ANALYTICAL CAPABILITIES

Use S2A to identify, query, and filter vessels based on user-defined criteria. The system is capable of executing advanced queries to ensure robust, timely, and informative track updates.

Using S2A’s web browser application tool set, an operator is able to analyze current and historical vessel tracks and create a suite of rules and alerts to automatically monitor an area of interest for illicit maritime activity. The maritime situational awareness picture can be tailored to satisfy the needs of each user or each operational unit. The full environment, comprising a suite of analytical tools, tracks and alerts interface can be accessed simply via a web-browser.

OPERATIONAL VIGNETTES

In 2015, NRL showcased S2A’s research and development capability against real-world scenarios in the Chesapeake Bay as part of a larger Maritime Experiment:

- Vessels breaching a security exclusion zone
- Vessels breaching a moving security zone
- Vessels exhibiting illegal fishing behavior in and around protected waters

R&D S2A provided value added to the operator by persisting multi-source vessel tracks (combining fragmented radar and AIS data) and alerting on aggressors targeting security exclusion zones and poachers targeting restricted sanctuaries.

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**500 Yard Red Alert Conditions**
Any vessel present in this zone

**2000 Yard Yellow Alert Conditions**
Incoming vessels, potential threat: speed over 20 knots & closing rapidly with restricted area
The Naval Research Laboratory (NRL) Maritime Domain Awareness (MDA) team has a breadth of technical expertise and disciplines encompassing the following skillsets:

- Research & Development
- Technical Design
- Analysis and Solution Implementation
- System-wide Troubleshooting
- End-to-end System Testing
- Training
- Maritime Scenarios
- Operational Demonstrations

The NRL MDA program works with federal, state, local, and industry partners to assist the nation in maritime situational awareness, improving small vessel detection and employing the capability to alert law enforcement officials and operators of illicit maritime activities.

Sealink Advanced Analysis (S2A) provides global maritime situation awareness by supplying multi-source data ingestion and fusion services at all security domains—automatically generating and maintaining worldwide vessel tracks. S2A comprises a data collector and aggregator, multi-source data fusion engine, complex event processor, and web browser application analytical tool set.

S2A ingests a multitude of data sources, aggregates the data and rapidly disseminates high quality ship tracks along with respective metadata valuable to analysts, joint warfighters, senior decision makers and interagency officers within the community. The system is operational, accessed by thousands of users and is continually being expanded and upgraded.

ALARMS AND ALERTS

Use S2A to:

- Generate and display automated, rule-based alerts
- Apply predefined alert rules to detect specific vessels or activity in areas of interest
- Tailor alerts to suit specific mission via a friendly alert wizard interface
- Notify users or operational units of alerts via the web portal or email