

**GOVERNMENT OF INDIA  
DEPARTMENT OF SPACE  
ISRO TELEMETRY TRACKING & COMMAND NETWORK (ISTRAC)  
BANGALORE**

**Tender for Development of NextGenMCS Software within ISTRAC**

**Bids to be submitted online**

**Tender No.: ISTRAC/ISTRAC PURCHASE/TR202400014301 dated 29-11-2024**

## A. Tender Details

Tender No :	<b>ISTRAC/ISTRAC PURCHASE/TR202400014301</b>
Tender Date :	<b>29-11-2024</b>
Tender Classification:	<b>SERVICES</b>
Purchase Entity :	<b>ISTRAC PURCHASE</b>
Centre :	<b>ISRO TELEMETRY TRACKING &amp; COMMAND NETWORK (ISTRAC)</b>

### Development of NextGenMCS Software within ISTRAC

Note: 1) This is a Dual Part Tender. Please submit your Offers separately for Technical and Price Bid under relevant Template. Please upload Price Bid under Price Bid only and nowhere else. If price is mentioned anywhere other than Price Bid, your offer will not be considered. 2) Please provide your compliance separately for (a) Performance Bank Guarantee Clause (b) Liquidated Damages Clause (c) Security Deposit Clause. (d) Certificate of Undertaking. 3) The Technical Bid and Price Bid Opening Date and Time is tentative only. Actual bid opening date and time will be intimated separately.

#### A.1 Tender Schedule

Bid Submission Start Date :	<b>29-11-2024 10:30</b>
Bid Clarification Due Date :	<b>03-01-2025 17:00</b>
Bid Submission Due Date :	<b>13-01-2025 14:00</b>
Bid Opening Date :	<b>13-01-2025 14:30</b>
Price Bid Opening Date :	<b>27-01-2025 15:00</b>

## **B. Tender Attachments**

### **Technical Write-up/Drawings**

**Document : Request for Proposal for Development of NextGenMCS Software**

**Document : Annexure-3**

**Document : Annexure-2**

**Document : Annexure-1**

### **Instructions To Vendors**

#### **5. INSTRUCTIONS TO TENDERERS FOR ONLINE SUBMISSION OF TENDERS THROUGH E-PROCUREMENT SYSTEM**

1. a) Bidders shall arrange themselves all resources, including Digital signature certificates and Internet Connections at their own cost, for participating in online tendering.
- b) Vendors can download the tender details and submit their offers online using their vendor accounts (obtained during registration) in our portal. Help demos for tender download and bidding processes are given on home page.
- c) The tender should be submitted online in the ISTRAC link before the due date and time as specified in the tender schedule in the portal.
- d) Vendors shall also take note of other Instructions to tenderers indicated in the tender documents.

#### 2. Conditions for online submission of tenders:

- a) It is mandatory for interested parties to register as vendors in our e-procurement portal <https://eproc.vssc.gov.in/home.html> for participating in online eProcurement process of ISRO. Only registered vendors can submit their offers online in our eProcurement portal.
- b) Vendors who are already registered in the existing EGPS software of ISRO, please register by clicking the link in the email you would have already received from 'eproc@vssc.gov.in'. After registration, do the profile update by login to this portal.
- c) For new vendors, who are not registered in the existing EGPS software, vendor registration will be released along with the portal release. To register as vendors please refer to the help demos listed on the home page of the e-procurement link mentioned above. They may approach help desk (contact details provided on the home page) for any technical help for registration and subsequent process.
- d) OEM details should be added in your E-Procurement profile under Add Agent/Principal without fail.

#### 3. ISTRAC shall not be responsible for failure of vendors in submitting bids online caused due to

technical reasons at vendor end such as network or power failures, computer failure, internet-browser, mistakes / errors in filling the bids on line by vendor etc.

4. Procedure for seeking clarifications/help for the tender:

a) All enquiries regarding the tenders and submission of offers shall be online and only through our eProcurement portal.

b) Vendors may approach help desk e-mail id and phone number given on the home page for any technical help (e-mail: eproc@vssc.gov.in and Phone: +91471 2565454/4574/2527/3753/3289).

5. Queries by vendors on technical problems on the last day of tender will not be binding on ISTRAC/ISRO for resolving/addressing. ISTRAC will not be responsible for non-submission of bids for those cases.

## **6. PROFORMA FOR INSTRUCTIONS TO TENDERERS AND TERMS & CONDITIONS OF TENDER**

1. a) All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.

(b) Samples, if called for, should be submitted free of all charges by the tenderer and the Purchaser shall not be responsible for any loss or damage thereof due to any reason whatsoever. In the event of nonacceptance of tender, the tenderer will have to remove the samples at his own expense.

(c) Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available the same should also be indicated in your offer.

(d) Specifications: Stores offered should strictly confirm to our specifications. Deviations, if any, should be clearly indicated by the tenderer in his quotation. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples, wherever necessary, along with the quotations. Test Certificates, wherever necessary, should be forwarded along with supplies. Wherever options have been called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.

2. ACCEPTANCE OF STORES: (a) The stores shall be tendered by the Contractor for inspection at such places as may be specified by the purchaser at the Contractor's own risk, expense and cost. (b) It is expressly agreed that the acceptance of the stores Contracted for, is subject to final approval by the purchaser, whose decision shall be final. (c) If, in the opinion of the purchaser, all or any of the stores do not meet the performance or quality requirements specified in the Purchase Order, they may be either rejected or accepted at a price to be fixed by the purchaser and his decision as to rejection and the prices to be fixed shall be final and binding on the Contractor. (d) If the whole or any part of the stores supplied are rejected in accordance with Clause No. (c) above, the purchaser shall be at liberty, with or without notice to the Contractor, to purchase in the open market at the expense of the Contractor stores meeting the necessary performance and quality Contracted for in place of those rejected, provided that either the purchase, or the agreement to purchase, from another supplier is

made within six months from the date of rejection of the stores as aforesaid.

3. ARBITRATION : All disputes, differences, claims and demands arising under or pursuant to or touching this agreement shall be referred to Arbitration of a sole Arbitrator to be appointed by the Director, ISTRAC, whose decision/award will be final and binding on both the parties. Such arbitration shall be held in Bangalore and shall be subject to and governed by the provisions of the Arbitration and Conciliation Act of 1996 or any statutory modification or re-enactment thereof. The language to be used in Arbitration is English only.

4. As a Government of India Department, this office is exempted from payment of Octroi and similar local levies. Tenderers shall ensure that necessary Exemption Certificates are obtained by them from the Purchase Officer concerned to avoid any payment of such levies.

5. a) Your offer should be valid for 120 days from the date of opening of the tender. b) Prices are required to be quoted according to the units indicated in the annexed tender form. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.

6. CUSTOMS DUTY : This office is eligible for Concessional Customs Duty @ 5.5% against Ministry of Finance, Department of Revenue, Government of India, vide Customs Notification No.51/96-Cus Dated 23-07-1996 (Sl.No.1) and amended under Notification No.93/96 dated 11th December 1996 and 24/2002 dated 01-03-2002

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

8. TAXES: GST is payable as per applicable rates.

9. GUARANTEE & REPLACEMENT: (a) The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down, for material, workmanship and performance. (b) Warranty shall be for the period mentioned in the tender document. After the acceptance of the stores, if any defects are discovered therein or any defects therein found to have developed under proper use, arising from faulty stores design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within the warranty period, by the purchaser who shall state in writing in what respect the stores or any part thereof are faulty. (c) If, in the opinion of the purchaser, it becomes necessary to replace or renew any defective stores such replacement or renewal shall be made by the Contractor free of all costs to the purchaser, provided the notice informing the Contractor

of the defect is given by the purchaser in this regard within the said period of warranty from the date of acceptance thereof. (d) Should the Contractor fail to rectify the defects, the purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores. (e) The decision of the Purchaser notwithstanding any prior approval or acceptance or inspection thereof on behalf of the Purchaser, as to whether or not the Stores supplied by the Contractor are defective or any defect has developed within the said period of warranty or any other period or as to whether the nature of defects requires renewal or replacement, shall be final, conclusive and binding on the Contractor. (f) To fulfill guarantee conditions outlined in (a) to (e) above, the Contractor shall, at the option of the Purchaser, furnish a Bank Guarantee (as prescribed by the Purchaser)

10. If the IGST is applicable, the same will be reimbursed if it is reflected in Bill Of Entry. Proof shall be provided while claiming payment.

11. It is to be noted that either Customs Duty or GST is applicable ( any one)

12. JURISDICTION : The contract/ purchase order shall be governed by an interpreted and construed in accordance with the laws of India. The courts situated at Bangalore only shall have jurisdiction to deal with and decide any legal matter or dispute arising out of contract/ purchase order.

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

14. Please provide your compliance for Security Deposit, Performance Bank Guarantee and Liquidated Damages Clause.

15. PRICES: Tender offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotation with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variation/s.

16. REJECTED STORES: Rejected stores will remain at destination at the Contractor's risk and responsibility. If instructions for their disposal are not received from the Contractor within a period of 14 days from the date of receipt of the advice of rejection, the purchaser or his representative has, at his discretion, the right to scrap or sell or consign the rejected stores to Contractor's address at the Contractor's entire risk and expense, freight being payable by the Contractor at actuals.

17. Sales Tax and/or other duties/levies legally leviable and intended to be claimed should be mentioned in the price bid template. If nothing is mentioned, then it will be presumed that the rate quoted is inclusive of all taxes/duties.

18. SECURITY DEPOSIT: Wherever, the Purchase Order value is Rs. 5.00 Lakhs or more, on acceptance of the tender, the Contractor shall, at the option of the Purchaser and within the period specified by him, deposit with him, in cash or in any other form as the Purchaser may determine, security deposit not exceeding ten percent of the value of the Contract as the Purchaser shall specify. If the Contractor is called upon by the Purchaser to deposit, 'Security' and the Contractor fails to provide the security within the period specified, such failure shall constitute a breach of the Contract, and the Purchaser shall be entitled to make other arrangements for the re-purchase of the stores Contracted at the risk of the Contractor in terms of Sub-Clause (ii) and (iii) of clause regarding Delivery. (b) hereof and/or to recover from the Contractor, damages arising from such cancellation.

19. SETTLEMENT OF DISPUTES : Except as otherwise specifically provided in the contract, all disputes concerning question of fact arising under the Contract shall be decided by the Purchaser subject to a written appeal by the Contractor to the Purchaser whose decision shall be final to the parties hereto. Any disputes or differences including those considered as such by only one of the parties arising out of or in connection with the Contract shall be, to the extent possible, settled amicably between the parties. If amicable settlement cannot be reached, then all disputes shall be settled by arbitration.

## 20. TERMS & CONDITIONS OF TENDER

21. TEST CERTIFICATE: Wherever required, test certificates should be sent along with the despatch documents.

22. The authority of the person signing the tender, if called for, should be produced.

23. The Purchaser reserves the right to place order on the successful tenderer for additional quantity up to 25% of the quantity offered by them at the rates quoted.

24. The purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderers shall supply the same at the rates quoted.

25. The tenderer should supply along with his tender, the name of his bankers as well as the latest Income-Tax clearance certificate duly countersigned by the Income-Tax Officer of the Circle concerned under the seal of his office, if required by the Purchaser.

26. The term Contractor shall mean, the person, firm or company with whom or with which the order for

the supply of Stores is placed and shall be deemed to include the Contractor's successors, representative, heirs, executors and administrators unless excluded by the Contract.

27. The term Purchase Order shall mean the communication signed on behalf of the Purchaser by an Officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the tender or offer of the Contractor for supply of stores or plant, machinery or equipment or part thereof.

28. The term Purchaser shall mean the President of India or his successors or assigns.

29. The term "Stores" shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order including erection of plants & machinery and subsequent testing, should such a condition is included in the Purchase Order.

## **7. TENDER TERMS AND CONDITIONS**

1. All information in Vendor Specified Terms shall be provided without fail to avoid unnecessary correspondence / delay in process. The same should reach before technical bid opening date and time without fail.

2. As per Rule 144(xi) of General Financial Rules, 2017, any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services (including consultancy services and non consultancy services) or works (including turnkey projects) only if the bidder is registered with the Competent Authority (i.e., Department for Promotion of Industry and Internal Trade) in line with Order (Public Procurement No. 1, 2 and 3) dated 23/07/2020 and 24/07/2020 or any amendments thereon issued by the Public Procurement Division, Department of Expenditure, Ministry of Finance. Hence, Vendors or Agents of a Vendor (Indian or Others) from a country sharing border with India shall submit the copy of Valid Registration made with DPIIT along with the tender mandatorily, without which the offer will be treated as invalid.

3. a) Order no: F.No.6/18/2019 PPD dated 23.07.2020 of Department of Expenditure), Ministry of Finance Under Public procurement division for the General Financial rule (GFRs).

4. b) Class I local supplier means a supplier or service provider, whose goods, service or works offered for procurement, has local content equal to or more than 50%, as defined under order.

5. c) Class II local supplier means a supplier or service provider, whose goods, services or works offered for procurement, has local content more than 20% but less than 50%, as defined under this Order.

6. d) Bidders offering imported products will fall under the category of Non-local suppliers. They cannot



claim themselves as Class I Local suppliers/Class II Local suppliers by claiming the services such as transportation, insurance, installation, commissioning, training and after sales service support like AMC/CMC etc. as local value addition.

7. e) Verification of local content: i) The Class I local supplier/ Class II local supplier at the time to tender, bidding or solicitation shall be required to indicate percentage of local content and provide self certification that the item offered meets the local content requirement for Class I local supplier / Class II local supplier as the case may be. They shall also give details of the location(s) at which the local value addition is made.

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

9. Delivery Terms: FOR ISTRAC

10. GENERAL TERMS & CONDITIONS FOR BIDDERS: For this procurement, bids from Class I, class II and Non-Local Suppliers are admissible. Provisions contained in Public Procurement (Preference to Make in India), Order 2017 issued by Department for Promotion of Industry and Internal Trade (DIPP), Ministry of Commerce & Industries vide letter No. P 45021/2/2017 PP(BE II) dated 04.06.2020 and subsequent amendment & directives shall be followed. Accordingly, offer will be evaluated & processed in conformation with above referred GOI order (Specially mentioned below). The bidder shall provide compliance and undertaking as per order and hereafter amendments:

11. If an agent submit bid on behalf of the principal/OEM, the same agent shall not submit a bid on behalf of another principal/OEM in this tender for the same item. If submitted, all offers will be liable for rejection.

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

13. ii) In case bid value is in excess of Rs. 10 Cr., Class I local supplier/ Class II local supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content.

14. In case the bidders propose any other payment terms in deviation with the standard terms mentioned in the tender enquiry, it may be noted that applicable cash flow implications will be loaded

on the prices quoted for commercial comparison of the offers. If advance payments are insisted by the bidders, interest at the rate of MCLR (Marginal Cost Linked Rate) as notified by State Bank of India from time to time shall be loaded on the prices for price comparison.

15. In this tender either the Indian agent on behalf of the principal/OEM or the principal /OEM itself can bid, but both cannot bid simultaneously for the same item. Indian agents while quoting on behalf of their principals shall provide necessary latest authorisation letter obtained from their principals/manufacturers.

16. Liquidated damages: If the vendor fails to deliver the items on or before the delivery date, or any extension thereafter purchaser shall recover from the vendor as liquidated damages a sum of 0.5% of the contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed 10% of the contract price of the unit or units so delayed.

17. Model Certificate for Tenders: I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered.

18. Model Certificates for Tenders for Work involving possibility of sub contacting: I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub contracting to contracting from such countries I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub contract any work to a contract form such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered. Provide Compliance for the above in Vendor Specified Commercial Terms.

19. NO EMD AND TENDER FEE.

20. Performance Bank Guarantee (PBG) to be furnished as a security for fulfilment of warranty obligations by the successful vendor after satisfactory execution of purchase order/Contract (3% of the value of the purchase order/Contract). Central SUs/PSE/Autonomous bodies are exempted from the production of Performance Bank Guarantee. Instead; an indemnity bond shall be furnished in lieu of PBG.

21. Product Scope: Class I local supplier/ Class II local supplier shall offer only standard and catalogued product for Equipment / Spares Cards / assemblies. If the above offered Equipment / Cards / Assemblies are under development / to be developed the bid will not be considered.

22. PUBLICITY: No publicity of any kind whatsoever in case of PURCHASE ORDER shall be given by the Supplier without prior permission of the Purchaser.

23. **SECRECY:** The technical information, drawings, specifications and other related documents, forming part of the CONTRACT, are the property of the Purchaser and shall not be used for any other purpose, except for execution of the CONTRACT. All rights, including rights in the event of grant of patent and registration of designs are reserved. The technical information, drawings, specifications, records and other documents shall not be copied, transcribed, traced or reproduced in any other form or otherwise in whole and/or duplicated, modified, divulged and/or disclosed to a third party nor misused in any other form whatsoever without Purchasers consent in writing except to the extent required for the execution of this CONTRACT. These technical informations, drawings, specifications and other related documents shall be returned to the Purchaser with approved copies and duplicates, if any, immediately after they have been used for the agreed purpose.

24. Senior Purchase and Stores Officer, ISTRAC, reserves the right to accept or reject any/or all the tenders in part or full without assigning any reasons thereof.

25. Submit the bid on or before due date.

26. Successful vendor has to submit the security deposit. (3 % of the value of the purchase order). Central PSUs/PSE/Autonomous bodies shall be exempted from the payment of security deposit, and instead, an indemnity bond shall be secured from them.

27. VENDORS HAS TO REFLECT THE POINT NO (4), (5) AND (6) IN THEIR BID.

28. **TAXES:** GST is payable as per applicable rates.

## C. Bid Templates

### C.1 Technical Bid - Development of NextGenMCS Software within ISTRAC

#### 1. SOFTWARE DEVELOPMENT SERVICES

#### 2. SOFTWARE MAINTENANCE

#### Common Specifications (Applicable for all items)

SI No	Specification	Value	Compliance	Offered Specification	Remark
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1	Introduction	<p>ISRO Telemetry Tracking and Command Network (ISTRAC) is the nodal agency of Indian Space Research Organization (ISRO) for providing Telemetry, Tracking &amp; Command (TTC) support and spacecraft control operations for Low Earth Orbit (LEO) and Planetary Missions.</p> <p>ISTRAC/ISRO has multiple Ground stations for tracking and commanding of on-orbit satellites as well as launch vehicles. Schedule driven automatic configuration and status monitoring of the stations for any satellite tracking session is already in place for more than 15 years now. It is proposed to develop new Monitoring and Control software by adopting latest technologies with the development happening in ISTRAC premises.</p> <p>ISTRAC ground stations comprise of multiple equipments towards receiving, processing and transfer of real-time data from Launch vehicle and satellite missions to the respective control centres. Also tele-command to the satellite is transmitted from these stations to the satellite whenever required. This includes but not limited to Antenna, RF systems, Receiver &amp; Baseband systems, Data acquisition, processing &amp; dissemination systems, modulation &amp; transmission systems</p>	Yes / No / Explain		
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and station status monitoring and control systems. The stations are driven by a schedule that is generated periodically by ISTRAC scheduling team.

There are multiple ground stations in a given geographical location and single station in some locations. It is proposed to develop new Monitoring and Control software with latest technologies catering to remote automatic operations. The proposal is to get developed and deployed one operational version in one cluster typically comprising of three ground stations.

- 1.1 Keywords & References
  - 1.1.1 ISRO Indian Space Research Organization
  - 1.1.2 ISTRAC ISRO Telemetry Tracking And Command Network
  - 1.1.3 TTC Telemetry Tracking and Tele-command
  - 1.1.4 LEO Low Earth orbit
  - 1.1.5 M&C Monitoring and Control

2	Scope of work for on-site development services-1	<p>The proposed software has backend as well as front end development requirement. The bidder has to develop the back end software as well as the front end software adhering to ISRO Software Process Document (ISPD) which is based on IEEE 12207 (ISPD shall be shared during development at ISTRAC premises). The software developed shall be tested in test environment and subsequently subjected to on-site test, evaluation and deployment.</p> <p>The bidder, on receipt and acceptance of the order, shall deploy a team of qualified Engineers towards design, development, testing and deployment of the backend as well as frontend software in one cluster of ground stations. The bidder shall deploy team of 2 on-site backend developers and 2 on-site frontend developers to carry out development activities within ISTRAC premises. The number of developers deployed can be more than this number based on the need during every phase of the project.</p> <p>The scope of work includes:</p> <p>2.1. Understand ISRO Software Process and development standards.</p> <p>2.2. Development of Software product to meet the requirements mentioned in the approved SRS provided by ISTRAC</p>	Yes / No / Explain		
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during pre-bid meeting.

2.3. Study of software requirements and operations scenario in a typical ground station.

2.4. Familiarization with already operational software and understanding the improvements that may be needed.

2.5. Bring out Software Requirements Analysis document.

2.6. Propose suitable software architecture, development life cycle & design of the entire software product in discussion with ISTRAC engineers for both backend and user-friendly GUI.

2.7. Propose the design to ISTRAC team for UI/UX (GUI) reviews & feedback, incorporate the changes and finalise the design for suitable development.

2.8. Bring out software design & Detailed Design documents, for both front-end and back-end software, prepared jointly with ISTRAC team.

2.9. Configuration of development environment with configuration of Continuous Integration (CI) & Continuous Deployment (CD).

2.10. Development of back-end software as per Software Requirement specifications and Detailed Design, under the guidance of ISTRAC Engineers.

2.11. Software Coding, implementation and validation for dynamic GUI as per detailed SRS/design/ coding instructions/ test plan.

2.12. Implementation



		<p>of all cyber security features as per design and towards enabling secure user interface.</p> <p>2.13. Carry out Unit testing, Integrated testing, Code Walk Through, Static analysis, and peer review throughout the software development cycle.</p> <p>2.14. Testing with typical open-source software test tools.</p> <p>2.15. Bring out software artefacts throughout the software development life cycle.</p> <p>2.16. Generation of Deployment scenario test plan.</p> <p>2.17. Configuration of software for Station &amp; satellite specific requirements.</p> <p>2.18. Deployment of the software with all necessary configuration files and making operational in one cluster.</p> <p>2.19. Post deployment issue resolution and regression testing.</p> <p>2.20. Version and Configuration Control of developed software at ISTRAC</p>			
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3	Scope of work for on-site development services-2	<p>3.1. Testing with typical security test tools to ensure secure User interactions, adhering to ISRO Software Security guidelines.</p> <p>3.2. Preparation of test plan document.</p> <p>3.3. Testing typical ground station equipment for M&amp;C integration with the provisioned interface.</p> <p>3.4. Shall maintain software repository in Source Code Management Software.</p> <p>3.5. Unit testing, documentation, knowledge transfer of the implemented code along with ISTRAC Engineer.</p> <p>3.6. Debugging and troubleshooting during every stage of coding, testing, post deployment scenarios and performing necessary code updates and testing as and when required</p> <p>3.7. Deployment with all necessary packages and features in the deployment environment.</p> <p>3.7. Updating of detailed design document based on the final software architecture and coding.</p> <p>3.8. Software User Manual shall also be released in deployment phase.</p> <p>3.9. Follow and adhere to secure coding guidelines and coding standards.</p> <p>3.10. Shall adhere to project deadlines provided by ISTRAC engineers.</p> <p>3.11. Brief requirements of the software are listed below. However SRS shall be shared with</p>	Yes / No / Explain		
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the bidder during pre-bid meeting.

3.12. Typical ground station comprises of around 80 equipments of maximum 25 different types. Interface with each and every equipment of Ground station using the prescribed protocol for status monitoring & control specific to the equipment. Equipment details and interface description will be provided by ISTRAC.

3.13. Schedule-driven automatic configuration of the station equipments within stipulated time for any upcoming session/satellite passes. It shall ensure the auto-verification and checks for each and every configuration parameters.

3.14. Real-time status monitoring of station equipments during typical session as well as non-session periods.

3.15. Real-time status sharing with spacecraft controllers and external agencies.

3.16. Configuration of station equipment parameters as well as mission specific parameters with respect to each mission.

3.17. Configuration of authentication servers, frontend applications & M&C databases (Mongo dB, MySQL) and hardening of the hardware in line with ISRO security policy.

3.18. Error logging and logging of all transactions

3.19. Planning and implementation of log retrieval mechanism.

		<p>3.20. Generation of pass summary as per requirement document.</p> <p>3.21. Alert message generation &amp; dissemination in the prescribed format and mode.</p> <p>3.22. User-friendly secure GUI with all session and status monitoring features in cluster level as well as from centralized console.</p>			
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4	Scope of work for on-site support services (post deployment & commissioning )	<p>4.1. The software development activity shall be followed by a maintenance phase for duration of three years that is extendable for 02 more years with the same terms and conditions.</p> <p>4.2. The proposed activity shall commence post deployment &amp; GO-LIVE phase.</p> <p>4.3. The bidder shall deploy maintenance team of 02 Nos of Engineers to carry out for on-site support &amp; maintenance activities.</p> <p>4.4. The bidder shall ensure that the team deployed for on-site support services has complete knowledge of the handling operations &amp; maintenance of developed M&amp;C software.</p> <p>4.5. Maintenance of all the M&amp;C software packages deployed across various ground stations.</p> <p>4.6. Configuration and testing of M&amp;C software in a new ground station and making it operational in all respects</p> <p>4.7. Supporting T&amp;E activities of M&amp;C software pertaining to new mission/station.</p> <p>4.8. Configuration control and version control maintenance</p> <p>4.9. Configuration of all equipments in station network with appropriate network configuration</p> <p>4.10. Maintenance of security features by means of system hardening and other stipulated norms</p> <p>4.11. Any other activity as part of the maintenance and operation of M&amp;C</p>	Yes / No / Explain		
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software to ensure seamless operations.

4.12. Regular Monitoring and troubleshooting of all operational issues, configuration issues, system environmental issues.

4.13. Maintaining records of issues, resolutions and carrying out root cause analysis.

4.14. Coordinating with various ground station teams and resolving day to day issues and maintaining the preventive maintenance records.

4.15. Integration of new/existing equipment in M&C software, testing and deployment in a given station or new station in the TTC network.

4.16. Periodic update of all software deployment environments with necessary changes / updates including but not limited to Antivirus update, IT security update & OS update as and when needed.

4.17. Maintenance of all software logs, associated system logs and daily report generation.

4.18. Any anomalies / non-compliance observed for the developed software are to be corrected.

4.19. Post deployment issue resolution and regression testing.

4.20. Any new system requirements towards improvement of functional and performance to be carried out.

4.21. Migration of existing software, OS and other related services to new hardware as and when

		ISTRAC plans hardware replacement. 4.22. New/Redeployment of applications/software as and when required.			
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5	Qualification criteria for On-site Development services: Backend Software Development	<p>It is proposed to develop backend software in Python/NodeJS (ExpressJS) as per design and guidance by ISTRAC Engineers. The bidder shall deploy backend development team to carry out development activities within ISTRAC premises. The backend team shall comprise of a team of Engineers 2 on-site with the following qualifications &amp; skillset.</p> <p>5.1. The development team shall be well qualified (with min. B.Tech/MCA/M.Tech degree in Computer Science/Information Technology). Indicated qualifications will be treated at par without any difference in cost.</p> <p>5.2. Minimum of two engineers shall be provisioned. However, bidder shall deploy more engineers based on requirements, progress of development activities to meet the project timeline, if needed.</p> <p>5.3. Coding Proficiency in Python/NodeJS with strong OOPS concept and working knowledge of Pycharm/Visual Studio Code.</p> <p>5.4. Expertise in Data Structures and Algorithms Design. Knowledge of Micro-services architecture and basics of Networking.</p> <p>5.5. Knowledge of Database (Mongo dB, MySQL etc.), design, configuration and retrieval.</p> <p>5.6. Minimum three years of experience in software development</p>	Yes / No / Explain		
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		<p>using Python/NodeJS. 5.7. The team strength may be increased by the bidder during the project, without any additional cost implications to ISTRAC, in case required, for meeting the delivery schedule. 5.8. Bidder shall assess the team size during pre-bid meeting based on the requirements, schedule and design projected by the ISTRAC team at different phases of the project.</p>			
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6	Qualification criteria for On-site Development services: Front End Software Development	<p>It is proposed to develop GUI Interfaces of the entire M&amp;C software in ReactJS (NextJS) as per SRS &amp; design. The frontend team shall comprise of a team of 2 Engineers on-site and the activity comprises of the following tasks:</p> <p>6.1. The development team shall be well qualified (with min. B.Tech/MCA/M.Tech degree in Computer Science/Information Technology). Indicated qualifications will be treated at par without any difference in cost.</p> <p>6.2. Bidder shall deploy more engineers based on requirements, progress of development activities to meet the project timeline, if needed.</p> <p>6.3. Coding Proficiency in ReactJS, HTML and CSS and working knowledge of Visual Studio Code.</p> <p>6.4. Expertise in JavaScript. Knowledge of web hosting platform.</p> <p>6.5. Knowledge of Database (Mongo dB, MySQL etc.), design, configuration and retrieval.</p> <p>6.6. Shall have expertise to implement software adhering to cyber security guidelines.</p> <p>6.7. Minimum three years of experience in frontend software development using ReactJS.</p> <p>6.8. The team strength may be increased by the bidder without any additional cost implications to ISTRAC, in case required, for meeting</p>	Yes / No / Explain		
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		the delivery schedule. 6.9. Bidder shall assess the team size during pre-bid meeting based on the requirements, schedule and design projected by the ISTRAC team at different phases of the project.			
7	Qualification criteria for On-site support services	<p>The team shall comprise of 2 service Engineers with the following qualification and skill-set:</p> <p>7.1. The development team shall be well qualified (with min. B.Tech/ MCA/M.Tech degree in Computer Science/Information Technology). Indicated qualifications will be treated at par without any difference in cost.</p> <p>7.2. Shall have complete knowledge on the M&amp;C software developed by the bidder in ISTRAC premises.</p> <p>7.3. Proficiency in Python/NodeJS with strong OOPS concept and working knowledge of Pycharm.</p> <p>7.4. Knowledge of Database Mongo dB, MySQL etc., design, configuration and retrieval.</p> <p>7.5. Proficiency in ReactJS, HTML and CSS and working knowledge of Visual Studio Code. Expertise in JavaScript. Knowledge of web hosting platform.</p> <p>7.6. Minimum three years of experience in software development and maintenance.</p>	Yes / No / Explain		

8	Qualification criteria for the Bidder/Party	<p>8.1. All the criteria given in table below are mandatory for qualification. Bids which are not meeting these parameters of the Qualification Criteria shall be liable for rejection.</p> <p>8.2. The criteria shall be met by the entity bidding, and not by the sister/associate companies.</p> <p>8.3. The bidder shall ensure that the requisite documents/details towards Qualification Criteria are submitted along with bid.</p> <p>8.4. Bids which are not accompanied by all the required documents mentioned are liable for rejection.</p> <p>8.5. However, ISRO reserves the right to seek clarifications from the bidders wherever considered necessary.</p> <p>S No. Qualification Criteria Credentials to be provided</p> <p>1. The bidder shall be a Company registered within India for more than three years as on date of closing of tender. Copy of certificate of registration with appropriate validity. Evidence for company's integrity: Party/Bidder to provide Copy of Articles of Association (In case of Registered firm), Bye Laws &amp; Certificates of Registration (in case of registered cooperative society), Partnership Deed (in case of partnership firm) and Establishment Registration Certificate (in case of</p>	Yes / No / Explain		
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Proprietorship firm) should be attached.

2. The Bidder shall not be under a Declaration of Ineligibility for corrupt or fraudulent practices with any Government departments/ agencies/ ministries or PSUs and should not be blacklisted by any government departments/agency/M inistries or PSUs/ private company. : The bidder must upload a self-certified declaration. Self-declaration to be given by Bidder's authorized signatory declaring company's Status regarding banning at the time of submission of bid on Company's Letter Head.

3. The bidder shall have executed/should be executing software development services related to the space-segment/mission-critical environment and related fields (Ground Segment/Spacecraft operations/Space Applications/Space Simulation etc.) during last 3 years. Proof of document towards this shall be provided.

4. The bidder shall have at least 30 software professionals on company including web developer, mobile application developer, and database administrator. Bidder shall have minimum of 10 developer/senior software developer/programmer with minimum 3 years of experience. Proof of document towards this shall be provided with name,

		<p>qualification &amp; designation of the employees.</p> <p>5. The bidder shall have completed minimum 3 software products which are currently operational in mission-critical environment. The total PO value shall be at least 150 Lakhs. This shall comprise of the total value of the number of purchase orders.</p> <p>Proof of bidder's past/on-going services towards software development along with end-user satisfactory completion certificate.</p>			
9	Scheduled timeline of activities	<p>The bidder shall establish, maintain and control a detailed schedule that shows the order in which the works will take place, including identification of major events and milestones and shall cover the period from acceptance of RFP till the end of contract.</p> <p>The bidder shall identify all major software life cycle milestones with timelines and indicate the dates associated with the project deliverables. The bidder shall describe the estimating methodology and the methods employed to determine the effort associated with this project.</p> <p>Detailed timeline of activities is attached as Annexure-1</p>	Yes / No / Explain		
10	Responsibility Matrix	Detailed timeline of activities is attached as Annexure-2	Yes / No / Explain		

11	GENERAL Terms and Conditions for On-site Development/Support Services- Part 1	<p>11.1. The deployed on-site development/support service by the bidder shall be in ISTRAC premises from Monday to Saturday from 08:30 hrs. To 17:30 hrs. except on Sundays and public holidays observed at ISTRAC, Bangalore.</p> <p>11.2. The deployed on-site development/support service by the bidder may have to work extended hours or on holidays if the testing or other activities demand, with prior permission from ISTRAC.</p> <p>11.3. The on-site development/support service by the bidder may have to visit IDSN/MOX campus other than ISTRAC SCC towards testing activities located in &amp; around Bangalore.</p> <p>11.4. The deployed on-site development/support service by the bidder needs to make their own logistic arrangement.</p> <p>11.5. The deployed on-site development/support service by the bidder shall not be replaced with another staff by the bidder during the service period without prior notice of three months in advance.</p> <p>11.6. If the deployed on-site development/support service by the bidder leaves the company, a replacement staff by the bidder shall be deployed in advance in order to ensure knowledge transfer/on job training for uninterrupted development/support</p>	Yes / No / Explain		
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	<p>activity. New staff by the bidder shall be trained and updated with the appropriate domain knowledge by the bidder who has been already working.</p> <p>11.7. The character and antecedents of the deployed on-site development/support service by the bidder shall be verified through record check by the service provider from the concerned police authorities, and original police report shall be submitted to this office.</p> <p>11.8. The deployed on-site development/support service by the bidder working in ISTRAC premises shall follow all the security requirements such as possessing a valid Pass/Id card while entering the campus, maintaining high order of discipline while on duty.</p> <p>11.9. The deployed on-site development/support service by the bidder who is found unacceptable to ISRO because of security risks, incompetence, attendance, conflict of interest, improper conduct or any other reasons, shall be replaced immediately by the bidder upon receiving a written notice from ISTRAC.</p> <p>11.10. The deployed on-site development/support service by the bidder shall not reveal any passwords, documents/work performed during the contract period or after completion of the same to any other person/outside</p>			
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		<p>without the permission of ISTRAC. An NDA (Non-Disclosure Agreement) will be signed with the party. Legal action as deemed fit will be initiated by ISTRAC if this clause is violated by the bidder.</p> <p>11.11. ISTRAC shall have full right on the intellectual property.</p> <p>11.12. The entire code/design document etc. related to this development shall be handed over to ISTRAC and shall be treated as property of ISTRAC/ISRO.</p> <p>11.13. The bidder/ deployed on-site development/support service by the bidder shall not take copy of any drawings/ documents/ software/ softcopies, if any, provided by ISTRAC for the purpose of this activity. If found it will be treated as security breach.</p> <p>11.14. Bidder shall submit the project management plan along with tender response.</p> <p>11.15. Project management plan shall contain details about the team's experience, qualification and expertise of the team to be deployed.</p>		
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12	GENERAL Terms and Conditions for On-site Development/ Support Services- Part 2	<p>12.1. The bidders, who executed the NDA during Pre-bid meeting and attendees of pre-bid meeting only will be eligible/ considered for project execution.</p> <p>12.2. Bidder has to attach the profile of the proposed skill sets with all relevant experience certificate and skill evidences as mentioned in the specification along with the offer. If bidder submits bid without providing relevant skillset data such offer shall be rejected and will not be considered for further evaluation.</p> <p>12.3. Bidder has to offer the same or better skill sets which are projected during evaluation process. In case, bidder is unable to offer the skills as per commitment after purchase order placement, the order will be cancelled.</p> <p>12.4. ISTRAC shall have rights to evaluate the candidates whom bidder is projecting for placement for service. In case it is found that the skillset offered does not have required expertise, then the offer will be rejected. If ISTRAC opts to review the capability of the offered skillset, bidder must arrange for such interaction with-in seven days after intimation. Online mode of interaction will be accepted.</p> <p>12.5. The contract shall stand cancelled with three months' notice at any time during the contract due to unsatisfactory performance.</p> <p>12.6. In case of cancellation of the</p>	Yes / No / Explain		
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contract due to unsatisfactory performance, the bidder shall transfer all the software artefacts like architecture, design, code, libraries, etc., developed so far to ISTRAC.

Completeness of the knowledge transfer shall be verified and approved by ISTRAC.

12.7. The bidder should not assign, sublet or delegate the contract or any part thereof without ISTRAC's consent.

12.8. During placement of the skill sets bidder has to ensure that each skillset shall sign the NDA who will be engaged in this service.

12.9. Bidder shall note that, in case bidder wish to replace any skill set engaged in the project due to internal reasons (like resignation); there shall be minimum 30 days overlap between the existing skill set and replacement for smooth handover of operation.

Competency of the replacement skillset shall be evaluated and approved by ISTRAC technical experts.

12.10. The bidder should note that the safety and regulation requirement for onsite development/support personnel shall be bidders responsibility.

12.11. Safe operation of the software/ equipment / systems under contract is sole responsibility of the bidder/service providers.

12.12. Department shall not pay any compensation for any

		<p>accident that may happen at site. Bidder/Service providers are advised to take suitable insurance cover accordingly.</p> <p>12.13. All the support personnel who deliver service onsite shall have insurance as per regulatory requirements.</p> <p>12.14. The Bidder shall adhere to all regulations as per Ministry of Labour &amp; Employment, Government of India &amp; State of Karnataka and any other statutory / regulatory body.</p>			
13	<p>Payment Terms &amp; Conditions: Payment Terms &amp; Conditions for On-site Development Services</p>	<p>Payment shall be made quarterly post completion of each milestone/quarter with satisfactory certification from the end user. The bidder shall submit the invoice after completion of the quarter to Purchase Section of ISTRAC. Milestone Table is attached as Annexure-3</p>	<p>Yes / No / Explain</p>		
14	<p>Payment Terms &amp; Conditions: Payment Terms &amp; Conditions for On-site Support Services</p>	<p>On-site Support Services shall be for 3 years with quarterly payment on certification by ISTRAC. Payment shall be made quarterly based on satisfactory certification from the end user &amp; assessment by ISTRAC team. The bidder shall submit the invoice after completion of the quarter to Purchase &amp; Accounts Section of ISTRAC.</p>	<p>Yes / No / Explain</p>		

15	Payment Terms & Conditions: LD Terms & Conditions	LD shall be applicable with the following terms: 0.5% of the payment due shall be deducted on not meeting the milestone. For every slippage by a week, will accumulate additional 0.5% to a maximum of 10% of the quarterly payment. This shall be cumulative for every delay per milestone, to a maximum of 10% of quarterly payment.	Yes / No / Explain		
16	Self declaration format on company's letterhead	Bidder shall provide a declaration as per following on company's letterhead – DECLARATION TO ADHERENCE TO REGULATION OF STATUTORY BODIES I/We hereby declare that I shall abide by all the rules & regulations of the local electricity board and Ministry of Law and Ministry of Labour & Employment and any other statutory body and shall also indemnify ISTRAC, Department of Space, and Government of India from any issues arising due to non-adherence of the regulations under these provision.	Yes / No / Explain		

### Supporting Documents required from Vendor

1. Proof of employees' name, qualification and designation (minumum 30)
2. Proof of execution of software development services related to the space-segment/mission-critical environment and related fields (Ground Segment/Spacecraft operations/Space Applications/Space Simulation etc.) during last 3 years
3. Proof of bidder's past/on-going services (minimum 3) towards software development in mission critical environment along with end-user satisfactory completion certificate (Total PO

**Value: atleast 150 Lakhs)**

**4. Proof of minimum 3 years experience for senior developers (min 10 employees)**

**5. Self Certified Declaration declaring company's Status regarding banning at the time of submission of bid on Company's Letter Head.**

**6. Copy of Articles of Association (in case of Registered Firm)**

**7. Certificate of Registration**

**8. Establishment Registration Certificate (in case of Proprietorship firm)**

**9. Partnership Deed (in case of partnership firm)**

**10. Bye Laws & Certificates of Registration (in case of registered cooperative society)**

5 additional documents can be uploaded by the vendor

## C.2 Commercial Terms / Bid

Sl. No.	Description	Compliance	Vendor Terms
1	General Terms & Conditions As per Indentor RFP	Yes / No / Explain	
2	Legal Terms & Conditions As per Indentor RFP	Yes / No / Explain	
3	Payment Terms & Conditions As per Indentor RFP	Yes / No / Explain	
4	Payment Term (Our normal terms of payment is 100% within 30 days from the date of receipt and acceptance of the item at our site)	Yes / No / Explain	
5	Taxes and other costs, if any	Yes / No / Explain	
6	Delivery Period	Yes / No / Explain	
7	Delivery Term	Yes / No / Explain	
8	Security Deposit: FD or BG for 3% of PO value to be submitted after receipt of PO and valid till supply & acceptance.	Yes / No / Explain	
9	Performance Bank guarantee : BG for 3% of PO value to be submitted while claiming payment valid till end of warranty period with a claim period of 60 days.	Yes / No / Explain	
10	SD-cum-Warranty (PBG) (in lieu of SD & PBG as a single instrument): BG for 3% of PO value to be submitted after receipt of PO valid till end of warranty period with a claim period of 60 days.	Yes / No / Explain	

11	<p><b>DELAY IN COMPLETION / LIQUIDATED DAMAGES :</b> If the Contractor fails to deliver the stores within the time specified in the Contract or any extension thereof, the Purchaser shall recover from the Contractor as Liquidated Damages a sum of one-half of one per cent (0.5%) of the Contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10%) of the contract price of the unit or units so delayed. Stores will be deemed to have been delivered only when all their component parts are also delivered. If certain components are not delivered in time, the stores will be considered as delayed until such time as the missing parts are delivered.</p>	Yes / No / Explain	
12	Warranty	Yes / No / Explain	
13	Validity	Yes / No / Explain	
14	<p>Name and Address of the company on whom purchase order to be placed (OEM if any should be added in your E-Procurement profile under Add Agent/Principal without fail). Address indicated here must be available in your profile as a Principal/Agent failing which PO will be placed on the e-procurement address available in the profile.</p>	Yes / No / Explain	
15	<p>Certificate of Undertaking: Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods or services (including consultancy services and non consultancy services) or works (including turn-key projects) only if the bidder is registered with the Competent authority (i.e. DPIIT). Hence, it is mandatory to furnish Certificate of Undertaking as indicated in the tender document.</p>	Yes / No / Explain	



16	Foreign vendors are permitted to quote. 1.Class -I and Class-II Local suppliers as per make in India policy are also eligible to participate in the bid. 2. The percentage of local content should be specifically mentioned in the offer if the quote is from Class-I or Class-II local supplier 3. Preference will be given to class-I Local Supplier and in their absence, class-II Local suppliers and in their absence Non-Local suppliers will be considered.	Yes / No / Explain	
17	Percentage of local content for the quoted item.	Yes / No / Explain	
18	Details of location (s) at which the local value addition is made	Yes / No / Explain	
19	GeM Seller ID: As per Gol OM No. 6/9/2020-PPD dated 24.08.2020 and DO No. 170/CEO-GeM/2020, sellers providing Goods and Services to Central Government Organizations shall be registered on GeM and obtain a unique GeM registered ID. Hence please get registered in GeM and furnish your GeM Seller ID.	Yes / No / Explain	
20	Any other terms	Yes / No / Explain	

### C.3 Price Bid

Sl. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark
1	SOFTWARE DEVELOPMENT SERVICES	1.00 Years		-		
2	SOFTWARE MAINTENANCE	3.00 Years		-		

### Common charges (Applicable for all items)

<b>P&amp;F Charges</b>	
<b>Freight Charges</b>	
<b>Installation Charges</b>	

<b>Documentation &amp; Handling Charges</b>	
<b>Other Charges (If any)</b>	