INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
Powai, Mumbai 400076.

PR No. 1000038343:

Detailed Technical Specifications of IPBX 5000 port on rental model for 5 years:

Sr. No.		Compliance (Yes/No)
1	**IPBX System Architecture:** 1. The IP telephony system should use asterisk as an open source technology. The Source Code of the telephony server and the configuration GUI should be handed over. 2. The IP telephony system should be 19'inch rack-mountable solution 3. The tenderer must submit valid latest Type test TEC approval certificate issued by Telecommunication Engineering Center as per GR approvals tested with IPv6 for both SIP terminals and SIP Trunks from day 1. 4. The IP telephony system should support up to 10000 endpoints. 5. The voice network architecture and call control function shall be SIP based. 6. The system must be capable of supporting Analog, IP Telephones, soft phones and SIP based video desk phones. 7. The IP telephony system must support unified communication (UC) server & gateways architecture for SIP, PRI and Analog trunks connectivity. 8. The offered system should be available with auto provisioning support. 9. The offered system should support recording of incoming and outgoing voice calls on same hardware and no external hardware should be used for voice recording. 10. The offered system should support audio conference bridge with GUI for meet me and dial out conference. 11. The offered system should support Video Conference Software with Video, Screen, Share, Presentation, Chat with 100 users. 12. The offered system should provide call details report. No external application to be used. 13. The offered system should have chat server and application for internal communication. 14. The offered system should support smart phone as extension	

	with wi-fi client. 15. The offered system should support 9 by 9 level of IVR System. No additional hardware to be used. 16. The offered system should support web based receptionist console. 17. The offered system should support Android based mobile monitoring application. 18. The offered system should support paging system with one button call from your extension. 19. The offered system should support in built voice blasting system to announce messages to an entire contact list or segment of list. 20. Voice Solution shall be converged with support of Unified Communication – IP Telephony, Video Telephony & Analogue Stations. It shall be possible to make Video calls without adding any modules or licenses. 21. The system shall use open standards for its operating system, call processing, signaling, networking etc. for easy integration/ interoperability with third party applications. 22. The offered system should have the facility to integrate with Email & SMS. 23. The offered system should have the compatibility of optical fiber connectivity 24. The offered system should support call center applications, CTI, VoIP, Telephony over IP and IP trunk facilities, to address future requirements. 25. The offered system should have an inbuilt LAN port, which can be connected to the LAN. It should be possible to access the system from any node of the LAN for maintenance purpose. The maintenance software should be browser based. 26. The communication servers must work in an Active/Active redundancy mode. It should be possible to define servers load balancing mode. 27. All servers must be provided in a cluster mode. If one cluster server fails, one of the other cluster servers in the network must be able to take the complete load of the calls automatically (without any manual intervention). All servers should have same database. 28. System should have Distributed Architecture. 29. Should support N+1 Redundancy Architecture as well as 1+1 redundancy Architecture. Should support Remote Survival Nodes. 30. In case of failure of one server, the SIP Phones, SIP Gateways should register with available second server	

	automatically 31. Telephony system should use Linux Operating System. The local administrative should have access for administrative tasks. 32. It should be possible to take system translation as well as operating system backups on an external removable medium or backup over the LAN into an FTP server. 33. It should be possible to add more sites and users without the need to change the software and existing configuration. 34. The telephony platform must consist of one or many servers where each server in the cluster provides complete 100% application functionality. 35. The UC platform must have distributed architecture and centralized control for all the sites in the network. 36. The redundant server must have separate hardware, not sharing elements like hard drives and RAM etc.to avoid a single point of failure. 37. The server should have AC power supply. 38. The system must be based on server gateway architecture with external appliance servers. 39. OEM presence should be in the market for more than 12 years. Terms & conditions: a) BSNL will provide following equipment at the customer premises either directly or through its franchisee who will be responsible for supply, installation and maintenance of EPABX, in order to deliver the Telecommunication Services to the Customers. 1) Hardware & Software for Voice & Data IPBX for 5000 ports, additional ports on same rate. 2) MDF, Inter-Connect Cables (from PBX to MDF) 3) PRI, SIP Trunk, analog Trunk, GSM gateway 4) Customer Premise Equipment for Broadband access service viz. Splitters FTTH & other VAS Ports. 5) Cabling/ Wiring at Customer Premises, if required by the customer will be provided by franchisee on chargeable basis b) BSNL / it's franchisee shall install, maintain and supply all spares for all the equipment supplied by it at its own cost and shall be liable to pay the wages, salary etc to the person engaged by franchisee for installation of said equipment at customers' premises. c) Repair/replacement of all equipment including the CPE supplied by BSNL / it's franchisee shall be the responsibility of BSNL /franchisee as the case may be. d) BSNL shall provide the required bandwidth and connectivity to the Voice & Data EPABX installed through franchisee or directly by BSNL (inter-city and intra-city) subject to technical feasibility as per the applicable policies of BSNL. The tariffs applicable shall be as per commercial below for 10 channels and will be renegotiated as per additional requirement. e) BSNL will provide Billing, Arrears Management and	

Settlement,

f) No capital investment will be borne by IIT Bombay for EPABX & its installation.
g) No maintenance cost for IIT Bombay
h) No Technological Obsolescence.
i) Onsite residential support to be provided 9 hrs. X 5 days (Monday to Friday) on working days (9AM to 6 PM)
j) Minimum contract period will 5 years and further extend on mutually agreed conditions.
k) Any other items are not covered under free IPPBX scheme and need to be purchase by customer on out right basis if required.
l) The OEM Proposed product should be TEC Certified.
m) Down time penalty in % on monthly payment:

Sr.No	Downtime	Penalty (in %) on monthly bill
1	Per 24 hrs.	0.33%

n) Downtime due to the following situations will not be considered for the purpose of penalty:

a. IPBX down due to power failure/or any situation which are beyond the control of service provider. In any case, the maximum time to repair must be 8 hours during disruptions like cable cuts, etc.

b. Due to scheduled maintenance by the Service Provider, with prior approval of Institute. Scheduled Maintenance shall mean any maintenance which Telephone exchange is notified 48 hours in advance. Notice of Scheduled Maintenance will be provided to Telephone exchange's designated point of contact by a method elected by telephone, email, or fax.

IPBX Commissioning Deadline:
IPBX commissioning during installation or upgradation should be completed within 8 weeks from the date of issue of the Intent (LOI) / Service order (SO). All the aspects of safe delivery, installation, commissioning of the IPBX shall be the exclusive responsibility of the service provider.
If the service provider fails to commission the IPBXon or before the committed date, then the penalty for the late PBX commissioning at the rate of 1% per week of the total annual contract value subject to maximum of 10% of total annual contract value will be deducted. Telephone Exchange reserves the right to cancel the contract if the commissioning of IPBX is delayed beyond the said 8 weeks.