

The SAON Initiative: Critical Linkages to Arctic Marine Safety and Environmental Protection

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Any investment in SAON, wherever in the circumpolar world, must also be considered an investment in enhancing Arctic marine safety and marine environmental protection. The scientific and marine operational agencies of the Arctic and non-Arctic states contributing to the SAON initiative must work closely together to ensure that the development of SAON includes pathways to provide advanced and timely Arctic information for strengthening safety and environmental protection measures. Such cooperation will also provide an improved capability for protecting Arctic coastal communities. A coordinated network designed for monitoring regional climate change and local environmental conditions will have certain synergies and direct value to a myriad of operational requirements that will be responding to increased Arctic marine operations. Enhancing the interoperability of the various observing systems and improving the accessibility of environmental information can result in a more robust Arctic safety shield for maritime operations.

The Arctic Council's Arctic Marine Shipping Assessment (AMSA) released in 2009 provides an example of the relationships that a strong SAON can have with Arctic marine use. The 17 AMSA recommendations were negotiated and approved by the eight Arctic states within the Arctic Council. They are collectively a policy statement and an integrated framework that the Arctic Council can use as a strategy to address marine safety and environmental protection issues during an era of increasing Arctic marine use. The AMSA 2009 Report outlines the recommendations in three, inter-related themes: (1) Enhancing Arctic Marine Safety; (2) Protecting Arctic People and the Environment; and, (3) Building the Arctic Marine Infrastructure. The Arctic states understand that implementing the AMSA recommendations will require extensive international cooperation among themselves, with the global maritime industry, and at the International Maritime Organization (IMO) and other related international bodies (for example, the World Meteorological Organization and the International Hydrographic Organization). The Arctic states also recognize a need for creation of new mechanisms for marine infrastructure investments, such as funding for SAON and emergency response.

Select linkages of the AMSA recommendations and the SAON initiative include:

- *Specially Designated Arctic Marine Areas* ~ Internationally-designated areas for regional environmental protection (IMO Special Areas and Particularly Sensitive Sea Areas) require substantial environmental information under a rapidly changing Arctic climate.
- *Areas of Heightened Ecological and Cultural Significance* ~ In view of changing climate conditions and increasing multiple marine uses, measures to protect these areas require robust environmental data and sustained monitoring.
- *Circumpolar Environmental Response Capacity* ~ Baseline information on regional Arctic environments and real-time operational information, both possible from SAON, are required to adequately respond to circumpolar environmental pollution incidents. A new Arctic oil spill preparedness and response agreement to be signed in May 2013

should strengthen Arctic state cooperation and coordination in this arena; SAON should provide future support to Arctic environmental response.

- *Investing in Hydrographic, Meteorological and Oceanographic Data* ~ Improved systems are required, as with SAON, to support the real-time acquisition, analysis and transfer of meteorological, oceanographic, sea ice and iceberg information.
- *Arctic Marine Traffic Systems* ~ A comprehensive Arctic marine traffic awareness system called for in AMSA will require near real-time environmental information, improved monitoring, and enhanced data sharing among the Arctic states.
- *Arctic Search and Rescue* ~ The Arctic Search and Rescue (SAR) Agreement signed in 2011 (recommended by AMSA) promotes establishment of adequate and effective search and rescue capability by each of the Arctic states within defined areas. Collaborative efforts by the Arctic states include the ‘sharing of real-time meteorological and oceanographic observations, analyses, forecasts, and warnings’; ‘sharing information systems’; and, ‘using ship reporting systems for SAR operations.’ A robust SAON can support many aspects of this new agreement.
- *Survey of Arctic Indigenous Marine Use* ~ On-going surveys are creating baseline data to assess the impacts of Arctic marine operations; SAON will be a key tool to adequately monitor the environment and provide timely information to indigenous marine users.
- *IMO Measures for Arctic Shipping* ~ The implementation of an IMO mandatory Polar Code will require an augmented Arctic sea ice monitoring and prediction system so that polar class ships of varying capability can be effectively regulated.

A second example for support to a fully functioning SAON involves integration of the operational work of the national ice centers and their collaboration within the International Ice Charting Working Group (IICWG). The IICWG is the leading international forum for cooperation among the operational ice services and for coordination of ice matters, including icebergs; the IICWG members are involved in: data and product exchange; standardization of terms, data and mapping; operations and unique customer support; shared training initiatives; sharing technology for analysis and forecasting; and, applied research in such areas as ice prediction models, remote sensing, and digital image processing. All of these activities have key linkages to the SAON initiative. And, the work of the ice centers is central to advancing Arctic marine safety and environmental protection in ice covered seas that are experiencing ever increasing marine use.

A strong case can be made that the SAON initiative is directly relevant to efforts that will greatly enhance Arctic marine safety and environmental protection. More dialogue between the scientific and marine operational communities is required, and more engagement necessary with a broad array of stakeholders.

Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic, Signed by the Arctic States in Nuuk, Greenland on 12 May 2011.

Arctic Marine Shipping Assessment 2009 Report, Arctic Council, April 2009.

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International Ice Charting Working Group, Terms of Reference, Updated 26 October 2007.