



**Request for Proposal (RFP) For the Selection of
Partner for Technology Transfer for Indian Regional
Navigation Satellite System (IRNSS) Manufacturing**

12 July 2025

Reference No: ITI/COR/P&T/RFP/IRNSS/2025/01

ITI LIMITED
Registered & Corporate Office
ITI Bhavan, Dooravaninagar
Bengaluru – 560 016
CIN No: L32202KA1950GOI000640

1. INTRODUCTION

ITI Limited (ITI), a Public Sector Undertaking under the Department of Telecommunications, Ministry of Communications, is a leading Telecom equipment manufacturer and turnkey solution provider in Information and Communication Technologies (ICT) and Telecom Domain in India. ITI is having state of the art electronic manufacturing infrastructure in its plants situated at Bengaluru, Palakkad, Rae Bareli, Mankapur and Naini. It has PAN India presence through its Marketing, Services & Project offices (MSP). The major customers are Government/ Defence/ Paramilitary forces/Railways/PSUs like MTNL/Private Corporates.

More information can be viewed on www.itilttd.in .

In this regards, proposals are invited **under e-tender mode** from the bidders having proven technological capabilities including necessary certifications for “IRNSS Receiver” meeting the Generic technical specifications as per Annexure-V” and enable ITI with technological detail to manufacture “IRNSS Receiver” as per terms & conditions enumerated below.

2. IMPORTANT DATES

S.No.	Activity	Schedule
i	RFP Issue Date	12/07/2025
ii	Bidders Query last Date	14/07/2025 17:30 Hrs
iii	Upload of Reply to Bidder's query	17/07/2025 15:00 Hrs
iv	Due Date & Time for Submission of Proposal through Uni Wizard	24/07/2025 17:30 Hrs
v	Date & Time of opening of Proposals	25/07/2025 15:00 Hrs

3. PURPOSE

ITI intends to manufacture “IRNSS Receiver” meeting Generic technical specifications as per Annexure-V” to participate & supply against

upcoming & future Tenders/RFP/RFP of State/Central Govt. or other Organisations.

For Generic Technical Specification please refer to Annexure-V. Technical details are for reference purpose only as technical Elements and Specification will vary as per customer requirements.

The selected Partner, should be willing to provide ITI with technological details for manufacturing and servicing of the IRNSS Receiver on exclusive basis to enable ITI as Class-I manufacturer of IRNSS Receiver with minimum 50% value addition.

4. SCOPE

- 4.1. The strategic alliance between ITI and the Partner shall be for a period of minimum five years or as per agreed time period from the date of the agreement. The Agreement will be extended further on mutual consent. The Partner shall provide all the assistance in setting up/upgrading the manufacturing facilities at ITI units. The Partner should enable progressive manufacturing by ITI to add value addition in the product.
- 4.2. PARTNER shall be willing to enable ITI to manufacture “IRNSS Receiver”, through an Agreement, to enable ITI to design, engineer, integrate, manufacture, Market, Sale & Service, provide maintenance of the product. The PARTNER would take responsibility on behalf of ITI to obtain the required Type Approval Certificate as well as all required BIS Certificate.
- 4.3. The PARTNER should be responsible to provide free software /firmware/patches/ upgrades to ITI for the product as per customer order conditions during the pre-sales and post sales phases of the product to ascertain the compliance of the product with the standards and specifications and to enable ITI operate and maintain the system.
- 4.4. The Agreement on IRNSS Receiver manufacturing will include the hardware/software design, manufacturing, assembly, inspection, testing, quality assurance methods, troubleshooting, supply, Installation and Commissioning if required, servicing/ maintenance during the warranty/post warranty period, training, documentation, design upgrades, system integration if required etc. as per various customer requirements.

- 4.5. The PARTNER shall ensure compliance, in totality, of his product to applicable Indian Standard specifications or any other standard, as referred in the customer requirement.
- 4.6. Partner has to support ITI to get the all certificate like Type Approval Certificate from any NABL/International accredited agencies for this device, TEPC certificate, Physical standard like IP68 under Mile standard (MIL-STD) and Mil grade for software / for encryptor and any other certification is required. Partner has to support ITI For Proof of concept (PoC) as per end customer requirement and for winning the opportunity.
- 4.7. The PARTNER at their own cost shall develop prototype and get them type approved for the Quality Assurance by providing samples as required towards the pre-supply qualification for the customer orders.
- 4.8. The PARTNER shall ensure the compliance of the IRNSS Receiver system as per the Generic technical specifications as per Annexure-V. This is the tentative requirement, which may vary as per the specific customer tender requirements.
- 4.9. The PARTNER should meet the eligibility criteria as per clause 5(A). PARTNER shall provide clause-by-clause compliance as per Annexure-II and conform to the requirements, by providing undertaking as per Annexure-III.
- 4.10. The partner must have a fully designed and functional IRNSS Receiver system. The system should be readily deployable and not under developmental stage as IRNSS Receiver systems are required on an urgent basis to meet the requirements of the customers.
- 4.11. The Partner shall provide minimum 1 IRNSS RECEIVER and two Receiver Handsets each on NCNC (No cost No commitment) to ITI on returnable basis for PoC testing and giving demo to various customers or Quality check etc.
- 4.12. During or after successful technology enablement process, the PARTNER shall also support ITI for the Tenders / Purchase orders of Government, PSUs, Defence and Private customers for the products / services.
- 4.13. ITI shall be solely responsible for procuring the materials as per BOM requirement for manufacturing, while the selected PARTNER may support source the materials by open tender at a competitive rate.

Partner has to provide the detailed technical specifications, drawings etc. for all the components being sourced from open market. Partner shall also extend the technical support for using the equivalent items compatible to the BOM items.

- 4.14. If ITI is procuring the materials from the selected Partner / sister concern / group concern, then that material cost will be adjusted against dues payable to the partner including payment of royalty.
- 4.15. The PARTNER has to support ITI in setting up the infrastructure for the manufacturing and test set up for the IRNSS RECEIVER.
- 4.16. PARTNER must assist ITI in setting up the production lines and give necessary Technical Support including Specification, process diagrams & training to ITI personnel for the smooth and efficient functioning of the IRNSS RECEIVER Production. ITI desires that PARTNER shall assist in supply of all the necessary Infra required for Manufacturing & Testing of IRNSS RECEIVER except High End SMT facility (available with ITI) & Test Bench (ITI is going to procure).
- 4.17. PARTNER shall provide all the upgrades developed for the offered product (including ITI product based on Technology enablement) during the contract period, without any commercial implication. They should also ensure to develop the upgraded System to meet upgraded Technical Specification as per prevailing standard, if any, to overcome any obsolescence.
- 4.18. PARTNER must agree to enable ITI to procure kits of the proposed product at component level as per ITI requirement.
- 4.19. PARTNER shall depute experienced technical personnel as per the requirements to support manufacturing and after that as and when required to resolve the technical issues for Certification or during bulk production.
- 4.20. Technology enablement for manufacturing and servicing of IRNSS RECEIVER shall be on Royalty Model.
- 4.21. Technology Transfer process will be completed in the form of Completely Built Unit(CBU), Semi Knock Down (SKD) and Completely Knocked Down(CKD) stages.
- 4.22. Royalty will be applicable only under CKD phase.

5. ELIGIBILITY CONDITIONS FOR PARTNER

A	Essential Eligibility Criteria for the Applicants	
	<i>Pre-Qualifying Criteria</i>	<i>Compliance Document</i>
i.	The PARTNER should be a company registered in India having its office in India and incorporated under the Indian Companies Act, 1956/2013 and should be at least five years (from the date of releasing this RFP) old company.	The details of the company and Certificate of Incorporation
ii.	<p>PARTNER should be an Original Design Manufacturer (ODM)/ Original Equipment Manufacturer (OEM) of “IRNSS Receiver System” meeting Generic technical specifications as per Annexure-V”.</p> <p>PARTNER should have designed, engineered, integrated, manufactured/ assembled “IRNSS Receiver” and obtained the required certifications for this Product</p>	<p>(i). <i>Relevant documents to the ownership to be submitted</i></p> <p>(ii). <i>An undertaking of owning IPR (Intellectual Property Right) or Copyright/License for the design needs to be submitted.</i></p>
ii.	<p>Bidders who have relevant experience in the following fields can submit the proposal in both categories or any one of the categories:</p> <p>TP shall be willing to transfer the technology of offered Product/Solutions to enable ITI to design, engineer, integrate, manufacture, Market, Sale & Service, provide maintenance of the Product/Solutions. The TP would take responsibility on behalf of ITI to obtain the required Type Approval Certificate as well as all required BIS Certificate if required.</p>	<i>A Self-Declaration of Technology Transfer consent to be provided.</i>
iii	The bidder should be in IRNSS Receiver supply business for at least 3 years. Should be a profit making company for	a. Incorporation Certificate to be provided

	last 3 years. Should have ISO 9001 certificate	b. Copy of ISO certificates to be provided
iv.	<p>Bidder should have supplied atleast 50 IRNSS Receiver systems in any 3 years in the last seven years.</p> <p>i. Consortium is allowed.</p> <p>ii. In case of Consortium, all the members has to meet the experience pertaining to that corresponding individually.</p>	Documentary evidence (Customer POs and performance certificate along with contact no, email address of the customer) to prove experience to be submitted.
v	<p>Bidder should have average turnover of at least 25 Lakh in last 3 years</p> <p>i. Consortium is allowed.</p> <p>ii. In case of Consortium, all the members has to meet the experience pertaining to that corresponding individually.</p>	<p>a. Audited account statements for the years specified to be provided.</p> <p>b. The Turnover certificate to be provided.</p>
vi.	The company should be profitable during last 3 financial years, that is, 2022-23, 2023-24 and 2024-25. PARTNER's Net Worth for the last three years must be positive.	<p>a. Audited account statements for the years specified to be provided.</p> <p>b. The Net worth certificate to be provided.</p>
vii.	Technology Provider should have the sufficient manpower, Equipment and Manufacturing facilities to meet the requirements of ITI. PARTNER should have manufacturing setup in India.	<p>1. A Compliance Statement is needed</p> <p>2. Technology Provider should provide list of major manufacturing components/equipment required for production of the technology / product in the applied category.</p>
viii.	PARTNER must confirm that there are no Patent / legal issues that might become hindrance as per scope of RFP at any stage.	<i>Self-Undertaking would be required</i>

ix.	PARTNER must meet the Technical Specifications of the offered product given at Annexure-V .	<i>self-Undertaking would be required</i>
x.	The PARTNER should commit to provide any software/hardware upgrade at free of cost required on the designed product to keep it updated and also work on optimizing the design to make it market competitive and meet customer requirements as per the prevailing standards.	<i>A Self-Declaration consent to be provided.</i>
xi.	Partner shall submit self-declaration(s) that the Partner or any of the promoters/directors/Partner or member not blacklisted/banned/debarred/suspended by the Central/ any other States/ Union Territories Government/ Quasi- Govt/ Govt. undertaking/Banks/Financial Institution or its agencies for indulging in corrupt or fraudulent practices or for indulging in unfair trade or for any other reasons or bad performance/ delayed delivery / Bank NPA, CDR (Corporate Debt Restructuring), SDR (Special Debt Restructuring), NCLT or for any other defaulting reason as on date of opening of this RFP.	<i>A Self-Declaration of not being under any black list or Barring.</i>
xii.	The IPR or copyright/License/Design of the product to be owned by the PARTNER. The PARTNER should have its own R&D set-up in India.	<i>(i). Relevant documents to the ownership to be submitted</i> <i>(ii). Bidder to provide an undertaking to apply for IPR (Intellectual Property Right) or Copyright/License/Design for the offered product design in India</i> <i>iii) Details of R&D infrastructure including</i>

		<i>technical manpower resources to be submitted</i>
xiii.	PARTNER should meet the specifications for manufacturing of IRNSS Receiver system as mentioned in Annexure-V. However, for future orders, PARTNER should also meet the specifications of customer for continuation of collaboration for manufacturing of the offered product at no additional cost.	<i>A Compliance statement is needed.</i>
xiv.	<p>Responsibility of Technology Partner under CKD manufacturing is as below.</p> <p>The PARTNER shall provide the design of the Smart rack system and SFP vide an agreement enabling ITI to manufacture IRNSS Receiver with following steps.</p> <ol style="list-style-type: none"> SMT assembling using components supplied by suppliers Bill of materials list along with technical specifications, part nos. and the OEM details THT and manual assembling using component supplied by suppliers Mechanical part assembling using component supplied by suppliers PCBA testing Plastic injection using materials supplied by suppliers Product assembly Product Calibration Software flashing Product Testing Debugging of product Printing & Sterilization Packaging QC Lab Any other procedure which is required for manufacturing the offered product. 	<i>A Compliance Statement is needed</i>

	Note: Investment in the Capex items will be based on the business feasibility and customer orders.	
xv.	<p>Orders issued by the Government of India restricting procurement from certain countries which shares a land border with India shall apply to this procurement.</p> <p>Any PARTNER or their OEM, from a country which shares a land border with India shall be eligible to bid in this tender only if they are registered with the Registration Committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT).</p>	PARTNER or their OEM sharing land border with India, which are not part of restricted countries shall provide the certificates of registration in this regard from DPIIT. Undertaking format is provided in Annexure –IX.
xvi.	<p>The PARTNER must have capability to produce the offered product in accordance with Industry Standards catering to different regions along the globe and relevant standards.</p> <p>The PARTNER has to provide free software /firmware/patches/software upgrades to ITI for the product as per customer order conditions during the pre-sales and post sales phases of the product to ascertain the compliance of the product with the standards and specifications.</p>	A Compliance Statement is needed
B	General Commercial Conditions	
i.	The PARTNER shall enter into an Agreement with ITI to enable ITI for the manufacturing and servicing of the product.	
ii.	The PARTNER shall provide comprehensive support to ITI for the installation, commissioning, warranty and post warranty servicing of the product.	
iii.	The PARTNER shall support ITI in tenders floated for the product, by meeting the technical conditions of the tender.	
iv.	The royalty payment or any other payments towards purchase of any specific items/kits from ToT Partner/sister concern / group concern, shall be made on receipt of payment from the end customer on	

	back to back basis. Request for change in terms will not be entertained at any point of time.
v.	The details of Technology for the IRNSS Receiver system manufacturing along with Gerber data, PCB layouts, schematic diagrams, component sourcing details including arrangement with the PARTNER suppliers, as applicable, through-hole details, software and mechanical assembly details etc., are to be provided by the PARTNER to ensure smooth manufacturing and delivery of finished product once the agreement is signed.
vi	Investment in Capex items for CKD process should start only after the receipt of confirmed order from customer. The process of Technology enablement as mentioned in clause 5.A.xiii above should be completed within two months after issue of order for the Capex items.
vii	The BOM/BOQ is to be provided by PARTNER as per the requirement received for new opportunities from time to time
viii.	The PARTNER shall impart necessary training to ITI Engineers for undertaking manufacturing, testing, calibration, troubleshooting, and installation acceptance testing including Pre- Despatch Inspection for successful commissioning at the premises designated by the customer. The Design/R&D issues however shall remain in the scope of the selected PARTNER only.
ix.	The Contract Agreement between ITI and PARTNER shall be signed by authorized signatories of ITI and the PARTNER, duly supported by Power of Attorney issued by respective parties in the name of these signatories.
x	PARTNER should be willing to provide type approved IRNSS Receiver system as per the requirements of type approving agencies or they should be willing to provide support to ITI for achieving any certification/type approval/Proof of concept as required by the end customer.
xi.	The Partner shall sign an agreement to enable ITI for manufacturing of the offered product through its technology and provide full support in planning, manufacturing, implementation, upgrading of manufacturing facilities and rehabilitation of the manufacturing lines so that ITI is fully equipped and capacitated to service the potential customer order. The Technology enablement activity and manufacturing shall start in parallel just after issue of LoI by ITI.
xii	All items of the product should have more than one source.

C	SPECIAL CONDITIONS
i.	ITI will be selecting Technology Partners based on the eligibility conditions as per this RFP and the financial offering. Technology partner should agree to provide their technology at the L1 price.
ii.	The Technology enablement for manufacturing of the offered product shall be exclusive to ITI in India and in SAARC countries for a period of five years from the date of signing of agreement provided the ITI manufactured Smart Rack System or SFP Module keep matching the price competition. However, manufacturing if found non-viable by ITI, it may review its decision.
iii.	The PARTNER should be doing hand holding in leveraging its resources to streamline the production of the offered product at ITI for the customer tender, as per ITI's need to service its customer.
iv.	In case any PARTNER 's statement is found false and misleading, the barring process against such defaulting PARTNER shall be initiated by ITI and the next eligible PARTNER shall be selected to go ahead in the process of proving technical compliance and competence to the required standards and specifications by applying risk and cost to defaulting Partner.
v	<p>As per Govt. procurement policy for Micro and small Enterprises, 2012 (amended 2018 and 2021), Micro and Small Enterprises (MSEs) may be given relaxation in prior turnover and prior experience criteria during tender process, subject to meeting of Quality and Technical Specifications.</p> <p>MSE vendors who are registered under Ministry of Micro and Small Enterprises, Government of India shall submit all the relevant documents for claim of benefit extended to MSE. Also mention whether the MSE certificate is issued for the relevant area pertaining to the terms of the RFP. The MSE who are authorized dealers/distributors are not eligible for availing the benefits extended to MSME's.</p>
vi	The ToT Partner should be willing to provide PBG to ITI in order to provide commitment towards any technical issues/fault at later stage of I&C, and product Certifications etc.

6. Liquidated Damages

6.1 In case the Technology Partner is also the supplier, then if the Technology Partner fails to complete the delivery of IRNSS Receiver system

within the time fixed under the contract, any LD imposed by Customer will be passed on to the bidder on a back to back basis.

6.2 The amount of Liquidated damages may be adjusted or set-off against any sum payable to the Technology Partner under this or any other contract with ITI as per set off clause in this RFP.

6.3 The Contract must be completed not later than the time lines specified in the Contract. Extension will not be given except in exceptional circumstances. Should, however, completion of the Contract is delayed with prior concurrence of ITI, the concurrence will not deprive ITI of its right to recover liquidated damage of 0.5% of the value of the Contract for each of first two weeks of delay or part thereof and 1% of the value of the contract for each subsequent week of delay or part thereof to a maximum of 5% of the contract value.

Any LD imposed by the end customer to ITI due to non-performance of the product or non-provision of warranty support, the equivalent LD will be levied on the selected bidder by ITI, except for reasons if only attributable to ITI.

7. Financial Proposal

7.1 Technology enablement for manufacturing of **IRNSS Receiver system** shall be on the Royalty Model.

RFP REFERENCE NO.		ITI/COR/P&T/RFP/IRNSS/202 5/01
Description of the RFP		Request for Proposal (RFP) For the Selection of Partner for Technology Transfer for IRNSS Receiver Manufacturing
<u>FINANCIAL BID</u>		
Name of the organization		
Sl. No.	Details	Percentage(%age) for IRNSS Receiver System

1.	Running Royalty on the sales price excluding taxes (Percentage)	
2	Percentage Margin payable to ITI in case of Completely Built Unit(CBU) procurement from Technology partner. CBU Pass through % to ITI (ITI Expecting 15%(+,- upto 3%))	

Note: Till the time ITI manufacturing setup gets ready ITI may procure the initial quantity in Completely Built unit (CBU) or Semi Knocked Down (SKD) form.

- 7.2 Selection of Technology Partner will be done based on lowest Royalty payable by ITI and quoted by the Technology Partner in the financial bid.
- 7.3 ITI may select more than one partner in each category based on the requirements.
- 7.4 The values filled at the prescribed place in the Price Bid shall be a numerical value to be considered up to two decimal points for calculation.
- 7.5 Financial Bid duly filled & signed both in PDF and Excel format as per attached bid sheet to be uploaded in ITI Tender Portal.

8. Instructions for Submitting Proposal Towards RFP

- 8.1 The Bidding would be subjected to an On-line / e-Tendering process. The prospective Bidders are requested to go through <https://itilimited.ewizard.in/> to understand the entire e-Tendering Process and follow the Registration and Bidding Process on <https://itilimited.ewizard.in/> as defined in the document. In case of any clarifications on e-tender portal, bidders may contact the portal helpdesk of <https://itilimited.ewizard.in/>
- 8.2 The Technical Bid and financial bid shall be uploaded in e-procurement site of ITI Limited (<https://itilimited.ewizard.in/>). For submission of online bid and procedure to be followed, visit <https://itilimited.ewizard.in/>.
- 8.3 ITI's Tender document can be downloaded from ITI web site www.itiltd.in or CPP portal www.eprocure.gov.in. For uploading the bid proposal, all bidders have to register in our eProcurement portal

(<https://itilimited.ewizard.in/>). When submitting the bid please state the tender ID.

- 8.4 Any clarifications regarding the tender can be obtained from GM-Products and Technology, ITI Bhavan, ITI Limited, Corporate Office, Dooravaninagar, Bengaluru- 560016 email: pp_crp@itiltd.co.in, santoshsinha_crp@itiltd.co.in Mob: 9225653254 / 9463167237
- 8.5 Technical bids will be opened at 03.00 PM on 25/07/2025.
- 8.6 All the bids will be scrutinized for turnover, experience and compliance to the RFP terms & conditions.
- 8.7 Financial Bid of Technically Qualified Partners will be opening after technical evaluation.
- 8.8 Bid offered should be valid for a period of 180 Days from the date of opening of RFP response.
- 8.9 Conditional offers are liable for rejection.
- 8.10 The Bidders should give Clause by clause compliance (as per Annexure III) of RFP with references to supporting documents; otherwise, the offers are liable for rejection.
- 8.11 The bidder to indemnify ITI LTD from any claims / penalties / statutory charges, liquidated damages, with legal expenses etc as charged by the customer.
- 8.12 In the event that ITI LTD is required to provide demonstration or working of the product to their buyers, the same shall be arranged by the bidder at latter's cost and expenditure.
- 8.13 ITI LTD reserves the right to suspend or cancel the RFP process at any stage, to accept, or reject any, or all offers at any stage of the process and / or to modify the process, or any part thereof, at any time without assigning any reason, without any obligation or liability whatsoever.
- 8.14 Bidders, whose Purchase Order(s) for any Project of ITI LTD was/were cancelled on risk & cost basis for nonperformance or non-submission of performance guarantee in last 2 years, are not eligible to participate in this tender.
- 8.15 Cost of RFP: The bidder shall bear all costs associated with the preparation and submission of his offer against this RFP, including cost of presentation for the purposes of clarification of the offer, if so desired by ITI LTD. ITI LTD will, in no case be responsible or liable for those costs, regardless of the conduct or outcome of the RFP process.

- 8.16 Amendment of RFP: At any time prior to the last date for receipt of offers, ITI LTD, may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the RFP document by an amendment. In order to provide prospective bidder reasonable time in which to take the amendment into account in preparing their offers, ITI LTD may, at their discretion, extend the last date for the receipt of offers and/or make other changes in the requirements set out in the Invitation for RFP.
- 8.17 ITI LTD will not consider any or all of the bids if they are not meeting RFP requirements.
- 8.18 ITI LTD may at its discretion reject any offers received for selection without assigning any reasons.

9. Other Terms and conditions:

9.1 Confidentiality

- All documents, drawings, samples, data, associated correspondence or other information furnished by or on behalf of the customer to the bidder, in connection with the customer PO, whether such information has been furnished before, during or following completion or termination of the customer PO are confidential.
- If advised by the Customer, all copies of such information in original shall be returned on completion of the bidder's performance and obligations under this customer PO.

9.2 Transparency

All customers are responsible and accountable to ensure transparency, fairness, equality, competition and appeal rights. This involves simultaneous, symmetric and unrestricted dissemination of information to all likely bidders, sufficient for them to know and understand the availability of bidding opportunities and actual means, processes and time limits prescribed for completion of registration of bidders, bidding, evaluation, grievance redressal, award and management of contracts.

It implies that such officers must ensure that there is consistency, predictability, clarity, openness, and equal opportunities in processes.

9.3 Indemnity:

Bidder to indemnify ITI LTD from any claims / penalties / statutory charges, liquidated damages, with legal expenses etc as charged by the customer. LD/ Penalties incurred on account of delay in supply, product failure during warranty if any and deficiency in Warranty and AMC services shall be borne by the bidder.

9.4 INTELLECTUAL PROPERTY:

Each Party will retain its right, title and interest in its respective trademarks, service marks and trade names as well as rights in respect of any patent, copyright, trade secrets or other intellectual property used during the performance of this Agreement. Both Parties recognize that except as otherwise expressly provided herein or agreed between the Parties, they shall have no right, title, interest or claim over the others' intellectual property.

9.5 RISK PURCHASE.

If the vendor fails to adhere to the quality norms, delivery schedules and other terms and conditions contained in this Tender after acceptance of purchase order and if no agreement is reached on the revised delivery schedule maximum up to 15 (Fifteen) Business Days, then buyer shall have the liberty to procure the material from an alternate source at the Vendor's risk and cost, and the Vendor shall be liable to make good the loss incurred by Buyer in this process.

9.6 Arbitration:

- 9.6.1 In case amicable settlement is not reached in the event of any dispute of difference arising out of the execution of the contract or the respective rights and liabilities of the parties or in relation to interpretation of any provision by the bidder in any manner touching upon the contract, such dispute or difference shall (Except as to any matters, the decision of which is specifically provided for therein) be referred to the sole arbitration of the arbitrator appointed by ITI LTD.
- 9.6.2 The award of the arbitrator shall be binding upon the parties to the dispute.
- 9.6.3 Subject as previously mentioned, the provisions of Arbitration and Conciliation Act 1996 or statutory modifications or re-enactments thereof and the rules made there under and for the time being in force shall apply to arbitration proceedings under this clause. The cost of arbitration shall be borne equally by both the parties.
- 9.6.4 Work under the contract shall be continued during the arbitration proceedings.
- 9.6.5 Failure to comply with any of the above conditions can result in termination of the contract, forfeiture of the security deposit, penalty as may be decided by ITI LTD and future blacklisting of the bidder.
- 9.6.6 The arbitration location will be at Bengaluru

9.7 **Set Off:** Any Sum of money due and payable to the bidder under this customer PO may be appropriated by the ITI LTD or any other person contracting through the ITI LTD and set off the same against any claim of the ITI LTD for payment of a sum of money arising out of this RFP or under any other RFP/contract made by the bidder with the customer.

9.8 The interested bidder may like to discuss the customer tender related information, RFP Bidding Conditions, Bidding Process and clarifications, if any with the General Manager – Products & Technology

9.9 Language of offers:

The offers prepared by the Company and all the correspondences and documents relating to the offers exchanged by the companies shall be written in English language.

9.10 Liquidated Damage (LD) may be included, i.e if any imposed on ITI for the reasons related to the bidder consortium shall be carry forwarded to bidder consortium

9.11 In the event that ITI LTD is required to provide demonstration or working of the product to their buyers, the same shall be arranged by the bidder at latter's cost and expenditure.

9.12 TERMINATION FOR DEFAULT:

Any of the following events shall constitute an event of default by the bidder entitling the Competent Authority to terminate the contract.

- If the bidder fails to perform any obligation(s) under the Contract
- If bidder, does not remedy his failure within a period of 30 days (or such longer period as the ITI LTD may authorize in writing) after receipt of the default notice from the ITI LTD
- If selected bidder fails to fulfill its part of the work to the satisfaction of ITI LTD, then ITI LTD shall have the right to terminate the contract.

The contract shall not be terminated for failure to discharge responsibilities due to force majeure situations or failure by ITI LTD to meet conditions precedent.

9.13 FORCE MAJEURE:

If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligations under this contract shall be prevented or delayed by reason of any war, or hostility, acts of the public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics,

quarantine restriction, strikes, lockouts or act of God (Hereinafter referred to as events) provided notice of happenings, of any such eventuality is given by the either party to the other within 21 days from the date of occurrence thereof, neither party shall by reason of such event be entitled to terminate this and contract shall be resumed as soon as practicable after such event may come to an end or cease to exist, and the decision of the ITI LTD as to whether the deliveries have been so resumed or not shall be final and conclusive, provided further that if the performance in whole or part of any obligation under this contract is prevented or delayed by reason of any such event for a period exceeding 60 days either party may, at its option terminate the contract.

9.14 TERMINATION FOR INSOLVENCY:

ITI LTD may at any time terminate the contract by giving written notice to the bidder, without compensation if the bidder becomes unwilling, bankrupt or otherwise insolvent

9.15 ITI's Right to accept any bid and to reject any or All Bids or to cancel the RFP: ITI LTD reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to award of contract without assigning any reason whatsoever and without thereby incurring any liability to the affected bidder or bidders on the grounds of ITI's action.

9.16 Disclaimer: ITI LTD and/or its officers, employees disclaim all liability from any loss or damage, whether foreseeable or not, suffered by any person acting on or refraining from acting because of any information including statements, information, forecasts, estimates or projections contained in this document or conduct ancillary to it whether or not the loss or damage arises in connection with any omission, negligence, default, lack of care or misrepresentation on the part of ITI LTD and/or any of its officers, employees.

Annexure-I

PARTNER s Profile

1	Name and address of the company			
2	Contact Details of the PARTNER (Contact person name with designation, Telephone Number, FAX, E-mail and Web site)			
3	Area of business			
4	Annual Turnover for 3 financial years (₹ in Cr)	2022-23	2023-24	2024-25
5	Date of Incorporation			
6	GST Registration number			
7	PAN Number			
8	CIN Number, if applicable			
9	Number of technical manpower in company's rolls			
10	Number of R&D engineers			

Annexure-II**Compliance Statement**

Section Details		Clause Numbers	Compliance (YES/NO)	Documentary Reference, If any
Technical BID				
4	Scope	4.1-4.22		
5A	Eligibility conditions for Partner	5.A.i-5.A.xiv		
5B	General Commercial Conditions	5.B.i-5.B.xiii		
5C	Special Conditions	5.C.i-5.C.vi		
6	Liquidated Damages	6.1-6.3		
7	Financial Proposal	7.1-7.4		

Undertakings (To be in PARTNER's Letter Head)

We, M/s..... Do hereby undertake the following:

- 1.** We are not blacklisted by Central Government / any State or UT Governments / PSU/ organized sector in India to work with ITI as per this RFP and Customer Tender terms and conditions. Also we agree to implement the project (scope of work as per Tender terms and conditions including investment) covering Warranty & post-warranty services, maintenance etc., in the event of ITI winning the contract on back-to- back basis.
- 2.** We undertake to submit Bid Security Declaration as per format Annexure-X in lieu of Earnest Money Deposit (EMD).
- 3.** That we have adequate manpower with qualifications, certifications and experience as may be required for Technology enablement with ITI as well as to provide services/support to the customer as per their tender/PO requirement.
- 4.** We will obtain all the required certificates/approvals as per customer tender requirement.
- 5.** We undertake to obtain relevant statutory approvals for the product.
- 6.** We are willing to sign MoU/Agreement, Integrity Pact with ITI for addressing the customer requirements as per customer's tender terms and conditions.
- 7.** We undertake to indemnify ITI from any claims / penalties / statutory charges, liquidated damages, with legal expenses etc. as charged by the customer.
- 8.** To support the offered equipment for warranty and Post warranty comprehensive AMC as per the requirement of Customer tender terms and conditions. All software upgrades, patches and Licenses to be provided free of cost, as and when they are released by OEMs.
- 9.** The PARTNER should give certificate/undertaking stating that all the hardware / software supplied under the contract shall not contain any embedded malicious codes that could inhibit the desired functions of the equipment or cause malfunction of equipment in any manner.

Signature:

Name:

Designation of Authorized Signatory:

Annexure-IV

PRE-CONTRACT INTEGRITY PACT

(To be executed on plain paper and submitted along with Technical Bid/ RFP Documents. To be signed by the bidder and same signatory Competent/ Authorized to sign the relevant contract on behalf of the ITI Ltd).

RFP No.....

This Integrity Pact is made onday of 2024

BETWEEN:

ITI Limited, having its Registered & corporate office at ITI Bhavan, Dooravani Nagar, Bangalore – 560016 India, and established under the Ministry of Communications, Government of India (hereinafter called the Principal), which term shall unless excluded by or is repugnant to the context, be deemed to include its Chairman & Managing Director, Directors, Officers or any of them specified by the Chairman & Managing Director in this behalf and shall include its successors and assigns) ON THE ONE PART
AND

M/s represented byChief Executive Officer (hereinafter called the bidder(s)/Contractor(s)), which term shall unless excluded by or is repugnant to the context be deemed to include its heirs, representatives, successors and assigns of the bidder/contract ON THE SECOND PART.

Preamble

WHEREAS the Principal intends to enter into an MOU of Partnering business opportunities of common interest and able to generate synergies in execution of such business for

(name of the Stores / equipment / items). The Principal, values full compliance with all relevant laws of the land, regulations, economic use of resources and of fairness/ transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal has appointed an Independent External Monitor (IEM), who will monitor the RFP process and the execution of the contract for compliance with the principles as mentioned herein this agreement.

WHEREAS, to meet the purpose aforesaid, both the parties have agreed to enter into this Integrity Pact the terms and conditions of which shall also be read as integral part and parcel of the RFP Documents and contract between the parties.

NOW THEREFORE, IN CONSIDERATION OF MUTUAL COVENANTS STIPULATED IN THIS PACT THE PARTIES HEREBY AGREE AS FOLLOWS AND THIS PACT WITNESSETH AS UNDER:

SECTION 1 – COMMITMENTS OF THE PRINCIPAL

The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:

- a. No employee of the Principal, personally or through family members, will in connection with the RFP for or the execution of the contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the personal is not legally entitled to.
- b. The Principal will, during the RFP process treat all bidder(s) with equity and reason. The Principal will in particular, before and during the RFP process, provide to all bidder(s) the same information and will not provide to any bidder(s) confidential/ additional information through which the bidder(s) could obtain an advantage in relation to the RFP process or the contract execution.
- c. The Principal will exclude from the process all known prejudiced persons. If the principal obtains information on the conduct of any of its employee, which is a criminal offence under IPC/PC Actor if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary action as per its internal laid down Rules/ Regulations.

SECTION 2 – COMMITMENTS OF THE BIDDER / CONTRACTOR

- 2.1 The Bidder(s)/Contractor(s) commits himself to take all measures necessary to prevent corruption. He commits himself observe the following principles during the participation in the RFP process and during the execution of the contract.

- a. The bidder(s)/contractor(s) will not, directly or through any other person or firm offer, promise or give to any of the Principal's employees involved in the RFP process or the execution of the contract or to any third person any material or other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever (during the RFP process or during the execution of the contract).
- b. The bidder(s)/contractor(s) will not enter with other bidders/ contractors into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- c. The bidder(s)/contractor(s) will not commit any offence under IPC/PC Act, further the bidder(s)/contractor(s) will not use improperly, for purposes of competition of personal gain, or pass onto others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- d. The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents /representatives in India, if any. Similarly, the Bidder(s)/Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any.
- e. The Bidder(s) f Contractor(s) will, when presenting the bid, disclose any and all payments made, are committed to or intend to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- f. The Bidder(s)/Contractor(s) will not bring any outside influence and Govt bodies directly or indirectly on the bidding process in furtherance to his bid.
- g. The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or to be an accessory to such offences.

SECTION 3 – DISQUALIFICATION FROM RFP PROCESS & EXCLUSION FROM FUTURE CONTRACTS

If the Bidder(s)/Contractor(s), during RFP process or before the award of the contract or during execution has committed a transgression in violation of Section 2, above or in any other form such as to put his reliability or credibility

in question the Principal is entitled to disqualify Bidder(s)/Contractor(s) from the RFP process.

If the Bidder(s)/Contractor(s), has committed a transgression through a violation of Section 2 of the above, such as to put his reliability or credibility into question, the Principal shall be entitled exclude including blacklisting for future RFP/contract award process. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the Principal taking into consideration the full facts and circumstances of each case, particularly taking into account the number of transgression, the position of the transgressor within the company hierarchy of the Bidder(s)/Contractor(s) and the amount of the damage. The exclusion will be imposed for a period of minimum one year.

The Bidder(s)/Contractor(s) with its free consent and without any influence agrees and undertakes to respect and uphold the Principal's absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground including the lack of any hearing before the decision to resort to such exclusion is taken. The undertaking is given freely and after obtaining independent legal advice.

A transgression is considered to have occurred if the Principal after due consideration of the available evidence concludes that on the basis of facts available there are no material doubts.

The decision of the Principal to the effect that breach of the provisions of this Integrity Pact has been committed by the Bidders)/ Contractor(s) shall be final and binding on the Bidder(s)/ Contractor(s), however the Bidder(s)/Contractor(s) can approach IEM(s) appointed for the purpose of this Pact.

On occurrence of any sanctions/ disqualifications etc arising out from violation of integrity pact Bidder(s)/ Contractor(s) shall not entitled for any compensation on this account.

Subject to full satisfaction of the Principal, the exclusion of the Bidder(s)/Contractor(s) could be revoked by the Principal if the Bidder (s)/ Contractor(s) can prove that he has restored/ recouped the damage caused by him and has installed a suitable corruption preventative system in his organization.

SECTION 4 – PREVIOUS TRANSGRESSION

4.1 The Bidder(s)/ Contractor(s) declares that no previous transgression occurred in the last 3 years immediately before signing of this Integrity Pact with any other company in any country conforming to the anti-corruption/ transparency International (TI) approach or with any other Public Sector Enterprises/ Undertaking in India of any Government Department in India that could justify his exclusion from the RFP process.

4.2 If the Bidder(s)/ Contractor(s) makes incorrect statement on this subject, he can be disqualified from the RFP process or action for his exclusion can be taken as mentioned under Section-3 of the above for transgressions of Section-2 of the above and shall be liable for compensation for damages as per Section- 5 of this Pact.

SECTION 5 – COMPENSATION FOR DAMAGE

5.1 If the Principal has disqualified the Bidder(s)/Contractor(s) from the RFP process prior to the award according to Section 3 the Principal is entitled to forfeit the Earnest Money Deposit/Bid Security/ or demand and recover the damages equitant to Earnest Money Deposit/Bid Security apart from any other legal that may have accrued to the Principal.

5.2 In addition to 5.1 above the Principal shall be entitled to take recourse to the relevant provision of the contract related to termination of Contract due to Contractor default. In such case, the Principal shall be entitled to forfeit the Performance Bank Guarantee of the Contractor or demand and recover liquidate and all damages as per the provisions of the contract agreement against termination.

SECTION 6 – EQUAL TREATMENT OF ALL BIDDERS/CONTRACTORS

6.1 The Principal will enter into Integrity Pact on all identical terms with all bidders and contractors for identical cases.

6.2 The Bidder(s)/Contractor(s) undertakes to get this Pact signed by its subcontractor(s)/sub- empaneled Partner(s)/ associate(s), if any, and to submit the same to the Principal along with the RFP document/contract before signing the contract. The Bidder(s)/Contractor(s) shall be responsible for any violation(s) of the provisions laid down in the Integrity Pact Agreement by any of its subcontractors/ sub-empaneled Partners / associates.

6.3 The Principal will disqualify from the RFP process all bidders who do not sign this Integrity Pact or violate its provisions.

SECTION 7 – CRIMINAL CHARGES AGAINST VIOLATING BIDDER(S)/CONTRACTORS

7.1 If the Principal receives any information of conduct of a Bidder(s)/Contractor(s) or sub-contractor/ sub-empaneled Partner/associates of the Bidder(s)/Contractor(s) which constitutes corruption or if the principal has substantive suspicion in this regard, the principal will inform the same to the Chief Vigilance Officer of the Principal for appropriate action.

SECTION 8 – INDEPENDENT EXTERNAL MONITOR(S)

8.1 The Principal appoints competent and credible Independent External Monitor(s) for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this pact.

Details of IEM appointed by ITI are as under:

Shri Atul Jindal, IFS (Retd.)
3/10 Vishesh Khand Opp. Little Friend School Gomti Nagar,
Lucknow-226010(UP)

8.2 The Monitor is not subject to any instructions by the representatives of the parties and performs his functions neutrally and independently. He will report to the Chairman and Managing Director of the Principal.

8.3 The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all product documentation of the Principal including that provided by the Bidder(s)/Contractor(s). The Bidder(s)/Contractor(s) will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The Monitor is under contractual obligation to treat the information and documents Bidder(s)/Contractor(s) with confidentiality.

8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the project provided such meeting could have an impact on the contractual relations between the Principal and the Bidder(s)/Contractor(s). As soon as the Monitor notices, or believes to

notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in specific manner, refrain from action or tolerate action.

8.5 The Monitor will submit a written report to the Chairman & Managing Director of the Principal within to weeks from the date of reference or intimation to him by the principal and, should the occasion arise, submit proposals for correcting problematic situations.

8.6 If the Monitor has reported to the Chairman & Managing Director of the Principal a substantiated suspicion of an offence under relevant IPC/PC Act, and the Chairman & Managing Director of the principal has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

8.7 The word 'Monitor' would include both singular and plural.

SECTION 9 - FACILITATION OF INVESTIGATION

9.1 In case of any allegation of violation of any provisions of this Pact or payment of commission, the Principal or its agencies shall be entitled to examine all the documents including the Books of Accounts of the Bidder(s)/Contractor(s) and the Bidder(s)/Contractor(s) shall provide necessary information and documents in English and shall extend all help to the Principal for the purpose of verification of the documents.

SECTION 10 - LAW AND JURISDICTION

10.1 The Pact is subject to the Law as applicable in Indian Territory. The place of performance and jurisdiction shall be the seat of the Principal.

1.2 The actions stipulated in this Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extent law in force relating to any civil or criminal proceedings.

SECTION 11 – PACT DURATION

This Pact begins when both the parties have legally signed it. It expires after 12 months on completion of the warranty/ guarantee period of the project /work awarded, to the fullest satisfaction of the Principal.

If the Bidder(s)/Contractor(s) is unsuccessful, the Pact will automatically become invalid after three months on evidence of failure on the part of the Bidder(s)/Contractor(s).

If any claim is lodged/made during the validity of the Pact, the same shall be binding and continue to be valid despite the lapse of the Pact unless it is discharged/determined by the Chairman and Managing Director of the Principal.

SECTION 12 - OTHER PROVISIONS

12.1 This pact is subject to Indian Law, place of performance and jurisdiction is the Registered & Corporate office of the Principal at Bengaluru.

12.2 Changes and supplements as well as termination notices need to be made in writing by both the parties. Side agreements have not been made.

12.3 If the Bidder(s)/Contractor(s) or a Partnership, the pact must be signed by all consortium members and Partners.

12.4 Should one or several provisions of this pact turn out to be invalid, the remainder of this pact remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

12.3 Any disputes/ difference arising between the parties with regard to term of this Pact, any action taken by the Principal in accordance with interpretation thereof shall not be subject to any Arbitration.

12.4 The action stipulates in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

In witness whereof the parties have signed and executed this Pact at the place date first done mentioned in the presence of the witnesses:

For PRINCIPAL
BIDDER(S)/CONTRACTOR(S)

For

.....
.....

Name Designation
Designation

Name

Witness

1.

1.

2.

2.

Tentative Technical specification**Specification for Hand Held version:****Specification for GUI Application of IRNSS-RS receiver:**

Sr. No.	Parameter	Requirements	Remarks on Compliance
1.	Way point Storage	Greater than 1000 way point	
2.	Route Storage	Greater than 10 routes upto 50 points each Greater than 2 GB	
3.	Data Logging	Greater than 2 GB	
4.	RAM Storage	Greater than 2 GB	
5.	Display	Built-in , easily readable colour OLED display : 6-7" backlit display, sunlight readability and touch pad keys to be provided	
6.	Coordinate system	User Selectable - IMGR (Eight Figure) Latitude and Longitude and WGS 84 standard	
7.	Maps	Support defence series maps, open standard maps, e.g. (.osm), (.shp) files etc.	
8.	Maps Loading	Map loading software to be provided	
9.	Memory Slot	Additional SD card slot for the loading of maps to be provided in the card	
10.	Dust and water parameters	Compliance to IP 65 standard or better	
11.	Ruggedness	Compliance to IK 06 standard or better	
12.	Memory backup to avoid loss of data on Switch off	Internal Rechargeable Lithium battery (Up to 12 hrs in the active mode & up to 48 hrs in the off mode)	
13.	Access Control Mechanism	PIN based access	
Parameters:			
1.	Input Centre Frequency & Processing	L1: 1575.42 MHz, BW= 20MHz L5: 1176.45 MHz, BW= 20MHz	
2.	bandwidth	S: 2492.028 MHz, BW= 16.5MHz	

3.	Acquisition Sensitivity	135 dBm	
4.	Tracking Sensitivity	-139 dBm	
No. of Active Channels 36			
5.	L5 Band NavIC	11	
	S Band NavIC	11	
	L1 Band GPS	12	
	L1 Band SBAS	2	
	Position accuracy (3D RMS)	IRNSS Dual freq <5 m at PDOP<3.5 IRNSS Dual freq + GPS <4 m at PDOP<2	
6.	Horizontal Accuracy* (CEP 50%)	IRNSS Dual freq <3 m at PDOP<3.5 IRNSS Dual freq + GPS <3 m at PDOP<2	
7.	Velocity accuracy	<0.3 m/s (1 σ)	
8.	1 PPS Accuracy	50ns (1 σ)	
9.	Receiver self-error	<100 cm	
10.	PVT update rate	1 sec	
11.	Operating Dynamics Velocity	<515 m/s	
12.	Acceleration	<4.5g Jerk <20g	
13.	Jerk	<20g	
14.	Time to First Fix (Cold Start)	<85s	
15.	Time to Subsequent Fix (Hot Start)	<15s	
16.	Power Supply	12 V+ 0.5V, ~1.2 A	
17.	Interface	INPUTS: RF_IN (SMA-F) PPS IN (SMA-F) REF IN-10MHz (SMA-F). OUTPUTS: PPS OUT (SMA-F)	

		USB (CP2102 Driver required).	
18.	Duty Cycle Maximum	20% duty cycle (typical DME/TACAN 6.1% to 17.2%)	
19.	Pulse Power	Less than -40 dBm at Rx input	
20.	Notch Frequency	Adaptive in 24MHz bandwidth on centre frequency	
21.	Jamming Margin	(J/S) 47 dB @ L5 band 47 dB @ L1 band 47 dB @ S band	
22.	RS Key management	Default key preloaded	

REQUIREMENTS OF IR-GNSS SYSTEM FOR UH-M		
Sl No.	IR-GNSS System Requirements	Vendor Compliance/Remarks
1.0	SYSTEM REQUIREMENTS This section states the technical requirements along with the architecture envisaged for the IR- GNSS and same are detailed below:	
1.1	FUNCTIONAL REQUIREMENTS OF IR-GNSS	
1	An off-the-shelf standalone IR-GNSS system shall be proposed with an embedded IRNSS and GNSS receiver card.	
2	IRNSS receiver card shall provide the navigation solution based on Indian Regional Satellite constellation using Standard Positioning Services (SPS) and Restricted Service (RS). GNSS receiver shall provide the navigation solution based on GPSaugmented with SBAS and GLONASS satellite constellations operating in L1 & L2 frequency band.	
3	The IR-GNSS receiver shall provide the following data for associated constellation: 3-D Position in terms of Longitude, Latitude and Altitude Velocities Time Number of Satellites along with health status & Current tracking state Accuracy and Integrity parameters	
4	IR-GNSS shall be capable to provide the navigation solution for following mode of operation: Military Mode : IRNSS RS/SPS Civil Mode : GPS + SBAS	

Vendor to specify the following detail for proposed IR-GNSS configuration:

Sl. No.	Features	Specification	Vendor Compliance/ Remarks
1.	Constellation Supported IRNSS Receiver GNSS Receiver	IRNSS (SPS) L5, S IRNSS (RS) L5, S IRNSS L1-11 (Future Growth) GPS L1 C/A, L2C SBAS L1 C/A (Worldwide capability) GLONASS L1& L2	
2.	Minimum numbers of channels	GPS L1-14, GPS L4-14, and SBAS-03 GLONASS L1- 12 & L2-12 IRNSS L5-11, IRNSS S-11 IRNSS L1-11	
3	Accuracy & Tracking Sensitivity	To be specified. Refer note below.	
4	Position update rate	Once in 200 mili sec	
5	Selectable Navigation mode	Military Mode/Civil Mode/Hybrid mode	
6	Time to first fix (TTFF)	Military mode: ≤ 180 sec Civil Mode: ≤ 120 sec Hybrid mode: ≤ 120 sec	
7	Signal Reacquisition	<20 seconds(typical)	
8	Accuracy (Static and Dynamic)	Military Mode: To be specified. Refer note below Civil Mode: Horizontal Position: ≤10 m (95%) without SBAS: ≤3 m (95%) With SBAS Altitude ≤20 m (95%) Without SBAS: ≤6 m (95%) with SBAS Velocity : ≤ 0.150m/s RMS Hybrid Mode: Horizontal Position: ≤ 10 m (95%) Altitude: ≤20 m (95%) Velocity: ≤0.150 m/s RMS	
9	1 PPS Accuracy (RMS Value with static scenario @ -130dBm)	20ns	

1.2	IR-GNSS: MODULE WISE REQUIREMENTS IR-GNSS receiver shall have with IRNSS Module (SPS & RS capability) and GNSS module consist with GPS+SBAS and GLONASS. Module wise System requirements are detailed below:	
1.2.1	IRNSS Module	
1	Dual band IRNSS receiver shall provide the navigation solution based on its satellite constellations operating in L5 and S frequency band.	
2	IRNSS shall be operating in SPS-L5 band operating at 1176.45 MHz and SPS – S band operating at 2492 MHz.	
3	IRNSS receiver shall provide the following data for its constellation. 3-D Position, Velocities and Time Number of Satellites along with health status, DOP Values Current tracking state Accuracy and Integrity parameters	
4	IRNSS shall also be capable to operate in L1 band as a future growth capability.	
5	IRNSS shall be capable to operate using Standard Positioning Service (SPS) & Restricted Services (RS).	
6	IRNSS shall be able to facilitate the Restricted services (RS) by incorporating the hardware and software modification or as applicable. NAVIC (RS) mode performance shall be in accordance with relevant standard.	
7	IRNSS receiver hardware and software design shall be compatible as per prevailing Standard and standard interface requirements.	
8	IRNSS Receiver shall meet the applicable MOPS requirements in accordance with RTCA DO-229 D/E.	
1.2.2	GNSS Module: GPS augmented with SBAS Solution	
1	The GPS+SBAS receiver shall provide the following data for associated constellation: 3-D Position, Velocities and Time Number of Satellites along with health status, DOP Values Current tracking state Accuracy and Integrity parameters	
2	GPS Receiver shall have inbuilt Receiver Autonomous Integrity Monitoring i.e., RAIM & PRAIM and Fault Detection and Exclusion capability i.e., FD and FDE.	
3	GPS receiver design shall meet the minimum operational requirements in accordance with RTCA/DO-229D/E, Change 1 for Class Beta 3.	
4	It shall compute the integrity of the Position, Velocity and Time (PVT) from the SBAS signal, when available as per RTCA/DO-229D/E.	
5	GPS receiver shall provide the navigation solution to meet the precision approach and landing.	

6	GPS output data shall provide the required accuracy & integrity related parameters for ADS- B OUT implementation in line with FAA AC 20-165B or above.	
1.2.3	GNSS Module: GLONASS Based Solution	
1	The GLONASS receiver shall provide the following data for associated constellation: 3-D Position, Velocities and Time Number of Satellites along with health status, DOP Values Current tracking state Accuracy and Integrity parameters	
2	GLONASS Receiver shall have inbuilt data Integrity Monitoring capability and shall provide the data with associated integrity parameters.	
3	GLONASS receiver shall provide the navigation solution to perform the various enroute and approach operation.	
4	GLONASS shall meet the MOPS requirements with RTCA DO-229 D/E as applicable.	
1.3	IR-GNSS: SYSTEM LEVEL REQUIREMENTS	
1	System shall be capable of determining complete solution for desired navigation mode after any of the above mode of operation.	
2	System shall provide its output in the NMEA 0183 protocol for complete data output including positioning and timing information.	
3	System shall remain operational up to its full performance capability operated across the globe.	
4	System shall be able to switch between different functional modes based on manual selection or automatically based on satellite coverage and signal availability.	
5	System design shall be capable to optimize its output solution depending upon single or dual frequency mode.	
6	System shall provide the raw data measurement for Pseudo range and velocity.	
7	System shall have appropriate model to provide GNSS Height Above Ellipsoid (HAE) and GNSS Height (MSL) globally for the mode selected.	
8	System shall appropriate measure for GPS week number roll over error resolution, if applicable without any end-user intervention	
9	Vendor shall provide the quantitative accuracy specification for which the proposed system is certified along with substantiating document covering statistical analysis of the system performance	
10	The system shall output the data with high order of precision within the defined accuracy limits.	

11	Vendor should provide the system accuracy profile for specified operational modes preferably for a helicopter flight of duration of minimum 2 hours			
12	Vendor to specify the limitation if any that would affect the system performance			
13	Vendor to indicate the feasibility to provide the installed platform heading output using the system raw measurement and single antenna arrangement			
14	IR-GNSS based navigational data output is intended to be utilized for Auto-pilot coupled navigational operation in different profile including hover and by on-board Mission/weapon systems to perform various operation in accordance with quality metric viz. accuracy, integrity & reliability			
15	IR-GNSS system shall be designed to meet the Design Assurance Level B			
16	IR-GNSS shall have self-fault monitoring capability and shall ensure the undetected failure rate confirming with system design assurance level			
17	System shall generate a flag to warn a pilot of any unacceptable malfunctioning conditions arise either the space segment or airborne equipment's			
18	In the event of failure or malfunction of an LRU or loss of partial function of LRU, the system shall enable the helicopter to fly safely by not providing any misleading or wrong information to pilot. There shall be appropriate annunciation to pilots and ground crew for any such occurrences			
19	The IR-GNSS system shall be capable of operating satisfactorily under the following flight dynamic conditions; Table 1.3-1: Flight Dynamic Conditions			
		Pitch*	:± 90°	
		Roll*	:± 120°	
		Heading	:± 180°	
		Angular rates	:± 80°/sec	
		Angular Acceleration	:± 100°/sec ²	
		Linear Acceleration	:± 5g	
		Sideward Velocity	: 60 km/hr	
		Rearward Velocity	: 50 km/hr	
		Forward Velocity	: 300 km/hr	
		Vertical Velocity	: 18 m/sec	
		Altitude Ceiling	: Up to 7000 m	
20	System shall be capable to operate in close proximity with RF interference of similar frequency close to satellite transmission without performance degradation.			

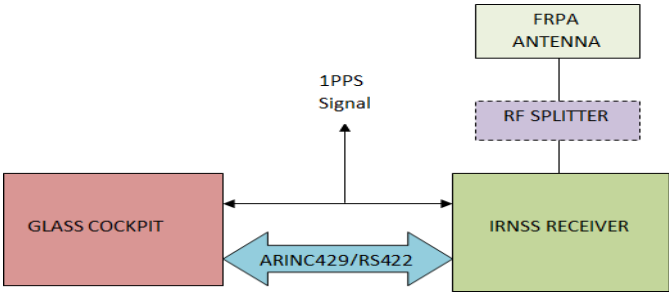
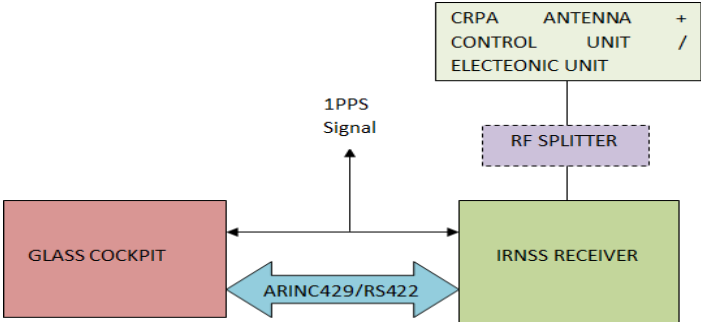
21	System design shall have appropriate measures for multi-path error cancellation to improve solution integrity and availability.	
22	System should have the requisite design measures to counter the rotor modulation effect, as applicable.	
23	System shall be capable for antenna fault detection, identification and to provide appropriate output to the Glass Cockpit.	
24	Vendor to provide the lever arm setting provision in the system along with suitable procedure	
25	System shall have a suitable port for data loading/downloading for various maintenance Application. Fault log shall provide the maximum coverage for debugging, diagnosis and repair	
26	System warm-up time during cold start for a temperature range from -40°C to +55°C to be specified.	
27	The system shall have adequate BIT facility, Continuous BIT (CBIT), Initiated BIT (IBIT) and Power up BIT (PBIT) with appropriate failure annunciations in order to efficiently identify and suitably indicate any subsystem malfunction. Duration and coverage details of the individual BIT shall be provided.	

28	<p>Anti- Spoofing & Anti-Jamming capability: System shall have capability to detect and indicate the presence of signal spoofing for GNSS and IRNSS signals-in-space. Vendor to indicate the mitigation measure to address the signal spoofing. System shall have anti-jamming capability for GNSS and IRNSS signals-in-space. System shall have anti-jamming capability for Narrow band continuous interference signals @ J/S of 45 dB assuming GNSS signal @ -124 dBm. System shall have signal rejection capability for multipath reflection and interference rejection in V/UHF, 2G/3G/4G/5G mobile band. Vendor to specify the undesired signal rejection level capability of the receiver. Vendor to indicate the mitigation measure incorporated in system design to address the Jamming against GNSS & IRNSS signals-in- space.</p>	
29	<p>Time synchronization: System shall provide 1 PPS time mark signal or equivalent to meet the accurate time synchronization across the network. 1 PPS signal accuracy shall be less than 20ns RMS @ static scenario @GNSS signal -130dBm. System shall have adequate current drive strength for 1 PPS signal fan out capability with specified performance for more than 4 interface.</p>	
30	<p>Data Latency: System shall have a output data latency less that 50ms from the rising edge of the reference PPS.</p>	
31	<p>Battery Requirements: If battery is being used for proposed IR-GNSS operation, it should be commonly available for easy procurement Battery shall be field replaceable without any requirement of laboratory environment. Vendor to specify the operational life of the Battery. Battery with minimum 5 years of operational life is preferred.</p>	

32	<p>General Requirements:</p> <p>System shall have a provision for firmware/software upgrade using an external interface media port viz. RS422 or Ethernet etc.</p> <p>Vendor shall provide a comprehensive software simulation model to carry out the close loop testing in the lab environment.</p> <p>Vendor shall provide the required processing software to convert the receiver raw data output logged during flight into ‘.csv’ format.</p>	
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1.4	IR-GNSS ANTENNA REQUIREMENTS	
1	Vendor shall propose the IR-GNSS system compatible with CRPA type and FRPA type antenna configuration.	
2	System shall be able to be utilized in any of two configurations viz. CRPA antenna or FPRA antenna.	
3	<p>FRPA Type Antenna Configuration</p> <p>Vendor shall propose certified, lightweight active FRPA type IR-GNSS antenna along with proposed system.</p> <p>Antenna shall have jamming protection for field levels up to 300V/m CW, 3000 V/m @ 10 µs PULSE @ 1 kHz RATE for a frequency band of 2MHz to 18 GHz.</p> <p>Low Noise Amplifier (LNA) gain of the antenna shall be at least 30dB or higher.</p> <p>Antenna shall meet the interference rejection level of at least 40-60 dB in the V/UHF band, frequency band 1360 to 1525 MHz and 2G/3G/4G/5G mobile frequency bands. Antenna parameters shall be in line with the RTCA-DO-373 MOPS for GNSS antenna for L band.</p> <p>f) Bore sight Relative Frequency Response and 1db compression point for antenna for S band operation of IRNSS constellation should be Mutually agreed during joint design phase.</p>	
4	<p>CRPA Type Antenna Configuration</p> <p>CRPA antenna configuration shall have the anti-jamming capabilities.</p> <p>CRPA antenna configuration shall have anti- jamming capability against simple tone, wide band, pulse and sweeping jammers.</p> <p>Vendor shall propose CRPA antenna along with its anti-jamming electronic unit or control unit.</p> <p>Vendor shall indicate the installation requirement / constraints for CRPA type antenna and its anti-jamming electronic unit or control unit.</p> <p>Vendor to indicate the design standard/ criteria followed for CRPA antenna.</p> <p>The frequency band for ant jamming functionality will be finalized during the joint design phase.</p>	

5	The model number/part number, technical specification, certification/MOPS compliance detail and any other information of proposed FRPA and CRPA antenna configuration as applicable to be provided.	
6	IR-GNSS antenna shall confirm to the following requirements: Frequency of operation: Compatible with IR-GNSS receiver set Polarization: Right Hand Circularly Polarized (RHCP) Radiation: Hemispherical Omni directional The performance of IR-GNSS systems shall be Guaranteed for RF Antenna cable length up to 22 meters.	
7	Restriction, if any, on the location of antenna, ground plane requirements, cable length restriction, distance from nearest protrusions and any other parameters shall be indicated.	
8	Both FRPA and CRPA type antenna configuration shall have inbuilt protection for antenna short circuit, Open circuit and Lightning effect.	
9	Vendor shall propose suitable airborne RF splitter (Minimum 1:2 & higher) compatible with the proposed IR-GNSS receiver and antenna along with its part no. & source detail.	
10	Vendor to ensure the IR-GNSS performance when associated antenna is shared using RF splitter. In case any limitation/specific requirement on use of proposed splitter to be indicated by the vendor.	
11	Vendor to provide the data sheet and technical specification of the proposed splitter.	
12	Vendor to propose lightweight loss low loss RF cables for the proposed FRPA and CRPA type antenna configuration along with its data sheet.	
13	Vendor to specify the power supply requirement for FRPA and CRPA type antenna configuration via Antenna connector using splitter	
15	Vendor to provide necessary support to carry out the Antenna simulation studies. Vendor to preferably provide soft copies of radiation pattern (near and far field) of the Antenna in the format compatible to EM simulation software.	
1.5	INTERFACE REQUIREMENTS	
1	The system shall cater to the requirements for integration with Glass cockpit.	
2	The system shall be interfaced to Glass Cockpit (dual Mission Computer configuration) for all of its controls & display through RS 422 interface and a provision shall be there for ARINC 429 interface.	
3	The speed, refresh rate, Baud rate for RS422/ARINC429 interface as applicable to be indicated.	

4	Any other interface requirement e.g., discrete I/O required for the system shall be indicated by the vendor.	
5	<p>The system interface with Glass cockpit and other onboard systems on the helicopter is depicted in Figure-1 and Figure-2 below:</p>  <p>FIGURE-1: IR-GNSS INTERFACE WITH FRPA ANTENNA CONFIGURATION BLOCK DIAGRAM</p>  <p>FIGURE-2 : IR-GNSS INTERFACE WITH CRPA ANTENNA CONFIGURATION BLOCK DIAGRAM</p>	

2.0	<u>LRU REQUIREMENTS:</u>	
2.1	LRU DESIGN REQUIREMENTS	
1	For each of the system LRUs, the design shall be modular for ease of failure identification of cards/modules and maintainability.	
2	Each LRU shall be interchangeable without any field adjustments.	
3	The design should ensure to the extent possible dissimilar connectors are available on the units to avoid the accidental mating of connectors on the helicopter.	
4	All switches and connectors protruding outside the LRU should be well protected.	
5	LRUs should preferably have a handle for logistics and maintenance.	
6	The cooling of the LRUs shall be integral to the unit. There shall not be a requirement for forced air-cooling or for circulating air.	

7	The system performance shall be maintained at the extreme temperature of operation and environmental conditions.	
8	The helicopter will be operating in extreme saline environment. Hence, the LRU and its subpart (chassis, connectors etc.) design should ensure that it withstands the saline environment and it is corrosion resistant.	
2.2	<u>MECHANICAL REQUIREMENTS</u>	
1	Proposed IR-GNSS shall not exceed the LRUs weight as indicated below: IR-GNSS Receiver: Less than 1.25 Kg inclusive of mounting tray (if any) CRPA antenna configuration: Less than 2.000 Kg (Including its electronic unit) FRPA antenna configuration: Less than 0.500 Kg Splitter < 0.5 Kg	
2	Mechanical details of the LRUs -Weight, dimensions and CG of all LRUs and its mounting tray (if any) to be provided.	
3	Legends/equipment labels on LRUs to be in English.	
2.3	<u>INSTALLATION REQUIREMENTS</u>	
1	Installation/mounting details and mechanical drawings of the individual LRUs along with mounting tray (if any) & Antenna(s) to be provided.	
2	Any specific requirements/restriction for installation of the unit and antenna (s), cable length restriction to be indicated.	
3	Any specific Harmonization/alignment requirement for system satisfactory operation, to be indicated.	
4	Details of any special tools, measurement devices/equipment, if required for installation to be Indicated.	
5	Vendor to supply the 2D and 3D CAD model for proposed IR-GNSS System (Receiver unit + Antenna) to carry out the feasibility analysis towards its installation on the Helicopter.	
2.4	<u>ELECTRICAL REQUIREMENTS</u>	
2.4.1	<u>POWER SUPPLY CHARACTERISTICS</u>	
1	The DC power supply on the helicopter is 28 V DC with steady state and transient voltage characteristics complying with MIL-STD-704D requirements.	
2	The System shall operate at 28 V DC. The power supply of all the LRUs shall comply with MIL-STD- 704D requirements.	

3	The equipment shall operate at DC steady state voltage in the emergency operation as specified in section 5.3.4.1 of MIL-STD-704D.	
4	The system shall not be damaged when voltage drops to 12V DC during engine start and subsequently increases gradually to the nominal voltage of 28 V DC in duration of approximately 45 seconds.	
5	The units shall have built in protection against power supply malfunction.	
6	The unit shall not reset or recycle due to micro-cut/interruption in power supply up to 50ms as defined in MIL-STD-704D. Continuous system operation shall be guaranteed for power interruptions up to 50 msec.	
2.4.2	POWER CONSUMPTION	
1	Vendor shall provide the total power consumption of the system for a temperature range from -40°C to +55°C.	
2	Vendor shall provide power consumption requirements of the LRU for peak, steady state and transient states along with its duration.	
3	Power consumption requirements shall include the power required for any forced cooling system provided in the LRU.	
2.4.3	BONDING	
1	Adequate electrical bonding shall be provided for each LRU. Bonding methods used to be specified.	
2	Bonding value should be less than 2.5mΩ and shall be in accordance with MIL-STD-464C.	
3	Chassis bonding shall be through mounting hole or through a separate bonding point on the unit, which is to be specified.	
2.4.4	CONNECTORS	
1	The multi-pin connectors should be as per MIL- C/D-38999 series 3/4 (crimp type) or equivalent Airworthiness standards.	
2	RF and other specialized connectors used should be as per applicable equivalent airworthiness standards.	
3	There shall be adequate means of identification for all connectors.	
4	The connectors used on LRUs should withstand corrosion and to coastal saline environment, preferably to have olive drab cadmium plating.	
5	In case unit has connectors, which require any special tool for wire extraction/termination/finalization, same to be provided for prototype phase. Vendor shall also provide the procurement source and other related detail for production phase.	

2.5	<u>RELIABILITY AND MAINTAINABILITY REQUIREMENTS</u>	
2.5.1	MTBF, MTTR AND SHELF LIFE	
1	MTBF data for safety reliability and mission reliability to be provided based on either theoretical estimate or field failure data on units already delivered and determination of MTBF shall be in accordance with MIL-HDBK-217F.	
2	MTBF for the LRUs shall be provided along with basis of estimation. The MTBF of at-least 10000 hours for all LRUs at 35°C is desirable. MTBF for all LRUs at 55°C also to be Indicated.	
3	MTBF of all LRUs would be monitored after certification and reported periodically to the vendor. If achieved MTBF values are less or than the committed values, vendor shall review and take corrective action for improvement.	
4	There should be no shelf-life limitation for LRUs except for batteries (if used). The shelf life of the battery shall be a minimum of 5 years. Expiry date of the battery shall be clearly indicated on the external label of the battery.	
5	Vendor shall define Mean time to repair (MTTR) at system level, LRU level and card level.	
2.5.2	MAINTENANCE REQUIREMENTS	
1	Maintenance shall be 'On-Condition'. No periodic maintenance/adjustments shall be required.	
2	No special tasks (except harmonization) other than those normally available as standards are required to be followed for installation purpose.	
3	The system should be capable of continuous operation for 3 to 4 hours. Limitations, if any, in any of the modes should be clearly brought out in the proposal.	
4	All essential spares required for O-Level maintenance and repair shall be indicated.	
5	Maintainability aspects shall be demonstrated /addressed to cover aspects such as daily/routine inspections, repair, interchangeability, calibration and other related schedule/ activities as applicable.	
2.5.3	OBSOLESCENCE MANAGEMENT	
1	Vendor shall ensure that the unit will be supplied and supported with respect to repair, overhaul, and replacement, spares supply for a minimum period of 25 years after certification.	
2	In case of obsolescence of any LRU / component, vendor to submit obsolescence management proposal preferably 1 year in advance.	
3	Modification of unit after certification to be carried out with prior concurrence from ITI and CEMILAC.	

4	Vendor shall provide necessary support for ground / flight test and re-certification of the system.	
5	Vendor shall ensure continued airworthiness of the system as a part of the obsolescence management.	
2.5.4	GROUND SUPPORT EQUIPMENT	
1	Detail of all necessary ground support equipment (GSE) required in Prototype/production phase for the acceptance checks during integration on helicopters to be provided.	
2	A Ground test procedure using supplied GHE/GSE for the system testing in the RIG and on the helicopter to be provided.	
3	Any special tool needed for installation and alignment of the LRUs to be specified.	
4	Vendor should provide necessary training to ITI/User representative for GSE equipment supplied.	
3.0	<u>QUALIFICATION AND CERTIFICATION REQUIREMENTS</u>	
3.1	CERTIFICATION OF THE UNIT/SYSTEM	
1	The unit on the helicopter shall be certified by the Indian certification agency – CEMILAC.	
2	The basis for certification of the system will be in accordance with the “Route to certification/Certification Approach” which will broadly cover the following: Design Documentation of the system QTP & QTR with respect to Environmental & EMI/EMC Qualification Installed performance of the system on Helicopter – both on ground & during flight	
3	Indian Certification Agency will participate and/or verify the qualification testing and software certification process. Vendor shall facilitate the process towards system certification.	
3.2	ENVIRONMENTAL, EMI/EMC & OTHER QUALIFICATION TEST REQUIREMENTS	
1	Vendor can comply the system qualification requirements as per Military standard (Enclosure- I to Enclosure-III).	
2	Tests as per latest versions of applicable standards with equivalent test levels are preferred.	
3	The technical proposal shall include a compliance matrix indicating the method, procedure, limits and method of compliance (actual testing, similarity or analysis).	

4	In case the tests already conducted are of lower level or duration than that specified herein, vendor shall retest and qualify the unit to the test method specified herein. Vendor shall comply the qualification requirement of unit under test by means of testing, analysis/analogy reports as applicable.	
5	In case if any test is not applicable for the system, vendor shall indicate details in proposal along with proper justification.	
6	In all cases, the vendor shall provide all the qualification test reports, analysis/analogy reports as applicable to demonstrate compliance to the specified requirements for obtaining flight clearance from Indian certification agencies.	
7	If additional testing is required to meet the specified requirements, QTP to be approved by CEMILAC and vendor shall perform these tests and submit the reports.	
3.3	SAFETY OF FLIGHT TESTS (SOFT)	
1	SOFT is applicable for systems that would have specific adaptation or development for Helicopter. However, for the production units and off-the-shelf units, the qualification requirements stated in Para. 8.2 apply.	
2	As a minimum, the prototype sets shall be subjected to the Safety-Of-Flight (Pre-qualification) tests for obtaining prototype flight clearance from Indian certification agencies.	
3	For SOFT, tests as per requirements specified in CEMILAC directive no. 14/2015 with equivalent test levels are to be conducted.	
3.4	ENVIRONMENTAL STRESS SCREENING (ESS) ESS as per MIL-HDBK-2164A shall be carried out on each production unit. The following tests shall be carried out as part of ESS: Vibration prior to thermal cycling Thermal cycling Vibration after thermal cycling Functional checks	
3.5	HALT & HASS	
1	Vendor shall provide details of the test carried out on the unit if HALT (Highly Accelerated Life Testing) and HASS (Highly Accelerated Stress Screening) test methodology has been adopted for electronics modules.	
2	In this case, HASS test is required on each production unit.	
3	HALT and HASS are not mandatory requirements.	

3.6	SOFTWARE REQUIREMENTS	
1	System shall comply with software qualification in accordance with the standard RTCA-DO-178B/C with criticality level B as applicable in accordance with RTCA DO229 D/E, Class Beta 3. Software can also be certified in accordance to IMTAR-21 Ver-I with mission criticality level.	
2	Vendors who already have system certification by any international airworthiness certification agency (FAA, EASA etc) or certification agency from the country of origin in accordance with RTCA/DO-178 B/C shall provide the documentary evidence of the same and also submit / make available the following documents in English to Indian Certification agency: Plan for Software Aspects of Certification (PSAC) Software Test Reports as applicable Software Configuration Index Software Accomplishment Summary	
3	Vendors who do not have system certification from international certification agencies or certification agency from the country of origin and the proposed system & the software is operational with satisfactory performance on airborne platforms, shall supply / make available the following software documents in English to Indian Certification agency for necessary approval: Plan for Software Aspects of Certification (PSAC) Software Requirement Specification (SRS) Interface Control Document (ICD) Software Test reports) IV & V reports Software Configuration Index (SCI) Software Accomplishment Summary	
4	Vendor to indicate the airborne platform where in the proposed system and the software is operational. Further, vendor to provide product service history details, if available.	
5	An IV&V committee established by the Indian Certification Agency will review the software documents and software development process followed by the Vendor. Upon completion of the IV&V Committee activities, the Indian Certification Agency would provide necessary approval.	
6	For adaptation/updates/changes in software to meet customer requirements, vendor shall also provide/make available the following documents in addition to document to Indian certification agency and customer: Updated/incremental requirements at system level and software. Change Impact Analysis Report.	
7	Vendor shall provide necessary inputs to Certification agency for the system certification activity. It shall be vendor's responsibility to ensure that necessary approval is obtained from the Indian Certification Agency.	

3.7	COMPLEX ELECTRONIC HARDWARE (CEH)	
1	Vendor shall comply with the requirements stated for Complex Electronic Hardware as per RTCA/DO-254, with criticality level as applicable in accordance with RTCA DO229D/E, Class Beta 3. If the system incorporates CEH.	
2	Alternatively, Vendor may certify the System in accordance with CEH guideline from Indian certification agency for mission criticality level.	
4.0	<u>QUALITY ASSURANCE REQUIREMENTS</u>	
1	The standards and regulations to which the quality assurance/control conforms shall be supplied.	
2	COTS components if used, shall be subjected to screening as per standard procedure. Method/procedure followed for quality assurance/screening shall be provided by vendor as part of deliverable documents.	
3	Alternatively, vendor may adopt the procedure as per Enclosure-IV for COTS screening.	
4	Each prototype and production unit shall be subjected to Acceptance test procedure (ATP) and Acceptance Test Reports (ATR) shall be submitted to ITI.	
5.0	<u>SYSTEM INTEGRATION ON RIG</u>	
1	System checks will be carried out in the SIL for establishing proper interface between IR-GNSS system, Glass cockpit and other Helicopter interfaces prior to actual ground testing of the system on the helicopter.	
2	Vendor should provide necessary documentation and test equipment to simulate the system functioning in lab environment to carry out Acceptance Test Procedure checks.	
3	Vendor to provide necessary support for IR-GNSS integration in the lab environment.	

DECLARATION OF RELATION IN ITI

(To be typed and submitted in the Letter Head of the Company/Firm of Bidder failing which the offer of Bidder is liable to be summarily rejected)

To,

ITI Limited,
ITI Bhawan, Doorvani Nagar,
Bangalore: 560016

Dear Sir,

Sub: Declaration for relation in ITI

Subject: RFP -

I/We hereby submit the following information pertaining to relation/relatives of Proprietor/Partner (s)/Director(s) employed in ITI

Tick (✓) any one as applicable:

1. The Proprietor, Partner(s), Director(s) of our Company/Firm DO NOT have any relation or relatives employed in ITI
OR

2.The Proprietor, Partner(s), or Director(s) of our Company/Firm have relation/relatives employed in ITI and their particulars are as below:

(i)

(ii)

(Signature, Date & Seal of Authorized Signatory of the Bidder)

Note:

1. Attach separate sheet, if necessary. If ITI Management comes to know at a later date that the information furnished by the Bidder is false, ITI reserves the right to take suitable action against the Bidder/Contractor.

ANNEXURE-VII

BID FORM

NIT No. _____

Dated: _____

To
GM P&T
ITI Limited,
(Registered &
Corporate Office)
ITI Bhavan,
Doorvaninagar,

Bengaluru – 560 016.

Dear Sir/Madam,

1. Having examined the conditions of contract and specifications including addenda Nos.....the receipt of which is hereby duly acknowledged, we, undersigned, offer to act as Technology Partner in conformity with the said contract.
2. We agree to abide by this Bid for a period of 180 days from the date fixed for Bid opening and it shall remain binding upon us and may be accepted at any time before the expiration of that period.
3. Until a formal Purchase Order of Contract is prepared and executed, this Bid together with your written acceptance thereof in your notification of award shall constitute a binding contract between us.
4. Bid submitted by us is properly prepared and submitted in the relevant sections of e-bidding portal as to prevent any subsequent alteration and replacement. Also pricing details / information is not made available in the technical section of e-bidding portal.
5. We understand that you are not bound to accept the lowest or any bid, you may receive.
6. We understand that the Bid document so submitted is the true copy of ITI tender documents available on ITI website www.itilttd.in. Any deviation will result in the rejection of the bid.

Dated thisday of 2024

Name and Signature -----

In the capacity of -----

Duly authorized to sign the bid for and on behalf of:

.....

Witness:
Address:
Signature

ANNEXURE-VIII

NON-DISCLOSURE AGREEMENT

By and between

ITI LIMITED
(A Government of India Enterprise)
Doorvaninagar, Bangalore-560016, India

(hereinafter "ITI")

On the One Hand

And

(hereinafter "XXXX ")

On the Other Hand

Either or both may also be hereinafter referred to, individually as the "Party," and collectively as the "Parties."

ARTICLE 1. DEFINITIONS

"Agreement" means this Non-Disclosure Agreement.

"Confidential Information" as used in this Agreement shall mean all trade secrets and information which is disclosed by the Disclosing Party and is designated as Confidential Information and/or Proprietary Information by the Disclosing Party, including, but not limited to, technical data, know how, type design, concepts, descriptions, specifications, schematics, research, product plans, products, services, lists of customers, markets, developments, inventions, processes, manufacturing processes designs, drawings, films, documentation, engineering hardware configuration information, engineering data, marketing, notes, models, compositions, algorithms, software programs, software source documents, program schedule, visual demonstrations, photographs, manuscripts, texts, video recordings, formulations, equipment or apparatus, oral discussions, sales, marketing and/or business plans

and/or financial information, cost estimates, pricing policy which is identified as confidential and/or proprietary by the Disclosing Party in accordance with the guidelines in Article 4 which may be made available in any form including machine readable. For avoidance of doubt "Confidential Information" also includes analysis, compilation, studies and other material prepared by or in the possession or control of the Recipient which contain or otherwise reflect or are generated from any such information as is specified in this definition.

"Disclosing Party" means that Party which directly or indirectly provides or makes available Confidential Information to the other in connection with this Agreement.

"Receiving Party" means that Party which receives or obtains Confidential Information directly or indirectly from the Disclosing Party in connection with this Agreement.

ARTICLE 2. PURPOSE OF AGREEMENT

The purpose of this Agreement is to allow the Parties to exchange confidential information both technical and commercial, to:

Enable ITI, to ensure timely submission of a technically state of the art and cost competitive proposal consistent with the requirements spelt out in the tender ref

Participate in the presentation/ demonstration to the vendor on No Cost No Commitment basis if called to do so.

ARTICLE 3. IDENTIFICATION OF INFORMATION

Both Party's information relating to business, financial and technical data related to the system engineering, manufacturing, marketing and business development capabilities with specific reference to the parameters laid out in the RFP

ARTICLE 4. CONFIDENTIAL INFORMATION RIGHTS AND OBLIGATIONS

(a) Information that is to be accepted in a confidential relationship and treated as Confidential Information, shall be disclosed in a tangible form, and shall be conspicuously marked as being "Private," "Confidential," or by any other appropriate legend clearly indicating the confidential nature of the information.

(b) Confidential Information, if first disclosed in a non-written or other non-tangible form, shall be identified by the disclosing party at the time of disclosure as being disclosed in confidence, shall be reduced to tangible form and marked in accordance with Article 4(a), and such tangible form shall be delivered to the Party identified above within twenty (20) working days after the date of first disclosure. During the above stated 20-day period, such Confidential Information shall be protected in accordance with the terms of this Agreement.

(c) Confidential Information that is disclosed pursuant to this Agreement shall not be used other than for the purposes submitted, or disclosed to any third party, unless authorized in writing by the disclosing Party.

(d) Upon receiving Confidential Information from the disclosing Party, recipient shall use at least the same degree of care that it uses in protecting its own information of like kind, but not less than reasonable care to safeguard such Confidential Information from an unauthorized use or disclosure. Recipient agrees that each employee having access to Confidential Information of the other Party to this Agreement, shall be in a "need-to-know" basis and shall be informed of the existence of this Agreement.

If the Receiving Party makes any copies, extracts, summaries, or digests of the Confidential Information (including computer entries), the Receiving Party shall ensure that appropriate legends are affixed thereto. Copies made by a reproduction service contractor, for the exclusive use of a Party to this Agreement is permitted, provided the service contractor has executed a non-disclosure agreement, which is sufficient to protect the Confidential Information required under this Agreement.

(f) Receiving Party undertakes to observe all requirements of security regulations of the Government of India to the extent they apply to Proprietary / Confidentiality Information disclosed pursuant to hereinto.

ARTICLE 5. AGREEMENT AND CONFIDENTIALITY TERMS

This Agreement shall terminate after the period of time specified below, from the date of last execution of this Agreement by the Parties, except that either Party, upon thirty (30) days written notice to the other Party, may terminate this Agreement. All obligations to maintain confidentiality shall survive termination under this Article 5 and Article 9.

The Term of this Agreement shall be Two (2) years from the effective date

hereof, as determined by the last date of execution.

Notwithstanding the above, the provisions of this Agreement, as they relate to Proprietary Information, shall remain in full force indefinitely unless expressly agreed otherwise in writing by the parties. Furthermore, the receiving party agrees to promptly return or destroy, as instructed by the disclosing party, any Proprietary Information received from the disclosing party, together with all copies thereof, upon request by the disclosing party, termination of the Agreement or expiry or termination of the Purpose, whichever is earlier.

ARTICLE 6. PROTECTION LIMITATIONS

It is acknowledged by the Parties, that when any portion of such Confidential Information falls within any of the following provisions, such portion of such Confidential Information is released from the protection provided under this Agreement from the date such provision becomes effective:

- (a) Information which is or becomes part of the public domain without breach of this Agreement;
- (b) Information which is subsequently received from a third party who did not obtain, or disclose such information in violation of any rights of the Disclosing Party;
- (c) Information which is already known to a Party, which is substantiated by reasonable evidence;

Information which is publicly disclosed with the prior written approval of the Party that owns, or controls the information; or

Information which was independently developed by an employee of the receiving Party, who did not have access to the disclosed information, and independent development, is substantiated by reasonable evidence.

ARTICLE 7. CONTACT

Each Party shall designate in writing one or more individuals within its organization as the only persons authorized to receive Confidential Information exchanged hereunder. Such authorized recipients initially designated are:

ITI LIMITED
XXXXXX

Phone:

Fax:

Email ID : pp_crp@itiltd.co.in, santoshsinha_crp@itiltd.co.in

Designated authorized recipients may be changed at any time upon written notice.

ARTICLE 8. JUDICIAL ORDER

Notwithstanding the foregoing, nothing in this Agreement shall restrict the right of either Party to this Agreement, from disclosing such Confidential Information pursuant to a judicial order issued by a court of competent jurisdiction, or other valid and binding court ordered discovery, but only to the extent so ordered, provided, however, that the Party so ordered shall notify the other Party to this Agreement, in writing, of such pending action to compel disclosure or such order in sufficient time to permit adequate time for response by the affected Party. The receiving Party shall provide all reasonable assistance, at the disclosing Party's expense and direction, in opposing such disclosure order.

ARTICLE 9. TERMINATION PROVISIONS

All such Confidential Information and copies, extracts, summaries, or digests (including computer retained format) thereof shall remain the property of the disclosing Party. All such Confidential Information shall be returned to the disclosing Party upon the first of the following events shall occur:

- (a) Within thirty (30) days after the termination of this Agreement under Article 5;
- (b) At the request of a Party upon completion of the purpose(s) for which it was submitted;
- (c) Upon the determination by a Party that received the information that it no longer desires to possess such Confidential Information; or
- (d) Upon breach of any of the obligations of this Agreement, wherein such Confidential Information, and all copies thereof, shall be returned to the Party that owns or controls the Information within thirty (30) days of written demand by such Party.

ARTICLE 10. SUCCESSORS

This Agreement shall be binding upon and inure to the benefit of the respective successors and assigns of both Parties respectively.

ARTICLE 11. ASSIGNMENT

Neither Party shall assign or otherwise transfer any of its rights nor shall obligations under this Agreement to any third Party inure without the prior written consent of the other Party and any attempted assignment or transfer without such prior written consent shall be null and void.

ARTICLE 12. GENERAL PROVISIONS

No license, right, title, or interest in, or to any patent, trademark, mask work, copyright, service mark, or any other intellectual property rights, is granted or implied by disclosure of, or access to such Confidential Information disclosed hereunder. Each Party warrants that it has the lawful, unqualified right to transfer, use, or otherwise disclose the information transmitted hereunder. No other warranties, express, or implied at law, or in equity, are intended or deemed to arise by virtue of entering into this Agreement or performing hereunder.

In the event of breach of the terms of this Agreement, the failure of a Party to enforce any right under this Agreement, shall not be deemed a waiver of any right hereunder. The invalidity in whole, or in part, of any condition of this Agreement shall not affect the validity of any other condition hereof.

At all times, both Parties shall remain independent contractors, with each responsible for its own employees and representatives. This Agreement is not intended to be, nor shall it be construed as, a joint venture, Partnership or other formal business organization, and neither party shall have the right or obligation to share any of the profits, or bear any losses, risks or liabilities of the other Party by virtue of this Agreement. Neither Party is authorized to act for, or on behalf, of the other Party, nor to bind or, otherwise commit the other Party to any contract, or other matter.

(d) This Agreement is deemed to be made under, and shall be construed in accordance with the laws of India.

(e) No amendment or modification of this Agreement shall be valid, or binding on the Parties, unless made in writing and signed on behalf of the Parties,

their respective duly authorized officers, or representatives.

(f) This Agreement may be executed in counterparts and transmitted by facsimile, each of which when so executed and transmitted shall be deemed to be an original, and all such counterparts shall together constitute one and the same instrument.

This Agreement supersedes all previous understandings between the Parties with respect to the subject matter of this Agreement.

ARTICLE 13. AGREEMENT LANGUAGE

This Agreement has been executed and delivered in text using the English language, which text, despite any translation into any language, shall be controlling.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized representatives, as of the date listed below.

ITI Limited	XXXXX
By _____ (Typed Name)	By _____ (Typed Name)
_____ (Title)	_____ (Title)
_____ (Signature)	_____ (Signature)
_____ (Date Signed)	_____ (Date Signed)

In the presence of

Witness

1.) Signature

Name

Address

2.) Signature

Name

Declaration regarding “Restrictions on procurement from a Bidder of a country which shares a land border with India

(To be submitted on Applicant’s Letter Head)

To,

Dear Sir,

In reference to bid submitted by M/s
against ITI RFP Document
Number:

...., I/We have read the Order No:F.No6/18/2019-PPD dated: 23-July- 2020 from Department of Expenditure, Ministry of Finance regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries.

I/We certify that we/our Collaborator/Assignee are/is not from such a country or, if from such a country, have/has been registered with the Competent Authority and we will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority.

We here by certify that we fulfill all requirements in this regard and are eligible to be considered.

We further confirm that evidence of valid registration by the Competent Authority for us/our Collaborator/JV Partner / Consortium member/Assignee, as applicable, is enclosed as Annexure...

***Bidder to strike-off, if not applicable.**

Date: _

Seal of Organization &

Place:

Signature of Authorized Applicant

Bid Security Declaration

Dated:

To
The ITI LIMITED
Corporate (PP) Unit
Bengaluru 560016

Sir,

Subject: **RFP No: ITI/COR/P&T/RFP/IRNSS/2025/01**

dt: DD.MM.2024 for The selection OF "TECHNOLOGY PARTNER [TP]" for manufacturing and supply of IRNSS Receiver system We, the undersigned, declare that:

1. I/We understand that, according to the general conditions of RFPs, offers must be secured with a bid security or to be supported with a Bid-Security Declaration.

2. Accordingly, in lieu of Bid security, I/We unconditionally declare that:

(a). I/We undertake to stand to all our statements and declarations towards this RFP as agreed upon by us.

(b). I/we will not alter or change any of the conditions during the validity and after our selection as successful Technology Partner and award of this RFP.

(c). I/We will abide by all the terms and conditions of the RFP.

(d) I/we fully understand that I/we will be automatically disqualified and barred from bidding for any contract and doing business for a period of **two (2) years** upon receipt of your Barring/Blacklisting/Suspension Order,

(e) I/we will pay the applicable fine or damages as provided by any stipulation or guidelines from the appropriate authority in this regard for the violation of PoC Securing Declaration; and,

(f) I/We undertake to comply above, without prejudice to other legal action or remedies ITI Ltd. may have, to secure itself from the damages and losses incurred due to the act of default or violation by undersigned company/entity.

Duly authorized to sign the bid for and on behalf of:

[Insert complete name of ITP]

Dated on ____ day of _____ *[insert date of signing]* Corporate Seal (where appropriate)

ANNEXURE-XI

10. DOCUMENTS / INFORMATION TO BE UPLOADED

	Check list of documents/information to be submitted
i.	The profile of the PARTNER as per Annexure-I and Certificate of Incorporation of the PARTNER company.
ii.	Memorandum & Articles of Association
iii.	Audited financial statements for past three years (2020-21,2021-22,2022-23)
iv.	Auditors Net worth certificate & Turnover certificate signed by the company's Auditors/ CA for last 3 financial years.
v	Experience/ Work Completion Certificate of the Product/Solution from the customer signed by the competent authority of the client entity along with the supporting documents such as Work order/Purchase order with the name of contact person, postal address, email id and telephone numbers
vi.	Details of possession of Quality certifications
vii.	Clause-by-Clause compliance of RFP terms and all corrigendum with supporting documents as per Annexure-II .
viii.	Valid Power of Attorney along with resolution of Board for authorizing the person signing the bid for this RFP.
ix.	Undertaking by the PARTNER shall be submitted as per Annexure-III .
x.	A documentary proof of owning IPR (Intellectual Property Right) or Copyright/License for the design to be submitted.
xi.	An undertaking to have understood and ready to sign a contract agreement by the appropriate authority immediately after being selected.
xii.	A Pre-Contract Integrity Pact as per the format given in Annexure-IV .
xiii.	Technical literature/Brochures of the offered Technology.
xiv.	Compliance on Generic technical specification Annexure-V
xv.	Declaration Of Relation In ITI ANNEXURE-VI
Xvi	Bid Form Annexure-VII
xvii	Confidentiality And Non-Disclosure Agreement Annexure-VIII
xviii	Declaration regarding "Restrictions on procurement from a Bidder of a country which shares a land border with India ANNEXURE-IX
xix	Bid security Declaration to be submitted ANNEXURE-X

xx	Checklist of the Documents to be submitted ANNEXURE-XI
xxi	Undertaking for IPR to be submitted
xxii	Certificate to be submitted by Bidders on Rule 144(xi) of the General Financial Rules (GFRs) 2017 on grounds of Defence of India and National Security ANNEXURE-XII
xxiii	PARTNER shall provide a list of all the necessary Infrastructure (Tools, Testers etc.) required for Manufacturing & Testing of IRNSS Receiver System.

**Certificate to be submitted by Bidders
(On Company's Letter Head)**

**Reference 1: ITI RFP No. ITI/COR/P&T/RFP/IRNSS/2025/01 issued
on**

I, in capacity of authorized signatory of
M/s.....having Regd. office
at.....

being a participant bidder in ITI RFP cited at reference 1 above, hereby declare that I have read and understood the clause regarding Restrictions under Rule 144(xi) of the General Financial Rules (GFRs) 2017 on grounds of Defense of India and National Security issued vide OM cited at reference 2 above, on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries. I, hereby, further certify that our Company is not from such a country which shares a land border with India and in light of conditions & restrictions imposed vide cited OMs, we fulfil all the requirements in this regard to become eligible to be considered in the subject Tender Enquiry by ITI.

(Name of the authorized signatory)

Signature Designation in Company Seal / Stamp of Company

Counter signed by Company Secretary of the Company with seal / stamp