

**Request for Proposal (RFP) document for Supply, Installation, Testing, Commissioning, Certification, Documentation, Training, Operations and Maintenance of IP based Private Automatic Branch Exchange (IP-PABX) with Server-Gateway Architecture.**

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## 1 Scope of the Work

- 1.1 Scope of the work includes **Supply, Installation, Testing, Commissioning, Certification, Documentation, Training, Operations and Maintenance** of IP based Private Automatic Branch Exchange (**IP-PABX**) with Server-Gateway Architecture, as per the specifications given in this document (**RFP**) in Vikram Sarabhai Space Centre (**VSSC**).

The IP-PABX should support distributed architecture wherein it should be possible to distribute/re-distribute servers as well as media gateways at different locations in VSSC. The IP-PABX system must be based on SIP standard so that all standard SIP terminals available in the market can work with the system without any problem and shall support H.323 end points and should have gateways with universal slots which can accommodate PSTN CO lines, Analog Lines, Digital Lines and GSM Gateways. The system shall be capable of Migration from the existing Exchange with Analog phones to the new one, with minimum downtime.

## 2 System Configuration, Features and Specifications

- 2.1 The IP-PABX should be of Server-Gateway architecture with Hot redundancy/ Active Standby in servers and with redundant hot swappable power supplies in all Servers, Gateways and Switches. It should be possible to distribute servers as well as media gateways at different locations and redistribute as and when required. All the required accessories for connecting multiple gateways and servers, necessary interface cables to connect gateways to server and IDF should be provided by the party. Supplier shall carry out all activities related to redistribution of gateways during the Warranty/ comprehensive Annual Maintenance Contract (AMC) period. The system shall be based on open standard, running preferably on Linux OS and should support Analog, Digital, IP, SIP and Mobile Application Extensions.
- 2.2 Table 1 provides Location of Exchange with Server-Gateway configuration. Two servers (S1, S2) to be installed in VSSC campus in two geographically different locations with one as Main and other as Hot standby server. Third server (S3) to be installed in remote location RL2. Servers S1, S2 and S3 should be of same configuration and in case of failure of any 2 servers in this set to be handled by the third server without disrupting any of the ongoing call.
- 2.3 Server S4 will be installed at RL3 and should be connected to server S1 through SIP trunk. OFC connectivity between servers will be provided by VSSC. Local survivable server or suitable switching mechanism to be provided along with the Gateways in locations as per Table1 for independency and survivability during link failure. The System should ensure compatibility with the existing campus-wide Analog Telephone network and Telephone instruments shall be retained and interconnected to the proposed exchange after installation and Testing of the proposed IP-PABX. The Central Location in VSSC where two Servers are in Hot standby mode,

- should have minimum 500 simultaneous voice paths available to communicate with all other locations (including remote locations)
- 2.4 The offered system should have a valid TEC Test approval by TEC (Telecommunication Engineering Center, Department of Telecommunications, Govt. of India). TEC test approval for all Type- I, II & III should be mentioned in the TEC Certificate. The tenderer must submit valid TEC certificate as per latest TEC format for the particular model of system Quoted and the same must be issued in the name of Manufacturer/ dealer of OEM/ Bidder.
  - 2.5 The IP-PABX should be capable of supporting 6500 Analog phone lines, 500 Soft phones and shall be expandable up to 10000 analog lines, 1000 soft phones and 50 IP phones (up to 500 in future) as and when required. The architecture of IP-PABX should be capable of seamless migration to its maximum capacity by simply adding user licenses and media gateways without compromising on any functions/ features of the system or any degradation of service.
  - 2.6 The IP-PABX shall be able to switch simultaneously voice, data and images without any degradation of service quality.
  - 2.7 The system should support SIP trunks to interoperate with other PABXs and also to work with SIP Trunk from service providers. OEM should provide Session Border Controller (SBC) for secure communication. The system should provide complete inbuilt encryption capabilities or features without any external firewall, with the ability to encrypt all traffic (media and call control signaling) between IP phones, soft phones, call controllers and all other associated endpoints via a strong encryption algorithm like Transport Layer System (TLS) protocol and Secure Real-time Transport Protocol (SRTP).
  - 2.8 In case of failure/busy SIPs, the proposed IP-PABX should changeover to the alternate route (e.g., Fixed Cellular Terminal- FCT) provided by VSSC automatically without affecting the ongoing calls.
  - 2.9 The system should adhere communication security standards in Network, Call server and management in accordance with the guidelines issued by Department of Telecommunications and Department of Electronics & IT, Govt. of India.
  - 2.10 Management of all servers in cluster should be from the same web page.
  - 2.11 The communication server should be of superior traffic handling capacities and offer BHCC (Busy Hour Call Completion) of at least 2,00,000 or higher per server.
  - 2.12 All gateways should be of same OEM. Media gateway shall be of modular type with web managing interface. Gateways should support the Analog, Digital, FXO, GSM, RIC, E&M & PRI and the following type of trunks: E&M (2W), E&M (4W), DTMF, SIP, CO Trunk.
  - 2.13 When the system goes down due to any reason (say failure of both prime and redundant power or some other fault), the system should have auto restart capability to automatically reload the system software once system power is restored/fault rectified and resume IP-PABX operation.

- 2.14 The offered system shall have built-in self-test diagnosis and audio/ visual alarm/ annunciation devices to provide the first-hand information regarding malfunctioning/ failure in the system.
- 2.15 System availability of 99.99% or higher to be ensured. The hot redundancy and high availability have to be configured and demonstrated before Commissioning of the IP-PABX.
- 2.16 Essential spares needed for the maintenance of IP-PABX to be listed and supplied along with the system/ before commissioning of the system. Cost of the essential spares to be included in the quote and the spares to be kept inside VSSC campus.
- 2.17 System to be powered from Uninterruptable power Supply (UPS). UPS with required capacity and features to be supplied and installed at all locations, along with the IP-PABX installation. UPS shall be capable of supplying power to other associated equipments, including servers, network switches and computers, supporting at least 6Hrs backup time. All the required racks for battery, cabling and accessories shall be provided by the supplier. In case of a power failure, automatic change over to the UPS and alert/ alarm has to be generated.
- 2.18 Supplier shall be responsible for providing adequate lightning protection for the Exchange equipments, up to IDF. Required Earth connection for the IP-PABX will be provided by VSSC.
- 2.19 The system should provide call logging and the details such as all type of dialed number, received and missed call details of all extensions as well as all type of Trunk lines. System Audit Logs for 365 days (minimum) needed.
- 2.20 System should be capable of providing centralized voicemail with the option of distributed/ centralized voicemail.
- 2.21 System should be able to record minimum 30 internal/external inward/outward calls simultaneously with storage for retaining at least one-month data. The numbers/calls to be recorded (including PSTN) shall be selectable and dynamically changeable through software interface with proper authentication.
- 2.22 The System should have the facility to create multiple groups with customized messages, able to assign designated codes and authorization so that programmed messages are communicated to the defined groups.
- 2.23 Provision for conveying prerecorded messages to predefined numbers to be provided. The system should be able to program the schedule, number of retries, facility to upload the numbers as excel file, able to upload recorded message in .wav, .mp3 or any other industrial standard formats.
- 2.24 The bidder shall provide the fault diagnosis (feature to monitor the end point status is preferred), fault analysis, fault correction and software loading tools for the offered system. The tools shall be capable of taking online backup of entire database and reload the system software along with database in case of the software failure. The tools shall be loaded on a PC equipped with required hardware interface and the licenses. The

- bidder shall supply anti-virus software and updates during the warranty period and AMC period without any additional cost.
- 2.25 Fault tree diagram/chart showing all possible fault symptoms/observations of the IP-PABX and list of related malfunctioning/failure of subsystem/part to be provided during installation and commissioning of the IP-PABX.
  - 2.26 The offered system shall work satisfactorily under following environmental conditions- Temperature: 15°C to 45°C, Humidity: 50% to 90% RH.
  - 2.27 The System Administration and programming can be done through a web-based GUI interface. A user-friendly GUI should be there to manage and maintain the system, monitor end point status, creation/deletion of users and enable/disable facilities. The administrators should have Dynamic Profiles. The system should allow for complete multi-level Administration. The Administrator must be able to define minimum three (3) different Administration level profiles that can be applied to allow subsets of users to access and manage particular pages in the system Web Portal. Administration of the system shall be using HTTPS. Event notifications and alerts via E-mail/ SMS to Administrators shall be provided. Software shall have provision to generate alerts and necessary status reports, Call billing and accounting for external and internal calls. Provision for feature wise listing of numbers may be provided. All Software supplied should have valid perpetual license and shall be customizable for the requirements of VSSC. OEM support for this has to be ensured. Soft IP phone client software for different OS (windows/linux) to be provided. All application software/ Database package required for the completion of the project shall be supplied with valid perpetual licenses.
  - 2.28 Network Management Software (NMS) should be supplied along with the system to manage and maintain the network with popup fault alarms.
  - 2.29 The bidder shall offer PC or IP phone based operator console with a detailed description of features. The console shall be equipped with a headset for hands free operations. Operator console should have the features like call waiting indication with selection keys for hold, mute, redial, transfer, hands-free speakerphone with local phonebook and remote phonebook, Key programming and 3-way conferencing.
  - 2.30 If the offered system/product has capacity/specifications higher than that specified in RFP and similarly the offered product has more than the specified features, facilities and functions, then such system is also acceptable, subject to clearance from VSSC. However, facilities and functions will not get any weightage in the technical bid and price evaluation.
  - 2.31 If required, VSSC may ask the party to demonstrate the proposed IP-PABX setup along with sample equipment during technical evaluation time to verify the technical specification and assess the system. In case of failure to demonstrate, the bidder will be declared disqualified.
  - 2.32 Detailed Specifications of the proposed system with system configuration diagram and detailed specifications of each of the subsystem to be

provided along with the quote. Conformance Certificate/ Certified Test results to be attached while delivering the item.

### **3 Telephony features required**

- 3.1 Voice mail: Voice mail must be embedded within the platform. User should be able to listen, delete, save, reply and forward messages through the phone. It shall have proper method to alert users about the presence of voice mail and also easy means to listen to those voice mails.
- 3.2 Auto Attendant: Auto Attendant shall greet incoming calls and announce service messages.
- 3.3 Interactive Voice Response System (IVRS): The IP-PABX should support and interactively assist the external callers to reach their destination easily with distinct message options. It shall be configurable by system Administrator with user defined messages.
- 3.4 Call Forwarding: Automatic Call Transfer to another internal extension number with call forwarding on 'Busy' to identified extension phone shall be possible through programming in Exchange.
- 3.5 Call Park: User should be able to put an on-going call on hold and then retrieve the same call from any other internal phone on the system.
- 3.6 Group call pickup: Must be able to group Phones in an office for call pick-up and to answer a call to any member of the pick-up group should be possible from any of the free phones by dialing a code. Even if not in call pick-up group, user shall be able to pick up any ringing phone by dialing a code followed by extension number of the ringing phone.
- 3.7 Call back: If the internal telephone is busy during the call attempt, provision (with dialing a code) shall be there to ring back when the called phone becomes free.
- 3.8 Dynamic locking: Dynamic intercom/STD locking shall be provided.
- 3.9 CLI: Caller Line Identification should be displayed on Analog Telephones (with CLI), Digital Telephones and IP Telephones.
- 3.10 Discriminate Ringing: The offered system shall provide distinctive ringing for internal calls, external calls, auto call back calls and certain emergency services.
- 3.11 Music on hold: The system should support MOH (Music on hold), which should be uploaded using the .wav, mp3 or any industry standard format file.
- 3.12 Boss-Secretary feature: The incoming call to the officer shall ring on secretary's phone with option of ring on both telephones. It should be possible to activate the Boss/Secretary telephone for enabling the telephone for above features. It should be possible for the Boss/Secretary to contact each other using one touch key on digital telephone and by dialing one or two-digit code on analog telephone.
- 3.13 Soft Phones: Soft phones shall be Web based. Simultaneous call alert should be there for analog phone/soft phone. Missed call alert, call back, audio conference/video conference capability are the minimum features

required for the soft phone. Facility to dial as audio/video call, call history Search (Call Log: incoming, outgoing and missed calls), Call Transfer (Conditional like Busy, DND, No Answer and Unconditional) Group Call Pickup, Voicemail, etc. shall be there.

- 3.14 Audio/Video conference features: The system shall have minimum 10-party simultaneous voice-conferencing in any combination of external and internal parties.
- 3.15 Multiple conferences with variable number of users should be possible within each of the conferencing banks. System should be able to generate detailed reports about the conference, should support scheduling of conference call and Conference should be available in various modes.
- 3.16 The system should be Capable of conducting video conferencing with minimum 4 parties and simultaneously at least 5 such video conferencing sessions shall be conducted with hard and soft phones.
- 3.17 Priority Answer: User can set priority numbers so that user get alert for important calls.

#### 4 Supply and Installation of IP-PABX system

- 4.1 The technical description and functioning of the offered system to be mentioned clearly in the technical bid with the help of block diagram showing the main parts (systems and subsystems) and interfaces, where it will be positioned (location) and interconnections of the system.
- 4.2 The bidder shall submit the equipment layout plan with dimensions, powering requirements including power consumption and details of the accessories for the proposed system shall be clearly stated.
- 4.3 The IP-PABX (6500 Lines) to be configured as mentioned in Table-1

**Table 1: IP-PABX Locations and Capacity**

Sl. No.	Location ID	Capacity	Configuration
1	L1	800	Server (S1), Gateways and LAN Switch with SIP Trunk
2	L2	600	Server (S2), Gateways and LAN Switch with SIP Trunk
3	L3	500	Gateways and LAN Switch
4	L4	300	Gateways and LAN Switch
5	L5	500	Gateways and LAN Switch
6	L6	500	Gateways and LAN Switch
7	L7	500	Gateways and LAN Switch
8	L8	700	Gateways and LAN Switch
9	RL1	200	Local survivable Gateways and LAN Switch

10	L9	700	Gateways and LAN Switch
11	RL2	800	Server (S3), Gateways and LAN Switch with SIP Trunk
12	RL3	400	Server (S4), Gateways and LAN Switch with SIP Trunk

Location L1 to L8 are in VSSC campus, Remote location RL1 is in VSSC Poly clinic, Pattam, Remote location RL2, L9 are in ISRO Vattiyookavu complex, Remote location RL3 is in VSSC-APEP, Aluwa

- 4.4 Interconnection between Main Exchange to Branch exchanges and remote locations has to be done through Optical Fiber Cable (OFC) and OFC connectivity will be provided by VSSC.
- 4.5 Smooth Migration from existing Exchange to the new one with minimum down time shall be ensured. Supplier shall provide the details of installation and migration plan of all the locations in detail, which is to be agreeable for VSSC for proceeding with the installation. All the existing telephone connections shall be made operational in the first phase itself.
- 4.6 All the locations shall be connected with OFC network in ring mode so that failure of one link will not affect the operation IP-PABX. IP/LAN network will be provided by VSSC. LAN switches with hot redundant power input to be provided by the bidder. LAN switches should also support the ring topology with the Branch exchanges. Sufficient numbers of Layer 3 and Layer 2 Networking devices need to be supplied to establish the ring network. Supplier shall provide all the necessary interconnecting cables and accessories required for the installation.
- 4.7 Installation of IP-PABX system and Cable interconnection from gateways to IDF required for the installation of IP-PABX to be done by the party (Back panel edge connectors are preferred). Indian standards and DoT guidelines to be followed for configuring and wiring of the Telephone exchange. All cables used shall be of LHLS (Low Halogen Low Smoke) type.
- 4.8 One official from VSSC will be identified as the focal point who will be in charge for the overall supervision of the installation and commissioning of the proposed Exchange.
- 4.9 Installation involves transportation of items to the identified locations, material handling, deployment of required man power, integration of the system with the existing system, interconnection between gateways to IDF, software installation, configuration of the system, customization, etc.
- 4.10 Bidder shall submit the pre-requisite for preparation of telephone exchange room, UPS and battery room, AC power supply and Air Conditioning requirement for the system in each location along with their offer. VSSC will

provide the equipment room and Air conditioning for the installation, as per the pre-requisite.

- 4.11 Bidder shall make all the arrangement for installation and commissioning of the system along with UPS and accessories in accordance with the schedule. The system operation and acceptance test shall be conducted on site for the final acceptance and certification. The bidder and VSSC team together shall work out the details of the test and test procedure after placement of the purchase order.
- 4.12 Hardware and tools required for installation and testing of the system shall be arranged by the bidder.

## **5 Testing, Commissioning, Certification, Documentation, Training and Operations & Maintenance**

- 5.1 Bidder shall submit the installation report including the configuration and as built connectivity diagrams, Operation and Maintenance manuals, Fault tree diagram, Test certificates, Brochures, original media and licenses of the software etc.
- 5.2 All the tests mentioned in the Test plan, generated in concurrence with the VSSC focal point has to be conducted by the bidder in presence of VSSC focal point to confirm satisfactory operation and performance evaluation of the system.
- 5.3 Preparation and implementation of the voice numbering plan and corporate directory plan shall be done in consultation with the focal point, VSSC.
- 5.4 Onsite training shall be provided directly by the OEM/OEM certified engineer, without any additional charges to the nominated team of VSSC staff (minimum 5) in System Administration (System configuration/ programming and System Management software), Operations, Fault identification, Troubleshooting and Maintenance of the installed telephone exchange. Training shall be provided for the Officials at VSSC premises. The Bidder shall make adequate training material for the proposed system available for the VSSC staff.
- 5.5 Bidder shall submit two sets of documents (Bound manuals as a hard copy as well as soft copy) which shall include the system configuration and specification of all subsystems with descriptions, installation and commissioning procedure, system programming, operating procedure, step by step fault diagnosis and fault rectification, Operator attendant and console manual.

## **6 Warranty and Maintenance support**

- 6.1 All equipment/ racks/ materials installed in IP-PABX shall be covered under onsite comprehensive warranty for 3 years from the date of commissioning by VSSC. The warranty shall include free replacement of the faulty systems and service charge.
- 6.2 Bidder should submit the rates for manufacturer backed on-site comprehensive AMC for additional seven years along with the tender, applicable after the completion of warranty period. The comprehensive AMC should cover cost of spares needed and service charges. Bidder shall submit valid authorization letter/certificate from OEM for Supply, Installation, Warranty and Maintenance support for the offered system for 10 years (3 years warranty and 7 years comprehensive AMC after warranty period) in VSSC against this tender. Award of the AMC will be made through a separate Purchase order at the end of satisfactory completion of the warranty period.
- 6.3 Bidder should submit the mechanism of the service support planned for VSSC, in the form of a flow diagram starting from lodging complaint to fault rectification.
- 6.4 During the warranty and comprehensive AMC period, the bidder shall maintain an Exchange uptime of 99.99% or more. In case of lesser availability, the warranty/comprehensive AMC will be extended by one month for each 1% of shortfall in availability of the complete system.
- 6.5 Bidder shall position one Engineer/ Technician at Thiruvananthapuram for regular up keeping, Operations and Maintenance of the IP-PABX during the tenure of the Warranty and AMC. The Engineer/ Technician shall have experience and expertise in up-keeping and maintenance of Telephone exchanges and shall strictly adhere to the disciplines and IT security policies being followed by VSSC. The Engineer/ Technician have to produce Police Verification certificate in accordance with our administrative guidelines. The Engineer/ Technician will be reporting to the Officer in Charge of IP-PABX, VSSC and shall be available not only during office hours but also during holidays and late office hours whenever needed.
- 6.6 Bidder should attend the breakdown call within 4 hours after reporting the fault. If any replacement/ repair of the defective parts is required, it should be done within 48 hours from the time of reporting. In the event of breakdown call is not attended on time, down-time compensation will be imposed, as applicable.
- 6.7 Monthly monitoring of parameters/ preventive maintenance shall be carried out which includes verification and logging of critical/major parameters and ensuring that they are within the specified range. Testing of subsystems and logging of test results periodically (every month) and preventive maintenance of the equipment will be responsibility of the bidder during the warranty and AMC period. Proper up-keeping of the IP-PABX to be done so that the facility will function and provide service for

24X7.

- 6.8 Bidder shall maintain adequate spares listed and submitted in the quote at VSSC premises for the up-keeping, maintenance and smooth functioning of the Exchange subsystems.
- 6.9 Bidder shall be responsible for all the upgrades and updates of the firmware and application software during the warranty period as well as the comprehensive AMC period. A declaration from the Supplier/OEM certification for up-keeping of the Telephone Exchange during the 3 Year Warranty period and subsequent 7 Year AMC period shall be submitted, to ensure that the IP-PABX functioning will not be affected even in case of the items are obsolete during the contract period.
- 6.10 It will be the responsibility of the bidder to meet transportation, food, medical and any other requirements in respect of the manpower deployed in VSSC and VSSC will have no liabilities in this regard.

## 7 Milestones and Payment

- 7.1 Part payment based on Supply, Installation, Commissioning, Certification, Documentation and Training will be provided based on the successful completion of Milestones mentioned in Table 2.

**Table 2: Milestones**

Sl. No.	Milestone description	Period	Part Payment
1	Supply of subsystems and other items needed for IP-PABX	Within 10 weeks from acceptance of Purchase Order	Up to 40% or order value or 80% of the supplied item's value, whichever is less, within one month of receipt of items.
2	Installation, Testing and Commissioning of IP-PABX	Within 18 weeks from acceptance of Purchase Order	Up to 30% or order value, within one month of installation, testing and successful commissioning of IP-PABX.
3	Certification, Documentation and Training	Within 20 weeks from acceptance of Purchase Order	Remaining amount of order, within one month of completion of Certification, Documentation and Training.

## 8 Mode of tendering

- 8.1 The tender should be submitted in **Two-Part** mode. Techno-commercial bid (**Part-I**) and Price bid (**Part-II**) shall be submitted in separate sealed covers.
- 8.2 Techno-commercial bid should not contain any price details.

**In case if any price details are mentioned in part-I the said offer WILL NOT BE considered.**

## 9 Eligibility Criteria for Qualifying Technical Bid (Part-I)

- 9.1 List of items as per Table 4 in Annexure A should be attached.
- 9.2 Bidder (OEM/Authorized service provider) shall have at least three years of experience in Supply and Installation of PABX systems in India. Certificate to this regard shall be enclosed in the bid.
- 9.3 Bidder shall have successfully carried out multiple installations of IP-PABX systems of similar nature with 3500 connections or more. The documentary evidence of the placement of Purchase orders for Supply, Installation, Operations, maintenance and support provided by the party for such installations in the following format is mandatory.

Table 3: Details of installations

Sl. No.	Customer Name and Address	Year of Installation	Number of connections	Details to be furnished (PO copy and Completion Certificate)
1				
2				
3				

- 9.4 Bidder shall not have been de-listed from business by any PSU/Government Department during last three years. Self-declaration in this regard shall be provided. In case the declaration is found wrong, at any time during the processing of the tender, their offer won't be considered for further processing.
- 9.5 Bidder shall have minimum one customer service center in India for more than a year for Installation and Maintenance support of IP-PABX system of similar features. The bidder shall submit the documentary proof along with the list of centers.
- 9.6 Bidder shall submit details of financial standing of the company viz. Income Tax Clearance Certificate/ PAN number, Annual report (Balance sheet and profit and loss account for the last 3 years). Bidder shall submit details of the Annual turnover in a tabulated form for the last three years. Bidder should have the positive net present worth and no Bankruptcy for the past three years and the balance sheet supporting the same shall be submitted.
- 9.7 Bidder shall submit a certificate from their Chartered Accountant certifying the Net worth after considering all liabilities as per Audited Balance sheets and loss account for the last financial year. It is further required that certification from CA mentioning that bidder has not eroded by more than 30% in the last 3 years ending on 2023-24.
- 9.8 Bidder shall submit a letter of assurance from OEM stating that in case a purchase order is placed on the bidder, there will be no problem in supply of the equipment to VSSC as the end-user due to any export restrictions by

the exporting country(s), if any imported systems are used. This letter shall also confirm that all the hardware and registration of licensed software will be on the name of the end user (VSSC). The said **letter of assurance shall be submitted along with the Technical bid, failing which bidder's offer shall not be considered.**

- 9.9 This project has to be executed on turnkey basis. Equipment/ material not covered in this proposal but essential for the completion of the project shall be included in the Techno-Commercial bid. The bidder shall quote for all such items with unit rates in the price bid. The offer shall be for complete scope of work as specified in the tender document. **Part/Split offer is Not Acceptable.**
- 9.10 **All items of the equipment/accessories in this tender shall be new and complete in all respect** for the IP-PABX system.
- 9.11 During the tender evaluation phase, bidder may be asked to explain in person in the form of presentation and documents to satisfy their technical capability and plan for execution. Bidder should be ready to demonstrate the offered product if demanded by VSSC.
- 9.12 Provisions of Make in India Policy 2017 or latest, issued by Govt. of India, as amended from time to time, shall be followed for consideration of tenders. The tenderer claiming benefit under this public procurement policy (Make in India) should provide self-certification in form-1 specifying that the item offered meets the minimum local content requirement and shall give details of the locations(s) at which the local value addition is made. The tenderer should upload self-certification with completed details as Form-1 (Format for self-certification regarding local content (LC) for telecom product, Services or works) issued by Department of Telecommunications, Ministry of communications vide notification published in the Gazette of India Extraordinary (Part I Sec. I), New Delhi, the 29th August-2018 or the latest.
- 9.13 Hardware or Software from OEMs of the countries which shares land border with India will be eligible to bid in any procurement only if the bidder is registered with the Competent Authority of Govt. of India. Documentary evidence of such registration shall be attached along with the offer, otherwise the offer will be rejected.
- 9.14 **Participating in Pre-bid meeting is mandatory.** Bidders can make site visit for better understanding of the existing Exchange in VSSC and assess the space availability, raw power availability and Air conditioning. However, advance intimation shall be made to Purchase so that entry pass shall be arranged and VSSC officials shall co-ordinate with the respective teams for the site visit.

## 10 Technical Compliance

- 10.1 Bidder shall provide line by line Technical Compliance for each of the specifications mentioned in the tender, as per Annexure E.

- 10.2 In case, the offered item deviates from the required specifications, the bidder shall indicate that clearly in the Remarks column of Technical Compliance Sheet.
- 10.3 Details of the offered items including make, model and technical Specifications are to be submitted along with the Quote. Softcopy of the Manuals/ catalogues/ Datasheets may be added. All the required/relevant specifications shall be highlighted in the data sheet.

### **11 Price Bid (part-II)**

- 11.1 Bidder shall quote item-wise rates (per unit cost and total cost) as per Table 5 in Annexure B should be attached.
- 11.2 Item wise GST component also to be shown in the price bid.
- 11.3 Any additional items required are to be included in the bill of material.

### **12 Terms & Conditions for the Installation and after sales Service**

- 12.1 Bidder shall arrange adequate Accident insurance coverage of their personnel while working at VSSC. VSSC shall not be responsible for any liability arising out of any accident/injury caused to bidder's personnel while executing the work at VSSC.
- 12.2 Bidder's persons while working at VSSC shall strictly follow the VSSC office timing, rules and regulations and security and safety guidelines of VSSC. To the extent possible, the work shall be carried during normal working hours of VSSC office (8:45 AM to 5:15 PM; Monday to Friday). Prior permission and supervision of VSSC staff will be required to work on holidays and beyond office hours on working days.
- 12.3 Bidder shall arrange all materials and tool kits in sequence, well in advance of work schedule to execute the work. Transportation of all materials, tools and manpower to and from work places is to be arranged by the bidder.
- 12.4 During installation, commissioning and maintenance of the system, bidder has to arrange own accommodation for his personnel.
- 12.5 The bidder shall be responsible for any loss or damage during transportation, handling, installation and commissioning of the system. In case of any damage the bidder will repair/ replace the same at his own cost.
- 12.6 Bidder has to strictly follow the Guidelines issued by Dept. of Telecommunications and Dept. of Electronics and IT, Govt. of India wherever applicable.

## Annexures

### Annexure A- List of items required for IP-PABX

(To be attached with technical bid Part-I)

List of the Hardware and Software required for IP-PABX system is listed below. Bidder may suitably modify the list according to the configuration proposed, add additional items if required. Bidder should submit technical datasheet from original equipment manufacturers (OEM).

**Table 4: List of Items**

Sl. No.	Item	Make/Model	Qty (Nos.)
1.	Dual power input Communication Servers - Rack mounting type. (Servers in L1, L2, RL2 are in Active-Active/Hot standby redundancy Mode and RL3 will be linked with L1).		4
2.	Dual power input Gateways - Rack mounting type. (L1 to L9, RL2, RL3).		11
3.	Dual power input Gateways (Self survival type) - Rack mounting type. (RL1).		1
4.	UPS of suitable capacity with SMF batteries for 6 hour backup in each location. (L1 to L9, RL1, RL2, RL3)		12
5.	Dual power input LAN Switches with triple fiber in for Ring connection - Rack mounting type. (L1 to L9, RL1, RL2, RL3).		12
6.	Racks for Mounting Server, Gateways, LAN switch, etc. with power supply points.		12
7.	Analog extensions license (The required Gateways for 12 Locations as per the requirement list has to be clearly mentioned in the offer).		6500
8.	Soft Phones with audio and video conference license.		500
9.	SIP trunk -500 lines to be provided (L1 -90, L2 - 120, RL2 -60, RL3 -30, interconnecting exchange - 200)		500 lines
10.	SIP license for IP devices		300 lines
11.	System Management software.		1
12.	Network Monitoring System (NMS).		1

13.	Call Billing/Accounting & Call data recording software		1+ 1
14.	Call Recording software for all internal/external calls (30 channels minimum).		1
15.	Interfacing Cables for interconnecting gateways and IDFs of 1000 lines in addition to 6500 lines		1 set
16.	Comprehensive AMC for seven years after completion of three year warranty		1
17.	Additional items required if any		
18.	Essential Spares (list of items)		

## Annexure B- Bill of Materials (BOM)

(To be attached with price bid -Part-II)

Bill of material required for IP-PABX system is listed below. Bidder may suitably modify the list according to the configuration proposed, add additional items if required.

**Table 5: Bill of Materials (BOM)**

Sl No	Item	Make/Model	Qty (Nos.)	Unit rate	Tax (%)	Total Amount
1.	Dual power input Communication Servers - Rack mounting type. (Servers in L, L2, RL2 are in Active-Active/Hot standby redundancy Mode and RL3 will be linked with L1).		4			
2.	Dual power input Gateways - Rack mounting type in L1 to L9, RL2, RL3.		11			
3.	Dual power input Gateways - Rack mounting type; Self survival type in RL1.		1			
4.	UPS of suitable capacity with SMF batteries for 6 hour backup in locations L1 to L9, RL1, RL2, RL3.		12			
5.	Dual power input LAN Switches with triple fiber input- Rack mounting type. (for Ring connection, in locations L1 to L9, RL1, RL2, RL3).		12			
6.	Racks for Mounting Server, Gateways, LAN switch, etc. with power supply points in locations L1 to L9, RL1, RL2, RL3.		12			
7.	Analog extensions license (The required Gateways for 12 Locations as per the requirement list has to be		6500			

	clearly mentioned in the offer).					
8.	Soft Phones with audio and video conference license.		500			
9.	SIP trunk -500 lines to be provided (L1 -90, L2 -120, RL2 -60, RL3 -30, interconnecting exchange - 200)		500 lines			
10.	SIP license for IP devices		300 lines			
11.	System management software.		1			
12.	Network Monitoring System (NMS).		1			
13.	Call Billing/Accounting & Call data recording software		1+ 1			
14.	Call Recording for all internal/external calls (30 channels minimum).		1			
15.	Interfacing Cables for interconnecting gateways and IDFs of 1000 lines in addition to 6500 lines		1 set			
16.	Comprehensive AMC for seven years after completion of three year warranty					
17.	Additional items required if any					
18.	Essential Spares (list of items)					

**Annexure C – Form I, II, II (A) and II (B)**

**FORM I**

(To be in the Firm's letter head)

Date: .....

**FINANCIAL CAPABILITY**

The details of Summary of Annual Turnover of the Bidder on the basis of the Audited Balance Sheet for the last three financial years shall be given as under

<b>Sl. No.</b>	<b>Financial year</b>	<b>Total Turnover</b>	<b>Uploaded reference</b>	<b>page</b>	<b>no.</b>
01	Year 20.... – .....	Rs. ....			
02	Year 20..... – .....	Rs. ....			
03	Year 20..... – .....	Rs. ....			

Note: The Profit & Loss statement and Balance sheet to be uploaded shall be duly certified by the Chartered Accountant.

(Signature of Authorized Person)

Place: .....

Name: .....

Date: .....

Designation: .....

Business Address: .....  
.....

Office Seal:

**FORM – II**

(To be in the Firm's letter head)

Date: .....

**SIMILAR WORK EXPERIENCE**

The Bidders experience in similar work carried out each in any Central / State Government / Autonomous bodies / PSEs/PSUs / Nationalised Banks / Public Limited or Private Limited Companies, etc., for evaluating the Eligibility Criteria for pre-qualification to be provided using the format as below:

Details of Similar Work Experience:

Sl. No.	Name of work	Value of work executed (in Rs.)	Work order reference No.	Contract period		Date of completion certificate	Name and address of the Client	Uploaded page no. reference
				Commencement	completion			
1								
2								
3								

Note:

1. The copies of the documents containing above information like work order and completion certificate in the at attached Form II(A) have to be uploaded duly self-attested.
2. In case of experience other than Central / State Government / Autonomous bodies / PSEs/PSUs/ Public Limited Companies, the bidder has to submit TDS certificate for the past experience to be uploaded, as provided in form II (B), only then the experience will be considered.

Yours faithfully,

(Signature of Authorized Person)

Place: .....

Name: .....

Date: .....

Designation: .....

Business Address: .....  
.....

Office Seal:

**FORM – II (A)**

**EXPERIENCE / COMPLETION / PERFORMANCE CERTIFICATE**

(To be issued in the Company's official letter head, sealed and signed by the Official who had issued the work order / his equivalent or his superiors)

This is to certify that M/s ----- awarded the contract ----- and executed in this organization as per the details furnished below

1. Name of the work :
2. Work order number/ agreement number and date :
3. Work order value :
4. Date of commencement :
5. Date of completion :
6. Executed value :
7. Performance of the Contractor : Satisfactory/ Not Satisfactory

(Signature)

Place: .....

Name: .....

Date: .....

Designation: .....

Organization with Address: .....

.....

Office Seal:

**FORM – II (B)**

(To be in the Firm's letter head)

Date: .....

**DETAILS OF TDS CERTIFICATE**

In case of experience other than Central / State Government / Autonomous bodies / PSEs/PSUs/ Nationalized Banks / Public Limited Companies, the bidder has to provide the details of the TDS certificate in the form provided below and shall submit TDS certificate for the past experience to be uploaded, only then the experience will be considered.

Sl. No	Name of work	Value of work executed (in Rs.)	Work order reference No.	TDS Certificate		Name and address of the Client	Uploaded page no. reference
				No.	Amount		
1							

(Signature of Authorized Person)

Place: .....

Name: .....

Date: .....

Designation: .....

Business Address: .....

.....

Office Seal:

## Annexure D - Compliance Matrix

Sl. No.	VSSC Specification (ref. RFP Document)	Offered Specification	Compliance	Remarks
1	IP-PABX is of Server-Gateway Architecture with System Configuration, Features and Specifications as per the RFP document.		Yes/No	
2	All the Equipment, accessories and cables are new and complete in all respect for the IP-PABX system.		Yes/No	
3	System availability of 99.99% or higher is ensured.		Yes/No	
4	Fault tree diagram/chart showing all possible fault symptoms of the system and related malfunctioning/failure of subsystem/part will be provided during installation of the IP-PABX.		Yes/No	
5	UPS with required Capacity and features with >6 hrs backup time will be provided in all the 12 locations.		Yes/No	
6	Lightning protection for all the Equipment of IP-PABX up to IDF will be provided.		Yes/No	
7	System adherence to Guidelines issued by Dept. of Telecommunications and Dept. of Electronics & IT, Govt. of India.		Yes/No	
8	System is capable of working satisfactorily under the following environmental conditions: Temperature: +15°C to +45°C; Humidity: 50% to 90% RH.		Yes/No	
9	Servers and Gateways meeting requirements specified in section 2 of RFP at locations given in Table 1.		Yes/No	
10	All Servers will be of same OEM.		Yes/No	
11	All Gateways will be of same OEM.		Yes/No	
12	Auto restart and resuming IP-PABX operation is provided to take care		Yes/No	

	in occasions like power interruption.			
13	Built-in Self-Test diagnosis and Alarm in case of Malfunction/Failure is provided.		Yes/No	
14	System Administration and programming software and Network management software with required licenses will be loaded in 4 PCs provided by VSSC, at 4 locations (3 in Thiruvananthapuram and one at Aluwa). Needed Hardware configuration of PC (VSSC will be providing the PC) will be mentioned in the quote.		Yes/No	
15	Operator console with PC (different from System Administration PC) or IP Phone based system, as mentioned in section 2.29 of RFP will be provided (detailed description of features will be mentioned).		Yes/No	
16	Technical description and functioning of the offered system, explained with help of Block diagram showing all the subsystems, interfaces and interconnections is attached. System Configuration with detailed Specifications of each subsystem is also attached in the quote.		Yes/No	
17	Pre requisite for Telephone Exchange room and UPS room like Power requirement (including power consumption of each equipment) and Air conditioning requirement in each location is clearly stated. Details of accessories planned to include and positioned in each location are also mentioned. Proposed Equipment Layout in each location is included along with the quote.		Yes/No	
18	Essential Spares (mentioned in quote) will be supplied along with the system (which will be		Yes/No	

	positioned inside VSSC) and each will be replenished after usage.			
19	Server S1 (at L1) and S4 (at RL3) will be connected through SIP trunk.		Yes/No	
20	Local survivable gateway is planned in location RL1.		Yes/No	
21	In case of link failure between L1 and RL2 then RL2 will work as an isolated PABX with all standard feature and functionality.		Yes/No	
22	In case of SIP Failure/Busy, system will automatically changeover to alternate route (eg. FCT), provided by VSSC, without affecting the ongoing call.		Yes/No	
23	Server is capable of handling up to 10000 Analog lines, 1000 Soft phones and 500 IP phones.		Yes/No	
24	IP-PABX is capable of Busy Hour Call Completion (BHCC) of 2,00,000 or higher.		Yes/No	
25	Servers are of Dual Power supply input provision.		Yes/No	
26	Gateways are of Dual Power supply input provision.		Yes/No	
27	Network Switches are of Dual Power supply input provision.		Yes/No	
28	Network Switches with ring connection feature having minimum 3 Fiber input port is planned in all locations.		Yes/No	
29	The IP-PABX supports SIP trunks to interoperate with other PABXs.		Yes/No	
30	Inbuilt Session Border Controller (SBC) is provided.		Yes/No	
31	Offered System is having a valid TEC for the specified Model and Make.		Yes/No	
32	Layout plan with dimensions, powering requirements including power consumption and details of the accessories for the proposed system for each location is submitted along with the quote.		Yes/No	

33	Web-based Centralized software with GUI for configuring, Administering and Monitoring of the system will be provided.		Yes/No	
34	System is capable of Call logging and system audit log for one year.		Yes/No	
35	System is capable of recording minimum 30 internal/external in/out calls simultaneously with storage for retaining for at least one-month.		Yes/No	
36	Emergency message broadcasting feature is provided.		Yes/No	
37	Call burst provision is there.		Yes/No	
38	End point status monitoring is provided.		Yes/No	
39	Provided all the Telephone features described in section 3 of RFP.		Yes/No	
40	The IP-PABX system will be covered under onsite Comprehensive Warranty for 3 years from the date of commissioning of IP-PABX. Free replacement of faulty cards/subsystems/system including Service charge will be covered under the Warranty.		Yes/No	
41	Cost of onsite Comprehensive Annual Maintenance Contract (AMC) for 7 Years (after the warranty period) is submitted along with the quote.		Yes/No	
42	The mechanism of service support in the form of Flow diagram (starting from lodging complaint to fault rectification) is included in the quote.		Yes/No	
43	One Residential Engineer/Technician (ref. section 6 in RFP) will be positioned in Thiruvananthapuram for regular up-keeping and Maintenance of the IP-PABX during the Warranty period.		Yes/No	
44	Breakdown calls in Warranty period will be attended within 4		Yes/No	

	hours after reporting the fault and if replacement of defective card/equipment is required, will be done within 48 hours.			
45	Monthly monitoring of critical/major parameters (listed along with the quote, with range specified) and preventive maintenance will be carried out whenever needed.		Yes/No	
46	Supply, Installation, testing, Training and certification will be done within 20 weeks from acceptance of purchase order		Yes/No	
47	Bidder has successfully carried out multiple installations of IP-PABX systems of similar nature with 3500 connections or more in India. The documentary evidence of the placement of Purchase orders for Supply, Installation, Operations, maintenance and support provided are attached with the quote.		Yes/No	
48	Name and address of Service Centre in India are listed and attached along with the quote.		Yes/No	
49	All the Specifications and Conditions mentioned in the RFP document will be met (non-comply, If any in any sub-clauses may be separately mentioned).		Yes/No	
50	The Tender is submitted in Two-part mode.  Techno-commercial bid (part 1) is not containing any price details.		Yes/No	
51	Quoted for complete scope of the work mentioned in RFP document (no part/split offer).		Yes/No	
52	Demonstration of the offered product will be done If asked by VSSC during Tender evaluation phase.		Yes/No	
53	Additional/Missing items added to the quote		Yes/No	

## **Annexure E - Check list**

1. Name and address of the bidder, mentioning whether Distributor/Joint Venture Partner.
2. Name and address of the Original Equipment Manufacturer (OEM) or Technology producer and declaration from OEM for system support for 3 years warranty and 7 years comprehensive AMC.
3. Bill of Materials (BOM).
4. Copy of last 3 years Income Tax filed Certificate and PAN number enclosed.
5. Annual Turnover report for last three years.
6. Duly filled Tables 2 to 6 and Form I, II, II(A), II(B) in firm's letter head, with office seal.
7. Name and address of customers for similar system installed across India mentioned and copy of work orders/purchase order for the offered or similar systems sold to other customers in India attached.
8. Warranty for 3 years mentioned in Quote and Comprehensive Annual Maintenance Contract (AMC) quote attached. Work order/purchase order copy of similar systems installed for other customers also included.
9. Availability of maintenance service for 24 hours mentioned.
10. System and Technology approved by TEC/DOT/BSNL for the ports capacity mentioned in the BOQ and certificate attached. TEC/BSNL interface approval for ISDN PRI/SIP and E1, TEC-GR Type approval attached.
11. Name and address of service centers in all over India.
12. Number of the qualified service engineers available in Thiruvananthapuram and Kerala.
13. Any item which is not included in BOM (added as a separate list with price).
14. List of Essential Spares (which will be positioned inside VSSC)
15. Compliance Matrix attached.
16. Any other relevant information.