

TECHNOLOGY - SAFETY SYSTEMS

Improving maritime safety, security and efficiency with AIS

Understanding and monitoring our oceans and their use is vital to our national defence. It also affects the safety of marine transportation.*

This requires a variety of ocean observation and maritime domain awareness (MDA) technologies, including the use of AIS data.

These technologies are available through the private sector and the US Coast Guard's (USCG) National AIS (NAIS) initiative.

Last May, I testified before the US House Subcommittee on USCG & Marine Transportation about AIS and related technologies, including the potential impacts of federal regulatory activities in this area.

As a leading provider of AIS solutions and data through our PortVision service, we work with a wide variety of vessel operators, marine terminals, government agencies and every major oil company. We also provide patented tools and technologies that increase MDA and improve waterway safety, security, and efficiency.

To do this, we maintain a global network of VHF receivers that detect the AIS collision-avoidance signals transmitted by vessels around the world. Today, our PortVision AIS network processes over 50 mill real-time vessel position reports each day and we maintain a data warehouse of over 40 bill arrival, departure and individual vessel movements, dating back to 2006.

While some might consider PortVision's AIS network to simply be a commercial variation on the USCG's NAIS initiative, the latter is focused primarily on aggregating AIS data around the US and its territories. In contrast, the PortVision service has extended real-time vessel detection globally through both terrestrial and satellite AIS receivers.

Another important distinction is that NAIS is primarily focused on AIS data acquisition for use in VTS and related operational environments, while PortVision is focused on data harvesting and analysis to generate business intelligence and enhance maritime visibility, efficiency and decision-making. As

a result, current government systems generally appear to be good at collecting and displaying real-time data, but not aggregating and making it broadly accessible to field personnel so they can clearly understand waterway utilisation.

Many of our commercial (non-government) users have the benefit of commercial tools like PortVision to support their mission, while frequently, USCG, Army Corps and other government field personnel do not have the benefit of such tools.

The availability of AIS tools that go beyond simple data aggregation creates many new opportunities for companies as well as government organisations. These include scheduling vessels at oil refineries, supporting incident response operations and supporting homeland security and law enforcement activities.

AIS value growth

In addition to being used in these new and emerging applications, AIS value, in general, continues to grow. For instance, AIS has been used to support operations related to key incidents, such as the 'Deepwater Horizon' oil spill, major hurricane and weather events and numerous compliance and law enforcement activities.

AIS is also helping the maritime business community accommodate today's surge of US Gulf traffic, including vessels transporting crude oil shipments from new finds in locations including the Dakotas, West Texas, and Mexico. It is also being used for new applications in pipeline, bridge and offshore asset protection.

As an example, PortVision has partnered with the Coastal and Marine Operators (CAMO) industry trade association on a system to pro-actively notify vessels and pipeline operators when there is imminent risk that a vessel might damage pipeline

infrastructure. Over the last 20 years there has been more than \$100 mill in property damage and in excess of 25 fatalities associated with these coastal and marine pipeline incidents.

Another AIS application is identifying bad actors and driving regulatory compliance. For example, PortVision has participated with the Offshore Marine Service Association to identify and report Jones Act violators. In a similar type of application, port authorities use PortVision to enforce speed and emission reduction initiatives. Other customers in the Federal Government use PortVision data and services to support homeland security and intelligence operations.

These applications and their associated benefits are only possible if carriers transmit a persistent AIS signal with accurate data, which means that the Federal Government must ensure that all vessels required to transmit AIS maintain a consistent, uninterrupted and accurate AIS transmission. We know of no uniform enforcement, or educational campaign by the USCG to ensure compliance. While some regional Vessel Traffic Service (VTS) offices are vigilant about compliance, other regions have significantly less active oversight - if any.

Finally, it is also important that federal agencies move beyond government-funded 'build-versus-buy' MDA initiatives. The commercial sector and small businesses offer proven, valuable services at very low cost. However, a 'not invented here' culture can hinder their adoption by federal agencies and prevent many USCG and other government field personnel from operating as effectively as their industry partners who are already using AIS-based MDA tools.

**This article was written by Dean Rosenberg, PortVision's director, products, ocean-eering global data solutions.*