INUIT MARINE MONITORING PROGRAM – PILOT PROJECT

AIS Backgrounder

Inuit Marine Monitoring Program Pilot Project
In response to growing concerns about increasing vessel traffic in Nunavut, NTI is developing a 1-year pilot project Inuit Marine Monitoring Program (IMMP). As part of this project, NTI will install AIS receivers in strategic locations throughout Nunavut to collect information about shipping.

Automatic Information System (AIS)
Automatic Information System, or AIS, is a technology developed by the International Maritime Organization (IMO) to track large vessels on international transit. Under international law, all commercial vessels over 300,000 Tonnes on international transits must use AIS technology to broadcast specified information about their ship. A significant amount of information is broadcast by ships using AIS, including:

- The name of the vessel, its identification number and radio call sign
- The type of vessel and its cargo, if applicable
- Its navigation status ("at anchor", "under way using engine(s)", "not under command", etc.)
- Its position, speed, heading, and destination
- The dimensions and draught of the ship

Vessels using AIS
By law, large vessels on international transits and all fishing vessels must broadcast AIS information. These vessels include:

- Tug/Barge
- Cruise Ships
- Small passenger vessels
- Coast Guard ships
- Research ships
- Tankers
- Cargo ships
- Fishing vessels

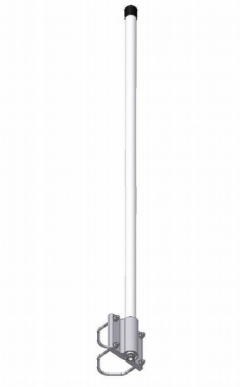
Although they aren't required to have AIS on board, many smaller vessels, including pleasure crafts and adventurers, also choose to use the technology for safety reasons.

Collecting AIS Data
AIS equipment uses very high frequencies (VHF) to transmit small packets of data over large distances. Because the data packets are so small, AIS is able to transmit up to three times further than other radio signals. AIS data broadcast by ships can be received in two ways: using land-based AIS receivers and via satellite networks. As part of the IMMP, NTI will be installing land-based AIS receivers in strategic

locations throughout Nunavut – both in communities and in remote areas.

In-town AIS receivers

In some strategic shipping areas in Nunavut, such as Chesterfield Inlet, ships pass very close to the community. In order to track ships in these areas, an AIS receiver will be installed in town. This is the most straight-forward approach to AIS installation. It requires an antenna (between 4 and 6 feet tall) to be installed on a building or other structure, and connected to the AIS radio receiver, which is connected to a power supply and the Internet, via modem.



AIS Antenna

AIS receiver

Remote AIS receivers

For strategic areas outside of communities where there is interest in monitoring ship traffic, a remote AIS receiver will be installed. Remote receivers require a power supply and Internet connection (via cellular or satellite modem). Since shipping in Nunavut occurs primarily in during the summer months, solar panels and batteries will be used for these installations. In order to get additional value from these sites, weather stations will also be installed in remote sites.

Example of a remote, solar powered AIS site with weather station