

NATACS 2020

Naval Tactical COMINT/DF System

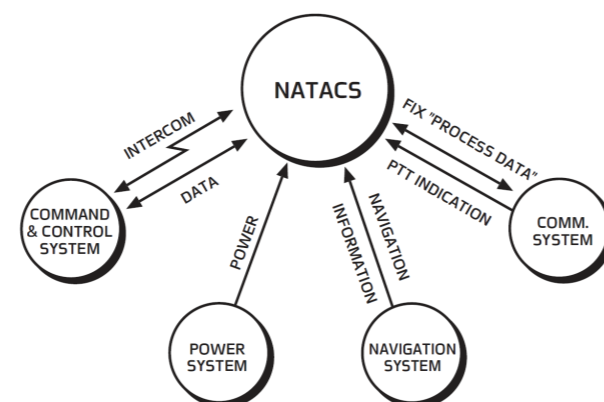
Technical Specifications

Parameter	Specifications
Frequency Range:	HF band: 1.6 to 30 MHz V/UHF band: 30 to 3000 MHz, SHF band: 3 to 6 GHz optional
DF Operating Principle:	HF band: Based on beamforming V/UHF Band: Correlative interferometer
Antenna Array:	HF band: Crossed loops V/UHF Band: four stacks, four dipoles per stack ESM antenna might be integrated with the COMINT antenna array forming one antenna mast from 1.6 MHz to 18 GHz.
Spatial Coverage:	Omn-directional in azimuth and $\pm 15^\circ$ coverage in elevation
Number of Channels:	HF band: 3 wideband channels, RF direct sampling and processing in parallel V/UHF Band: 4 wideband channels, sampling and processing in parallel
Instantaneous Processing BW (IBW):	HF band: according to preselector sub-octave filters, from 0.8 to 8 MHz V/UHF band: selectable 20 or 40 MHz
Resolution Bandwidth (RBW):	HF band: 0.78, 1.58, 3.125 KHz V/UHF band: 6.25, 12.5, 25, 50 KHz
Min. Signal Duration for DF:	HF band: 20 mSec V/UHF band: 10 mSec
DF Result:	Resolution of 0.1° with quality factor
Operational DF Accuracy:	HF band: 5° RMS typical V/UHF band: 2° RMS typical
DF/Scan Speed:	HF band: 2 GHz/Sec V/UHF band: 20 GHz/Sec
False Alarm Rate:	10-4
Spurious Free Dynamic Range:	≥ 80 dB instantaneous
Frequency Stability:	0.1 ppm
Max RF Power Input:	+20 dBm
Radiated LOs:	< -100 dBm typical
Interfaces	

Interfaces

For coexistence and on-board integration, NATACS 2020 interfaces with the following ship's systems:

- Command & Control
- Power
- Communication & Intercom
- Navigation



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NATACS 2020

Naval Tactical COMINT/DF System

Delivers Full Naval Picture through Sophisticated Handling of Agile Communications

The Advanced Naval Tactical COMINT\DF System - NATACS 2020 - is a new generation of Naval EW Systems capable of coping with advanced agile frequency communication radios. This fully integrated system - equipped with ultra-fast, Wide Band Receivers and Direction Finding (DF) Systems - is the only on-board COMINT/DF System of its kind. NATACS' outstanding scanning rates enable the handling of extremely dense electromagnetic environments in the HF/VHF/UHF/HUHF frequency bands, characterized by frequency hopping, burst, and other agile transmissions. The system's COMINT antenna can be integrated with an ESM antenna - thus allowing maximum utilization of the vessel's mast, as well as enabling significant space savings. Combining the data extracted by NATACS 2020 with the data obtained from on-board ESM systems enables completion of the mission-critical tactical naval picture.

Main Feature

- Automatic Direction Finding and "FIX", signal classification, identification capability
- Very fast scanning of frequency bands & activity detection
- HF/VHF/UHF/HUHF frequency band coverage
- Focus on signals of interest by activating various filters and criteria (azimuth sector, signal type, etc.)
- Monitor signals of interest (content & traffic)
- High-level analysis of suspected signals and signals of interest
- High-capacity Digital Audio & IF Wideband Recording
- Modular, flexible, future-proof configuration
- Installation on-board variety of vessels
- Reliable, designed & tested to meet Naval MIL-Spec

System Configuration

Based on sea-proven equipment & subsystems, NATACS 2020 uses client-server architecture and is comprised of three computer-controlled subsystems and operation posts:

Interception & Monitoring Subsystem

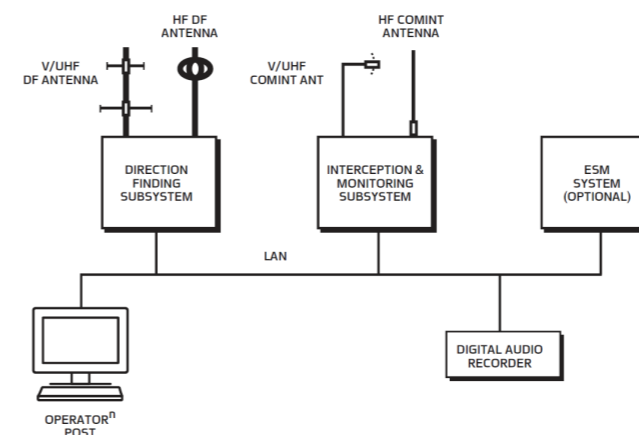
- Active or Passive HF/VHF/UHF/HUHF receiving antennas connected through RF distribution units
- Wide-Band receivers for fast search, scan, and activity detection
- Monitoring elements such as receivers, signal classifiers, Digital Audio Recorder
- Controller with embedded activity detector and signal classifiers

Direction Finding Subsystem

- DF antennas
- VHF/UHF/HUHF wide-band, multi-channel DF system
- HF - DF (optional)
- Controller with embedded control & processing cards

Communication Subsystem

- Communication Controller
- HF/VHF radios for data-link between Master and Slaves (neighboring vessels) in location process ("FIX")
- Intercom



Operation Posts

The basic system is run by two operators:

• Supervisor

The Supervisor configures the system, activates the search & scan activities, performs COMINT activities, and submits missions to the other operator, including DF and COMINT miss

• Operator

The operator performs COMINT activities such as listening and recording, and operates the DF system when intervention is required. The system can work with a single operator, or with as many operators as required. Alternatively, operator positions can be integrated into the system's databases.

Expansion and Scalability

Due to its modularity and open architecture, expansion of the system to include additional operation posts and equipment is easily performed.