

F.No.P-63013/11/2011(MSC)-Ord/BSF/MHA-Prov-I 388
Bharat Sarkar/Government of India
Griha Mantralaya/Ministry of Home Affairs
PM Division/Prov.I Desk

26, Man Singh Road, Jaisalmer House
New Delhi, Dated 5th July, 2013
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To,

DsG: AR (through LOAR), BSF, CISF, CRPF, ITBP, SSB, NSG & BPR&D.

Subject: QRs and Trial Directive for Video Surveillance Ball.

The QRs and Trial Directives in respect of Video Surveillance Ball as per Annexure (except warrant and AMC clause as mentioned in para 6 & 7 of QRs) have been accepted by the Competent Authority in MHA.

2. Henceforth, all the CAPFs should procure the above item required by them strictly as per the laid down Technical Specifications/QRs.

Yours faithfully,

Encl: as above



(P.K. Srivastava)

Under Secretary to the Govt. of India

Tel: 23381278

Director General Border Security Force
(Provisioning Directorate)

The Sub-group of Technical Experts on Surveillance Equipments constituted by MHA vide their letter No. IV-17017/18/2001-Prov-I dated 05 Jul 2002 held its meeting at BSF headquarters on 25 Aug 2011, 02 Sep 2011, 27 Sep 2012 & 29 Nov 2012 to formulate the fresh QRs of Video Surveillance Ball as desired by MHA vide their letter No. IV-21011/4/2010-Prov-I dated 09 Jun 2011.

After detailed deliberations the referred Sub-group has finalized the QRs of Video Surveillance Ball which are as under:-

General

1. Sensor: The video surveillance ball should have following features
 - a) It should have audio and video svl capacity
 - b) Should be rugged enough to survive a "throw" or "roll" of more than 20 mts with landings in rough terrain, concrete, piles of debris, or through windows.
 - c) 360° audio and video coverage
 - d) Continuous operation up to 2 Hrs
 - e) Night vision capability.

2. Receiver: 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. This should have output facility for recording on external device.

3. Technical Specification

Ser No	Features	Specifications	Remarks by vendors/Firms
(a)	Image sensor		
	(i) Resolution	More than 450 TV lines	
	(iv) Frame rate	Line Video minimum 25 fps	
	(v) Shutter operation	Automatic	

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b)	Audio Microphone		
	i) Audio mike detection	Omni directional	
	ii) Sensitivity of audio mike	should detect human voice from 5 m or more	
	iii) Squelch	Automatic squelch to decrease noise	
c)	Video and Audio Transmission		
	i) Indoor transmission dist	25 mtr minimum	
	ii) Outdoor transmission dist	100 mtr minimum	
	iii) Frequency of control and feed back link/net	License free	
d)	Illumination		
	i) Illumination wavelength	Illumination by using near infrared LEDs	
	ii) Illumination distance	5 mtr or more	
	iii) Light sensor	Automatic and manual control of illuminating light depending on light condition of target area	
e)	Camera		
	i) Camera Range of sensor ball	Less than 1meter to 20 m or more	
	ii) Pan and Zoom	Pan 360, 2x Digital Zoom, day/night camera.	
f)	Mechanical specifications		
	i) Dimensions of Ball unit	100 mm Diameter or less	
	ii) Weight	1 Kg (max)	
	iii) Stabilization and Motion	Quick self stabilization	
g)	Power source		
	i) Rechargeable battery	LiON/LIPO	
	ii) Battery operation capacity	Ball Unit: Minimum 2 Hrs PDU : Minimum 3 Hrs	
	iii) Battery Charger	For PDU and Sensor	
	iv) Battery charging time	Less than 4 hours	
	v) Battery Charger input	220V, 50 Hz AC Mains and provision for Charging from the vehicle.	

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h)	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	
i)	Output connection	S - Video/AV and earphone connectors for audio	
j)	IP Standard for Ball units	IP 65 or better	
k)	<u>Accessories:- The following accessories to be supplied with each system in hard carrying case:</u>		
	i) Throw able camera ball		02
	ii) Training ball		01
	iii) Portable Operator Control Unit with Jacket and battery charger		01
	iv) Camera Ball Charger		02
	v) Head phones		01
	vi) Telescopic pole with adaptor		01
	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
l)	Additional battery charger for PDU and Ball units per deployment kit		01 x each charger for PDU and Ball unit
m)	<u>Carrying case</u> A single soft 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. It should be preferably of camouflage pattern		

Misc Aspects

4. Literature Operating and Technical literature for each discrete components of system should be in English language

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5. Demonstration and Training Demonstration 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 day on operation, maintenance, fault finding and user level repairs.

6. Warranty Comprehensive warranty for 1 year.

7. Annual Maintenance Contract/Repair Cover The vendor will provide AMC for 3 yrs after expiry of the warranty. The manufacturer shall guarantee to complete repairs and return the equipment to the customer within 30 days of reporting the fault, during the period the eqpt is under warranty/ AMC Repair cover to be made available ex Delhi

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are not
seen accepted
by competent
Authority in
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(SUBHASH JOSHI) IPS
DIRECTOR GENERAL
BORDER SECURITY FORCE

TRIAL DIRECTIVE FOR VIDEO SURVEILLANCE BALL

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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" or "roll" of more than 20 Mts with landings in rough terrain, concrete, piles of debris, or through windows.
 - c) 360° audio and video coverage.
 - d) Continuous operation up to 2 Hrs.
 - e) Night Vision capability.

2. **Receiver:** The portable Remote Display Unit should have a TFT display of minimum five inches or more. (To be checked by the Board of Officers/STEC)

3. **Technical Specification**

S No.	PARAMETERS	Procedure suggested for trial	Result expected / desired	Complied / Not Complied
a)	Image sensor		1) Resolution:- more than 450 TV lines.	Check the supporting documents provided by the OEM/NABL accredited lab certificate.
			2) Frame rate:- line video minimum 25 fps.	Check the supporting documents provided by the OEM/NABL accredited lab certificate.

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			from concerned lab.	
	III) Shutter operation:- automatic.	Should be checked physically by the Board of Officers.	Shutter operation must be automatic	
b)	Audio microphone			
	i) Audio mike detection:- Omni directional.	Should be checked physically by the Board of Officers by checking input from all around.	Mike detection must be from any corner.	
	ii) Sensitivity of audio mike:- should detect human voice from 5m or more.	Should be checked physically by the Board of Officers with the help of measuring tape.	Should detect the human voice from 5 m or more.	
	iii) Squelch:- Automatic squelch to decrease noise.	Should be checked physically by the Board of Officers	Must decrease automatically.	
c)	Video and Audio Transmission			
	i) Indoor transmission dist:- 25 mtr minimum.	Should be checked physically with the help of measuring tape.	Indoor transmission must be 25 mtr minimum.	
	ii) Outdoor transmission dist:- 100 mtr minimum.	Should be checked physically with the help of measuring tape.	Outdoor transmission must be 100 mtr minimum.	
	iii) Freq of control and feed back link /net : - license free.	Check the supporting documents provided by the OEM.	Check the certificates submitted. In case of any doubt the veracity of same be checked from concerned OEM..	
d)	Illumination			
	i) Illumination wavelength:- illumination by using near infrared LEDs.	Should be checked physically with the help of IR sensor and also Check the supporting documents provided by the OEM.	Check the certificates submitted. In case of any doubt the veracity of same be checked from concerned OEM.	
	ii) Illumination distance:- 5 mtr or more.	Should be checked physically in the dark room	Illumination distance must be 5	

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<p>iii) Light sensor: - Automatic and manual control of illuminating light depending on light condition of target area.</p>	<p>with the help of IR sensor and measuring tape. Should be checked physically in the dark room with the different light conditions of target area by the Board of Officers.</p>	<p>mtr or more. The light sensor illumination must adjust automatically as well as manually with light condition of the target area.</p>	
<p>e) Camera</p> <p>i) Camera range of sensor ball:- Less than 1 meter to 20 m or more.</p> <p>ii) Pan and zoom:- pan 360, 2x digital zoom, day/night camera.</p>	<p>Should be checked physically with the help of measuring tape by the Board of Officers.</p> <p>Should be checked physically with the help of Integrated Test Station by the Board of Officers.</p>	<p>Camera range of sensor ball (video surveillance ball) must be less than 1 meter to 20 m or more.</p> <p>Pan must be 360 degree and zoom must be 2x digital zoom.</p>	
<p>f) Mechanical specifications</p> <p>i) Dimensions of ball unit:- 100 mm or less</p> <p>ii) Weight:- 1 Kg Maximum.</p> <p>iii) Stabilization and motion:- Quick self stabilisation</p>	<p>Should be checked physically with the help of measuring scale by the Board of Officers.</p> <p>Should be checked physically with the help of weighing machine by the Board of Officers.</p> <p>Should be checked physically by the Board of Officers.</p>	<p>Dimension of ball must be 100 mm or less.</p> <p>Weight not to exceed 1 Kg.</p> <p>Stabilization must be self and quick.</p>	
<p>g) POWER SOURCE</p> <p>i) Rechargeable Bty:- Li-ON/ LIPO</p> <p>ii) Bty operation capacity:- Ball Unit: Min. 2 Hrs PDU: Min. 3 Hrs</p> <p>iii) Bty Charger:- For PDU & Sensor</p>	<p>Should be checked physically by the Board of Officers.</p> <p>i) Should be checked physically by the Board of Officers.</p> <p>ii) Switch on the ball unit.</p> <p>iii) It must run min 2 Hrs, check with the help of stop watch.</p> <p>Should be checked physically by the Board of</p>	<p>Bty must be Li-ON/LIPO.</p> <p>Ball unit and PDU must run continuously for two hrs and three hrs respectively.</p> <p>Bty charger for PDU & sensor</p>	

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	<p>iv) Bty charging time:- Less than 4 Hrs</p>	<p>Officers. Should be checked physically after connecting to AC mains supply. It should charge the bty in less than 4 Hrs.</p>	<p>must be provided. Charging must be completed in less than 4 Hrs.</p>	
	<p>v) Bty charger Input:- 220V, 50 Hz AC mains and provision for charging from the vehicle.</p>	<p>Should be checked physically by the Board of Officers.</p>	<p>Charging input from AC 220 V 50 Hz and also from vehicle battery.</p>	
h)	<p>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.</p>	<p>Five inch TFT display should be physically checked by the Board of Officers.</p>	<p>The portable Remote display unit must have a TFT display of minimum five inches along with the system software.</p>	
i)	<p>Output Connection:- S-Video/ AV & Earphone connection for Audio</p>	<p>Should be checked physically by the Board of Officers.</p>	<p>Must have Output Connection S-Video/AV & Earphone connection for Audio.</p>	
j)	<p>IP Standard for Ball units:- IP 65 or better.</p>	<p>Check the supporting documents provided by the NABL accredited Lab.</p>	<p>Check the certificates submitted. In case of any doubt the veracity of same be checked from concerned lab.</p>	
k)	<p>Accessories :- The following accessories to be supplied with each system in hard carrying case:</p> <ul style="list-style-type: none"> i) Throw able camera ball: - 02 nos. ii) Training ball : - 01 nos. iii) Portable Operator Control unit with Jacket and bty charger: - 01 nos. iv) Camera Ball Charger: - 02 nos. v) Head phones: - 01 nos. vi) Telescopic pole with adaptor: - 01 nos. vii) Spare Powering pin: - 02nos. viii) User Manual: - 01 nos. 	<p>Should be checked physically by the Board of Officers.</p>	<p>Must have all the accessories.</p>	

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<p>ix) Quick Reference Guide: - 01 nos. x) Ground Spike: - 01 nos. xi) Door Hanger for Throw able camera ball: - 01 nos. xii) Tripod: - 02 nos. xiii) Retrieval rope: - 02 nos.</p>			
<p>l) Additional battery charger for PDU and Ball units per deployment kit:- 01 x each charger for PDU and ball unit.</p>	<p>Should be checked physically by the Board of Officers.</p>	<p>Must have 01 no additional bty charger for PDU and ball unit.</p>	
<p>m) Carrying case A single soft 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. It should be preferably of camouflage pattern.</p>	<p>Should be checked physically by the Board of Officers.</p>	<p>Must have soft backpack type carrying case.</p>	

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