



UNITED STATES DEPARTMENT OF COMMERCE
Assistant Secretary of Commerce for Oceans and
Atmosphere Washington, D.C. 20230

July 10, 2020

Harry K. Brower, Jr., Mayor
North Slope Borough

John Hopson, Jr., Chairman
Alaska Eskimo Whaling Commission

Willie Goodwin, Chairman
Arctic Waterways Safety Committee

Dear Mayor Brower, Chairman Hopson, and Chairman Goodwin:

Thank you for your letter of September 16, 2019 requesting the U.S. Committee on the Marine Transportation System (CMTS) compile an inventory of Federal communications capabilities in the U.S. Arctic. The CMTS appreciates your concerns and shares your desires regarding the safety of local Alaska Native residents engaged in marine-related activities, especially as vessel traffic in the region continues to increase. Your request was forwarded to the CMTS U.S. Arctic Marine Transportation Integrated Action Team (Arctic IAT) for action.

Many of the recent efforts of the Arctic IAT focused on understanding the overall growth and sources of vessel traffic. In the fall of 2019, the Arctic IAT published the report *A Ten-Year Projection of Maritime Activity in the U.S. Arctic Region, 2020—2030*, which details past and present vessel activity in the northern U.S. Arctic and projects additional activity over the next decade. Additionally, in December 2019, the IAT engaged several agencies and organizations in a roundtable discussion on the responsibilities of research vessels operating in the area. The discussion centered on two main issues: reporting vessel location while at sea and communication with local communities before and after research cruises. That work is continuing. With these and other efforts, the Arctic IAT aims to improve maritime domain awareness in the U.S. Arctic region.

The CMTS recognizes the value of greater communications in the region, and that vessel communication capabilities are of particular interest for the safety of small vessels operating in the area. This need was highlighted in the Arctic IAT's 2016 report, *A Ten-Year Prioritization of Infrastructure Needs in the U.S. Arctic*. The IAT is also in the process of updating its "U.S. Arctic MTS Infrastructure Table," which first appeared in that report. The new iteration will reflect the current status of MTS infrastructure in the region, identify gaps, and assess potential impacts based on those gaps. This table should prove to be a useful tool for Federal agencies and stakeholders striving to enhance the safety and reliability of the Arctic MTS.

To respond to your request, the Arctic IAT consulted with its member agencies and conducted a literature review to compile the inventory of Federal communications capabilities. This task was discussed in detail at two Arctic IAT meetings, involving representatives and input from eight Federal agencies. Of note, the team reviewed the 2018 U.S. Coast Guard (USCG) report to Congress, *Vessel Traffic Communications in Coastal Western Alaska*; a 2017 Arctic Council Report, *Telecommunications infrastructure in the Arctic: a circumpolar assessment*; and an unpublished 2015 National Telecommunications and Information Administration (NTIA) report. The NTIA report represents the most thorough assessment of communication capabilities in the Alaskan Arctic to date. Finally, the IAT consulted with members of the Coast Guard's Research, Development, Test and Evaluation Office, and the District 17 Office in Juneau.

The inventory of Federal communications systems and capabilities is attached at the end of this letter. Our findings indicate that Federal communications in the U.S. Arctic are primarily related to search and rescue efforts, weather forecasting and environmental observations, and defense operations. The defense communications systems, which include the Navy's Mobile User Objective System (MUOS) and the Air Force's Enhanced Polar System, are designed for secure communications for Department of Defense mobile forces; additionally, the MUOS was designed to provide full coverage only between 65 degrees N to 65 degrees S. Ship-to-shore communication services are available for maritime distress messages, which the USCG monitors. As part of the Global Maritime Distress and Safety System, the USCG offers Digital Selective Calling (DSC) services through MF and HF radios. Additionally, the USCG's Rescue Coordination Center (RCC) in Juneau can receive distress messages through cellular telephones and satellite messages.

Apart from maritime distress messages, there are no specific Federal communications systems that address ship-to-shore communications. The USCG and the National Oceanic and Atmospheric Administration (NOAA), through the Alaska Ocean Observing System (AOOS), utilize automatic identification systems (AIS); the terrestrial AIS systems in Alaska are built and operated by the Marine Exchange of Alaska (MXAK). The AOOS currently transmits weather information through AIS systems, but could be utilized for communicating additional information in the future. The USCG and MXAK collaborated on a 2018 research and development initiative to develop the next generation of navigational safety information systems, utilizing AIS transmitters. The USCG continues to pursue improvements in mariner safety-related communication capabilities through technologies such as AIS, web- or phone-based applications, and satellite systems.

The CMTS hopes that this information provides a more complete context of the available Federal communications systems in the U.S. Arctic. Additionally, this inventory should help to identify communication gaps that could be targeted in future planning. With that in mind, the CMTS would like to direct you to two resources that may prove useful. First, the Economic Development Administration (EDA) provides a variety of tools, programs, and funding opportunities designed to help local communities and regions build economic capacity. EDA resources range from programs that aid in strategic planning to funds for building critical infrastructure. As reliable communication systems are integral to the safety and prosperity of local mariners, EDA resources could be utilized to address communication issues in your communities. Second, the CMTS publishes a compendium of Federal funding opportunities related to the marine transportation system that may help you identify relevant grants; this can be found at: https://www.cmts.gov/downloads/Federal_Funding_Handbook_2019_FINAL_Jan2020_corrected.pdf

Once again, thank you for reaching out to the CMTS with this request. Please do not hesitate to contact us with any questions or clarifications. We look forward to further engagement and collaborations with your organizations and communities in the future.

With regards,



Tim Gallaudet, Ph.D., Rear Admiral, U.S. Navy (Ret.)
Assistant Secretary of Commerce for Oceans and Atmosphere / Deputy NOAA Administrator
Chair, CMTS Coordinating Board

Attachment

Deputy Administrator



Inventory of Federal Communications Capabilities in the U.S. Arctic (by Federal Agency)

United States Coast Guard

- The USCG Joint Rescue Coordination Center (RCC) in Juneau receives and responds to maritime distress messages from the Cospas-Sarsat satellite system and the various components of the Global Marine Distress and Safety System (GMDSS) such as the MF/HF voice radio and INMARSAT C Digital Selective Calling (DCS) systems. The USCG RCC can also receive distress messages by other means such as cellular telephones and Iridium satellite messages. Iridium also became the second satellite provider for GMDSS services in 2020.
- Within the U.S., the GMDSS Sea Areas claimed by the U.S. are Sea Area 1 (VHF-FM), Sea Area 3 (INMARSAT and HF DSC) and Sea Area 4 Polar Region (HF-DSC). Sea Area 2 (MF) is not claimed within the U.S. Please see the U.S. Coast Guard NAVCEN website for further information: <https://www.navcen.uscg.gov/?pageName=gmdssArea>.
- The Marine Exchange of Alaska (MXAK) builds and operates the only terrestrial AIS network in Alaska that is serving as the primary component of the U.S. Coast Guard and State of Alaska maritime domain awareness network. The MXAK worked with the U.S. Coast Guard in a Cooperative Research and Development Agreement (CRADA) to develop the Arctic next generation navigational safety information system that utilizes AIS transmitters to send environmental and safety information to mariners to aid safe and environmentally sound maritime operations. This CRADA is now complete, and the USCG continues to investigate and pursue options based on the results of that work.

National Oceanic and Atmospheric Administration

- NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. There are several NWR stations throughout Alaska, including Arctic Alaska.
- The Alaskan Ocean Observing System (AOOS) has an ongoing project to transmit environmental information, such as real-time weather information, over AIS stations. Weather and environmental sensors are tied into the AIS network in five locations, with the northernmost one in Nome.
- For weather and environmental monitoring, NOAA has polar operational environmental satellites (POES) and geostationary operational environmental satellites (GOES), and they utilize Iridium's satellites to collect sea-ice and oceanographic data from buoys in the Arctic Ocean. A satellite earth station in Utqiagvik sends command signals to the POES satellites and collects data from the satellites, sensors, and monitoring devices in Alaska that communicate with the satellites.

Federal Aviation Administration

- FAA operates Flight Service Stations (FSS) at Utqiagvik, Deadhorse, and Kotzebue. Aircraft in flight and planes at the smaller airfields in the Arctic Region can communicate with the FAA's Anchorage Air Route Traffic Control Center (ARTCC) and FSS through a system of unmanned transmitters/receivers operating in the VHF and UHF radio bands. The FAA has interconnected Remote Communication Outlets (RCOs) and Remote Communications Air/Ground (RCAGs) facilities with the ARTCC and FSS, and the FSS with each other and to the ARTCC, via C-band satellite links. About half of the airfields in the Arctic Region have an RCO, an RCAG, or both.

United States Army Corps of Engineers

- The U.S. Army Corps of Engineers – Alaska District has a radio tower on Joint Base Elmendorf-Richardson to enhance the high-frequency radio capabilities of the district's Emergency Management Office during a disaster.