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MS7000D-PTZ-360R-5K

5 Km Long Range PTZ Dual Vision + Radar 360º Automatic Surveillance System

This security platform is tailored to give you an easy deployable, easy to use and highly versatile security system. It consists of MS1002 surveillance radar combined with the best available camera technology in the market. The system can be operated via our Command and Control software; MS.react CIP , MoviSight AIBOX and Nextiva.

System Description
The single mast solution is highly modular and ideal for medium to long range surveillance applications using HD zoom video cameras and (un)cooled thermal zoom cameras.

The fixed through shaft, running through the Pan and Tilt (PT) allows the cameras to rotate 360° continuously while keeping a MS1002 radar on top fixed in position, perfect for detection and visualization.
A range of thermal zoom cameras together with HD video cameras are available, all supplied in cable managed housings for protection in the harshest environments. With the Pan and Tilt unit harmonic drive gears as standard, the unit has virtually zero backlash ensuring the capture of stable images even at very long distances over land or water.

Pan and Tilt systems are designed with absolute positing feedback as standard. When twinned with radar and MS.react CIP software, MoviSight AIBOX , Nextiva, Cognyte and others VMS it can be driven automatically to any threat detected and remain on target as the threat moves.

The unit can easily be deployed as a standalone system or a combined solution to increase the performance.

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Long Range Security Surveillance Platform

System Features
- Surveillance over land and water simultaneously.
- Absolute positioning feedback for radar control 360° continuous rotation.
- Highly ruggedized for extreme and marine environments.
- IP65, REACH, ROHS & CE Compliant.
- Simple installation with one Ethernet and power connection.

Radar Features
- Ku-band radar with 360º continuous rotation.
- Radar supporting ranges to 5.5km for human detection and up to 12km for vehicle detection.
- Capable of handling > 100 tracks.

Camera Features
- Long range (un)cooled thermal cameras (up to 960mm).
- Long range (up to 1000mm (2000mm with extender)) HD video / day camera.
- Anti-fog and image stabilization capabilities.

Pan & Tilt Unit
- Ultra-slow pan / tilt speeds down to 0.0002° per second (and up to 80° per second).
- Virtually zero backlash with automatic self-position correction.
- Optical encoders for preset accuracy (0.0002° repeatability).
- Unique rapid release mechanism allows cameras to be quickly changed in the field.
- Wiper option available on the video camera.

Command & Control System

For optimal performance, the Long Range Security Surveillance Platform can be operated via C2 system; MS.react CIP and Nextiva Review.

MS.react CIP analyses and fuses overlapping data from multiple sensors and cameras and provides a single coherent picture of activity in your entire area.

Benefits:
- One touch operation.
- Automatic object tracking.
- Smooth on target video (no jittering).
- Range controlled zoom and focus, no need for auto focus.
- Automatic camera and sensor handover between units.

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Long Range Security Surveillance Platform

MS1002 Ground Surveillance Radar	
Transmission frequency	Ku-band
Transmitted power	8 W
Instrumented range	Up to 12 km
Detection range - walking person (1 m2, height 1.5 m)	5.5 km
Detection range - crawling person (0.5 m2, height 0.5 m)	1.6 km
Detection range - small vehicles (5 m2, height 1.5 m)	7.3 km
Detection range - large vehicles (10 m2, height 1.5 m)	9.2 km
Detection range - heavy vehicles (100 m2)	12 km
Detection range - fast moving target (1 m2, height 1 m)	5.3 km
Detection area	Up to 452 km2
Minimum detection range	20 m
Power consumption	130 W
Power supply	115V-240V
Main features	2D fully coherent pulse compression radar, Software-defined – fully digital, Single channel, frequency diversity
Scanning	360º continuous rotation
Rotation rate	12 to 60 RPM
Angular accuracy	< 2º
Range accuracy	< 5 m
Antenna elevation tilt	Adjustable
Max. number of tracked targets (TWS)	> 100
Weight	35 kg
Size (diameter, height)	D 500 mm, H 850 mm
Control, tracks, and video interface	IP network
Radar parameters	Profiled and adaptable to the operational environment
User interface software	T.react CIP and Radar Service Tool
Ambient temperature (operations)	-25ºC to +60ºC
Ambient temperature (storage)	-40ºC to +70ºC

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Long Range Security Surveillance Platform

Lens – Thermal				
Focal Length	**25mm to 225mm**	**15mm to 300mm**	**35mm to 900mm**	**80mm to 960mm**
Optical Zoom (Continuous)	9x, Motorized	20x, Motorized	19.7x, Motorized	20x, Motorized
F Number	F1.5	F4.0	F4.0	F4.0
Horizontal Field of View	22.3° (W) to 2.8° (T)	35.5° (W) to 1.83° (T)	15.6° (W) to 0.8° (T)	12.2° (W) to 0.61° (T)
Focus	Fixed, preset with Athermalization	Motorized zoom and focus with autofocus		

Thermal Camera				
Detector Type	Uncooled VOx Microbolometer	Cooled InSb FPA		CMT
Resolution	640 x 480	640 x 512		1280 x 720
Pixel Size	17 µm	15 µm		12 µm
Spectral Band	8 to 14 µm (LWIR)	3.4 to 5.1 µm (MWIR)		3.7 to 4.95 µm (MWIR)
Sensitivity	< 50 mK (NEdT) f/1.0 @ room temperature	< 25 mK (NEdT) @ room temperature		27.5 mK (NEdT) @ room temperature
Frame Rate / Frequency	25 Fps (9fps, 30fps options)	25Hz (30Hz option)		60Hz
Cooler Type	n/a	Stirling cycle, integrated (20,000hrs)		CMT, long life linear (50,000hrs)
Cool Down Time	n/a	< 10 Minutes, 6 minutes typical		3 to 4 minutes typically
Image Enhancement	Image Contrast Enhancement (ICE™)	Linear AGC, CLAHE, LAP		LACE, Linear, Edge enhancement
Digital Zoom	4x	4x		8x
Turbulence Mitigation	-	-		Yes
Image Stabilization	Yes (cost option)	Yes		Yes
Image Control	Polarity: White Hot / Black Hot, Orientation: Invert / Revert	Noise reduction, sharpen, alpha-blend. Palettes: Black-hot, white-hot, ironbow, rainbow + more		White hot, Black hot, Ironbow, Rainbow, many more

Detection, Recognition and Identification Ranges*				
Detection (Human / Vehicle)	11910m / 15220m	10970m / 20110m	24170m / 31170m	30300m / 50000m
Recognition (Human / Vehicle)	2980m / 3800m	2360m / 8790m	6950m / 22670m	8000m / 20600m
Identification (Human / Vehicle)	1830m / 2340m	1440m / 5960m	4280m / 16830m	6300m / 16900m
* Ranges are based upon NVESD recommended target dimensions, temperature and task difficulty with 50% probability on a MODTRAN standard atmosphere.				

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Long Range Security Surveillance Platform

Electrical and Mechanical		
Boresight	Yes	-
Rapid Release Mechanism	Yes	-
Video Output	IP and Composite (PAL / NTSC)	IP and Composite (PAL / NTSC)
IP rating	IP67	IP67
Temperature Range	-30°C (-22°F) Up to 65°C (149°F) (-40°C with optional heater)	-32°C (-25°F) Up to 55°C (131°F)
Power	28-32vDC, 1.7A, 49W Peak (excludes heater at 65W)	28vDC, 0.9A, 25W Peak
Window	Vanadium thermal optical quality glass, with a Low Reflection Hard Carbon (HCLR) coating	Silicon Window Enhanced Diamond Like Carbon (EDLC) coating
Fixing Material	Stainless steel with external fall protection	Black anodised aluminium alloy
Housing Material	Iridited aluminium	Glass fibre polyester resin & gelcoat
Housing Finish	White powder marine grade paint finish (other colors are available upon request)	Gloss white polyurethane finish
Housing Model	HT07	HT07
Weight	Typically 14Kg / 30.9lb	Typically 23Kg / 50.7lb
Dimensions (mm)	L700 x W254 x H226	L597 x W299 x H299

Lens – Day		
Focal Length	**15.2mm to 500mm**	**16.7mm to 1000mm**
Optical Zoom (Continuous)	33x, motorized	60x, motorized
F Number	F3.0 to F32	F3.5 to F16
Horizontal Field of View	28.0° (W) to 0.74° (T)	23.1° (W) to 0.41° (T)
Extender	n/a	2x Extender available (doubles figures above)
Format Size	1/2"	1/1.8"
Focus	Auto focus and motorized manual focus	Auto focus and motorized manual focus
Iris	Auto iris	Auto iris

Day Camera	
Sensor	1/1.8" CMOS (Total sensor pixels 6.1MP)
Sensor Mode	Full HD 1080p (1920 x 1080)
Wide Dynamic Range	Yes (103 dB)
Video Performance (High Sensitivity Mode)	Color 0.00825 lux Mono 0.00275 lux
White Balance	Auto, push and manual
Automatic Level Control	Auto / manual
Shutter	1/25 [30] to 1/15,000
Day/Night Mode	Auto, color, monochrome
Backlight Compensation	On / off
Noise Reduction	Yes
Digital Zoom	-
Defog	Yes
Image Stabilization	Gyro image stabilization (lens cost option)

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Detection, Recognition and Identification Ranges*		
Detection (Human / Vehicle)	10970m / 20110m	24170m / 31170m
Recognition (Human / Vehicle)	2360m / 8790m	6950m / 22670m
Identification (Human / Vehicle)	1440m / 5960m	4280m / 16830m
* Ranges are based upon NVESD recommended target dimensions, temperature and task difficulty with 50% probability on a MODTRAN standard atmosphere.		

Electrical and Mechanical	
Boresight	Yes
Rapid Release Mechanism	Yes
Video Output	IP and Composite (PAL / NTSC)
IP rating	IP67
Temperature Range	-30°C (-22°F) Up to 65°C (149°F) (-40°C with optional heater)
Power	28-32vDC, 1.7A, 49W Peak (excludes heater at 65W)
Window	High Definition optical quality glass, with a low reflection and water resistant coating
Fixing Material	Stainless steel with external fall protection
Housing Material	Iridited aluminium
Housing Finish	White powder marine grade paint finish (other colors are available upon request)
Housing Model	HT07
Weight	Typically 14Kg / 30.9lb
Dimensions (mm)	L700 x W254 x H226

Pan and Tilt Unit – High Powered	
Repeatability	0.0002°
Speed Control	Zoom dependent speed control
Pan Rotation	360° Continuous
Pan Speed	0.002° to 80.0° per second (selectable ultra slow speed down to 0.0002°)
Tilt Range	+90° To -90°
Tilt Speed	0.002° to 80.0° per second (selectable ultra slow speed down to 0.0002°)
Actuation	Pan and tilt stepper motors
Position encoders	Optical encoders on pan and tilt motors
Housing Material	Cast hard anodized aluminium
Housing Finish	Powder marine grade paint finish
Color	White (other colors available upon request)
Fixing Material	Stainless steel with external fall protection
IP rating	IP67
Temperature Range	-30°C (-22°F) Up to 65°C (149°F) (-40°C with optional heater)
Power	28-32vDC, 1.8A, 50W Nominal / 3.5A, 99W Peak (excluding camera payload)
Dimensions	391mm (H) x 248mm (W) x 245mm (D) (including mounting adaptor, excluding through shaft and payloads)
Weight	20kg / 44.1lb (excluding camera payload, payload capacity 50kg)

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Telemetry	
Presets	127x Preset positions, 16x preset tours
Protocols	Pelco D, Pelco D Extended, SSP, ONVIF Profile-S
Parameter Programming	Via RS485 or RS422
Privacy Zones	4
Positioning	Absolute positioning feedback

Network Camera	
Ethernet	10/100 Base T, auto sensing, half/full duplex
Connectivity	ONVIF Profile S, auto MDIX, port forwarding
Network Protocols	Networking: IPv4/v6, UDP, TCP, IGMP, ARP, DHCP, DNS, NT Streaming: RTSP, RTP, HTTP, Web Sockets Management: HTTP, HTTPS, Bonjour, ONVIF, PSIA, ION API, SNMP, SMTP Security: Basic / Digest Authentication, SSL

Image Processing	
Video Compression	H.264/MPEG4 Part 2, M-JPEG
H.264 Performance (standard)	Total D1@390 fps or Full HD 1080p@65 fps Examples: 2x 1080p at 30 fps (HD video/thermal) or 2x D1 at 30 fps (thermal / SD)
H.264 Performance (6.1MP cameras)	3x 1080p at 30 fps or 3x 1080p at 25 fps (various resolutions from 768 x 432 available)
Image Processing	Image resizing and scaling ratio, noise reduction, edge enhancement (sharpness), ROI based video compression
Software Update	Remote / IP accessible
Other Features	Email Notifications, Text Overlay, 2x Dry-Contacts

Options	
Wiper	Wiper, wiper nozzle and wash tank (for the video camera only)
Gyro	2 Axis gyro stabilizer on Jaegar Unit

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