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No.IV-17017/13/06-Prov.I  
Ministry of Home Affairs  
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New Delhi , Dated 15.05.2006

To

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

Subject: Finalization of QRs/Specifications for Weaponry/Security Equipments

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The Sub-Group constituted by MHA vide Office Memorandum No. IV.17017/18/2001-Prov.I dated 5-7-2002 for laying down QRs/specifications of various items/equipments has since submitted QRs in respect of the following item:-

- (a) REPEATER FOR VIDEO BUG
- (b) REPEATER FOR DIGITAL AUDIO MINIATURE BUGS
- (c) SPOTTOSCOPE
- (d) WIRELESS CAMERA COLOUR INFRARED NIGHT VISION
- (e) LIGHT WEIGHT PORTABLE VIDEO SVL SYSTEM.

2. These recommendations have been accepted by MHA. The QRs finalized by the Sub-Group and accepted by MHA in respect of the above equipment is enclosed herewith.

3. Henceforth, all the CPMFs should procure the above item required by them to meet their operational needs strictly as per the laid down QRs/specifications.

Yours faithfully,

*Alok*

(Alok Mukhopadhyay )  
Under Secretary(Prov.I)

94/100021  
19/5

By

497 MHA

19/5/06

*[Handwritten signature]*  
19/5

at 10.00 AM  
19/5/06

Copy to : DD(Procurement), MHA

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- Copy for information to:
- 1. PS to JS(PM), MHA
  - 2. Dir(Prov), MHA

## QR : REPEATER FOR VIDEO BUGS

Q.1. An equipment capable of re-transmitting the signal transmitted by a video bug at a different frequency and higher power output to enhance the working range.

### 2. Specifications

(a) **Repeater:** It should consist of a built in receiver and a transmitter. Receiver accepts the video/audio signals radiated by video bug and the transmitter retransmit the same so that it can be received by the repeater receiver placed at ops room.

- |       |                                 |   |  |
|-------|---------------------------------|---|--|
| (i)   | Frequency Range                 | - | 0.3GHz to 4 GHz  |
| (ii)  | RF output                       | - | Minimum 2 watts.   |
| (iii) | Transmission range              | - | Min 1 KM   |
| (iv)  | Power supply                    | - | (i) AC & DC both<br>(ii) Rechargeable Li-ion or equivalent battery |
| (v)   | Battery discharge time          | - | Minimum 4 hours while in use.                                      |
| (vi)  | Weight with bty and accessories | - | Less than 10 Kgs. //   |
| (vii) | Operating Temperature           | - | 0 <sup>0</sup> C to + 50 <sup>0</sup> C                            |

(b) **Repeater Receiver:** To accept video/audio signals from repeater transmitter.

- |       |                        |   |  |
|-------|------------------------|---|--|
| (i)   | Frequency Band         | - | 0.3 GHz to 4 GHz.  |
| (ii)  | Power supply           | - | (i) AC & DC both<br>(ii) Rechargeable Li-ion or equivalent battery |
| (iii) | Battery discharge time | - | Minimum 4 hours.   |
| (iv)  | Operating Temperature  | - | 0 <sup>0</sup> C to +50 <sup>0</sup> C                             |

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- (v) Antenna - (i) Rod/whip omni directional.  
(ii) Directional antenna like yagi equivalent.
- (vi) Colour LCD TFT monitor minimum 10" in size.

3. Scale of Equipments

- (a) A compatible receiver with each repeater.
- (b) 2 sets of additional bty with repeater and receiver.
- (c) A suitable bty charger with each repeater and receiver.
- (d) Carrying case for each equipment.

4. Miscellaneous aspects

- (a) Literature. Operating and Technical literature for each discrete component of system, in English.
- (b). Demonstration and Training. Demonstration of the repeater with one set of equipment to be given in Delhi on no cost no commitment basis during evaluation. In situ training of users for one week on operation, maintenance, fault finding and user level repairs.
- (c) Repair/ Maint Cover. Repair cover up to <sup>10</sup>8 yrs after eqpt has been provided to NSG with or without AMC.  
Under condition
- (d). Warranty. Comprehensive warranty for 1 year.

OR : REPEATER FOR DIGITAL AUDIO MINIATURE BUGS

1. A digital audio repeater capable of re-transmitting the signal from a bug to enhance working range.

2. Specifications

- (a) Digital Audio Repeater: The equipment will be provided with a digital repeater and separate receiver for receiving output of repeater.

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- (i) Frequency Range - 400 MHz to 2000 MHz
- (ii) RF output - Minimum 2 watts.
- (iii) Transmission range - Minimum 2 Kilio meter.
- (iv) Power supply - Rechargeable Li-ion or equivalent battery.
- (v) Battery discharge time - Minimum 4 hours.
- (vi) Size - ~~Less than~~ 5" x 4" x 2" or less.
- (vii) Weight - Less than 2.5 Kgs.
- (viii) Electromagnetic - Should be EMI/EMC complied for Interference use at airport.
- (ix) Operating Temperature - 0<sup>0</sup> C to + 50<sup>0</sup> C

(b) **Digital Repeater Receiver** : To accept output of digital transmission of repeater .

- (i) Frequency range - 400 MHz to 2000 MHz
- (ii) Power supply - Rechargeable Li-ion or equivalent battery.
- (iii) Antenna - (i) Rod/whip omni directional.  
(ii) Directional antenna like yag equivalent.
- (iv) Battery discharge time - Minimum 4 hours.
- (v) Size - 12 x 10 x 5 inches or less.
- (vi) Weight - Less than 4 Kgs.
- (vii) Operating Temperature - 0<sup>0</sup>C to + 50<sup>0</sup> C

3. Scale of Equipments

- (a) A digital receiver with each repeater.
- (b) 2 sets of additional bty with repeater and receiver.
- (c) A suitable bty charger with each repeater and receiver.
- (d) Carrying case for each equipment.

4. Miscellaneous aspects

- (a) Literature. Operating and Technical literature for each discrete component of system, in English.
- (b). Demonstration and Training. Demonstration of the repeater one set of equipment to be given in Delhi on no cost no commitment basis during evaluation. In situ training of users for one week on operation, maintenance, fault finding and user level repairs.
- (c) Repair/ Maint Cover. Repair cover up to <sup>10</sup>8 yrs after eqpt has been provided to NSG with or without AMC.  
*use of eqpt.*
- (d). Warranty. Comprehensive warranty for 1 year.

QRs : SPOTTOSCOPE

1. A 3rd Gen or better modular equipment capable to provide night vision capability for surveillance, observation, photography and videography applications.

2. Specifications

- (a) Pick up range - 275 meter (A person to be identified from a distance of 275 meter)
- (b) Objective lens - f/1.4- 35 mm or better.
- (c) Photo cathode sensitivity - More than 1500 micro amps per lumen.



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- (d) Resolution of image tube - Better than 45 line pairs per mm
- (e) Typical tube life - Minimum 12 K hours.
- (f) Luminous Gain - Better than 40 K times.
- (g) Power supply - Rechargeable Li-ion or equivalent battery.
- (h) Battery discharge time - Min 8 hours.
- (j) Operating Temperature -  $0^{\circ}$  C to  $+40^{\circ}$  C
- (k) Electromagnetic Interference - EMI/EMC compliant for use at airport.
- (l) Weight - Less than 1 Kg.
- (m) Protection against occasional bright light

3. **Mode of operation**

- (a) Stand alone. (ability to use with out camera for viewing images in night).
- (b) With 35 mm digital Camera.

4. **Scale of Equipments**

- (a) One digital camera mount per equipment
- (b) 2 sets of additional battery with each equipment.
- (c) A suitable battery charger with each equipment.
- (d) Tripod - Should be supplied with a light weight adjustable tripod which can extend from 26" to min 64" height with provision for 30 degree pan and tilt feature. It should be Super Husky model or equivalent with separate carrying case.
- (e) Carrying case for each equipment.

Miscellaneous aspects

- (a) **Literature.** Operating and Technical literature for each discrete component of system, in English language.
- (b). **Demonstration and Training.** Demonstration of the complete system with one set of equipment to be given in Delhi on no cost no commitment basis during evaluation. In situ training of users for one week on operation, maintenance, fault finding and user level repairs.
- © **Repair/ Maint Cover.** Repair cover up to <sup>10</sup> 2 yrs after eqpt has been provided to ~~NSG~~ <sup>user orgn</sup> with or without AMC.
- (d) **Warranty.** Comprehensive warranty for 1 year.

QRs : WIRELESS CAMERA COLOUR INFRARED NIGHT VISION

1. An active video surveillance system consisting of a long range IR sensitive colour camera along with a set of high performance infrared illuminators and a digital video recording and processing system.

2. Specifications

(a) Camera

- (i) Pick up range. - 300 meter or more using suitable lenses.
- (ii) Monitoring - Provision for video out port for monitor
- (iii) CCD - Minimum 1/2" CCD
- (iv) Pixcls - Minimum 811 (H) X 508 (V)
- (v) Scanning system - NTSC - 525 lines or more interlaced.  
PAL - 625 lines or more interlaced
- (vi) IR Sensitivity - Should be compatible with the IR illuminators supplied and IR sensitivity should be 800nm-1100 nm or more.

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- (vii) Lens - Minimum 30 - 150mm or better zoom lens.
- (viii) Lens mount - C/CS
- (ix) Lens capability - Should be suitable for IR operation.
- (x) Resolution - Minimum 480 TV lines (Horizontal).
- (xi) Signal to noise ratio - Better than 48 dB.
- (xii) Operating temperature - 0<sup>0</sup> C to + 50<sup>0</sup> C.
- (xiii) Camera to be housed in an all weather container.

(b) **High performance Infrared Illuminator**

- (i) Radiated output - Equivalent to 500 watts or more.
- (ii) Bulb life - 1000 hours or more.
- (iii) Aux output - 12 V DC supply for camera.
- (iv) Weight - Less than 2Kg
- (v) Power supply - 230 V, 50 Hz AC supply.
- (vi) All weather housing should be provided.

© **Digital Video Recording and Processing System.** A laptop based video recording and processing system with following configurations: -

- i) Intel Centrino Pentium M, minimum 1.73 GHz Processor.
- ii) Minimum 2MB L2 Cache.
- (iii) Minimum 512 MB DDR RAM.
- (iv) Minimum 15.4 inch CSV WXGA TFT display.



- v) Shock absorption minimum 60 GB HDD, DVD + CDRW combo drive.
- vi) Internal modem & Ethernet.
- vii) Touch pad, minimum 3 USB, minimum IEEE 1394.
- (viii) Windows XP Professional or latest version.
- (ix) Spill resistant keyboard.
- (x) Wi-Fi enabled.

#### Additional Accessories

- (a) 2 sets of additional battery with each equipment.
- (b) A suitable battery charger with each equipment.
- © Tripod - A light weight adjustable tripod which can extend from 26" to min 64" height with provision for 30 degree pan and tilt feature. It should be Super Husky model or equivalent with separate carrying case.
- (d) Carrying case for each equipment.
- (e) A colour LCD TFT display minimum 2.5" in size with each camera.

#### Miscellaneous aspects

- (a) Literature. Operating and Technical literature for each discrete component of system should be in English.
- (b). Demonstration and Training. Demonstration of the complete system with one set of equipment to be given in Delhi on no cost no commitment basis during evaluation. In situ training of users for one week on operation, maintenance, fault finding and user level repairs.
- © Repair/ Maint Cover. Repair cover up to <sup>10</sup>~~8~~ yrs after equipment has been provided to NSG with or without AMC.  
*user origin.*
- (d). Warranty. Comprehensive warranty for 1 year.

**QRs : LIGHT WEIGHT PORTABLE VIDEO SVL SYSTEM**

1. An integrated video svl system consisting of a long range colour camera with optical zooming, a display device and a digital video recording and processing equipment.

2. **Specifications**

(a) **Camera**

- |        |  |   |  |
|--------|--|---|--|
| (i)    | Pick up range                                    | - | 500 meter using suitable lenses (A known person to be identified from a distance of 500 meter)       |
| (ii)   | Monitoring                                       | - | Local LCD TFT display, minimum 2.5 inches in size.   |
| (iii)  | Horizontal resolution                            | - | Better than 470 lines.   |
| (iv)   | Scanning system                                  | - | NTSC- minimum 525 lines<br>PAL - minimum 625 lines   |
| (v)    | Output signal                                    | - | 1V p-p or better. (Compressed video signals in MPEG II or MPEG IV format for streaming video output. |
| (vi)   | Signal to noise ratio                            | - | Better than 50 dB.   |
| (vii)  | Power supply                                     | - | Rechargeable Li-ion or equivalent battery.   |
| (viii) | Operating temperature                            | - | 0 <sup>0</sup> C to + 50 <sup>0</sup> C  |
| (ix)   | Camera to be housed in an all weather container. |   |  |

(b) **Display Device:** A LCD projector based display device with following features: -

- (i) Resolution - Min 1 Mega pixel
- (ii) Contrast ratio - 1000: 1 or better
- (iii) Interface - PC / Laptop
- (iv) Cooling system - Silent fan cooled

(c) **Digital Video Recording and Processing System.** A Lap top based video recording and processing system with following configurations: -

- (i) CPU - Pentium IV, 2.4 GHz or better
- (ii) Storage - Min 80 GB hard disk
- (iii) Memory - Min 512 MB RAM
- (iv) Interface - LAN and USB port
- (v) Operating system - Windows XP SP2 or latest
- (vi) Monitor - Min 14 inch LCD TFT

3. **Additional Accessories**

- (a) 2 sets of additional battery with each equipment.
- (b) A suitable battery charger with each equipment.
- (c) Tripod - A light weight adjustable tripod which can extend from 26" to min 64" height with provision for 30 degree pan and tilt feature. It should be Super Husky model or equivalent with separate carrying case.
- (d) Carrying case for each equipment.

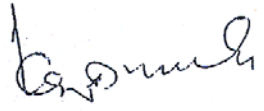
5. Miscellaneous aspects

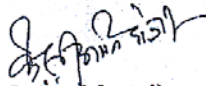
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(b) Demonstration and Training. Demonstration of the complete system with one set of equipment to be given in Delhi on no cost no commitment basis during evaluation. In situ training of users for two days on operation, maintenance, fault finding and user level repairs.

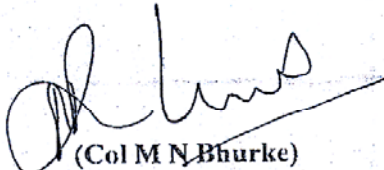
(c) Warranty. Comprehensive warranty for 1 year.

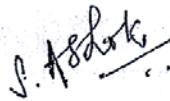
(d) Repair/Maintenance ?

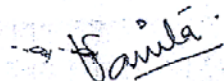
  
(Dr K S Dharmasaktu)  
Dy Director, DRDO

  
(K C Agnithotri)  
Dy Director, DCPW

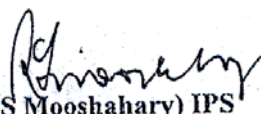
  
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