

Specifications for Video Conferencing facility

Description : Software based video conferencing (VC) facility capable of working at bandwidth of 256 kbps per VC location on BHEL's MPLS network / Internet.

A. Software based video conferencing solution - Technical Data / Features :

1	MCU	MCU should be Software based Application preloaded on the Server. The backup MCU along with the server should also be provided along with it so that in case One MCU is down the other backup MCU server is made up and running within few minutes.
2	Multi-Party Conference	Solution should be able to connect minimum 7 locations at HD resolution in a Single Video conference at the same time. It should be upgradeable to 20 simultaneous conferences. Any of BHEL units should be able to telecast/transmit program which can be seen by others.
3	Floating License	All licenses should be floating type to facilitate any of BHEL locations to join in as per need using existing user Id. License should be valid for 25 years. (Lifetime validity)
4	Video Codec	Solution should have H.264 SVC/ H.264/H.264HP or better Video Codec for good video quality at lower bandwidth.
5	Client Software Support	Solution should have client Software available for Windows, Android, IOS and should offer Free client downloads.
6	Recording	Solution should have inbuilt video recording capability. The Solution should offer option to record on local PC.
7	Data Collaboration	Solution should have capability to share Data in Multi party conference, Document Sharing at low bandwidth and Text chat (Private and Group chat)
8	Multimedia File Playing	Should be able to play movie files so that audio/video content can be shared with all the participants. (Files of type MP3, MP4, AVI, DAT, etc.)
9	Security	System should fully encrypt Video Conference Meetings to ensure encrypted data flows between client and server.
10	Audio Codec	Solution should have G.711, G.722 , G.723 , OR better Audio Codec for good quality Audio communication at lower bandwidth
11	Presentation Sharing with annotation	Presentation Sharing, whiteboard application, Document, desktop, file and application sharing; it is to be provided for all locations.
12	Multi Camera support	All Locations - 4 Channel HD Video Mixer Solution should be provided either inbuilt or External so that 4 HD Cameras can be connected to Single Location and all Cameras are Viewable at the same time. The Video Mixer should also have the capability to choose any camera out of 4 to be in Big Video layout and others in small Video layout or all 4 Camera Views to be of same Size.
13	Replay Recordings and Live stream video Files	Recording and streaming should be possible at any or all locations.

B. **Video Peripheral - PTZ camera** : - USB VC Camera PTZ type with 15X optical zoom or higher which should give clear visibility even in low light / emergency lights in case of power failure. It should be suitable for a large classroom / conference hall (40'x45'). Pan to be 300° rotation (min.) Camera should be compatible with software based VC facility.

C. **Audio Peripheral** : - USB audio device with integrated 3 way mic and speaker with noise cancellation feature. The mic should work up to 10 – 12 feet radius. The audio device should be compatible with software based VC facility.

D. Installation & commissioning of VC solution and Other Requirements :

1. All equipment shall be tropicalized and should work at 0 – 40°C and relative humidity up to 95%.
2. Facility to give mic input from existing AV system at respective HRDC of BHEL.
3. Facility to mute mic/voice input by using cordless remote.
4. Provision to connect globally outside of BHEL's network.
5. Delivery of Equipment, Installation & commissioning of the system by the supplier at HRDI-NOIDA, Haridwar, Tiruchirapalli, BHEL R&D (2 nos), RC'puram-Hyderabad, and Bhopal.
6. Supplier should arrange for a demo at BHEL R&D before actual placement of order.

E. Warranty, support and AMC:

Onsite warranty for 3 years from the date of installation. In case of repair, a standby mic/camera to be provided. Warranty should cover software updates.

At least one day free training and demonstration to be provided at the place of installation on a date convenient to BHEL with one week prior notice.

Onsite support for Hyderabad & Metro based units and tele support for locations other than metros. Minimum of 7-8 on-site visits for technical support at places of installation during video conferencing.

AMC is to be provided after warranty period to maintain the VC facility and peripherals. Suppliers to quote for 2 years AMC after warranty period. Order for AMC shall be placed after completion of warranty period.

To be provided by BHEL :

1. Server - I5 / Quadcore or Xeon processor with 4 GB RAM or higher shall be provided along with one Static IP. (located at BHEL R&D, Hyd)
2. For client at different BHEL locations, one PC each with specs - Core 2 duo, 2 GHz processor with 2 GB RAM or higher; OS- Win XP or higher shall be provided.
3. The following firewall Ports shall be Opened for both incoming and outgoing (TCP :18080 5222 8084 8085 5525 5526 8100 443 8080 ; UDP 33000 TO 50000)
4. Latency shall be between 40milli sec to 120 milli sec for proper lip sync.
5. Bandwidth of up to 1 Mbps shall be provided (for 4 licenses).