GOVERNMENT OF INDIA
(Ministry of Home Affairs)
DIRECTORATE GENERAL
CENTRAL RESERVE POLICE FORCE
EAST BLOCK-7, SEC-1, R.K. PURAM, NEW DELHI-110066
(Email:- comncell@crpf.gov.in Tele/Fax:011-26109038)

No. B.V-7/2022-23-C (VC) Dated, the 01 December'2022

To

The DsG: AR, BSF, CISF,ITBP,NSG,SSB,DCPW and BPR&D

Subject: Amendment in approved QRs/TDs of Video Conferencing Equipment along with accessories.

In partial modification of MHA F.No.M.V.8/2011-12-DA.IV.IT-MHA-Prov-I-965 dated 21st June' 2017, the following amendment/revision is made with approval of DG, CRPF on 28/11/2022 (empowered vide MHA letter F.No. 11012/02/2009-Fin-I-17 dated 02/01/2018):-

QRs/TDs of Video Conferencing Equipment along with accessories				
S N	**Section**	**Parameter**	**Existing specification**	**Amended specification**
3(b)	Network	ITU - T Standards	Dual Stream:- The system should have capability to support H.239 in both H.323 and SIP mode.	Dual Stream:- The system should have capability to support H.239 in H.323 and BFCP/ any better protocols in SIP mode as per user requirement.

2. The remaining text of specification for the "Video Conferencing Equipment along with accessories" will remain unchanged.

2/12/22
{Amit Taneja}
DIG (Equipment)
Directorate General, CRPF

महानिदेशक/DG	
महानिरीक्षक/IG OPS	26/6

F. No.M.V.8/2011-12-DA.IV.IT-MHA-Prov-I – 965

(162)

भारत सरकार/Government of India

गृह मंत्रालय/Ministry of Home Affairs

पुलिस आधुनिकीकरण प्रभाग /Police Modernization Division

संभरण-I डेस्क /Prov.I Desk

Jaisalmer House, 26, Man Singh Road,
New Delhi, the 21st June, 2017

To

The DsG: AR, BSF, CISF, CRPF, ITBP, NSG, SSB, IB & NIA.

Subject: QRs/Specifications and Trial Directives of Video Conferencing System.

Sir,

The undersigned is directed to refer to DG, CRPF U.O. note No.M.V-05/2013-14-ITW(QRs) dated 31.3.2016 on the subject mentioned above and to say that the QRs and Trial Directives in respect of Video Conferencing System as per Annexure-I and Annexure-II, respectively have been approved by the competent authority in MHA.

2. Henceforth, all the CAPFs should trial evaluate and procure the above item, required by them, strictly as per the laid down QRs and TDs of Video Conferencing System.

3. Concerned CAPFs will be accountable for correctness of the QRs and Trial Directives of Video Conferencing System.

Encl: As above.

Yours faithfully,

21/6/2017

(Ritesh Kumar)
Under Secretary to the Govt. of India

Copy forwarded for necessary action to:

SO (IT), MHA - with the request to host the Revised QRs and Trial Directives of Video Conferencing System on official website of MHA (under the page of Organizational Set up, Police Modernization Division-IT/Communication items) and Soft copy is being sent through email.

21/06/17

(V. Devadas)
Section Officer (Prov-I)

– DSG (Comm)

Copy to:

(i) DG, BPR&D, CGO Complex, Lodhi Road, New Delhi.
(ii) DDG (Procurement), MHA

NGO Dy. No. 2068
Date 23/6/17

QR/TECHNICAL SPECIFICATIONS OF VIDEO CONFERENCING SYSTEM

	Parameter	Specification
1	**VIDEO**	
a	Signal system	The system should support PAL and should be a point-to-point system with codec, Full High Definition 1080p camera with a minimum of 10xzoom, MIC, remote control, cable and power supply.
b	Standards and protocol	H.263, H.264 or better
c	Resolution	The system should support video resolution from 4CIF (Common Intermediate format), VGA, SVGA, 720P, 1080p @30fps. The PC resolution should be 1080P
d	Frame rate	Minimum 30 fps.
e	Band width	Upto 4Mbps point to point on IP
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.	Picture in Picture	Should support picture in picture (PIP)

2	AUDIO	
a	Standards and protocol	G.711,G.722,G.722.1 or better
b	Features	CD-Quality audio or Equivalent or Higher Instant Adaptation Echo Cancellation or Equivalent or Higher Automatic Gain control (AGC)or Equivalent or Higher Automatic Noise suppression (ANS)or Equivalent or Higher
c	Audio Inputs	The system should have 2 Audio inputs (2XRCA Phone connectors) or Equivalent or Higher
d	Audio outputs	The system should have 2XRCA Phone or Equivalent or Higher
e	Lip synchronization	Active Lip Synchronization or Equivalent or Higher

3	NETWORK	
a	Features	The system should ready for IPv6 The system should have features such as QoS / RSVP Standards or equivalent or higher , Packet loss based down speeding TCP/IP, DHCP (Dynamic Host Configuration Protocol), Auto Gatekeeper discovery, Dynamic Layout/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	Gigabit LAN Port
e	Inbuilt MCU in end point	End point should have option of inbuilt MCU. (No. of ports can be define by user Deptt. on tendering.)
f	Security	Should support data encryption for better security

4	CAMERA	
a	Image sensor	1/3 CCD / CMOS
b	Pan	+/- 75° or more
c	Tilt	+ 10° /- 15 ° or more .
d	Focus	Automatic/ Manual
e	Total field of view	250° or better'
f	Horizontal view angle	65 ° or better
g	Zoom ratio	10x Zoom optical or better
h	Remote Control	IR/ Wireless
i	Microphone	2 x 360° voice pickup microphone
j	Administration	The administration of the Video endpoint should be through Web interface using HTTPS/HTTP (Hyper Text Transfer Protocol Secure)

5.	MULTI CONTROL UNIT (MCU)	
a	Dimension	The MCU must be provided with all the necessary accessories to integrate system in 19" Industrial Rack.
b	Capacity	N ports@ 4Mbps with HD 1080p @ Min 30 fps resolution should be supported on the same chassis/module without cascading with rate matching. The maximum number of ports upgradeable/scalable upto 48 ports. (Note - Port capacity "N" to be decided by user department as per there requirement)
c		**Optional :** The MCU should additionally support with a minimum of ' N' Audio only participants. **(Note - "N" to be decided by user department)**
d		The MCU should be accompanied with external / internal 2 PRI- ISDN gateway on same chassis or different chassis. Flexible design enables streamlined traffic flow and mass scale for converged IP Networks. (User department can extend the scalability to N PRI internal/external depending upon their requirement. Where N is to be decided by user)
e		The system should 1080p in continuous presence.
f		The MCU must support 2 nos of 10/100/1000 Mbps Ethernet.
g	AUDIO SUPPORT	Audio Codecs G.711, G.722 G.722.1 of better
h	VIDEO SUPPORT	Video codec H.263, H.264 or better
i	GATEKEEPER	MCU shall support an embedded/external Gatekeeper for minimum 100 registrations and 50 concurrent calls. 50/100 Management, address book and scheduling tool should have capability to manage minimum 100 devices. MCU shall have the capability to connect the PC/laptop for presentation sharing over LAN/IP network
j	NO OF CONFERENCES	MCU should support multiple conferences as per the virtual MCU port capacity with flexible resource Capacity by using N ports. Conferencing highlights personnel layout, auto layout, border for active, speaker indication, lecture and presenting mode, conference profiles.
k	CONTINUOUS PRESENCE VIEW	MCU should support 16 Continuous Presence (CP) on a single screen.

l	INTERACTIVE KEYPAD	MCU shall have a built- in auto- attendant/IVR from whom users can select conferences to join or start a new conference. This shall be operated using either DTMF or' FECC (For End and Camera Control).
m	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 loss 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.
n	CHAIRPERSON VIEW	It should have chairperson / Administrator view.
o	FAR END CAMERA CONTROL (FECC) AND VOLUME CONTROL	It should be possible to control far end camera.
p	H-239 SUPPORT	The MCU shall support H.239 (Sharing content through Video Conferencing).
q	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 also.
r	DIAL-IN CAPABILITY	Should offer dial-in and/or dial out capability.
s	SECURITY	The MCU should support one level or more of conference password-Chair Person and Participant password.
t	OTHER FEATURES	i) MCU shall provide HD quality in continuous presence to all HD(1080p) endpoints connected and deliver this even if SD or HD end points or port of the conference. The solution shall support standard definition, and high definition in both voices activated and continuous presence mode without loss of functionality or capacity.
		ii) MCU shall support communication up to 4 Mbps per port using both H.263 and H.264 video
		iii) 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.
		iv) The MCU must support ability to terminate two different non-routable networks, so that video calls from either network can be connected into a single conference without compromising on the security
		v) MCU shall provide a built- in web Interface, 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/external address book and built in/ external scheduling.
		viii) The MCU shall support scheduled conferences and ad-hoc conferencing mode at the same time for all the N ports of the system.
		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 Administrator /operator
		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.
		(xiii) Features like "**Do Not Disturb**" and "**Auto Mode**" should be available.

u	CENTRALIZED RECORDING	The MCU server either internally or externally should be able to record the ongoing conference on HD 1080P for 2 or more Simultaneously Conference. (Min 500 hrs VC storage capacity)
v	CONNECTIVITY WITH EXISTING UCM. (OPTIONAL FOR USER DEPARTMENT)	It should support Video Conferencing with other UCM (Unified Communication System) Port capacity can be decided by user department.
w	DISPLAY UNIT	Dimension and features of display unit may be decided by user department as per their requirement.

Anil Kamboj
SI/Tech, CRPF

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INSP/GD, CRPF

Mayank Dansena
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Vijay Kumar
DIG(IT), CRPF

R. P. Pandey
IG(Comn), CRPF

[Approved / Not Approved]

K. Durga Prasad, IPS
DG, CRPF

TRIAL DIRECTIVE WITH QR OF VIDEO CONFERENCING SYSTEM

	Parameter	Specifications finalized by Sub-Group	Trial Directive
1	**VIDEO**		
a	**Signal system**	The system should support PAL and should be a point-to-point system with codec, Full High Definition 1080p camera with a minimum of 10xzoom, MIC, remote control, cable and power supply.	Refer the user documentation. Mic, Remote Control, Cable and Power Supply can be physically verified.
b	**Standards and protocol**	H.263, H.264 or better	Use legacy endpoint during field trial and connect the same with offered End Point.
c	**Resolution**	The system should support video resolution from 4CIF (Common Intermediate format), VGA, SVGA, 720P, 1080p @30fps. The PC resolution should be 1080P	Refer the user documentation. Also check the call statistics when call is on between two endpoints.
d	**Frame rate**	Minimum 30 fps.	Refer the user documentation.
e	**Band width**	Upto 4Mbps point to point on IP	Connect a call on 4 Mbps and check that end points bitrate in call statistics.
f	**Video Inputs**	The system should have 2 Video Inputs to connect 1XHD camera and 1 for PC DVI (Digital Video Interface)	Refer the user documentation and check the port physically on endpoint.
g	**Video outputs**	The system should have 2 video outputs 2XHDMI (High-Definition Multimedia Interface)/DVI for connecting two HD displays :DVI	Refer the user documentation and check the port physically on endpoint.
h.	**Picture in Picture**	Should support picture in picture (PIP)	Refer the user documentation and check the port physically on endpoint.
2	**AUDIO**		
a	**Standards and protocol**	G.711,G.722,G.722.1 or better	Refer the user documentation
b	**Features**	CD-Quality audio or Equivalent or Higher Instant Adaptation Echo Cancellation or Equivalent or Higher Automatic Gain control (AGC)or Equivalent or Higher Automatic Noise suppression (ANS)or Equivalent or Higher	Refer the user documentation

c	**Audio Inputs**	The system should have 2 Audio inputs (2XRCA Phone connectors) or Equivalent or Higher	Refer the user documentation and check the port physically on endpoint.
d	**Audio outputs**	The system should have 2XRCA Phone or Equivalent or Higher	Refer the user documentation and check the port physically on endpoint.
e	**Lip synchronization**	Active Lip Synchronization or Equivalent or Higher	Connect the call and interact with the far end and see the lip synchronization.
3	**NETWORK**		
a	**Features**	The system should ready for IPv6 The system should have features such as QoS / RSVP Standards or equivalent or higher , Packet loss based down speeding TCP/IP, DHCP (Dynamic Host Configuration Protocol), Auto Gatekeeper discovery, Dynamic Layout/lip sync buffering, DTMF (Dual tone multi frequency signaling tone, Date and Time.	Refer the user documentation. Also see the system settings for the ready for IPv6.
b	**ITU-T standards**	DUAL STREAM:- The system should have capability to support H.239 in both H,323 and SIP mode	Refer the user documentation.
c	**Network Protocols**	The system should have H.323 and SIP capability	Refer the user documentation
d	**Interfaces**	Gigabit LAN Port	Refer the user documentation. Check the port physically on endpoint.
e	**Inbuilt MCU in end point**	End point should have option of inbuilt MCU. (No. of ports can be define by user Deptt. on tendering.)	Refer the user documentation.
f	**Security**	Should support data encryption for better security	Refer the user documentation.
4	**CAMERA**		
a	**Image sensor**	1/3 CCD / CMOS	Refer the user documentation
b	**Pan**	+/- 75° or more	Refer the user documentation. Check the right and left movement of camera only.
c	**Tilt**	+ 10° /- 15 ° or more .	Refer the user documentation. Check the up and down movement of camera only.
d	**Focus**	Automatic/ Manual	Refer the user documentation. Zoom the camera on an object and check that auto focusing functionality.
e	**Total field of view**	250° or better'	Refer the user documentation.
f	**Horizontal view angle**	65 ° or better	Refer the user documentation

g	**Zoom ratio**	10x Zoom optical or better	Refer the user documentation. zoom the camera and see the zoom functionality.
h	**Remote Control**	IR/ Wireless	Refer the user documentation. check the remote functionality.
i	**Microphone**	2 x 360° voice pickup microphone	Refer the user documentation. Check the voice pickup of Microphone from all directions.
j	**Administration**	The administration of the Video endpoint should be through Web interface using HTTPS/HTTP (Hyper Text Transfer Protocol Secure)	Refer the user documentation. Browse the system through web interface and check the functionality.
5.	**MULTI CONTROL UNIT (MCU)**		
a	**Dimension**	The MCU must be provided with all the necessary accessories to integrate system in 19" Industrial Rack.	Refer the user documentation. Check the Rack slots.
b	**Capacity**	N ports@ 4Mbps with HD 1080p @ Min 30 fps resolution should be supported on the same chassis/module without cascading with rate matching. The maximum number of ports upgradeable/scalable upto 48 ports. **(Note -** Port capacity "N" to be decided by user department as per there requirement)	Refer the user documentation. Connect a call on the MCU and check the call statistics.
c		**Optional :** The MCU should additionally support with a minimum of ' N' Audio only participants. **(Note - "N" to be decided by user department)**	Refer the user documentation. Add audio participants during a call and check the functionality.
d		The MCU should be accompanied with external / internal 2 PRI- ISDN gateway on same chassis or different chassis, Flexible design enables streamlined traffic flow and mass scale for converged IP Networks. (User department can extend the scalability to N PRI internal/external depending upon their requirement. Where N is to be decided by user)	Refer the user documentation. Add ISDN Participants on a conference and see the functionality.
e		The system should 1080p in continuous presence.	Refer the user documentation. Add more than two locations and see if they are displayed in a single screen.

f		The M J must support 2 nos of 10/100/1000 Mbps Ethernet.	Refer the user documentation. Check the port physically.
g	AUDIO SUPPORT	Audio Codecs G.711, G.722 G.722.1 of better	Refer the user documentation.
h	VIDEO SUPPORT	Video codec H.263, H.264 or better	Refer the user documentation. Connect legacy equipment and check the functionality of the system.
i	GATEKEEPER	MCU shall support an embedded/external Gatekeeper for minimum 100 registrations and 50 concurrent calls. 50/100 Management, address book and scheduling tool should have capability to manage minimum 100 devices. MCU shall have the capability to connect the PC/laptop for presentation sharing over LAN/IP network	Refer the user documentation. Register endpoint to the gatekeeper and management device and check the functionality. Send a presentation in a call and see the PC Presentation.
j	NO OF CONFERENCES	MCU should support multiple conferences as per the virtual MCU port capacity with flexible resource Capacity by using N ports. Conferencing highlights personnel layout, auto layout, border for active, speaker indication, lecture and presenting mode, conference profiles.	Refer the user documentation. Create multiple conferences on the MCU and connect to them from various end points.
k	CONTINUOUS PRESENCE VIEW	MCU should support 16 Continuous Presence (CP) on a single screen.	Refer the user documentation. Add 16 locations and see if they are displayed in a single screen.
l	INTERACTIVE KEYPAD	MCU shall have a built- in auto- attendant/IVR from whom users can select conferences to join or start a new conference. This shall be operated using either DTMF or FECC (For End and Camera Control).	Refer the user documentation. Connect a call and check the functionality.
m	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 loss 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.	Refer the user documentation. Connect a call and check the functionality of layout changing dynamically.
n	CHAIRPERSON VIEW	It should have chairperson / Administrator view.	Refer the user documentation.
o	FAR END CAMERA CONTROL (FECC) AND VOLUME CONTROL	It should be possible to control far end camera.	Refer the user documentation. Connect legacy equipment and check the functionality of the system.
p	H-239 SUPPORT	The MCU shall support H.239 (Sharing content through Video Conferencing).	Refer the user documentation
q	DIAL-OUT CAPABILITY	Should dial out automatically to all participants, retry dial out conferences to complete call setup and should report	Refer the user documentation. Connect the call and control the far end camera and see the functionality.

		specific failures. MCU shall support dual video H.239 and ability to send content also.	
r	**DIAL-IN CAPABILITY**	Should offer dial-in and/or dial out capability.	Refer the user documentation
s	**SECURITY**	The MCU should support one level or more of conference password-Chair Person and Participant password.	Refer the user documentation. Add participants to the MCU and try dialing out from the MCUs interface.
t	**OTHER FEATURES**	i) MCU shall provide HD quality in continuous presence to all HD(1080p) endpoints connected and deliver this even if SD or HD end points or port of the conference. The solution shall support standard definition, and high definition in both voices activated and continuous presence mode without loss of functionality or capacity.	Refer the user documentation. Connect participants from PC and check the functionality.
		ii) MCU shall support communication up to 4 Mbps per port using both H.263 and H.264 video	Refer the user documentation. Connect a call from the MCU and see the resolution.
		iii) 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.	Connect a call on 4 Mbps and check that end points bitrate in call statistics.
		iv) The MCU must support ability to terminate two different non-routable networks, so that video calls from either network can be connected into a single conference without compromising on the security	Refer the user documentation. Create permanent conferences on the MCU and see if ports are consumed.
		v) MCU shall provide a built- in web Interface, for configuration and administration.	Refer the user documentation. Connect calls from two separate network and check the functionality.
		vi) MCU shall support 2 access level/user privileges from administrator to simple guest.	Refer the user documentation. Browse the system through web interface and check the functionality.
		vii) MCU shall have a built- in/external address book and built in/ external scheduling.	Refer the user documentation. Create multiple users on the MCU with different rights.
		viii) The MCU shall support scheduled conferences and ad-hoc conferencing mode at the same time for all the N ports of the system.	Refer the user documentation. Add participants to the address book of the MCU and check the functionality.
		ix) MCU shall support a predefined and unique PIN for each conference.	Refer the user documentation. Add an ad-hoc participant to the MCU and check the functionality.
		x) MCU shall allow users to create conferences on the fly from their end points without the need of Administrator /operator	Refer the user documentation. Create a conference and assign a pin to check the functionality.
		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	Refer the user documentation. Add participant on the fly and check the functionality.

		xii) MCU shall be capable of supporting H.323,SIP, and H.235 in the same conference, at any band with resolution.	Refer the user documentation. Connect a call on the MCU and check the functionality.
		(xiii) Features like "**Do Not Disturb**" and "**Auto Mode**" should be available.	Refer the user documentation. Connect a call and check the functionality.
u	**CENTRALIZED RECORDING**	The MCU server either internally or externally should be able to record the ongoing conference on HD 1080P for 2 or more Simultaneously Conference. (Min 500 hrs VC storage capacity)	Refer the user documentation. Record an ongoing conference and check the functionality.
v	**CONNECTIVITY WITH EXISTING UCM. (OPTIONAL FOR USER DEPARTMENT)**	It should support Video Conferencing with other UCM (Unified Communication System) Port capacity can be decided by user department.	Refer the user documentation. Connect the UCM like Microsoft Lync/IBM etc and check the functionality.
w	**DISPLAY UNIT**	Dimension and features of display unit may be decided by user department as per their requirement.	Design the display plan as per requirement of conference hall or Room.

Anil Kamboj
SI/Tech, CRPF

Mohan Singh Bisht
INSP/GD, CRPF

Mayank Dansena
AC(IT), CRPF

Maj. Piyush Tilara
TC(Comn), NSG

Pardeep Kumar Yadav
AC, ITBP

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Vishal Anand
Comdt(Comn), ITBP

Ms. C. Radhika
Jt. Dir, DRDO

Vijay Kumar
DIG(IT), CRPF

R. P. Pandey
IG(Comn), CRPF

[Approved / Not Approved]

K. Durga Prasad, IPS
DG, CRPF