

## FLIR Daylight and Thermal Surveillance (P/T/Z) Multi-Sensor systems

Item No.	Specifications Required
1	<p><b>Daylight and Thermal Surveillance (P/T/Z) Multi-Sensor (cooled) systems SMC 3500 x 3 sets</b>  <b>Required Model: FLIR HRC-E</b></p> <p>Product is a multi-sensor system for visual surveillance with the capacities: day and thermal surveillance cameras, horizontal rotation (360°) and vertical slope (+/-30°), image zoom (details in technical requirements). Operation of product shall be implemented from remote places using the network (TCP/IP); The planning term for compulsory technical service for the components of thermal module (camera) shall be not less than 8,500 working hours; Contractor shall provide the final beneficiary with the special Software (Shall be included in the price of product) for operation (4 (four) license) and system administration (1 (one) license) having the following minimum requirements: (i) Operation of system components - automated and manual, (ii) Area scanning - automated and manual, (iii) Marking of important area and alarming, (iv) Object surveillance (target following) – automated and manual, (v) Motion Detection and alarming - automated, (vi) Image stabilization, (vii) E-maps integration, (viii) Other technologies integration capability for operational usage and system administration, (ix) Day/thermal Image display - overlaying and separately in one frame, (x) Photo shooting – manual, (xi) Video recording - Motion Detection automated and manual, (xii) Zooming, (xiii) Compatibility with operational systems - Windows or Linux, (xiv) Language – English (optional: Georgian and/or Russian), (xv) Each operational license has to operate at least 5 (five) multisensory cameras; The product must have the ISO, origin and quality certificates, which shall be submitted in the course of tender; Contractor shall provide public information on the implemented projects where the product – tender lot had been used; Contractor must be an official representative or dealer (It is necessary to submit the official certificate of the dealer) of the given brand; Contractor shall ensure within the reasonable time the relevant maintenance capacity development enabling the latter to conduct technical service of the product and necessary works identified under the regular technical service plan;</p>

Contractor shall ensure access to the factory (plant, workshop) resources of product manufacturer and shall provide “certified maintenance training” of the staff (3 (three) persons) of the final beneficiary in the relevant skills, including installation, regular works (technical service, configuration, software, etc.); Installation works for the first three points shall be exercised jointly by the specialists of Contractor and the final beneficiary, Further installation works will be performed by the relevant personnel (already provided with manufacturers certified maintenance training course) of the final beneficiary (the presence of at least one representative of the Contractor is a preference issue in the awarding process of tenderers); Contractor shall give to the final beneficiary system development kit (SDK) of the basic software of the product; Contractor shall deliver multi-sensor surveillance system to the place of destination (DDP incoterms); Contractor shall ensure the proper packaging of the product that will protect it from damage during transportation; The product shall be subject to manufacturer’s warranty for 1-year that will come into effect from the day of product installation; in case of detecting defect or damage (while observing the rules of operation) within the term of warranty the Contractor shall replace the damaged/defective product at his/her own expense (including the costs for international transportation) no later than within 30 calendar days from the date of receiving the notification from beneficiary; Contractor shall implement all procedures relating to export license from the country of origin and other organizational procedures; Product shall be delivered within 150 days from the date of contract formalization; the specific plan of delivery shall be agreed with the final beneficiary; The final user is authorized to decide the purpose and location of product and carry out its management from the date of delivery according to the relevant Georgian legislation.

Description	Specifications
<b>Field of Vision</b>	
Approx. Human target 1.8mx0.5m <sup>2</sup>	
Detection	not less than 10400m
Recognition	not less than 3200m
Identification	not less than 1500m
Approx. Vehicle target 2.3mx2.3m <sup>2</sup>	
Detection	not less than 17500m
Recognition	not less than 7200m
Identification	not less than 3900m
<b><u>Thermal Sensor</u></b>	
<i>Detector type</i>	Indium Antimonide (InSb): 640 x 480 pixels
<i>Spectral range</i>	3.5 to 5.0µm
<i>Field of View: continuous optical zoom</i>	22 x 275 mm lens
<i>Preset Fields of View</i>	4
<i>Spatial resolution (IFOV)</i>	0.67 mrad for 22 mm lens - 0.056 mrad for 275 mm lens
<i>Thermal sensitivity</i>	20 mK
<i>Image frequency</i>	50 Hz (PAL), 60 Hz (NTSC)
<i>Focus</i>	Automatic and Manual

<i>Continuous e-Zoom</i>	Yes, up to 16x
<i>Electable preset focus distance</i>	Yes
<i>Focus athermalisation</i>	Yes
<i>Image processing</i>	Digital Detail Enhancement (DDE), Histogram Equalization
<b><u>Daylight sensor</u></b>	
<b>PAN &amp; TILT:</b>	
<i>Az Range; Az velocity</i>	n x 360°; 0.03° - 65° /sec continuous
<i>El Range; El velocity</i>	+/- 35°; 0.03° - 30° / sec
<i>Accuracy</i>	1 mrad
<i>Resolution</i>	0.1 mrad
<i>Parking Position</i>	Yes
<b><u>SYSTEM FEATURES</u></b>	
<i>Programmable Search</i>	Program multiple preset scene locations
<i>Remote Control</i>	By serial link or over TCP/IP
<i>Automatic heater</i>	Yes
<i>Built-in Test (BIT)</i>	Yes
<i>PelcoD compliance</i>	Yes
<b><u>IMAGE PRESENTATION</u></b>	
<i>Video output</i>	NTSC or PAL composite video
<i>Connector types</i>	BNC (2) provides thermal and daylight video simultaneously
<i>VOIP</i>	Optional embedded server provides simultaneous IR + TV
<i>MPEG video</i>	MPEG-2 or MPEG-4
<b><u>POWER</u></b>	
<i>Requirements</i>	18-35 V DC
<i>Consumption</i>	55 W typical - 140 W with heaters - 250 W Max.
<b><u>ENVIRONMENTAL SPECIFICATIONS</u></b>	
<i>Operating temperature range</i>	-32°C to +55°C
<i>Storage temperature range</i>	-45°C to +70°C
<i>Automatic Window defrost</i>	Yes
<b><u>PHYSICAL CHARACTERISTICS</u></b>	
<i>Weight</i>	Max 65 kg.

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**Daylight and Thermal Surveillance (P/T/Z) Multi-Sensor (uncooled) systems SMC 1500 x 8 sets**

**Required Model: FLIR DEFENDIR 640 45/135MM CZ\***

Product is a multi-sensor system for visual surveillance with the capacities: day and thermal surveillance cameras, horizontal rotation (360°) and vertical slope (+/-30°), image zoom (details in technical requirements). Operation of product shall be implemented from remote places using the network (TCP/IP); The planning term for compulsory technical service for the components of thermal module (camera) shall be not less than 8,500 working hours; Contractor shall provide the final beneficiary with the special Software (Shall be included in the price of product) described in the "Item 11.1" of this Lot and offered product shall be in the full compliance and compatibility by operational usage and system administering to the product offered in the "Item 11.1" of this Lot; The product must have the ISO, origin and quality certificates, which shall be submitted in the course of tender; Contractor shall provide public information on the implemented projects where the product – tender lot had been used; Contractor must be an official representative or dealer (It is necessary to submit the official certificate of the dealer) of the given brand; ; Contractor shall ensure within the reasonable time the relevant maintenance capacity development for the final beneficiary described in the "Item 11.1" of this Lot; Installation works for the first three points shall be exercised jointly by the specialists of Contractor and the final beneficiary, Further installation works will be performed by the relevant personnel (already provided with manufacturers certified maintenance training course) of the final beneficiary (the presence of at least one representative of the Contractor is a preference issue in the awarding process of tenderers); Contractor shall give to the final beneficiary system development kit (SDK) of the basic software of the product;

Contractor shall deliver multi-sensor surveillance system to the place of destination (DDP incoterms); Contractor shall ensure the proper packaging of the product that will protect it from damage during transportation; The product shall be subject to manufacturer's warranty for 1-year that will come into effect from the day of product installation; in the case of detecting defective or damaged equipment and/or damage (while observing the rules of operation) within the term of warranty the Contractor shall replace defective product at his/her own expense (including the costs for international transportation) no later than within 30 calendar days from the date of receiving the notification from beneficiary; Contractor shall implement all procedures relating to export license from the country of origin and other organizational procedures; Product shall be delivered within 150 days from the date of contract formalization; the specific plan of delivery shall be agreed with the final beneficiary; The final user is authorized to decide the purpose and location of product and carry out its management from the date of delivery according to the relevant Georgian legislation.

Description	Specifications
<b>Field of Vision</b>	
Approx. Human target 1.8mx0.5m <sup>2</sup>	
Detection	not less than 3000m
Recognition	not less than 1300m
Identification	not less than 250m
Approx. Vehicle target 2.3mx2.3m <sup>2</sup>	
Detection	approximately 10000m
Recognition	not less than 3000m
Identification	not less than 1500m
Video Output	RS-170 (NTSC) or CCIR (PAL)

Serial Interfaces	RS-422 and 10/100 Ethernet
Power Input	15-24 VDC +/- 20% or 220 VAC 50/60 Hz
Power Consumption	< 22 Watts (nominal) / 45 Watts (peak)
Operating Temperature	-40° to +60° C
Azimuth Control	Continuous 360°
Elevation Control	Up to -80° to +80° (varies by configuration)
Pan & Tilt Slew Rate	0.25°-60°/sec Controlled (varies by configuration) up to 110°/sec uncontrolled
Pointing Accuracy & Repeatability	Pan +/- 0.25°, Tilt +/- 0.1° (varies by configuration)
<b><u>THERMAL CAMERA</u></b>	
Detector	
Resolution	640 x 480
Detector type	Uncooled, Vanadium Oxide Microbolometer
Frame Rate	30 hz
IR Lens Options	45/135mm Continuous zoom
IR Zoom	Continuous Digital Zoom 1x to 4x
Spectral Response	LWIR
Gain / Level Controls	Automatic or Manual
Focus	Remote focus
<b><u>CCD CAMERA</u></b>	
CCD Camera	Narrow FOV 1.6° Wide FOV 42°
Image Stabilization	YES
Zoom	Optical: 26x
	Digital: 12x
	Total: 312x
FEATURES	Simultaneous IP and analog video outputs – thermal and visible-light – along with IP and serial control interfaces for easy integration into IP or analog networks.
	Image enhancement with Digital Detail Enhancement (DDE) opportunity.
	Continuous thermal zoom available.
	P/T with continuous 360° pan
	imagery in real time
	IP66

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**Daylight and Thermal Surveillance (P/T/Z) Multi-Sensor (uncooled) systems SMC 1500 for Mobile Detection Vehicle x 2 sets  
Required Model: FLIR DEFENDIR 640 100MM**

Product is a multi-sensor system for visual surveillance with the capacities: day and thermal surveillance cameras, horizontal rotation (360°) and vertical slope (+/-30°), image zoom (details in technical requirements). Operation of product shall be implemented from remote places using the network (TCP/IP); The planning term for compulsory technical service for the components of thermal module (camera) shall be not less than 8,500 working hours; Contractor shall provide the final beneficiary with the special Software (Shall be included in the price of product) described in the "Item 11.1" of this Lot and offered product shall be in the full compliance and compatibility by operational usage and system administering to the product offered in the "Item 11.1" of this Lot; The product must have the ISO, origin and quality certificates, which shall be submitted in the course of tender; Contractor shall provide public information on the implemented projects where the product – tender lot had been used; Contractor must be an official representative or dealer (It is necessary to submit the official certificate of the dealer) of the given brand; ; Contractor shall ensure within the reasonable time the relevant maintenance capacity development for the final beneficiary described in the "Item 11.1" of this Lot; Installation works for the first three points shall be exercised jointly by the specialists of Contractor and the final beneficiary, Further installation works will be performed by the relevant personnel (already provided with manufacturers certified maintenance training course) of the final beneficiary (the presence of at least one representative of the Contractor is a preference issue in the awarding process of tenderers); Contractor shall give to the final beneficiary system development kit (SDK) of the basic software of the product;

Contractor shall deliver multi-sensor surveillance system to the place of destination (DDP incoterms); Contractor shall ensure the proper packaging of the product that will protect it from damage during transportation; The product shall be subject to manufacturer's warranty for 1-year that will come into effect from the day of product installation; in the case of detecting defective or damaged equipment and/or damage (while observing the rules of operation) within the term of warranty the Contractor shall replace defective product at his/her own expense (including the costs for international transportation) no later than within 30 calendar days from the date of receiving the notification from beneficiary; Contractor shall implement all procedures relating to export license from the country of origin and other organizational procedures; Product shall be delivered within 150 days from the date of contract formalization; the specific plan of delivery shall be agreed with the final beneficiary; The final user is authorized to decide the purpose and location of product and carry out its management from the date of delivery according to the relevant Georgian legislation.

Description	Specifications
<b>Field of Vision</b>	
Approx. Human target 1.8mx0.5m <sup>2</sup>	
Detection	not less than 3000m
Recognition	not less than 1300m
Identification	not less than 250m
Approx. Vehicle target 2.3mx2.3m <sup>2</sup>	
Detection	approximately 10000m
Recognition	not less than 3000m
Identification	not less than 1500m
Video Output	RS-170 (NTSC) or CCIR (PAL)

Serial Interfaces	RS-422 and 10/100 Ethernet
Power Input	15-24 VDC +/- 20% or 220 VAC 50/60 Hz
Power Consumption	< 22 Watts (nominal) / 45 Watts (peak)
Operating Temperature	-40° to +60° C
Azimuth Control	Continuous 360°
Elevation Control	Up to -80° to +80° (varies by configuration)
Pan & Tilt Slew Rate	0.25°-60°/sec Controlled (varies by configuration) up to 110°/sec uncontrolled
Pointing Accuracy & Repeatability	Pan +/- 0.25°, Tilt +/- 0.1° (varies by configuration)
<b><u>THERMAL CAMERA</u></b>	
Detector	
Resolution	640 x 480
Detector type	Uncooled, Vanadium Oxide Microbolometer
Frame Rate	30 hz
IR Lens Options	100 mm
IR Zoom	Continuous Digital Zoom 1x to 4x
Spectral Response	LWIR
Gain / Level Controls	Automatic or Manual
Focus	Remote focus
<b><u>CCD CAMERA</u></b>	
CCD Camera	Narrow FOV 1.6° Wide FOV 42°
Image Stabilization	YES
Zoom	Optical: 26x
	Digital: 12x
	Total: 312x
FEATURES	Simultaneous IP and analog video outputs – thermal and visible-light – along with IP and serial control interfaces for easy integration into IP or analog networks.
	Image enhancement with Digital Detail Enhancement (DDE) opportunity.
	P/T with continuous 360° pan
	imagery in real time
	IP66

4	<p><b>Camera Control Joystick x 6 units</b></p> <p>Product is a P/T/Z control joystick for multi-sensor surveillance system with Pelco-D Pelco-P protocol support; The product shall have the ISO, origin and quality certificates, which shall be submitted in the course of tender; Contractor shall ensure the proper packaging of the product that will protect it from damage during transportation; The product shall be subject to manufacturer’s warranty for 1-year. In the case of defective or damaged equipment (while observing the rules of operation) the Contractor shall replace the product at his/her own expense (including the costs for international transportation) no later than within 30 calendar days from the date of receiving the notification (written or oral) from beneficiary.</p>
5	<p><b>Software licenses for management and operating Requirements for all Multisensory Cameras</b></p> <p>Site 1: 1 (One) Work station - 5 MS Cameras  Site 2: 1 (One) Work station - 3 MS Cameras  Site 3: 1 (One) Work station - 3 MS Cameras</p>