TENDER NOTICE

Tenders are invited for the Supply installation testing and commissioning of an expendable type Digital EPABX system having 16 P&T lines, 08 digital extensions and 160 analog extensions with a buy back of existing 08 P&T lines, 48 analog extensions, Siemens make, Hicom 130, exchange on “as is where is basis” as per NIT. Interested parties may down load the tender document from HSCC website (www.hsccltd.co.in). Sealed tender should be submitted to CGM (PG-III) on any working day between 10:00 AM to 4:00 PM on or before 30.01.2008. Tenders will be opened at 04:30 PM on same day in the presence of the parties who may choose to attend the bid opening.

Technical Specifications

6.0 EPABX AND TELEPHONE SYSTEM

6.1 EPABX TELEPHONE EXCHANGE

6.1.1 Scope:

This specification covers the design, manufacture, supply, installation and commissioning of digital electronic Private Automatic Branch Exchange (EPABX), Telephone Sets, MDF, Back-up Power supply system, Voice Mail System etc., of reputed make.

6.1.2 Code and Standards:

The telephone system and the components shall conform to the latest edition of the "The International Telegraph and Telephone Consultative Committee (CCITT)" and other Indian and International standards as applicable.

6.1.3 Site Condition:

All the equipments shall be designed and tropicalised to withstand the site conditions as specified in the schedule of quantities.

6.1.4 Technical Requirements

6.1.4.1 The EPABX should be fully digital and should employ Stored Program Control (SPC) using Pulse Code Modulation (PCM). Confirming to latest ITU-T (earlier CCITT) standards. The system should support not only IP but also TDM giving the advantage of both the worlds. EPABX should be of reputed make.

6.1.4.2 The system shall be 100% non-blocking.

6.1.4.3 The system shall utilize single codec per line.

6.1.4.4 The Central Processing Unit (CPU) of EPABX should use 32-bit microprocessor with system memory on MMC card and not on EPROM or a floppy disc.

6.1.4.5 The system should support battery back-up of at least 100 hours for the office data memory.

6.1.4.6 The system should be able to restart automatically without human intervention when the external AC power supply is resumed after complete power failure i.e. even after batteries are discharged.

6.1.4.7 The system should have integrated Modem on the central motherboard for remote maintenance.

6.1.4.8 There should be an LED indication on each card, which can help determine the state of the card.

6.1.4.9 The system should be suitable to accommodate both Decadic Pulse (DP) and DTMF telephones. The system should support outgoing DTMF transmission even from Digital and IP phones.

6.1.4.10 It should be possible to remove and put back line or trunk card from the system even in online condition.

6.1.4.11 The system software should be protected against loss/ alteration of memory due to power failure, unauthorized command or any other fault condition.

6.1.4.12 The EPABX should be able to use the existing IP network to get connected to a similar system at other location. It should also give complete feature transparency between the two systems. A single voice call between the two systems should not take more than 20 KBPS bandwidth on the IP network. In case the IP network is down, the system should be able to get connected to the remote system using Dial-up PSTN connectivity offering ' No Single Point of Failure'.

6.1.4.13 The EPABX with TCP-IP connectivity (10/100 Base T on RJ 45) should also support Remote LAN Access apart from the support for voice communication. There should be fire-wall concept checking both the Source IP Address & Destination IP Address as well as ISDN numbers at the Wan transition to ensure the security of Data/ VoIP packets. The above feature should be available without any external additional hardware.

6.1.4.14 System should support Digital phones as well as IP phones.

6.1.4.15 The EPABX should have integrated Universal Call Distribution system (UCD) in-built to support max. 150 agents. System should be able to forward the call centre information to the reporting software. Agent Login, logoff, wrap-up features should be available.

6.1.4.16 System should have a standards based CSTA interface available, for integration of 3rd party call centre applications.

6.1.4.17 Apart from the IP support on the EPABX, it should also work with any type of public exchange or similar networks. It should be possible to network with exchanges of different makes/ technologies using either E&M lines or ISDN BRI/PRI lines.

6.1.4.18 The exchange shall accept different type of trunk signaling such as:

- EDSS1/1TR6 for ISDN BRI and PRI
- Ringdown.
- 2W/4W E&M signaling, Type 1 to Type 5
- Analog C.O. Lines
- DTMF Signaling

6.1.4.19 The exchange should be suited to work on an AC mains supply of 230 V with a tolerance of +10 V and -15 V.

6.1.4.20 The system should be ventilated by conventional airflow. No cooling fans should be used in any part of the EPABX cabinet.

6.1.4.21 The system should have the capability to directly connect it to the battery bank. The battries should be sealed maintenance free (SMF) and be able to give a minimum 4 hours backup to the system in case of power failure.

6.1.4.22 The system should have emergency transfer facility to automatically route the C.O. lines to predefined extensions in case of power failure.

6.1.4.23 The system should support simultaneous voice and data capability over the same single pair telephone cable in (2B+D) ISDN BRI format. The following voice and data terminals should be supported.

- ISDN terminals should be supported.
- ISDN FAX (G4)
- Vedio Conferencing Equipment.

The system shall support PRI ISDN in (30B+D) Format.

6.1.4.24 The system should support voice processing applications such as Voice Mail, Auto attendant.

6.1.4.25 The EPABX should be suitable up to 5 digit extension numbering scheme. This numbering scheme should be flexible. System should also allow mixed numbering scheme.

6.1.4.26 The features mentioned below should be available from extensions.

- Call forwarding
- Do not disturb
- Override do not disturb
- Speed dialing: system numbers.
- Speed dialing: individual numbers
- Barge in
- Call back
- Paging, both external and internal.
- Call parking.

6.1.4.27 In night mode when the operator is not present at the console, the direct lines will have to be routed to different extensions for incoming calls. Once the call lands in the department it should be possible to answer it from any station.

6.1.4.28 It should also be possible to have a different class of service during the day and during the night.

6.1.4.29 The system should support Mobile PIN functionality. Calls can be made from various telephones and still billed to his own account.

6.1.4.30 It should be possible to integrate an announcement / industrial paging system with the proposed EPABX with out any external additional hardware.

6.1.4.31 It should be possible to directly connect an external music source for music on hold.

6.1.4.32 The system should have in-built V.24 port from which call billing data can be obtained.

6.1.4.33 The system should have integrated Modem for remote maintenance, the system should also support LAN based remote maintenance.

6.1.4.34 The EPABX should support centralized system administration using SNMP (Simple Network Management Protocol)

6.1.4.35 The EPABX should support Integrated Cordless Solution based on the DECT (Digital Enhanced Cordless Telephony) technology. The system should support up to 64 base stations & 250 handsets. Direct Base station connectivity to the control board.

6.1.4.36 The system should support High Density Traffic of up to 12 channels per radio cell per base station. It should be possible to place the base station up to 1000 metres from the system. Each Base station should have range of 50 mtrs in buildings & up to 300 mtrs in open air. The system should support

Roaming & Handover (i.e. the call should not get cut when the DECT user moves from one base station cell area to another base station cell area.)

6.1.4.37 The user interface of cordless handsets should be consistent with that of Digital phones. Message should be able to be sent from cordless handsets to the digital phones and vice versa. DECT hand set user should receive an advisory tone and mailbox symbol on receipt of a text message.

6.1.4.38 Support for adapters on digital phones for connecting ISDN so terminals like Group IV Fax, video conferencing equipment, digital phones, analog phones, headset & mic adapter etc.

6.1.5 Specification of EABX system:

S. N.	Description	Requirement
1	Speed path & Technology	Digital PCM-TDM with VoIP support
2	Control	Stored Programme Control (SPC)
3	System capacity	350 ports
4	Signal conditions DTMF Decadic dial Inter digit Interval Pulse ratio	 As per CCITT Rec. 10 PPS 800 m sec Programmable
	FLASH time	40 m sec. to 1620 m sec
	E & M Signaling	Type I – V, immediate start, Wink start, delay dialing, Seizure acknowledgement, start of dialing, end of dialing.
	DC loop resistance	Local extension – 1200 ohms including tel. instrument.
	Environmental conditions Temperature Relative Humidity Power Consumption	 +5 to +40 Degree Celsius. 5% to 85% RH non condensing Maximum 1000 watts

6.1.6 Specifications of the system:
(Extension could be Digital phone, analog phone, IP phone, or any H .323 standard client like Netmeeting).

i. Extension to extension calling
ii. Extension to extension call barring
iii. Operator calling
iv. Operator call barring
v. Direct Outward Dialing with at least 6 levels of dialing class
vi. Call transfer by means of RECALL key in tone phones and direct extension numbering dialing in case of pulse phones.
vii. Incoming call routing should be possible to a predefined extension, a hunting group or group ringing.
viii. The group ringing and hunting groups should be able to accommodate up to 32 extensions.

ix. It should be possible to define the hunting groups as either linear or cyclic hunting.
x. Night mode activation via authorized extension only.
xi. Different class of service for extensions in the night mode.
xii. Automatic call-back to busy or ringing extension.
xiii. It should be possible, via a code, to ring up to 32 extensions simultaneously.
xiv. These extensions could be digital phones, analog phones or a combination of both.
xv. All extensions should have a facility to register at least one reminder call from their extension
xvi. All extensions with outgoing dialing facility should be able to register at least 10 memory numbers from their extensions.
xvii. Extensions with access to system abbreviated numbers should not have any toll restriction for accessing these numbers.
xviii. All extensions should have a facility to lock their instruments so as to prevent outgoing calls. It should be possible to have a locking code up to 5 digits. It should also be possible to review or change this locking code from a system administrator digital phone.
xix. It should be possible to park up to 6 calls in the system.
xx. The extensions, both analog and digital phones, should be able to initiate 5 party conferences with up to 4 external parties.
xxi. System should also support up to 6 simultaneous 5 party conferences.
xxii. It should be possible to assign extensions to a call pickup group with up to 32 extensions in a group. Calls ringing outside a group should be answered by a different access code.
xxiii. It should be possible to assign internal hotline between extensions. It should be possible to program these hotlines as immediate or as delayed hotlines.
xxiv. It should be possible to have different rings for internal, external, and call back. It should be possible to change these rings, at site, as per requirement.
xxv. It should be possible to change the dial tone, ringing tone, call waiting tone, conference tone, over ride tone etc as per requirement.
xxvi. It should be possible to access each trunk individually by means of individual trunk access codes.
xxvii. It should be possible to group the trunk lines in to at least 4 routes. It should be possible to assign more than one code to each route.
xxviii. It should be possible to seize the lines of a route in either linear or cyclic mode.
xxix. There should be a provision of route overflow for out going calls, such that if the lines of one route are busy the system should automatically select the next programming route.
xxx. It should be possible to send ‘FLASH TO TRUNK’ from both analog extensions and digital phones.
xxxi. The system should support both open and closed numbering scheme.
xxxii. System should support Silent calling.

6.1.7 Operator Console and digital phone Features:

6.1.7.1 Operator Console

- Electronic telephone directory
- Total number of queued calls and graphical display.

- Display showing call status, name and directory number
- Answer telephone calls
- Speed servicing of calls
- Call toggling
- Conference with up to 5 parties
- Park/ hold
- Dial/ Redial/ notebook function
- Supplementary functions such as override, call back, disconnect user & lines

6.1.7.2 Digital Phone for operator and Senior Officials.

- Digital phone should have hand free operation with duplex speaker.
- It should be with speaker, 12 storage keys on the phone and 16 key module for display of extensions shall be provided for the use of operator.
- It should also be possible to connect a PC to the digital phone via an in-built USB port eliminating the need of using an extra adapter for this application. It should also be possible to perform direct dialing from this PC (support for 1st party CTI functionality)
- On receiving the incoming call the display should indicate the extension name and number on the display (if incoming trunk lines are digital)
- Rejection of call by pressing a key. This call can be transferred to any other predefined extension or to the operator.
- Display of incoming calls, answered calls and missed calls should be there in the digital phone.
- The cradle switch should be with optical sensor.

6.1.7.3 Digital phone for secretary

- Digital phone should be non display , non speaker.
- It should have 08 storage keys
- The cradle switch should be with optical sensor.

6.1.8 UPS

UPS should be of suitable capacity with four hour backup time at full load with SMF batteries. The input supply to the UPS should be 220 V single phase.

6.1.9 Main Distribution Frame (MDF)

A Krone MDF mounted in sheet steel enclosure shall be supplied along with the exchange. I.P.M. shall be provided in the MDF for all junction lines and external one. All cables coming from field will be terminated on the MDF.

6.1.10 Protection:

Main power supply incomer shall be provided with protective fuses. All other circuits such as individual subscribers, CPU memory etc. shall be protected with current limiting devices or Semi-Conducting fuses. TPM shall be provided for subscriber lines.

6.1.11 The **EPABX** shall be installed in the Telephone Exchange Room. The EPABX capacity shall be as mentioned in schedule with suitable motherboard for expansion as per schedule of quantities.

6.1.12 Warranty:

Vendor shall have final and total responsibility for the design and performance of all equipment supplied under this spec. The equipment shall be guaranteed for 12 months from the date of commissioning. All defective component during the warranty period shall be replaced free of cost by the vendor.

6.1.13 Existing System

Siemens make Hicom 130 having 08 P&T lines and 48 analog extensions installed in EPABX room of the building.

Bill of Quantity

S.N.	Description of items	Qty.	Unit	Rate in Rs. (in figure)	Rate in Rs. (in words)	Amount in Rs.
1	Supply installation testing and commissioning including maintenance for one year of a expendable type digital EPABX system having 16 P&T lines, 24 digital extensions and 144 analog extensions including MDF, redundant power supply for the system, standby UPS with SMF batteries suitable for 4 hrs backup time on full load, one operator's console, one digital phone with key module including software etc complete as per the enclosed technical specifications as required.	01	Set			
2	Digital phone sets: with display, 12 storage keys and with USB port and speaker.	06	Set			
3	Digital phone sets: for secretary without display, 08 storage keys.	06	Set			
4	Cost of 2 port Voice Mail facility (optional item)	Rate only	Each			
5	Analog telephone Instrument (Optional item)	Rate only	Each			
6	Supply, laying including clamping and termination at both end of 200 pair telephone cable.	10	Metre			
7	**SUB TOTAL**					
8	Buy back of existing Exchange and operator's console of Siemens model no. Hicom 130 (purchased in 1998 consisting of 08 P&T lines and 48 analog extensions) on "as is where is basis".	01	Set			
9	**TOTAL**					

Bill of quantity has been revised as per the requirement. The revised BOQ supersedes the quantity mentioned in the tender notice published in the news papers.

CONDITIONS OF CONTRACT

1. Bid shall remain valid for 60 days after the date of bid opening.

2. The bidder shall furnish a bid security of Rs. 30,000.00 (Rupees thirty thousand) in the form of Bank Guarantee/DD.

3 Any bid received after the last date and time of submission of bid, will be rejected by the HSCC.

4. Successful bidder has to submit Contract Performance Security @ 10% of the contract value in the form of Bank Guarantee/ Demand Draft, the same shall be released after successful commissioning of the EPABX system.

5. Successful bidder has to complete the entire work as mentioned in BOQ with in a period of 60 days after the date of award of the contract.

6. EPABX system shall be inspected by the representative of HSCC at the works of manufacturer before dispatch.

7. If bidder is unable to complete the work with the stipulated period, a penalty of 1.0% of total contract value will be imposed for per week of delay or part thereof, however the maximum penalty will be 10% of the total contract amount.

8. All incidental services required for the successful commissioning of the system are deemed to be included in the scope of the contractor and it is assumed that the prices for these services has been included in the price of bid.

9. Nothing will be paid extra on account of taxes and duties including octorai etc. The cost of bid should be inclusive of all.

10. The successful bidder shall maintain the system for a period of one year including the cost of spares etc, if any, free of cost.

11. No Form 31 or Form 32 shall be issued by HSCC.

12. The payments shall be released as per following:

    i. After receipt of equipments/ material at site 75%

    ii. After erection, testing & commissioning 15%

iii. After submission of Bank Guarantee of equal amount (10%) , as a performance guarantee valid for the maintenance period of one year in HSCC's format. 10%

13. Performance guarantee will be released after successful completion of maintenance period of one year.

14. The offered digital EPABX should be quoted strictly as per mentioned technical specifications. No technical devition will be accepted. The bids with technical deviation will be rejected.

15. Bidders can visit the site to see the existing system after contacting CGM. PG-III, HSCC (I) Ltd, Noida at his phone number 0120-2540153.

16. The address of the site is HSCC (I) Ltd, E-6 (A), Sector -1, Noida 201 301 Distt. Gautam Budha Nagar, (UP).

17. HSCC reserves the right to accept any bid and reject any /all bids without assigning any reason.

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