DEFENSE AND SECURITY

SKYFENDER
AIR DEFENSE RADAR

Guaranteeing airspace sovereignty

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SKYFENDER
AIR DEFENSE RADAR

SkyFender ADR is an X-band pulse-doppler radar designed to provide real-time air surveillance to detect multiple target types flying at low and very low altitudes, even in low visibility and harsh weather conditions.

DESCRIPTION

The SkyFender ADR is an air defence multimode tactical battelfield radar specially designed to detect low level targets. It relies on Indra X Band radar technology used in Air Defence fire control and surveillance radars systems.

SkyFender ADR is an all-weather pulse-doppler radar, operating in X band, that performs innovative signal processing in time and spectral domains to provide advanced air target detection and tracking capabilities allowing for situational awareness and timely response to airborne threats.

LOW LEVELAIR DEFENCE MULTIMODE TACTICAL BATTELFIELD RADAR

SkyFender ADR radar is designed to provide real-time air surveillance, being able to detect and accurately track aircraft flying at low and very low altitudes providing early warning to Air Defence Command & Control Centres, or Fire Direction Centres and aiming to Fire Units (Weapon Terminals) in VSHORAD or SHORAD applications.

The radar is interoperable with a secondary surveillance radar (IFF) providing electronic identification of detected radar targets.

A radar operator console is available, that provides control interfacing between the operator and the radar. The operator console also presents the local air picture.

Due to its purpose, availability of the system is also a key factor, therefore scheduled and preventive maintenance are kept to a minimum.

SkyFender ADR has a powerful fault detection (Buit-in-Test, BIT) capability that can automatically detect and locate any possible failure that may happen to reduce out-of-operation time.

Portability of the radar sensor is a key factor, therefore, the radar sensor (and associated IFF, if any) are installed in a high mobility shelter (vehicle mounted or towed), providing portability and being its mechanical architecture designed in order to achieve a fast deployment combined with easy maintenance procedures.

SYSTEM. TECHNICAL CHARACTERISTICS

- Detection of low and very low flying air target in strong clutter conditions.
- Target tracking concurrent with search (TWS).
- High tracking accuracy achieved by monopulse channel processing.
- High range resolution providing target discrimination in the area of interest.
- Emission Control (EMCON): Radar performs transmit inhibit to avoid transmissions of RF signals.
- High mobility. The radar shelter can be transported be any one of the following means:
  - Mounted on or towed by an all-terrain light vehicle.
  - Carried by helicopter.
  - Carried in a cargo aircraft (C-130).
- Low cost and modular architecture and compact system design affording high reliability.
- Transmitter based on a TWT.
- Low power consumption.
- Integrated IFF.
- Local and remote console available.

OPERATIONAL CAPABILITIES

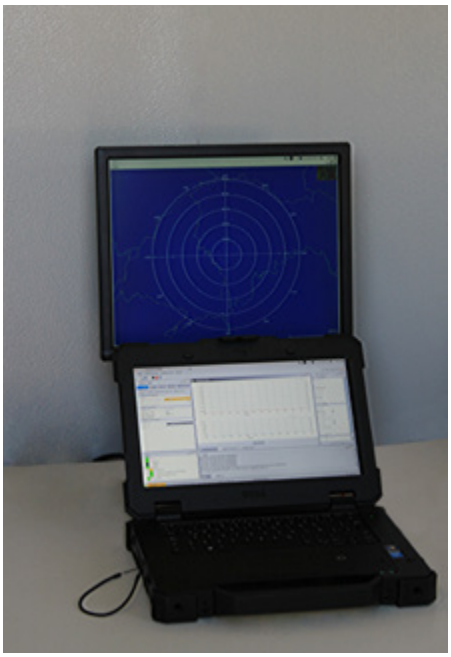
RADAR OPERATIONAL MODES

SkyFender ADR radar provides three radar operational modes, optimized for different surveillance needs.

•Early Warning Surveillance Mode.
This operational radar mode is optimized for radar maximum detection range with the antenna rotation period automatically set for maximizing time on target).

•Air Defense - Priority Track Mode.
This operational radar mode is optimized to prioritize radar tracking performance, ensuring a high detection refresh rate.

•Air Defense - Priority Search Mode.
This operational radar mode is optimized to prioritize radar detection range, while ensuring good detection refresh rate.



BUILT IN TEST (BIT)

The radar has a modular architecture and has an advanced built-in-test system that continually monitors and reports the status and health of the radar and its units.

IFF

Interrogates in modes 1,2,3/A, C, S Intermode, 4 & 5 (optional) in sectors and with an interleave defined by operator.

ARCHITECTURE. MAIN COMPONENTS

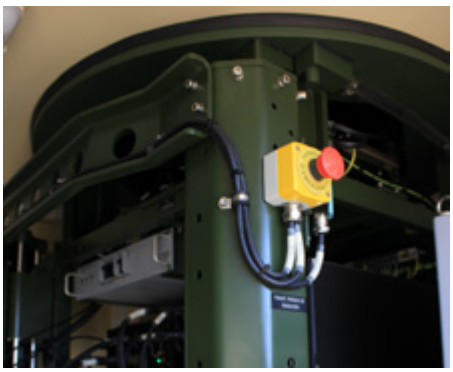
MOBILITY UNIT

It comprises of a mobile platform where all system units and elements are installed. The mobility unit provides radar housing, radome, a mechanical structure for convenient antenna deployment and retraction, electric system for system levelling and the antenna deployment, racks and drawers, interconnecting cables, UPS and generator set, North finder and tilt sensors, camouflage net and other ancillary equipment.
The mobility unit include the power control that provides the system with power supply from the available two sources: VCA (from generator AC/AC Converter) and VDC (from AC/AC Converter). Several configurations for the Mobility Unit are possible:

- Installation in shelter towable by a medium vehicle.
- Installation in shelter mounted on a medium vehicle HMMWV type or light truck.
- Installation in shelter mounted on a heavy vehicle.

IFF INTERROGATOR/DECODER

This unit includes IFF transceiver (transmitter and receiver), as well as the response processor and interrogator code generator. The IFF Interrogator is an optional unit. In some cases this units is furnished by the Customer (CFE).



RADAR CONTROL CONSOLE

This unit provides a local radar operator interface with the radar sensor and displays the air picture as seen by the radar. This unit also provides the operator with means to control and monitor the radar and IFF operation and includes the interface for the possible integration and exchange of information with the Air Defense C2 Centre via data link with the support of radio and/or optic fiber.

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