

PROCEEDINGS OF THE PRE-BID CONFERENCE HELD 20TH DECEMBER 2022 THROUGH WEBEX, TOWARDS PROCUREMENT OF LASER TRACKER UNDER BUY-BACK SCHEME.

The Pre-bid Conference was held and the following T&PC members attended the meeting: -

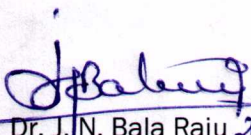
Sl. No.	Name & Designation		Role
1	Dr. Ramesh Kumar. M	Chief Scientist, ACD	Chairman
2	Dr. Soumendu Jana	Chief Scientist/PR	Member
3	Dr. J. N. Balaraju	Sr. Principal Scientist / SED	Member
4	Mr. Sunil Prasad	Sr. Scientist/ACD ALD	Member
5	Mr. R. Suresh	Principal Scientist	Member - Convener (TSC)

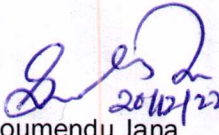
The list of Prospective bidders who attended the Pre-bid Conference is as per Annexure-I.

At the outset, the Chairman welcomed all the Members and the representatives of the Bidders and briefed in general the scope of the Project. The Indenting Officer to read out the clarification sought by the bidders and the replied there to as detailed in **Annexure-II (Part A: Technical Clarification and Part B: Commercial Clarification, if any).**

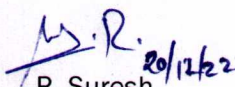
The representatives present were satisfied with the replies given and it was informed that the corrections / additions / clarifications given, as discussed during the Pre-Bid Conference would be hosted on the website of CSIR-NAL and all prospective bidders are required to take cognizance of the proceedings of the Pre-Bid Conference before formulating and submitting their bids as stipulated in bidding Documents.

The meeting ended with a vote of thanks to the Chair.


Dr. J. N. Bala Raju 20/12/22
Member


Dr. Soumendu Jana 20/12/22
Member


Sunil Prasad 20/12/22
Member


R. Suresh 20/12/22
Member - Convener (TSC)


Dr. Ramesh Kumar 20/12/22
Chairman-T&PC

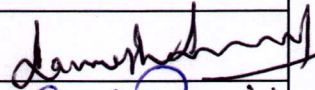

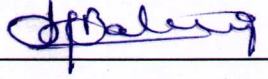
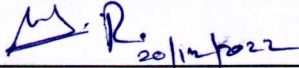
CSIR-NATIONAL AEROSPACE LABORATORIES
BENGALURU - 560 017

TENDER NO.: NAL/PUR/APMF/029/22-Z
DATE & TIME : 20-Dec-2022 @ 11.00 AM
VENUE: THROUGH WEBEX

ANNEXURE - I

Pre-Bid Conference for Procurement of Laser Tracker Under Buy-back Scheme.

ATTENDANCE SHEET - T&PC MEMBERS

Sr. No.	Name			Signature
1	Dr. Ramesh Kumar. M	Chief Scientist, ACD	Chairman	
2	Dr. Soumendu Jana	Chief Scientist/PR	Member	
3	Dr. J. N. Balaraju	Sr. Principal Scientist / SED	Member	
4	Mr. Sunil Prasad	Sr. Scientist/ALD	Member	
5	Mr. R. Suresh	Principal Scientist	Member - Convener (TSC)	 20/12/2022

**NATIONAL AEROSPACE LABORATORIES
BENGALURU - 560 017**

TENDER NO.: NAL/PUR/APMF/029/22-Z

DATE & TIME :20-Dec-2022 @ 11.00 AM

VENUE: THROUGH WEBEX, CSIR-NAL, HAL Airport Road, Kodihalli, Bengaluru-560017

ANNEXURE - I

Pre-Bid Conference for Procurement of Laser Tracker Under Buy-back Scheme.

Sr. No.	Name of the Firm	Name & Designation of Representative	E-tender Registration (Yes/No)	Email ID	Signature
1	FARRO	Nagaraja, from MAPPA representing FARRO		nagaraja@mappa.co.in nagaraja@mappaconsultants.com	
2	API India	Vaibhav Shah		viabhav.shah@apimetrology.com	

**CSIR-NATIONAL AEROSPACE LABORATORIES
BENGALURU**

DEC, 20, 2022

TECHNICAL QUERIES & CLARIFICATION

Tender No. : NAL/PUR/APMF/029/22-Z
Item Description : Procurement of Laser Tracker Under Buy-back Scheme.

Sr. No.	Query / Clarification Sought	Clarification/Amendment
1	Chapter 4 – 4.2 Detailed Specifications under 6.0 General Conditions - 6.5 support for spares cannot be committed by the Indian Representative	This point is w.r.t the OEM, i.e. the vendor to whom the PO will be placed, he has to confirm and provide the required support. NO CHANGE required
2	4.2 Detailed Specifications 1.35 & 1.36 (also in list of deliverables 8 & 9) - Red Ring Reflector - To be changed to a general term	to be changed to <i>Spherical Mounting Reflector</i>
3	1.33 (also in list of deliverables 5) - External Temperature Sensor - Clarity required	To be change to "External Temperature Sensor for job "
4	List of deliverables – 10 - Height Adjustable Tripod - Height to be mentioned	4ft to 8 ft (to be added)
5	1.15 - Vendor should supply two sets (1 set consists of 2 nos. batteries) of suitable rechargeable batteries with power backup of 5 to 6 hours per battery - Requested to change it as <i>sealed battery with external power bank</i>	Have communicated to give his configuration for consideration. NO CHANGE required.
6	1.3 - Adopting IMF or ADM technology - Requested to make IMF compulsory	Whether IMF/ADM, the vendor has to prove the desired accuracy. NO CHANGE required.
7	1.4 and 1.37 (List of deliverables 15) - Software Polyworks - Polyworks mandatory or any compatible software can be considered	Re-iterated that Polyworks is mandatory and of latest version. NO CHANGE required
8	5.3 - Distance Accuracy (Range Test) - Range Test to be removed as it is confusing	To be changed to Distance Accuracy (<i>inline distance measurement</i>) Requirement also to be changed to <i>Vendor to Specify</i>
9	4.2 Detailed Specifications – 7.1	Range - First two bullets to be merged into one point
10	4.2 Detailed Specifications – 7.3	New Bullet to be added – <i>Dimensional & CAD model inspection of a part or mould provided by CSIR-NAL to be carried out at CSIR-NAL and Inspection Report generated.</i>
11	4.2 Detailed Spec. – 4.4 Acceptance Test 7.4	New point to be added – <i>All accuracies should be proved for both 0.5" and 1.5" SMR in Technical Evaluation and Acceptance Test.</i>

12	4.2 Detailed Specifications – 6.2	New Point to be added - <i>As part of the Technical bid evaluation, the Vendor has to demonstrate the quoted model and prove out the measurement capabilities & accuracy as per 7.0 of this document at CSIR-NAL on mutually agreed date & time.</i>
13	4.7 Buy Back Details	In the equipment description the model company name <i>Leica</i> to be added

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Leica

Chapter 4

Specifications and Allied Technical Details for Procurement Of Laser Tracker

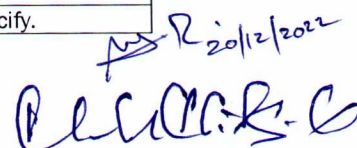
4.1 **End Use:** For Setting and Inspection of aircraft subassembly and assembly jigs, ICY gauges, Tooling, Moulds and certification activities related to aerospace projects of CSIR-NAL.

4.2 Detailed Specifications

Sl. No	Description	Requirement/specification
1.0	<u>Equipment Configuration & Construction Requirements</u>	
1.1	The equipment should be capable of on-site dimensional measurement using contact type probing	Required, Vendor to specify
1.2	Should support Contact Measurement using Spherical Mounted Reflector (SMR).	Required, Vendor to specify
1.3	System should be capable of measuring in static and dynamic modes adopting IFM (Interferometer method) or ADM (Absolute distance meter) technology.	Required, Vendor to specify
1.4	Laser Tracker should be configured and made compatible to work with POLYWORKS (Inspection) software. (Polyworks software version details will be provided at the time of placement of purchase order)	Required, Vendor to specify
1.5	The Tracker should be of robust construction and have excellent thermal stability and vibration isolation.	Required, Vendor to specify
1.6	The system should recognize and acquire the target automatically. As target moves, Laser tracker head should continuously track the target to acquire coordinates.	Required, Vendor to specify
1.7	If the tracking beam is interrupted during the measurement using SMR, it should be capable of re-acquiring the beam with target.	Required, Vendor to specify
1.8	Integrated video camera for easy and quick tracking and locking of target on job required.	Required, Vendor to to provide details
1.9	Environmental monitoring and compensation unit for system and job required.	Required, Vendor to to provide details
1.10	Laser Tracker should be capable of operating in the temperature range of 0° to 45 °C	Required, Vendor to to provide details
1.11	The system should provide information about itself, environment and other parameters before it becomes critical. The system should be self-diagnostic to various parameters including excessive vibrations, elevated temperature, laser beam deviation, detecting a bad SMR and Laser intensity etc.,	Required, Vendor to to provide details
1.12	System should have unit that monitors and compensates Laser beam for changes in temperature, air pressure and relative humidity automatically.	Required, Vendor to to provide details
1.13	Laser warm up time for warm start \leq 5 minutes and cold start \leq 10 minutes or better. The system should provide alerts for laser warm up status	Required, Vendor to to provide details
1.14	Protection device are to be incorporated for the entire electrical system, control circuit, power distribution system and software.	Required, Vendor to to provide details
1.15	System should be supplied with all the necessary cables. Vendor should supply two sets (1 set consist of 2 No.s of batteries) of suitable rechargeable batteries with power backup of 5 to 6 hour per battery.	Required.
1.16	The tracker to operate using Radio Frequency remote and	Required.

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	connection should be wireless between tracker and laptop.	
1.17	Sturdy, water proof carrying cases and cart to accommodate all boxes at once should be supplied for transportation of the entire system. Wheels and telescopic handles to be provided for easy movement of carrying cases.	Required.
1.18	Controller should have the provision for accommodating new SMR's for future upgradation.	Vendor to provide details
1.19	Leveling equipment for gravity oriented measurements	Required.
1.20	Tracker tripod extensions (for raising the instrument to adjust the height)	Required.
1.21	Safety class and certification for Laser system	Vendor to provide details
1.22	The system should be able to operate in environment like hangars, shop floors etc. Details of operating environment, IP class and storage conditions.	Vendor to provide details
1.23	Tracker should be capable of being mounted on base stand, tripod, floor. The stand supplied should be stable during measurements and should not require application of glue or any other adhesive medium.	Vendor to provide details
1.24	The tracker should have versatile mounting options viz., should be able to measure in horizontal and vertical positions with quick release mechanisms.	Vendor to provide details
1.25	Periodicity of calibration	Vendor to provide details
1.26	On-line remote diagnostic of the system / on-line help for maintenance application throughout the machine life.	Vendor to provide details
1.27	Integrated weather station to auto compensate temperature, pressure and relative humidity. This capability should be a built-in feature and part of the system.	Vendor to provide details
1.28	Dynamic temperature updation.	Vendor to provide details
1.29	Tracker head	To be provided
1.30	Tracker Controller	To be provided
1.31	Power Supply Unit	To be provided
1.32	Connecting Cables	To be provided
1.33	External Temperature sensor for job	To be provided
1.34	Optical cleaning kit	To be provided
1.35	Spherical Mounting Reflector 0.5"	To be provided
1.36	Spherical Mounting Reflector 1.5"	To be provided
1.37	Polyworks-Inspection Software (Latest version)	To be provided
2.0	<u>LASER TRACKER SPECIFICATIONS</u>	
2.1	Horizontal envelope	$\pm 360^\circ$
2.2	Vertical Envelope	-50° to $+75^\circ$ or better
2.3	Measuring Distance using SMR	≥ 60 m or better
3.0	<u>OPERATING ENVIRONMENT</u>	
3.1	Temperature	0° to 45° C or better
3.2	Altitude	-700 m to +3000 m or better
3.3	Humidity	max. 85% non-condensing or better
3.4	Dust/Water resistance	Vendor to specify.

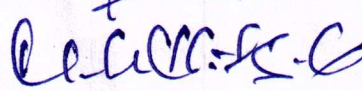


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4.0	ACCURACY	
4.1	All the accuracies specified should be "Maximum Permissible Error (MPE)" which is the extreme value of an error permitted for the equipment and all the measurement error should be guaranteed to be below this value.	Required.
4.2	The accuracies should be specified as a function of the distance between the tracker and the measured point / scale bar.	Required.
4.3	The vendor should quote the accuracy of the system in MPE only. The Standard followed should be ASME B89.4.19 / ISO 10360.	Required.
4.4	All accuracies should be proved for both 0.5" and 1.5" SMR in Technical Evaluation and Acceptance Test.	Required.
5.0	MEASUREMENT ACCURACY USING SMR	
5.1	Angle accuracy (Location test)	$\pm (15 \mu\text{m} + 6 \mu\text{m/m})$ or less
5.2	Length Accuracy (Length test)	$\pm (20 \mu\text{m} + 6 \mu\text{m/m})$ or less
5.3	Distance Accuracy (inline distance measurement)	Vendor to Specify
5.4	Repeatability	Vendor to specify
5.5	Resolution	0.1 μm or less.
5.6	Precision level Accuracy	± 2 arc sec or less
6.0	GENERAL CONDITIONS	
6.1	Vendor shall visit CSIR-NAL, Kodihalli, Bangalore before submission of the bid to assess the Leica Laser Tracker (LTD-600) with accessories as per Annexure - 2, which is identified under buy-back scheme.	Vendor to Confirm
6.2	As part of the Technical bid evaluation, the Vendor has to demonstrate the quoted model and prove out the measurement capabilities & accuracy as per 7.0 of this document at CSIR-NAL on mutually agreed date & time.	Vendor to Confirm
6.2	The Laser Tracker system supplied should carry comprehensive warranty (hardware and system software) for a period of five years after installation, commissioning by vendor and acceptance by CSIR-NAL, for defect free operation and specified accuracies. Any defect observed during the warranty period will have to be repaired / replaced free of cost with minimum down time. All costs incurred in handling, transportation, insurance, freight, taxes, duties etc., (both within India and abroad) during warranty period to be borne by the vendor.	Vendor to Confirm
6.3	If the equipment/accessory is out of order for more than 10 days, standby equipment has to be provided by the vendor. Warranty period has to be extended for the number of days the equipment remains out of order during the warranty period.	Vendor to Confirm
6.4	All relevant technical manuals and user manuals (Soft copy and one set of Hard copy) should be provided in English language.	Vendor to Confirm
6.5	Availability of spare parts to be assured and explicitly committed for at least TEN years after commissioning of the system.	Vendor to Confirm
6.6	The vendor in the quotation should mention Hardware and software features that are necessary in addition to the above features for effective performance of the Laser	Vendor to Confirm

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	Tracker system.	
6.7	Quotation should be item wise.	Vendor to Confirm
6.8	The supplier has to provide the complete catalogue of system with accessories.	Vendor to Confirm
6.9	Supplier has to provide complete details of Factory Acceptance Test including specified value, method of Test, Test results, Uncertainty of measurements and Certificate of Conformance.	Vendor to Confirm
6.10	The specified system shall be a catalogued item from the company with proven track record and all the relevant catalogues shall be enclosed in the bid.	Vendor to Confirm
6.11	The vendor shall furnish the list of companies in India with contact details to whom the similar systems have been supplied earlier.	Vendor to Confirm
6.12	Only Original Equipment manufacturer (OEM) of Laser tracker system and / or their respective authorized sale representative / agent / dealer / distributor can submit the offer. In case of such offer from any such vendor other than OEM., the copy of documentary evidence certifying – appointing – declaring such vendor as authorized by OEM has to be mandatorily submitted along with the offer without fail. The documentary evidence has to be valid on the date of submission of such offer and the date of cessation of validity of such certification to be mentioned in the same. It must be noted that such offers without above details of authorization and validity would not be considered for evaluation.	Vendor to Confirm
6.13	Point wise compliance statement to be provided clearly stating the specification of the offered product. Following format is to be submitted along with the technical proposal and relevant brochures to be provided.	Vendor to Confirm
6.15	Wherever numerical values are required to be quoted, vendor is requested to indicate actual value/range of values being offered for better appreciation.	Vendor to Confirm
6.16	Calibration certificate should be provided with traceability to International standards for the supplied Laser tracker System.	Vendor to Confirm
7.0	ACCEPTANCE TEST AT CSIR-NAL	
7.1	Range :	
	<ul style="list-style-type: none"> Mark distances at 20mtr, 40mtr and 60mtr respectively from the tracker using measuring tape. Place SMR at the marked distances and carry out the measurement and confirm the Laser beam range capability. 	Required, Please confirm
	<ul style="list-style-type: none"> Rotate the tracker head and evaluate the rotational angles for both vertical (-50° to +75°) and horizontal(±360°) modes of operation. 	Required, Please confirm
7.2	Repeatability	
	<ul style="list-style-type: none"> Measure a single point 10 times at 20mtr, 40mtr, 60mtr. 	Required, Please confirm
	<ul style="list-style-type: none"> Measure two points on the calibrated Scale bar 10 times at 20mtr, 40mtr, 60mtr to evaluate the distance repeatability.. 	Required, Please confirm
7.3	Accuracy	
	<ul style="list-style-type: none"> Length Accuracy : Measure distance between two SMR mounting positions on calibrated Scale bar placed horizontally and vertically at 20mtr, 40mtr, 60mtr away from the Laser Tracker 	Required, Please confirm

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	with Tracker head positioned at 0° and 90°. Accuracy should meet the requirements of $\pm (20 \mu\text{m} + 6 \mu\text{m/m})$ or better.	
	<ul style="list-style-type: none"> Angle Accuracy: measure a stationary SMR placed at 20mtr, 40mtr, 60mtr, away from the Laser Tracker by rotating the horizontal encoder 180 degrees and elevating the vertical encoder to lock onto the SMR. Accuracy should meet the requirements of $\pm (15 \mu\text{m} + 6 \mu\text{m/m})$ or better 	Required, Please confirm
	<ul style="list-style-type: none"> Dimensional & CAD model inspection of a part or mould provided by CSIR-NAL to be carried out at CSIR-NAL and Inspection Report generated. 	Required, please confirm
7.4	General	
	<ul style="list-style-type: none"> Check whether the display readings jump when there is vibration. 	Required
	<ul style="list-style-type: none"> Check for Drift over a period of time. 	Required
	<ul style="list-style-type: none"> Check for discontinuance/disruption of the laser beam over at least 4 hours. 	Required
	<ul style="list-style-type: none"> Check whether the temperature compensation unit is working correctly by comparing the readings taken at controlled environment. 	Required
	<ul style="list-style-type: none"> All the readings should have the time and temperatures recorded and the type of test. 	Required
	<ul style="list-style-type: none"> All above accuracies to be proved for both 0.5" and 1.5" SMR 	Required

List of Deliverables (BoQ): (To be repeated in the main specification)

Sl. No.	Item Description	Unit	Quantity
1.	Tracker head	Nos.	01
2.	Tracker Controller	Nos.	01
3.	Power Supply Unit	Nos.	01
4.	Connecting Cables	Set	01
5.	External Temperature sensor for job	Nos.	01
6.	Optical cleaning kit	Nos.	01
7.	Protective sensor cover	Nos.	01
8.	Spherical Mounting Reflector 0.5"	Nos.	01
9.	Spherical Mounting Reflector 1.5"	Nos.	01
10.	Height Adjustable Tripod 4ft to 8 ft	Nos.	01
11.	Temperature Compensation Unit with sensor for online temperature Compensation of job and equipment	Nos.	01
12.	Necessary sturdy carry boxes and Cart to move the tracker and its accessories from one place to another	Set	01
13.	Two sets of suitable re-chargeable battery set with cables and carry boxes	Set	02
14.	Wireless remote	Set	01
15.	Polyworks-Inspection Software (Latest version)	License	01

4.3 Scope of Supply and incidental works:

Scope of Supply includes the following:

- Supply of the equipment / system along with the accessories as per clause No.4.2
- Installation, Commissioning and Acceptance as per clause No.4.4.5

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- (iii) Training as per clause no.4.5
- (iv) On site comprehensive Warranty as per clause No.4.6.
- (v) Annual Maintenance Contract / Maintenance Support as per clause No.4.7
- (vi) Delivery Schedule as per clause No.4.8.

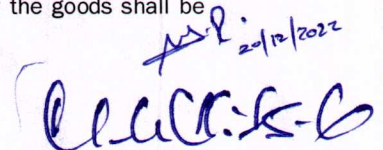
4.4 Inspection & Tests

4.4.1 General

1. The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified here.
2. The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at the point of delivery and/or at the Goods final destination.
3. Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.
4. Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.
5. The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at final destination shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.
6. The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.
7. With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent, if any, shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after customs clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/ Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.
8. Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply operation and maintenance Manuals together with Drawings of the goods and equipment built. These shall be in such details as will enable the Purchase to operate, maintain, adjust and repair all parts of the works as stated in the specifications.
9. The Manuals and Drawings shall be in the ruling language (English) and in such form and numbers as stated in the Contract.
10. Unless and otherwise agreed, the goods and equipment shall not be considered to be completed for the purposes of taking over until such Manuals and Drawing have been supplied to the Purchaser.
11. On successful completion of acceptability test, receipt of deliverables, etc. and after the Purchaser is satisfied with the working of the equipment, the acceptance certificate signed by the Supplier and the representative of the Purchaser will be issued. The date on which such certificate is signed shall be deemed to be the date of successful commissioning of the equipment.

4.4.2 Manufacturer's Inspection Certificate`

After the goods are manufactured and assembled, inspection and testing of the goods shall be



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carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications. Manufacturer's test certificate with data sheet shall be issued to this effect and submitted along with the delivery documents. The purchaser reserves the options to be present at the supplier's premises during such inspection and testing.

4.4.3 Pre Dispatch Inspection : NOT APPLICABLE

4.4.4 Third Party Inspection : NOT APPLICABLE

4.4.5 Installation, Commissioning and Acceptance Test of the equipment at CSIR-NAL

The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at Purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified.

On the event of the ordered item 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, the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.

Successful conduct and conclusion of the acceptance test for the installed goods and equipment shall also be the responsibility and at the cost of the Supplier.

The acceptance tests at the final destination include the following:

a)	Accuracies and performance tests have to be proved out at CSIR-NAL as per ASME B89.4.19 / ISO 10360.
b)	(i) Vendor has to prove the accuracies of the supplied Laser Tracker as mentioned under Acceptance test as mentioned in part 'G' (ii) Vendor is solely responsible for supply, installation, commissioning and effective functioning of the Entire Laser Tracker System at CSIR-NAL
c)	Vendor shall provide Calibration certificate for the supplied Laser Tracker System.

4.5 Training

1)	Location	CSIR-NAL, Kodihalli bangalore
2)	Number of persons	Six
3)	Period of Training	10 Days (Two stages of 5 days)
4)	Nature of Training	Detailed training to be provided in the areas of Laser Tracker operations, and applications, Electrical, Electronic interface & maintenance to NAL engineers for 10 days. The training session is split into two stages of 5 days each with a gap of 15 days in between.

4.6 Incidental Services

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On site Comprehensive Warranty:

Sl. No.	Requirements
1.	Comprehensive warranty has to be provided for the entire Laser Tracker system including system software for 5 years from the date of acceptance by CSIR-NAL.
2.	The Vendor has to provide total product support for the entire Laser Tracker system in terms of both hardware and system software for 10 years from the date of installation and commissioning for effective functioning of the supplied Laser Tracker system.
3.	Preventive Maintenance, Calibration & Correction has to be carried out twice a year during warranty period (i.e. every 6 th and 12 th month from the month of final acceptance by CSIR-NAL) at free of cost to CSIR-NAL.
4.	Downtime call attendance should be within Four Working days.
5.	If the equipment/accessory is out of order for more than 10 days, standby equipment has to be provided by the vendor at free of cost to CSIR-NAL. Warranty period has to be extended for the number of days the equipment remains out of order during the warranty period.
6.	System software and application software (Polyworks-Inspection) upgrades i.e., both version and release upgrades have to be provided free of cost for five years during the warranty period.

4.7 Annual Maintenance Contract – NOT APPLICABLE

4.8 Delivery Schedule (including supply, installation, commissioning, training & acceptance)

Delivery of the Item		Installation & Commissioning		Training At CSIR_NAL, if any	Acceptance of the item
Days/ Weeks/Months	Location	Days/ Weeks/Months from the date of receipt of equipment	Location	Days/ Weeks/Months from the date of Installation & Commissioning	Days/ Weeks/Months from the date of Installation, Commissioning & Training
Four months from release of purchase order/ Acceptance of LC	Metrology & Calibration Lab, APMF Division, CSIR-NAL, Kodihalli campus, Bengaluru-17	Eight Weeks from the Date of Receipt of the Equipment.	Metrology & Calibration Lab, APMF Division, CSIR-NAL, Kodihalli campus, Bengaluru-17	10 days split into 5 days, with 15 days gap.	Four Weeks

[Signature]
20/12/2022
R. A. C. K. G.

Annexure-2

The details of the existing item for buy back scheme

Equipment Description	Items identified for return	
Leica Laser Tracker Model-LTD600 MSC- XXIII-1240	1	LTD 600 sensor unit Serial no.: 01539 01 No.
	2	Base plate with extension tube Serial No.: 601334 01 No.
	3	Sensor Cable 03 Nos.
	4	AT Controller 900 Serial No.: SB3038 01 No.
	5	Meteo Station Serial No.: 1033328 01 No.
	6	Rotronic Serial No.: 36412023 01 No.
	7	AT Controller 900 Serial No.: 01539 01 No.
	8	Nivel 20 with base Serial No.: 383333 01 No.

AS R. 20/11/2021
Chandra K. C.

**CSIR-NATIONAL AEROSPACE LABORATORIES
BENGALURU**


COMMERCIAL QUERIES & CLARIFICATION

Tender Id : 2022_CSIR_137805_1

Tender No. : NAL/PUR/APMF/029/22-Z

Item Description : Procurement of laser Tracker Under Buy-Back Scheme.

Sr. No.	Query / Clarification Sought	Clarification/Amendment
	-NIL-	


30/12/2022
Stores & Purchase Officer
For and on behalf of CSIR-NAL

