

**DIRECTOR GENERAL BORDER SECURITY FORCE**  
**(PROVISIONING DIRECTORATE (ORD SECTION))**

**Expression of Interest**

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The Sub-group of Technical Experts on Surveillance Equipment's constituted by MHA vide their letter No. IV-24011/12/2011-Prov-I dated 13 June 2012, No. IV-24011/12/2011-Prov-I dated 28 Dec 2012 & UO No. IV-24011/12/2011-Prov-I-350 dated 27 June 2013 held its meeting at BSF Headquarter on 18 Dec 2013, 14 March 2014, 17 Nov 2014, 19<sup>th</sup> Feb 2015, 21<sup>st</sup> April 2015, 24<sup>th</sup> July 2015, 30 Sep 2015, 10<sup>th</sup> June 2016, 08<sup>th</sup> Feb 2017, 15<sup>th</sup> March 2017, 25<sup>th</sup> July 2017 and 18<sup>th</sup> Aug 2017 to formulate the Qualitative Requirement of 'PTZ (35x140 MM) D/N All Weather Camera System With Wireless Transmission System'.

**DRAFT QR'S FOR PTZ (35 X 140 MM) D/N ALL WEATHER CAMERA SYSTEM WITH WIRELESS TRANSMISSION SYSTEM**

| S/N<br>O | SPECIFICATION  |   |                                |  |     |        |   |      |                    |            |       |               |                                   |
|----------|--|---|--------------------------------|--|-----|--------|---|------|--------------------|------------|-------|---------------|-----------------------------------|
| 1.       | <p><b><u>General Description</u></b> A battery powered, versatile portable PTZ Camera System housed in a rugged corrosion proof IP 65 enclosure with an inbuilt high performance Day/Night Camera with ability to recognize facial feature at a distance of 250m even in darkness and poor weather conditions. It should have following capabilities:-</p> <ul style="list-style-type: none"> <li>(a) Enable looking through glass in the dark</li> <li>(b) Facial Identification in dark using active mode till 250 m range</li> <li>(c) Detection of hostile sights (weapons with sights)</li> <li>(d) Ability to focus in the dark on targets located at a particular Range</li> </ul>  |   |                                |  |     |        |   |      |                    |            |       |               |                                   |
| 2.       | <p><b><u>Physical Characteristics</u></b></p> <ul style="list-style-type: none"> <li>(a) Weight should be less than 5 Kg</li> <li>(b) Ruggedisation : Mil Std 810E or JSS55555</li> <li>(c) It should be comply to IP 65 or better</li> </ul>  |   |                                |  |     |        |   |      |                    |            |       |               |                                   |
| 3.       | <p><b><u>Operational Characteristics PTZ Camera with Wireless Transmitter/Receiver System</u></b></p> <table border="1" data-bbox="316 1765 1551 2041"> <thead> <tr> <th data-bbox="316 1765 399 1809">(a)</th> <th colspan="2" data-bbox="399 1765 1551 1809"><b><u>Hand Held Camera</u></b></th> </tr> </thead> <tbody> <tr> <td data-bbox="316 1809 399 1897">(i)</td> <td data-bbox="399 1809 829 1897">Sensor</td> <td data-bbox="829 1809 1551 1897">SCMOS sensor with full HD image quality both for day and night vision respectively.</td> </tr> <tr> <td data-bbox="316 1897 399 1986">(ii)</td> <td data-bbox="399 1897 829 1986">Video/Photo Format</td> <td data-bbox="829 1897 1551 1986">H.264/JPEG</td> </tr> <tr> <td data-bbox="316 1986 399 2041">(iii)</td> <td data-bbox="399 1986 829 2041">Field of view</td> <td data-bbox="829 1986 1551 2041">1.8<sup>o</sup> x 1<sup>o</sup></td> </tr> </tbody> </table> | (a)   | <b><u>Hand Held Camera</u></b> |  | (i) | Sensor | SCMOS sensor with full HD image quality both for day and night vision respectively. | (ii) | Video/Photo Format | H.264/JPEG | (iii) | Field of view | 1.8 <sup>o</sup> x 1 <sup>o</sup> |
| (a)      | <b><u>Hand Held Camera</u></b>   |   |                                |  |     |        |   |      |                    |            |       |               |                                   |
| (i)      | Sensor   | SCMOS sensor with full HD image quality both for day and night vision respectively. |                                |  |     |        |   |      |                    |            |       |               |                                   |
| (ii)     | Video/Photo Format   | H.264/JPEG  |                                |  |     |        |   |      |                    |            |       |               |                                   |
| (iii)    | Field of view  | 1.8 <sup>o</sup> x 1 <sup>o</sup>   |                                |  |     |        |   |      |                    |            |       |               |                                   |



|     |  |   |  |
|-----|--|---|--|
|     | (iv)   | Human Target DRI Range  | <p><b>Day Vision</b><br/> Detection: 2400m minimum<br/> Recognition: 1200m minimum<br/> Identification: 600m minimum</p> <p><b>Night Vision</b><br/> Detection: 1400m minimum<br/> Recognition: 700m minimum<br/> Identification: 350m minimum</p> <p><b>Dark Night Vision</b><br/> Detection: 1,000m minimum<br/> Recognition: 500m minimum<br/> Identification: 250m minimum</p> |
|     | (v)  | Digital Zoom  | 2x or better   |
|     | (vi)   | Modes   | Ability to focus in the dark on targets located at a particular range and provide target range using active eye safe laser.  |
|     | (vii)  | Eye Safety Laser Emission   | Class 4 or lower   |
|     | (viii)   | Image Quality   | Autofocus and manual   |
|     | (ix)   | Recording Time  | Min 4 hrs  |
|     | (x)  | Display OLED HD Technology  | Monochrome   |
|     | (xi)   | <b>Power</b>  |  |
|     | (a)  | Battery   | Li-ion / Li Polymer  |
|     | (b)  | Endurance   | 5 hours  |
|     | (c)  | Charger   | AC 110/220VAC 50-60Hz  |
|     | (d)  | Current camera should be operable both in AC/DC (one spare Battery kit)                                       |  |
|     | (xii)  | <b>Ports and connectors :</b> Composite video/ HDMI port and connectors used to extend video over transmitter |  |
| (b) | <b><u>PTU Platform (Battery Powered) &amp; Remote Controller</u></b> |   |  |
|     | (i)  | Pan   | +/- 180° (360°)  |
|     | (ii)   | Tilt  | ±40°   |
|     | (iii)  | Speed   | 10°/sec or better  |
|     | (iv)   | Accuracy  | 2 mrad   |
|     | (v)  | Range of controller   | Remotely controlled both through software/ RF remote for 200 mtr or better   |
|     | (vi)   | Endurance   | 4 Hrs  |
| (c) | <b><u>Transmitter</u></b>  |   |  |
|     | (i)  | Modulation  | COFDM, QPSK  |
|     | (ii)   | Bandwidth   | 6/7/8 Mhz  |
|     | (iii)  | RF Output Power   | 100mW/ 500mW/1W  |
|     | (iv)   | Frequency Band  | 300 Mhz ~ 2.4 Ghz (Unlicensed Band)  |
|     | (v)  | Encryption  | AES-128  |
|     | (vi)   | Latency   | 1 Sec or lower   |

|        |                |   |
|--------|----------------|---|
| (vii)  | Range          | (a) NLOS Urban >500m<br>(b) LOS Urban >1,500m   |
| (viii) | Antenna        | Omni directional Antenna  |
| (ix)   | Video Rate     | 500 kbps, 10 Mbps (max)   |
| (x)    | Video          | (a) Encoding: MPEG-4<br>(b) Frame Rate: 30fps to 2 fps (self selecting)<br>(c) Video Quality: User Selectable |
| (xi)   | Ports          | (a) Ethernet IPV4<br>(b) RS232<br>(c) Video I/O<br>(d) HDMI I/P   |
| (xii)  | Resolution     | Full HD (1920 x 1080)   |
| (xiii) | Mil STD        | 810E or better  |
| (xiv)  | Operating Temp | -20°C to +55°C  |

**Power**

|       |  |                       |
|-------|--|-----------------------|
| (i)   | Battery  | Li-ion / Li Polymer   |
| (ii)  | Endurance  | 5 hours               |
| (iii) | Charger  | AC 110/220VAC 50-60Hz |
| (iv)  | Current time work on DC/ AC ( two spare lithium bty) |                       |

**Carrying Case**

|     |  |  |
|-----|--|--|
| (i) | Rugged, sectionized and water proof case to store camera with all accessories. The case should be provided with roller wheels with 360° rotation capability. |  |
|-----|--|--|

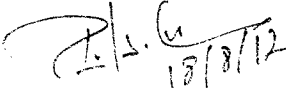
**Receiver**

|        |                |   |
|--------|----------------|---|
| (i)    | Bandwidth      | 6/7/8 Mhz   |
| (ii)   | Frequency Band | 300 Mhz ~ 2.4 Ghz   |
| (iii)  | Decryption     | AES - 128 or better   |
| (iv)   | Range          | (a) NLOS Urban > 500m<br>(b) LOS Urban > 1.5 km   |
| (v)    | Antenna        | Dual Antenna (Switch RX/Tx and Rx only)<br>Omni Directional Antenna   |
| (vi)   | Receiver Type  | Diversified   |
| (vii)  | Video          | (a) Decoding: MPEG-4<br>(b) Frame Rate: 30fps to 2 fps (self selecting)<br>(c) Video Quality: User Selectable |
| (viii) | Ports          | (a) Ethernet IPV4<br>(b) RS232<br>(c) Video I/O<br>(d) HDMI I/O   |
| (ix)   | Resolution     | Full HD (1920 x 1080)   |
| (x)    | Display        | 15 inch (min) sunlight readable OLED display or better  |
| (xi)   | Video Feed     | Ability to see video feed from <b>four</b> PTZ cameras ie software based <b>four</b> channel viewer           |

|    |   |  |   |
|----|---|--|---|
|    | (xii)   | Recording & Storage  | Recording of up to four simultaneous video feeds on 3 TB internal storage   |
|    | (xiii)  | Connectivity   | (a) Composite Video/ HDMI port for external TV connectivity<br>(b) Ethernet and USB port for streaming video feed over high-speed commercial wireless network like 3G/4G GSM/CDMA |
|    | (xiv)   | Mil STD  | 810E or better  |
|    | (xv)  | <b>Power</b>   |   |
|    |   | (a) Battery  | Li-ion / Li Polymer   |
|    |   | (b) Endurance  | 5 hours   |
|    |   | (c) Charger  | AC 110/220VAC 50-60Hz   |
|    |   | (d)  | Current time work on DC/AC ( two spare lithium bty)   |
|    | (xvi)   | <b>Carrying case</b>   |   |
|    |   | Rugged, sectionized and water proof case to store camera with all accessories. The case should be provided with roller wheels with 360° rotation capability. |   |
| 4. | <b>Literature</b> Operating and Technical literature for each discrete components of system should be in English language |  |   |
| 5. | <b>Training</b> In situ training of users for three day on operation, maintenance, faultfinding and user level repairs.   |  |   |

The Sub-group has decided to upload the QRs on MHA & BSF website for 15 days to invite the views/comments/suggestion of prospective bidders to make the QRs more broad.

Note - All the firms are requested to comment upon the above mentioned QRs and furnish Brochure/catalogue of their products from the OEMs.

  
 (Rishipal Singh)  
 Deputy Commandant (Mod)