भारत सरकार, अंतरिक्ष विभाग /Government of India, Department of Space
यू.आर. राव उपग्रह केन्द्र (यू.आर.एस.सी.)/ U R Rao Satellite Centre [URSC]
(पूर्व में इसरो उपग्रह केन्द्र/ (Formerly known as ISRO Satellite Centre)
एच.ए.एल. एयरपोर्ट रोड, विमानपुरा पोस्ट,
HAL Airport Road, Vimanapura Post,
बेंगलूरु/Bengaluru - 560 017
भारत/India

URSC/PUBLIC TENDER NOTICE No.36/B/2024-25 **04-07-2025**

शुध्दिपत्र/ **Corrigendum-01**

दो भाग निविदा /Two Part Tender

क्र.सं. Sl.No	निविदा संदर्भ TENDER REFERENCE	संक्षिप्त विवरण BRIEF DESCRIPTION
01	URSC/CE/CDA/2024000146	ऑनबोर्ड माड्यूलों का विकास Development of On-board Modules

Reference to our Tender No: URSC/CE/2024000146 01 Dated: 06.06.2025, Pre Bid Meeting held on 13.06.2025. Technical and Commercial details pertaining to "Development of On-board Modules "are clarified as follows:

QUERIES	CLARIFICATION
As part of the modules testing, Test - Jig's are required, Development of Test-jig is Scope of Vendor? If it is by vendor, Test-Jig is part of delivery, Will Test-Jig cost can be considered in module fabrication cost.	Required test jigs / test setup equipments for testing card/module level is Vendor responsibility. Cost of test jigs may be included in the quote. Test Jigs comprises of standard equipments like ARDUINO Boards, Power Supply, Current Meters, Oscilloscope, etc. **They are not part of deliverables to URSC.**
Who will provide the Test Software required for On board Card level testing?	Software required to test the CPU module will be provided by URSC.
For Package Level Testing, if harness will be supplied by vendor Interface connector & Harness details are needed	Package Level Testing to be done at URSC by vendor. **Required Test Consoles and Harness for Package Testing will be**

for estimation	**made available by URSC.**
Details of BOM including FIM & Mechanical details are required to estimate	Electronics Modules to be realized through this indent may fall into any of the categories mentioned in section 4 & 5 of the SOW. Exact requirement will be provided along with the work order to be released from time to time over the period of the rate contract. **Typical parameters for a single module is defined in Table 1 of SOW.** To enable for estimating the quote, following tentative list (Industrial Grade) per module may be considered. **D SUB 78 Pin IO Connectors = 9 Nos.** Shell Finish: Yellow passivation / Tin Plating (Cadmium Free) & Non-magnetic body Contacts: Gold Plated Reference Part No. for 78 pin socket (HD-PCB RA): 4110-1-2-78S-4-GNMB-GND or DD78S4R7000/AA or Eqvt. Supplier: Amphenol & Others Grade: Engineering / Industrial, Class-D or better. **Relay GP250 or Equivalent = 10 Nos.** Supplier: Connect Electronics, Domlur, Bangalore & Others **FRB Mother Board Connectors = 10 Nos.** Type: FRB41 Finish: Plastic Contacts: Gold plated hyperboloid socket and standard plug contact Reference part No.: HMK041MEA3Y71E000, HMK041FDA3B71E000 or Eqvt. Supplier: Amphenol / Smiths Interconnect / IEH & Others **Analog IC = 2 Nos.** Type: 1840 Mux Alternate part No.: C1840 or Eqvt.

	Supplier: Connect Electronics, Domlur, Bangalore & Others **PCB Multi 14 Layer Board = 3 Nos.** Material: High TG-FR4(150-170) Type: IPC Class-3 or better with UL marking and BBT reports. Supplier: Micropack Pvt Ltd, Bangalore, Hi-Q Electronics Pvt Ltd, Bangalore & Ascent Circuits Pvt Ltd, Hosur, Tamilnadu.
We are non MSME, is there EMD for this Tender?	No, EMD is not required.
It is mentioned that a total of 20 modules are to be designed. How many of these are planned to be taken up in the initial phase? Also, how many design inputs/BOM will be provided among these 20 modules?	It is planned to execute the activity through Module-wise Rate Contract for a period of two years may be extendable by additional one year, through work orders issued from time to time based on Project Schedules. BOM with respect to particular work order will be made available at the time of release of work order.
Please provide block diagram, Initial / previous version Circuit Diagram, Design guidelines, Functional requirement, Specifications of the Card and Bill of Materials	Electronics Modules to be realized through this indent may fall into any of the categories mentioned in section 4 & 5 of the SOW. Exact requirement will be provided along with the work order to be released from time to time over the period of the rate contract. **Typical parameters for a single module is defined in Table 1 of SOW.** To enable for estimating the quote, following tentative list (Industrial Grade) per module may be considered. **D SUB 78 Pin IO Connectors = 9 Nos.** Shell Finish: Yellow passivation / Tin Plating (Cadmium Free) & Non-magnetic body Contacts: Gold Plated Reference Part No. for 78 pin socket (HD-PCB RA): 4110-1-2-78S-4-GNMB-GND or DD78S4R7000/AA or Eqvt. Supplier: Amphenol & Others Grade: Engineering / Industrial, Class-D or better. **Relay GP250 or Equivalent = 10 Nos.** Supplier: Connect Electronics, Domlur, Bangalore & Others

	FRB Mother Board Connectors = 10 Nos. Type: FRB41 Finish: Plastic Contacts: Gold plated hyperboloid socket and standard plug contact Reference part No.: HMK041MEA3Y71E000, HMK041FDA3B71E000 or Eqvt. Supplier: Amphenol / Smiths Interconnect / IEH & Others **Analog IC = 2 Nos.** Type: 1840 Mux Alternate part No.: C1840 or Eqvt. Supplier: Connect Electronics, Domlur, Bangalore & Others **PCB Multi 14 Layer Board = 3 Nos.** Material: High TG-FR4(150-170) Type: IPC Class-3 or better with UL marking and BBT reports. Supplier: Micropack Pvt Ltd, Bangalore, Hi-Q Electronics Pvt Ltd, Bangalore & Ascent Circuits Pvt Ltd, Hosur, Tamilnadu.
Can we use ALTIUM TOOL for PCB Designing?	Vendor must have or ensure that they have genuine licensed copies of professional PCB design ECAD tools (Cadence Allegro / Mentor Graphics Expedition) and simulation (Cadence Sigrity / Mentor Hyperlynx tool) and they shall be under maintenance. If other design tools are used, then the data should be compatible with & exportable to above tools.
As per Point 12.6, Please name few ISRO Approved units for PCB Fabrication. Refer to Annexure-1 for snapshot.	URSC Qualified Vendors for PCB Fabrication – Micropack Pvt Ltd, Bangalore Hi-Q Electronics Pvt Ltd, Bangalore Ascent Circuits Pvt Ltd, Hosur, Tamilnadu.
Requesting URSC team to clarify if design needs to conform to flight unit specifications or Ground unit specifications. Refer to Annexure-2 for detailed explanation and examples	Schematic & PCB Designs realized will be incorporated in Flight Model, unless otherwise specified. Hardware realized through this indent is entirely for Ground / Lab Purpose only. Fabrication practices applicable to the above may be followed.
Please share the list of raw material reports required for	Unless otherwise specified, **Aluminum** Al 6061 shall be the

AA 6061-T65/AA 6061-T652 used on Mechanical Housing.	material for manufacture of housings / trays
As per Point 11.3, several tests such as shock, vibration, and vacuum are mentioned. We would like to clarify whether the vendor-supplied cards are exempt from undergoing these tests, or if compliance is expected from our end as part of the delivery scope. Refer to Annexure-3 for Snapshot. Kindly confirm so we can align accordingly	Designs needs to be complaint of Shock, Vibration & Vacuum by Analysis only.
Requesting URSC to please provide overall block diagram, Initial / previous version Circuit Diagram, Design guidelines, Functional requirement, Specifications of the Card and tentative Bill of Materials.	Electronics Modules to be realized through this indent may fall into any of the categories mentioned in section 4 & 5 of the SOW. Exact requirement will be provided along with the work order to be released from time to time over the period of the rate contract. **Typical parameters for a single module is defined in Table 1 of SOW.** To enable for estimating the quote, following tentative list (Industrial Grade) per module may be considered. **1) SUB 78 Pin IO Connectors = 9 Nos.** Shell Finish: Yellow passivation / Tin Plating (Cadmium Free) & Non-magnetic body Contacts: Gold Plated Reference Part No. for 78 pin socket (HD-PCB RA): 4110-1-2-78S-4-GNMB-GND or DD78S4R7000/AA or Eqvt. Supplier: Amphenol & Others Grade: Engineering / Industrial, Class-D or better. **Relay GP250 or Equivalent = 10 Nos.** Supplier: Connect Electronics, Domlur, Bangalore & Others **FRB Mother Board Connectors = 10 Nos.** Type: FRB41 Finish: Plastic Contacts: Gold plated hyperboloid socket and standard plug contact

	Reference part No.: HMK041MEA3Y71E000, HMK041FDA3B71E000 or Eqvt. Supplier: Amphenol / Smiths Interconnect / IEH & Others **Analog IC = 2 Nos.** Type: 1840 Mux Alternate part No.: C1840 or Eqvt. Supplier: Connect Electronics, Domlur, Bangalore & Others **PCB Multi 14 Layer Board = 3 Nos.** Material: High TG-FR4(150-170) Type: IPC Class-3 or better with UL marking and BBT reports. Supplier: Micropack Pvt Ltd, Bangalore, Hi-Q Electronics Pvt Ltd, Bangalore & Ascent Circuits Pvt Ltd, Hosur, Tamilnadu.
Could you kindly clarify the basis of vendor selection for this tender? Will it be evaluated solely on cost competitiveness, or will additional factors such as technical merit and value addition to the design also be considered in the decision-making process?	This indent is two-part tender. First part is technical evaluation, where compliance and supporting documents will be the criteria. Second part is Price bid evaluation & will be arrived from technically compliant vendors. Distribution of orders amongst vendors as per section 28.1 of SOW.
We appreciate URSC's commitment to sharing the overall block diagram, initial circuit schematics, detailed design guidelines, functional requirements, card specifications, and a provisional bill of materials.	Electronics Modules to be realized through this indent may fall into any of the categories mentioned in section 4 & 5 of the SOW. Exact requirement will be provided along with the work order to be released from time to time over the period of the rate contract.
Please provide the block diagrams of the modules and other required inputs	Electronics Modules to be realized through this indent may fall into any of the categories mentioned in section 4 & 5 of the SOW. Exact requirement will be provided along with the work order to be released from time to time over the period of the rate contract. **Typical parameters for a single module is defined in Table 1 of SOW.** To enable for estimating the quote, following tentative list (Industrial Grade) per module may be considered. **D SUB 78 Pin IO Connectors = 9 Nos.**

	Shell Finish: Yellow passivation / Tin Plating (Cadmium Free) & Non-magnetic body Contacts: Gold Plated Reference Part No. for 78 pin socket (HD-PCB RA): 4110-1-2-78S-4-GNMB-GND or DD78S4R7000/AA or Eqvt. Supplier: Amphenol & Others Grade: Engineering / Industrial, Class-D or better. **Relay GP250 or Equivalent = 10 Nos.** Supplier: Connect Electronics, Domlur, Bangalore & Others **FRB Mother Board Connectors = 10 Nos.** Type: FRB41 Finish: Plastic Contacts: Gold plated hyperboloid socket and standard plug contact Reference part No.: HMK041MEA3Y71E000, HMK041FDA3B71E000 or Eqvt. Supplier: Amphenol / Smiths Interconnect / IEH & Others **Analog IC = 2 Nos.** Type: 1840 Mux Alternate part No.: C1840 or Eqvt. Supplier: Connect Electronics, Domlur, Bangalore & Others **PCB Multi 14 Layer Board = 3 Nos.** Material: High TG-FR4(150-170) Type: IPC Class-3 or better with UL marking and BBT reports. Supplier: Micropack Pvt Ltd, Bangalore, Hi-Q Electronics Pvt Ltd, Bangalore & Ascent Circuits Pvt Ltd, Hosur, Tamilnadu.
If the component is obsolete from the supplier. Please give the confirmation to proceed with another supplier with same footprint	Please refer Section 15.0 of SOW. Approval for the same will be provided during Circuit Design Review.

Pleases clarify Test jig is part of deliverables or not	Required test jigs / test setup equipments for testing card/module level is Vendor responsibility. Cost of test jigs may be included in the quote. Test Jigs comprises of standard equipments like ARDUINO Boards, Power Supply, Current Meters, Oscilloscope, etc. **They are not part of deliverables to URSC.**
Card level test software is provided by URSC or Vender need to be develop **If vender need to be develop with tools & version need to be used for Software Development**	Software required to test the CPU module will be provided by URSC.
Provide PCB grade Details	Material: High TG-FR4(150-170) Type: IPC Class-3 or better with UL marking and BBT reports.
Clarification need about the deliverables	Total Quantity of Modules (Electronics + Mechanical Fabrication) to be realized = 40. This includes Electronics Design & Analysis = 20, Mechanical Design & Analysis = 10, Package Design & Analysis = 2 and Package Assembly = 4 Also section 23.0, 24.0 & 25.0 of SOW may be referred.
Weather environmental tests need to be conducted or not Please clarify	Environmental tests not required.
Please provide the details of components issued by URSC/ISRO as FIM	ASIC, FPGA, PROM, HMC are issued as FIM. **Details and quantity of the FIM will be provided prior to release of individual Work Order.**

Particulars	In Place of	To be read as
बोली प्रस्तुत करने की नियत तिथि/ Bid submission Due date:	**07-07-2025 (14:30 Hrs)**	**21-07-2025 (14:30 Hrs)**
बोली खोलने की तिथि/ Bid Opening Date:	**07-07-2025 (15:00 Hrs)**	**21-07-2025 (15:00 Hrs)**

All other Terms and Conditions remain unaltered.

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व. प्रधान, क्रय व भंडार / Sr. Head, Purchase & Stores