

# APAR Block 2 X-band multifunction radar



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## X-band multifunction radar



**APAR Block 2 is the new X-band multifunction radar and successor of the proven APAR. With true digital beam forming and gallium nitride amplifiers, it defends in the highest threat scenarios against the latest evolving threats. Featuring multi-beam volume search, horizon search, robust target tracking and unparalleled firepower with semi-active and active missiles.**

### ACTIVE PHASED ARRAY RADAR

- Proven APAR architecture and performance
- Vast missile firepower
- Low elevation search and multi-beam search
- Modular and scalable radar

### PROVEN APAR ARCHITECTURE AND PERFORMANCE

Developed in the late 1990s, APAR was the first naval Active Electronically Scanned Array (AESA) radar as well as the first to perform semi-active ICWI firings. In use with 3 NATO navies today, it represents a proven system with over 50 successful life firings of ESSM and SM-2.

### VAST MISSILE FIREPOWER

APAR Block 2 defends against saturation attacks in the highest threat scenarios by supporting many simultaneous AAW and ASuV engagements with both active and semi-active guidance using ICWI. Firepower is limited only by the rate of fire by the launcher. ESSM, SM-2 and RAM are supported as well as ESSM Block 2 and the future Standard Missile family using the novel Joint Universal Weapon Link (JUWL).

### LOW ELEVATION AND MULTI-BEAM SEARCH

APAR Block 2 leverages X-band propagation characteristics for early detection of small incoming low elevation targets in the littoral. True digital beam forming enables multi-beam volume search. Low latency between initial detection and high update rate weapons track creates maximum battle space against sea skimming missiles.

### MODULAR AND SCALABLE RADAR

APAR Block 2 uses four independent antennas, each with a scalable number of solid-state T/R modules. This flexible, scalable and modular design offers high availability, graceful degradation and lifecycle upgradability. Software-defined radar ensures future proof capability upgrades.

### SUITE PROCESSING INSIDE

APAR Block 2 is equipped with Suite Processing allowing the merging with SM400 Block 2 into the XS-Suite: a single radar system with 4 X-band and 4 S-band faces. Striking benefits are:

- Instant reaction against highest threat spectrum by avoiding cueing latencies

- Reconfiguration: automatic reallocation of functionality between X-band and S-band to adapt to changing situations
- Ease-of-operation and -maintenance

### KEY FEATURES

- Area defence against the latest emerging and evolving threats in the littoral
- Low elevation search to detect very small targets at the horizon
- Multi-beam volume search and track-while-scan on non-stressing targets
- Weapon tracks with high update rate on engaged targets
- Many simultaneous fire control channels for ESSM (Block 2) and SM-2 engagements
- JUWL for ESSM Block 2 and Standard Missile family
- Kill assessment support
- Integrated search and track for high accuracy and quick reaction
- High robustness in littoral, cluttered and jamming environments
- Modular and reliable design exhibiting graceful degradation
- Scalable to suit light frigates to destroyers

Operational Performance	
Missile guidance support	ESSM Block 2, ESSM, SM-2, RAM and growth to SM-family
Surface gunfire support	3 Fire Control windows
Instrumented range	150 km
Tracking Coverage	≥ 1000 targets

Technical Characteristics	
Coverage	> 70° (elevation above horizon) × 360° (azimuth)
Frequency band	X-band (I/J)
Antenna	AESA using DBF and GaN amplifiers

Installation Data	
Mass	from 11.4 ton*
Power requirements	from 300 kVA*
Coolant requirements	from 250 kW*

\* depending on antenna population and selected options