

REVISED DRAFT QRs/TDs OF VIDEO SURVEILLANCE BALL

General:-

1. **Sensor.** The Video Surveillance Ball should have following features (The following features are required to be checked physically by the Board of Officers/STEC).

- (a) It should have audio and video Svl capacity.
- (b) Should be rugged enough to survive a **“throw” upto height of 03 mtr** and “roll” of more than 20 mtr with landing in rough terrain, concrete, piles of debris or through windows.
- (c) 360⁰ audio and video coverage.
- (d) Continuous operation up to 02 hrs.
- (e) Night vision capability.

2. **Receiver.** Receiver should have following features (The following features are required to be checked physically by the Board of Officers/STEC).

- (a) The portable Remote Display Unit should have a TFT display of minimum Five inches or more with inbuilt DVR capability to record and play back.
- (b) This should have output facility for recording on external device.
- (c) **This should have S- Video, AV & USB port for extension of display of receiver through RF transmitter.**
- (d) **This should have LED indication for the signal strength of sensor and BITE test facility on display.**

3. **Technical Specifications.**

<u>Ser</u>	<u>Parameters</u>	<u>QRs</u>	<u>TDs</u>
(a)	<u>Image sensor</u>		
	(i) Resolution	More than 520 TV Lines	Check the supporting documents provided by OEM/NABL accredited lab certificate.
	(ii) Frame rate	Live Video min 25 fps	Check the supporting documents provided by OEM/NABL accredited lab certificate.
	(iii) Shutter operation	Automatic	Should be checked physically by the BOO.
	(iv) Number of cameras in image sensor	Two	Should be checked physically by the BOO.
(b)	<u>Audio Microphone</u>		
	(i) Audio detection	Omni directional	Should be checked physically by checking input from all around by the BOO.
	(ii) Sensitivity of audio microphone	Should detect human voice from 5 m or more.	Should be checked physically by the BOO with the help of measuring tape.
	(iii) Squelch	Automatic squelch to decrease noise	Should be checked physically by the BOO with ear phone.

Ser	<u>Qualitative Requirements</u>	<u>QRs</u>	<u>TDs</u>
(c)	<u>Video and Audio Transmission</u>		
	(i) Indoor transmission dist	25 Mtr minimum	Should be checked physically by the BOO with the help of measuring tape.
	(ii) Outdoor transmission dist	100 mtr minimum	Should be checked physically by the BOO with the help of measuring tape.
	(iii) Frequency of control and feedback link/net	License free	Check the supporting documents provided by OEM.
(d)	<u>Illumination</u>		
	(i) Illumination wavelength	Illumination by using infrared LEDs not visible to Human Eye	Should be checked physically by the BOO in the dark room with the help of IR sensor and also check the supporting documents provided by the OEM.
	(ii) Illumination distance	5 mtr or more	Should be checked physically by the BOO in the dark room with the help of IR sensor and measuring tape.
	(iii) Light sensor	Automatic operation of illuminating light depending on light condition of target area.	Should be checked physically by the BOO in the dark room with different light condition of target area.
(e)	<u>Camera</u>		
	(i) Camera Range of sensors ball.	Less than 1m to 20 m or more	Should be checked physically by the BOO with the help of measuring tape.
	(ii) Pan & Zoom	PAN 360 deg, 2x Digital Zoom day/night camera	Should be checked physically by the BOO.
	(iii) Number of Cameras in one sensor.	Two	Should be checked physically by the BOO.
	(iv) Camera selection/swap	User selectable	Should be checked physically by the BOO.

<u>Ser</u>	<u>Qualitative Requirements</u>	<u>QRs</u>	<u>TDs</u>
(f)	<u>Mechanical specifications</u>		
	(i) Dimensions of Ball unit	100 mm Diameter or less	Should be checked physically with the help of measuring scale by the BOO.
	(ii) Weight	1 Kg (Max)	Should be checked physically with the help of weight machine by the BOO.
	(iii) Stabilization and Motion	Quick self-stabilization.	Should be checked physically by the BOO.
(g)	<u>Power Source</u>		
	(i) Rechargeable battery	Li-Ion/LiPO with protection circuit.	Should be checked physically by the BOO.
	(ii) Battery operation capacity.	<u>Ball unit</u> : Minimum 2 Hrs <u>PDU</u> : Minimum 3 Hrs	Should be checked physically by the BOO.
	(iii) Battery Charger	for PDU and Sensor	Should be checked physically by the BOO.
	(iv) Battery Charging time	Less than 4 hours	Should be checked physically by the BOO.
	(v) Battery Charger input	220-240V, 50 Hz AC and provision from charging from the vehicle.	Should be checked physically by the BOO.
	(vi) Fast Charger for charging of Sensor Battery and PDU	To be provided for Sensor and PDU to charge within 02 hrs.	Should be checked physically by the BOO.

<u>Ser</u>	<u>Qualitative Requirements</u>	<u>QRs</u>	<u>TDs</u>
(h)	The display Unit- A touch-screen TFT display unit To receive and display audio and video reconnaissance data picked up by Video Surveillance Ball.		Should be checked physically and supporting document provided by OEM by the BOO.
	(i) Remote Display Unit with system software	The portable Remote Display Unit should have a TFT display of minimum five inches along with the system software	Should be checked physically and supporting document provided by OEM by the BOO.
	(ii) Display	The display should offer 360° FOV.	Should be checked physically and supporting document provided by OEM by the BOO.
	(iii) Squelch	Should have automatic squelch with digital noise filter.	Should be checked physically and supporting document provided by OEM by the BOO.
	(iv) Endurance	Should be 3 hours or more in continuous operation.	Should be checked physically by the BOO.
	(v) Memory	Min of 128 GB or more storage for recording of videos.	Should be checked physically by the BOO.
	(vi) Sleep Mode	Power save mode should be available in case video transmission not required from Sensor.	Should be checked physically by the BOO.
	(vii) Flip mode	Image should auto flip in case the Ball is placed upside down.	Should be checked physically by the BOO.
	(viii) Audio output jack should be there to listen to the audio being picked up by the ball.	S – Video, AV and earphone connectors for audio	Should be checked physically by the BOO.

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	(ix) IP Standard for Ball units	IP 65 or better	Check the supporting documents provided by certified lab.
	(x) Recording	(i) Video (incl audio) recoding to be continued 02 hrs (min). (ii) Video extract option must be available.	Should be checked physically by the BOO.
(j)	Accessories:- The following accessories to be supplied with each system in hard carrying case		Should be checked physically by the BOO.
	(i) Throw able camera ball	02	
	(ii) Training Ball	01	
	(iii) Portable Operator Control Unit with Jacket and bty charger	02	
	(iv) Camera Ball Charger	02	
	(v) Head Phones	01	
	(vi) Telescopic Pole with adaptor	02 (For two balls when both are required to be used for operation).	
	(vii) Spare Powering Pin	02	
	(viii) User manual	01	
	(ix) Quick Reference Guide	01	
	(x) Ground Spike	01	
	(xi) Door Hanger for Throw able camera ball	01	
	(xii) Tripod	02	
	(xiii) Retrieval Rope	02	

<u>Ser</u>	<u>Qualitative Requirements</u>	<u>QRs</u>	<u>TDs</u>
(k)	Additional Battery charger for PDU and ball units per deployment kit	01 x each charger for PDU and ball unit	Should be checked physically by the BOO.
(l)	<u>Carrying Case:</u> A single backpack type carrying case housing the complete equipment and its accessories less the pole. A soldier should be able to carry the equipment on his back conveniently. Its should be preferably of camouflage pattern	01	Should be checked physically by the BOO.

Misc Aspects

4. **Literature** Operating and Technical literature for each discrete components of system should be in English language.
5. **Demonstration and Training.** Demonstration/Trial of one set of complete system with its full accessories to be given in Delhi on no cost no commitment basis. In site training of users for three days on operation, maintenance, fault finding and user level repairs.
6. **Warranty.** Comprehensive warranty for 03 years.
7. **Comprehensive Annual Maintenance Contract/ Repair cover.** The vendor will provide CAMC for 05 yrs after expiry of the warranty. The manufacturer shall guarantee to complete repairs and return the equipment to the customer within 10 days of reporting the fault, during the period the eqpt is under warranty / CAMC repair cover to be made available ex Delhi.