



# SELEX

## Sensors and Airborne Systems

A Finmeccanica Company

Sensing the Future

### The ATOS system and Defender

Available for fixed and rotary wing platforms, the Airborne Tactical Observation & Surveillance (ATOS) system is an advanced mission system, including operator consoles and a wide range of sensors. It has been designed to respond to the growing demand for area surveillance, border and critical infrastructure protection as well as requirements for pollution detection and disaster control. It is an open architecture, flexible surveillance system that can integrate a number of mission sensors using a wide range of avionics and datalinks.

SELEX Sensors and Airborne Systems (SELEX S&AS), a Finmeccanica company, has worked successfully with the Britten Norman Aircraft Company to integrate the ATOS system onto the Defender 4000 maritime surveillance aircraft.

The ATOS system gives the Defender, which is already in service with a number of military and police authorities world-wide, a complete turnkey surveillance package that greatly enhances its maritime protection and detection capability.

Mounted on the Defender Aircraft, this variation of the ATOS system comprises:-

- Seaspray 7000E surveillance radar
- Passive Littoral Surveillance System (PALS)
- Titan 385 multi-sensor turret system
- Tactical down-link system
- Tactical processing system



Integrated systems enhancing surveillance

#### KEY FEATURES

- Enhanced radar target detection and tracking performance
- Oil, gas and fishery protection capability
- Improved capability for search and rescue operations and environmental protection
- Greater operational efficiency
- Improved situational awareness
- Increased effective smuggling activity intercept by coastguard
- Long range day/night and poor visibility surveillance
- Multi-platform capability



Seaspray radar antenna

Titan 385 sensor turret

PALS interface

## SYSTEM COMPONENTS

### SEASPRAY RADAR

The 360 degree surveillance capability comes from SELEX S&AS' highly successful family of Seaspray surveillance radar. The Seaspray offers genuine multi-mode performance including:

- Detection of large and small surface targets in bad weather and high seas
- Search and rescue
- Track-while-scan
- Identification
- Classification
- Inverse Synthetic Aperture Radar (ISAR)
- Ground mapping
- Identification Friend or Foe (IFF)

### PASSIVE LITTORAL SURVEILLANCE SYSTEM (PALS)

The ATOS system on Defender includes a Passive Littoral Surveillance System. This system increases the operational effectiveness of naval, coastguard and border patrol assets, both surface and air. PALS operates well outside the radar detection range of vessels under surveillance. Using specially developed enhanced emitter identification algorithms, PALS examines the radar signature of vessels to reveal unique characteristics and, from this, the vessel that it is fitted to. Using a library of contact information, the user can locate a vessel and identify whether it is known or unknown. This vastly improves situational awareness of the sea-space and enhances the ability of the commander to identify passively vessels engaged in illegal activity.

### TITAN 385 MULTI-SENSOR TURRET SYSTEM

To provide long range target identification, the SELEX S&AS Titan 385 multi-sensor turret system combines high resolution sensors into a single stabilised line replaceable unit solution. The sensors and capabilities of the turret can include the following:

- Third generation large format 3 to 5  $\mu\text{m}$  or 8 to 10  $\mu\text{m}$  waveband infrared surveillance camera
- Low light and/or Colour TV camera
- Laser range finder
- Auto tracker fitted as standard
- Spotter scope
- Oil pollution surveillance camera

### TACTICAL DOWN-LINK SYSTEM

ATOS incorporates a satellite communications (SATCOM) terminal that can provide for both voice and wide-band secure data traffic beyond line-of-sight ranges. Data forms transferred over this link can be high bandwidth real time video from sensor imagery, still imagery and tactical data. This provides an enhanced tactical feedback to ground-based command centres and, with the provision of mobile SATCOM terminals, can provide integration of the air element with ground-base units.

### TACTICAL PROCESSING SYSTEM

The tactical processing system is an integrated display and control system. It receives inputs from the operator, mission sensors, navigation sensors and, in conjunction with the system database, is able to collect, handle and distribute the mission sensor data according to operator need. The tactical processing system uses an integrated approach to operator control/interface based on a multifunction display, keyboard and trackball at each crew station. This allows a significant reduction in the number of dedicated control panel displays thus maximizing the flexibility of crew task allocation.