MSS

Mobile Surveillance System

The MSS is an high mobility vehicular integrated system for on field surveillance which includes radar sensors, an optronic system, a Command & Control and Communication facility. The components combined performances allow the system to detect air, ground and maritime targets up to the nominal distance of 40km.

All the components are mounted on a 4 wheel drive highly mobile platform which also host a power generator, an Air Conditioning Unit and a set of communications devices which allow, together with the C2 based interoperability features, easy integration with higher echelon units and with other cooperating units.

The sensor group is based on a set of TMMR digital radars, configurable from 1 to 4 units, and the ultra-long range NERIO-ULR optronic system which are mounted on a telescopic mast. The 4.5mt mast length, combined with the platform height, allow the sensors, to overcome surrounding obstacles and detect very small targets on the surface and at very low altitude. Typical small detectable targets include micro-drones and crouching people.

The Command and Control room hosts two workstations with 27" 4K Multi Touch Configurable Display. The Axios C2 SW provides the functionality to control the organic sensors, additional radars and different external sensors (i.e. an ESM/ Direction Finder).

Sensor Data Processing and Multi source Data Fusion support the creation of a timely and reliable picture of the Controlled Area. Artificial Intelligence applied to image processing supports target tracking and classification. Threat Evaluation and Weapon Assignment can be added to the system when the MSS is connected to reaction systems (i.e. Jammers). A large set of communications interfaces allows the connection to controlled units (i.e. effectors) and other C2 systems.

The TMMR Multi-mission radar allows for detection of any moving/slow moving target from $0°$ to $90°$ degrees in elevation and in a $90°$ ($120°$ degrees in extended mode) sector in azimuth. Detection distance of targets like micro-drones exceeds 7 km. Multiple TMMRs can be installed to cover larger surveillance sectors.
The TMMR use of C-band frequency allows an angle measurement precision sufficient to cue the NERIO-ULR on the target at a distance compatible with camera performances.

NERIO-ULR provides 24hr operational capability, and its Thermal Imaging camera combines an $11°$ to $0.9°$ zoom field-of-view high definition (HD) TI with a $360°$ x $±60°$ system field of regard. The optronic system includes a high-definition colour day TV camera with a compatible zoom field of view and optional, eye-safe Laser Rangefinder (LRF).
The NERIO-URL allows for target recognition of targets like micro-drones beyond 5km.

LEONARDO

TECHNICAL SPECIFICATIONS

AXIOS C2

Two C2 Workstations with full functional reconfigurability and role/task assignment.

Main Functions:

- Sensors Management
- Sensor Data Fusion
- Sensor Planning
- Threat Evaluation
- Weapon Assignment
- Interface/Comms management

TMMR

Search data rate:	2s
Detection Max Range (Sw limited):	40Km
Minimum range:	150m
Azimuth Detection (Standard Mode):	± 45°
Elevation Detection:	0° - 90°
Weight:	< 45Kg

NERIO-ULR

Field of regard continuous:	360° (Az); ± 60° (El)

Small boat or vehicle range performances:

- Detection: > 40Km
- Recognition: > 20Km
- Identification: > 15Km

Automatic Threat Detection and Tracking

VEHICLE PLATFORM

Overall length:	5881mm
Overall width:	1976mm
Gross Vehicle Weight:	< 7000Kg
Payload:	up to 4000Kg
Fording Depth w/o prep.:	650mm
Towing capability:	3500Kg
Single Cabin seats:	2+1
Top Speed:	110Km/h