



Government of India, Department of Space
U R Rao Satellite Centre [URSC]
(Formerly known as ISRO Satellite Centre)
HAL Airport Road, Vimanapura Post,
Bengaluru - 560 017
India



URSC/PUBLIC TENDER NOTICE NO. A-13/25-26

18.12.2025

भारत के राष्ट्रपति की ओर से व. प्रधान, क्रय एवं भंडार, यू.आर. राव उपग्रह केन्द्र (यू.आर.एस.सी.), द्वारा निम्नलिखित मदों की आपूर्ति के लिए **केवल ऑफलाइन के जरिए** निविदाएं आमंत्रित हैं।

On behalf of the President of India, Sr. Head, Purchase & Stores, U R Rao Satellite Centre [URSC] invites tenders **ONLY** through offline for supply of the following.

दो भाग निविदा/PT Two Part Tender

Sl. No.	TENDER REFERENCE	BRIEF DESCRIPTION
01	ISAD 2025-06589501	आई आर एस अंतरिक्षयान हेतु आर आफ पैकेज का उत्पादन Realisation of RF Packages for IRS Space Craft

बोली प्रस्तुत करने हेतु प्रारंभिक तिथि /Bid Submission Start Date : 18.12.2025 (17.00 Hrs.)
बोली स्पष्टीकरण की तिथि /Bid Clarification Date upto : 30.12.2025 (16.00 Hrs.)
बोली प्रस्तुत करने की नियत तिथि /Bid Submission Due Date : 08.01.2026 (14.00 Hrs.)
बोली खोलने की तिथि/ Bid Opening Date : 09.01.2026 (10.00 Hrs.)

लोक निविदा दस्तावेज को इसरो वेबसाइट www.isro.gov.in में अपलोड किया गया है। इच्छुक निविदाकार निविदा दस्तावेज को वेबसाइट से डाउनलोड कर सकते हैं तथा निविदा अधिसूचना में उल्लिखित ब्यौरे के अनुसार अपना प्रस्ताव प्रस्तुत कर सकते हैं। निविदा शुल्क लागू नहीं है।

Public Tender document is uploaded on the ISRO website i.e. www.isro.gov.in. Interested Tenderers may download the tender document from the website and submit their offer as per details mentioned in the Tender Notification. No Tender fees applicable.

निविदाओं को उपरोक्त निर्दिष्ट दिनांक पर खोला जाएगा। अर्ह विक्रेताओं के दर बोली (दो भाग निविदाओं के मामले में) को खोलने की समय सूची को बाद में सूचित किया जाएगा। बोली लगाने से संबंधित विवरण को इसरो ई-प्रापण पोर्टल में लागिन करके देखा जा सकता है।

Tenders will be opened on the date specified above. Schedule for opening of the Price Bid (in case of Two-Part Tenders) of Qualified Vendors will be intimated later.

उपरोक्त के संबंध में शुद्धिपत्र/अनुशेष, यदि कोई हो, तो उसे हमारे ई-पोर्टल एवं वेबसाइट पर प्रकाशित किया जाएगा।

Corrigendum/Addendum, if any, related to above shall be hosted in www.isro.gov.in

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

भारत सरकार
अंतरिक्ष विभाग (अं.वि.)



GOVERNMENT OF INDIA
DEPARTMENT OF SPACE (DOS)
PURCHASE & STORES

फोन नं Ph No. / Fax. / ईमेल e-mail:
INVITATION TO TENDER
निविदा आमंत्रण

M/s
मेसर्स

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Our Ref. No.
हमारी संदर्भ सं.

ISAD 2025-065895-01

Tender Due at 14:00 hrs IST on 08/01/2026
निविदा अंतिम तिथि

महोदय

Dear Sirs,

कृपया निम्नलिखित मदों की आपूर्ति के लिए अनुलग्नक (फार्म सं. संलग्न) में उल्लिखित निबंधन एवं शर्तों के अनुसार संलग्न निविदा प्रपत्र में वर्णनात्मक सूचीपत्र/पैम्फलेट/साहित्य सहित हमारी संदर्भ सं. एवं अंतिम तिथि (मोटे अक्षरों में) ऊपर लिखते हुए अपनी मुहरबंद निविदा प्रस्तुत करें।

Please submit your sealed quotation , in the Tender Form enclosed here along with the descriptive catalogues /pamphlets /literature ,superscribed with Our Ref.No. and Due Date for the supply of the following items as per the terms & conditions mentioned in Annexure(Form No. NIL)

क्र.सं. Sl. No.	विनिर्देशों सहित मद का विवरण Description of items with Specifications	इकाई Unit	मात्रा Quantity
1	Realisation of IRS RF Package in Mode-III	Nos.	110
2	Realisation of IRS RF Package in Mode-IV	Nos.	198
3	Realisation of IRS RF Package in Mode-V	Nos.	502

सुपुर्दगी स्थल

Delivery At URSC

प्रेषण की विधि

Mode of Despatch BY ROAD

शुल्क छूट

Duty Exemptions -

विशेष अनुदेश

Special Instructions NIL

विशेष निबंधन

Specific Terms NIL

निविदाकारों को अनुदेश

Instructions to Tenderers

- (1) Technical Specifications as per Annexure-A, Instructions to Tenderer as per Annexure-B and Specific Terms & Conditions as per Annexure-C.
- (2) All Annexures with due compliance, signature of Authorized signatory and Company Seal shall be provided along with the quotation.
- (3) Please submit the hard-copy quote/s in Covering Letterhead in a sealed envelope superscribing the Tender number within the tender due date and time through offline only by Post/Courier.
- (4) Please note e-mail/Fax quotations are not acceptable.
- (5) Quotations shall be sent to: Purchase & Stores Officer, Group-A, U. R. Rao Satellite Centre, HAL Airport Road, Vimanapura Post, Bengaluru- 560 017.
- (6) This is a Two-Part Tender. Please DO NOT indicate price details in the technical offer failing which offer will be liable for rejection.
- (7) Quotations shall be sent in separate envelopes for Technical cum Commercial terms (Part-1) & Price (Part-2).
- (8) For any query regarding this Tender, Vendor may contact to: Purchase and Stores Officer, Group-A, U R Rao Satellite Centre (URSC), Bengaluru- 560017 Tel. No.+91 80 6108 4015, E-mail ID: pso_a@ursc.gov.in

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PURCHASE & STORES OFFICER

REALISATION OF RF PACKAGES FOR IRS SPACECRAFTS

PRODUCTION FRAMEWORK DOCUMENT (PFD)

**U R RAO SATELLITE CENTRE
VIMANAPURA
BANGALORE – 560017**

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Acronyms/Abbreviations

AIT	-	Assembly, Integration & Testing
AOCE	-	Attitude & Orbit Control Electronics
ASIC	-	Application Specific Integrated Circuit
DOR	-	Daily Operations Record
EED	-	Electro Explosive Device
EIDP	-	End Item Data Package
EMI	-	Electro Magnetic Interference
ESD	-	Electro Static Discharge
FPGA	-	Field Programmable Gate Array
FIM	-	Free Issue of Materials
HMC	-	Hybrid Micro Circuit
IBT	-	Initial bench test
IRNSS	-	Indian Regional Navigational Small Satellite
URSC	-	U R Rao Satellite Centre
ISITE	-	ISRO Satellite Integration and Testing Establishment
LMRB	-	Local Material Review Board
MRB	-	Material Review Board
MRR	-	Manufacturing Readiness Review
NC	-	Non-Conformance
OBC	-	On-Board Computer
PCB	-	Printed Circuit Board
PROM	-	Programmable Read-Only Memory
QA	-	Quality Assurance
QC	-	Quality Control
RAM	-	Random Access Memory
RF	-	Radio Frequency
RDC	-	Rework Data Card
RQA	-	Reliability & Quality Area
SSRB	-	Sub-system Review Board
TMTC	-	Telemetry and Tele-command
TRR	-	Test Readiness Review
WIM	-	Wheel Interface Module

REALISATION OF RF PACKAGES FOR SPACECRAFT

1. SCOPE

U R Rao Satellite Centre (URSC) is exploring for Industry partners with capability in fabrication and testing of RF Packages for spacecraft. This Production Framework Document (PFD) comprises details regarding realization of C/Ku-Band TTC, S-Band TTC, X-Band Data Transmitter, Satellite Positioning System. These are sought to be realized through industry/vendors that are experienced and have knowledge of the intricacies of various RF systems, processes and testing complexities. The rate contracts under this PFD shall be for Fabrication and Testing of flight model RF hardware under different modes as detailed further in this document. The rate contract is envisaged for three years.

This PFD has generic details of all RF packages, details of fabrication and testing and other general features. The details of the specific RF package under this contract are provided in the appended Detailed Document.

2. INTRODUCTION

URSC is the lead Centre in Indian Space Research Organization (ISRO) which is responsible for realisation of multiple Satellites for ISRO. This calls for a large number of RF Hardware to be fabricated, tested and made ready for integration. To meet this requirement, it is planned to involve industries, wherever required, to realize RF Hardware under different modes of operation. URSC wishes to forge long term working relationship with vendors for realizing these hardware.

These hardware are planned to be realized through URSC qualified vendors who are familiar and have experience in RF Hardware realisation. The activity primarily involves fabrication and testing of packages for Communication Systems. These packages have good heritage in current spacecrafts and evolving technologies aim to build on existing configurations for future spacecrafts. Vendors who have previous experience in realisation of such hardware, either in fabrication and testing, would be suited for these activities.

This section is intended to provide a general framework for vendors who are keen to work with ISRO in realizing RF Hardware. The document provides details of how the hardware realisation is planned, the different modes for tendering of activities to vendors, details of activity involved in each mode, typical delivery period,

documentation requirements, the Roles & Responsibilities of vendors and related aspects for flight model RF hardware realisation.

2.1 Vendor Pre-requisites

With reference to the technical specifications of the tender, vendors shall fulfill the following requirements to be eligible for Fabrication and Testing of flight RF hardware under this contract:

1. Qualified by URSC/SAC with experience in Fabrication and Testing of similar space quality RF hardware.
2. Exposure to quality and reliability standards as applicable to avionics hardware realization for flight application.
3. Understand all the technical specifications and requirements for stringent high reliability applications.
4. Experience in similar production practices of space quality hardware.
5. Knowledge on Test & Evaluation procedures and methodologies for critical electronic hardware including Experience in preparation of log sheets & documentation.
6. All the resources including manpower required for Fabrication & Testing of High quality and Reliable hardware.
7. Should have executed such work for URSC anytime during the last 4 years. In support of the same, recent relevant Purchase Orders shall be enclosed.
8. Should own necessary infrastructure for realization involving space grade components (Highest level) and elements, and should poses valid facility Certificate by URSC. (applicable for Mode-IV/ Mode-V).
9. In case of SMT facility, vendors can use their own / other vendor facilities certified by URSC (applicable for Mode-IV/ Mode-V).
10. Have URSC certified manpower for Fabrication of space quality hardware with proper validity and Trained manpower for RF Testing.
11. In support of all the above points (#1 to #10), relevant Purchase Orders (as applicable) and proof of evidence is mandatory and shall be enclosed as part of tender.

2.2 First Article Realisation

The successful bidders - in terms of technical suitability and commercial considerations - have to fabricate and test the offered Electronic Package/s at URSC and/or at Vendors premises as a part of specific training required for realization of new cards/process/systems.

For this activity, the vendor has to deploy URSC certified fabricators, QC inspector and Test engineers to get familiarized with fabrication techniques, card level inspection, card level functional test, package assembly, Package level tests, QA/QC aspects, Environmental tests and T&E aspects. Vendors who have limited experience in realizing the specific type of package offered shall have to realize a “First Article” to demonstrate their ability to Fabricate and test these packages, besides ensuring that they have sufficient experience to handle future flight model hardware. After assessment of Vendor’s capability to realize the offered package, URSC shall decide whether the vendor should fabricate one hardware at URSC or may directly realize the hardware at his premises. Depending on the expertise and earlier experience URSC may ask vendor to realize one hardware at URSC and/or his premises as first article.

Subsequently vendor shall realize a “First article” at his premises/ URSC with the trained manpower under their own supervision and demonstrate independent handling capability in realizing the hardware. Subsequent to successful realisation of this hardware, future flight hardware shall be offered as under the purchase contract.

The vendors should carry out the following activities while realizing the first article,

1. Fabricate Electronic Hardware in URSC under the guidance of URSC fabrication agency.
2. Functional Testing of Card under the guidance of URSC.
3. Mechanical assembly activities (Mounting of Power devices on mechanical housing, card mounting, feed through mounting and other miscellaneous activities) under the guidance of URSC.
4. Package level tests, Initial Bench Test (IBT), Environmental tests (Vibration, Thermo-vacuum tests, EMI/EMC Test), Final bench test (FBT).

First Article realization requirement is not applicable for the vendors who have been realizing and delivering similar hardware to URSC/SAC.

3. REFERENCE DOCUMENTS

The following documents shall serve as reference documents for the contract. They cover various phases of activity including facility requirements and certification, manpower certification, ESD and clean room requirements. Vendors shall comply with requirements as listed out in these documents and which are applicable to them.

Document Identification*	Document title
ISRO-PAX-300Rev1	Workmanship Standards for the Fabrication of Space Electronics Packages.
ISRO-PAS-207	Storage, Handling and Transportation requirements for Electronics hardware.
ISRO-PAS-100 Rev 1	Non-Conformance Control Requirement for ISRO Projects.
ISRO-PAS-201-Rev1	Failure Reporting, Analysis and Corrective Action Procedures
ISRO-PAS-203-Rev1	Procedures and Review Requirements for Major Ground Tests and Ground Test Facilities
ISRO-PAS-400	Contamination Control and Cleanliness Requirements
MIL-HDBK-263B	ESD Control Hand Book
ISRO-URSC-QAG-MTA-GL-01	Space Electronics Production Assurance Guidelines

**Available in ISRO website*

Latest revision of the standards/documents generated from time to time shall be applicable and made available. All other applicable documents & fabrication details will be given to respective vendors.

4. BRIEF DESCRIPTION OF THE HARDWARE

This section gives a brief introduction regarding the functional aspects of different types of RF packages which are to be realized. This is only indicative and meant to provide a flavor of typical RF hardware which are part of the spacecraft electronics and which are likely to be outsourced.

4.1 Radio Frequency (RF) System

There are three major types of standard RF systems:

1. C/ Ku -Band TTC & SPS RF System
2. S-Band TTC RF System
3. X/ Ka- Band Data Transmitter

4.1.1 C/Ku-Band TTC RF System & SPS RF System

GEOSAT series spacecraft TT&C RF system consists of C-Band Transponder operating at 6.4GHz uplink and 4.2GHz downlink frequencies or Ku-Band Transponder operating at 12 GHz uplink and 10 GHz downlink frequencies. The

transponder consists of main and redundant transmitters, receivers and associate antenna and feed network used to carry out the following functions:

To transmit telemetry data from the spacecraft to ground station as phase modulated downlink.

To receive and demodulate the command signal transmitted on an uplink carrier from ground station.

To demodulate the tone ranging information from the transmitted up link carrier and then phase modulate the ranging information on the downlink carrier.

4.1.2 S-Band TTC RF System

LEO series spacecraft TT&C RF system consists of S-Band Transponder operates at 2.01GHz uplink and 2.12GHz downlink frequencies. The transponder consists of main and redundant transmitters, receivers and associate antenna and feed network used to carry out the following functions:

- To transmit telemetry data at 2.12 GHz from the spacecraft to ground as phase modulated downlink.
- To receive and demodulate the command signal transmitted on a 2.01 GHz uplink carrier from ground station.
- To demodulate the tone ranging information from the transmitted up link carrier and then phase modulate the ranging information on the downlink carrier.

4.1.3 X-Band Data Transmitter:

The X-Band Data Transmission System accepts the payload data through Baseband Data Handling systems. It modulates this data on X-Band carrier and transmits to ground after suitable amplification and filtering. For the transmission of the payload data, a data rate of typically 640 Mbps is needed. This is carried out through two chains: 320 Mbps of data is transmitted with Right Hand Circular polarization (RHCP) and another 320 Mbps of is transmitted on Left Hand Circular Polarization (LHCP). The carrier generation in X-Band transmitter is using PLL technique and modulation is typically QPSK.

4.1.4 Satellite Positioning System:

Satellite Positioning System (SPS) is 12-channel MGR-1 (Multi-GNSS receiver) at L1 (1575.42 MHz) and L5 (1176.4MHz) frequency. SPS is designed for computing the state vector of the high-dynamic platform. Satellite Positioning System is typically

placed on Anti-Earth Viewing (AEV) side to receive, track & demodulate GPS and NavIC signals continuously and provide the state vector.

Note:

Most of the above packages contain boards with surface mount components and through hole components. Most of the PCBs are double-sided component mount type. The devices used are highly ESD sensitive and the operators must have the knowledge of handling ESD sensitive devices.

All the above packages listed in this section have components like SAW Filter, GaAS FET, Mixer, RF Transistor, FPGA, PROMs, Pre-scalar. Some of the components require specialized fabrication techniques.

5. NATURE OF WORK

The activity involved for vendors in realisation of these packages is fabrication and testing. In addition, there is scope for carrying out the activities either at URSC or at Vendor's own premises. All these variations are built into the 3 modes of operation as envisaged by URSC.

The following section gives an overview of the work involved in the realisation of hardware. The activities to be carried out by vendors, in brief, are as follows:

1. Receiving, handling and storage of components/ PCBs/Housings.
2. To carry out the prefab activities including lead formation.
3. Procurement of consumables for fabrication as applicable to Mode 4/5.
4. Card/Package level fabrication and Package wiring.
5. Assembly, Integration and Testing of Electronics Modules/Subsystem including PCB stacking and inspection.
6. Applying protective coating like conformal coating, Potting and Radiation Shielding of Components etc.
7. Conduct of Initial Bench level test, 6+1 Thermal Cycling, Burn-in Test, Vibration Test, Thermo-vacuum test, EMI/EMC, FBT etc at specified location.
8. Implementation of the recommendations of various Review Boards.
9. Package stacking and inspection.
10. Package level tests in different phases.
11. To carry out environmental tests at vendor/ URSC facility.
12. Delivery of packages to AIT for integration to spacecraft.
13. Any other additional tests/re-tests as desired by URSC.

Vendor may be required to bring the required tools/equipments as may be necessary for carrying out the activity planned at URSC.

5.1 Modes of Realisation

Packages are sought to be realized in different modes (**Table-I**). Vendors, depending on their experience, expertise, capability and willingness, can offer to realize packages in one or more modes. The details of the packages which are offered in any specific mode of operation are indicated in the detailed specifications document. The decision to offer packages in any of the modes lies with URSC and depending upon the requirements, schedule and capacity, may be offered in one or more modes. The three modes of package realisation entail different activity and capability/ facility of vendors. Vendors while making their techno-commercial bids shall carefully go through the requirements as specified in detailed specification document and respond accordingly.

URSC has two locations identified as main campus and ISITE campus. In this document wherever URSC facilities are mentioned, the facilities may be available either at main campus or ISITE campus and vendors may have to carry out activities at either of the two locations. In this context, URSC shall therefore imply main campus or ISITE campus.

For Mode III, where activities are to be carried out within the URSC campus, URSC will provide the working facilities to carry out the tasks i.e. work areas, tools, materials & consumables and test equipments. For all the other modes, vendor shall have working facility and arrangements of his own to realize the hardware. The comprehensive list of roles and responsibilities for each given mode is detailed in **Table-2**.

Table- 1: RF Package Realisation Modes

Mode	Nature of work	Remarks
Mode III	Fabrication and Testing at URSC	-
Mode IV	Fabrication and Testing at Vendor Facility	PCB, Mechanical Housing and EEE components will be provided by URSC as FIM
Mode V	End-to-End realisation at Vendor Facility	Only EEE components will be provided by URSC as FIM

Table-2: Roles & Responsibility of URSC & Vendors

SL. No.	SUBJECT/DESCRIPTION	MODE-III	MODE-IV	MODE-V
		Fabrication and Testing at Vendor/ URSC facility	Fabrication & Testing at Vendors premises	End-to-End realisation at vendor premises
1.	Production Document	URSC	URSC	URSC
2.	Schedule Planning	Vendor & URSC	Vendor & URSC	Vendor & URSC
3.	Interaction with various agencies in URSC for smooth execution of the fabrication, testing and documentation during the period of contract through Focal Point, URSC.	Vendor	Vendor	Vendor
4.	PCB Gerber files/Films,Blue prints of Layouts and Mounting Details	URSC	URSC	URSC
5.	PCBs Procurement	URSC	URSC	Vendor
6.	EEE Components	URSC	URSC	URSC
7.	Approved Mechanical Drawing	URSC	URSC	URSC
8.	Mechanical Housing	URSC	URSC	Vendor
9.	Consumables procurement	URSC	Vendor	Vendor
10.	Consumables Audit/ Qualification	URSC	Vendor/ URSC	Vendor/ URSC
11.	Components management including receipt and acknowledgement of Components for fabrication	Vendor	Vendor	Vendor
12.	Utmost care in handling and transportation of the components properly	Vendor	Vendor	Vendor
13.	Defective components, if any found during	Vendor	Vendor	Vendor

	incoming inspection should be accounted and informed to the URSC for replacement				
14.	Storage of FIM & other materials		URSC/ Vendor	Vendor	Vendor
15.	Audit/ Clearance of PCB's and Mechanical Housings		URSC	URSC	URSC/ Vendor
16.	Audit/ Clearance of consumables and materials procured by vendor		NA	Vendor/ URSC	Vendor/ URSC
17.	Facility audit & clearance		URSC	URSC/ Vendor	URSC/ Vendor
18.	Facility for Lead Forming, Vapour de-greasing, Icom cleaning and oven for performing Dam and Fill activity		URSC	Vendor	Vendor
19.	Operator & Inspector Training		Vendor	Vendor	Vendor
20.	Operator & Inspector Certification		URSC	URSC	URSC
21.	Generation of all standard /Planned RDC		Vendor	Vendor	Vendor
22.	Clearance of RDCs generated by Vendor		URSC	URSC	URSC
23.	MRR		URSC/ Vendor	URSC/ Vendor	URSC/ Vendor
24.	Fabrication of Hardware	Stencil preparation & Kitting	Vendor/ URSC	Vendor	Vendor
25.		Tools for assembly	URSC	Vendor	Vendor
26.		Card and Package Assembly & Inspection	Vendor	Vendor	Vendor
27.	Card and Package level audit (QC)		Vendor/ URSC	Vendor/ URSC	Vendor/ URSC
28.	Fabrication related NC Management		URSC/ Vendor	URSC/ Vendor	URSC/ Vendor

29.	Vendor side material Review Board (VMRB)		NA	Vendor	Vendor
30.	Card Level Test Jigs		URSC	Vendor	Vendor
31.	Providing EIDs, PROMs, Test systems/ Test stations/ Consoles for package level test		URSC	URSC	URSC
32.	Test Equipment	General	URSC	Vendor	Vendor
33.		Specific	URSC	Vendor/ URSC	Vendor/ URSC
34.	TRR for Card and Package Level		Vendor/ URSC	Vendor/ URSC	Vendor/ URSC
35.	Coordination for Hot/cold, Vibration,Thermo vacuum and EMI/EMC facilities, etc.		URSC	Vendor/ URSC	Vendor/ URSC
36.	Test profile management: For Vibration and Thermo vacuum etc.		URSC	URSC	URSC
37.	Standard Test procedure document for card & Package Testing		URSC	URSC	URSC
38.	Preparation of project specific test procedure document		Vendor	Vendor	Vendor
39.	Buffer harness/ Special Harness required for package level testing (Gold plated connector will be supplied by URSC)		URSC/ Vendor	Vendor	Vendor
40.	Card & Package level Testing, Independent T&E and documentation (DOR, logsheets, Test Reports, T&E Reports etc.)		Vendor	Vendor	Vendor
41.	Audit of Test results		URSC	URSC	URSC

42.	Results clearance through Review Boards	URSC	URSC	URSC
43.	Nonconformance management during Card & Package level Testing through VSRB	NA	Vendor	Vendor
44.	Nonconformance management during Card & Package level Testing through URSC review Boards	Vendor/ URSC	Vendor/ URSC	Vendor/ URSC
45.	Clearance for Rework/ Retest requirements	URSC	URSC	URSC
46.	Implementation of Rework/ Retest	Vendor	Vendor	Vendor
47.	Compilation & Presentation of Test Results to Review Boards for final clearance	Vendor & URSC	Vendor & URSC	Vendor & URSC
48.	End Item Data Package (EIDP) Provider	Vendor	Vendor	Vendor
49.	Focal point for work status reporting & Management of entire activities to meet the delivery schedule provided by URSC	Vendor	Vendor	Vendor
50.	Pre-certificates (Electrical/Mechanical/ T&E) for Hardware Clearance certificate	Vendor/ URSC	Vendor/ URSC	Vendor/ URSC
51.	Hardware Clearance Certification for AIT after due review/ audit	URSC	URSC	URSC
52.	Participation in Reviews such as MRR,TRR, LMRB, MRB, LSRB, CMRB, SRC etc.	Vendor/ URSC	Vendor/ URSC	Vendor/ URSC
53.	Submission of DOR, Log Books, Folders (Card & Package Level) etc. (Soft/Hard copy) to URSC along with hardware.	Vendor	Vendor	Vendor

54.	Maintenance of Consumption statement (all records of components/ materials received, utilized, balance etc.,) and submission to URSC Focal Point	Vendor	Vendor	Vendor
55.	Responsibility of Return of unused components if any back to URSC after completion of activity/delivery of product.	Vendor	Vendor	Vendor
56.	Responsibility for loss/ damage of components supplied by URSC to vendor; vendor shall make due compensation to URSC	Vendor	Vendor	Vendor
57.	Responsibility of using the free issue materials solely for the intended activity.	Vendor	Vendor	Vendor
58.	MIPs at various stages of realisation (refer Table-3)	URSC/Vendor	URSC/Vendor	URSC/Vendor

Note:

1. URSC will provide the necessary infrastructure based on the Mode of realization defined in Table 1 as agreed upon and as deemed essential for carrying out the Realisation of Hardware including delta training / training of First article.
2. Vendor is responsible for the safe custody of the equipment / test jigs/ test consoles provided to them.
3. All require checklist for fabrication and testing will be provided after the release of work order.

Table 3: Mandatory Inspection Points (MIP)

The MIP where URSC shall mandatorily audit/review the progress of activity and readiness of hardware for further activity is as follows:

MIP No.	Activity	Period/Stage	Responsibility
1.	Card level Audit	After each card fabrication completion	URSC, Vendor
2.	Package level audit	After each Package assembly and readiness for Bench Test	URSC, Vendor
3.	Vibration clearance	After each Package assembly and readiness for Vibration test	URSC, Vendor
4.	Delivery/User clearance and certification	After each Package readiness for delivery to AIT	URSC, Vendor

5.2 Description of Work

This section describes the activities involved, in brief, to provide vendors with a fair idea of the activities expected to be performed by them in various phases of different modes. The activities can be broadly classified as Fabrication and Testing. Both the activities are carried out at card and Package levels. Only the main activities are listed here and the details are explained in detail in further sections of this document.

5.2.1 Card Fabrication & Package Assembly

The activity basically involves the following:

1. Presentation and participation in Manufacturing Readiness Review (**MRR**).
2. Pre-fabrication activities – card cleaning/baking, folder opening, all pre-requisite drawing/blueprint verification, component kitting, NA (Non-Availability) list preparation and preparing folder for card fabrication.
3. Mounting and soldering of components.
4. Mounting of test select ICs (PROMs) on sockets as per the designer's requirements.
5. Conducting VMRB for any Non-conformance arises during fabrication and reporting to URSC.
6. Cards assembly to tray.
7. Preparing the cards for functional tests.
8. Card level polymer activities.

9. Box level component mounting.
10. Package wiring.
11. Package assembly for Initial Bench Test (IBT).
12. Package preparation for Environmental tests.
13. Folder scanning & photographs.
14. Package preparation for Assembly, Integration & Testing (AIT).

5.2.2 Card & Package Testing

The following activities are to be carried out as part of the card level test activity:

1. Presentation to TRR (Test Readiness review) committee regarding readiness for commencing testing at card/package level.
2. Preparation of log sheets.
3. Preparation & Verification of test equipment's and test set up.
4. Testing the cards in ambient & Hot & cold conditions as per the test procedure.
5. Logging and submission of test results & reporting anomaly.
6. Carrying out IBT.
7. Carrying out 6+1 Thermal cycling, Step Test, Burn-in Test, Pre-vibration bench test (PVBT), Vibration test, Pre-thermovac test (PTBT), Thermovac test, EMI/EMC Test and Final bench test (FBT) in specific environments.
8. Folder scanning & photographs.

5.2.3 Package preparation to Assembly, Integration & testing (AIT)

Packages are to be prepared for delivery to AIT after formal clearance by review boards. Subsequent to clearance by review board, vendor shall label Packages. Packages are to be prepared for delivery to AIT following all necessary procedures.

Necessary pre-certificates shall be prepared by Vendor for the final hardware clearance certification by QA, URSC.

5.2.4 Documentation

1. Vendor shall prepare the consolidated component list required and generate the required folders for card and package activities prior to start of the fabrication activity. This list shall be reviewed by URSC and approved for issuance of components.
2. Vendor is responsible for preparation of production document during the first article/model realisation. The Production document shall contain two parts viz., **Fabrication document and testing documents**. Any additional inputs for making the Production Document will be provided by URSC. After the completion of 1st article, the fabrication document shall be made ready before the beginning of the subsequent card fabrication activity and the testing document for both card and

package level testing shall be made ready before the card level Test readiness review. The same shall be submitted to URSC for review and approval and only the approved version shall be used for subsequent flight model realisation of the same hardware.

3. Any modification/addition required for any of the above documents based on the inputs/feedback obtained during the fabrication and testing phase should be implemented by the vendor after getting clearance from URSC.
4. Vendor shall maintain folders with respect to fabrication and testing for each card and package with unique folder numbers.
5. Separate documents / log books to be maintained for each card and package.
6. Vendor shall compile the Card Test results and submit to URSC for review before proceeding with polymer activities.
7. Vendor shall compile all the test results and generate End Item Data Package (EIDP) at the end of package level test phase. This document shall be reviewed by URSC to ensure compliance to specifications, closure of all non-conformance and overall technical compliance.
8. Vendor shall maintain Rework Data Card (RDC) of fabrication, testing Log books, Daily Operations Record (DOR), test results log, Non-Conformance Reports (NCRs) of testing and submit the same to URSC along with the EIDP.
9. All fabrication and test records shall be submitted to URSC in both hard and soft form i.e., the hard copy records shall be scanned and preserved on CD/DVD along with photographs at every stage of assembly.

5.3 Reviews & Audits

The following reviews are mandatory and vendors who are chosen for a contract for fabrication and testing shall be required to participate in them and make presentation/s as applicable.

1. **MRR (*Manufacturing Readiness Review*)**: Prior to start of PCB Assembly activity, MRR shall be conducted by URSC. This shall be either at URSC or at Vendor's location and vendor participation is mandatory. Prior to this, vendor shall be provided with a list of PCB's to be populated, the configuration of the package to be realized, the components and component list for verification, mechanical housings, relevant drawings and blueprints as necessary for carrying out the activities.
2. **TRR (*Test Readiness Review*)**: After PCB wiring and prior to card level testing and also prior to Package level Testing, TRR shall be conducted. TRR shall be conducted at URSC or at Vendor's location. The TRR shall review card

fabrication/package fabrication status and close-outs of any audit observations, test equipment and test engineer's availability and experience, availability of test document, specifications etc.

3. **Test Results Review:** The test results of the cards and package shall be submitted to URSC for review. After the internal review by Focal point, formal Test Results Review by standing committee shall be held. Vendor shall formally present all test results, compliance to specifications, non-conformances and their closures and any observations of relevance.

Subsequently, upon clearance, necessary pre-certificates shall be prepared by Vendor (format for pre-certificates shall be given by URSC) for AIT delivery.

The facility audits and fabrication/Testing phase audits at different levels as mandated by URSC should be carried out. Refer flow chart at **Annexure-I** for details.

6. DETAILS OF FABRICATION

6.1 Components / Materials / Consumables

EEE components, PCBs, Mechanical housings will be issued by URSC for Mode-III and Mode-IV. For Mode V, only EEE components will be provided by URSC. Fabrication materials and consumables are to be procured by vendors for Mode-IV and Mode-V. A list of materials/consumables and their likely sources is provided in **Annexure-II**. Vendors shall procure the specified materials as indicated in the list – which are already space proven and approved for flight hardware. The sources provided are only indicative.

6.2 Fabrication Details

Necessary fabrication details for each card will be provided by URSC. The flow chart depicting card/package assembly sequence is given in **Annexure-III and IV**.

6.3 Fabrication Procedures

During the fabrication process the following are to be strictly followed by vendor personnel:

1. Adherence to the ESD protection measures

2. Following the fabrication procedures as per the guidelines & applicable Documents of URSC including stage inspections.
3. Logging & reporting of deviations, anomalies observed and clearance to be obtained from URSC before proceeding further.
4. NC Management has to be followed as per URSC guidelines.
5. To maintain a folder for each card & package being fabricated and log all relevant information as per the prescribed formats.
6. Vendor shall have URSC trained personnel as operators & inspectors to look after all assembly activities, both electrical and mechanical fabrication/inspection aspects.
7. Each card after completion of wiring should be inspected by vendor side QC person as per URSC Guidelines and to be offered for audit by QA, URSC as per MIPs.
8. Lead Forming of special devices like ASICs and FPGAs should be done by vendor personnel at URSC/Vendor premises as applicable.

6.4 Card Fabrication

As part of card fabrication, Vendor shall be responsible for populating the PCB. In each subsystem, the cards are classified into different types based on the complexity, which in turn depends on PCB, quantity of components, type of components, no. of tests to be carried out and the time taken for the same. Vendor shall carry out the card fabrication and inspection as per the URSC Guidelines.

For Mode-IV and Mode-V, automatic SMT line qualified and approved by URSC at vendor premises shall be used. If the vendor is not having the qualified and approved SMT line at his premises, any URSC qualified and approved SMT line can be used for carrying out these activities. However vendor shall provide all the details including Valid facility certificate by URSC for carrying out this activities. Vendor shall necessarily adopt automatic reflow soldering for identified components (SMT devices).

The card fabrication activity basically involves the following:

1. Procurement, Storage of Consumables.
2. Receipt and handling of URSC FIM elements
3. Presentation and participation in Manufacturing Readiness Review (**MRR**).
4. Pre-fabrication activities – folder preparation with all pre-requisite drawing/blueprint verification, card cleaning/baking, component kitting, NA (Non-Availability) list preparation, etc.
5. Mounting and soldering of components.
6. Mounting of test select ICs (PROMs)
7. Inspection and clearance of fabrication activity at each stage
8. Providing heat sinks and chotherm wherever required, prior to assembly.

9. Cards to be assembled with respective tray prior to card testing.
10. Cleaning of cards.
11. Preparing the cards for functional tests.
12. Clearance of cards for functional test after the MIPs by URSC.

6.5 Harness Fabrication

For Mode-IV and Mode-V, harness fabrication (for the purpose of card/package testing) shall be carried out by vendors with EID details provided by URSC. Connector crimping/soldering, sleeve shrinking etc will form part of the activities. Required Gold plated Connectors for Buffers will be provided by URSC. The required consumables and wires shall be procured by Vendors. However after the completion of package realisation, the gold plated buffers/ harness should be returned back to URSC.

6.6 Package Assembly

Package assembly is to be carried out after receiving clearance for all cards from URSC for various tests completed.

The following activities are involved:

1. DC/DC Tray wiring.
2. Harness/cables and connector wiring, lacing etc.
3. Package wiring between cards, connectors, and package mounted devices, wherever applicable.
4. Package Assembly and preparation for Initial Bench Test (IBT) after MIP by URSC.
5. Subsequent to IBT, de-stacking package and completion of pending polymer activities i.e., conformal coating, potting, radiation shielding, Dam & Fill, etc.
6. Stacking of packages and Preparation for environmental tests.
7. Clearance of Package for further test after the MIPs by URSC

6.7 Package Preparation to AIT

1. Packages are to be labeled and labeling to be verified. Packages are to be prepared for AIT with all necessary Pre-certification checklists. Vendor may use URSC facility for these activities.
2. Clearance of Package for AIT after the MIP by URSC.
3. Necessary pre-certificates to be prepared by Vendor for the final hardware clearance certification by QA, URSC

6.8 Inspection and Auditing

The flight fabrication activity involves inspection and audit by the vendor QC personnel. They shall carry out inspection on 100% basis at all stages of activity and shall make specific mention of inspection in the fabrication folder. For inspection guidelines, vendor may refer to the reference documents section. Subsequently before every higher stage of activity, audit shall be carried out internally to assure that all activities at the earlier stage are completed.

URSC reserves the right to inspect/audit hardware at any stage of the activity. Formal stage audits to be carried out by URSC are indicated **in the flowchart Annexure-VII & VIII.**

6.9 Quality Control

All Quality assurance practices of electronic systems assemblies, as provided in the reference document, shall be adhered to strictly. All fabrication and inspection processes used shall follow the guidelines provided in the reference documents. Materials and consumables procured by Vendor, used for fabrication activity, shall be approved by URSC.

6.10 Non-Conformance Management during Fabrication phase

For non-conformances observed during fabrication by vendor, following are the recommended guidelines:

1. Vendor shall constitute a suitable Vendor Material Review Board (VMRB) to discuss all non-conformances (NC) observed during fabrication.
2. All non-conformances shall be formally notified to URSC immediately after the occurrence. The NCR shall be addressed to Focal Point, URSC.
3. Also all Non-conformances shall be discussed in VMRB and VMRB report shall be submitted to URSC for further disposition.
4. After receipt of NCR and VMRB report from vendor URSC shall suggest further course of action.
5. Any rework/ activity on the flight card/ package shall be carried out only with the recommendation of URSC.
6. Vendor presence is mandatory for the review and rework at URSC.

6.11 Special Checks

Subsequent to completion of card fabrication activity, any specific alerts/checks as mandated by URSC shall be carried out by Vendor and clearance for functional test will be provided by URSC after necessary verification.

6.12 Photographic Records

Photographs of the hardware shall be taken at appropriate stages of realisation and needs to be maintained as a record of the fabrication/assembly activity by the Vendor. This shall be submitted to URSC for appropriate MIP clearance.

6.13 Rework

Sometimes during or after testing, certain reworks become necessary for ensuring compliance to requirements.

1. Reworks due to Vendor's workmanship or minor in nature shall be carried out by vendor without any financial implications
2. Reworks due to design problem or URSC specific requirements which are major shall be carried out by vendor. Payment for those reworks will be estimated by URSC based on quantum of the work and time involved and cleared with approval of appropriate committee of URSC.
3. At certain times, it may be necessary to carryout rework in URSC only, even though it may have been fabricated at Vendor premises. At such times, vendor shall depute fabrication and QC personnel to URSC for completing the activity.

7. DETAILS OF TESTING

7.1 Card / Package Test procedures.

Testing activity involves broadly, card and package level testing including environmental tests. Vendor shall perform the testing of the cards and packages as per the test procedure documents approved by URSC.

7.2 Role of Vendor T&E

1. Vendor shall identify a T&E Engineer.
2. The vendor Testing team including T&E engineer should have undergone necessary training to deal with regular T&E activities during testing, handling,

safety, test setup, environmental test requirements, etc for smooth conduct of test and verification.

7.3 Non-Conformance Management during Testing phase

For non-conformances observed during testing by vendor, following are the recommended guidelines:

1. Vendor shall constitute a suitable Vendor Subsystem Review Board (VSRB) to discuss all non-conformances (NC) observed during testing.
2. All non-conformances shall be formally notified to URSC immediately after the occurrence. The NCR shall be addressed to Focal Point, URSC.
3. Also all Non-conformances shall be discussed in VSRB and VSRB minutes shall be submitted to URSC for further disposition.
4. After receipt of NCR and VSRB report from vendor URSC shall suggest further course of action.
5. Any activity on the flight card/ package shall be carried out only with the recommendation of URSC.
6. Vendor presence is mandatory for the review and retest at URSC.

7.4 Card Testing

1. Card Level Test Readiness Review (TRR) shall be conducted after PCB wiring and prior to Card level Testing
2. Verification of test equipment/ Test jigs / Test console etc.
3. Preparing the test bench/set up with ESD precautions in place.
4. Test set-up verification/evaluation
5. Preparation of Test log sheets.
6. Testing of wired cards as per the approved test procedures provided by URSC.
7. Results logging in prescribed format, review and submission to URSC for clearance.
8. Recording and reporting any observation/deviation in test results from the specified values, if any.
9. Noting the details of the test equipment used such as model number, serial number, make, calibration/ Validation status etc., along with the input voltage/currents, test set up and test environment in the log sheets.
10. During the testing phase if any updation needs to be carried out in the test procedure document, the same shall be carried out by vendor and submitted to URSC for clearance.
11. All the testing activities shall be logged in the DOR as per the activities flow including the details about the testing personnel.
12. Detailed flow of activities is given in **Annexure - IV**

7.5 Package Level Testing

Package Level Test Readiness Review (TRR) shall be conducted after Card level testing and Prior to Package testing as per TRR checklist.

7.5.1 Preparation for Package Testing

Test system and the associated harness will be provided by URSC wherever applicable. The vendor shall set up, verify and evaluate the test console and harness prior to commencement of testing.

7.5.2 Bench Test

1. Package Level Test Readiness Review (TRR) shall be conducted after Card level testing and prior to Package testing as per TRR checklist.
2. Preparation of Test logsheets.
3. Vendor has to carry out the package testing as per the approved test procedure document provided by URSC and all test results to be recorded in the logbook for verification/analysis and to be submitted to URSC for clearance at the end of each phase.
4. Post conformal coating test and/or pre-vibration test has to be carried out after the conformal coating of all cards.
5. One T&E engineer from vendor side will look after all QA aspects during all phases of testing activities in co-ordination with URSC
6. During the testing phase if any updation needs to be carried out in the test procedure document, the same shall be carried out by vendor and submitted to URSC for clearance.
7. All the testing activities shall be logged in the DOR as per the activities flow including the details about the testing personnel.

7.5.3 Environmental Tests

The vendor shall carry out the package level environmental tests such as vibration, thermovac tests, EMI/EMC tests etc.

7.5.4 Vibration Test

1. After completing the initial bench test and obtaining necessary approval/clearance from URSC and mandatory inspection by QA, the packages are to be made ready for vibration test. The vendor shall carry out the activities in close supervision/association with URSC.

2. To arrange the test setup with necessary harness at vibration facility in association with facility group
3. To conduct pre-vibration bench test as per the test procedure and record the results
4. During active vibration test all parameters listed in test document to be monitored and recorded
5. To carry out post vibration mechanical checks under the close supervision/ association with QA.
6. To conduct post vibration bench test as per the document
7. Clearance from URSC before proceeding the packages for thermovac test

7.5.5 Thermovac Test

The packages have to undergo thermo vacuum (TVAC) test after vibration test. The temperature-time profile and vacuum limits (TVAC profile) will be provided by URSC during package level TRR. Vendor personnel are to carry out the following:

1. To conduct thermo vacuum tests as per the specifications given by URSC
2. For Mode-IV and Mode-V required materials such as wires and consumables shall be procured by the vendors and URSC shall only provide the connectors to fabricate the special harness (~~Typical number of 25~~) if any required to conduct the Thermo vacuum Test.
3. To conduct all tests as per test procedure document provided by URSC and record all the parameters
4. Post thermo vacuum test/ FBT to be conducted
5. Compiled results discussion/clearance from URSC regarding the performance of the packages during thermo vacuum test/ FBT before proceeding with further activities.

7.5.6 Burn-in Test

The package shall undergo burn-in test of 120 hours at +55°C, in order to stabilize the DC and RF parameters.

7.5.7 EMI/EMC Test:

EMI/EMC test is carried out to verify the package performance in electromagnetic field environment. There are four type of test conducted namely-RE, RS, CE and CS. The details will be provided during package level TRR.

7.5.8 Final Bench Test

All the tests are to be carried out in ambient conditions as per the test procedure document. Detailed flow of activities is given at **Annexure-II**

7.5.9 Package Preparation to AIT

During Preparation for AIT, data pack has to be generated and presented by Vendor for review by URSC Review Board. Subsequent to the clearance by URSC review board, vendor shall prepare the packages for delivery to AIT by following all necessary procedures.

Necessary pre-certificates shall be prepared by Vendor for the final hardware clearance certification by QA, URSC.

7.5.10 Retest/ Additional Test

Sometimes during or after testing, certain retests/ additional test become necessary for ensuring compliance to requirements.

1. Retest due to Vendor's workmanship or minor in nature shall be carried out by vendor without any financial implications
2. Retest/ any additional test due to design problem or URSC specific requirements which are major in nature shall be carried out by vendor. Payment for those tests will be estimated by URSC based on quantum of the work and time involved and cleared with approval of appropriate committee of URSC. If required separate work order will be issued.
3. At certain times, it may be necessary to carryout these tests in URSC only, even though it may have been realised at Vendor premises. At such times, vendor shall depute testing and T&E personnel to URSC for completing the activity.

7.6 Schedule Planning and status reporting

1. Based on Delivery schedule given by URSC in respective Work order/ Supply order, Vendor has to make the detailed Schedule plan and discuss with URSC. The same is to be implemented without any slippage. Schedule plan to be made available to all concerned.

2. Status reports on fabrication, testing and documentation to be submitted for review periodically to Focal Point, URSC.

8. DELIVERABLES

8.1 List of Deliverables by URSC

Particular set of deliverables depends on the mode of realisation which is specific to each mode and given in detail specification document.

8.2 List of Deliverables by Vendor

Particular set of deliverables depends on the mode of realisation which is specific to each mode.

8.2.1 List of Deliverables by Vendor for Mode III (Fabrication & Testing at URSC)

1. Fabricated and tested cards/Electronic hardware.
2. Unused and/or surplus materials / components.
3. EIDP (Folders, Inspection reports, Photographs of Cards & Packages, Minutes of review board meeting, Test Report, T&E report etc.)

8.2.2 List of Deliverables by Vendor for Mode IV (Fabrication & Testing at Vendor Facility)

1. Consumables Procurement details.
2. Consumables Audit/ Qualification certificate from URSC.
3. Fabricated and tested cards/Electronic hardware.
4. Fabrication / Assembly / Test reports /Inspection reports
5. Unused and/or surplus materials / components.
6. Special harness required to conduct the Thermo vacuum Test as applicable
7. URSC supplied Equipment/Instrument if any
8. EIDP (All Facility details and its certificates used during realisation phase, Folders, Inspection reports, Photographs of Cards & Packages, Minutes of review board meeting, Card level Test Report, Environmental Test Report, Package Level T&E report etc.)

8.2.3 List of Deliverables by Vendor for Mode V (End-to-End mode at Vendor Facility)

1. PCB procurement details and audit clearance certificate from URSC
2. Mechanical Housing procurement details and audit clearance certificate from URSC

3. Consumables procurement details and audit clearance certificate from URSC
4. Fabricated and tested cards/Electronic hardware.
5. Fabrication / Assembly / Test reports /Inspection reports
6. Unused and/or surplus materials / components.
7. Special harness required to conduct the Thermo vacuum Test as applicable
8. URSC supplied Equipment/Instrument if any
9. EIDP (All Facility details and its certificates used during realisation phase, Folders, Inspection reports, Photographs of Cards & Packages, Minutes of review board meeting, Card level Test Report, Environmental Test Report, Package Level T&E report etc.)

9. SAFETY PRECAUTIONS

1. The vendor personnel should strictly adhere to the general work rules, procedures and office timings followed at URSC and keep harmonious relations with the staff during their visit to URSC
2. The personnel of vendor must adhere to all the safety guidelines while handling components, cards, and packages during testing and transporting, particularly the ESD protection measures such as wearing ESD overcoats, shoes / chapels, wrist bands, grounding and other measures as per ESD protection guide line document.
3. It is imperative that the vendor's personnel do not touch any component, card and package without ESD protection.

10. SECRECY & SECURITY

1. All documents prepared for fabrication, test procedures, log books, drawings, schematics and any other communications, codes revealed during the process of realisation will be exclusive property of URSC and vendor shall have no right what so ever on them.
2. These documents are to be strictly confidential and should not be reproduced, copied/ transmitted to any media without explicit permission of URSC
3. Further, the vendor must not quote any of these works in any publications or to any of their customers without explicit permission from URSC and adhere to strict confidentiality.

11. DELIVERY SCHEDULE

1. The items should be delivered /completed within six months from the release of work order or issue of last component/inputs whichever is later.
2. Vendor is responsible to strictly adhere to the schedule provided by URSC. Delays attributable to awaiting inputs/clearances/test facilities availability etc. which are to be provided by URSC, shall not be taken into consideration for delivery period.
3. LD clause (see terms and conditions) may be applicable for delay in delivery beyond the delivery period indicated.

12. CONTRACT VALIDITY

This section deals with the Terms and Validity regarding the contract:

1. The rate contract is for a period of 3 (three) years.
2. Purchase orders will be released on successful bidders.
3. The successful vendors shall be offered packages in identified mode through work order.
4. As more than one instance of work allotment is likely, multiple work orders may be issued.
5. The number of work orders shall be as per the hardware requirements issued for realization of one /batch of packages.
6. Security deposit, (as required by Government rules and procedures), will be applicable to the work order value only. As the hardware delivered could get integrated to satellite any time; sometime directly into clean room without any storage time. Hence warranty period, and associated PBG is not applicable.
7. Payment for each work order shall be by submission of bills at completion of all activities as mentioned in Work Order or based on milestone payment as identified in the Table-4.
8. URSC reserves the right to monitor all activities and to withdraw the work if found unsatisfactory or delayed beyond project requirements.
9. URSC will issue required materials as Free Issue of Materials (FIM) to the vendors as per the relevant work orders. The vendors shall provide all risk insurance as per Government Purchase procedures for the same as the FIM value will be much higher than the work order value.

12.1 PARALLEL RATE CONTRACT

1. Only the technically suitable offers meeting all the specifications of the tender shall be considered for the contract.
2. The URSC qualified vendors are eligible to quote for Mode-III, Mode-IV, Mode-V.
3. New vendors who are interested in participating and getting qualified by URSC for these activities shall quote for Mode-III only. If quoted for other modes (Mode-IV and Mode-V), it will not be considered for price bid opening.
4. The commercial bids of technically suitable quotes for respective modes shall be opened for finalizing the contracts.
5. URSC may enter into parallel rate contract with one or more vendors. For entering into parallel rate contract, mode wise L1 rates shall be arrived at based on the price bids received from the suitable vendors. As needed URSC will Negotiate with L1. The negotiated price of L1 will be counter-offered to other technically suitable vendors. The number of parallel rate contracts is as per Annexure-1 of **PFD-ANNEXURE DOCUMENT for IRS RF packages** document.

6. ~ 10% of total order value will be reserved under Mode-III for new vendor who are interested in getting qualified and qualified vendor for executing new configuration / new packages. Approximately 20% of total order value will be kept for mode-IV and remaining 70% for Mode-V including facilities wherever applicable.
7. For Mode-III one new vendor and one qualified vendor are planned to be loaded equally. If no new vendors are there, then entire 10% of Mode-III will be offered to qualified vendors for executing any new configuration / new packages. If no qualified vendors are there under Mode-III then entire 10% will be offered to New Vendor.
8. Under mode-IV and Mode-V, 100% of the respective mode will be offered to qualified L1 vendor in case of single qualified vendor, will be distributed in the ratio of 60 % and 40 % in case of two qualified vendors and will be distributed in the ratio of 50 %, 30% and 20 % in case of three qualified vendors. This number is approximate; actual quantity of distribution may vary depending on project requirement.
9. For Each activity specified above, required number of vendors planned for each mode of realisation is mentioned in the **Annexure-1 of details of realization of package** (DT) and the work will be distributed among the participating vendors based on URSC requirements.
10. In case, if a vendor does not comply for the delivery schedules/Quality requirements during the execution of the contract, URSC reserves the right to cancel the work orders and re-appropriate the funds and the work orders as applicable to the alternate vendor/vendors to meet the requirements.
11. Fall clause is applicable to this rate contract as per URSC/Purchase rules.

12.2 ABNORMALLY LOW BIDS

An Abnormally Low Bid (ALB) is one in which the Bid price, in combination with other elements of the Bid, appears so low that it raises material concerns as to the capability of the Bidder to perform the contract at the offered price. The procuring Entity may, in such cases, seek written clarifications from the Bidder, including detailed price analyses of its Bid price in relation to scope, schedule, allocation of risks and responsibilities, and any other requirements of the tender document. If, after evaluating the price analyses, the procuring entity determines that the Bidder has substantially failed to demonstrate its capability to deliver the contract at the offered price, the Procuring Entity may reject the Bid/ Proposal and evaluate the next higher bidder (and so on), at his/ their own quoted rate (if considered reasonable, and not by the counter-offering rate of ALB), for the award of contract.

12.3 FREE ISSUE MATERIAL

1. The Supplier shall furnish All Risk Insurance Policy, towards the cost of materials issued by URSC, valid up to completion of supply against each work order/ orders. This All Risk Insurance Policy shall be furnished before collecting the Free Issue Material. At any given point of time, the cost of material (components) with the Supplier shall not exceed FIM value shall be collected from our Premises through returnable gate pass, by the Supplier on submission of Authorization Letter & other relevant documents to our Purchase & Stores Officer (Stores), URSC and the Gate Pass shall be regularized by the Supplier on return of the ordered items. Utmost care shall be taken while handling Government property. Damages caused, if any, shall be suitably compensated.
2. The Supplier shall stock the free issue materials in safe custody and shall take all precautions during storage, handling and use against any loss, damage, etc.
3. As and when the Contract is completed, Supplier shall provide details of FIM consumed in "Material Consumption Statement" (enclosed) and return balance FIM/Scrap, if any.

13. PAYMENT TERMS

Payment will be made either on completion of all activities as per work order for each package as per milestone payment terms as provided in Table-6.

Table.4: Milestone Payments for Different Modes of Operation

Item	Mode of operation	Payment after completion of activity as % of total package cost		
		Card level (%)	Package level (%)	Environmental (%)
		Fabrication & Testing	Fabrication & Testing	Fabrication & Testing including EIDP
Electronic fabrication / testing	Mode III	50	30	20
	Mode IV	50	30	20
	Mode V	50	30	20

Note-1:

1. Payment shall be made only after completion of activities.
2. The contract is for three (3) years. As per the present costing format in the detailed specification document, the average cost per PCB shall be provided.
3. In Mode III (and also in other modes depending on requirement), whenever Vendor personnel are deployed at URSC for Fabrication and/or testing, Vendor shall ensure payment to its personnel, at the minimum, as required by Central Labor Laws
 - i. The minimum wages applicable to the deployed manpower and
 - ii. Other statutory payments (PF/Medical/Gratuity etc).
4. The Vendor shall be responsible for all statutory obligations arising out of deployment of personnel at URSC under this contract.

14. TERMS & CONDITIONS:

1. *Vendor shall provide point by point compliance as part of the technical quotation requirements as provided in Compliance Matrix and the details provided by URSC shall not be altered in any way.*
2. *Validity of this contract is for 3 years.*
3. *The vendors shall submit their quotations in two parts:*
The Part-I: Technical Bid.
The Part-II : Commercial Bid.
4. *The vendor shall quote separately for different modes of contract (Refer Table 1 of Production Framework Document Ref. No.: URSC-SEMG-IRS-EP-2025*
5. *As part of Technical bid evaluation, a team from URSC may visit the vendor premises to verify the compliance of facilities to URSC requirements. The vendor needs to make necessary arrangements for the same.*
6. *Vendor shall have Focal Points for the execution of the contract.*
7. *All communication between URSC and Vendor shall be in writing.*
8. *The Vendor shall be bound to accept all instructions or directions issued by the URSC Focal Point or any other Authority duly authorized by him / her relating to the execution of the Contract.*

9. *URSC may enter into Multiple rate contract with multiple vendors (Sec 12.1 REALISATION OF RF PACKAGES FOR IRS SPACECRAFTS Ref. No.: URSC-SEMG-IRS-EP-2025.*
10. **QUANTITY VARIATION:** - *The quantities mentioned in PFD-ANNEXURE DOCUMENT for IRS RF Packages are tentative & subject to variation.*
11. *All the FIM issued by URSC are to be taken with all risk insurance/ indemnity bond as per Govt. of India procedure till the packages are delivered to URSC.*
12. Reworks/Retests due to workmanship shall be carried out by vendor without any financial implications.
Reworks/Retests due to URSC specific requirements which are major shall be carried out by vendor. Payment for those reworks/retests will be estimated by URSC based on quantum of the work & time involved and cleared with final approval of appropriate committee of URSC.
13. Vendor Focal Point shall update URSC about the progress of the activities periodically.
14. All URSC material / equipment / tools, if any provided for the work should be kept under safe custody and returned to URSC on completion of the work.
15. The details of work handled as part of the purchase contract shall be kept secret and should not be divulged to any person / agencies outside ISRO.
16. The Vendor shall abide by all the security regulations governing access to the work areas at URSC.
17. The work force whenever deployed for work at URSC shall follow the discipline of the Centre.
18. The cost of components and associated hardware lost/damaged due to negligence/mishandling by vendor shall be recovered through Vendor's payment. This will be carried out with the approval of appropriate committee of URSC.
19. For activities being carried out at URSC, Vendor shall be prepared to work beyond working hours and on holidays, if necessary.
20. The Vendor shall be responsible for any damage to URSC / their property or injury to URSC / their Personnel caused due to their negligence during the execution of the P.O.
21. URSC unilaterally reserves rights of short closure of this contract.
22. LD clause is applicable for delay in delivery beyond the delivery period indicated in the work order.
23. All commercial aspects shall be applicable as per URSC Purchase Terms and Conditions.
24. In the event of violation of any of the terms and conditions of the P.O or in the event of the work done by the Vendor not meeting the URSC quality/quantity/schedule requirement, the Work Order/Purchase Order shall be terminated by URSC after giving 30 days-notice to the Vendor. In the event of

such termination of the Work Order/P.O / Contract, payment to the Vendor will be restricted to the work completed and accepted.

25. Cancellation of Purchase Order: URSC reserves the right to cancel the purchase order, either partially or completely at any time during the currency of the P.O., without assigning any reasons thereof.
26. **Confidentiality:** The intellectual property rights of all documents, drawings, package details and any written communication furnished by URSC to the vendor as part of the P.O., shall remain the property of the Government of India. The Vendor is prohibited from further utilizing or passing on any of the design details, drawings, schematics, etc. in whole or part to any third party.
27. Transport / Conveyance, Canteen and Medical Facilities will not be extended to vendor personnel deployed at URSC. The Vendor shall be responsible for the same.
28. The employees deputed to undertake the work by the Vendor shall remain the employees of the Vendor and they will not acquire any claim for future employment or regularization in URSC or any other ISRO Centers.
29. Any security violations or involvement in any unauthorized movement / transaction of official material / properties by the Contract Personnel deployed will be viewed seriously and the Contract will be terminated and action deemed fit will be taken.
30. Compensation to vendor workforce deployed at URSC
 - a. ISRO/URSC has adopted the guidelines to grant compensation in case of death/permanent incapacitation of persons engaged by the Service Provider/Bidder (Private Companies, firms & Contractors) due to unintended/ unforeseen occurrences during maintenance, operation and provisioning of Public Services.
 - b. The extent of liability, on the occurrence of any "accident" as defined under these Guidelines, Department shall whether or not there has been any wrongful act, neglect or default on its part and notwithstanding anything contained in any other law, be liable to pay compensation to such extent as prescribed below:
 - (a) In the event of death or permanent disability resulting from loss of limbs - Rs.10 Lakh.
 - (b) In the event of other permanent disability - Rs.7 Lakhs.
 - c. Any compensation paid under these Guidelines shall be recoverable from such Service Provider/Bidder concerned.
 - d. For this purpose, without limiting any of the other obligations or liabilities, the Service Provider/Bidder concerned shall at their own expense take and keep a Comprehensive Insurance for their workforce and for all the work during the execution.
 - e. The Service Provider/Bidder concerned shall have to furnish originals along with premium receipts and other papers related there to the

concerned Contract Manager/Focal point within 15 days from the date of commencement of the Contract.

The Service Provider/Bidder should provide their unconditional acceptance to these guidelines in their letterhead duly signed by their authorized signatory which is mandatory for acceptance of their offer.

31. The Service Provider / Bidder shall abide by the law of the land including, Contract Labour (Regulation & Abolition) Act, EPF Act, ESI Act, Minimum Wages Act, Equal Remuneration Act, Employees Compensation Act, Payment of Wages Act, Income Tax Act, Goods and Service Tax Act and all labour related laws / Acts or any new regulations / legislations enacted in this regard and its compliance as applicable during the tenure of the Contract. Service Receiver shall in no way be responsible for any default regarding statutory obligation. The Service Provider / Bidder has to ensure compliance of the above provisions at the time of submission of bill to the Service Receiver and while making payments to their work-force at all times during the currency of the Service Contract.
32. The Vendor shall be responsible for all statutory obligations arising out of deployment of personnel at URSC under this contract. Also Vendor to ensure statutory payments like ESI, PF, insurance, etc. for the personnel deployed at URSC is up to date. All the details to be provided during placement of work order.
33. It is the responsibility of the Service Provider / Bidder to arrange the character and antecedents of the work-force deputed for testing work. The Service Provider / Bidder shall engage the work-force who is not having any criminal background. The character and antecedents shall be got verified through record check by Service Provider / Bidder at their own cost from the concerned Police authorities (Police Clearance Certificate) and shall maintain all the relevant documents.
34. Vendor personnel should be prepared to work beyond working hours and on holidays to meet the project schedules, if necessary.
35. The cost of components / systems damaged due to negligence / mishandling by the vendor shall be recovered from the vendor's payment.
36. The Service Receiver shall not be responsible for any damages, losses, claims, financial or other injury to any of the work-force engaged by the Service Provider / Bidder in the course of their performing the functions / duties, or for payment towards any compensation. The work-force shall adequately be insured by the Service Provider / Bidder against accidents including loss of life.
37. All documents, drawings, package details and any written communication furnished by URSC to the vendor as part of the P.O., shall remain the Intellectual Property of the Government of India and the vendor is prohibited from further utilizing or passing on any of such information / details / drawings etc. in whole or in part to any other agency / third party.

38. Transport / Conveyance, Canteen and Medical Facilities will not be extended to vendor / vendor personnel deployed at URSC.
39. The employees deputed to undertake the work by the vendor shall remain the employees of the vendor and they shall not acquire any claim for future employment or regularization in URSC or any other ISRO Centers.
40. Any security violations or involvement in any unauthorized movement / transaction of official material / properties by the vendor personnel will be viewed seriously, the contract may be terminated and action deemed fit will be taken.

Annexure I: List of PCB Manufacturer

Sl. No.	Item Description	Known Sources
1.	Upto 16 Layers Fr4 and glass polyimide with 0.2mm PTH with via filling and cap plating, RF PCBs with gold plating (RTD)	M/s Micropack, Jigani, Bangalore M/s HiQ, Hosur M/s Ascent, Hosur
2.	Glass Polyimide 14 layers with 0.2mm PTH and Double Side PCBs	M/s Micropack, Jigani, Bangalore M/s HiQ, Hosur

Annexure II: List of Mechanical Housing Manufacturing

Sl. No.	Item Description	Known Sources
1.	Material Realization (AA6061)	M/s Manjira Machine Builders, Hyderabad
2.	Thermal Treatment	M/s Pushpak Industrial Services, Bangalore
3.	Fabrication of Mechanical Housing	M/s SMART Technologies PEENYA INDUSTRIAL ESTATE BANGALORE-560058

	M/s Bhagyashri Home Appliances Pvt. Ltd. Nagpur 440016
	M/s Prakash Engineering Works, Kamakshipalya, Bangalore -560079
	M/s Avio Heli Tronics Info Systems Pvt Ltd KIADB Industrial Area, Whitefield, Bangalore - 66
	M/s Ripple Technologies Peenya Industrial Area, Bengaluru- 560058
	M/s DELTA TECHNOLOGIES Peenya,B'lore-560058
	M/s S L N CNCTECH PRIVATE LIMITED PEENYA II STAGE,BANGALORE-560 058.
	M/s SURELIA WIRE-CUT PVT LTD Tagore Road, RAJKOT - 360002.
	M/s ARTHA TECHNOLOGIES Magadi main Road, Bangalore-560091
	M/s AERO PLATINA TECHNOLOGIES HITECH DEFENCE & AEROSPACE PARK, JALA HOBLI, BANGALORE - 562129
	M/s SAAB ENGINEERING CENTRE Mahadevapura Post, Bangalore - 560048
	M/s SHOMA Automation Pvt Ltd Peenya Industrial Estate, Bangalore - 560058
	M/S DUCOM AEROSPACE TECHNOLOGIES PVT.LTD, PEENYA IND. ESTATE BANGALORE : 560058
	M/s MULTITECK ENGINEERING SOLIUTIONS

		Peenya 2nd Stage Bangalore – 560 091
		M/s SILVERGREY ENGINEERS INDUSTRIAL ESTATE RAJAJINAGAR BANGALORE 560 010
		SOUTHERN ELECTRONICS (BANGALORE) PRIVATE LIMITED
		Peenya Industrial Area, Bangalore - 560054.

Annexure III: List of consumables.

a. Mechanical Accessories & Consumables

Sl. No	Item Description	Known Sources
1	Non-Magnetic SS304 Type: CSK Screw, washer, nuts & Cheese head as per (DIN /ISO) Size: M2, M2.2, M2.5, M3, M4, M5	Avdel India Ltd., Bangalore LPS Bossard (P) Ltd. New Delhi
2	100% Non-magnetic machined SS 304 washer and spacers Size: M2, M2.2, M2.5, M3, M4, M5	Nanni Engineering works, Bangalore
3	Aluminium Anodised Press fit Spacer (As per drawing)	Pushpak Industries, Bangalore
4	Self-lock Helicoils Size: M2, M2.2, M2.5, M3, M4, M5	Armstrong Fastening Systems, U.K Aerofasteners, UK Apex Stainless steel fasteners limited unit U.K
5	Aero Tight Lock nuts Size: M2, M2.2, M2.5, M3, M4, M5	Apex Stainless steel fasteners limited unit U.K
6	Nylon Lock nuts Size: M2, M2.2, M2.5, M3, M4, M5	Apex Stainless steel fasteners limited unit U.K
7	Tantalum as per DIN/ISO specification Overall Size: 300×1000 (in mm) Thickness (in mm): 0.1, 0.125, 0.25, 0.5, 0.8 & 1	M/s. H C Starc, USA United Titanium Inc, Ohio 10-44691-USA

8	Insulation Bushes for Diode and transistors As per Drawing (Teflon, delrin etc)	Nanni Engineering works,Bangalore-
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b. Electrical Consumables

Sl. No	Item Description	Known sources
1	Electrical grade copper sheets.	Sri. Anugraha Enterprises, Bangalore Shanthi Metals, Bangalore
2	Polyimide wires and cables	Sanghvi Aerospace (P) LTD, Ahmedabad. Tyco Electronics CA 94025-USA
3	Spec 55 wires different AWG	Tyco Electronics CA 94025-USA Raychem corporation Menlo park/Redwood city, California. Tyco Electronics Bangalore. India Flutff
4	Solder Bar As per QQ-S-571F	Advance tech Services, Bangalore B.T. solders(P) Ltd: Bangalore -94
5	Panduit terminals	Tentacles Aero logistix, Bangalore Advance tech Services.
6	Polyolefin tubing & Kynar tubing (Sleeves)	3M India Ltd, Bangalore
7	Adhesive tapes like, polyimide, kapton, copper, PTFE.ETC.	3M India Ltd, Bangalore CIR-Q-TECH, Bangalore Shanthi metals, Bangalore.

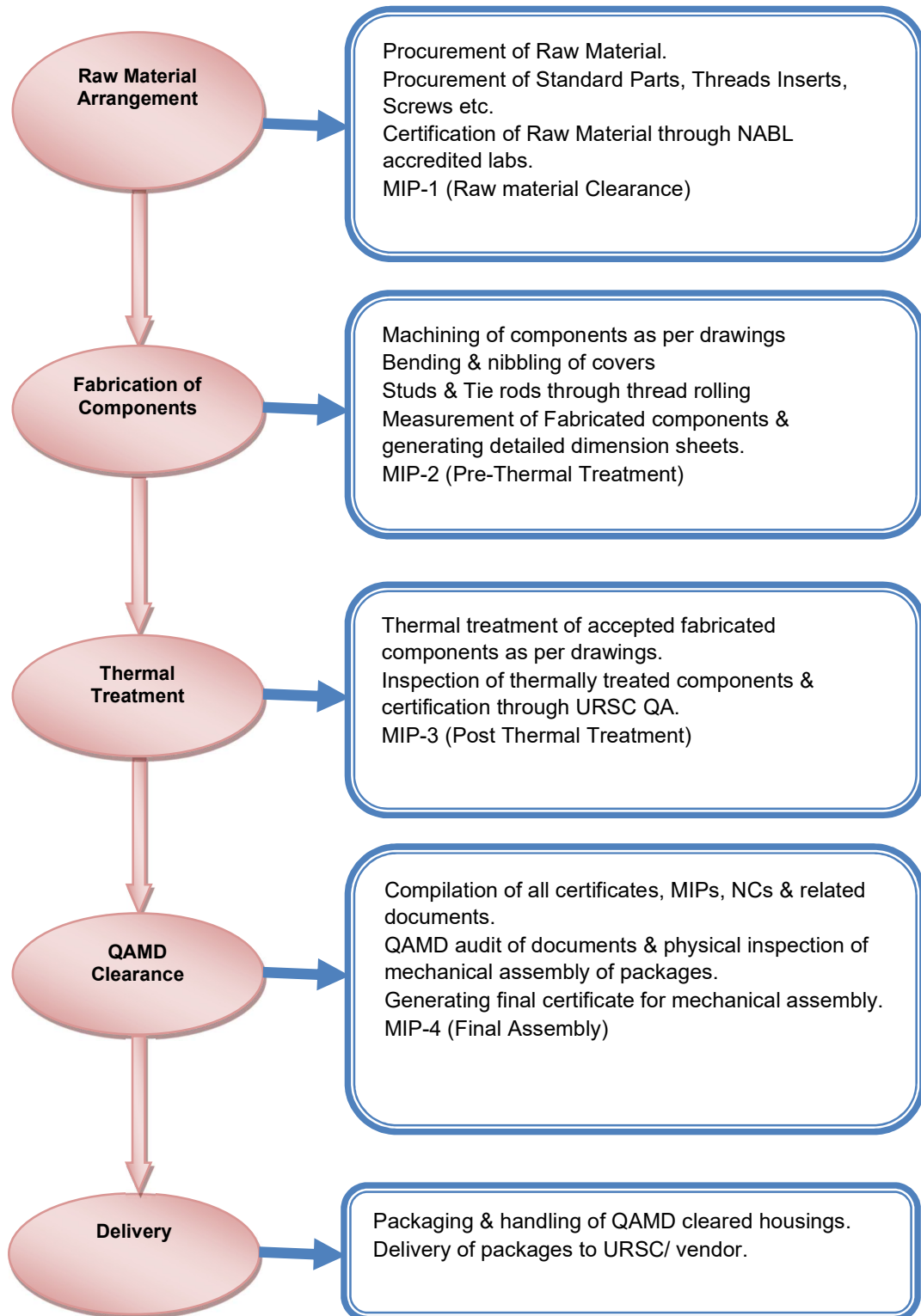
8	Bifurcated Solder terminals	M/s. Cambion, Canada Tentacles Aero logistix, Bangalore
9	Harnessing materials like Cable ties/ Cable tie mounts (TEFZEL)	M/s. Panduit, USA
10	Polyimide Film Tape Size 0.5 Inch x 36 yards Part no.: 7419	M/s. 3M, USA
11	Antistatic Utility Tape 0.5 Inch x 72 Yard	M/s. 3M, USA
12	Copper tape	M/s. 3M, USA
13	Lead tape Part no.: 421	M/s. 3M, USA
14	Wicking tape Part Name: Soder Wick	M/s. Chemtronics
15	Anti-static bag	M/s. DESCO, USA
16	Lacing thread LC 136 & LC143	M/s. Alphawire, USA
17	Beakers	M/s. Borosil
18	Cable ties (TEFZEL)	M/s. Panduit
19	Cable ties mount (TEFZEL)	M/s. Panduit

Annexure IV: Chemicals and Adhesives

SL. No	Item Description	Known sources
1	Liquid flux Type RMA	B.T. solders (P) Ltd; Mysore Sumitron exports (P) ltd. New Delhi
2	Sn63, Pb37 RMA cored Solder wire (5 core) Sn62, Ag2, Pb36 RMA cored Solder wire (5 core)	B.T. solders (P) Ltd: Bangalore -94 AIM Inc. Canada HIE2S4 Multicore solders Ltd; HPW4RQ-UK Interflux electronics, Belgium.
3	Sn63, Pb37 RMA Solder Paste Sn62, Ag2, Pb36 RMA Solder Paste	AIM Inc. Canada Alpha Cookson
4	RMA Flux	M/s. AIM, USA.
5	Electronic grade Iso Propyl Alcohol	M/s. Nice chemicals M/s. Thermofisher M/s. Rankem
6	Thermal interface material 1. Silpad: SP2000/K10 2. Chotheim: -1671	1. Berquist ITC GmbH, Germany 2. M/s. Parker Hannifin Tentacles Aerologistix, Bangalore
7	EPOXY ADHESIVE Space grade Scotch Weld Epoxy Adhesives EC2216 B/A Gray	3M INDIA Tentacle Aerologistix, Bangalore.
8	Space grade Encapsulant with Curing Agent Dowsil 93-500	Dow Chemical's India (p) Ltd Mumbai Tentacle Aerologistix Pvt Ltd Bangalore
9	Thermally Conductive Epoxy Encapsulant (Black) Stycast 2850 FT with Catalyst 24LV/ Catalyst 9AMB	Henkel -LOCKTITE
10	Polyurethane Conformal Coating Material CONATHANE CE-1155 with S8 thinner	M/s. ELANTAS PDG, Inc, USA

11	Potting material Dow Sil RTV 3145 Gray colour	Dow Chemical's India (p) Ltd Mumbai Tentacle Aerologistix Pvt ltd Bangalore
12	Araldite Adhesive AV 138 + HV 998	M/s. Huntsaman

Annexure V: Mechanical Housing Fabrication Flow Chart

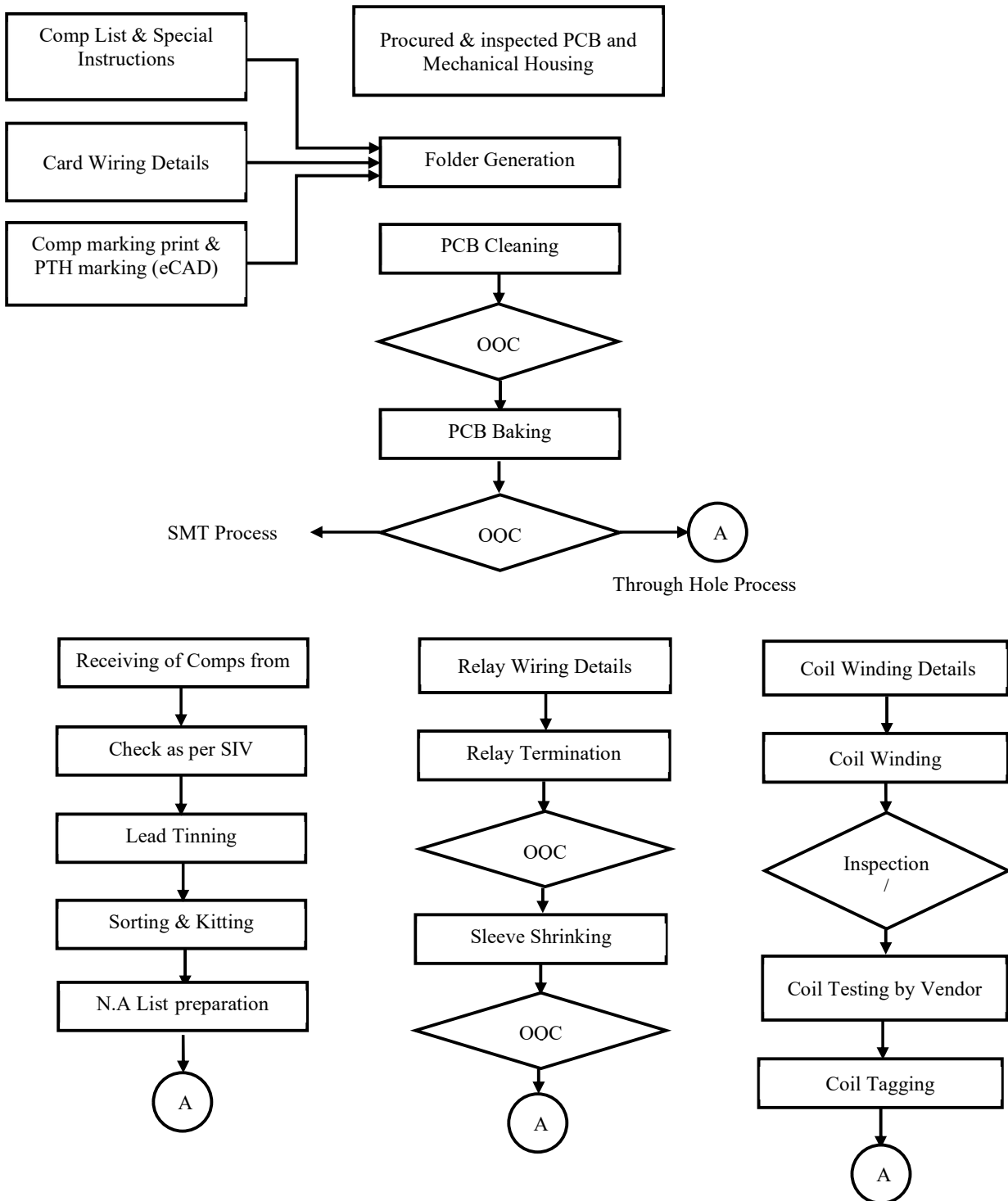


Annexure VI: PCB fabrication details

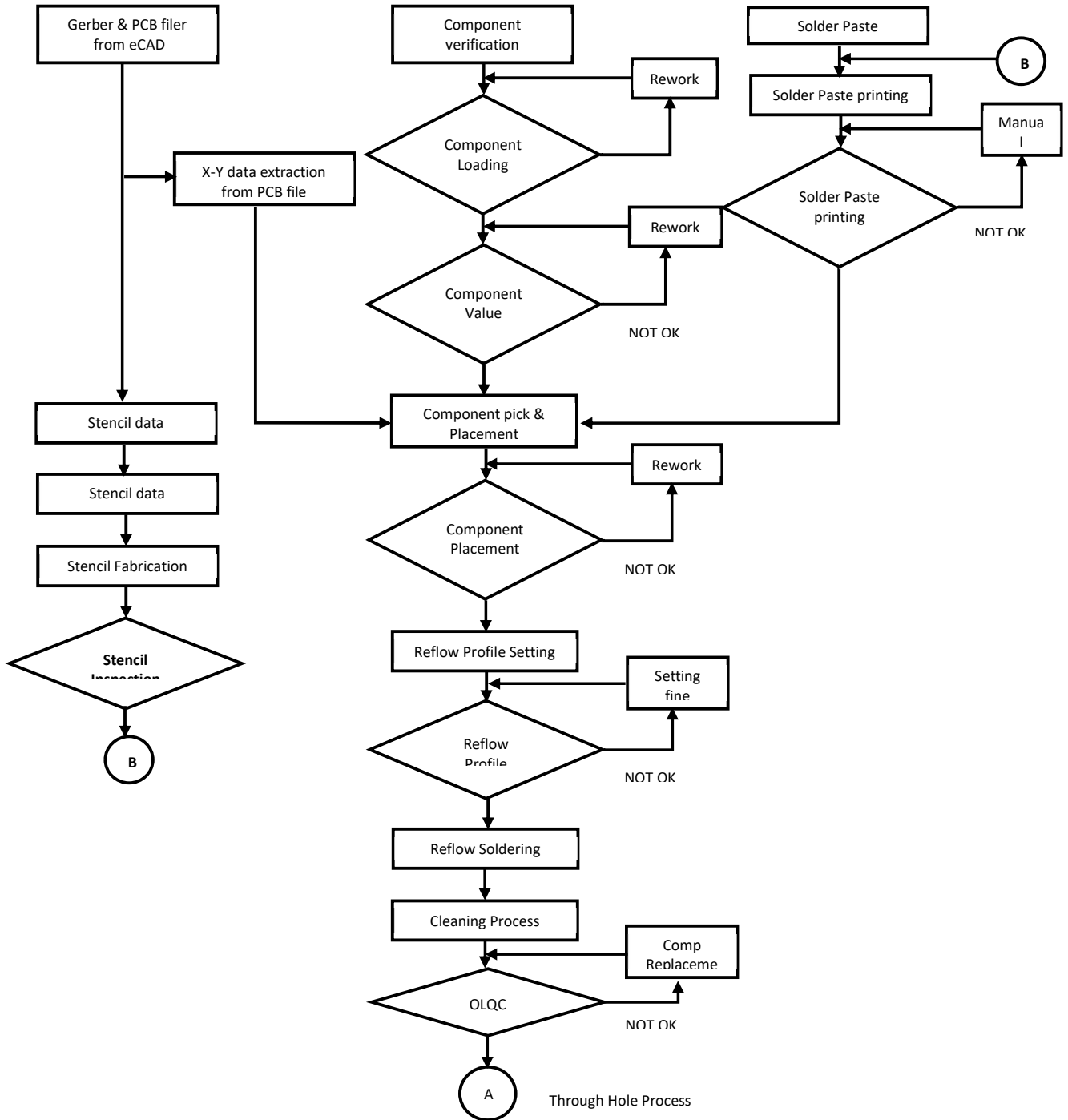
DELIVERABLES	ACCEPTANCE	CONTROL OF NON-CONFORMANCE
Following reports shall accompany every PCB supplied as per the document “Procurement specification of Rigid Printed Wiring Boards (ISRO-ISAC-ST-0111)”. 1. PCB Inspection report summary of each PCB 2. Mechanical inspection report of each PCB 3. Ionic contamination test report and Bare board test report as per Para 4.7.3.2 4. Micro section report of each panel's test coupons (two numbers). 5. Vendor shall separate the horizontal and vertical test coupons in presence of URSC Engineers. 6. Vendor shall get the supplied PCBs verified at OQCPS, URSC, for mechanical dimensions. 7. Vendor shall engrave QA codes in individual PCBs as provided by OQCPS, URSC.	Acceptances of PCBs are based on stationary compliance of the following: Applicable documents for acceptance and approval as per 2.0 Electrical Integrity: By bare Board 1. Testing as per section 3.2 of Document: ISRO-ISAC-ST-0136. 2. Mechanical inspection and approval by URSC as per section 3.3 of Document: ISRO-ISAC-ST-0136. 3. Ionic contamination test reports for each panel 4. Micro-section and Group-B testes ‘PASS’ by URSC test Coupons as per section 3.5 and section 3.6 of Doc: ISRO—URSC-ST-0136. 5. Vendor should supply two test coupons (as per ISRO design) as an integral part of each MLB/panel. 6. Vendor should also supply micro section moulds of initials of initial, 3- solder dip samples as applicable along with each batch of PCBs. 7. Supply of applicable reports such as Visual Inspection report, Mechanical inspection report Bare Board test report, Controlled Impedance report and mechanical test report of each of PCB and Micro section report and ionic contamination report of individual PCB/Panel 8. Final inspection of supplied PCBs will be carried out by SR&QA, URSC, and shall be the final authority of PCBs acceptance. 9. Each board supplied shall be identified with unique identification number for traceability with batch & date of manufacturing.	1. The Non-conformances, Observed by the manufacturer during various phases of process and testing, shall be recorded, discussed/reviewed in local review board for suitable correction and presented to URSC audit team. 2. Rejection should not exceed 10% for every period of six monthly. In case rejection rate continues to exceed 10%, URSC reserves the right to review the processes and if the vendor does not take suitable & quick corrective action, URSC reserve the right to terminate the contract or hold work order releasing till the process corrected. Rejected PCBs should be replaced at the earliest without any additional cost.

Totally, vendor shall provide three test coupons [two regular coupons & one Control impedance coupon if applicable] and one set of mold [initial, 3x solder Dip and 6x solder Dip] as part of deliverables. Each regular coupon measures the area of 70.98 Sqcm and typical control impedance coupon measures 51.00 Sqcm.

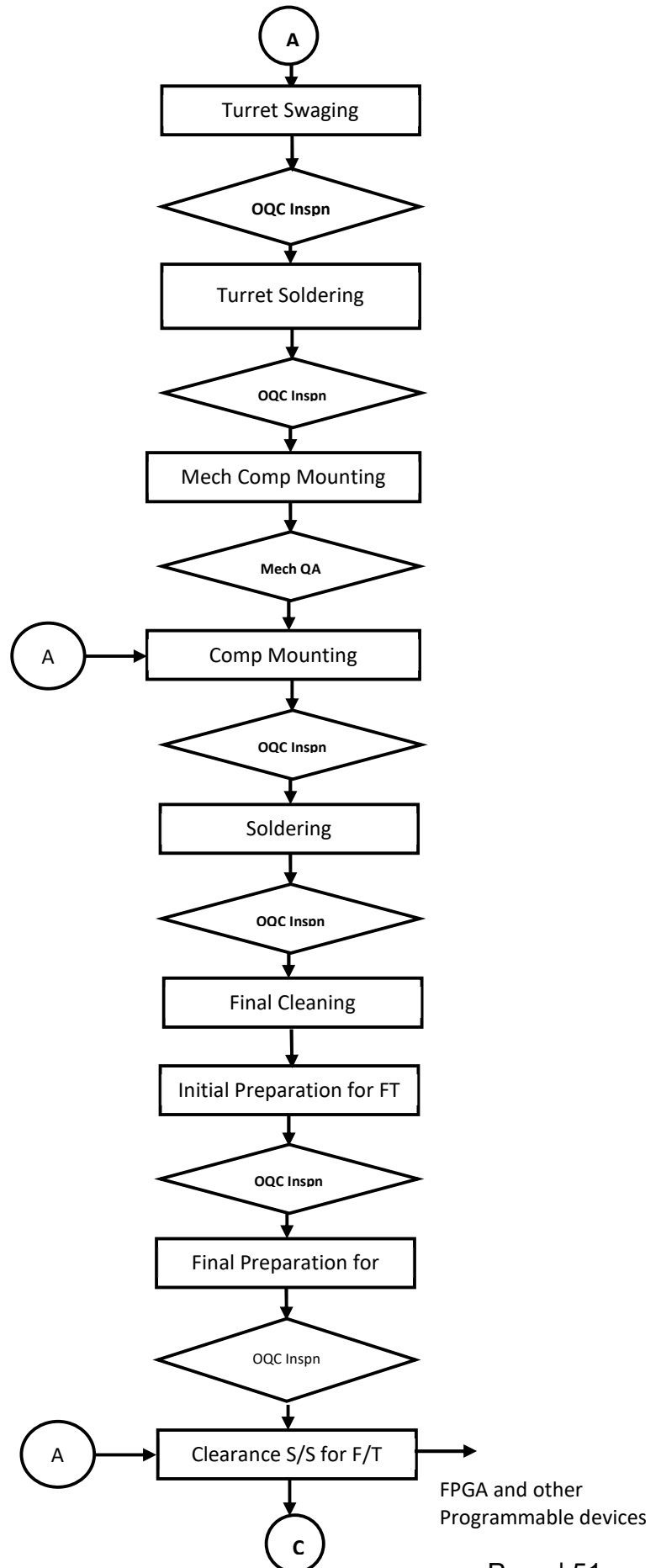
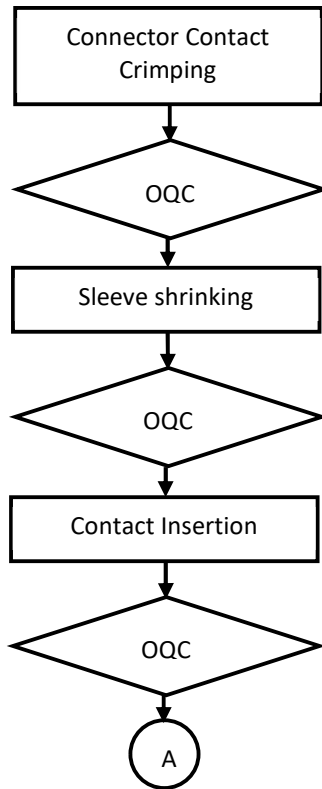
Annexure VII: Fabrication Flow Chart



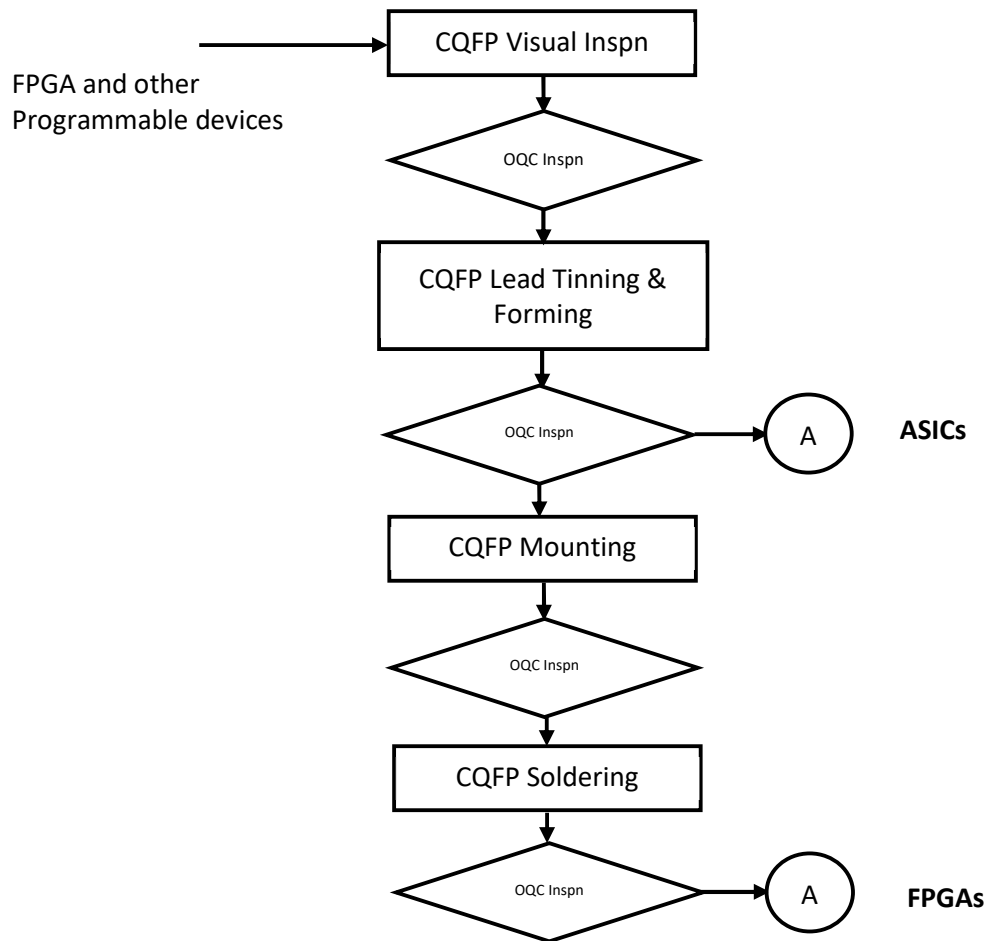
SMT Process:



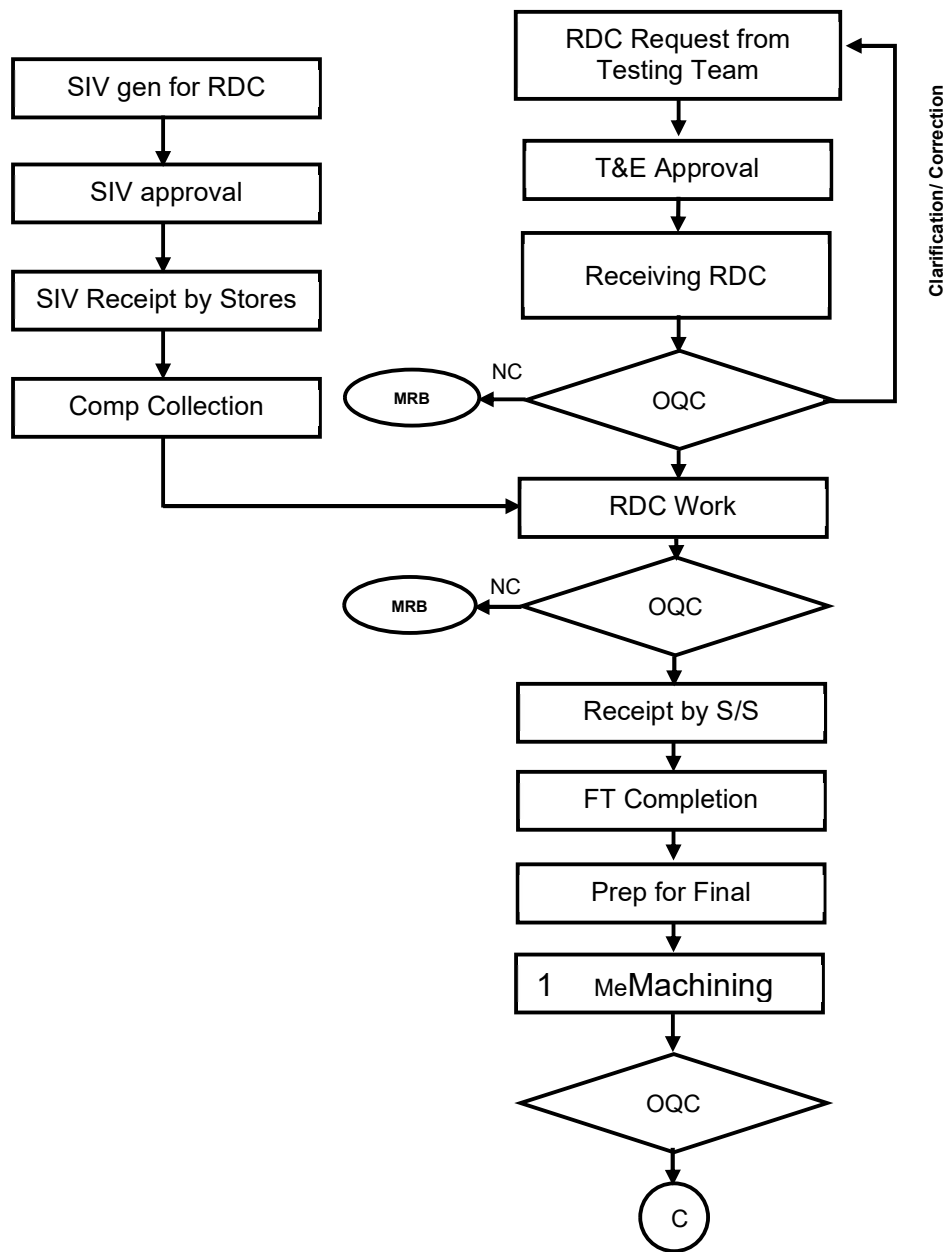
Flexible Connector Wiring:

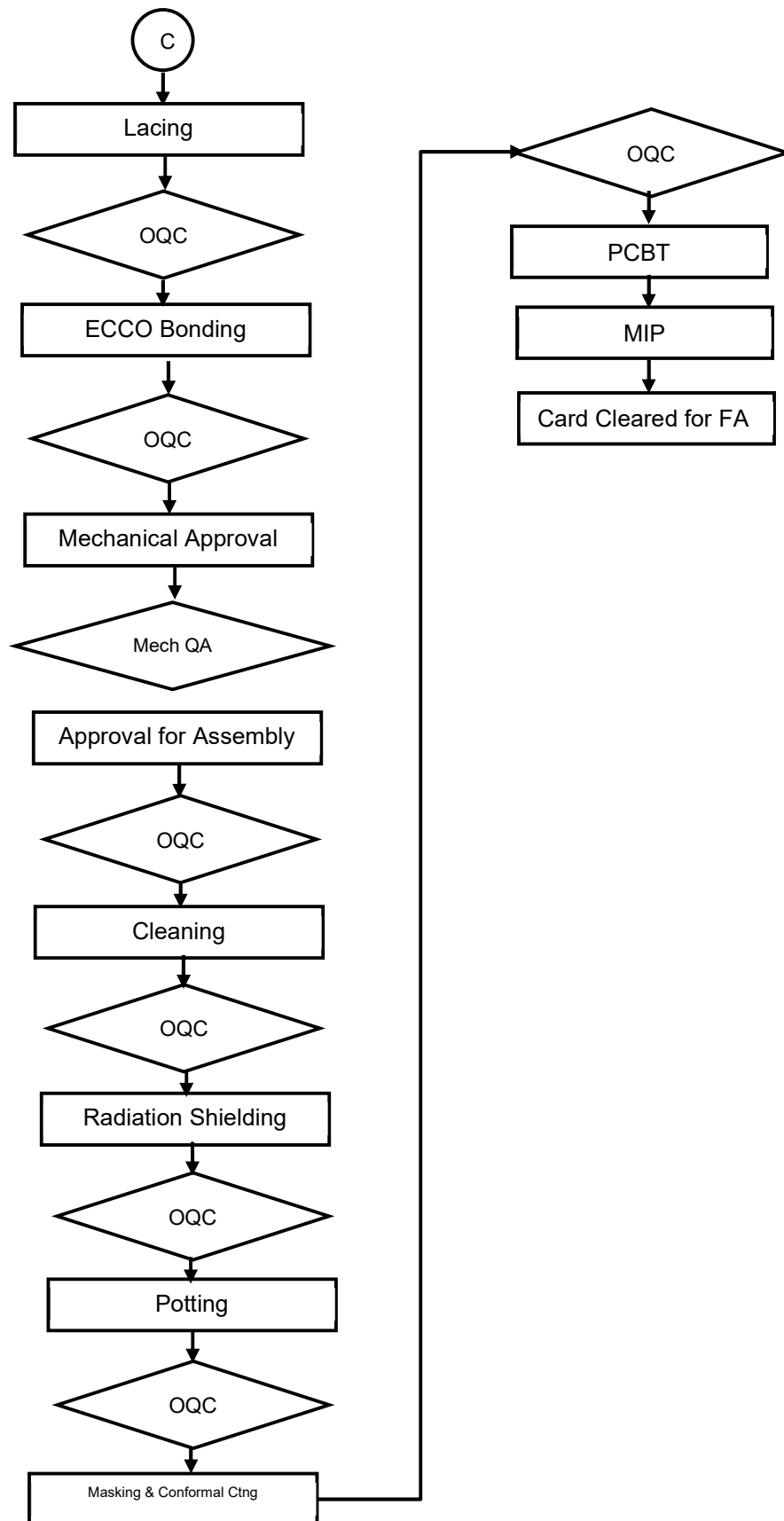


CQFP (ASICs& FPGA) Process:



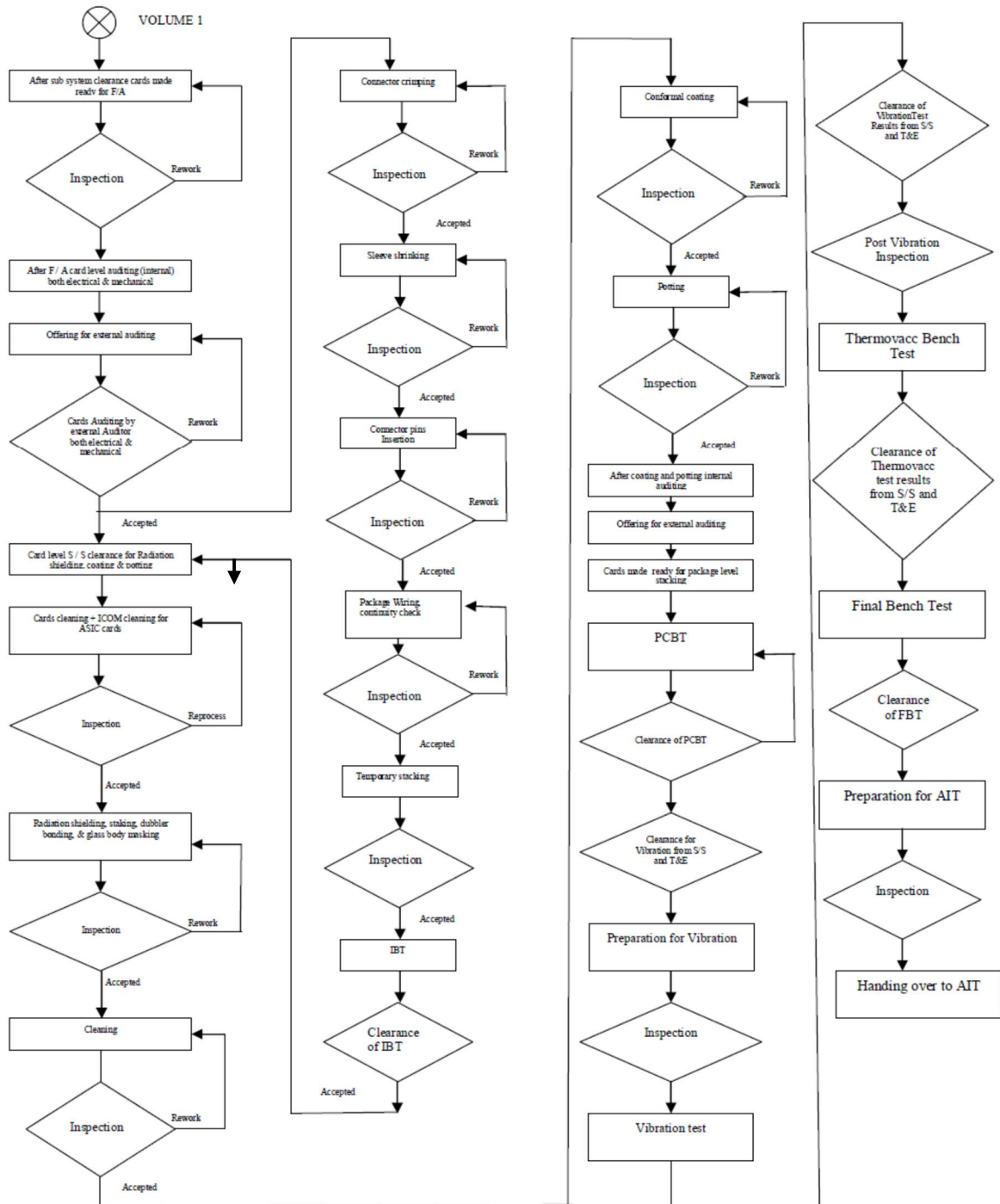
Note: FPGAs will come along with RDCs during FT





Annexure-VIII: Process Flow Chart

PROCESS FLOW CHART FOR HIGH RELIABILITY ELECTRONIC PACKAGES PACKAGE LEVEL



Annexure-IX: List of Standard Test Equipments

The following table gives the list of equipments required to test RF Package.

S. No	Test Equipment	Remarks
1	Power Supplies	General
2	Current Meters	General
3	Digital Multimeters	General
4	Oscilloscopes	General
5	Function Generator	General
6	On-line Monitors	General
7	Clip on meter	General
8	True RMS Meter	General
9	Current Probe Amplifier	General
10	Spectrum Analyser	General
11	Signal Generator	General
12	Power Meter	General
13	Modulation analyzer	General
14	Vector network analyzer	Special
15	Noise figure analyzer	Special
16	Vector Signal Generator	Special
17	Cortex Receiver	Special

Note: Special equipment if required at any time during the execution of work will be supported by URSC against Bank Guarantee.

Annexure-X: New Vendor Qualification

This Annexure is applicable only for the New vendors seeking qualification for realization of Satellite Avionic Packages.

Eligibility (Pre-Requisites)

1. Interested new vendors / Industry in the field of realization of Aerospace / Defence, Electronics/Avionics flight packages are eligible to be considered for qualification to take up space grade electronic fabrication & testing related activities.
2. Vendor shall have minimum TWO years of experience in Fabrication and Testing of Aerospace / Defence Avionics hardware.
3. Vendor shall have exposure to quality and reliability standards as applicable to avionics hardware realization.
4. Vendor should be a registered and established company.
5. Vendor shall understand all the technical specifications and requirements for stringent high reliability applications.
6. Vendor shall have knowledge on Test & Evaluation procedures and methodologies for critical electronic hardware including Experience in preparation of log sheets & documentation.

Conditions

1. The vendors who meets all the prerequisites and who would like to be included under “new vendor seeking qualification for realization of satellite avionics packages” shall clearly specify “New Vendor”.
2. Vendors shall provide the proofs for all the points mentioned above.
3. Vendors shall provide details and certificates of similar work carried out in the field of realization of Aerospace / Defence, Electronics / Avionics Flight packages.
4. Interested new vendors are mandatorily required to undergo formal qualification procedure set by URSC.
5. The reference document for Avionic Hardware realisation is ISRO-ISAC-QAG-MTA-GL-01, “Space Electronics Production Assurance Guidelines”
6. New vendor are eligible to participate only for Mode-III. Even if they participate for Mode-IV and Mode-V, ***they will not be considered.***

7. Qualification process: The Selected New vendor completes the following activities within 12 months from the letter of intimation from Purchase department.
 - a) Certification of technical human resources by URSC for carrying out electronics & mechanical Fabrication activity. (minimum of 3 ITI/Diploma with minimum of 6-month work experience). All Operators and inspectors involved in wiring must possess IPC certification (JSTD-001 class 3) or ISRO solder school certification. For testing, vendor shall have minimum of 3 Diploma/Engineers with minimum of 6-month work experience.
 - b) Procurement and certification of required fabrication tools and generic test equipments for carrying out flight hardware realisation activity within the stipulated period.
 - c) Above two (point a and b) activities shall be completed within 4 months from the letter of intimation from Purchase department.
 - d) Vendor shall fabricate and test of sample/first article hardware within a period of 6 months from the date of last component drawn.
8. After successful completion of “Qualification Process” activities, Purchase Order will be released appropriately for new vendor under Mode-III.
9. If the Identified new vendor fails to comply to qualification process as listed above within 12 months from the date of formal communication from purchase department for considering them to qualify, they are not eligible to get the purchase order as mentioned in point-8.

**PFD-ANNEXURE DOCUMENT
for
IRS RF packages**

Ref :(1) PFD Doc. URSC-SEMG-IRS-EP-2025

**I. DETAILED TECHNICAL SPECIFICATION OF IRS
RF PACKAGES**

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Acronyms/Abbreviations

AIT	-	Assembly, Integration & Testing
AOCE	-	Attitude & Orbit Control Electronics
ASIC	-	Application Specific Integrated Circuit
DOR	-	Daily Operations Record
EED	-	Electro Explosive Device
EIDP	-	End Item Data Package
EMI	-	Electro Magnetic Interference
ESD	-	Electro Static Discharge
FPGA	-	Field Programmable Gate Array
HMC	-	Hybrid Micro Circuit
IBT	-	Initial bench test
IRNSS	-	Indian Regional Navigational Small Satellite
ISAC	-	ISRO Satellite Centre
ISITE	-	ISRO Satellite Integration and Testing Establishment
LMRB	-	Local Material Review Board
MRB	-	Material Review Board
MRR	-	Manufacturing Readiness Review
NC	-	Non-Conformance
OBC	-	On-Board Computer
PCB	-	Printed Circuit Board
PROM	-	Programmable Read-Only Memory
QA	-	Quality Assurance
QC	-	Quality Control
RAM	-	Random Access Memory
RF	-	Radio Frequency
RDC	-	Rework Data Card
RQA	-	Reliability & Quality Area
SSRB	-	Sub-system Review Board
TMTC	-	Telemetry and Tele-command
TRR	-	Test Readiness Review
WIM	-	Wheel Interface Module
MPC	-	Multiport coupler

1. INTRODUCTION

This section gives the details of fabrication and testing of IRS RF Hardware for different modes of realization.

It is envisaged to realize the IRS RF hardware in any or all of the three modes. URSC may offer one or more IRS RF Packages for fabrication and testing considering applicable modes.

The RF hardware presently identified are for different IRS Satellite configurations. The packages for different satellites will have minor variations, but will be of similar functionality and complexity. Packages with similar configuration are offered under one type in further sections, the details of the different types of RF packages shall be summarized to provide a feel of the activity involved.

2. MODES OF REALIZATION

It may be noted that each mode of realization describes the generally encountered steps involved in the realization process of a typical package. However, the actual flow would be as per the requirements of the particular hardware realized.

2.1 Mode III – Fabrication and Testing at URSC facility (applicable for new Vendors)

Refer PFD document No.- URSC-SEMG-IRS-EP-2025

2.2 Mode IV – Fabrication and Testing at Vendor facility

Refer PFD document No.- URSC-SEMG-IRS-EP-2025

2.3 Mode V – End to End Mode at Vendor's Facility (Not applicable for new Vendors)

Refer PFD document No.- URSC-SEMG-IRS-EP-2025

3. DESCRIPTION OF THE PACKAGES

IRS series spacecraft TT&C RF system consists of S-Band Transponder operates at 2.01GHz uplink and 2.12GHz downlink frequencies. The transponder consists of main and redundant transmitters, receivers and associate antenna and feed network used to carry out the following functions:

- To transmit telemetry data at 2.12 GHz from the spacecraft to ground as phase modulated downlink.
- To receive and demodulate the command signal transmitted on a 2.01 GHz uplink carrier from ground station.

- To demodulate the tone ranging information from the transmitted up link carrier and then phase modulate the ranging information on the downlink carrier.

4. HARDWARE DETAILS

4.1 FABRICATION DETAILS

The following table gives the overall configuration of the RF hardware used in a IRS type Spacecraft and the complexity involved in the fabrication.

Table-1: Details of IRS RF PACKAGE

DETAILS OF IRS RF PACKAGE		
SI No.	Details (Typical)	
1.	No. of Packages / Spacecraft	04 (2 Nos Transmitter , 2 Nos Receiver)
2.	Total no. of PCBs per Package	Receiver-11 Cards, Transmitter- 13 Cards
3.	Wired PCB size	Varies from 750 to 15600 mm ²
4.	Number of components	1100 per package approx Including transistor, Capacitors and Resistors (Tx & Rx)
5.	Approx. no. of solder joints	Approx 2200 solder joints per package
6.	RF connector /SR cable	As applicable

The following table gives the card wise details of the typical IRS type of RF Hardware.

Table-2: PCB details of IRS RF PACKAGE

S. No	Representative Card Code (for. Info. Only)	Description	Card laminate	PCB Size(mm X mm)	Components
1	MTX051	Extension Card	FR4	25X20	No Components
2	MTX052	Extension Card	FR4	38X25	No Components
3	MTX032	TCXO card	FR4	25X15	TCXO, resistors, capacitors
4	MTX063	Extension Card	FR4	25X15	No Components
5	MTX035	PLL Synthesizer Card	RT Duroid	25X15	MIC, IC, Diode, inductor, capacitor, resistors
6	MTX064	Interface Card	FR4	25X15	Diodes, resistors, capacitors
7	MTX057	Modulator Card	RT Duroid	25X24.4	ICs, Resistors, capacitors
8	MTX067	LVDS Interface card	FR4	30X9.5	ICs, Resistors, capacitors
9	MTX030	Driver amplifier Card	RT Duroid	28X25	Transistor, Resistors, capacitors
10	MTX041	Interface Card	FR4	30X9.5	Resistors
11	MTX007	0.5-Watt amplifier Card	RT Duroid	25X15	GaAsFET, Resistors, capacitors
12	MTX156	Extension Card	RT Duroid	25X15	No Components
13	MTX155	Extension Card	FR4	25X15	No Components
RECEIVER					
14	CH2DR-005	Image Reject filter Card	RT Duroid	34X41	No Components
15	CH2DR-015	Extension Card	TFG	40X40	No Components

16	CH2DR-104	Second IF Card	FR4	80X80	Resistor, capacitor, inductor ,mixers
17	CH2DR-106	Supply distribution Card	FR4	40X50	Resistor ,capacitor, Inductor, Thermistor
18	CH2DR-109	Extension Card	TFG	12X30	No Components
19	CH2DR-203	First IF Card	FR4	80X80	Resistor, capacitor, inductor ,mixers
20	CH2DR-208	Demodulator Card	FR4	80X160	FPGA, MIC, IC, Diode, capacitor, resistors.
21	CH2DR-307	FPGA Power supply card	FR4	40X100	Resistor ,capacitor, Inductor, Thermistor.
22	GYINT-001	Interface Card	FR4	165X55	Opamp, Diode Resistor ,capacitor.
23	GYLO-101	Local Oscillator card	FR4	80X160	Frequency divider, Transistor, Resistor, capacitor.
24	TWR-402	LNA Card	RT Duroid	40X50	Resistor ,capacitor, transistor

4.2 Testing Details

The testing activity can be broadly classified into two categories viz., Card level and Package level testing.

- Card level testing of wired cards to be carried out as per the details provided in the card level Test procedure document. Individual card need to be aligned for desired performance under ambient and specific temperature ranges.
- Package level testing to be carried as per the details provided in the Test & Evaluation procedure document. The package needs to be aligned for its optimum performance under specific temperature condition. Subsequently the package to be subjected to Bench test, step test, environmental tests viz. Burn-in, thermal cycling, vibration, Thermo-vacuum test, EMI/EMC Test, FBT, etc.

The following table gives an insight into the functionality and configuration of cards in IRS RF packages. The tables indicate the nature of activity and the quantum of work involved in card and package level testing for the IRS RF packages. These are typical test matrices and are only indicative. The package level test matrices also indicate the various phases at which the testing needs to be carried out

TABLE-3: Typical Tests for IRS RF PACKAGE

TYPICAL FUNCTIONAL TESTS OF IRS RF PACKAGE	
CARD LEVEL TESTS	
SI No	Name of Test
1.	RDC verification
2.	Visual inspection & component verification on PCB
3.	Passive continuity check, Isolation check
4.	Establishment of Card level Test setup and evaluation
5.	Card level test and alignment for optimum performance under ambient and climatic condition as per the URSC approved test procedure
DECK LEVEL TESTS	
6.	Integrated cards at deck level as applicable
PACKAGE LEVEL TESTS	
7.	Establishment of Package level Test Setup and evaluation
8.	Continuity & Isolation checks
9.	DC power measurement
10.	RF performance optimization under ambient and climatic condition
11.	Interface test with Tx/RX to finalize selectable
12.	Thermal Soak, Cycling & Step test
13.	Vibration test
14.	Thermovac test
15.	Burn-in test
16.	EMI/EMC test
17.	FBT
INTERFACE TEST	
18.	Interface test with other flight Hardware if applicable

5. TENTATIVE QUANTITY

The following table details the estimated number of cards under each category. These numbers are indicative only.

Table-4: Estimation of Work – IRS RF Packages

TYPE	Mode of Realisation	Estimated Number of Cards
IRS-Band TTC RF PACKAGE	Mode-III	110
	Mode-IV	198
	Mode-V	502
Total		810

6. Maximum number of vendors in parallel contract

The Following table details the number of vendors required for each mode.

Table-5: Maximum no. of vendors in parallel contract

Type	Mode of Realisation	Max. no. of Vendors (New + URSC/SAC qualified)
RF Packages	Mode-III	1+1
	Mode-IV	3
	Mode-V	3

END OF PART-I

II. GUIDELINES FOR QUOTATION

GUIDELINES FOR QUOTE

1. There are three different modes which are to be utilized for realization of IRS RF packages. Vendors may refer to the PFD Doc. URSC-SEMG-IRS-EP-2025 and Section 1 of this document for details of the same. The activities involved in terms of fabrication, testing, location where the activities are to be carried out, the roles and responsibilities therein are listed out in the PFD Doc. URSC-SEMG-IRS-EP-2025 and Section 1 of this document.
2. Each Mode shall have a separate commercial bid, and each bid shall be submitted in an individual seal envelope clearly marked with the respective mode.
3. Vendors shall fully familiarize themselves with the tasks involved in each and shall suitably quote for the same.
4. Each tender will be evaluated mode wise and L1 will be arrived at for each mode separately.
5. The value of the Purchase order shall be split between different vendors for different modes/ facilities as per section 12.1 of PFD Doc. URSC-SEMG-IRS-EP-2025. URSC shall reserve the right to offer activity to the vendors in any of the identified modes in the P.O to the extent of the value of the P.O.
6. Each vendor shall have a single Purchase Order with all the applicable modes/ facility as relevant to the vendor incorporated.
7. Under this contract, vendors would be given work orders for fabrication and testing in one or more of the three modes. The work order will specify the packages, the number of Cards and the total cost of package based on the Purchase order.
8. Vendors shall calculate the cost of realizing the package in a given mode and divide the cost (cost averaging) over the number of cards in the package and provide the quote per card basis.
 - For example, a typical Electronic package of 10 cards in mother board-daughter board configuration may cost Rs "X". This includes all costs: Card Fabrication, card testing, polymer activities like conformal coating, potting, radiation shielding, etc., package assembly, package level test including all environmental test (Excluding the environmental test facility cost). The quote shall be then entered as Rs "X"/10 per Card (since this is equal to Rs. "X" divided by 10 Cards).
9. Vendors shall clearly indicate taxes applicable, if any. If no taxes are indicated, it shall be assumed that the cost is inclusive of ALL taxes and is the landed cost at URSC.
10. The cost shall be provided in a separate document which is not part of the technical bid. Any mention of prices in the technical bid shall lead to rejection of offer.

11.Storage related re-testing details:

The following table summarizes different re-testing cost (fixed) as a percentage of the total cost quoted for storage related re-test under Mode-III. Separate work orders shall be issued to carry out this activities:

Table-1 Cost for re-testing

Type of re-test	Work Volume
Functional tests	5% of mode-III
Functional tests and environmental tests as per URSC storage & retest document	10% of mode-III

NOTE: No separate quotes shall be required for re-testing / additional acceptance testing.

END OF PART-II

III. COMPLIANCE MATRIX

Instruction:

1. After thorough understanding, Vendor shall provide Point by Point Compliance without any ambiguity by clearly stating 'Complied or Not Complied'. Any other method such as '- ', 'blank', etc. are not acceptable and hence may be liable to be rejected.
2. Deletion and/or Alteration of any Column or the contents of the document is strictly prohibited.
3. "For Information" Clause: Vendor is expected to study and understand the technical requirements and Confirm understanding through Compliance.

Compliance Matrix to Sections of PFD Doc. URSC-SEMG-IRS-EP-2025

SL. No.	DESCRIPTION	Section No.	Vendor Compliance Complied/Not Complied	REMARKS
1.	Scope	1		For Information
2.	Introduction	2		For Information
3.	Vendor Pre-Requisites	2.1		
4.	First Article Realisation	2.2		
5.	Reference Documents	3		
6.	Brief Description Of Hardware	4		For Information
7.	Radio Frequency (RF) System	4.1		For Information
8.	C/Ku-Band TTC RF System	4.1.1		For Information
9.	S-Band TTC RF System	4.1.2		For Information
10.	X-Band data Transmitter	4.1.3		For Information
11.	Satellite Positioning System	4.1.4		For Information
12.	Nature of Work	5		For Information
13.	Modes of Realisation	5.1		For Information
14.	Description of Work	5.2		For Information
15.	Card Fabrication and Package Assembly	5.2.1		
16.	Card & Package Testing	5.2.2		
17.	Package preparation to Assembly, Integration & Testing (AIT)	5.2.3		
18.	Documentation	5.2.4		
19.	Reviews and Audits	5.3		
20.	Details of Fabrication	6		For Information
21.	Components/Materials/Consumables	6.1		
22.	Fabrication Details	6.2		
23.	Fabrication Procedures	6.3		
24.	Card Fabrication	6.4		
25.	Harness Fabrication	6.5		
26.	Package Assembly	6.6		

SL. No.	DESCRIPTION	Section No.	Vendor Compliance Complied/Not Complied	REMARKS
27.	Package Preparation to AIT	6.7		
28.	Inspection and Auditing	6.8		
29.	Quality Control	6.9		
30.	Non-Conformance Management	6.10		
31.	Special Checks	6.11		
32.	Photographic Records	6.12		
33.	Rework	6.13		
34.	Details of Testing	7		
35.	Card/Package Test Procedures	7.1		
36.	Role Of Vendor T&E	7.2		
37.	Non-Conformance Management	7.3		
38.	Card Testing	7.4		
39.	Package Level Testing	7.5		
40.	Preparation For Package Testing	7.5.1		
41.	Bench Test	7.5.2		
42.	Environmental Tests	7.5.3		
43.	Vibration Tests	7.5.4		
44.	Thermovac Tests	7.5.5		
45.	Burn-in Test	7.5.6		
46.	EMI/EMC Test	7.5.7		
47.	Final Bench Tests	7.5.8		
48.	Package Preparation to AIT	7.5.9		
49.	Retest/ Additional Test	7.5.10		
50.	Schedule Planning and status reporting	7.6		
51.	Deliverables	8		For Information
52.	List of Deliverables by URSC	8.1		
53.	List Of Deliverables By Vendor	8.2		
54.	List of Deliverables by Vendor for Mode III (Fabrication & Testing at URSC)	8.2.1		

SL. No.	DESCRIPTION	Section No.	Vendor Compliance Complied/Not Complied	REMARKS
55.	List of Deliverables by Vendor for Mode IV (Fabrication& Testing at Vendor Facility)	8.2.2		
56.	List of Deliverables by Vendor for Mode V (End-to-End mode at Vendor Facility)	8.2.3		
57.	Safety Precautions	9		
58.	Secrecy And Security	10		
59.	Delivery Schedule	11		
60.	Contract Validity	12		
61.	Parallel Rate Contract	12.1		
62.	Abnormally Low Bids	12.2		
63.	Free Issue Material	12.3		
64.	Payment Terms	13		
65.	Terms & Conditions	14		

“For Information” Clause: Vendor is expected to study and understand the technical requirements and Confirm understanding through Compliance wherever applicable.

Compliance to Section 2.1 (Vendor Pre-Requisites) of PFD Doc. URSC-SEMG-IRS-EP-2025

SL. No.	DESCRIPTION	Section No.	Vendor Compliance Complied/Not Complied	REMARKS
1.	Qualified by URSC with experience in Fabrication and Testing of similar space quality RF hardware.	2.1		
2.	Exposure to quality and reliability standards as applicable to avionics hardware realization for flight application			
3.	Understand all the technical specifications and requirements for stringent high reliability applications.			
4.	Experience in similar production practices of space quality hardware.			
5.	Knowledge on Test & Evaluation procedures and methodologies for critical electronic hardware including Experience in preparation of log sheets & documentation.			
6.	All the resources including manpower required for Fabrication & Testing of High quality and Reliable hardware.			
7.	Should have executed such work for URSC anytime during the last 4 years. In support of the same, recent relevant Purchase Orders shall be enclosed.			
8.	Should own necessary infrastructure for realization involving space grade components (Highest level) and elements, and should poses valid			

SL. No.	DESCRIPTION	Section No.	Vendor Compliance Complied/Not Complied	REMARKS
	facility Certificate by URSC. (applicable for Mode 4/ mode 5).			
9.	In case of SMT facility, vendors can use their own / other vendor facilities certified by URSC (applicable for Mode 4/ mode 5).	2.1		
10.	Have URSC certified manpower for Fabrication of space quality hardware with proper validity and Trained manpower for RF Testing.			
11.	In support of all the above points (#1 to #10), relevant Purchase Orders (as applicable) and proof of evidence is mandatory and shall be enclosed as part of tender.			

Compliance to Section 14 (Terms & Conditions)
PFD Doc. URSC-SEMG-IRS-EP-2025

SL. No.	DESCRIPTION	Section No.	Vendor Compliance Complied/Not Complied	REMARKS
1.	Vendor shall provide point by point compliance as part of the technical quotation requirements as provided in Compliance Matrix and the details provided by URSC shall not be altered in any way.			
2.	Validity of this contract is for 3 years.			
3.	The vendors shall submit their quotations in two parts: The Part-I : Technical Bid. The Part-II : Commercial Bid.			
4.	The vendor shall quote separately for different modes of contract (Refer Table 1 of PFD Doc. URSC-SEMG-IRS-EP-2025)			
5.	As part of Technical bid evaluation, a team from URSC may visit the vendor premises to verify the compliance of facilities to URSC requirements. The vendor needs to make necessary arrangements for the same.			
6.	Vendor shall have Focal Points for the execution of the contract. All communication between URSC and Vendor shall be in writing.			
7.	The Vendor shall be bound to accept all instructions or directions issued by the URSC Focal Point or any other Authority duly authorized by him / her relating to the execution of the Contract.			
	URSC may enter into Multiple rate contract with multiple vendors (Sec 12.1 of PFD Doc. URSC-SEMG-IRS-EP-2025)			

8.	QUANTITY VARIATION: - The quantities mentioned in section 1 of this document are tentative & subject to variation.			
9.	All the FIM issued by URSC are to be taken with insurance/ indemnity bond as per Govt. of India procedure till the packages are delivered to URSC.			
10.	Test system issued by URSC, if any are to be taken with bank guarantee as per Govt. of India procedure till the test system is returned to URSC.			
11.	Reworks/Retests due to workmanship shall be carried out by vendor without any financial implications. Reworks/Retests due to design problem or URSC specific requirements which are major shall be carried out by vendor. Payment for those reworks/retests will be estimated by URSC based on quantum of the work & time involved and cleared with final approval of appropriate committee of URSC.			
12.	Vendor Focal Point shall update URSC about the progress of the activities periodically.			
13.	All URSC material / equipment / tools, if any provided for the work should be kept under safe custody and returned to URSC on completion of the work.			
14.	The details of work handled as part of the purchase contract shall be kept secret and should not be divulged to any person / agencies outside ISRO.			
15.	The Vendor shall abide by all the security regulations governing access to the work areas at URSC.			
16.	The work force whenever deployed for work at URSC shall follow the discipline of the Centre.			

17.	The cost of components and associated hardware lost/damaged due to negligence/mishandling by vendor shall be recovered through Vendor's payment. This will be carried out with the approval of appropriate committee of URSC.			
18.	For activities being carried out at URSC, Vendor shall be prepared to work beyond working hours and on holidays, if necessary.			
19.	The Vendor shall be responsible for any damage to URSC / their property or injury to URSC / their Personnel caused due to their negligence during the execution of the P.O.			
20.	URSC unilaterally reserves rights of short closure of this contract.			
21.	LD clause may be applicable for delay in delivery beyond the delivery period indicated in the work order.			
22.	All commercial aspects shall be applicable as per URSC Purchase Terms and Conditions.			
23.	In the event of violation of any of the terms and conditions of the P.O or in the event of the work done by the Vendor not meeting the URSC quality/quantity/schedule requirement, the Work Order/Purchase Order shall be terminated by URSC after giving 30 days' notice to the Vendor. In the event of such termination of the Work Order/P.O / Contract, payment to the Vendor will be restricted to the work completed and accepted.			
24.	Cancellation of Purchase Order: URSC reserves the right to cancel the purchase order, either partially or completely at any time during the currency of the P.O., without assigning any reasons thereof.			
25.	Confidentiality: The intellectual property rights of all documents, drawings, package details and any written communication			

	furnished by URSC to the vendor as part of the P.O., shall remain the property of the Government of India. The Vendor is prohibited from further utilizing or passing on any of the design details, drawings, schematics, etc. in whole or part to any third party.			
26.	Transport / Conveyance, Canteen and Medical Facilities will not be extended to vendor personnel deployed at URSC. The Vendor shall be responsible for the same.			
27.	The employees deputed to undertake the work by the Vendor shall remain the employees of the Vendor and they will not acquire any claim for future employment or regularization in URSC or any other ISRO Centers.			
28.	Any security violations or involvement in any unauthorized movement / transaction of official material / properties by the Contract Personnel deployed will be viewed seriously and the Contract will be terminated and action deemed fit will be taken.			
29.	Compensation to Workforce a. ISRO/URSC has adopted the guidelines to grant compensation in case of death/permanent incapacitation of persons engaged by the Service Provider/Bidder (Private Companies, firms & Contractors) due to unintended/ unforeseen occurrences during maintenance, operation and provisioning of Public Services. b. The extent of liability, on the occurrence of any "accident" as defined under these Guidelines, Department shall whether or not there has been any wrongful act, neglect or default on its part and notwithstanding anything contained in any other law, be liable to			

	pay compensation to such extent as prescribed below: (a) In the event of death or permanent disability resulting from loss of limbs - Rs.10 Lakh. (b) In the event of other permanent disability - Rs.7 Lakhs. c. Any compensation paid under these Guidelines shall be recoverable from such Service Provider/Bidder concerned. d. For this purpose, without limiting any of the other obligations or liabilities, the Service Provider/Bidder concerned shall at their own expense take and keep a Comprehensive Insurance for their workforce and for all the work during the execution. e. The Service Provider/Bidder concerned shall have to furnish originals along with premium receipts and other papers related there to the concerned Contract Manager/Focal point within 15 days from the date of commencement of the Contract. f. The Service Provider/Bidder should provide their unconditional acceptance to these guidelines in their letterhead duly signed by their authorized signatory which is mandatory for acceptance of their offer.			
30.	The Service Provider / Bidder shall abide by the law of the land including, Contract Labour (Regulation & Abolition) Act, EPF Act, ESI Act, Minimum Wages Act, Equal Remuneration Act, Employees Compensation Act, Payment of Wages Act, Income Tax Act, Goods and Service Tax Act and all labour related laws / Acts or any new regulations / legislations enacted in this regard and its compliance as applicable during the tenure of the			

	Contract. Service Receiver shall in no way be responsible for any default regarding statutory obligation. The Service Provider / Bidder has to ensure compliance of the above provisions at the time of submission of bill to the Service Receiver and while making payments to their work-force at all times during the currency of the Service Contract.			
31.	The Vendor shall be responsible for all statutory obligations arising out of deployment of personnel at URSC under this contract. Also Vendor to ensure statutory payments like ESI, PF, insurance, etc. for the personnel deployed at URSC is up to date. All the details to be provided during placement of work order.			
32.	It is the responsibility of the Service Provider / Bidder to arrange the character and antecedents of the work-force deputed for testing work. The Service Provider / Bidder shall engage the work-force who is not having any criminal background. The character and antecedents shall be got verified through record check by Service Provider / Bidder at their own cost from the concerned Police authorities (Police Clearance Certificate) and shall maintain all the relevant documents.			
33.	Vendor personnel should be prepared to work beyond working hours and on holidays to meet the project schedules, if necessary.			
34.	The cost of components / systems damaged due to negligence / mishandling by the vendor shall be recovered from the vendor's payment.			

35.	The Service Receiver shall not be responsible for any damages, losses, claims, financial or other injury to any of the work-force engaged by the Service Provider / Bidder in the course of their performing the functions / duties, or for payment towards any compensation. The work-force shall adequately be insured by the Service Provider / Bidder against accidents including loss of life			
36.	All documents, drawings, package details and any written communication furnished by URSC to the vendor as part of the P.O., shall remain the Intellectual Property of the Government of India and the vendor is prohibited from further utilizing or passing on any of such information / details / drawings etc. in whole or in part to any other agency / third party.			
37.	Transport / Conveyance, Canteen and Medical Facilities will not be extended to vendor / vendor personnel deployed at URSC.			
38.	The employees deputed to undertake the work by the vendor shall remain the employees of the vendor and they shall not acquire any claim for future employment or regularization in URSC or any other ISRO Centers.			
39.	Any security violations or involvement in any unauthorized movement / transaction of official material / properties by the vendor personnel will be viewed seriously, the contract may be terminated and action deemed fit will be taken.			

Compliance to Tables & Annexures of PFD Doc. URSC-SEMG-IRS-EP-2025

SL. NO	Table/ Annexure No.	Title	Vendor Compliance Complied/Not Complied	REMARKS
1.	Table-1	RF Package Realisation Modes		For Information
2.	Table-2	Roles & Responsibility of URSC & Vendors		
3.	Table-3	Mandatory Inspection Points (MIP)		
4.	Table-4	Milestone Payments For Different Modes Of Operation		
5.	Annexure-I	List of PCB Manufacturer		
6.	Annexure-II	List of Mechanical Housing Manufacturing		
7.	Annexure-III	List of consumables		
8.	Annexure-IV	Chemicals and Adhesives		
9.	Annexure-V	Mechanical Housing Fabrication Flow Chart		
10.	Annexure-VI	PCB fabrication details		
11.	Annexure-VII	Fabrication Flow Chart		
12.	Annexure-VIII	Process Flow Chart		
13.	Annexure-IX	List of Standard Test Equipments		
14.	Annexure-X	New Vendor Qualification		

“For Information” Clause: Vendor is expected to study and understand the technical requirements and Confirm understanding through Compliance wherever applicable.

Compliance to Annexure-X (New Vendor Qualification) of PFD Doc. URSC-SEMG-IRS-EP-2025

SL. NO	DESCRIPTION	Vendor Compliance	REMARKS
		Complied/ Not Complied	
Eligibility (Pre-Requisites)			
1.	Interested new vendors / Industry in the field of realization of Aerospace / Defence, Electronics/Avionics flight packages are eligible to be considered for qualification to take up space grade electronic fabrication & testing related activities.		For Information
2.	Vendor shall have minimum TWO years of experience in Fabrication and Testing of Aerospace / Defence Avionics hardware.		
3.	Vendor shall have exposure to quality and reliability standards as applicable to avionics hardware realization.		
4.	Vendor should be a registered and established company.		
5.	Vendor shall understand all the technical specifications and requirements for stringent high reliability applications.		
6.	Vendor shall have knowledge on Test & Evaluation procedures and methodologies for critical electronic hardware including Experience in preparation of log sheets & documentation.		

SL. NO	DESCRIPTION	Vendor Compliance	REMARKS
		Complied/ Not Complied	
Eligibility (Pre-Requisites)			
Conditions			
1.	The vendors who meets all the prerequisites and who would like to be included under “new vendor seeking qualification for realization of satellite avionics packages” shall clearly specify “New Vendor”.		
2.	Vendors shall provide the proofs for all the points mentioned above.		
3.	Vendors shall provide details and certificates of similar work carried out in the field of realization of Aerospace / Defence, Electronics / Avionics Flight packages.		
4.	Interested new vendors are mandatorily required to undergo formal qualification procedure set by URSC.		
5.	New vendor are eligible to participate only for Mode-III. Even if they participate for Mode-IV and Mode-V, <i>they will not be considered.</i>		

SL. NO	DESCRIPTION	Vendor Compliance	REMARKS
		Complied/ Not Complied	
Eligibility (Pre-Requisites)			
6.	Qualification process: The Selected New vendor completes the following activities within 12 months from the letter of intent from Purchase department. a. Certification of technical human resources by URSC for carrying out electronics & mechanical Fabrication activity. (minimum of 3 ITI/Diploma with minimum of 6-month work experience). All Operators and inspectors involved in wiring must possess IPC certification (JSTD-001 class 3) or ISRO solder school certification. For testing, vendor shall have minimum of 3 Diploma/Engineers with minimum of 6-month work experience. b. Procurement and certification of required fabrication tools and generic test equipments for carrying out flight hardware realisation activity within the stipulated period. c. Above two (point a and b) activities shall be completed within 4 months from the letter of intent from Purchase department. d. Vendor shall fabricate and test of sample/first article hardware within a period of 6 months from the date of last component drawn.		

SL. NO	DESCRIPTION	Vendor Compliance	REMARKS
		Complied/ Not Complied	
Eligibility (Pre-Requisites)			
7.	After successful completion of “Qualification Process” activities, Purchase Order will be released appropriately for new vendor under 10 % category in Mode-III.		
8.	If the Identified new vendor fails to comply to qualification process as listed above within 12 months from the date of formal communication from purchase department for considering them to qualify, they are not eligible to get the purchase order as mentioned in point-8.		

“For Information” Clause: Vendor is expected to study and understand the technical requirements and Confirm understanding through Compliance wherever applicable.

Compliance to Part-I (Detailed technical specification of IRS RF packages) of this document

Sl. No	DESCRIPTION	Section No	Vendor Compliance	REMARKS
			Complied/ Not Complied	
1.	Introduction	1		For information
2.	Modes of Realisation	2		
3.	Mode-III – Fabrication and Testing at URSC	2.1		
4.	Mode-IV- Fabrication and Testing at Vendor Place	2.2		
5.	Mode-V – End to End Mode	2.3		
6.	Description of the packages	3		
7.	Hardware details	4		
8.	Fabrication Details	4.1		
9.	Testing Details	4.2		
10	Tentative Quantity	5		
11	Maximum number of vendors in parallel contract	6		

“For Information” Clause: Vendor is expected to study and understand the technical requirements and Confirm understanding through Compliance wherever applicable.

Compliance to Tables of Part-I (Detailed technical specification of IRS RF packages) of this document

Sl. No.	Table No.	Title	Vendor* Compliance	REMARKS
			Complied/Not Complied	
1.	Table-1	Details of IRS RF Packages		For information
2.	Table-2	PCB Details of IRS RF packages		
3.	Table-3	Typical Tests for IRS RF package		
4.	Table-4	Estimation of Work – IRS RF Packages		
5.	Table-5	Maximum no. of vendors in parallel contract		

“For Information” Clause: Vendor is expected to study and understand the technical requirements and Confirm understanding through Compliance wherever applicable.

Compliance to Annexure-V (Mechanical Housing Fabrication Flow chart) of PFD Doc. URSC-SEMG-IRS-EP-2025

Sl. No.	Title	Vendor* Compliance	REMARKS
		Complied/Not Complied	
1.	Raw Material procurement Procurement of Raw Material, Procurement of Standard Parts, Threads Inserts, Screws etc. Certification of Raw Material through NABL accredited labs		
2.	Fabrication of components Machining of components as per drawings, Bending & nibbling of covers, Studs & Tie rods through thread rolling. Measurement of Fabricated components & generating detailed dimension sheets.)		
3.	Thermal treatment Thermal treatment of accepted fabricated components as per drawings. Inspection of thermally treated components & certification through URSC QA)		
4.	QAMD Clearance Compilation of all certificates, MIPs, NCs & related documents. QAMD audit of documents & physical inspection of mechanical assembly of packages. Generating final certificate for mechanical assembly)		
5.	Delivery Packaging & handling of QAMD cleared housings. Delivery of packages to URSC/ vendor.		

**Compliance to Annexure-VI (PCB Fabrication Details) of PFD
Doc. URSC-SEMG-IRS-EP-2025**

Sl. No.	Title	Vendor*	REMARKS
		Compliance Complied/Not Complied	
1.	PCB Inspection report summary of each PCB		
2.	Mechanical inspection report of each PCB.		
3.	Ionic contamination test report and Bare board test report		
4.	Micro section report of each panel's test coupons (two numbers).		
5.	Vendor shall separate the horizontal and vertical test coupons in presence of URSC		
6.	Vendor shall get the supplied PCBs verified at OQCPS, URSC, for mechanical		
7.	Vendor shall engrave QA codes in individual PCBs as provided by OQCPS, URSC		

END OF PART-III

END OF THE DOCUMENT

Public Tender Enquiry
Instruction to Tenderers and General Terms and Conditions

Chapter-1

1. The intending Tenderers are advised to read the Technical specifications, terms and conditions and other details carefully relating to the work contemplated in the Bid document and fully acquaint themselves as to all conditions and matters which may in anyway affect the work or cost thereof. The Tenderer shall be deemed to have known the nature, scope and magnitude of the work. Tenderer should bid only if he considers himself eligible and if it is in possession of all documents required as per the tender. The intending Tenderers are required to bid after carefully examining all instructions, eligibility criteria, forms, terms standards and specifications as per the tender document with full understanding of its implications.
2. If the Tenderer is found ineligible after opening of tenders, his tender shall become invalid ipso facto, and costs of the tender document and processing fees, as applicable shall not be refunded. Offers which are not in compliance with the tender conditions will be rejected, without assigning any reasons thereof. Failure to furnish all requisite information or and/or documents shall result in repudiation of the Offer. Notwithstanding the foregoing, U R Rao Satellite Centre [URSC], Bengaluru reserves the right to assess the capability of the Tenderer to perform the contract keeping in view the overall interest of URSC. In the event, the Tenderers capability and capacity are found to be unsatisfactory, URSC reserves the right to reject the bid, without assigning any reasons thereof.
3. Any neglect or omission or failure on the part of the Tenderer in obtaining necessary information as stated above or in any other matter affecting the Tenderer shall not relieve him from any risks or liabilities or the entire responsibility for completion of the work in accordance with the bid documents.
4. All requirements stated herein below are a minimum and URSC reserves the right to request for any additional information and also reserves the right to reject the proposal of any Tenderer, if in the opinion of URSC, the qualification or data is incomplete or if the Tenderer is found not qualified to satisfactorily perform the contract. The Tenderer shall bear all costs and expenses associated with preparation and submission of bid including post bid discussions, technical and other presentations and URSC will in no case be responsible or liable for such costs, regardless of the outcome of the bidding process. The Tenderer shall also not be entitled to claim any costs, charges and expenses incidental to or incurred by him through or in connection with the submission of the Bid or its consideration by URSC, even though URSC may elect to modify or withdraw the invitation to Bid or not to accept the Bid.
5. At any time prior to the deadline for submission of bids, URSC may for any reason on its own initiative modify the bidding document by amendment. The amendment will be notified in writing to the prospective Tenderers or uploaded online on the website. URSC shall bear no responsibility or liability arising out of non-receipt of the same in time or otherwise. Notwithstanding the above, URSC may at its discretion extend the deadline for submission of bids in order to afford reasonable time to prospective Tenderers to take into account the amendment in preparing the bids.
6. All the bids in prescribed form enclosed with tender documents must be submitted before the time and date fixed for the receipt of offers as set forth in the tender document. URSC will not be responsible for non-receipt of tender[s]/offer[s] due to any loss of tender documents and it shall be the sole responsibility of the Tenderer to ensure providing of the tender[s]/offer[s] within the time fixed and URSC will not be responsible for non-submission of tender(s)/offer(s) within the stipulated date and time. Tenderer(s) shall submit their bid(s) well in advance to overcome last minute rush.
7. URSC reserves the right to accept or reject any of the tender in full or part without assigning any reasons thereof. Offers received after stipulated time and date will be rejected.

8. Public Tender documents will also be uploaded on the ISRO website i.e. www.isro.gov.in. Interested Tenderers may download the tender documents from website and submit their offers as per details mentioned in the Tender Notification.
9. If the tender opening date happens to be on an unidentified Holiday due to any reason, including Force Majeure, tender(s) shall be opened on the next working day.
10. The Tender shall be complete in respect of all technical specifications, instructions, drawings, pamphlets and catalogues, as per the tender document. Failure to furnish all information as per the requirements of the tender document and submission of bid not substantially responsive to the tender document shall render the tender liable for rejection. Any/All Bids by way of Fax/E-mail shall not be accepted.
11. Tenderers shall quote Prices in Indian rupees only for Stores offered by them in the Price Bid.
12. All available technical literature, catalogues, Original Equipment Manufacturer Certificate [OEM] and other data in support of the specifications and details of the items should be furnished along with the offer wherever necessary. Unsolicited documents received after Tender due date & time shall not be entertained.
13. Samples, if called for, should be submitted free of charges by the Tenderers and URSC shall not be responsible for any loss or damages thereof, due to any reason whatsoever. All incidental expenses towards submission of samples including Freight charges, Taxes & Duties etc shall be borne by the Tenderer. Delivery of samples to URSC Stores shall be the responsibility of Tenderer. In the event of non-acceptance of tender, the Tenderer will have to remove/take away the samples at their own expenses.
14. Approximate Net and Gross weight of the items offered shall be indicated in your offer. If dimensional details are available, the same should also be indicated in your offer.
15. Specifications: The description of the system in the documents supplied by the Tenderer along with the Bid shall be such as to ensure a clear understanding of the same and to permit its comparative evaluation. Stores offered should strictly confirm to URSC Specifications. Deviations, if any, should be clearly indicated by the Tenderer in their quotation. The tender should also indicate the Make/Type, number of the Stores offered and provide catalogues, technical literature, and samples, wherever necessary along with the quotations. Test Certificate wherever necessary should be forwarded along with Supplies. Whenever options are called for in our Specifications, the Tenderer should address all such options. Wherever specifically mentioned by us, the Tenderer could suggest changes to specifications with appropriate justification for the same.
16. All amounts shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, the amount quoted in words shall prevail over the amount mentioned in figures.
17. The Bid and the prices quoted shall remain valid for 90 days for Single Part Tender. In case of Two Part Tender, bid validity shall remain valid for 120 days from the date of opening Part-1 and 90 days from the date of opening of Part-2 bid. A bid valid for a shorter period shall be rejected by Purchaser as non-responsive.
18. U R Rao Satellite Centre [URSC] reserves the right to place order on the successful Tenderers for additional quantity at the rates quoted or as mutually agreed for a period up to 18 months from the date of release of original order.

19. Earnest Money Deposit [EMD]:

- a. The Tender should be accompanied with an Earnest Money Deposit [EMD] for a prescribed amount wherever called for in the covering sheet of Notice Inviting Tender [NIT].
- b. Registered Tenderers and those Tenderers who have applied for renewal of registration, Central PSUs/PSEs /Autonomous Bodies, Micro and Small Enterprises, KVIC, etc., are exempted from payment of EMD. Tenderers seeking exemption from payment of EMD shall submit necessary valid proof before opening of Tender.
- c. Any Tender not accompanied with EMD or without any valid Certificate for exemption shall be treated as invalid tender and shall be rejected.
- d. The said Earnest Money Deposit shall be in the form of Demand Draft/Bankers Cheque/Fixed Deposit Receipts payable at place as mentioned in NIT in favour of Accounts Officer, URSC payable at Bengaluru from any Nationalized/Scheduled bank or Bank Guarantee from any Nationalized/Scheduled banks in the enclosed format. The Bank Guarantee shall be valid for 45 days beyond the Tender validity date. No interest will be payable by URSC on the said amount covered under EMD/any other Security Deposit.
- e. The EMD of the unsuccessful Tenderers will be returned to them within 30 days from the date of the award of the Contract to the successful Tenderer.
- f. The EMD will be forfeited if the Tenderer withdraws or amends or impairs or derogates from the Tender in any respect within the validity period of the Tender.

20. Micro and Small Enterprises [MSEs]

- a. In order to avail the benefits extended by Government of India to the Micro and Small Enterprises [MSEs] in respect of Goods and Services as per provision of the policy, MSEs registered with District Industries Centre [DIC] or Khadi and Village Industries Commission [KVIC] or Khadi and Village Industries Board [KVIB] or Coir Board or National Small Industries Commission [NSIC] or Directorate of Handicrafts and Handlooms or Udyog Aadhar Memorandum, or any other Body specified by Ministry of MSME have to submit a copy of Valid Certificate with self-attestation along with the Techno-commercial bid. No Certificate claiming exemption will be entertained after Tender due date.
- b. MSEs are entitled for [i] issue of Tender Documents Free of Cost [ii] Exemption of Earnest Money Deposit [EMD]. However, Performance Security is mandatory for Goods and Services.
- c. If the MSE Tenderer[s] is/are SC/ST/Woman entrepreneur owned MSEs, specific mention for the same should be there in the valid certificate submitted by the tenderer.
- d. Tenderers claiming MSME benefit shall furnish copy of UAM no. as uploaded on CPP portal to avail benefit.

21. Bid Securing Declaration: The Tenderers/Bidder have to sign a Bid Securing Declaration accepting that if the Tenderer[s] withdraw or modify their Bids during the period of validity, or if they are awarded the Contract and they fail to sign the Contract, or fail to submit a Security Deposit & Performance Bank Guarantee before the deadline stipulated in the request for Bid Documents, they will be suspended for the period of 2 years and such Tenderer[s] will not be eligible to submit Bids for future tenders.

22. Quote should be submitted in Single Part/Two Parts as specified in the Tender Enquiry.

23. The Tender Enquiry contains technical requirements and specification. The detailed technical specification along with Commercial Terms and Conditions of your offer should be covered in Technical Bid i.e. Part-1 [Technical and Commercial] and Price should be covered only in Part -2 [Price Bid]. In the case of Two-Part Tender, Price details should NOT be disclosed in the

Part-1 [Technical and Commercial Bid] and in any other attachments enclosed in the Technical Bid. In case, Price details are mentioned, the same will be rejected.

24. In case of Two Part Tender, Commercial Terms to be covered in the Part-1 [Technical Bid] are Delivery Terms as per [INCOTERMS], Delivery Period, Payment Terms (without mentioning the price or amount), Security Deposit for performance of Contract and Performance Bank Guarantee for fulfilment of Warranty obligation, Validity of the Offer, Warranty/Guarantee, Liquidated Damages [for delayed supplies] and all available technical literature, catalogues and other data in support of the specifications and details of the items, etc. which have to be filled up.
25. Prices are required to be quoted according to the units indicated, in the Part-2 [Price Bid] only. If documents with price details are submitted with techno-commercial part, such tenders will be treated as invalid.
26. The Price quoted must be firm and should indicate quantity wise unit rate separately. The Prices are to be mentioned both in figures as well as in words. Where there is difference between amounts quoted in words and figures, the amount quoted in words shall prevail. The percentage of GST where legally leviable and intended to be claimed shall be calculated and indicated in the column provided in forms explicitly.
27. GST/or Other Duties/Levies where leviable and intended to be claimed should be distinctly shown separately in the Tender. For the Procurement/providing of Services, the Tenderer[s] are requested to quote the correct percentage of GST. The document solicited from Tenderer should be submitted along with the quotation.
28. The Tenderer should submit along with his tender the Name of his Bankers, Account Number etc., mandatorily to U R Rao Satellite Centre [URSC].
29. In case of Two-Part Public/Open Tender, the exact date and time of opening of Price Bid of successful Tenderers will be intimated later.
30. Conflict of Interest among Tenderers: A Tenderer shall not have conflict of interest with other Tenderers. The Tenderer found to have a conflict of interest shall be disqualified. A Tenderer may be considered to have a conflict of interest with one or more parties in this bidding process, if:
 - a. They have controlling partner(s) in common; or
 - b. They receive or have received any direct or indirect subsidy/financial stake from any of them; or
 - c. They have the same legal representative/agent for purposes of this bid; or
 - d. They have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Tenderer; or
 - e. Tenderer participates in more than one bid in this bidding process. Participation by a Tenderer in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/sub-assembly/assemblies from one bidding manufacturer in more than one bid.
 - f. A Tenderer or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid;
 - g. in case of a holding company having more than one independently manufacturing units, or more than one unit having common business ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Tenderer must proactively declare such sister/common business/management units in same/similar line of business.

Chapter-2: Terms and Conditions

1.0 Definitions: In the contract, the following expressions shall, unless the context otherwise requires, have the meanings, hereby respectively assigned to them: -

a. Acceptance' shall mean conditional determination by Purchaser of the completion of the Work or any element thereof in accordance with the Contract, by issuance of a Certificate of Substantial Completion of Work as provided in the Contract.

b. Approval' shall mean approval in writing issued by the Purchaser in terms of the tender.

c. Contract shall mean the documents forming the tender, the offer, the award of tender and the formal agreement executed between the competent authority on behalf of Purchaser and the Contractor, together with the documents referred to therein including the conditions enumerated herein, specifications, designs, drawings and instructions issued from time to time by the competent authority of Purchaser and all these documents taken together, shall be deemed to form one Contract and shall be complementary to one another.

d. Contractor' shall mean the individual, firm, Limited Liability Partnership [LLP] or company, undertaking the works and shall include the legal representatives, nominees, affiliates, successors-in interest, permitted assigns, Heirs, Executors and Administrators of such individual, LLP, Firm or Company, unless repugnant to the context or meaning thereof.

e. Contract Value' shall mean the sum for which the tender is accepted as per the Letter of Award

f. Date of commencement of work' The date of start of Contract shall be reckoned from the date of issue of Letter of Award.

g. Drawings' shall mean the drawings referred to in the Contract document including modifications if any and such other drawings as may be from time to time, be furnished or approved by Purchaser.

h. Letter of Award' shall mean Purchaser's letter or notification conveying its acceptance of the tender, subject to such conditions as may have been stated therein.

i. Market Rate shall be the rate as decided by the competent authority of the Purchaser on the basis of the prevailing cost of materials and labour at the site where the work is to be executed plus the percentage mentioned elsewhere in the tender document to cover, all overheads and profits.

j. Month' means English calendar month and 'Day' means a calendar day of 24 hours each.

k. Purchaser' shall mean the President of India represented by its Director or Sr. Head/ Head, Purchase and Stores/ Sr. Purchase & Stores Officer/Purchase & Stores Officer, U R Rao Satellite Centre [URSC] Bengaluru or his successors or assigns.

l. Purchase Order' shall mean the communication signed on behalf of the Purchaser by an officer duly authorized intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to therein accepting the Tender or offer of the Contractor.

m. Template' shall mean the standard template of rates to be read with any of receipt amendments thereto issued up to the date of receipt of tender.

n. Stores' shall mean what the Contractor agrees to supply under the Contract/Tender as specified in the Purchase Order including erection of plant and machinery and subsequent testing should such a condition be included in the Purchase Order

o. Words indicating the singular only also includes the plural and vice versa, where the context so requires.

p. Words importing persons or parties shall include firms, corporations and organizations having legal capacities.

q. Words indicating male gender shall also include the female or neuter gender, and vice versa, where the context so requires

2.0 Government of India Orders, Circulars and Guidelines: All relevant Orders, guidelines issued by Government of India from time to time shall be applicable for this tender.

3.0 Transparency: Tenderers are free to ask Purchaser for clarifications on the Bidding/tender terms and conditions, process, etc., during the procurement process. All such queries and clarifications shall be sought for in writing via e-mail and sent to the officer authorized by the Purchaser to issue such clarifications, as may be required. No verbal request will be entertained.

4.0 Prices: Tenders offering Firm & Fixed Prices will be considered. The Contractor shall be bound to carry out and complete the stipulated work irrespective of the variation in individual items as specified herein above. The Tenderer shall quote prices separately furnishing break-up of cost towards Basic Cost of Items testing, inspection, packing, forwarding, Freight, Handling, Insurance, Installation if any, and GST.

5.0 Price Variation for Long Term Contracts: Where Tenderer[s] quote delivery period beyond 18 months, the illustrative formula for Price Variation Clause [PVC] shall be referred under General Financial Rules [GFR], 2017, Appendix-11 [see Rule 225 [viii] [b]. It may please be noted that the formula for Price Variation is available on the Website.

6.0 Goods and Service Tax:

6.1 Government of India has implemented Goods and Services Tax [GST] w.e.f. 01.07.2017. The Tenderer[s] should mandatorily possess a valid GSTIN along with the GST Registration Certificate. Please send duly self-attested certificate of GST Registration along with offer[s], in the absence of which your offer[s] will be invalid and shall not be considered.

6.2 HSN Code and applicable rate of GST: U R Rao Satellite Centre [URSC], Bengaluru is eligible for Concessional GST under the following notifications:

6.2(a) CGST and SGST : Government of India, Ministry of Finance (Department of Revenue) vide its Notification No. 6/2018-Central Tax (Rate), dated the 25th January, 2018, read with Notification No.24/2018-Central Tax (Rate) dated the 31st December, 2018, have inserted the serial number 243B under Chapter 88 or Any other chapter wherein it is specified that the CGST @ the rate of 2.5% and SGST @2.5% vide SL No 243A now 243B vide Notification No. 6/2018,FD48CSL2017, Bengaluru dated 25.01.2018 and as amended as Notification No. 24/2018 FD48CSL2017 dated 31.12.2018 and Notification No.09/2025 - Central Tax (Rate) dated 17/09/2025 *Sl. No. 462 (Schedule-I)* issued by Finance Secretariat, Government of Karnataka, shall be applicable for Scientific and technical instruments, apparatus, equipment, accessories, parts, components, spares, tools, mock ups and modules, raw material and consumables required for launch vehicles and satellites and payloads.

6.2 (b)IGST Government of India, Ministry of Finance (Department of Revenue) vide its Notification No. 7/2018-Integrated Tax (Rate), dated the 25th January, 2018, read with Notification No.25/2018- Integrated Tax (Rate) dated the 31st December, 2018 have inserted the serial number 243B under Chapter 88, and as amended vide Notification No.09/2025 - Central Tax (Rate) dated 17/09/2025 *Sl. No. 462 (Schedule-I)* issued or Any other chapter wherein it is specified that the IGST @ the rate of 5% shall be applicable for Scientific and technical instruments, apparatus, equipment, accessories, parts, components, spares, tools,

mock ups and modules, raw material and consumables required for launch vehicles and satellites and payloads.

6.2 (c) The declaration regarding the proposed procurement is for Satellites or for its payload will be mentioned specifically in our Purchase Order and also a certificate in this regard will be issued, if required. Successful Tenderers should consider this aspect before raising an invoice. On all other procurements, applicable GST will be paid. Tenderers shall mention applicable GST rate along with the HSN code in their commercial Terms.

7.0 Customs Duty:

7.1 U R Rao Satellite Centre [URSC], Bengaluru is eligible for "Nil" Customs Duty vide Notification No.50/17-Customs dated 30.06.2017 and as amended by Notification No. 5/2018-Customs dated 25.01.2018, Sl. No. 539A, further amended by 05/2025-Customs I (38) dated 01.02.2025 and as amended vide Custom Notification No. 45/2025 dated 24/10/2025 Sl. No. 340.0 The necessary Customs Duty Exemption Certificate (CDEC) shall be provided by URSC only to those bidders who claim Purchase Preference under Make in India Policy and fulfil all requirements of tender document applicable for Indigenous Manufacturer i.e., Class-I/Class-2 local supplier. Such Class-I/Class-2 local suppliers have to take note of this aspect and submit their Offer clearly mentioning the quoted Price arrived by considering the Nil Custom Duty as per above Notification. While requesting for issue of CDEC for the imported contents, the Tenderer[s] should mention the Item Description, Quantity and Value for which CDEC is to be provided for the bought out Imported Items. The necessary documentary proofs like P.O., on their Supplier, Invoice, AWB shall be produced while requesting for issue of CDEC from URSC. However, CDEC will be issued only to those successful Class-I/Class-2 local supplier, not exceeding the limit of foreign content declared in their quote. Also a declaration of the Supplier in their letter head that imported items in the Invoice are used for realization of ordered items. Suppliers may note that URSC is not responsible for any incidental charges incurred towards late/non-submission of CDEC.

8.0 Evaluation of Tenders:

8.1 The Evaluation/Loading criteria in respect of Payment Terms, Bank Guarantee towards free issue of materials [FIM], etc., having financial implications will be considered to arrive at L-1 status.

8.2 In case of Ex-works offer from Local supplier, an additional one percent shall be loaded to arrive at the FOR Destination cost.

9.0 Clarification regarding contents of the Bids:

9.1 During evaluation and comparison of bids, the Purchaser may, at its discretion, ask the Tenderer for clarification of his bid. The request for clarification will be given in writing and no change in prices or substance of the bid will be sought, offered or permitted.

9.2 All responsive bids shall be evaluated with a view to select the lowest [L1] Tenderer who meets the qualification criteria, techno-commercial aspects and shall be compared on a common platform on the basis of total evaluated cost of each offer which will be arrived at by adding the basic price as well as other charges, and all statutory levies/taxes/duties. Maintenance charges shall be considered if it forms part of the tender for the purpose of cost comparison. The financial implication shall be considered as the all-inclusive cost to the Purchaser. Evaluation of the bids shall be done on the basis of landed cost to the Purchaser.

9.3 Purchaser discourages advance payment terms. In case of advance payment/ Milestone Payment, for the purpose of evaluation, interest shall be loaded on the amount so paid as advance for the delivery period quoted, as per Marginal Cost of funds-based Lending Rate [MCLR] or any other rate as notified by Reserve Bank of India from time to time, prevailing on the date of tender opening. Further, for any delay in executing the contract, Purchaser shall

recover interest on the amount paid as advance for the delayed period at the MCLR of State Bank of India prevailing on the date of the payment besides other remedies available for breach of the contract.

9.4 If a Tenderer quotes NIL charges/ consideration in case of Service contracts, the bid shall be treated as unresponsive and will not be considered.

9.5 Evaluation of the bids shall not be done on the basis of conditional discounts.

9.6 Purchaser reserves the right to give preference for procurement of goods in terms of product reservation and preferential / mandatory purchase policy as notified by Government of India from time to time. Tenderers claiming any preference shall submit relevant and valid registration certificate along with the tender. No certificate claiming any concession shall be considered after Tender due date.

9.7 Purchaser reserves the option to increase/decrease the quantity to the extent of 25% of the tendered quantity.

9.8 Purchaser reserves the right to accept or reject any quotation in full or part thereof by recording the reasons. The Purchaser shall be under no obligation to accept the lowest or any tender and reserves the right to accept whole or any part of the tender or part of the quantity offered and the Tenderers shall supply the same at the rates quoted.

9.9 Purchaser also reserves the right to reject any offer in the event of non-compliance to tender terms and conditions.

9.10 Tenderers are advised to refrain from contacting by any means, either URSC and/or their employees/representatives on matters related to the tender which are under consideration. Adherence to this Clause is compulsory or otherwise the Tender will be rejected.

9.11 The tender evaluation and process of award of works is done by duly authorized URSC Committee and this Committee is authorized to discuss and get clarification/s from the Tenderers, if any. The Tenderer/s may be asked to give a presentation on their technical bid and arrange for functional demonstration of the stores offered. No change in the substance of the bid or the price thereof shall be sought/offered/permitted.

10.0 Payment Term:

10.1 All payments are subject to permissible legal deductions from the contract price as per the Contract. All payments shall be released only after successful and satisfactory completion of quantum and type of work, specified for respective activity. All payments shall be directly made by the Purchaser to the Tenderer.

10.2 All interim payments made shall be regarded as payments by way of advance against the final payment only, and not as payment for work actually completed and shall not preclude defective/imperfect/incomplete work to be removed. It will not be considered as an admission on the part of the Purchaser of the due performance of Contract or any part thereof nor shall it preclude, determine or affect in any way the powers of the Purchaser to determine the quality and quantity of work and issue such directions, as may be necessary to the Contractor.

11.0 Terms of Payment

11.1 The Contractor[s] Bill will be processed for payment only after the Stores have been received, inspected and accepted by the Purchaser. Normally payment will be made for the accepted Stores within 30 days from the date of Receipt and Acceptance of the Material at U R Rao Satellite Centre [URSC].

11.2 For any Services, payment will be made after satisfactory completion of the services and certification to that effect from the Purchaser.

12.0 Bank Guarantee:

12.1 Performance Security [PS]

Within 20 days from the date of issue of the Purchase Order or with in such extended time as may be granted by the Purchaser in writing, the Contractor shall execute an irrevocable interest free Performance Security for 3% of the Contract value to ensure due Performance of the Contract including the fulfilment of the Warranty obligation. The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Tenderer's failure to complete his obligations under the contract. The Purchaser shall discharge the performance security bond after completion of Tenderer's performance obligations including the warranty and post-warranty obligations under the contract. In case any increased percentage of performance security is mentioned in special terms and conditions the same will prevail over general terms and conditions.

12.2 Security Deposit [SD]

Within 20 days from the date of issue of the Purchase Order or with in such extended time as may be granted by the Purchaser in writing, the Contractor shall execute an irrevocable interest free Security Deposit for 3% of the Contract value to ensure due Performance of the Contract. The proceeds of the Security Deposit shall be payable to the Purchaser as compensation for any loss resulting from the Tenderer's failure to complete his obligations under the contract. The Purchaser shall discharge the security deposit after completion of Contractor's obligations till acceptance of the items by URSC. In case any increased percentage of performance security is mentioned in special terms and conditions the same will prevail over general terms and conditions.

12.3 Performance Bank Guarantee [PBG]

The Contractor shall execute Performance Bank Guarantee for 3% value of the Contract value for fulfilment of Warranty obligations. The PBG shall be executed as per our specimen. The PBG shall be executed and submitted to URSC before claiming payment. In case any increased percentage of performance security is mentioned in special terms and conditions the same will prevail over general terms and conditions.

12.4 The Contractor shall submit either (a) Performance Security OR (b) Security Deposit & Performance Bank Guarantee as mentioned above.

12.5 The Performance Security/Security Deposit/Performance Bank Guarantee may either be furnished in the form of an Account Payee Demand Draft; or Fixed Deposit Receipt from a Nationalized or Scheduled Bank, or Bank Guarantee from a Nationalized or Scheduled Bank or Online Payment in favour of Accounts Officer, U R Rao Satellite Centre [URSC], Bengaluru. The Bank Guarantee must be valid till its contractual obligation plus an additional period of 60 days beyond the date of completion of all contractual obligations.

12.6 In the event the work is not completed within the stipulated period, the contractor shall get the Performance Security/Security Deposit be extended.

12.7 The Bank Guarantee shall be executed on a Non-judicial stamp paper of appropriate value.

12.8 The Performance Security/Security Deposit/Performance Bank Guarantee will not carry

any interest and shall be returned after completion of all the obligations of the Contract with a NO CLAIM CERTIFICATE issued by Contractor as per our Specimen enclosed.

12.9 Adherence to this clause is compulsory or otherwise, the Tender will be rejected.

12.10 In the event the Contractor fails to furnish the Performance Security/Security Deposit within 20 Days as stipulated hereinabove, i.e. after the receipt of Purchase Order or on signing of the Contract or any extension thereof, the Purchase Order/ Contract shall be cancelled and terminated at the Contractor's risk, cost and liability. The Earnest Money Deposit, if any executed shall be forfeited and appropriate penal and legal action shall be initiated.

12.11 Central Public Sector Undertakings [PSUs]/Public Sector Enterprises [PSEs]/Autonomous Bodies are exempted from payment of Performance Security, and instead, an Indemnity Bond shall be executed in lieu of Performance Security.

12.12 Bank Guarantee towards Free Issue Materials (FIM):

a. The successful Tenderers shall furnish Bank Guarantee (BG) towards the cost of Free Issue Materials issued by Purchaser (if any) towards adequate Security for the FIM for the execution of the Contract and the said Tenderer will be duly authorized by PURCHASER to collect the free issue materials from URSC's site subject to the furnishing of the aforesaid Bank Guarantee. The BG is to be kept valid till supply and acceptance of the final product. Adherence to this Clause is compulsory or otherwise the Tender will be rejected.

b. In the case of Public Sector Undertaking, Public Sector Enterprises and Government Organization, Indemnity Bond [IB] together with Insurance shall be considered in place of BG.

c. For Fabrication of items, in case FIM issued by URSC, the Supplier should quote the rates considering the Scrap Materials generated and taken over by Supplier.

12.13 The Bank guarantee issued by the Issuing Bank on behalf of contractor/ supplier in favour of U R RAO SATELLITE CENTRE shall be in paper form as well as issued under "Structured Financial Messaging System". The details of beneficiary for issue of BG under SFMS platform is furnished below:

Name of the Beneficiary: U R RAO SATELLITE CENTRE

Beneficiary Bank Name: STATE BANK OF INDIA

Beneficiary Branch IFSC: SBIN0009048

Beneficiary Branch Name: ISRO VIMANAPURA BRANCH Bank

Address: STATE BANK OF INDIA, ISRO VIMANAPURA BRANCH, URSC CAMPUS, HAL AIRPORT ROAD, BENGALURU 560017

The above particulars are to be incorporated by the issuing bank properly while issuing BG under SFMS mode to avoid any problem in future.

13.0 Packaging:

The Contractor wherever applicable will be held responsible for the Stores being sufficiently and properly packed for transport by rail, road, sea or air to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packages shall be done by and at the expense of the Contractor. The Purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Contractor and the Purchaser shall pay only for such stores as are actually received exclusively of the Contractor and the Purchaser shall pay only for such stores as are actually received in good condition in accordance with the Contract.

14.0 High Sea Sale: Tenderers submitting offer[s] against High Sea Sale Trade shall not be considered.

15.0 Guaranteed Time of Delivery:

15.1 Delivery period shall be specified in Tender. In case the tender calls for installation then the Tenderers shall mention the schedule for supply and installation separately. Time required for installation post supply shall be clearly defined to avoid any lag period between supply and installation/commissioning.

15.2 The date of delivery of the stores stipulated in the Purchase Order/Contract shall be deemed to be the essence of the Purchase Order/Contract and delivery must be completed on or before the specified dates. In case of failure, Purchaser reserves the right to terminate/cancel the Order/Contract at his discretion.

15.3 Where erection or assembly or commissioning is a part of the Contract, it should be done immediately on notification. The Contractor shall be responsible for any loss / damage sustained due to the delay in fulfilling this responsibility.

15.4 For items having shelf life, those with maximum shelf life should be supplied if order is placed.

15.5 The Contractor is responsible for obtaining a clear receipt from the Transport Authorities specifying the goods despatched. The consignment should be despatched with clear Railway Receipt/Lorry Receipt. If sent in any other mode, it shall be at the risk of the Contractor. Purchaser will take no responsibility for short deliveries or wrong supply of goods when the same are booked on 'said to contain basis. Purchaser shall pay for only such stores as are actually received by them in accordance with the Contract.

16.0 Mode of Dispatch: RAIL/ROAD

17.0 Ultimate Consignee: Purchase & Stores Officer [Stores] (a)U R Rao Satellite Centre, P.B.No.1795, HAL Airport Road, Vimanapura Post, Bengaluru 560 017, India. (b)ISRO Satellite Integration and Test Establishment (ISITE), Outer Ring Road, Marathahalli, Bengaluru 560 037

18.0 Insurance of the Stores: No Insurance is required at U R Rao Satellite Centre [URSC] cost. The Contractor shall be responsible for insuring the Stores wherever considered necessary. The necessity or otherwise of Insurance will be as indicated in the Purchase Order.

19.0 Inspection and Acceptance Tests:

19.1 The Purchaser's representatives shall also be entitled at all reasonable times during manufacture to inspect examine and test at the Contractor's premises, the material and workmanship of all Stores to be supplied under this Contract and if part of the said Stores is being manufactured on other premises, the Contractor shall obtain the Purchaser's representative permission to inspect, examine and test and shall not release the Contractor from the obligations under this Contract.

19.2 For tests conducted at the premises of the Contractor or any of his sub-contractors, the Contractor shall provide free of cost assistance, Labour, Materials, Electricity, Fuel and Instruments as may be required or as may be reasonably needed by the Purchaser's representative to carry out the tests efficiently.

19.3 When the Stores have passed the specified test, the Purchaser's representative shall furnish a certificate to this effect in writing to the Contractor. The Contractor shall provide copies of Test Certificate to the Purchaser as may be required.

19.4 Inspection/Test/Certificate should be provided for the goods after testing it thoroughly at the Contractor's works. If any inspection by Lloyds or any other Third-Party Agency is considered necessary, it shall be arranged by Contractors on the instructions of the Purchaser.

19.5 Pre-Delivery Inspection: Pre-Delivery Inspection if required, shall be carried out by URSC Engineers at the Contractors Factory Premises at our cost. The Contractor need not extend any Hospitality to our representatives.

20.0 Acceptance of Stores:

20.1 The Stores shall be tendered by the Contractor for Inspection at such places as may be specified by the Purchaser at the Contractor's own risk, expenses and cost.

20.2 It is expressly agreed that the acceptance of the Stores contracted for is subject to final approval by the Purchaser, whose decision shall be final.

20.3 If, in the opinion of the Purchaser, all or any of the Stores that do not meet the performance or quality requirements specified in the Purchaser Order, they will be rejected and the decision as to the rejection by the Purchaser shall be final and binding on the Contractor.

20.4 If the whole or any part of the Stores supplied are rejected the Purchaser shall be at liberty, with or without notice to the Contractor, to Purchase in the open market at the expense of the Contractor, Stores meeting the necessary performance and quality contracted for in place of those rejected, provided that either the Purchaser or the agreement to Purchase from another supplier is made six months from the date of rejection of the Stores as aforesaid.

20.5 Instruction/Operation Manual containing all assembly details including wiring diagrams should be sent wherever necessary in duplicate. All documents/ correspondence should be in English language only.

21.0 Contractor[s] Default Liability:

21.1 The Purchaser upon a written notice of default to the Contractor, shall be entitled to terminate the Contract by giving 30 days prior notice, in whole or in part, at the sole risk and cost of the Contractor, in circumstances detailed hereunder: -

a. If in the judgment of the Purchaser, the Contractor fails to make delivery of Stores within time specified in the Contract/Agreement or within the period for which extension has been granted by the Purchaser to Contractor

b. If in the judgment of the Purchaser, the Contractor fails to comply with any of the other provisions of this Contract.

21.2 In the event of Purchaser terminating the Contract in whole or in part thereof, as provided hereinabove, the Purchaser reserves the right to purchase, upon such terms and in a manner as he may deem appropriate, Stores similar to that terminated and the Contractor shall be liable to the Purchaser for any additional cost for such similar Stores, and/or for Liquidated Damages for delays as defined in Clause 25.0 until such reasonable time as may be required for the final supply of Stores.

21.3 If Contract is terminated as provided in Clause 21.0 the Purchaser in addition to any other rights provided in this Article, may require the Contractor to transfer title and deliver to the Purchaser under any of the following cases in the manner and as directed by the Purchaser.

a. Any completed Stores

b. The Purchaser shall pay to the Contractor, the Contract price for completed Stores delivered to and accepted by the Purchaser and for manufacturing materials delivered and accepted.

21.4 In the event, the Purchaser does not exercise its right to terminate the Contract as

provided in Clause 21.0, the Contractor shall continue the performance of the Contract, in which case he shall be liable to the Purchaser for Liquidated Damages for delay as set out in Clause 25.0 until the Stores are accepted.

22.0 Replacement: If the Stores or any portion thereof, is damaged or lost during the transit, the Purchaser shall give notice to the Contractor setting forth particulars of such Stores damaged or lost during transit.

The replacement of such Stores shall be effected by the Contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores.

23.0 Rejection: If the Stores supplied by the Contractor are found to be defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specification, the Purchaser shall either reject the Stores or request the Contractor in writing to repair, rectify, replace the same. The Contractor, on receipt of such notification shall either rectify or replace the defective Stores free of cost to the Purchaser. If the Contractor fails to do so, the Purchaser may either.

a. Repair, Replace or rectify such defective Stores and recover extra cost so involved from the Contractor;

or

b. Terminate the Contract for default as provided under Clause 21.0 above. The right to terminate and the right to replace the Stores shall not be derogatory to one another and shall mutually complement one another. In other words, the Purchaser shall be entitled to take either decision, or both.

24.0 Force Majeure:

24.1 Neither party shall bear responsibility for complete or partial non-performance of any of his obligations [except for failure to pay any sum which has become due on account of receipt of goods under the provisions of the Purchase Order/Contract], if the non-performance results from such force majeure circumstances such as, but not restricted to, flood, fire, earthquake, civil commotion, sabotage, explosion, epidemic, quarantine restriction, strike, lock out, freight embargo, acts of the Government either in its sovereign or its contractual capacity, hostility, acts of public enemy and other acts of God as well as war or revolution, military operation, blockade, acts or actions of state authorities or any other circumstances beyond the control of the parties that have arisen after the conclusion of Purchase Order/Contract. In such circumstances, the time stipulated for the performance of an obligation under the Purchase Order/Contract may be proportionately extended.

24.2 The party for whom it has become impossible to meet the obligation under this contract due to force majeure condition shall notify the other party in writing not later than 7 days from the date of the occurrence and cessation of the force majeure condition/s. In the event of delay lasting over one month, arising from force majeure causes, the Purchaser reserves the right to cancel the contract without any obligation to compensate the Tenderer in any manner. Unless agreed by both the parties, in writing, the Contractor shall continue to perform his obligations under the Purchase Order/Contract as far as is practical and shall seek all reasonable alternative means for performance not prevented by the force majeure event.

24.3 Any Certificate issued by the Chamber of Commerce or any other competent authority or organization shall be sufficient proof of commencement and cessation of the above circumstances. In case of failure to carryout complete or partial performance of an obligation for more than 60 days, either party shall reserve the right to terminate the Contract totally or partially. A prior written notice of 30 days to the other party will be given informing of the intention to terminate without any liability.

24.4 The Force Majeure condition is applicable only to the prime Contractor and Purchaser.

25.0 Delay in Completion/ Liquidated Damages:

25.1 The time and date stipulated in the contract for completion of the work shall be deemed to be the essence of the contract. If the Contractor fails to deliver the Stores within the time specified in the Contract or any extension thereof or if the Contractor fails to maintain the required progress or comply with the relevant provisions of the general conditions of contract or special conditions of contract, if any and clear the site on or before the contract or extended date of completion, the Purchaser shall, without prejudice to any other right or remedy available under the law to Purchaser on account of such breach, recover from the Contractor as Liquidated Damages a sum one-half of one percent [0.5 percent] of the Contract price of the undelivered Stores for each calendar week of delay or part thereof. The total Liquidated Damages shall not exceed Ten percent [10 percent] of the Total Contract Value. Adherence and acceptance to this Clause is Compulsory or otherwise the Tender will be rejected.

25.2 In case of delay in delivery of the Stores beyond the delivery date stipulated in the Purchase Order/Contract or any extension thereof, such Stores shall be received without prejudice to the right of the Purchaser to claim Liquidated Damages and without prejudice to the terms and conditions of the Purchase Order/Contract.

26.0 Erection of Plant, Machinery and Installation of Software:

26.1 Wherever Erection of Plant or Machinery and Installation of Software is the responsibility of the Contractor as per the terms of the Contract and in case the Contractor fails to carry out the Erection and Installation of the Software as and when called upon to do so within the period specified by the Purchaser, the Purchaser shall have the right to get the Erection and Installation of the Software etc., done through any source/agency of his choice. In such an event, the Contractor shall be liable to bear any additional expenditure that the Purchaser is liable to incur towards erection. The Contractor, shall, however, not be entitled to any gain/payment due to such an action by the Purchaser.

26.2 If it appears to the authorised representative of the Purchaser that any work has been executed with unsound, imperfect or unskilful workmanship or with materials of any inferior quality or description, or that any materials or articles procured by the tenderer for the execution of the work are of unsound quality or of a quality inferior to that contracted for or otherwise not in accordance with the contract, the tenderer shall on demand in writing within 03 Months of the completion of the work from the said Authorised Representative notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part as the case may require remove the materials or articles so specified and provide other proper and suitable materials or articles at its own cost. In the event Tenderer fails to rectify or remove and re-execute the work or remove and replace with others, the material or articles complained of, as the case may be, it shall be so strictly at the risk and expense in all respects of the Tenderer, including the right to refund of payment received and also cost of rectification.

27.0 Standard Warranty/Guarantee

27.1 All products/stores supplied against the bid shall be of high reliability and shall carry comprehensive free of cost warranty. The Contractor shall guarantee and certify that the Stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance. The Purchaser expects the stores to be highly reliable which would result in lower maintenance and repair cost.

27.2 Guarantee for the period as indicated in the tender documents shall be after acceptance of the Stores. If any defects are discovered, therein or any defects therein are found to have developed under proper use arising from faulty materials, design or workmanship, Contractor shall remedy such defects at his own cost provided, he is called upon to do so within a period of 12 months from the date of Acceptance thereof, by the Purchaser who shall state in writing in what respect the Stores or any part thereof, are faulty.

27.3 If in the opinion of the Purchaser, it becomes necessary to repair, replace or renew any defective Stores, such repair, replacement or renewal shall be made by the Contractor Free of all Cost to the Purchaser, provided the notice informing the Contractor of the defect is given by the Purchaser in this regard within the said period of 12 Month from the date of acceptance of Stores thereof.

27.4 If Contractor fail to rectify the defects, the Purchaser shall have right to reject or repair or replace, at the cost of the Contractor the whole or any portion of the defective Stores. The warranty for such replaced/repared items/stores shall be for 12 months from the date of handing over of such replaced/repared stores in complete and satisfactory condition to the Purchaser.

27.5 The decision of the Purchaser, notwithstanding any prior approval or acceptance or inspection thereof, on behalf of the Purchaser, as to whether or not the Stores supplied by the Contractor are defective or any defect has developed within the said period of 12 Months or as to whether the nature of the defects requires renewal or replacement, shall be final, conclusive and binding on the Contractor. The Warranty/Guarantee certificate has to accompany the shipment.

27.6 All the replacement Stores shall also be guaranteed for a period of 12 months from the date arrival of Stores at Purchaser's site.

27.7 Even while the 12 months guarantee applies to all Stores in case where a greater period is called for by our Specifications then such a specification shall apply, in such cases the period of 12 months referred to in Clause 27 shall be the 'asked for' guarantee period plus 2 Months.

28.0 Termination:

28.1 Under the normal circumstances, Termination/Short Closing of the Purchase Order/Contract is not foreseen. However, the Purchaser reserves the right to terminate the Contract in whole or in part by giving 30 days' prior notice under any of the following circumstances:

- a. For repeated non-performance in the execution of Purchase Order/Contract.
- b. If the Contractor fails to deliver the final Product within the stipulated delivery schedule or any extension thereof, granted by U R Rao Satellite Centre [URSC].
- c. If the Stores repeatedly fails in the Inspection and does not pass Inspection and Quality requirements of Purchase Order/Contract and/or the Contractor is not in a position to either rectify the defects or offer the Stores conforming to the contracted Quality Standards.
- d. If the Contractor is unable to rectify the defects or offer replacements in lieu of defective items.
- e. If the final Product does not pass Inspection and Quality requirements of Purchase Order/Contract.
- f. If the Contractor fails to perform any other obligations under P.O/Contract.
- g. If the Contractor becomes bankrupt or otherwise insolvent
- h. Owing to deficiency of service, breach of Contract
- i. For inefficiency, indiscipline, irregularity, insincerity, indifference in work, indulges in corrupt practices, disobedience, doubtful credentials/integrity, etc., at any point of time during the Contract period.

j. To terminate the Purchase Order/Contract at any time by giving 30 days' prior notice.

k. If the Contractor becomes bankrupt or otherwise insolvent or any petition seeking its insolvency is admitted by a Court/Tribunal of competent jurisdiction or if the Contractor applies for voluntary insolvency or enters into any arrangement for deferred payment to its creditors

29.0 Parallel Contract: Purchaser reserves the right to enter into Parallel Contract/s with one or more Contractors for procurement of Stores or any portion thereof that is covered by this Contract.

30.0 Subletting/Assignment of the Contract: The Contract shall not be sublet, transferred or assigned to any other third-party firm/agencies/person, etc., without the prior written permission of Purchaser. In case of violation of this clause, the Service Provider/Contractor shall be solely responsible for any legal action besides termination of Contract.

31.0 Secrecy: The technical information, drawings, specifications and other related documents provided by the Purchaser and forming part of the Contract are the property of Purchaser and shall not be used or disclosed for any other purpose, except for execution of the Contract. All rights, including rights in the event of grant of patent and registration of designs are reserved in favour of the Purchaser. The technical information, drawings, specifications, records and other documents provided by the Purchaser shall not be copied, transcribed, traced or reproduced in any other form or otherwise in whole and/ or duplicated, modified, divulged and/or disclosed to a third party nor misused in any other form whatsoever without Purchaser's consent in writing except to the extent required for the execution of this Contract. These technical information, drawings, specifications and other related documents which were originally provided by the Purchaser shall be returned to the Purchaser with all approved copies and duplicates, if any, immediately after they have been used for the agreed purpose, and shall be accompanied with a certificate of the Contractor signed by an authorised signatory that such technical information, drawings, etc. have been returned to the Purchaser and that the Contractor has not retained any copy/ies thereof with him.

32.0 Dispute Resolution between the Buyer and Seller/Service Provider:

- i. In the event of any conflict or dispute arising out of or in connection with the Contract, the Parties shall endeavour to settle such disputes amicably. If a dispute is not resolved within 30 (thirty) days after a written notice of any dispute by one Party to the other, the same shall then be resolved through the mechanism of a Dispute Resolution Committee. This Dispute Resolution Committee shall comprise of representatives of both the Buyer and the Seller / Service Provider and shall be chaired by the Procuring entity or any other person as authorized by the Procuring entity.
- ii. If the Dispute Resolution Committee is not able to resolve the matter within 30(thirty) days of its formation, the dispute shall be dealt with in accordance to Guidelines for Arbitration and Mediation in Contracts of Domestic Public Procurement issued by Department of Expenditure via OM No. F.1/2/2024-PPD dated 03.06.2024, as amended from time to time.
- iii. The Contract shall be interpreted and governed in all respects in accordance with the laws of India. All disputes in connection with or arising out of the Contract, shall be subject to the exclusive jurisdiction of the Court within the local limits of whose jurisdiction principal place of business of the Buyer department / organization is located.

33.0 Language and Measures: All documents pertaining to the Contract including specification schedule notices, correspondence, operating and maintenance instruction drawings or any other writing shall be written in English language only. The metric system of measurement shall

be used exclusively in the Contract. Any document originally in a language other than English must be accompanied with certified English translation and the same shall be considered for evaluation.

34.0 Applicable Law and Jurisdiction: The Contract shall be interpreted, construed and governed by the Laws of India and the Courts in Bengaluru City alone shall have exclusive jurisdiction in this regard, to the extent permissible under the Arbitration and Conciliation Act, 1996 and subsequent Amendment, if any. Adherence and acceptance to this Clause is Compulsory or otherwise the Tender will be rejected.

35.0 Indemnity: The Contractor shall warrant and deemed to have warranted that all Stores supplied against this Contract are free and clean of infringement of any third party Patent, Copy Right or Trademark and shall at all times indemnify the Purchaser against all claims which may be made in respect of the Stores for infringement of any third party right protected by Patent, Registration of the design or Trade mark and shall take all risk of accidents or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfilment of the Contract. The Contractor shall indemnify and keep indemnified the Purchaser against payments to be made under and for the observance of the applicable laws without prejudice to his right to claim indemnity from his sub-contractors, if any.

36.0 Counter Terms & Conditions: Where counter terms and conditions printed or cyclostyled condition have been offered by the supplier as part of its bid, the same shall not be deemed to have been accepted by the Purchaser, unless specific written acceptance thereof, is obtained and incorporated into the Agreement to be entered into between the Parties, upon award of the Tender/Contract.

37.0 Security Interest: On each item to be delivered under this Contract, including an item of work in progress in respect of which payment have been made in accordance with the Terms of the Contract. Purchaser shall have a Security Interest in such items which shall be deemed to be released only at the time when the applicable deliverable items is finally accepted and delivered to the Purchaser in accordance with the terms of Contract. Such Security Interest of the Purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any other entity.

38.0 Training: The Contractor shall, if required by the Purchaser, provide facilities for the Practical Training of Purchaser's Engineering or Technical Personnel from India and for their active association on the manufacturing process throughout the manufacturing period of the Contract/Stores, number of such personnel to be mutually agreed upon.

39.0 Purchase Preference to Public Sector Undertakings: Wherever, Purchase/Price Preference is applicable for Public Sector Undertaking [PSUs], the same will be as per the extant orders of Department of Space

40.0 Risk Purchase:

40.1 In the event of failure of the supplier to deliver or dispatch the stores within the stipulated date/period of the supply order or in the event of breach of any of the terms and conditions mentioned in the supply order/ contract, Purchaser shall have the right to purchase the stores from elsewhere after due notice to the defaulting supplier at the risk and cost of the defaulting supplier. In the event of failure of the supplier as detailed above, the cost as per risk purchase exercise may be recovered from the Earnest Money Deposit/ Security Deposit/ Performance Security of the supplier and/or bills submitted by the supplier against the same contract or any other contract. GST will be charged / levied on Risk Purchase as per the provision of GST Act Rule thereon.

40.2 Risk purchase action may be initiated under any of the following conditions

- a. When the supplier fails to deliver the materials even after extending the delivery period.
- b. When the supplier fails to respond to purchases request for supply of the materials and fails to provide any genuine and bonafide reason for the delay in supply
- c. When the supplier breaches any of the terms and conditions of the supply order/ contract and as a result fails to execute the order satisfactorily.

41.0 Fall Clause:

41.1 The Price[s] charged for the Stores/Services supplied under the Contract by the Contractor shall in no event exceed the lowest price at which the Contractor sells the Stores/Services or offer to sell the Stores/Services of identical description to any Person[s], Firm, Party, Organisation[s] including the Purchaser or any Department of Central Government or any Department of State Government or any statutory undertaking of the Central/State Government as the case may be during the period till the performance of all supply orders placed during the currency of the Contract is completed.

41.2 If at any time during the said period, the Contractor reduces the sale price, sells or offers to sell such Stores/Services to any person[s], Organisation[s], including the Purchaser or any Department of Central Government or any Department of State Government or any statutory undertaking of the Central or a State Government as the case may be, at a price lower than the price chargeable under the Contract, he shall forthwith notify such reduction or sale of offer to the Purchaser and the price payable under the Contract for the Stores/Services supplied after the date of coming into force of such reduction or sale or offer of sale stand correspondingly reduced to the same lower rate.

42.0 Limitation of Liability:

42.1 The remedies stated in the Contract are exclusive and in no event shall the Contractor be liable for any, special, incidental, consequential or punitive damages of any nature. Notwithstanding any other provision of the contract, the Contractor's total liability to the Purchaser, whether in Contract shall not exceed the total amount paid to the Contractor under the Contract.

42.2 The Purchaser shall be under no obligations to accept the lowest or any tender and reserve the right of acceptance of the whole or any part of the tender or portion of the quantity offered and the Tenderer[s] shall supply the same at the rates quoted.

42.3 The Purchaser shall not be liable to the Contractor for any loss or damages suffered by it during the term of the Contract or subsequently, and in no event shall the Contractor be liable for any, special, incidental, consequential or punitive damages of any nature. Notwithstanding any other provision of the Contract, the Contract having been satisfactorily completed, the Purchaser's total liability to the Contractor, shall not exceed the total amount to be paid to the Contractor under the Contract.

43.0 Buy Back Offer: Wherever it is considered necessary, the Quotation shall be given separately with Buy-Back Offer and also without Buy-Back Offer so as to enable Purchaser either to Trade or not to Trade the item while purchasing the new one.

44.0 Rejection of Bids: Canvassing by the Tenderer in any form, unsolicited letter and post-tender correction may invoke summary rejection of Bids. Conditional Tenders will be rejected. The Tenderer shall not impose any conditions on the bid i.e. the bid must be unconditional.

45.0 Conditional Discount Offer: Conditional Discount Offers will not be considered.

46.0 Splitting of Order[s]: The Volume/Quantity for certain specialized nature of jobs is considerably large and it is necessary the orders are split with more than one party in order to

ensure timely delivery/services. Purchaser reserves right to split the Purchase Orders to more than one party. However, every effort will be made to bring the Commercial aspect including price of the parties on a single common platform. This is aimed at providing equal opportunity for the parties while taking the decision.

47.0 Changes in the Name and Address of the Supplier: In the event of Change in Name and Address of Tenderer/Contractor, Documentary Proof issued by the Appropriate Government Authorities shall be produced for making such change in the Contract and its procedures, in the absence of which PO/Amendment/Payment will not be released.

48.0 Annual Maintenance Contract [AMC]/Extended Warranty

48.1 Tenderers are requested to quote separately towards Annual Comprehensive Maintenance Service/Extended Warranty and Non-Comprehensive Maintenance besides attending to unlimited Break-Down calls wherever specification calls for after expiry of Standard Warranty.

48.2 Payment for Extended warranty support: After the completion of Standard warranty period, the payment towards extended warranty support shall be released on monthly/quarterly/half yearly/yearly after successful completion of service.

48.3 Payment for Annual Maintenance contract: The payment towards annual maintenance contract shall be released monthly/quarterly/half yearly/yearly basis after successful completion of the maintenance services.

48.4 In case of Non-Comprehensive AMC, Tenderers shall provide essential spare list with its price. In case of TWO PART Tender, same shall be provided along with PRICE BID as any disclosure of Price in Techno-commercial bid amounts for rejection.

Government Policies & guidelines

49.0 Start-ups: The facilities/benefits will be extended for start-ups as per the Guidelines issued by Government of India, only if they technically qualify for tendered specifications.

50.0 Public Procurement [Preference to Make in India]

50.1 Public Procurement (Preference to Make in India) order 2017- revision issued by Government of India, Department of Promotion of Industry and Internal Trade [DPIIT] Public Procurement [preference to Make in India] vide Order No P-45021/2/2017-PP(BE II) dated 16/09/2020 or as amended thereafter. The Tenders submitted are subjected these orders.

50.2 Bidders are required to submit necessary certificates & documents as detailed in the above referred GOI Order in support of their claim to avail benefit against this order. The bidders who claim Purchase Preference under Make in India Policy shall fulfil all requirements of tender document applicable for Indigenous Manufacturer. FAILURE TO SUBMIT THE REQUIRED DOCUMENTS MAY RENDER TENDER UNACCEPTABLE.

50.3 Local Content means the amount of value added in India which shall unless otherwise prescribed by the Nodal ministry, be the total value of the item procured (excluding net domestic Indirect taxes), minus the value of imported content in the item (including all customs duties) as a proportion of the total value in percentage.

50.4 Class-I local supplier' means a Supplier or Service provider, whose goods, services or works offered for procurement, meets the minimum local content as prescribed for Class-I local supplier under this order.

50.5 Class-II local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, meets the minimum local content as prescribed for 'Class-II local supplier' but less than that prescribed for 'Class-I local supplier' under this Order.

50.6 Non - Local supplier' means a supplier or service provider, whose goods, services or works offered for procurement, has local content less than that prescribed for Class-II local supplier under this Order.

50.7 L1' means the lowest tender or lowest bid or the lowest quotation received in a tender, bidding process or other procurement solicitation as adjudged in the evaluation process as per the tender or other procurement solicitation.

50.8 Margin of Purchase Preference: means the maximum extent to which the price quoted by a "Class-I local supplier" may be above the L1 for the purpose of purchase preference. The Margin of purchase preference shall be 20% (i.e. L1 + 20% band).

50.9 Nodal Ministry' means the Ministry or Department identified pursuant to this order in respect of a particular item of goods or services or works.

50.10 Procuring entity' means a Ministry or department or attached or subordinate office of, or autonomous body controlled by, the Government of India and includes Government companies as defined in the Companies Act.

50.11 Works' means all works as per Rule 130 of GFR- 2017 and will also include 'turnkey works.

50.12 Eligibility of 'Class-I local supplier'/ 'Class-II local supplier'/ 'Non-local suppliers' for different types of procurement.

a. In procurement of all goods, services or works in respect of which the Nodal Ministry / Department has communicated that there is sufficient local capacity and local competition, only 'Class-I local supplier', as defined under the Order, shall be eligible to bid irrespective of purchase value.

b. Only 'Class-I local supplier' and Class-II local supplier', as defined under the Order, shall be eligible to bid in procurements undertaken by procuring entities except when Global tender enquiry has been issued. In global tender enquiries, 'Non-local suppliers' shall also be eligible to bid along with 'Class-I local suppliers' and 'Class-II local suppliers. In procurement of all goods, services or works, not covered by sub para 3(a) above, and with estimated value of purchases less than Rs. 200 Crore, in accordance with Rule 161 (iv) of GFR, 2017, Global tender enquiry shall not be issued except with the approval of competent authority as designated by Department of Expenditure.

c. For the purpose of this Order, works includes Engineering, Procurement and Construction (EPC) contracts and services include System Integrator (SI) contracts.

50.12(A) Purchase Preference

a. Subject to the provisions of this Order and to any specific instructions issued by the Nodal Ministry or in pursuance of this Order, purchase preference shall be given to Class-I local supplier' in procurements undertaken by procuring entities in the manner specified here under.

b. In the procurements of goods or works, which are covered by para 50.12(b) above and which are divisible in nature, the Class-I local supplier shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure

i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class-I local supplier', the contract for full quantity will be awarded to L1.

ii. If L1 bid is not a 'Class-I local supplier', 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the Class-I local supplier' will be invited to match the L1 price for the remaining 50% quantity subject to the Class-I local supplier's quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to

such Class-I local supplier' subject to matching the L1 price. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price or accepts less than the offered quantity, the next higher 'Class-I local supplier' within the margin of purchase preference shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on Class-I local suppliers, then such balance quantity may also be ordered on the L1 bidder.

c. In the procurements of goods or works, which are covered by para 50.12(b) above and which are not divisible in nature, and in procurement of services where the bid is evaluated on price alone, the 'Class-I local supplier' shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure.

d. Class-II local supplier' will not get purchase preference in any procurement, undertaken by procuring entities.

50.12(B) Applicability in tenders where contract is to be awarded to multiple bidders: In tenders where contract is awarded to multiple bidders subject to matching of L1 rates or otherwise, the 'Class-I local supplier' shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure:

a. In case there is sufficient local capacity and competition for the item to be procured, as notified by the nodal Ministry, only Class I local suppliers shall be eligible to bid. As such, the multiple suppliers, who would be awarded the contract, should be all and only 'Class I Local suppliers'.

b. In other cases, 'Class II local suppliers and 'Non local suppliers' may also participate in the bidding process along with 'Class I Local suppliers' as per provisions of this Order.

c. If Class I Local suppliers qualify for award of contract for at least 50% of the tendered quantity in any tender, the contract may be awarded to all the qualified bidders as per award criteria stipulated in the bid documents. However, in case Class I Local suppliers do not qualify for award of contract for at least 50% of the tendered quantity, purchase preference should be given to the 'Class I local supplier' over 'Class II local suppliers'/ 'Non local suppliers' provided that their quoted rate falls within 20% margin of purchase preference of the highest quoted bidder considered for award of contract so as to ensure that the 'Class I Local suppliers' taken in totality are considered for award of contract for at least 50% of the tendered quantity.

d. First purchase preference has to be given to the lowest quoting 'Class-I local supplier', whose quoted rates fall within 20% margin of purchase preference, subject to its meeting the prescribed criteria for award of contract as also the constraint of maximum quantity that can be sourced from any single supplier. If the lowest quoting Class-I local supplier', does not qualify for purchase preference because of aforesaid constraints or does not accept the offered quantity, an opportunity may be given to next higher 'Class-I local supplier', falling within 20% margin of purchase preference, and so on.

50.13 Minimum local content: The 'local content' requirement to categorize a supplier as 'Class-I local supplier' is minimum 50%. For 'Class-II local supplier', the local content' requirement is minimum 20%. Nodal Ministry/ Department may prescribe only a higher percentage of minimum local content requirement to categorize a supplier as 'Class-I local supplier'/ 'Class-II local supplier'. For the items, for which Nodal Ministry/ Department has not prescribed higher minimum local content notification under the Order, it shall be 50% and 20% for 'Class-I local supplier'/ 'Class-II local supplier' respectively.

50.14 Verification of local content

a. The 'Class-I local supplier'/ 'Class-II local supplier' at the time of tender, bidding or solicitation shall be required to indicate percentage of local content and provide self-certification that the item offered meets the local content requirement for Class-I local

supplier/ 'Class-II local supplier', as the case may be. They shall also give details of the location(s) at which the local value addition is made.

b. In cases of procurement for a value in excess of Rs. 10 crores the 'Class-I local supplier'/ 'Class-II local supplier' shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

c. Decisions on complaints relating to implementation of this Order shall be taken by the competent authority which is empowered to look into procurement-related complaints relating to the procuring entity.

d. Nodal Ministries may constitute committees with internal and external experts for independent verification of self-declarations and auditor's/ accountant's certificates on random basis and in the case of complaints.

e. Nodal Ministries and procuring entities may prescribe fees for such complaints.

f. False declarations will be in breach of the Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

g. A supplier who has been debarred by any procuring entity for violation of this Order shall not be eligible for preference under this Order for procurement by any other procuring entity for the duration of the debarment. The debarment for such other procuring entities shall take effect prospectively from the date on which it comes to the notice of other procurement entities.

50.15 Self-Certificate for Local Content

We [name of manufacturer] hereby confirm in respect of quoted item(s) that Local Content is equal to or more than 50% and come under Class-I Local Supplier Category. As being Class-I Local Supplier, we are eligible for Preference to Make in India) order 2017- revision issued by Government of India, Department of Promotion of Industry and Internal Trade [DPIIT] Public Procurement [preference to Make in India] vide Order No P-45021/2/2017-PP(BE II) dated 16/09/2020 or as amended thereafter OR We [name of manufacturer] hereby confirm in respect of quoted item(s) that Local Content is more than or equal to 20% but less than 50% and come under Class-II Local Supplier Category.

The details of the location(s) at which the local value addition made is/are as under: 1. 2 3.
Strike out whichever is not applicable Date: Seal & Signature of the Bidder

51.0 Restrictions under Rule 144 (xi) of the General Financial Rules (GFR), 2017

51.1 Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. The Competent authority for the purpose of registration shall be the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT), Government of India.

51.2 Bidder (including the term Tenderer, service provider in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated herein before, including any agency branch or office controlled by such person, participating in a procurement process.

51.3 Bidder from a country which shares a land border with India for the purpose of this order means

- i. An entity incorporated, established or registered in such a country;
or
- ii. A subsidiary of an entity incorporated, established or registered in such a country; or
- iii. An entity substantially controlled through entities incorporated, established or registered in such a country;
or
- iv. An entity whose beneficial owner is situated in such a country;
or
- v. An Indian (or other) agent of such an entity;
or
- vi. A natural person who is a citizen of such a country;
or
- vii. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

51.4 The beneficial owner for the purpose of 51.3 above will be as under:

- i. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together or through one or more juridical person, has a controlling ownership interest or who exercises control through other means. Explanation --
- Controlling Ownership Interest means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits of the company;

Control shall include the right to appoint majority of the Directors or to control management or policy decisions including by virtue of their shareholding or management rights or shareholders' agreements or voting agreements;

- ii. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting alone or together, or through one or more juridical person, has ownership of entitlement to more than fifteen per cent of capital or profits of the partnership;

- iii. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more juridical person, has ownership of or entitlement to more than fifteen per cent of the property or capital or profits of such association or body of individuals;

- iv. Where no natural person is identified under i) or ii) or iii) above, the beneficial owner is the relevant natural person who holds the position of senior managing official

- v. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen per cent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

- vi. An agent is a person employed to do any act for another, or to represent another in dealings with third person

- vii. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with a Competent Authority.

51.5 Model Certificate for Tenders

I have read the clause regarding restriction on procurement from a bidder of a country which

shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirement in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]

51.6 Model Certificate for Tenders for Works involving possibility of sub-contracting I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India or sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract for any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evidence of valid registration by the Competent Authority shall be attached.]

52.0 Government e-Market place [GeM]

52.1 In terms of Rule No.149 of GFR 2017 Purchaser is authorized to procure Goods and Services through Online Government e-Market place [GeM] for common use Goods and Services which are available in GeM.

52.2 As per Office Memorandum No 6/9/2020-PPD dated 24/08/2020 of Department of Expenditure, it shall be mandatory for sellers providing Goods and Services to Central Government Organizations to be registered on GeM and obtain a Unique GeM Seller ID, at the time of Placement of Order/acceptance of contract. Tenderers shall ensure the same.

53.0 Code of Integrity in Public Procurement; Misdemeanours and Penalties

53.1 Code of Integrity:

Procuring authorities as well as bidders, suppliers, contractors, and consultants - should observe the highest standard of ethics and should not indulge in following prohibited practices, either directly or indirectly, at any stage during the Tender Process or during the execution of resultant contracts

i) Corrupt practice making offer, solicitation or acceptance of a bribe, reward or gift or any material benefit, in exchange for an unfair advantage in the Tender Process or to otherwise influence the Tender Process;

ii) Fraudulent practice - any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained or an obligation avoided. Such practices include a false declaration or false information for participation in a tender process or to secure a contract or in the execution of the contract

iii) Anti-competitive practice any collusion, bid-rigging or anti-competitive arrangement, or any other practice coming under the purview of the Competition Act, 2002, between two or more bidders, with or without the knowledge of the Procuring Entity, that may impair the transparency, fairness, and the progress of the Tender Process or to establish bid prices at artificial, non-competitive levels;

iv) Coercive practice harming or threatening to harm persons or their property to influence their participation in the Tender Process or affect the execution of a contract;

v) Conflict of interest participation by a bidding firm or any of its affiliates who are either involved in the Consultancy Contract to which this procurement is linked; or if they are part of more than one bid in the procurement; or if their personnel have a relationship or financial or business transactions with any official of procuring entity who are directly or indirectly related to tender or execution process of contract; or improper use of information obtained by the (prospective) bidder from the Procuring Entity with an intent to gain unfair advantage in the Tender Process or for personal gain;

vi) Obstructive practice materially impede procuring entity's investigation into allegations of one or more of the above mentioned prohibited practices either by deliberately destroying,

falsifying, altering; or by concealing of evidence material to the investigation; or by making false statements to investigators and/ or by coercive practices mentioned above, to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or by impeding the Procuring Entity's rights of audit or access to information;

53.2 Obligations for Proactive Disclosures:

i). Procuring authorities, bidders, suppliers, contractors, and consultants are obliged under this Code of Integrity to suo-moto proactively declare any conflict of interest (coming under the definition mentioned above - pre-existing or as and as soon as these arise at any stage) in any Tender Process or execution of the contract. Failure to do so shall amount to a violation of this code of integrity.

ii). Any bidder must declare, whether asked or not in a bid-document, any previous transgressions of such code of integrity during the last three years or of being under any category of debarment by the Central Government or by the Ministry/ Department of the Procuring Organisation from participation in Tender Processes. Failure to do so shall amount to a violation of this code of integrity.

53.3 Misdemeanours and Penalties:

The following shall be considered misdemeanours - if a bidder/ contractor either directly or indirectly, at any stage during the Tender Process or during the execution of resultant contracts

i). commits any of the following misdemeanours

(a) violates the code of Integrity or the Integrity Pact if included in the Tender/ Contract;

(b) any other misdemeanour, e.g., supply of sub-standard quality of material/ services/ work or non-performance or abandonment of contract or failure to abide by Bid Securing Declaration.

ii). commits any of the following misdemeanours:

(a) has been convicted of an offence under the Prevention of Corruption Act, 1988; or the Indian Penal Code or any other law for the time being in force for causing any loss of life or property or causing a threat to public health as part of the execution of a public procurement contract.

(b) is determined by the Government of India to have doubtful loyalty to the country or national security consideration.

(c) Employs a government servant, who has been dismissed or removed on account of corruption or employs a non-official convicted for an offence involving corruption or abetment of such an offence, in a position where he could corrupt government servants or employs a government officer within one year of his retirement, who has had business dealings with him in an official capacity before retirement.

53.4 Penalties for Misdemeanours:

Without prejudice to and in addition to the rights of the Procuring Entity to other remedies as per the Tender-documents or the contract, If the Procuring Entity concludes that a (prospective) bidder/contractor directly or through an agent has committed a misdemeanour in competing for the tender or in executing a contract, the Procuring Entity shall be entitled, and it shall be lawful on his part to take appropriate measures, including the following.

a). If his bids are under consideration in any procurement:

1) Enforcement of Bid Securing Declaration in lieu of forfeiture or encashment of Bid Security.

2) Calling off of any pre-contract negotiations, and;

3) Rejection and Exclusion of Bidder from the Tender Process

b). if a contract has already been awarded:

- 1) Termination of Contract for Default and availing all remedies prescribed thereunder;
- 2) Encashment and/or Forfeiture of any contractual security or bond relating to the procurement;
- 3) Recovery of payments including advance payments, if any, made by the Procuring Entity along with interest thereon at the prevailing rate;
- c). Remedies in addition to the above: In addition to the above penalties, the Procuring Entity shall be entitled, and it shall be lawful on his part to:
 - 1) File information against Bidder or any of its successors, with the Competition Commission of India for further processing, in case of anti-competitive practices;
 - 2) Initiate proceedings in a court of law against Bidder or any of its successors, under the Prevention of Corruption Act, 1988 or the Indian Penal Code or any other law for transgression not addressable by other remedies listed in this sub-clause.
 - 3) Remove Bidder or any of its successors from the list of registered suppliers for a period not exceeding two years. Suppliers removed from the list of registered vendors or their related entities may be allowed to apply afresh for registration after the expiry of the period of removal.
 - 4) Initiation of suitable disciplinary or criminal proceedings against any individual or staff found responsible.
 - 5) Debar, a bidder/ contractor from participation in future procurements without prejudice to Procuring Entity's legal rights and remedies. Debarment shall automatically extend to all the allied firms of the debarred firm. In the case of Joint Venture/ consortium, all its members shall also stand similarly debarred.
 - 6). URSC may debar a bidder or any of its successors from participating in any Tender Process undertaken by all its procuring entities for a period not exceeding two years commencing from the date of debarment for misdemeanours listed above.
 - 7). Central Government (Department of Expenditure (DoE), Ministry of Finance) may debar a bidder or any of its successors from participating in any Tender Process undertaken by all its procuring entities for a period not exceeding three years commencing from the date of debarment for misdemeanours listed above.

No Claim Certificate [on Company Letterhead]

Sub: Contract Agreement No. _____ dated _____ for supply of

We have received the sum of Rs. _____ [Rupees _____ Only] in full and final settlement of all the payments due to us for providing the services of _____ under the above mentioned contract agreement, between us and Government of India. We hereby unconditionally and without any reservation whatsoever, certify that with this payment, we shall have no claim whatsoever, on any account, against procuring entity, against aforesaid contract agreement executed by us. We further declare unequivocally, that with this payment, we have received all the amounts payable to us, and have no dispute of any description whatsoever, regarding the amounts worked out as payable to us and received by us, and that we shall continue to be bound the terms and conditions of the contract agreement, as regards performance of the contract.

Yours faithfully,

Signatures of Contractor or Officer

authorized to sign the contract

documents on behalf of the

contactor [Company stamp]

Yours faithfully,

Signatures of Contractor or Officer authorized
to sign the contract documents
On behalf of the contactor
[Company stamp] Date. Place

Specific Commercial Terms and Conditions

Sl. No.	Terms & Conditions	Compliance (Yes/No)	Remarks
1.	Provide compliance for General terms and conditions which is attached as a separate sheet in a document folder.		
2.	Taxes: Government of India has implemented Goods and Services Tax [GST] w.e.f. 01.07.2017. The Tenderer[s] should mandatorily possess a valid GSTIN along with the GST Registration Certificate.		
3.	Indicate the applicable Rate of GST for the quoted item/s.		
4.	Contract Validity: The Contract is valid for a period of 3 (three) years.		
5.	Indicate the applicable HSN code/s for the quoted item/s.		
6.	Custom Duty: U R Rao Satellite Centre [URSC], Bengaluru is eligible for "Nil" Customs Duty vide Notification No.50/17-Customs dated 30.06.2017 and as amended by Notification No. 5/2018-Customs dated 25.01.2018, Sl. No. 539A, further amended by 05/2025-Customs I (38) dated 01.02.2025 and as amended vide Custom Notification No. 45/2025 dated 24/10/2025 Sl. No. 340. The necessary Customs Duty Exemption Certificate (CDEC) shall be provided by URSC only to those bidders who claim Purchase Preference under Make in India Policy and fulfil all requirements of tender document applicable for Indigenous Manufacturer i.e., Class-I/Class-2 local supplier. Such Class-I/Class-2 local suppliers have to take note of this aspect and submit their Offer clearly mentioning the quoted Price arrived by considering the Nil Custom Duty as per above Notification. While requesting for issue of CDEC for the imported contents, the Tenderer[s] should mention the Item Description, Quantity and Value for which CDEC is to be provided for the bought out Imported Items. The necessary documentary proofs like P.O., on their Supplier, Invoice, AWB shall be		

	produced while requesting for issue of CDEC from URSC. However, CDEC will be issued only to those successful Class-I/Class-2 local supplier, not exceeding the limit of foreign content declared in their quote. Also a declaration of the Supplier in their letter head that imported items in the Invoice are used for realization of ordered items. Suppliers may note that URSC is not responsible for any incidental charges incurred towards late/ non-submission of CDEC.		
7.	Delivery Terms [Indigenous Supply]: Tenderer[s] shall quote the Price[s] on FOR, URSC Stores, Bengaluru.		
8.	Delivery Date/Completion Date: Delivery is the essence of the Contract. Delivery Period shall be 06 months from the release of work order or issue of last components/inputs, whichever is later.		
9.	Mode of Despatch (Rail/Road)		
10.	Payment Terms: Please refer to Clause No. 13 of RFP		
11.	Name of suppliers Banker & Account Number with IFSC code.		
12.	Security Deposit: The Contractor shall execute Security Deposit for 3 per cent of the value of the Purchase Order to ensure Satisfactory Performance of the Contract. The Security Deposit shall be executed within 20 days after Receipt of Purchase Order or any extension thereof. The Security Deposit is to be furnished in the form of Insurance Surety Bond or Fixed Deposit Receipt or Bank Guarantee from Nationalized Bank/Scheduled Bank/International Bank approved by RBI. The Security Deposit shall be executed on a Non-Judicial Stamp Paper of appropriate value as required by the state from where the BG is issued and shall be valid for a period of 60 days beyond the date of completion of the P.O/Contract. In case the Contractor fails to furnish the		

	Security Deposit within 20 days or any extension thereof the Purchase Order shall be Cancelled or Terminated and appropriate penal action shall be initiated. Any breach of the Terms and Conditions of the PO including Delivery Period, Security Deposit shall be forfeited and PO shall be terminated and cancelled at the Contractors risk, cost and liability. The Security Deposit will not carry any interest and shall be returned after completely executing the order. Adherence to this clause is compulsory or otherwise, the Tender will be rejected.		
13.	Liquidated Damages: The time and date stipulated in the contract for completion of the work shall be deemed to be the essence of the contract. If the Contractor fails to deliver the Stores within the time specified in the Contract or any extension thereof or if the Contractor fails to maintain the required progress or comply with the relevant provisions of the general conditions of contract or special conditions of contract, if any and clear the site on or before the contract or extended date of completion, the Purchaser shall, without prejudice to any other right or remedy available under the law to Purchaser on account of such breach, recover from the Contractor as Liquidated Damages a sum one-half of one percent [0.5 percent] of the Contract price of the undelivered Stores for each calendar week of delay or part thereof. The total Liquidated Damages shall not exceed Ten percent [10 percent] of the Contract/PO value. In case of delay in delivery of the Stores beyond the delivery date stipulated in the Purchase Order/Contract or any extension thereof, such Stores shall be received without prejudice to the right of the Purchaser to claim Liquidated Damages and without prejudice to the terms and conditions of the Purchase Order/Contract. Adherence and acceptance to this Clause is Compulsory or otherwise the Tender will be rejected.		
14.	Validity of Offer: The Bid and the prices quoted shall remain valid for 90 days for Single Part Tender. In case of Two-Part Tender, bid validity shall remain valid for 120 days from the date of opening Part-1 and 90 days from the date of opening of		

	Part-2 bid. Adherence and acceptance to this Clause is Compulsory or otherwise the Tender will be rejected.		
15.	<u>Dispute resolution between the buyer and the seller / service provider</u> i. In the event of any conflict or dispute arising out of or in connection with the Contract placed through EGPS, the Parties shall endeavour to settle such disputes amicably. If a dispute is not resolved within 30 (thirty) days after a written notice of any dispute by one Party to the other, the same shall then be resolved through the mechanism of a Dispute Resolution Committee. This Dispute Resolution Committee shall comprise of representatives of both the Buyer and the Seller / Service Provider and shall be chaired by the Procuring entity or any other person as authorized by the Procuring entity. ii. If the Dispute Resolution Committee is not able to resolve the matter within 30(thirty) days of its formation, the dispute shall be dealt with in accordance to "Guidelines for Arbitration and Mediation in Contracts of Domestic Public Procurement" issued by Department of Expenditure via OM No. F.1/2/2024-PPD dated 03.06.2024, as amended from time to time. iii. The Contract shall be interpreted and governed in all respects in accordance with the laws of India. All disputes in connection with or arising out of the Contract, shall be subject to the exclusive jurisdiction of the Court within the local limits of whose jurisdiction principal place of business of the Buyer department / organization is located.		
16	Arbitration with Public Sector Undertakings: In the event of any dispute or difference relating to the interpretation		

	and application of the Contract, such dispute or difference shall be taken up by either party for resolution through AMRCD as mentioned in DPE OM No. 4 (1)/2013 - DPE (GM) /FTS-1835 dated 22.05.2018. And/or amended thereafter.		
17.	Applicable Law and Jurisdiction: Contract shall be interpreted, construed and governed by the Laws of India and the Courts in Bengaluru City alone shall have exclusive jurisdiction in this regard, to the extent permissible under the Arbitration and Conciliation Act, 1996. Non-acceptance to this Clause will amount to rejection of the Tender.		
18.	Company postal address along with Email ID and Ph No. on which order to be placed.		
19.	Pre-Delivery Inspection [PDI] [if Required]: The successful Tenderer[s] has to arrange for the necessary PDI of the Stores at the Contractor Factory Premises to enable URSC Engineers to carry out PDI. The PDI is applicable wherever the RFP document/Scope of Work calls for such an inspection.		
20.	Factory Acceptance Testing [FAT] [if Required]: The successful Tenderer[s] has to arrange for the necessary FAT of the Stores at the Contractor Factory Premises to enable URSC Engineers to carry out FAT. The FAT is applicable wherever the RFP document/Scope of Work calls for such as FAT.		
21.	Tenderer[s] are requested to mention whether Installation, Testing, Commissioning, Demonstration, Acceptance and imparting Training is necessary for the Tendered Stores. Do not mention any price under this column in case of Two-Part Tender.		
22.	Based on the GOI order dated 16.09.2020, provide declaration in Company Letter head indicating the following: Percentage of Local Content in the quoted items along with its break-up (in percentage only). It may be noted that Local Content shall not include services such as Transportation, Insurance, Installation, Commissioning, Training and after sales service support like AMC/CMC etc. Adherence and acceptance to this		

	Clause is Compulsory or otherwise the Tender will be rejected.		
23.	Details of the location(s) at which the local value addition is made - Adherence and acceptance to this Clause is Compulsory or otherwise the Tender will be rejected.		
24.	In case a bidder is an MSE, registered under NSIC or any other Government Agencies and would like to avail exemptions, offer should be accompanied with necessary registration certificate with declaration to consider their offer. Quotation received without such declaration and valid registration certificate will not be considered for exemptions under the Public Procurement Policy.		
25.	Do you have Unique GeM Seller ID? If YES, provide details. If NO, As per Office Memorandum No 6/9/2020-PPD dated 24/08/2020 of Department of Expenditure, it shall be mandatory for sellers providing Goods and Services to Central Government Organizations to be registered on GeM and obtain a Unique GeM Seller ID, at the time of Placement of Order/acceptance of contract. Tenderers shall ensure the same.		
26.	Please refer the following OMs/orders issued by Govt. of India while submitting the bid: (i) No. P-45021/2/2017-PP (BE-II) dated 16.09.2020 (ii) F.No.6/18/2019-PPD (Public Procurement No.1) dated 23.07.2020 (iii) F.No.6/18/2019-PPD (Public Procurement No.2) dated 23.07.2020 and (iv) F.No.6/18/2019-PPD (Public Procurement No.3) dated 24.07.2020. All the provisions mentioned in the above OMs/orders shall be complied. If any deviation from the above OMs/order, your offer will be liable for rejection. All Bidders fulfilling the above orders, shall submit a valid registration certificate made with DPIIT, without which the offer shall not be considered.		
27.	Country of Origin of quoted items. Adherence and acceptance to this Clause is Compulsory or otherwise the Tender will be rejected.		

28.	(i). Confirm whether you are a reseller or distributor. If not, mention the nature of business with a copy of valid registration certificate to substantiate the same. (ii). Details of break-up of Local Content shall be provided in terms of percentage. Please Note that the Value should not be Mentioned.		
29.	The Contractor shall furnish All Risk Insurance Policy towards the cost of Free Issue Material (FIM) issued by the Purchaser. The value of the FIM shall be mentioned in the respective Work Order. For more details, please refer Point No. 12.3 of Annexure-A.		

Please Note:

1. Fax/e-mail quotations shall not be considered.
2. For any query regarding this Tender, Vendor may contact to:
Purchase and Stores Officer, Group-A, U R Rao Satellite Centre (URSC), Bengaluru- 560017
Tel. No.+91 80 6108 4015, E-mail ID: pso_a@ursc.gov.in