Background

AMSA Report Recommendation III(B) provides:

*That the Arctic states should support continued development of a comprehensive Arctic marine traffic awareness system to improve monitoring and tracking of marine activity, to enhance data sharing in near real-time, and to augment vessel management service in order to reduce the risk of incidents, facilitate response and provide awareness of potential user conflict. The Arctic states should encourage shipping companies to cooperate in the improvement and development of national monitoring systems.*

Chapter 3 of the Arctic Council Arctic Ocean Review Final Report notes that:

“Shore-based systems in Norway and the United States that use ground-based radars and AIS transponders/receivers have the capability to gather detailed spatial and temporal information about Arctic ship traffic. Satellite tracking of ships in the central Arctic Ocean, which has begun to show patterns of shipping traffic and high density flows of vessels in select area, might also be useful for future analyses. As well, Canada uses long-range identification and tracking (LRIT) to monitor vessel transiting its waters and has recently established two terrestrial AIS sites in the Arctic. These systems can be used to develop vessel tracking in international straits such as the Bering Strait, and can assist in the design of voluntary IMO marine traffic routes through complex and evolving patterns of commercial and indigenous marine use.”

PAME I-2015 adopted a Record of Decision (Rod) inviting “member governments to submit to PAME II-2015 information on all terrestrial AIS stations located within their Arctic territory. Such information would include their location and area of coverage.”

The purpose of this RoD is to gain a better understanding of the extent of the terrestrial AIS station coverage in the Arctic and consider exploring whether there are opportunities for PAME to help advance implementation of AMSA Recommendation III(B).

This paper is the U.S. response to that invitation.

---

I. Discussion

An extensive terrestrial network of more than 120 Automatic Identification System (AIS) receiving sites is in place along the coast of Alaska. This network is owned and operated by the Marine Exchange of Alaska, a nonprofit maritime organization established in 2000 to provide information, communications and services that aid safe, secure, efficient, and environmentally sound maritime operations in waters off of Alaska’s coast. For a fee, vessel owners, operators, ports, the U.S. Coast Guard, the State of Alaska and other authorized members of the maritime community may access the system to view near real-time information on vessels, including their speed, heading, name, classification, call sign, registration number and other information.

AIS range varies depending on atmospherics, sensitivity of radios, height of antenna on shore and height of antenna on the vessel, whether the vessel has the 2 watt power AIS B or the 12 watt power AIS A, near field interference, etc. Generally, the Marine Exchange of Alaska averages a 50-100 miles receiving range for tracking commercial vessels equipped with AIS A, although instances of vessel detection at 175 miles from shore have been recorded.

The graphics below depict (1) the location of AIS Sites throughout Alaska and (2) AIS coverage by this network over a 30-day period in fall 2014.

---

PAME (II)/15/4.11/a/terrestrial AIS stations submitted by USA
IV. USA Recommendation

The USA recommends that PAME II-2015 adopt one or more RODs that:

- Encourage Arctic states and Arctic stakeholders to strengthen and expand terrestrial AIS networks where appropriate and feasible in order to support safety of navigation, risk reduction, search and rescue, and incident response;
• Support submission of AIS location information to the Arctic Maritime & Aviation Transportation Infrastructure Initiative (AMATII) database maintained online at http://arcticinfrastructure.org/; and

• Explore the development of options for bringing together owner/operators of Arctic AIS networks to share their experiences and best practices with a view to improving cooperation and possibly information-sharing among such entities.