No. IV-17017/13(i)/06-Prov.I
Government of India
Ministry of Home Affairs

Jaisalmer House, Man Singh Road,
New Delhi, 17.11.2006

To

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

Subject:- Finalization of QRs/specifications for Electronic Security Gadgets.

The QRs of certain security related Equipments which belong to the following four categories have been finalized and accepted by the MHA:-

(i) VIDEO SURVEILLANCE SYSTEM - List of items at Annexure 'A'
(ii) ACCESS CONTROL SYSTEM - List of items at Annexure 'B'
(iii) PERIMETER PROTECTION SYSTEM - List of items at Annexure 'C'
(iv) INTRUSION DETECTION SYSTEM - List of items at Annexure 'D'

2. The QRs of all the individuals items mentioned at (Annexure A, B, C & D) are sent herewith.

3. Henceforth, all the CPMFs should procure the above items required by them strictly as per the laid down QRs/Specifications.

(Alok Mukhopadhyay)
Under Secretary (Prov-I)

Copy to:-

DD (Procurement), MHA

Copy for information to:-

1. PS to JS (PM), MHA
2. Dir (Prov), MHA
TECHNICAL SPECIFICATIONS OF OUTDOOR SPEED DOME COLOUR CAMERA

1. Pick-up device -- 1/4 or 1/3 format, interline transfer. CCD image sensor
2. Horizontal resolution -- 520 TV Lines or better.
3. Sensitivity -- 1 Lx day mode or better
   (Usable video) -- 0.05 Lx Night mode
4. Signal to noise ratio -- ≥ 50 dB
5. White balance -- Auto/Manual
7. Zoom -- 25 X optical with 8 X digital or more
8. Pan/Tilt -- 360° continuous pan, 0 to 90° tilt
9. Preposition Speed -- 360°/sec,
10. variable speed -- 120°/sec minimum
11. Features
    • Sector/ titles
      ○ Pre-set positions -- 99 or more
      ○ Alarm inputs / outputs
      ○ Auto tours – Recorded or preset
      ○ Pre-programmed tours
      ○ Password control
      ○ Privacy masking
12. Operating Temperature -- -10 °C to +50 °C
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Humidity</td>
<td>0 to 80% relative, non-condensing.</td>
</tr>
<tr>
<td>14. EMC</td>
<td>CE, Immunity, Safety: CE</td>
</tr>
<tr>
<td>16. Mount</td>
<td>Either Pole or Wall mount as required</td>
</tr>
</tbody>
</table>

**OUTDOOR HOUSING FOR SPEED DOME CAMERA**

1. **Construction**
   - Aluminum cover, neoprene gaskets, UV-resistant polymer end caps, and all stainless steel hardware. The mount shall have mounting head adjustable 360° pan, 180° tilt.

2. **Environmental**
   - Shall meet IP 65 or better protection. It should have sun shield with thermostatically controlled heater blower kit.

---

(Abhishek Sen)
Asst. Director (Tech) I.B.

(Harish Kumar)
DIG, BSF, S.J.S.

(Sura Mall)
DIG/TECH, CISF

(S.I.S. Ahmed)
DG, CISF
TECHNICAL SPECIFICATIONS OF DIGITAL VIDEO RECORDER (STANDARD MODEL)

Video Inputs
8 CH minimum (as specified up to 16 CH)

Video Outputs
2 Monitors, one composite & one VGA

Video Format
NTSC/PAL

Display speed
480 fps or more

Display Mode
Full, Quad, combination multi-screen

Resolution
720x240 or better

Recording
240 fps or better (Real time, linear & ring recording up to 8 CH & should be able to specify record rate for each camera separately)

Playback speed
50 fps or better

Back up
HDD, DVD

Pan/Tilt/Zoom
RS 232/485/422

Alarm
Sensor in – 8, out – 2

Audio
1 in/out

Network
RJ-45 (10/100 Ethernet)

Controller
IR-Remote Controller

Protocol
TCP/IP etc

Power source
12- 24 VDC, 220 VAC

HDD Capacity
400 GB

[Signature]

[Date]
Zoom

Compression protocol
Archiving
Date/Time Stamp
Video authentication

Search
Programmable modes

Motion Detection

Camera Titling
Video loss
It should have simultaneous display
Recording

It should be provided with remote viewer software.

It should have USB ports.

Up to 4X

MPEG 4
DVD-R/RW
Should be available
Should have watermarking feature for detect of tampering.
By time, date, event/motion, camera
4 or more- definite drift behavior like record rate, alarm handling, motion detection, should be set as per day/time
yes, selectable area of scene specification on direction of motion, speed sensitivity.

16 Character- user programmable
Alarm
Recording should be event based/motion bas operator triggered/scheduled

(Surya Mal) L7/46
DIG/TECH, CISF

(S.I.S. Ahmed)
DG, CISF

(Abhijit Sen)
Asstt. Director (Tech) I.B.

(Harish Kumar) L7/14
DIG, BSF/STS
TECHNICAL SPECIFICATIONS OF PAN/TILT UNIT

It should be a lightweight indoor Pan/Tilt unit for cameras.

Power: 220 ± 10% VAC, 12 to 24 VDC

Pan Speed: 6° per second or more

Pan Travel: 345° with adjustable limit stops

Tilt Speed: 4° per second or more

Tilt Travel: 70° or more

Maximum Load: For Pan – not less than 6 Kg
               For Tilt – Not less than 4 kg

Duty Cycle: Continuous for Pan & intermittent for Tilt

It should have dust proof seals.

(Signed)
Abhijit Sen
Asstt. Director (Tech) I.B.

(Harish Kumar)
DIG, BSF/LTS

(S.S. Ahmed)
DG, CISF

(Suraj Mal)
DIG/TECH, CISF
<table>
<thead>
<tr>
<th>TECHNICAL SPECIFICATIONS OF ZOOM COLOUR CAMERA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Pick-up Device: 1/4&quot; interline CCD</td>
</tr>
<tr>
<td>Effective Pixels: 752(H) x 582(V) minimum</td>
</tr>
<tr>
<td>Resolution: 520 Lines for Colour or better</td>
</tr>
<tr>
<td>S/N Ratio: 50 dB or more</td>
</tr>
<tr>
<td>Illumination: 0.5 Lux for normal mode @ F 1.6 or better</td>
</tr>
<tr>
<td>0.05 Lux for night mode @ F 1.6 or better</td>
</tr>
<tr>
<td>Gain Control: Low, middle, high, off selectable</td>
</tr>
<tr>
<td>White Balance: Auto &amp; selectable</td>
</tr>
<tr>
<td>Electronic Shutter speed: Auto/Manual selectable (-1/50 - 1/1,000,000 sec)</td>
</tr>
<tr>
<td>OSD: Built in</td>
</tr>
<tr>
<td>Motion Detection: on/off selectable</td>
</tr>
<tr>
<td>Zoom: 30X optical, 8X digital</td>
</tr>
<tr>
<td>Preset: 8 or more positions</td>
</tr>
<tr>
<td>Flip: Left, right, up &amp; down</td>
</tr>
<tr>
<td>Irish control: Auto/Manual selectable</td>
</tr>
<tr>
<td>Control Out put: RS-485</td>
</tr>
<tr>
<td>Operating Temp.: -5°C to 50°C</td>
</tr>
<tr>
<td>Weight: not more than 800 gm</td>
</tr>
</tbody>
</table>

(Asstl. Director (Tech) I.B.)

DIG. B&F, STS

DIG/TECH CISF

DG CISF

(S.I.S. Ahmed)

(Suraj Mal)

(Abhiraj Sen)
IR ILLUMINATOR WITH 30 M RANGE

1. Range : 30 meter (or as specified up to 50 m)
2. Angle : 10°
3. Wavelength : 850 nanometer (some visible)
4. Power : 12 VDC
5. Operating Temp : 0°C to 45°C

IR ILLUMINATOR WITH 18 M RANGE

1. Range : 18 meter (or as specified up to 50 m)
2. Angle : 30°
3. Wavelength : 940 nanometer (Completely non-visible)
4. Power : 12 VDC
5. Operating Temp : 0°C to 45°C
6. It should have Day/Night IR On/Off feature.

(I.S. Ahuja)
Asstt. Director I.B

(Harish Kumar)
DIG BSF, STS

(Sanjay Chander)
DIG/TECH, CISF

(S.I.S. Ahmed)
DG, CISF
<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Pick-up device</td>
<td>1/3-inch format, interline transfer, CCD image sensor</td>
</tr>
<tr>
<td>2. Horizontal resolution</td>
<td>520 TV Lines or better</td>
</tr>
<tr>
<td>3. Scene illumination</td>
<td>0.6 lx at Usable picture</td>
</tr>
<tr>
<td></td>
<td>0.03 lx or better</td>
</tr>
<tr>
<td>4. Signal to noise ratio</td>
<td>≥ 48 dB minimum</td>
</tr>
<tr>
<td>5. Electronic Shutter</td>
<td>Automatic On/off selectable</td>
</tr>
<tr>
<td>6. Aperture correction</td>
<td>Horizontal &amp; Vertical symmetrical</td>
</tr>
<tr>
<td>7. Backlight compensation</td>
<td>Required auto with manual override</td>
</tr>
<tr>
<td>8. Video outputs</td>
<td>Composite video - 1.0 V p-p, 75 ohm</td>
</tr>
<tr>
<td>9. Synchronization</td>
<td>Internal/External Synchronization</td>
</tr>
<tr>
<td>10. Controls</td>
<td>BLC, On/Off, AGC, On/Off, Auto Black, On/Off</td>
</tr>
<tr>
<td>11. Operating Temperature</td>
<td>-10 °C to +50 °C at 90% humidity</td>
</tr>
<tr>
<td>12. EMC</td>
<td>Relevant intentionally recognized standards of Immunity and safety</td>
</tr>
<tr>
<td>13. It should automatically switch to night mode in low light conditions.</td>
<td></td>
</tr>
</tbody>
</table>
### Auto iris vari-focal lens

1. **Image format**  
   - 1/3-inch format
2. **Focal length**  
   - 3.5-8 mm
3. **Iris range**  
   - F1.8
4. **Min. object distance**  
   - 0.3m (1 ft)
5. **Iris control**  
   - DC
6. **Focus control**  
   - Manual

---

(I.S. Ahuja)  
Asstt. Director I.B

(Harish Kumar)  
DIG, BSF, STS

(Sanjay Chander)  
DIG/TECH/CISF

(S.I.S. Ahmed)  
DG, CISF
FIX INDOOR COLOUR CAMERA

1. Pick-up device
   -- 1/3-inch format, interline transfer, CCD image sensor
2. Active picture elements
   -- standard (752H x 562V)
3. Horizontal resolution
   -- 520 TV Lines or better
4. Scene illumination
   Color mode
   -- 1 lx at Usable picture
5. Signal to noise ratio
   -- ≥ 48dB minimum
6. Aperture correction
   -- Horizontal & Vertical symmetrical
7. Backlight compensation
   -- Center Zone photometry System
8. White Balance
   -- Auto tracking
9. Electro Irish range
   -- 1 to 50,000 lx (With F 1.2)
10. Video outputs
    -- Composite video - 1.0 V p-p, 75 ohm
11. Synchronization
    -- Line lock - for roll-free vertical viewing
12. Controls
    -- BLC On/Off, AGC: On/Off,
13. Operating Temperature
    -- -10 °C to 50 °C
14. EMC
    -- All relevant immunity and safety standards
Varifocal lens

1. Image format -- 1/3-inch format
2. Focal length -- 3.5 - 8 mm
3. Iris range -- F1.8
4. Min. object distance -- 0.3m (1 ft)
5. Iris control -- DC.
6. Focus control -- Manual
7. 4-pin connector -- DC-iris

(I.S. Ahuja)
Asstt. Director I.B

(Harish Kumar)
DIG, BSF, STS

(Sanjay Chander)
DIG/TECH, CISF

(S.I.S. Ahmed)
DG, CISF
PIN HOLE CAMERA

Pick up device: 1/3" CCD image sensor
Resolution: 380 TV Lines
Sensitivity: 1 Lux

I.S. Ahuja
Asstt. Director I.B

Harish Kumar
DIG, BSF, STS

Sanjay Charan
DIG/TECH, CISF

S.I.S. Ahmed
DG, CISF
DIGITAL VIDEO RECORDER CARD

1. No of channels: 8 channels (as specified from 4 to 16)
2. Frames per channel: 25 f/s PAL per channel (Total-200 f/s)
3. It should be able to work on Window XP, Window-2000 etc.
4. It should have real time display, play back and recording (Triplex) simultaneously.
5. It should be provide local and remote surveillance.
6. It should have PSTN/ISDN modem/LAN connectivity.
7. It should have PTZ camera control.
8. It should have various recording modes.
9. It should have video motion detection feature.
10. The no. of frames per channel should be adjustable.
11. It should be possible to use the PC for other purposes as well and should not be dedicated only for DVR purpose.
12. It should have facility to zoom recorded images.
13. It should have date/time stamp for verification of authenticity of recorded material.

(I.S. Ahuja)
Asstt. Director I.B

(Harish Kumar)
DIG, BSF, STS

(Sanjay Chander)
DIG/TECH, CISF

(S.I.S. Ahmed)
DG, CISF
TECHNICAL SPECIFICATIONS OF VIDEO CAMERA JAMMER

Frequency Band : 800 MHz to 2.5 GHz
Effective range : 30-60 meter
Input Power : 6-12 VDC
Signal source : Synthesized
Operating temp : -10 to 55 deg C
Humidity : 80%
Size : 20 cm x 15 cm x 55 cm Maximum

This should be capable to jam any wireless camera and Bluetooth.

Abduljit Sen
Asstt. Director (Tech) I.B.

Hansh Kumar
DIG. BS-STS

S.I.S. Ahmed
DG. CISF
TECHNICAL SPECIFICATIONS OF DIGITAL KEYBOARD FOR DIGITAL VIDEO RECORDER &

1. Features
   - Control of Multiple DVRs & P/T/Z Cameras at the same time
   - Soft backlit keys with user friendly menu and easy to read display
   - Joystick for P/T/Z control of camera
   - Shall be interfaced to DVR for control of Camera selection and P/T/Z control.
   - LCD display of complete menu for selection of various functions

2. Connectors
   - Suitable for connectivity to DVR and preferably RJ11
   - Aux power for extended distances
   - RS-232 port for remote programming

3. DVR and Keyboard should be compatible

(Abhijit Sen)
Asstt. Director(Tech) IB

(Harish Kumar)
DIG BSF STS

(Suraj Mal)
DIG/TECH, CISF

(S.S. Ahmed)
DG, CISF
## TECHNICAL SPECIFICATIONS OF LCD MONITOR

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCD Panel</td>
<td>40 inch TFT LCD</td>
</tr>
<tr>
<td>TV System</td>
<td>PAL</td>
</tr>
<tr>
<td>Resolution</td>
<td>1280 X 768 or better</td>
</tr>
<tr>
<td>Aspect Ratio</td>
<td>16:9</td>
</tr>
<tr>
<td>Brightness</td>
<td>500 Cd/sq m or more</td>
</tr>
<tr>
<td>Contrast ratio</td>
<td>600:1</td>
</tr>
<tr>
<td>Viewing angle</td>
<td>170° (H)/170° (V)</td>
</tr>
<tr>
<td>Connector type</td>
<td>2 Speakers output</td>
</tr>
<tr>
<td></td>
<td>1 VGA input</td>
</tr>
<tr>
<td></td>
<td>1 Composite video input (BNC)</td>
</tr>
<tr>
<td></td>
<td>Component Video Input</td>
</tr>
<tr>
<td></td>
<td>RF input</td>
</tr>
<tr>
<td></td>
<td>S-Video, Coaxial RF, USB</td>
</tr>
</tbody>
</table>

### Other features
- Picture & Picture (PAP)
- RS 232C
- PAL
- Auto power on/off
- On screen menu
- Remote control
- Stand should be included
- CE, FCC Certified

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(Signature)

Assist. Director (Tech) I.B.

(Signature)

DG, BSF, STS

(D.S. Ahmed)

DG, CISF
**TECHNICAL SPECIFICATIONS OF IP CAMERA**

<table>
<thead>
<tr>
<th>Sensor</th>
<th>1/3&quot; or 1/4&quot; CCD sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>0.5 Lux</td>
</tr>
<tr>
<td>Monitoring</td>
<td>It should provide a real time monitoring via network (LAN/WAN) through built in webserver.</td>
</tr>
<tr>
<td>Image format</td>
<td>MPEG-4 &amp; Motion JPEG, QVGA, VGA</td>
</tr>
<tr>
<td>Frame rate</td>
<td>25 fps or better (PAL)</td>
</tr>
<tr>
<td>Image Control</td>
<td>Adjustment of brightness, contrast &amp; colour, B/W on/off, electronic Iris</td>
</tr>
<tr>
<td>Resolution</td>
<td>640X480 or better</td>
</tr>
<tr>
<td>Motion Detection</td>
<td>Should have inbuilt motion detection with post alarm buffers.</td>
</tr>
</tbody>
</table>

The image should be viewed, recorded, played back and managed simultaneously through internet explorer.

It should have multi-level password protection to prevent unauthorized access.

It should support minimum 10 users to browse the camera simultaneously.

It should have scheduled & triggered event functionality, via email or e-mail IDs.

It should have inbuilt memory for recording half an hour in normal mode and a slot for inserting higher capacity memory stick or card.

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(Officer's Name)
Asst. Director (Tech) I.B.

(Harish Kumar)
DIG, BSF, I.T.

(S.I.S. Ahmed)
DG, CISF
Technical Specifications of Wireless System for Video Surveillance

The system should consist of a transmitter, receiver, and connecting accessories so that remote camera signals could be connected to a monitor DVR.

TRANSMITTER:

It should be based on 2.4 GHz or 5.8 GHz audio/video transmission technology.

It should be capable to send the camera signals to receiver (or receiver) of 5 km (or as specified by the tenderer).

It should have at least four independent channels.

It should have high performance antenna enabling efficient transmission.

It should be providing with brackets supporting transmitter and receiver.

RECEIVER:

It should be capable of receiving wireless signals from transmitter over a distance not less than 5 km (or as specified by the tenderer according to the tender requirement).

It should have at least four independent compatible channels.

It should have high performance antenna for reception.

It should be provided with brackets supporting receiver and antenna.

Other features:

It should be compatible to any type of Camera and DVR.

The transmission should not be affected by RF or any other radio transmission.

Frequency Band: Two to three bands between 6.8 and 7.3 GHz in the given frequency range.

Contd. 2
Operating Channels: At least 8 non-overlapping channels
Transmit output power: Up to 100 mW
Interfaces: RJ-45, 10/100 Base-Tx, Radio wave, Antenna N-male
Antenna type: External High gain antenna
Security system: Encryption
Software support: GUI Interface, SNMP Network manager, Interface, FTP

Optional Feature:
The system should be capable of controlling all the features of a dome camera like Pan/tilt/zoom etc. receiving end with all necessary accessories.

Abhijit Sen
Asstt. Director (Tech) I.B.

Harish Kumar
DIG, BSF, STS

S.S. Ahmed
DG, CISF

DIGTECH CLF
**Technical Specifications of Button Camera with DVR**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera:</td>
<td></td>
</tr>
<tr>
<td>Image Sensor</td>
<td>1/3&quot; or 1/4&quot; CCD</td>
</tr>
<tr>
<td>Resolution</td>
<td>450 TV Lines</td>
</tr>
<tr>
<td>S/N Ratio</td>
<td>40 db min</td>
</tr>
<tr>
<td>Video System</td>
<td>NTSC/PAL</td>
</tr>
<tr>
<td>Illumination</td>
<td>0.3 Lux or better</td>
</tr>
<tr>
<td>Video Output</td>
<td>1V p-p Composite at 75 Ohm</td>
</tr>
<tr>
<td>Audio Output</td>
<td>2V p-p</td>
</tr>
<tr>
<td>Lens</td>
<td>4.3 mm approx.</td>
</tr>
<tr>
<td>Angle of View</td>
<td>70 degree min</td>
</tr>
<tr>
<td>Power</td>
<td>6-12 VDC</td>
</tr>
</tbody>
</table>

It should be a button type wired CCD Camera for covert surveillance.

The front covert lens should be interchangeable.

Complete power and cable accessories should be offered with the kit.

It should be provided with wireless kit.

**PORTABLE TRANSMITTER AND RECEIVER KIT**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Band</td>
<td>1200 MHz or 2400 MHz</td>
</tr>
<tr>
<td>Channel</td>
<td>At least two channels</td>
</tr>
<tr>
<td>Range</td>
<td>100 M</td>
</tr>
<tr>
<td>DC Power</td>
<td>6-12 V</td>
</tr>
</tbody>
</table>
Battery life: 1.5 hrs min
Battery charging time: 2 hrs max
Weight: 100 gm max
Dimension: 95X70X20 mm max.

**PORTABLE DVR**
- Display: 2.4" TFT LCD
- Video input: NTSC/PAL
- Video recording: MPEG-4
- Resolution: 720X480 pixels @ 25 fps
- Memory: SD Memory card with 1 GB
- Recording time: 60 minutes min
- Audio recording: Yes
- Photo recording: Yes
- Audio/Video out: 3 in 1 AV Output
- PC Interface: USB2.0
- Power: 5-9 DC
- Battery type: Li-Ion rechargeable
- Battery life: 60 Minutes min
- Weight: Not more that 100 gm.

It should be provided with all essential accessories like remote control, USB & AV lead cable, Charger, Carrying case, Earphone, user's guide, camera connector cable etc.

(Signed)
(Abhishek Sen) 27.7.08
Asstt Director (Tech) I.B

(Harish Kumar) 5.9.06
DIG, BSE, STS

(S. I. S. Ahmed) 5.10.06
DG, CISF

(Sural Malik) 9.11.06
Dir (Tech), I.C.