



TRSS

Tactical Radar for Surface Surveillance

Surface surveillance of sea and land

The TRSS is the new compact high-performance surveillance radar in HENSOLDT Sensors' TRS-family. It has the capability to detect very small targets in all surface environments based on naval platforms.

Missions in littoral and blue water environment and sea-to-land operations require full situational awareness of all kinds of targets at any time. TRSS reliably recognises and identifies targets and asymmetric threats offshore and onshore.

TRSS is designed for all kinds of security, safety and defence missions for surface surveillance. Convincing especially through its flexibility in configuration and operational needs, TRSS even provides the capability for enhanced land surveillance.

TRSS is based on latest AESA (Active Electronically Scanned Antenna) technology and is a coherent Pulse-Doppler X-band radar. It is the appropriate sensor to fulfil the surveillance requirements from short range (close to the naval platform) to medium range by detecting even very small targets.

The radar core sensor is a further development of latest security radars with additional software elements of TRS-3D and TRS-4D and therefore combines the latest technology with long-year expertise in naval radar business.

The new radar offers the following capabilities to cover current and up-coming operational needs:

- **Sea and land surveillance from sea platform**
Support of defence landing missions and security tasks.

- **New dimension of situational awareness**

Very high track update rates for effective self-defence and area defence: Detection of small targets in sea clutter like swimmers, mines and periscopes in long distances.

- **Multi-beam**

Compared to mechanically scanned radars, the beam pointing is by far more flexible due to the AESA technology. High Doppler Resolution with one to eight beams in parallel for high update rates, small objects and slight object movements.

- **Optimised time-energy budget**

Capability to scan only defined areas of interest to improve focussed awareness.

- **Electronic stabilisation**

Pitch/roll/heading movements of the ship are compensated by the use of high performance 3D antenna. No need for a heavy mechanically stabilised pedestal.

- **Designed for today. And tomorrow.**

Flexible software-defined radar management. Fast adaptable software for emerging mission needs.

The TRSS supports protection of ship, crew and mission teams in all naval and littoral environments.

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Key features for a wide range of applications:

- Detection of targets close to naval platforms
- Detection of land targets from sea
- Ship Controlled helicopter Approach (SCA) support
- Support of mine warfare
- Drone detection and guidance
- Surface gun fire control with splash detection
- Support of search and rescue operations
- Harbour surveillance

TRSS offers the following operational modes:

- Panoramic surveillance
- Multi-mode surveillance
- High update target tracking

Strong advantages in long time deployment:

- Environmental compliance to MIL standards
- MTBF >2000 hrs
- Excellent diagnostic features
- Easy operable and maintainable

Strengths in installation:

- Low weight
- On-deck with radome or in-hull installation
- 360° multi-panel configuration possible
- Flexible design for upgrade of refurbishment programmes



Example for TRSS sector scan

Type	Coherent Pulse-Doppler X-band radar based on latest AESA technology	
Detection ranges	Minimum range:	< 100 m
	Instrumented range:	> 40 km
Antenna	Electronically stabilised with frequency steering	
	Azimuth scan angle:	+/- 60° (electronically) 360° (panoramic surveillance mode)
	Elevation scan angle:	more than +/- 20° for combined roll & pitch
Transmitter	Solid-state Transmit Receive Modules (TRM)	
Tracking	Tracking of more than 100 targets. Additional individual tracking of multiple targets with high update track rate.	
Interface	Different interfaces available, e.g. Ethernet	
Physical parameters (antenna incl. radome)	Weight:	< 180 kg
	Dimensions:	approx. 130 cm / 100 cm (diameter / height)