



NA-30S RADAR AND OPTRONIC FIRE CONTROL SYSTEM

NA-30S is an advanced modular weapon control system designed to control surface-to-air missile system and guns (up to three gun outputs) in a sophisticated threat environment and in coordinated fire reaction mode.

NA-30S is a modern Fire Control System (FCS) based on the ORION RTN-30X tracking naval radar, a I-band fully coherent equipment which is characterised by anti-nodding, extensive ECCM and anti-clutter features together with high tracking accuracy.

A set of two EO sensors (TV camera, IR camera) can be mounted on the radar director to enable firing assessment and to provide an alternative line-of-sight on the same target. A third sensor (Laser Range Finder) can be mounted to provide a complete EO tracker facility. NA-30S can be provided with a dedicated multifunctional console or controlled by any console of the Combat Management System (CMS).

The FCS can be easily integrated in every CMS and completely remote accessible.

NA-30S interfaces the CW Illuminator Transmitter and supports the engagement against a target, conducted through the deployment of the ESSM (Evolved Sea Sparrow Missile), by illuminating the target itself. A couple of Targets Designation Sight (TDS) enhance the FCS configuration.

Through an internal additional function, NA30S system can be integrated inside an Artillery System (including at least two FCSs), to optimize the use of all onboard guns against multiple concurrent targets (missiles, air and surface targets).

The FCS is designed in fully accordance with modern international military standards to guarantee high reliability and low life cycle cost.

ARCHITECTURE

The system is composed of the following units:

- ORION RTN-30X tracking radar, a monopulse fully coherent tracker radiating a coded waveform.
- The Continuous Wave Transmitter allows the radar to illuminate semi-active missiles.
- An optronic sensor suite, TV, IR and Laser, can be mounted to provide either an alternative line-of sight (LOS) on the same target and scene monitoring and kill assessment.
- A Computer Unit based on a state-of-the-art processor.
- A versatile display system, which incorporates two high resolution colour monitors to display raw radar (its own tracking radar and, in addition, search radar if required), TV/IR videos and supplementary information

MAIN OPERATIONAL FUNCTIONS

NA30S performs the main following tasks:

- Radar and optronic autonomous search with automatic/manual self-designation
- Surveillance and self designation on ship's search radar video
- Automatic engagement of evaluated priority target up to firing action
- Automatic air/missile/shore and surface targets tracking
- Automatic coordination of weapons (SAM and guns) for a combined reaction
- Automatic detection of launched missile
- Simultaneous control of up to three guns with different calibres and a Surface-to-air Missile (SAM) system.
- Line-of-sight, Line-of-Fire stabilisation
- Track While Scan (TWS) on external naval data.
- Target Illumination

STATUS

NA30S Fire Control Systems and RTN-30X tracking radars are in service on board several ships of the Italian Navy as well as other foreign Navies.

TECHNICAL CHARACTERISTICS

Sensor Head

Training limits:	unlimited (slip ring)
Elevation limits:	-23° to +85°
Training max speed:	2.8 rad/s
Training max acceleration:	6.5 rad/s ²
Elevation max Speed:	1.5 rad/s
Elevation max acceleration:	3.5 rad/s ²

Radar

Frequency:	X-band (I-band)
Antenna type:	Cassegrain
Transmitter:	fully coherent with TWT, coded waveform, frequency agility
Receiver:	super heterodyne double conversion, MTI and anti-clutter filters, enhanced ECCM features
Tracking method:	monopulse
Missile Illumination:	CW

TV Camera

Target:	CCD
Sensitivity:	10 to 200.000 lux
Lens:	Continuous zoom

IR Camera

Type	3÷5 μm (8÷12 μm), FPA
Dual FOV:	Narrow
	Wide

Laser Range Finder

Type:	eyesafe
Range accuracy:	better than 5 m
Instrumental range:	300 to 20,000 m
High rate repetition frequency	

INSTALLATION DATA

Antenna Group (above deck)

- Dimensions (h):	1435 mm
- Diameter:	1940 mm
- Weight (EO sensors excluded):	490 kg

Servo and conversion unit

- Dimensions (h w d):	(1450x700x695) mm
- Weight:	360 kg

Computer Unit

- Dimensions (h w d):	(1310x565x920) mm
- Weight:	170 kg

Transmitter

- Dimensions (h w d):	(1815x700x695) mm
- Weight:	250 kg

Receiver

- Dimensions (h w d):	(1980x720x540) mm
- Weight:	240 kg

Console (only in stand-alone configuration)

- Dimensions (h w d):	(1810x905x995) mm
- Weight:	240 kg

