR can't change the dimension at this stage.
29	Technical specifications 5.1 Table #2, Row #6, Please let us know the approved sources for silver plated fasteners.	Vendor are free to select the supplier and choose to meet the specifications as included in the tender documents
30	What is limit on the long seam and circumferential seam during fabrication of chamber shell and dished end	Follow the standard manufacturing process, codes & standards and vacuum practices. Long seam and circumferential seam are allowed, allowed number shall be mutually agreed at appropriated stage. Welding shall be optimised to keep it minimum from the requirement of UHV needs
31	Fabrication and welding will be in class 100000?	Yes, Except machining other task shall be performed in clean room area.
32	FTIR Test to assess quality of cleanliness is required? Is it in vendor scope?	FTIR analysis shall be in the scope of vendor, as mentioned in the tender documents. Yes
33	Is Third party inspection involved in this contract?	Will be decided by IPR.
34	Is there any time limit specified for the achievement of ultimate vacuum during demonstration of 10^{-9} Mbar Vac for both chambers	No specific time duration has been mentioned. It is desirable that, ultimate vacuum is achieved in least possible time. The vendor shall provide a pump down curve (pressure vs. time) for the pump-down procedure, which he would follow in vacuum demonstrate during FAT
35	O-Ring groove, the surface finish of 0.8 rms is mandatory? How it will be measured?	Surface finish is as mentioned in drawing. For measurement vendor is free to choose the method and tool.
36	Standard flanges shall be manufactured or procured from outside agency? What type of material test certificate is needed?	Material test certificate provided by supplier of standard bought out items should be provided.

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		Material traceability need to ensure and maintained. This is one of the major requirements
37	In page 6 of 75 & page 7 of 75 for BSC & HAM chamber, Provide the openings for feed-through that are necessary for the attachment of vacuum pump, pressure gauge, RGA, other control instruments installation requirement. But in annexure 7, Page 59 of 75 in point no. 4, Pumping system & associated gauges (scope of supply). The vacuum pumps, vacuum monitoring gauges, leak detectors, residual gas analyser will be made available by vendor during leak testing and vacuum pumping, Please clarify that the vacuum pumping system is in scope of supply or IPR scope, Please not that the achieving the vacuum level of 1×10^{-9} mbar is difficult with this higher chamber volume	There are no specific ports specified in BSC and HAM chamber for attachment of vacuum equipment. Vendor can use any port as per their convenience, during testing from their experienced judgement Though the arrangement of necessary equipment's for vacuum leak test and vacuum demonstration are in scope of vendor, they are not part of deliverables
38	In annexure 7, page 60 of 75 in point # 8, Annulus space between two "O" ring is to be pumped down to less than 1×10^{-5} mbar pressure using ion pump, Please clarify why ion pump is required why not diffusion pump for creating vacuum level 1×10^{-5} mbar. Please clarify that the vacuum pumping system is in scope of supply or IPR scope	Ion pump is preferable, but vendor can use other oil free vacuum pump which shall not contaminate the UHV side. Vacuum pumping system is not in IPR scope of supply. Vacuum equipment used during testing by vendor are not part of deliverables.
39	For vacuum demo pumps combination is in scope of vendor?	Yes
40	Annexure 6 point # 4 clarification required and clause no 12, bullet point #2	ASTM-E498 code is for standard test methods for leak testing using mass spectrometer leak detector and ASNT is for personal qualification.
41	Two to three types of flanges DN 63, DN 100 which does has the reference	Follow the specification mentioned in the tender document.
42	Annexure 5: Section #4.2	Follow the specification in Annexure 2 and Annexure 5
43	Existing PQR, WPQ and PWQ can be used for work of this tender?	Vendor shall follow the ASME Section IX code for welding as per their applicability covering scope of work
44	What is difference between MIP and QAP	MIP -Manufacturing and inspection plan & QAP - Quality Assurance Plan
45	Will soft copies of drawings be provided in CATIA CAD format? Is this acceptable?	CAD format for deliverables of drawings is as specified in documents
46	Is heating necessary for chambers during vacuum leak testing	No
47	Annexure-6, section #4; section #12 - confusing input on ASNT Level III need	ASTM-E498 code is for standard test methods for leak testing using mass spectrometer leak

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		<p>detector. ASNT is for personal qualification. ASNT level II is for testing and ASNT III for qualification of operations</p>
48	<p>Regarding standard bought out items, for requirement of the material test certificate what is to be submitted?</p>	<p>Material test certificate provided by supplier of standard bought out items should be provided. Material traceability need to ensure and maintained</p>
49	<p>When Mill certificate for raw material procured is submitted, further local testing by vendor is mandatory?</p>	<p>Mill certificate by raw material producer is sufficient. To cross verify purchaser shall take specimen from the procured material. It is recommended that vendor also should check the material at his end to ensure the material quality.</p>
50	<p>Annexure-1 #6, forging material chemical composition of Sulfur 0.006% (max) is mandatory?</p>	<p>Content of Sulfur - 0.03 (Max) is as per ASTM standard (SA 182) chemical composition for forging. But LIGO specification for Sulfur is 0.006 (MAX) in forged material.</p>
51	<p>Heat treatment for bought out O-ring is to be performed again, if manufacturer of 'O' ring has performed it and certified it for the supply</p>	<p>As per UHV practice, it is recommended prior to its usage in application</p>
52	<p>Annexure 3: Sec #4 - PQR and Annexure 5: Sec #4 - clarify if the current and voltage need to be monitored during production welding</p>	<p>Recording of these parameter is not a continuous but in certain intervals</p>