- Member of the Thales Mission Solution family
- Standard configuration of integrated sensors, effectors, CMS, communication system and navigation system
- Turn-key delivery of proven solutions with flexible in-service support levels
- Affordable solutions and short lead times through standardization

Mission Solution 150
Standard configuration for ocean security
Mission Solutions for each domain

Thales offers a complete range of domain oriented solutions for Safety, Littoral Security, Ocean Security, Point Defence, Local Area Defence and Wide Area Defence. The Mission Solutions for ships that operate in the maritime safety and security domain and/or in the defence domain with low intensity conflicts are standardized by Thales. The pre-integrated and hence cost effective systems are easy to install, easy to operate and have short delivery times. The basis of these solutions is the TACTICOS Combat and Mission Management System family that offers a full package supporting Maritime Security Operations (MSO) next to traditional warfare functionality.

The MS-150 provides capabilities for both littoral and ocean operations, up to Maritime Interdiction Operations (MIO) like counter-drugs & terrorism and anti-piracy operations. As an expanded version of MS-100, it adds extra capabilities and abilities to manage more complex scenarios. MS-150 is typically aimed at armed coast guard OPVs and naval constabulary patrol ships, with embarked helicopter and RHIB(s). These units are exposed to limited surface threat.
Benefits

- Superior very small surface and air object detection with the SCOUT Mk3 Tactical Surveillance Radar in normal and cluttered environments.
- Covert operations with the Low Probability of Intercept (LPI) SCOUT Mk3, VARIANT (option) and the TRINITY Electro Optical Surveillance and Tracking (EOST) sensor.
- Unique on-board information management with the TACTICOS Maritime Interdiction Operations package to discover normal and anomalous behavior. This turns situation awareness into real situation understanding.
- Superior fire control solution with TRINITY EOST sensors and TACTICOS surface gun algorithms.
- Legal evidence gathering and recording with TRINITY EOST and TACTICOS.
- Easy information sharing over non-tactical communication networks (IP-based) and real-time data exchange over a military tactical data link (option).
- Long-range helicopter and UAV control with the VARIANT 2D radar.
SCOUT Mk3
Tactical surveillance radar

SCOUT Mk3 is the most advanced rotating 2D Maritime Low Probability of Intercept (LPI) Surveillance Radar. It features the latest FMCW and Doppler technology. SCOUT Mk3 uses automatic detection & tracking, excellent clutter suppression and high range resolution to detect very small objects even in high sea states or closely spaced to larger objects. Additionally SCOUT Mk3 provides low-level air coverage enabling detection and/or guidance of planes, UAVs and helicopters. Its true LPI nature enables SCOUT Mk3 to operate covertly.

Functional aspects
- 2D Maritime surveillance
- Small target detection
- Helicopter approach / guidance
- Low-Level airspace surveillance
- UAV detection / guidance
- True LPI surveillance
- Automatic detection and track initiation
- Fast track initiation with low false track rate
- Safe for personnel due to extremely low transmitter power
- Surface gun fire support
- Littoral surveillance
- Detection of asymmetric threats

Technical data
- Operation: I/J band
- Range: up to 24 NM (44.4 km)
- Minimum range: 15 meter
- Fully automatic detection and tracking
- FMCW doppler waveforms provide accurate radial speed measurements

### INSTALLATION DATA SCOUT MK3

<table>
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<tr>
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<th>Width (mm)</th>
<th>Depth (mm)</th>
<th>Height (mm)</th>
<th>Mass (kg)</th>
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</table>

Typical environments and objects of interest, where SCOUT Mk3 outperforms: severe sea states, buoys, littoral and multi-objects, smugglers, jet skis, helicopters.
TRINITY EOST
Electro Optical Surveillance and Tracking system

The TRINITY EOST stands out by providing recognition and identification during day/night and up to a range to the horizon maximum. It is a compact and lightweight system specifically designed for the use on small naval and coast guard vessels.

The system uses an IR camera in combination with a laser range finder for surface target tracking and a colour zoom camera for observation and surveillance. The sensors are mounted on a compact pan and tilt system. Target tracking (based on the well-known MIRADOR® EOSTS), sensor management (e.g. steering of pan and tilt and communication with the sensors) and communication with other components (e.g. navigation and inertial navigation) are handled by the processing cabinet.

**Functional aspects**
- Optical Surveillance
- Target Designation
- Manual and Automatic Target Acquisition
- Target Tracking

**Technical data**

**EOST director**
- Azimuth mechanical coverage: 360°
- Elevation mechanical coverage: -40° to +95°
- Maximum azimuth speed: ≥ 120 °/s
- Maximum elevation speed: ≥ 100 °/s

**TV colour zoom camera**
- Field of View (FOV): 1.6° x 1.2° (smallest FOV)
- Focusing range: 1 meter to infinity
- Zoom: ≥ 18 X
- Dynamic range: 2 - 300,000 lux
- Video output: CCIR

**IR track camera**
- Type: Uncooled (cooled is supported)
- Spectral bandwidth: 8 - 12 µm
- Field of view: 4.6° x 3.7°

**Laser range finder**
- Type: OPO shift Nd YAG, IEC 60825 class
- 1M Wavelength: 1.57 µm
- Instrumented range limit: 300 m – 20 km
- Beam divergence: 0.8 mrad
- Eye safe

**INSTALLATION DATA TRINITY EOST**

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<thead>
<tr>
<th>Width (mm)</th>
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TACTICOS 150
Combat Management System

TACTICOS 150 is the first choice for ocean-going maritime security agencies. It provides capabilities for both littoral and ocean operations. As an expanded version of TACTICOS 100, it adds extra capabilities and abilities to manage more complex scenarios. TACTICOS 150 is typically aimed at ocean-capable armed coast guard OPVs and naval constabulary patrol ships.

Maximising Offshore Patrol
Ocean patrol has many challenges – distance, relative isolation, extended deployment and a wide task list. By integrating locally derived and off-board sensor based information from databases and open sources, TACTICOS 150 provides an extended situation awareness and understanding.

TACTICOS 150 can also provide an extended surveillance capability by providing planning and execution support for helicopter and unmanned missions.

Controlled and Co-ordinated
TACTICOS 150 allows force operations to be controlled and coordinated – from tasking organic boarding teams to coordinating maritime patrol aircraft and external agency vessels. Should the situation escalate, TACTICOS 150 also provides excellent capability to defend the own ship by highly accurate fire control for any installed gun.

INSTALLATION DATA MOC MK4 (EXCL. SHOCK MOUNTS)

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EARL
Lightweight Naval C-ESM solution

EARL - Naval is a lightweight and cost-effective naval C-ESM solution for small surface ships, providing Alert and Situation Awareness capabilities based on interception/Direction Finding of the radio communication signals in frequency band 100-3000 MHz. It provides detection and bearing of conventional or asymmetric communication emitters, for surveillance and littoral warfare missions.

EARL - Naval is composed of a compact DF antenna, a lightweight DF sensor and an easy-touch display running on a rugged laptop, able to be used by non-skilled operators.

Technical data
• Frequency band: 100 - 3000 MHz
• DF scanning speed: up to 2.5 GHz/s
• DF accuracy: < 3° RMS
• Listening-in: AM, FM, USB, LSB, ISB

Installation data
• DF sensor unit
  Size: 43x32x14cm Weight: < 15kg
  Power supply: 11-30 VDC
• Antenna: weight: <15 kg

Maritime Security and Defence
VARIANT
Lightweight short-to-medium range 2D surveillance radar

The VARIANT naval radar system is a modern, highly efficient surveillance and target indication sensor for Naval Vessels operating in blue ocean and in the littoral. It is a stabilised, 2D air- and surface surveillance radar system consisting of a dualband pulse-Doppler radar, a dedicated FMCW radar and an IFF antenna. Three-antennas-in-one ensures robustness under a variety of circumstances, operational flexibility (the FMCW radar will e.g. allow the vessel to conduct covert operations) and enhanced redundancy.

Technical data
Antenna
- Type: double pill box
- Horizontal beamwidth: 1.8° (G-band) - 1.2° (I-band)
- Rotation speed: 14 & 28 r.p.m.
- Elevation coverage: up to 35°

Performance data
Number of tracks
- Air: 200
- Surface: 200
- FC Surface: 3

Instrumented ranges
- Air: 120 km
- Surface: 70 km

Information sharing
MS-150 shares information such as track data, e-mail or chat messages, map overlays, compressed video frames, etc. over the communications bearers.

MS-150 supports multiple network communication bearers including: Satellite Communications (SATCOM), Internet Protocol (IP), Ultra High Frequency (UHF), Very High Frequency (VHF) radio, High Frequency (HF) radio, W-AIS, WiMAX and WIFI. Since this capability has been designed to efficiently operate over low-bandwidth HF radio channels, the MS-150 data exchange mechanism is extremely efficient. This translates into exceptional bandwidth optimization.

LINK Y Mk2
Tactical data link

LINK Y Mk2 is used for reliable and secure exchange of tactical data and tactical orders. It is easy to use via a self-managing and adaptive radio network between multiple military platforms. LINK Y Mk2 offers functionality which is comparable to NATO LINK 11, but with enhanced capabilities, and using [software embedded] national encryption. LINK Y Mk2 acts as a “force multiplier”: available tactical data of participating units is shared, creating a complete and uniform tactical picture amongst users.

- Dynamic TDMA protocol for HF, VHF and UHF radio communication
- Proven integration with TACTICOS
- Applicable for sea, air and land platforms
### Solutions matched to your mission

#### Safety & Security

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### THALES

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Maritime Security and Defence