Agenda Item 4.11(a)—AMSA Recommendation III(B) by USA

PAME II-2015 Agenda Item 4.11(a)
AMSA Recommendation III(B)
Terrestrial AIS Stations in the U.S. Arctic

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 patters of commercial and indigenous marine use."[1]

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.

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[1] Arctic Council, Arctic Ocean Review - Final Report (May 2013), p. 36, *available at*
http://www.pame.is/images/03_Projects/AOR/Reports/126082_pame_sept_2.pdf.

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.[2] 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.

MXAK AIS Receiver Network

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[2] See http://www.mxak.org/index.html.
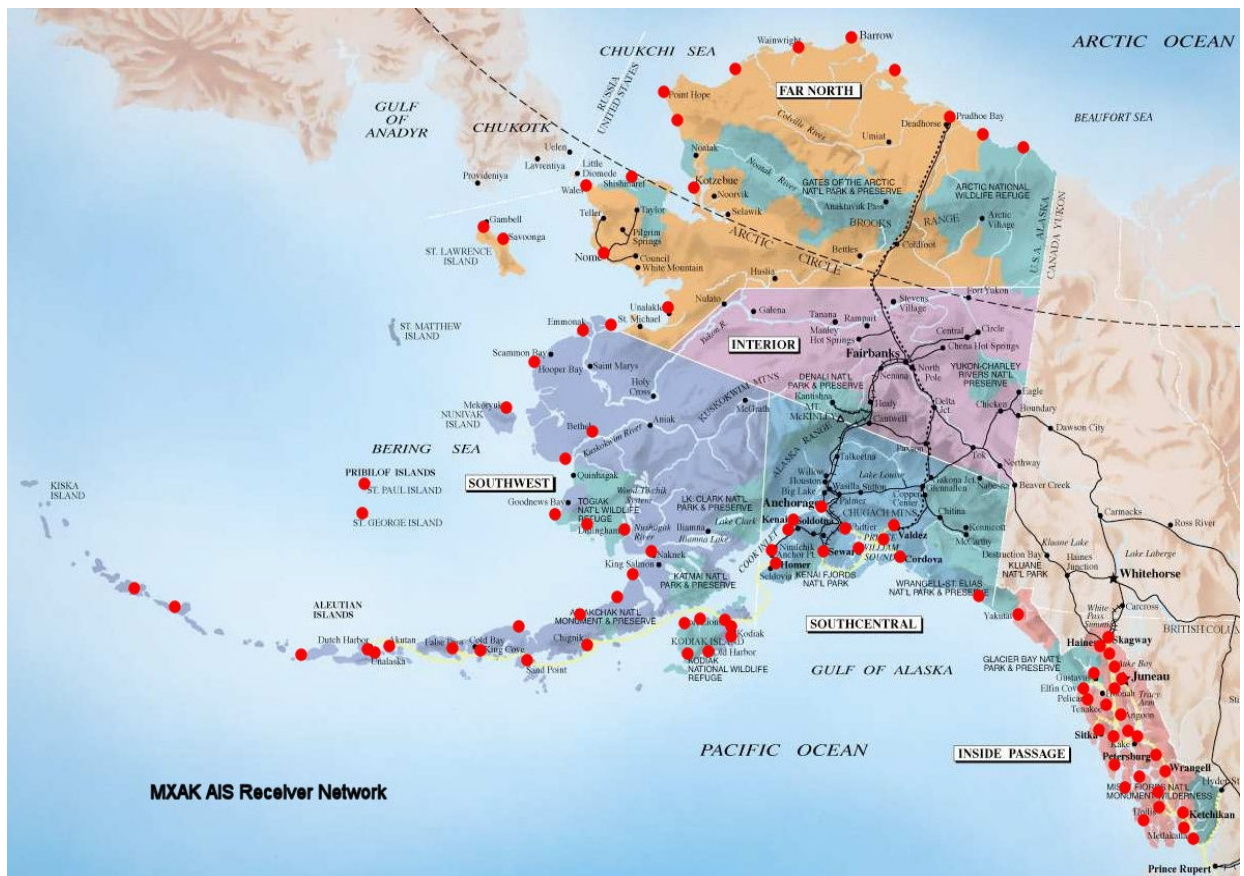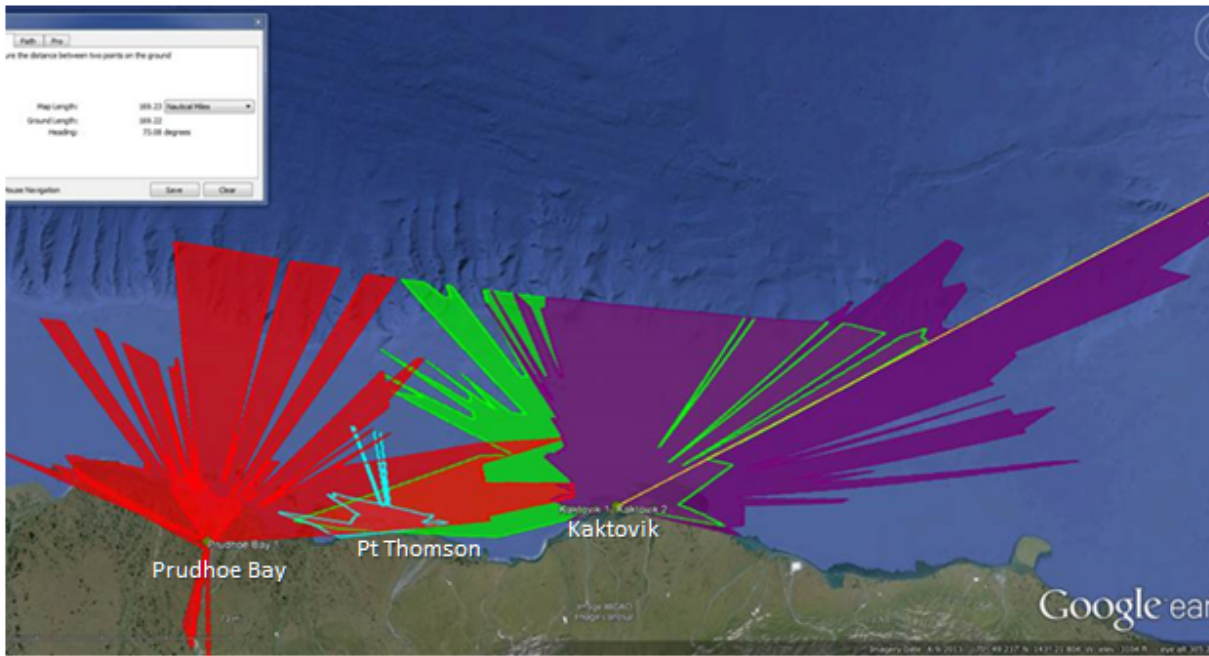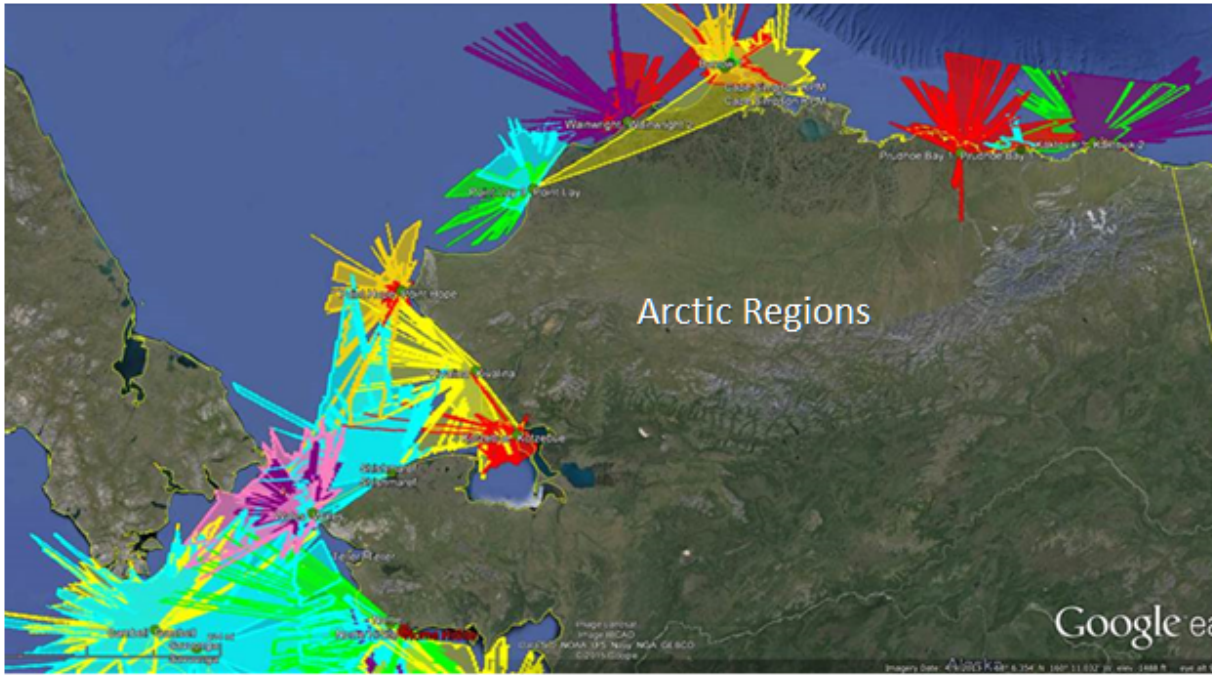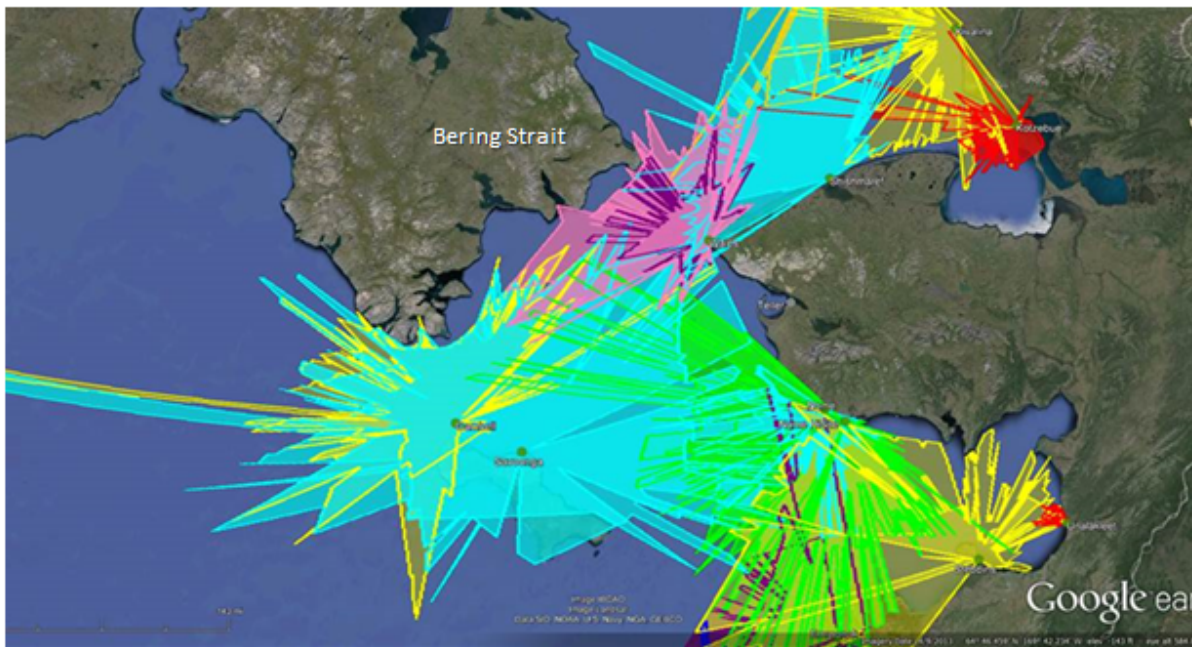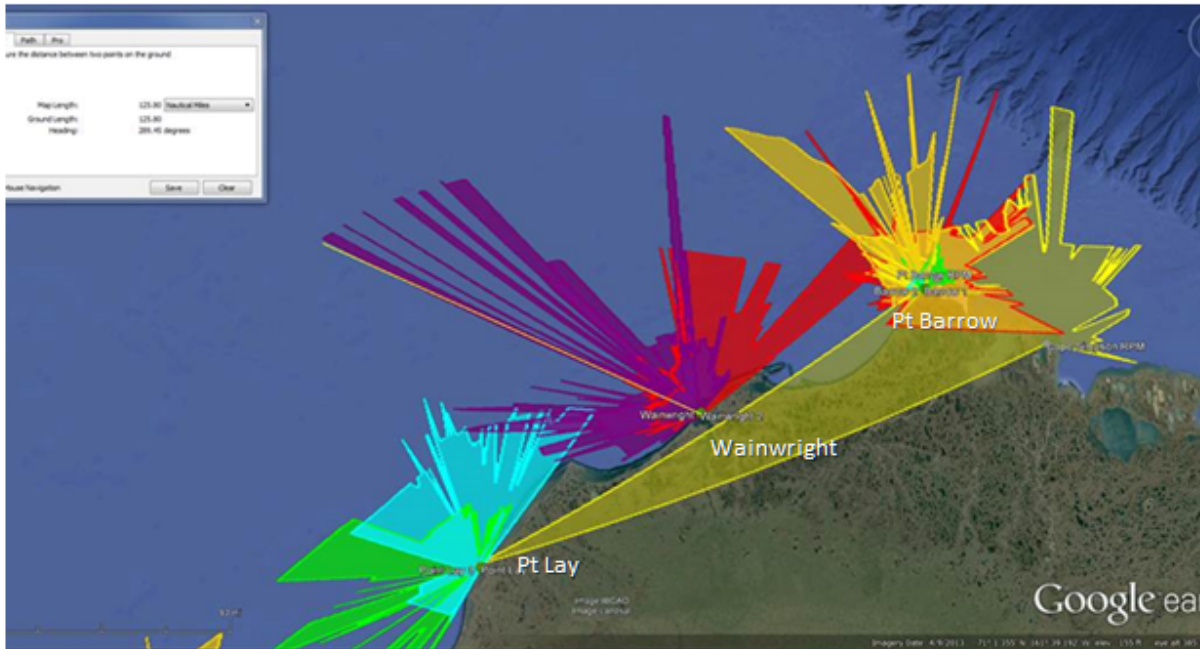
IV. USA Recommendation

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.