Mission Solution 100
Standard configuration for littoral security

- 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 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-100 provides stable and reliable command and control capabilities to support short-endurance maritime security operations in the littorals. Typical operations are: vessel traffic patrol, fishery inspection, border patrol, illegal immigration detection, search and rescue (SAR), counter drugs operations. These operations are normally executed by offshore coast guard or customs cutters, and inshore coastal and small patrol vessels, operated by navies or maritime security agencies. These units are exposed to very limited threat.
• Superior very small surface 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 and the TRINITY Electro Optical Surveillance and Tracking (EOST) sensor.
• Full situation awareness by modern sensors and TACTICOS packages for Maritime Security Operations.
• Support for legal evidence gathering and recording of TRINITY EOST and TACTICOS.
• Easy information sharing of tracks, chat and pictures with all actors for successful Maritime Security Operations. Fully based on IP technology in a non-military secure network, connecting sea, air and shore, fixed and mobile assets.

• TACTICOS 100 can be integrated with a bridge system
• Compact footprint for all MS100 subsystems
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

<table>
<thead>
<tr>
<th>INSTALLATION DATA SCOUT MK3</th>
<th>Width (mm)</th>
<th>Depth (mm)</th>
<th>Height (mm)</th>
<th>Mass (kg)</th>
<th>Power cons. (kVA)</th>
<th>Heat dissipation (W)</th>
<th>Cooling</th>
<th>I/F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antenna System</td>
<td>1900</td>
<td>620</td>
<td>520</td>
<td>70</td>
<td>415 VAC</td>
<td>–</td>
<td>Air</td>
<td>–</td>
</tr>
<tr>
<td>Processing Unit</td>
<td>500</td>
<td>180</td>
<td>500</td>
<td>20</td>
<td>300 VAC</td>
<td>–</td>
<td>Air</td>
<td>NMEA OSI Gigabit Ethernet</td>
</tr>
</tbody>
</table>

Typical environments and objects of interest, where SCOUT Mk3 outperforms: severe sea states, buoys, littoral and multi-objects, smugglers, jet skis, helicopters.
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

<table>
<thead>
<tr>
<th>Width (mm)</th>
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<th>Height (mm)</th>
<th>Mass (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>580</td>
<td>540</td>
<td>430</td>
<td>32</td>
</tr>
</tbody>
</table>
Patrolling busy and highly dynamic coastal areas is a complex task. The ability to focus quickly on the contacts of interest maximizes operational effectiveness. TACTICOS provides even more.

TACTICOS is the core integration, presentation and command support element of the Mission Solution family. It is tailored to the respective Mission Solution in hardware, software and sensor/weapon integration. For MS 100 it provides amongst others a layered operational picture that is matched to the operator’s needs as well as many more dedicated functions for Maritime Security and target designation. As evidence recording is a key function in maritime security TACTICOS includes comprehensive data and video logging functions.

Evidence trail is key to prosecute criminal and illegal activity. Therefore TACTICOS 100 includes comprehensive logging of operator actions, object positions and information sharing. It also supports video recording from vessel surveillance cameras. If required, evidence collected from boarding teams is also captured and stored.

<table>
<thead>
<tr>
<th>INSTALLATION DATA MOC MK4 (EXCL. SHOCK MOUNTS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width (mm)</td>
</tr>
<tr>
<td>MOC Mk4</td>
</tr>
</tbody>
</table>
Communication and navigation system

All communication and navigation capabilities are combined within one proven, integrated package. It supports the mission tasks of the ship by providing accurate navigation data to the CMS for weapon and/or sensor control, as well as all types of communications required for maritime security operations.

External Communication System

- 1x FleetBroadband Satellite Communication 250
- 1x GMDSS A2 System consisting of:
  - 1x GMDSS Console
  - 2x VHF/IMM Radios
  - 4x VHF Antenna
  - 1x 250W MF/HF Radio
  - 1x HF Antenna
  - 1x Navtex Receiver
  - 3x VHF portable
  - 1x EPIRB
  - 2x SART

Navigation System

- 1x Navigation Data Distribution System
- 1x Main Gyro
- 1x GPS
- 1x Log
- 1x Anemometer / Board Weather Station
- 1x Bearing & Steering Repeater
- 1x Junction Box
- 1x NSS Software (Hardware not included)
- 1x Echosounder

Information sharing

MS-100 shares information such as track data, e-mail or chat messages, map overlays, compressed video frames, etc. over the communications bearers.

MS-100 supports multiple network communication bearers including: Satellite Communications (SATCOM), Ultra High Frequency (UHF), Very High Frequency (VHF) radio, High Frequency (HF) radio, W-AIS, WiMAX and WIFI. Since this capability has also been designed to efficiently operate over low-bandwidth HF radio channels, the MS-100 data exchange mechanism is extremely efficient. This translates into exceptional bandwidth optimization.
### Solutions matched to your mission

#### Safety & Security

- **Nav radar**
- **SCOUT Mk3**
- **VARIANT**
- **IFF TSB2525**
- **SMARTS Mk2**
- **TRINITY EOST**
- **MIRADOR**
- **LIROD Mk2**
- **STIR 1.2 EO Mk2**
- **EARL ESM**
- **ALTESSE ESM**
- **VIGILE 100 R-ESM**
- **LINK Y Mk2**
- **AIS**
- **ADS-B**
- **Communication**

#### Defence

- **TRINITY**
- **MS-100**
- **MS-150**
- **MS-300**
- **MS-400**

- **TACTICOS**
- **General Policing**
- **General Combat**
- **Maritime Interdiction Operations**
- **Search and Rescue**
- **Asset Control**
- **Info Sharing**
- **Tactical Data [Link]**
- **Anti Surface Warfare**
- **Anti Air Warfare**
- **Anti Submarine Warfare**
- **Electronic Warfare**
- **Land Attack**

**Legend:**
- Selected
- Option

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Maritime Security and Defence