

CSIR- NATIONAL PHYSICAL LABORATORY

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From: Director, CSIR-NPL
No. 14-VIII/AZ(29-GTE)24PB/T-13

Dated: 07.07.2026

CORRIGENDUM

With reference to NPL's Global Tender ID: **2026_CSIR_840471_1** for "**Absolute Gravity Meter/ Absolute Gravimeter**". All the prospective bidders are hereby informed that some changes have been made in the technical specification of captioned tender. Revised specifications are as follows:

Original Specifications	Final Specifications
As tendered	No change

Technical specifications will remain same as per tender documents. Accordingly, all the interested bidders may submit their Offer as per tendered technical specification.

Please also note that bids submitted without taking these changes into consideration will be rejected summarily.

All other terms will remain the same. The same is also available on CSIR-NPL official website <http://www.nplindia.in> under Tender link.



Sr. Controller of Stores & Purchase

FORM TO BE FILLED BY IO WHILE CONVENING PRE-BID MEETING OF TSC.**File No. 14-VIII/AZ(29-GTE)24PB****Date:30/06/2026****Pre-bid Meeting (To be typed clearly by the I/O)**

Name of Indentor_____Dr. Afaqul Zafer_____

Indent No._____PR1062262024_____

Item Description___ Absolute Gravity Meter/ Absolute Gravimeter_____

No. of Budgetary Quotes_____02 (Two)_____

(1) A pre-bid meeting of TSC was held on_____16/06/2026_____.

(2) Following queries were raised by participating Bidders:

Name of the firm 1: M/s Complete Instrumentation Solutions, Suite #512, Suncity Business Tower, Golf Course Road, Sector-54, Gurgaon, Haryana. OEM: M/s Exail, Website: <https://www.exail.com/product/quantum-gravimeters>

Specifications	Queries Raised/comments	Remarks (by I/O), if any
The working principle of the instrument should be based on ballistic free-fall method which should be suitable for the purpose of standardization use.	Ok	Compliant. Since the bidder has mentioned the compliance bidder will be required to validate it with the supporting documents.
Capability of measurement with accuracy of 2 microGal or better. (This performance of the equipment should be validated from the published and reported data from National Metrology Institute (NMI) for at least the same OEM.)	Accuracy is 15μGal and Stability is better than 2μGgal. Kindly change the accuracy to 15μGgal.	Not Compliant. No further modifications will be done. This accuracy is as per our requirement in the use of the gravimeter in Kibble Balance. It cannot be modified to 15 μGal.
Having all-sites coverage range with precision better than 15 microGal. (This performance of the equipment should be validated from the published and reported data from NMI for at least the	-50 nm/s ² in 1.5 min (5 μGal) -20 nm/s ² in 10 min (2 μGal) -10 nm/s ² in 40 min (1 μGal) Kindly change the precision to 1-	Compliant. Since the bidder has mentioned the compliance, bidder will be required to validate it with

same OEM.)	2 μ Gal	the supporting documents. No further modifications will be done.
Free-falling of test mass in vacuum/dropping chamber should be independent of effect of external magnetic field.	Ok	Since the bidder has mentioned the compliance, bidder will be required to validate it with the supporting documents.
It should include Rubidium atomic clock and optical/laser interferometer system for the accurate monitoring of free-fall.	Ok	Since the bidder has mentioned the compliance, bidder will be required to validate it with the supporting documents.
Operational temperature coverage range should be at least (20 - 30) °C or higher range, i.e (≤ 20 °C to 30 °C $\leq$)	You should opt for broader temperature range like 0-40 deg C as you might be using the system outside as well. Kindly change the temperature to (0-40) Deg C.	Compliant. Since the bidder has mentioned the temperature range of 0-40 °C which is well within the specified range. No further modifications will be done. Also, the procured item will be used in the indoor lab well within the controlled temperature and environment. .
It should have real-time gravity corrections for tides, ocean loading, polar motion, ambient perturbation, etc.	Ok	Since the bidder has mentioned the compliance, bidder will be required to validate it with the supporting documents.
It should have mechanism for the seismic isolation and efficient rejection	Active vibration compensation	Since the bidder has mentioned the compliance, bidder will be required to

of ground vibration noise.		validate it with the supporting documents.
Built-in collimation optics for vertical alignment	Patented optomechanical configuration that builds the collimation and vertical laser alignment directly into the hardware geometry. Kindly include in the specifications that Tiltmeters should be integrated in the system.	As per the bidder's claim, the equipment supports the collimation and alignment which is well within the specification, though validation will be required. No additional features or accessories will be added.
Built-in frequency stabilization system with Iodine stabilized He-Ne Laser	Frequency stabilization system with Iodine stabilized He-Ne Laser. Kindly include in the specification that the desired stability. Usually it should be better than 10 ⁻⁹	As per the bidder's claim, the equipment has frequency stabilization and alignment, with Iodine stabilized He-Ne Laser which is well within the specification, though validation will be required.
Compatible ultra-high vacuum pump for the dropping/vacuum chamber	Not required in case of Quantum Absolute Gravimeter. The AQG is far superior than the other Absolute Gravimeters available in the market. Kindly mention Transport and storage for several weeks without any power supply should not affect the measurement capability nor required additional pumping.	Not Compliant. Since the bidder is not providing it. Even the Quantum Absolute Gravimeter requires vacuum for atom interferometry and cold atom trap. So even the pump is integrated, It is still needed for initial vacuum generation.
In built system for reduction of Coriolis force of test mass	AQG does not require Coriolis reduction force system. No Coriolis reduction force system is required. A calibration before delivery is done, it is highly recommended (and has proven high reliability) to perform 2 inverted sets of measurements with two orientations. Kindly remove this clause no Coriolis	Not Compliant. Since the bidder is not providing it. Though the bidder has mentioned the compliance, bidder will be required to validate it with the supporting documents.

	reduction force system is required in case of quantum absolute gravimeters.	
Battery backup power supply for at least 3-4 hour	Complies	Compliant.
Having an integrated GNSS disciplined Rubidium timing system.	AQG has integrated GNSS disciplined Rubidium timing system. Kindly mention integrated GNSS disciplined Rubidium timing system or internal enslaved RF reference on Rb Atoms with high accuracy.	Compliant. Since the bidder has mentioned the compliance, bidder will be required to validate it with the supporting documents. No further modifications will be done.
Integrated metrological parameters monitoring system (e.g. barometric pressure, temperature, etc.)	The desired corrections are integrated in the system.	Compliant. Since the bidder has mentioned the compliance, bidder will be required to provide the supporting documents.
Facility for automatic data acquisition, storage and real time data processing	Complies	Compliant. Since the bidder has mentioned the compliance, bidder will be required to provide the supporting documents.
Compatible software (with perpetual license and free update) and hardware for data processing with integrated computer/laptop, including A/D interfacing with system	Complies	Compliant.
Installation and commissioning: The supplier shall mandatorily carry out the installation & commissioning of the instrument at the CSIR-NPL identified site at its own cost for testing and checking the performance, consistency,	Agreed	Compliant.

and other specified parameters which will be verified by the CSIR-NPL officials during the inspection before final acceptance.		
Training: Supplier shall provide a field-based training on operation, field data acquisition and maintenance of the instrument to CSIR-NPL officials for 5 (five) working days at consignee's selected site in CSIR-NPL for free of charge.	Agreed	Compliant.
Warranty: At least 12 months standard warranty on complete system is required.	Agreed	Compliant.
The supplier should ensure the availability of spare parts, accessories, etc. after sales for at least minimum of 5 years.	Agreed	Compliant.
Performance certificate (preferably NMIs) should be provided.	Agreed	Compliant.

Name of the firm 2: M/s Sowar Private Limited, 3rd Floor, Defence Colony, New Delhi, India – 110024. OEM: M/s Scintrex (a division of LRS), 222 Snidercroft Road, Concord, ON, Canada L4K 2K1.

Specifications	Queries Raised/comments	Remarks (by I/O), if any
Free-falling of test mass in vacuum/dropping chamber should be independent of effect of external magnetic field.	Magnetic susceptibility of the test mass will be extremely negligible.	Compliant. If the magnetic susceptibility effect is negligible in a way that does not affect the measurement, then it is well within the specification, though it will be validated by a supporting document.

Indentor's recommendation

1. The comments, as received from bidders during PBC, and our response is as follows:

Tender Specification and its number	Comment of bidder	Response of Indentor (Accepted/ Not accepted)	Revised specification (If any)	Justification for non-acceptance
S.No. 2. Capability of measurement with accuracy of 2 microGal or better. (This performance of the equipment should be validated from the published and reported data from National Metrology Institute (NMI) for at least the same OEM.)	Accuracy is 15μGal and Stability is better than 2μGgal. Kindly change the accuracy to 15μGgal.	Not accepted	-	This accuracy is as per our requirement in the use of the gravimeter in Kibble Balance. It cannot be modified to 15 μGal.
S.No. 3. Having all-sites coverage range with precision better than 15 microGal. (This performance of the equipment should be validated from the published and reported data from NMI for at least the same OEM.)	-50 nm/s ² in 1.5 min (5 μGal) -20 nm/s ² in 10 min (2 μGal) -10 nm/s ² in 40 min (1 μGal) Kindly change the precision to 1-2 μGal	Not accepted (Since the bidder has mentioned 1 microGal precision, so it is well within the mentioned specification. So change in specification is not needed.)	-	Change is not required as all bidders (as per their claims) satisfy this broad general specification.
S.No. 6. Operational temperature coverage range should be at least	You should opt for broader temperature range like 0-40 deg C as you might be using the system outside as well. Kindly change the temperature to (0-	Not accepted (Since the bidder's system has (0-40) °C which is well within	-	Change is not required as all bidders (as per their claims) satisfy this

(20 - 30) °C or higher range, i.e ($\leq 20\text{ }^{\circ}\text{C}$ to $30\text{ }^{\circ}\text{C} \leq$)	40) Deg C.	our specification.)		general specification.
S.No. 9. Built-in collimation optics for vertical alignment	Patented optomechanical configuration that builds the collimation and vertical laser alignment directly into the hardware geometry. Kindly include in the specifications that Tiltmeters should be integrated in the system.	Not accepted (Since the bidder's equipment has the vertical alignment system, which is well within our specification.)	-	Change is not required as all bidders (as per their claims) satisfy this general specification and additional features or accessories will not be added.
S.No. 10. Built-in frequency stabilization system with Iodine stabilized He-Ne Laser	Frequency stabilization system with Iodine stabilized He-Ne Laser. Kindly include in the specification that the desired stability. Usually it should be better than 10^{-9}	Not accepted (Since the bidder has mentioned Frequency stabilization system with iodine-stabilized He-Ne Laser in his equipment as per the specification, so no change required)	-	Change is not required as all bidders (as per their claims) satisfy this broad general specification.
S.No. 11. Compatible ultra-high vacuum pump for the dropping/vacuum chamber	Not required in case of Quantum Absolute Gravimeter. The AQG is far superior than the other Absolute Gravimeters available in the market. Kindly mention Transport and storage for several weeks without any power supply should not affect the measurement capability nor required additional pumping.	Not accepted (Even the Quantum Absolute Gravimeter requires vacuum for atom interferometry and cold atom trap. So even the pump is integrated, It is still needed for initial vacuum generation.)	-	As per the requirement, no additional feature/ function for storage or transport will be added.

S.No. 13. In built system for reduction of Coriolis force of test mass	AQG does not require Coriolis reduction force system. No Coriolis reduction force system is required. A calibration before delivery is done, it is highly recommended (and has proven high reliability) to perform 2 inverted sets of measurements with two orientations. Kindly remove this clause no Coriolis reduction force system is required in case of quantum absolute gravimeters.	Not accepted (If it is not required in the bidder's equipment or taken care off by performing 2 inverted sets, then this is well within the mentioned specification as the requirement is fulfilled.)	-	Change is not required as all bidders (as per their claims) satisfy this broad general specification.
S.No. 15. Having an integrated GNSS disciplined Rubidium timing system.	AQG has integrated GNSS disciplined Rubidium timing system. Kindly mention integrated GNSS disciplined Rubidium timing system or internal enslaved RF reference on Rb Atoms with high accuracy	Not accepted (As the bidder has mentioned that AQG has integrated a GNSS disciplined Rubidium timing system, so the specification already includes the required essential part and no change is required.)	-	Change is not required as all bidders (as per their claims) satisfy this broad general specification.

Final recommended specifications are as attached at Annexure 1 and signed by I/O: **No change in the submitted technical specifications**

Corrigendum to Tender ~~may be issued/~~ **may not be issued.**

Recommended Revised Date of Tender submission (if any) is **NIL**

The specifications are generic and broad based.

Submitted to TSC for necessary approvals.

FORM TO BE USED BY TSC FOR FINALISING PRE-BID MINUTES

File No.14-VIII/AZ(29-GTE)24PB

Date:30/06/2026

TSC Minutes (To be typed clearly by the I/O)

Based on the Pre-bid meeting and recommendation of I/O, following changes have been made in the specifications:

Original Specifications	Final Specifications
Same as the indented specifications	No change

The file is forwarded to Purchase Section for uploading the final specifications and TSC minutes on the website and CPPP Portal.

Declaration: We hereby declare that we have no conflict of interest with any of the bidder in this tender