

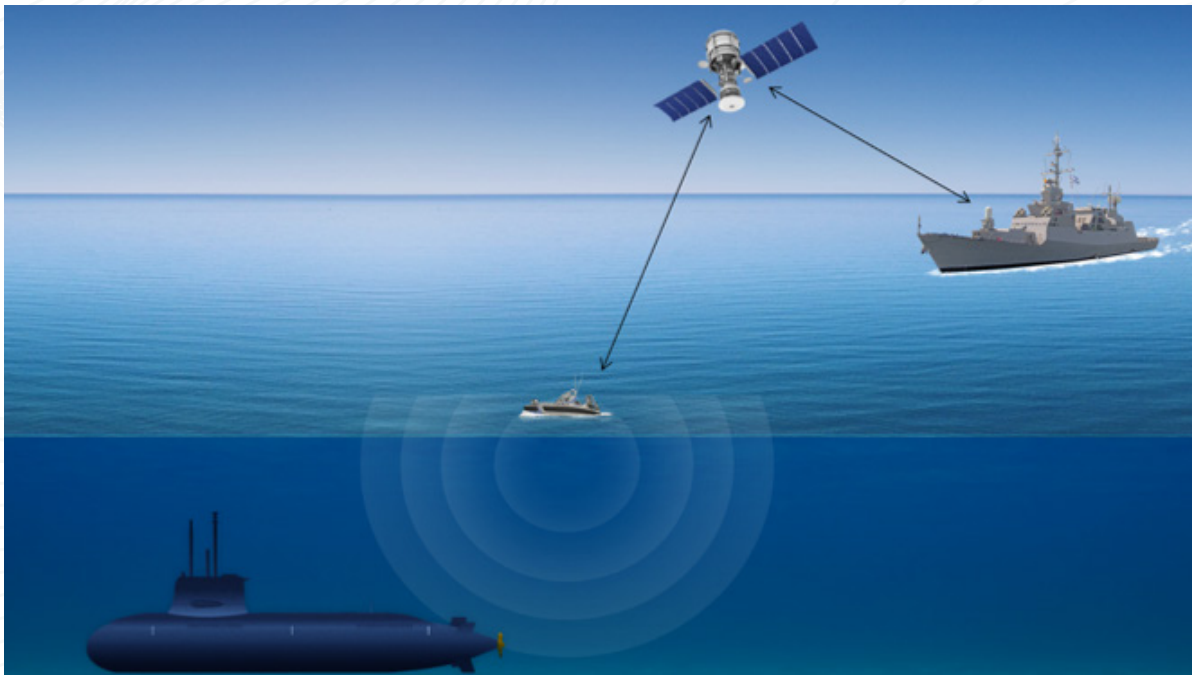


GeoSpectrum Technologies Inc
Customizing Detection

LRAM

Long-Range Acoustic Messaging

ROBUST LONG-RANGE COMMUNICATION FOR SUBMERGED VEHICLES



OVERVIEW

LRAM is based on a proven scalable modem software architecture designed to provide robust, reliable and power-efficient through-water communications to extended ranges. The common LRAM modem architecture can be applied to submarine, UUV, and diver communications as well as remote activation of underwater devices and supports ranges from the strategic [thousands of kilometers] to the tactical [up to hundreds of kilometers].

APPLICATIONS

- Provides a highly robust communications capability to dived units;
- Built-in data security, anti-spoofing, national and coalition access features;
- Proven ability to operate in the presence of high-power in-band sonar transmissions and other jamming sources;
- Acoustic performance validated in multiple NATO and allied exercises and trials in diverse environments.

GEOSPECTRUM TECHNOLOGIES INC

geospectrum.ca | sales@geospectrum.ca

tel: +1 902.406.4111 | fax: +1 902.435.8987 | 10 Akerley Blvd, Unit 19 | Dartmouth, Nova Scotia | Canada | B3B 1J4

LRAM Long-Range Acoustic Messaging

SYSTEM ARCHITECTURE

Command Console

- Operating system agnostic software
- User interface enables message formatting/select and status monitoring and control of the transmit assets
- Implements message assurance and encryption functions
- Allows the use of Coalition and National keys
- Can be fitted and operated from surface, shore and air units on a range of hardware and operating systems

Surface Link

Fitted with Iridium [or equivalent] satcom antenna for control and activation

Strategic Communications (30 – 100 Hz)

- GTI C-Bass projector (fixed or mobile transmit asset) operated from a fixed (moored) or mobile (ship or UxV) platform

Tactical Communications (1 – 4 kHz)

- Towed ASW sonar mounted on UxV or surface ship, or submarine, air or ship deployed gateway buoy

Littoral Communications (20 kHz)

- Dedicated hardware mounted on either swimmer delivery vehicle and/or diver supporting through-water half duplex communication

Uplink Station

- Operating system agnostic software
- Manages message routing to available transmit assets
- Enables enterprise-wide user access to system capability (i.e. command ashore or afloat, tactical units both air and surface and forces deployed ashore)

Acoustic Processor

- Interfaced to submarine sonar via either existing sonar patch panels or dedicated interface
- Detects LRAM signals and passes to the receive console for message processing
- Small physical footprint

Receive Console

- Operating system agnostic software
- Walk-on system fit available
- Decodes and formats received messages for display
- Implemented in Hardware and OS agnostic software
- Implements message assurance checking and decryption functions
- Allows the use of Coalition and National keys
- Capable of rapid fit to all NATO-operated submarines
- Architecture can be run on a single computing platform or split across geographically separated platforms.

GEOSPECTRUM TECHNOLOGIES INC

geospectrum.ca | sales@geospectrum.ca

tel: +1 902.406.4111 | fax: +1 902.435.8987 | 10 Akerley Blvd, Unit 19 | Dartmouth, Nova Scotia | Canada | B3B 1J4

