
NA-30S



Naval & Air Defence Systems

GUN FIRE CONTROL SYSTEM AND TARGET ILLUMINATOR

NA-30S is an advanced modular weapon control system designed to support semi-active surface-to-air missiles and control guns (up to three different guns outputs) in a sophisticated threat environment and in coordinated firing reaction mode. NA-30S is a modern Gun Fire Control System (GFCS) based on the tracking naval radar ORION RTN-30X, a I-band fully coherent radar which is characterised by superior antinodding, extensive ECCM and anti-clutter features together with high tracking accuracies.

A set of two EO sensors (TV camera, IR camera) can be mounted on the radar director to provide a passive line-of-sight and enable firing assessments. A third sensor (Laser Range Finder) can be mounted to provide a complete EO tracker facility. NA-30S can be provided with a dedicated multi-functional console or its human-computer interface (HCI) can be integrated within any Combat Management System (CMS).

Two Target Designation Sight (TDS) enhance the FCS configuration. NA-30S interfaces the CW Illuminator Transmitter and supports engagement against air and surface targets, conducted through the ESSM (Evolved Sea Sparrow Missile), by illuminating the target itself. A couple of Targets Designation Sight (TDS) enhance the GFCS configuration. NA-30S can be easily integrated inside an Inner Layer Defence System (including at least two FCSs) to optimize the use of all onboard guns against multiple concurrent targets (such as missiles, and air and surface targets). The FCS is designed in full accordance with modern international military standards and to guarantee high reliability and low life cycle costs.

Architecture

The system architecture comprises:

- ORION RTN-30X a monopulse fully coherent tracking radar with independent Receiver and Transmitter Units
- 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 function
- Servo Conversion Unit (SCU)



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- Continuous Wave Transmitter (CW Tx) to allow the radar to illuminate semi-active missiles
- Computer Unit based on a state-of-the-art processor
- Multifunction console or the human-computer interface (HCI) to provide a versatile display system.

MAIN OPERATIONAL FUNCTIONS

NA-30S performs the main following tasks:

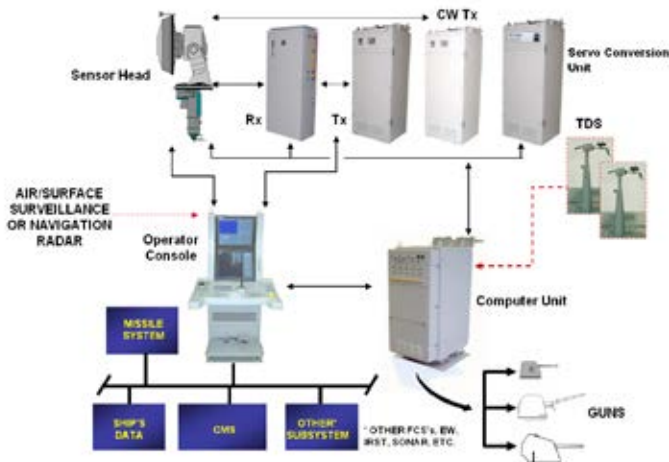
- Radar and optronic autonomous search with automatic/ manual self-designation
- Target Illumination and Multiple Gun Control
- Surveillance and self designation on ship's search radar video
- Automatic engagement of evaluated priority target up to firing action
- Automatic air/missile/shore and surface 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.

STATUS

NA-30S Fire Control Systems and RTN-30X tracking radars are in service on board vessels of the Italian Navy, as well as International Navies.

TECHNICAL SPECIFICATION

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, coded waveform, frequency agility
Receiver	Super heterodyne double conversion, MTI 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 (8-12μm), FPA
Dual FOV	Narrow Wide
Laser Range Finder	
Type	Eyesafe
Range accuracy	Better than 5m
Instrumental range	300 to 20,000m
High rate repetition frequency	
Installation data	
Antenna Group (above deck)	
Dimensions (h)	1435mm
Diameter	1940mm
Weight (EO sensors excluded)	490kg
Servo and conversion unit	
Dimensions (h w d)	1450mm x 700mm x 695mm
Weight	360kg
Computer Unit	
Dimensions (h w d)	1310mm x 565mm x 920mm
Weight	170kg
Transmitter	
Dimensions (h w d)	1815mm x 700mm x 695mm
Weight	250kg
Receiver	
Dimensions (h w d)	1980mm x 720mm x 540mm
Weight	240kg
Console (only in stand-alone configuration)	
Dimensions (h w d)	1810mm x 905mm x 995mm
Weight	240kg



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