



SELEX GALILEO

A Finmeccanica Company



SEASPRAY 5000E MULTI-MODE SURVEILLANCE RADAR

The Seaspray 5000E Active Electronically Scanned Array (AESA) multi-mode surveillance radar provides an unrivalled surveillance capability as the primary sensor on airborne assets to meet the challenges of the 21st century.

Seaspray 5000E is the lightest member of the Seaspray AESA radar family, which also comprises the Seaspray 7000E selected for the UK Royal Navy Future Lynx, and the Seaspray 7500E selected for the United States Coast Guard HC-130H aircraft.

Seaspray radars have been delivering a high performance surveillance capability to armed forces and paramilitary users for nearly 40 years.

Seaspray 5000E employs the Seaspray AESA family common processor, coupled with a compact state-of-the-art AESA antenna to deliver a leading edge capability covering air-to-surface and air-to-air environments. The Seaspray 5000E antenna has been developed and demonstrated in a series of helicopter and fixed wing aircraft trials. This lightweight radar can be installed onto a wide range of manned and unmanned aircraft.

KEY FEATURES

Seaspray 5000E's excellent performance and reliability stems from its AESA architecture and use of digital waveforms to optimise performance in all modes.

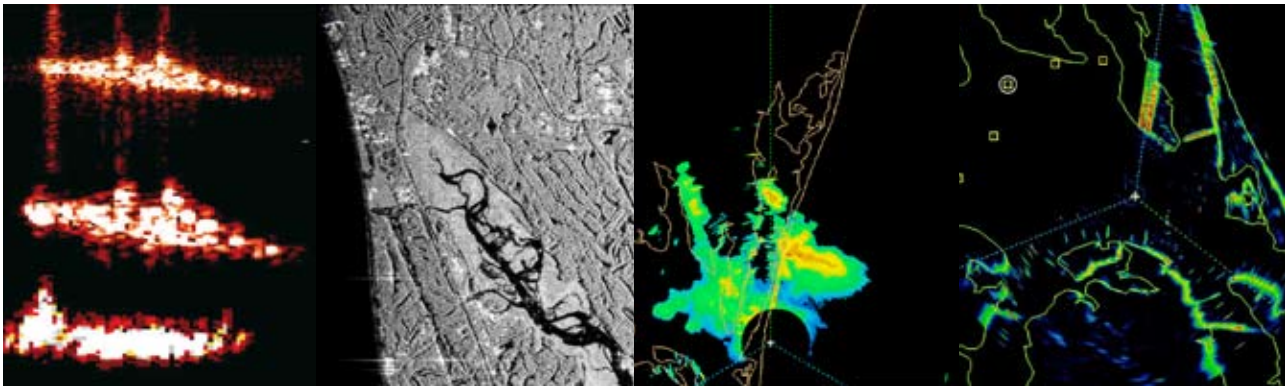
Seaspray 5000E combines mechanical scanning of the antenna with electronic scanning of the radar beam to provide a cost-effective radar system with a wide range of capabilities from small target detection to long range search.

Comprising just two Line Replaceable Units (LRU), which can be remotely connected to ease installation issues, Seaspray 5000E is a highly reliable lightweight surveillance radar that can be easily integrated with other mission sensors and avionics using industry standard interfaces.

KEY FEATURES

- Excellent performance
- Low cost of ownership
- True multi-mode operation
- Superior reliability
- Ease of installation
- Easy to use
- Mode interleaving.

Seaspray 5000E Multi-Mode Surveillance Radar



ISAR imagery

SAR imagery

TECHNICAL SPECIFICATIONS

Characteristics

Frequency	X Band
Scan coverage	Installation dependant
Maximum range	>100 NM
Mean Time Between Failure (MTBF)	~2,000 hours
Cooling	Unconditioned air
Weight	<45kgs
Dimensions (approx)	
Processor	500x260x210mm
Antenna	430x280x140mm
Interfaces	Ethernet plus Mil Std 1553B, ARINC 429, ARINC 419, RS422, RS232, USB and synchro
Video outputs	RGB, Stanag 3350, VGA, Digital Video

Functions

Track While Scan	Automatic
Track Identification	AIS integration
Mode Interleaving	Simultaneous dual mode operation

Capabilities

Surface surveillance	Long range search
	Priority track
	Small target mode
Navigation	Real beam ground map
	Weather detection
	Turbulence detection
Beacon Detection	Search and Rescue Transponder (SART)
Target Imaging / Classification	ISAR
	Range profiling
Ground Mapping	Spot SAR
	- High resolution ground mapping
	Strip SAR
	- Medium resolution wide area ground mapping
	- Oil Slick detection
	- Iceberg detection
Moving Target Detection	GMTI
	Air-to-air MTI

SUPERIOR RELIABILITY

The Seaspray 5000E AESA minimises the impact of transmitter failure by removing this single point failure, high power, 'relatively' low MTBF LRU. This is replaced by many Transmit Receive Modules (TRMs) with high MTBFs within the antenna array.

At the core of the AESA radar design is the ability to tolerate individual item failure. Component failures within the array result in graceful performance degradation rather than complete system failure, delivering high operational availability when compared with conventional radar systems.

Due to its high reliability and availability the customer has a reduced maintenance requirement and has the option to reduce spares holding, resulting in significant cost benefits over the life of the system.

BACKGROUND

As a company we have been at the forefront of the airborne radar market since the 1950s when the AI23 radar became the world's first high power monopulse radar to enter squadron service. Maintaining our leading position in the market, we have been developing AESA technology since the early 1990s and now possess a range of AESA radar products capable of meeting the requirements of the airborne radar market.

Within our radar Centre of Excellence, we have designed, developed and supported radar systems for over 50 years. Our Software Development capability meets the requirements of CMM Level 5. Over 3000 radar systems have been supplied for fixed and rotary wing aircraft in surveillance, fire control and ground attack roles. We have extensive experience of surveillance radar and have produced almost 600 systems in our Seaspray and Blue Kestrel families of radars.