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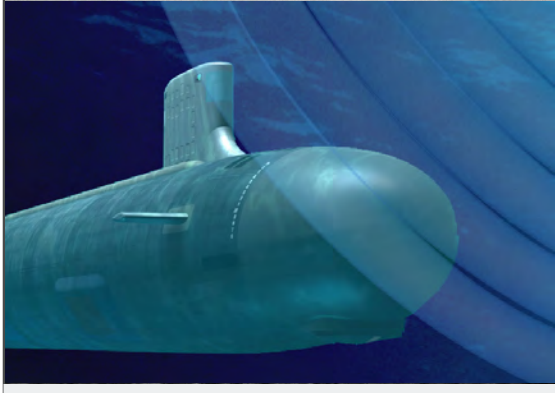
LOW-FREQUENCY ACTIVE TOWED SONAR

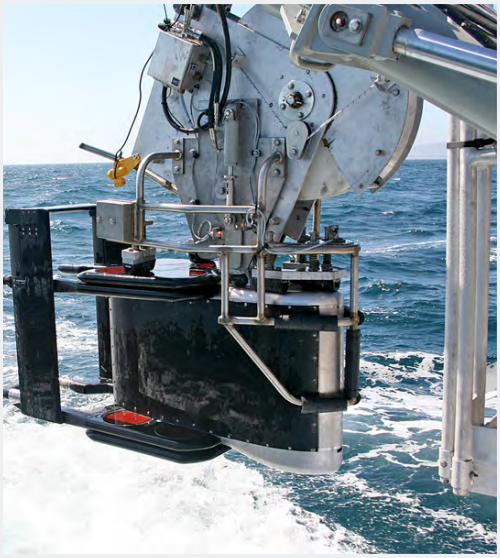


Full-feature, long-range, low-frequency active and passive variable depth sonar (VDS)

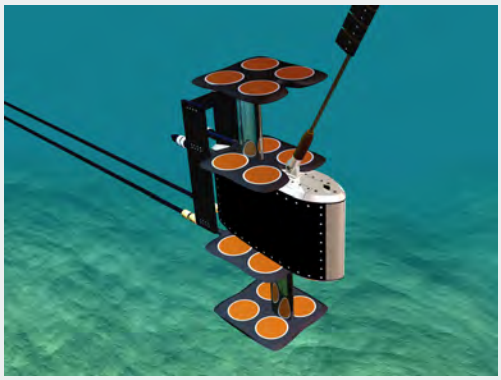
The Low-Frequency Active Sonar (LFATS) system is used on ships to detect, track and engage all types of submarines. L3Harris specifically designed the system to perform at a lower operating frequency against modern diesel-electric submarine threats.

FEATURES

- Compact size - LFATS is a small, lightweight, air-transportable, ruggedized system
- Specifically designed for easy installation on small vessels.
- Configurable - LFATS can operate in a stand-alone configuration or be easily integrated into the ship's combat system.
- Tactical bistatic and multistatic capability - a robust infrastructure permits interoperability with the HELRAS helicopter dipping sonar and all key sonobuoys.
- Highly maneuverable - own-ship noise reduction processing algorithms, coupled with compact twin-line receivers, enable short-scope towing for efficient maneuvering, fast deployment and unencumbered operation in shallow water.
- Compact Winch and Handling System - an ultrastable structure assures safe, reliable operation in heavy seas and permits manual or console-controlled deployment, retrieval and depth-keeping.
- Full 360° coverage - a dual parallel array configuration and advanced signal processing achieve instantaneous, unambiguous left/right target discrimination.
- Space-saving transmitter tow-body configuration - innovative technology achieves omnidirectional, large aperture acoustic performance in a compact, sleek tow-body assembly.
- Reverberation suppression - the unique transmitter design enables forward, aft, port and starboard directional transmission. This capability diverts energy concentration away from shorelines and landmasses, minimizing reverb and optimizing target detection.
- Sonar performance prediction - a key ingredient to mission planning, LFATS computes and displays system detection capability based on modeled or measured environmental data.



LFATS has been successfully deployed on ships as small as 100 tons.



Unique extension/retraction mechanism transforms compact tow-body configuration to a large-aperture multidirectional transmitter.

SONAR PROCESSING

Operating Modes	Active, passive, test, playback, multi-static
Source Level	219 dB (omni)/ 221 dB (Sector Steered)
Projector Elements	16 in 4 staves
Transmission	Omnidirectional or by sector
Operating Depth	15 m to 300 m
Survival Speed	30 knots
Size	Winch & Handling Subsystem: 180 in. x 138 in. x 84 in. (4.5 m x 3.5 m x 2.2 m) Sonar Operator Console: 60 in. x 26 in. x 68 in. (1.52 m x 0.66 m x 1.73 m) Transmit Power Amplifier: 42 in. x 28 in. x 68 in.(1.07 m x 0.71 m x 1.73 m)
Weight	Winch & Handling: 4854 kg (10,678 lbs.) Towed Subsystem: 736 kg (1,620 lbs.) Ship Electronics: 972 kg (2,150 lbs.)
Platforms	Frigates, corvettes, small patrol boats
Receive Array	Configuration: Twin-line Line Length: 26.5 m (86.9 ft.) Line Diameter 53.2mm (2.1 in.) Array directivity: > 18 dB @ 1,380 Hz

DISPLAYS AND OPERATOR INTERFACES

Active Band	1,200 to 1,600 Hz
Processing	CW, FM, wavetrain, multi-pulse matched filtering
Pulse Lengths	Range-dependent, 0.039 to 10 sec. max.
FM Bandwidth	50, 100 and 300 Hz
Tracking	20 auto and operator-initiated
Displays	PPI, bearing range, Doppler range, FM A-scan, geographic overlay
Range Scale	5, 10, 20, 40, & 80 kyd
Passive Band	Continuous 100 to 2,000 Hz
Procesing	Broadband, Narrowband, ALI, DEMON and tracking
Displays	BTR, BFI, NALi, DEMON and LOFAR
Tracking	20 auto and operator-initiated
Common	Own-ship noise reduction, Doppler nullification, directional audio

SONAR PROCESSING

- Active processing — state-of-the-art signal processing offers a comprehensive range of single- and multi-pulse, FM and CW processing for detection and tracking.
- Passive processing — 100-to-2,000 Hz continuous wideband coverage. Broadband, DEMON and narrowband analyzers, torpedo alert and extended tracking functions constitute a suite of passive tools to track and analyze targets.
- Playback mode — playback is seamlessly integrated into passive and active operation, enabling post analysis of pre-recorded mission data, and is a key component to operator training.
- Built-in test — power-up, continuous background and operator-initiated test modes combine to boost system availability and accelerate operations.

DISPLAYS AND OPERATOR

- State-of-the-art workstation-based operator machine interface — trackball, point-and-click control, pull-down menu function and parameter selection allows easy access to key information.
- Displays — a strategic balance of multifunction displays, built on a modern OpenGL framework, offer flexible search, classification and geographic formats. Ground-stabilized, high-resolution color monitors capture details in the real-time processed sonar data.
- Built-in operator aids — to simplify operation, LFATS provides recommended mode/parameter settings, automated range-of-day estimation and data history recall.

L3Harris Technologies is an agile global aerospace and defense technology innovator, delivering end-to-end solutions that meet customers' mission-critical needs. The company provides advanced defense and commercial technologies across air, land, sea, space and cyber domains.

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