

9th Aug 2023

Minutes of the meeting held on 9th Aug 2023 as prebid conference for procurement of LPBF machine as per Tender no: Pur/EQP/34/(2023-24)

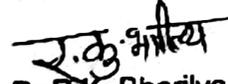
Companies that attended the prebid meeting:

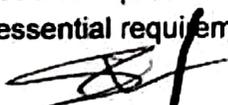
1. 3D Engineering (Intech additive)
2. Shreerapid (3D systems)
3. Philipscorp (EOS)
4. Adroitec (SLM Soln)
5. Machine Tools India Ltd (Trumpf)

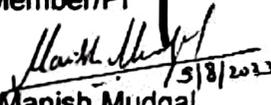
In the presence of the members of the TSC committee, Dr. P. Asokan, Dr I.A. Palani, domain expert (external member), Dr Md Akram Khan, Member, Dr. Manish Mudgal, Member, Dr. R.K. Bharilya, Member, Dr. N. Sathish, member/PI, Dr Abhishek Pandey, member/Indentor and Ashok Yadav, SPO attended the meeting. All the queries from the vendors were attended and clarifications were made as per attached annexure A. Also, after discussion with the vendors following changes were approved by the committee:

1. Removal of point A1.1- Extension of z-axis up to 125mm. With discussion with all the OEM this point was removed and TSC committee approved it.
2. Extension of 1 week to submit report for repeatability and reproducibility test mentioned in the other essential requirements. *CI week tender date extension provided dt. Scanned Signature attached*

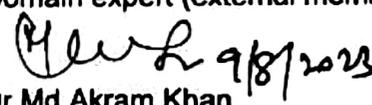

Dr. Abhishek Pandey
Member/Indentor


Dr R.K. Bharilya
Member


Dr N.Sathish
Member/PI


Dr Manish Mudgal
Member

Prof I.A. Palani
Domain expert (external member)


Dr Md Akram Khan
Member


Dr F. Asokan
Chairman TSC

Queries raised by potential bidders for prebid conference:

3D engineering				
Point mentioned in specification			Query	Reply
A1.9	Maximum permissible label of oxygen in the chamber for printing	100ppm	1000 ppm	Can't be negotiated as machine will be used for reactive materials
A6.	Accessories	<ul style="list-style-type: none"> • Closed automatic powder filling station attached with sieving station to avoid any direct powder contact. 	Sieving Station: Please clarify the exact process/operation you are expecting from this accessory?	After printing, the de-powdering of loose powder needs to be done in a closed chamber which needs to be attached directly to the sieving system to recover the powder and it will avoid any human contact with powder.
		<ul style="list-style-type: none"> • Closed, automatic de-powdering station to remove powder from printed parts with provision to internally connect it to sieving machine to recover and reuse the left over powders. 	Depowdering/Recovery Station: Please clarify the exact process/operation you are expecting from this accessory?	After printing, the de-powdering needs to be done in a closed chamber which needs to be attached directly to the sieving system to recover the powder.
A9.	Industrial Design Tool		Please clarify on this requirement??	Essential: These softwares are essential for us for design and
A10	Concept Level design Tool		Please clarify on this requirement??	

				testing our specimens before printing.
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COMMERICAL CLARIFICATION

Other essential Requirements (Pg 54): Part of Chapter 4

AMC	<ul style="list-style-type: none"> • 2 year comprehensive warranty after installation which will include parts and labor charges if any. • Quotation for 2 years of AMC after expiration of comprehensive warranty. 	Please clarify?? Where to add the quotation? BOQ states (one year extended warranty & two years comprehensiv AMC) or as per 5.1: PRICE SCHEDULE document. Multiple Pointers in diffrent document.?	Clarified
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CHECKLIST for OEM - ANNEXURE XIV

Price certificate	"Certified that rates quoted are not higher than the rates quoted for the same / similar equipment / item charged to any other govt. organization / PSUs / CSIR Labs".	Please clarify??	Clarified
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SRT (3D systems)			
Point mentioned in specification		Query	Reply
Point No. A1.8	Filter System: The system should have double filters mounted externally so that it can be changed without interrupting build process.		This arrangement is requested for smooth functioning of the machine and if one filter is full we do not need to change the filter, when the machine is in operation. Any operator can switch to another filter from outside.
Point No: A6	Accessories: Closed, automatic de-powdering station to remove powder from printed parts with provision to internally connect it to sieving machine to recover and reuse the left-over powders.		After printing, the de-powdering of loose powder needs to be done in a closed chamber which needs to be attached directly to the sieving system to recover the powder and it will avoid any human contact with powder.
Point No: A7	Laser power measurement system: To measure the laser power directly in the process chamber before and after a job with the following specifications and suitable holder	Explanation	A system to display the power being used inside the chamber.
Other essential requirements:	Repeatability and reproducibility test: This instrument is very costly and is being purchased from public money, so it is in public interest to make sure that money is invested at right place. Therefore, it is essential for the	Explanation	Supplier needs to print the tensile specimen as per ASTM standard from 4 different printers he has supplied under same parameter. The tensile testing is needed to be done in a NABL or BIS accredited lab, and

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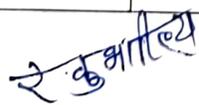
र. क. शर्मा

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	<p>manufacturer to provide report for 316L stainless steels (tensile specimen as per any ASTM standard), printed using at least 4 different printers. The token samples are needs to be printed with same parameters (manufacturer can use their optimized parameters). The printed samples are needed to be tested in NABL or BIS accredited laboratory and reports are need to be attached with technical bid document. After installation, the supplier also has to print same token sample at AMPRI and acceptable variation is 10%.</p>		<p>the test results are needed to be uploaded with technical bid document. The acceptable variation in tensile properties in 10%.</p>
	<p>Manufacturer has to provide complete set up furniture .</p>	<p>Which Type furniture needed pl explain</p>	<p>Any furniture which may be required to install equipment mentioned in the tender. For example a table for installation of microscope and its computer. The tenderer will only provide a suitable closed space with power connections.</p>









Philips India (EOS)			
Point mentioned in specification		Query	Reply
Point No : A1.1:	Extension of Z axis upto 125 mm. Kindly remove this point , as it is not recommended, and it is specific to few vendors, leading to very limited participation.	Additionally, this will affect the performance of the machine over the period of time.	This point was removed after discussion with vendors in prebid meeting.
Point No A9 and A10:	Industrial Design Tool; Concept level design tool	These softwares are not essential to operate and run the metal 3D printing machine. Theses software are required for designing the parts and not required to operate the 3D printing machine. Essential softwares are already added in specification.	These softwares are essential for us for design and testing our specimens before printing.







Adroidtec (SLM Solutions)			
Point mentioned in specification		Query	Reply
A1.1	Extension Z-Axis up to 125 mm	(We request you to clarify on the Point)	This point was removed after discussion with vendors in prebid meeting.
A9 and A10	Industrial Design Tool; Concept level design tool	The section belongs to software (We need to Know your Preference)	We do not have any preferred software. Any make software should be able to provide this
A6 -		What is the Exact Requirement in De Powdering Station?	After printing, the de-powdering of loose powder needs to be done in a closed chamber which needs to be attached directly to the sieving system to recover the powder and it will avoid any human contact with powder.
A7 -	Laser power measurement system:	Laser Power Measure: Need some Clarification	A system to display the power being used inside the chamber.

Each vendor requested for date extension to submit the report for repeatability and reproducibility test mentioned in the other essential requirements. One week extension was provided to the vendors to submit the report.





