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Using AIS data for surveillance purposes in the SPRFMO Area

Secretariat

The Automatic Identification System (AIS) is a tracking system used on ships and vessel traffic services for identifying and locating vessels by electronically exchanging data with other nearby ships, AIS base stations, and satellites. AIS is supplementary to other systems (such as marine radar) and is used for safety being predominately collision avoidance.

The International Maritime Organization's International Convention for the Safety of Life at Sea (SOLAS) requires that (Chapter V, Regulation 19, paragraph 2.4):

> "*All ships of 300 gross tonnage and upwards engaged on international voyages and cargo ships of 500 gross tonnage and upwards not engaged on international voyages and passenger ships irrespective of size shall be fitted with an automatic identification system (AIS), international voyaging ships of 300 GT or greater, cargo ships of 500GT or greater not engaged in international voyages, and all passenger ships (regardless of size) carry AIS*".

SOLAS prescribes that data transmitted via the AIS include the ship's identity, type, position, course, speed, navigational status and other safety-related information.

At present thousands of fishing vessels are carrying, and reporting position and other data through, AIS across the world's oceans. As a result, while not a suitable substitute for VMS given particular characteristics (e.g., that the units are not tamperproof, there are no procedures for manual reporting if the unit fails, data confidentiality challenges, etc), AIS can serve to complement VMS and provide for public oversight of vessel movements at sea.

AIS data can be viewed publicly, on the internet, without the need for an AIS receiver. Global AIS transponder data collected from both satellite and internet-connected shore-based stations are aggregated and made available on the internet through a number of service providers. Data aggregated this way can be viewed on any internet-capable device to provide near global, real-time position data from anywhere in the world. Typical data including vessel name, details, location, speed, and heading is searchable, has potentially unlimited global range and the history is archived. Some of this data is free of charge but satellite data and special services such as searching archives are usually supplied at a cost. The data is generally read-only view and users cannot be seen on the AIS network itself.

In the case of SPRFMO, AIS data could be used by the Secretariat to discover all fishing vessels present in the SPRFMO Area and sending AIS signals; including those not authorised by a SPRFMO Member or CNCP or, (once a SPRFMO VMS is in place) those that are not sending VMS reports to SPRFMO. According to a preliminary assessment by the Secretariat, the annual fee charged by a commercial service provider enabling access to AIS satellite data and two or three months of historical data would be up to about 10 000 NZD.

AIS could also potentially be accessed by SPRFMO through future collaboration with non-profit organisations such as PEW in the context of its new project "Eyes on the Seas" with UK's Catapult Company.

References:

- Koehler, Holly. 2014. A Survey of RFMO Vessel Monitoring Systems and Set of Best Practices. ISSF Technical Report 2014-01
- International Convention for the Safety of Life at Sea (SOLAS), 1974