No. IV-21011/30/2009-Prov-I
Government of India
Ministry of Home Affairs

26, Man Singh Road, Jaisalmer House,
New Delhi, 31.3.2011

To

The DGs:Assam Rifles/BSF/CISF/CRPF/ITBP/NSG/SSB/BPR&D

Subject:- QRs/Technical Specifications for the High Definition Video Conferencing System.

Sir,

I am directed to forward herewith the QRs/ Technical Specifications for the High Definition Video Conferencing System, as per Annexure, accepted by the Competent Authority in MHA for record.

Yours faithfully,

(S.B.Nanda)
Under Secretary to the Govt. of India

Copy to:-

DD(Procurement),MHA

Copy for information to:-

PS to JS(PM),MHA

Annexure

QRs FOR VIDEO CONFERENCE SYSTEM

SL No	PARAMETERS	SPECIFICATION
SPECIFICATION FOR END POINTS		
1	**Video** (a) Signal System	The system should support PAL and should be a point-to-point system with codec, High Definition (HD) 720p camera with a minimum of 10x zoom, MIC, remote control, cable and power supply. The system should be capable of giving HD 720p @25fps. The system should be upgradeable to support HD 1080p @25fps in motion or sharpness video mode.
	(b) Standards and Protocol	H.261, H.263, H.264 or better
	(c) Resolution	The system should supports video resolution from 4CIF (Common Intermediate format), VGA, SVGA, HD-720p @25fps. The PC resolution should be 720p.
	(d) Frame Rate	Up to 25 fps
	(e) Band Width	Option-I Up to 4Mbps point to point on IP Option-II Up to 4Mbps point to point on IP and 2Mbps on ISDN –PRI (Internal / External). Note:- User Departments may select their option as per organizational requirement.
	(f) Video Inputs	The system should have 2 video inputs to connect 1xHD camera and 1 for PC DVI (Digital Video Interface)
	(g) Video Outputs	The system should have 2 video outputs 2xHDMI (High- Definition Multimedia Interface)/ DVI for connecting two HD displays DVI
	(h) Graphics	Native 16:9 widescreen Advance screen layout Intelligent video management local auto layout.
	(i) Picture in Picture	Should support Picture in Picture (PIP)
2	**Audio** (a) Standards & Protocol	G.711, G.722, G.722.1 or better
	(b) Features	CD- Quality audio Instant Adaptation Echo Cancellation Automatic Gain control (AGC) Automatic Noise suppression (ANS)
	(c) Audio Inputs	The system should have 2 Audio inputs (2xRCA Phone connectors)
	(d) Audio Outputs	The system should have 2xRCAPhono
	(e) Lip synchronization	Active Lip Synchronization
3	**Network** (a) Features	The system Should support IP v4 & IP v6 The system should have features such as QoS, RSVP standards, Packet loss based down speeding TCP/IP, DHCP (Dynamic Host Configuration Protocol), Auto gatekeeper discovery, Dynamic payout/ lip –sync buffering, DTMF (Dual tone multi frequency signaling) tone, Date and Time.
	(b) ITU-T standards	DUAL STREAM:- The system should have capability to support H.239 in both H.323 and SIP mode.
	(c) Network Protocols	The system should have H.323 and SIP capability
	(d) Interfaces	1xLAN/Ethernet (RJ-45)10 /100 and 1 USB
4	**Camera**	Should have PTZ Feature
	(a) Image sensor	1/3 CCD / CMOS or equivalent
	(b) Pan	± 75° or more
	(c) Tilt	+10°/ -15° or more
	(d) Focus	Automatic / Manual
	(e) Total field of view	265° or better
	(f) Horizontal view angle	65° or better
	(g) Zoom ratio	10x Zoom optical or better

Contd.p/2

5	**Remote Commander**	IR / Wireless
6	**Microphone**	360° Voice pick up Microphone
7	**Multi Point Control Units (MCU)**	
	(a) Dimension	The MCU must be up to 2/3 Units rack solution provided with all the necessary accessories to integrate into a 19" rack
	(b) Capacity	i) N ports @ 4Mbps with HD 720p resolution should be supported on the same chassis with/without cascading where N is to be defined by the User. ii) The MCU should additionally support with a minimum of 10 audio only participants. iii) The MCU should be accompanied with external 2 PRI- ISDN gateway expandable to 7 PRI (internal / external) / on same chassis or different chassis. Flexible design enables streamlined traffic flow and mass scale for converged IP networks. iv) The system should be HD enabled supporting HD 720p @ 25 frames in continuous presence mode and it should be up gradable to 1080p v) The MCU must support 10/100/1000 Mbps Ethernet.
	(c) Audio support	Audio Codecs G.711, G.722 G.722.1 or better
	(d) Video Support	Video codec H.261, H.263, H.264 or better
	(e) Gatekeeper, Scheduler and Network management system	MCU shall support an embedded / external Gatekeeper, Management tool scheduling and address book. MCU shall have the capability to connect the PC/laptop for presentation sharing over LAN/IP network.
	(f) No of conferences	MCU should support multiple conferences as per the virtual MCU port capacity with flexible resource capacity. Conferencing highlights – personnel layout, auto layout, choose site to see layout, border for active speaker indication, lecture and presenting mode, conference profiles.
	(g) Continuous presence view	MCU should support 16 Continuous Presence (CP) on single screen.
	(h) Interactive keypad	MCU shall have a built –in auto –attendant from whom users can select conferences to join or start a new conference. This shall be operated using either DTMF or FECC (For End Camera Control)
	(i) Dynamic CP layout	The MCU should support dynamic layouts- wherein layout should adjust based on the participants joining the calls. MCU shall support Automatic down speeding and packet error /lose concealment methods to ensure optimum video and audio quality. The MCU must provide standards based on method of compensating and correcting for packet loss of media streams.
	(j) Chairperson view	It should have chairperson/ Administrator view.
	(k) Far End Camera Control (FECC) and Volume Control	It should be possible to control far end camera with a facility to increase or decrease volume of end point.
	(l) H-239 Support	The MCU shall support H.239/ chair control
	(m) Dial – out capability	Should dial out automatically to all participants, retry dial out conferences to complete call setup and should report specific failures. MCU shall support dual video H.239 and ability to send content to legacy Protocols that do not support H.239 through it main video.
	(n) Dial – in Capability	Should offer robust software driven dial-in and/or dial out capability.MCU shall have in built /external capability to support PC based desktop clients for 12 PC users or more.
	(o) Security	The MCU should support two levels of conference password-Chair Person and Participant password. The administration of the Video endpoint should be through Web interface using HTTPS/HTTP (Hypertext Transfer Protocol Secure)

Contd. P/3

		(p) Other Features	i) MCU shall provide HD quality in continuous presence to all HD end points connected and deliver this even if SD or HD end points or port of the conference. MCU have the ability to enhance the resolution even from the SD and ED endpoints and send to HD participants. The solution shall support Standard Definition, Enhance Definition, and High Definition in both voices Activated and Continuous Presence mode without loss of functionality or capacity. ii) MCU shall be able to display the static image of audio only participants to the video participants within the continuous presence layout. iii) MCU shall support communication up to 4 Mbps per port using both H.263 and H.264 video. iv) MCU shall support conferences that permanently exist but use no resources /port if no participants are in the conference. The functionality gives end user the flexibility to directly join the conference without having to depend or wait for the system administrator/operator. v) MCU shall provide a built –in web server, for configuration and administration. vi) MCU shall support 2 access level /user privileges from administrator to simple guest. vii) MCU shall have a built –in address book and built in external scheduling. viii) The MCU shall support scheduled conferences and ad-hoc conferencing mode at the same time. ix) MCU shall support a predefined and unique PIN for each conference. x) MCU shall allow users to create conferences on the fly from their end points without the need of. xi) The MCU shall support a mix of resolution in both voice activated mode and continuous presence. Each end point shall receive at the maximum of its capacity without reducing the capacity of another. xii) MCU shall be capable of supporting H.323, SIP, and H.235 in the same conference at any band with resolution.
		(q) Centralized Recording	The MCU server either internally or externally should be able to record the ongoing conference. Facility should exist to record the conferences on DVD / CD subsequently from the recording server.
8	**Desktop clients** Desktop conferencing requirements		i) PC web camera (HD) & Mic. should provide HD quality Video. ii) The solution provided should support integration with Microsoft outlook. These desktop clients on the PC should be able to initiate H.239 data collaboration and participate on view video and H.239. iii) Each Desktop Client participant should have the ability to change between voices activated video switching mode and continuous presence mode on the fly. iv) The Desktop Client user interface must provide simultaneous views of the participants and H.239 data collaboration portions of the conference. The user interface must provide full screen views of the participants or H.239 data collaboration portion of the conference. v) The Desktop Client must include a native component that enables desktop client participants to text chat while in conference. vi) The Desktop Client must include a native component that enables desktop client participants to text chat while in conference. vii) The Desktop administrator must be able to provision a directory of room systems. This directory shall be available in the desktop client user interface to ease the process of inviting room systems. DTMF should modes to join any conference. viii) The Desktop client should be able to secure Conferences via PINs/Passwords. ix) Desktop client should be able to work on a standard PC with Windows XP, Windows Vista & Windows 7 operating system running on machine with intel 1.2 GHz or above processor and 1 GB RAM.

Contd.p/4

9	**LCD Panel**	
	(a) Model	LCD Screen size : as per user requirement
	(b) Picture	Display Resolution: 1920x1080 Theatre Mode Photo TV HD Dynamic Contrast: 50,000:1 Panel Contrast: 3000:1 3D Digital Comb Filter HD Ready/Full HD
	(c) Audio	Audio O/P: Min 50W Voice Zoom
	(d) Interface	HDMI In :1 AV In : 2 Composite/ S Video In:1 HD 15PC Input/Audio:1 AV Out :1 Headphone out:1,USB 2.0 -1
10	**Server**	As per specification laid out in Rate Contract
11	**UPS**	As per specification laid out in Rate Contract
12	**Environment**	
	(a) Operating Temp (b) Operating Humidity (c) Storage Temp	5° to 35° C 20% to 70% -20° to +60° C

(Manoj Kumar)
D.C (IT), CRPF

(B.S.N Reddy)
AIG (Tech), CISF

(Yogesh Sharma)
Scientist's "D", DRDO

(B.B Lal)
D.D (Tech), IB HQ.

(T.B.J.S Rajappa)
Joint Director, DCPW

(Brig. Arun Kumar Dixit)
DIG (Comn), NSG

29.11.10

(Pawan Kumar Singhal)
Director, DCPW

Approved/~~Not Approved~~

(K.Vijay Kumar, IPS)
D.G, CRPF