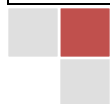


<b>Compliance Table</b>		
Parameter	Requirement	Compliance
<b>General System Requirements</b>		
System Type	Multisensor EO (Electro-Optical) system	Complied
Camera Layout	Cameras must be integrated in the same housing	Complied
Control Interface	Serial and Ethernet	Complied
Video Output	Two independent H.264 streams (one per camera)	Complied Two independent RTSP H.264 streams
Supported Protocols	ONVIF Profile S	Complied
Supported Video Outputs	RTSP H.264 and ONVIF Profile S	Complied
Power Consumption	Max 310 W	Complied 75 W (without heaters); 200 W (with heaters)
Operating Voltage	18–32 VDC	Complied
Operating Temperature	-32°C to +55°C	Complied
Environmental Protection	Minimum IP67	Complied
Weight	Max 45 kg	Complied
<b>Thermal Camera</b>		
Detector	Uncooled LWIR VOx Microbolometer	Complied
Resolution	≥ 640 × 512	Complied
Pixel Pitch	≥ 12 μm	Complied
Spectral Band	8 – 14 μm	Complied
NETD	≤ 40 mK	Complied
Focal Length	≥ 30 – 180 mm	Complied
Field of View	≥ 14.6° – 3.0° (Horizontal)	Complied
Optical Zoom	Continuous up to 5×	Complied Yes, 6× continuous
Digital Zoom	Continuous up to 8×	Complied
Focus	Auto or Manual (remote)	Complied
Image Stabilization	Yes (VPU/ST)	Complied
Video Outputs	Analog, RTSP H.264 Ethernet	Complied
Control Interface	Serial, Ethernet	Complied



Power Consumption	15 W typical, <60 W with heaters	Complied
Operating Voltage	18 – 32 VDC	Complied
Operating Temperature	-32°C to +55°C	Complied
IP Rating	≥ IP67, MIL-STD-810	Complied
Dimensions	Max 600 × 225 × 220 mm	Complied
Weight	Max 14 kg	Complied
Image Processing (Thermal)	Tunable Digital Detail Enhancement Brightness adjustment Contrast adjustment Digital Noise Reduction Non-uniformity correction White Hot / Black Hot Colour Palette On-Screen Display (OSD)	Complied
Detection / Recognition / Identification (D/R/I)		
Target Type	Detection	Complied
NATO target (2.3 × 2.3 m)	D ≥ 11.15 km R ≥ 5.28 km I ≥ 2.74 km	Complied D >11.15 km R >5.28 km I >2.74 km
Human target (1.8 × 0.5 m)	D ≥ 6.38 km R ≥ 2.28 km I ≥ 1.17 km	Complied D >6.38 km R >2.28 km I >1.17 km
Method	STANAG 4347	Complied
Δ T0 (K)	Minimum 2	Complied
δ(km <sup>-1</sup> )	Minimum 0,2	Complied
Probability	50 %	Complied
Background temperature	≤ 288 K	Complied
<b>Day/Night Camera</b>		
Sensor	Minimum 1/1.9' CMOS sensor	Complied
Resolution	Minimum 1920x 1080	Complied
Sensitivity	Colour 0.001 Lux (F1.5, 25 fps);	Complied
Horizontal FoV	59° up to 2.25°	Complied
Continuous optical zoom	Yes, up to 30x	Complied
Digital optical zoom	Yes, up to 8x	Complied



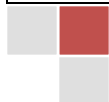
Focus	Automatic or Manual (remote)	Complied
Image stabilization	Yes	Complied
Optical filters	Colour: IR Cut filter / B&W: Defog Filter – NIR only	Complied
Image processing	Auto /Manual White Balance Auto / Manual Gain Control Wide Dynamic Range Digital Fog Removal / Auto Contrast Dynamic Noise Reduction	Complied
Video outputs	HD-SDI or analog, optional RTSP H.264	Complied
Control interface	Serial, Ethernet	Complied
Consumption Wide Dynamic Range Digital Fog Removal / Auto Contrast	15 W typical, < 60 W maximum with heaters / lens defrost	Complied
Operating voltage	18 – 32 Vdc	Complied
Operating temperature range	Minim -32°C to maxim +55°C	Complied
IP rating	IP67, built according to MIL-810	Complied
Dimensions	Max. 490 x 170x 175 mm	Complied
Weight	Max. 8 kg	Complied
<b>Pan-Tilt Unit</b>		
Load Capacity	Max 35 kg	Complied
Torque	60 Nm	Complied
Weight	≤ 25 kg	Complied
Pan Range	Continuous n × 360°	Complied
Pan Speed	0.001°/s to 60°/s	Complied
Tilt Range	±90° (application ±35° to ±45°)	Complied
Tilt Speed	0.001°/s to 60°/s	Complied
Accuracy	≤ 0.02°	Complied
Backlash	None	Complied
Brake	Self-locking	Complied
Operating Voltage	18–32 VDC	Complied
Max Power	160 W	Complied
Communications	Ethernet, RS-232, RS-485, RS-422	Complied
IP Rating	IP67	Complied



Operating Temperature	-32°C to +55°C	Complied
Material	Aluminium or equivalent	Complied
<b>Laser Rangefinder</b>		
Laser Class	Class 1 (Eye safe)	Complied
Measurement Range	50 m – 32 km	Complied
Standard Target Range	10 km (2.3 × 2.3 m target)	Complied
Accuracy	0.5 – 1.5 m	Complied
Beam Divergence	~0.35 mrad	Complied
Wavelength	≥ 1.54 μm	Complied
Measurement Rate	10/min (up to 40/min reduced power)	Complied
Control Interface	Serial, Ethernet	Complied
Operating Voltage	18 – 32 VDC	Complied
Power Consumption	3 W standby / 7 W measuring	Complied
IP Rating	IP67	Complied
Operating Temperature	-32°C to +55°C	Complied
Weight	~2 kg	Complied
<b>Power Supply Box</b>		
Sun Shield	Yes	Complied
Dual Shielding	Yes	Complied
Input Power	230 VAC / 50 Hz	Complied
Communication	1 × RJ45	Complied
Protection	High and low voltage protection	Complied
Service Outlet	Yes	Complied
Cables	All required interconnection cables included	Complied
Operating Temperature	-32°C to +55°C	Complied
<b>Joystick</b>		
Type	USB	Complied
Sensor	Hall Effect	Complied
Axes	3	Complied
Buttons	2 joysticks + 10 programmable	Complied
Operating Temperature	-32°C to +55°C	Complied
<b>Special equipment with Software for control and management pre-installed</b>		
Processor	Intel Core i7 -14700 (2,1 - 5,3 GHz) 33MB 20 jeder/28niti, vPro	Complied



SO	Minimum Windows 11 Pro 64	Complied
RAM	Minimum 32 GB DDR5 4800 MHz (1x32GB)	Complied
SSD	1 TB PCIe-4x4 2280 NVMe TLC	Complied
Video card	nVidia T1000 8 GB GDDR6 PCIe, 4x mDP (3x adapter mDP to	Complied
Carcass type	Tower (TWR)	Complied
Chipset	Intel Q670 OR analog	Complied
Power source	Minimum 550W	Complied
Front connectors	1x USB-C 3.2; 4x USB 3.2 Gen2 (1x with charging)	Complied
Rear connectors	1x HDMI 1.4; 2x DP 1.4a; 3x USB 3.2 Gen1;	Complied
Card reader	SD 4 in 1	Complied
Extensions	1x M.2 2230; 1x PCIe Gen4 x16; 1x PCIe Gen4 x16 (wired cable)	Complied
Expansion slots	2x 3,5"	Complied
keyboard and mouse	included	Complied
Sound system	internal 2 W	Complied
Wireless connections	Realtek 8852BE Wi-Fi 6 + Bluetooth 5.3 WW WLAN-4H0E9AV	Complied
Cable connections	Gigabit Network	Complied
Optical unit	DVD-RW slim	Complied
RAID	Support RAID	Complied
Security	TPM 2.0 module, Kensington lock slot	Complied
Monitor	2 x 24-inch FHD monitors, IPS, glare-free, Low blue-	Complied
Warranty	Minimum 36 months	Complied
MS Supervisory and Management Software		Complied
Software specifications		Complied
Console	The software must allow for complete management and control of all electro-optical systems and modules, as well as other existing modules, devices,	Complied



	and pan/tilt mechanisms. It must be implemented as a software package based on the Windows operating system, which provides a stable and logical operating environment. The software package must be modular and designed throughout to provide a user-friendly interface.	
Keyboard	There should be programmable shortcuts for both basic and advanced functions.	Complied
Mouse	There must be full mouse control operations to assist the operator with system control, navigation, and data input.	Complied
Joystick	There must be full control of the XYZ joystick (rotation) and its programmable buttons for both basic and advanced functions.	Complied
Touch	The software should support touch functionality and be optimized for touch operation.	Complied
System Overview	A tool shall be available to display the current system status and all components that support status reporting. This tool shall provide information about the system condition and any maintenance requirements	Complied
Cameras	There shall be an option to fully and extensively	Complied



	control the cameras and other EO components.	
Control	The system shall provide full control of elevation and azimuth. Full lens and camera control must be available, separated into basic and advanced functions depending on the device.	Complied
Picture-in-Picture	While controlling the selected (primary) camera in full-screen mode, there shall be an option to display the video from the secondary (non-controlled) camera in Picture-in-Picture mode. The window must be resizable and movable on the desktop.	Complied
Zoom Synchronization	There should be an option to synchronize the zoom between cameras so that the secondary camera follows the zoom level of the primary controlled camera.	Complied
Secondary Camera Control	There shall be an option to manually control the lens of the secondary camera while viewing the primary camera and observing the secondary camera in Picture-in-Picture mode.	Complied
Panorama	There shall be an option to capture panoramic images using the selected camera. The system shall allow export and import of such images, and the EO unit can be controlled by navigating within the panoramic image.	Complied



	Selecting a region in the panoramic image will orient the EO system toward that position.	
Presets	There shall be an option to define and play presets for EO components (pan-tilt, cameras). At least 12 presets must be stored in separate playlists. The operator should be able to define movement speed, waiting times, and playlist repetition behavior. At least 16 separate playlists must be available.	Complied
BIT	A tool should be available to start and record the EO system status. This tool shall be manually initiated and run built-in tests to determine the operational status of the system. The generated report may serve as a service or maintenance request to the manufacturer.	Complied
System Information	A system information bar shall display the current system status, including at least Pan-Tilt position, Azimuth, Heading, Field of View (FOV), and Focus.	Complied
Recording and Snapshots	There shall be an option to trigger instant recording of the current video streams and capture snapshots.	Complied
Screen Display	There shall be an option to enable full-screen mode where only the video image is displayed across the entire screen.	Complied



Video Tracking and Electronic Image Stabilization	The video tracking and electronic image stabilization module shall be enabled in the manufacturer's software. It shall allow multi-sensor image fusion, target detection and tracking, automatic camera control, and provide performance indicators.	Complied
Slew-to-Cue Integration	Full integration with radar, AIS, and GPS.	Complied
Image Stabilization	The IVA functionality must maintain accuracy even in strong wind or vibration conditions.	Complied
Automatic Detection of Objects and People	AI algorithms should identify suspicious movement, vehicles, or persons, even in low visibility conditions.	Complied
Behavioral Analysis	The system should detect unusual patterns such as repeated movements or stopping in restricted areas and flag potential risks.	Complied
Facial and Biometric Recognition	Should be usable for identity verification and correlation with official databases to help prevent illegal crossings.	Complied
AI Multi-Sensor AI Fusion	The system should combine data from optical cameras, thermal cameras, and radar to provide a complete contextual situational picture.	Complied
Real-Time Alerts and Response	The system should automatically notify operators when suspicious activity is detected, reducing response time.	Complied



Intelligent AI Filtering	AI should reduce false alarms (e.g., animals or weather conditions) through machine learning to improve alert relevance.	Complied
Predictive Analysis	The system should anticipate high-risk areas and assist in patrol planning.	Complied
Testing Requirements	All specifications mentioned must be tested before delivery at the manufacturer's facility, with test certificates provided during handover. Systems must undergo Factory Acceptance Testing (FAT)	Complied
FAT Visit	End-users (two people) will conduct at least one visit for the FAT. All FAT-related costs, including travel and accommodation, shall be the responsibility of the bidder.	Complied

