

DHS Science and Technology Directorate

Coastal Surveillance System

Small vessels used in smuggling are difficult to detect

Increasingly, criminals use small vessels to smuggle illicit materials into the United States (U.S.). Transnational criminal organizations design and build these vessels, including go-fasts, pangas, and self-propelled semi-submersibles, for stealth. Although primarily used for drug smuggling at present, these vessels could also be used for a variety of threats.



Panga (upper left) and self-propelled semi-submersibles

Small vessels are an ideal platform for smuggling—they are difficult to detect with existing sensors, and it is challenging to distinguish between the bad actors and those engaged in legitimate pleasure and commercial boating. Another challenge for the agencies responsible for guarding our maritime borders is how to effectively patrol the vast shorelines of the U.S. using limited resources (ships, boats, planes, helicopters). To do this more efficiently and effectively requires an enhanced situational awareness of the maritime domain. Agencies need reliable, timely, and actionable law enforcement information in order to cue limited interdiction assets.

Enabling the capture of suspicious small boats

The Department of Homeland Security (DHS) Science and Technology Directorate is improving the ability of the U.S. Coast Guard (USCG), U.S. Customs and Border Protection (CBP), and other DHS operational components to interdict small vessels by developing a Coastal Surveillance System

(CSS) with an open, Web-based architecture for rapid technology insertion and agile information sharing. The CSS integrates data feeds from existing local and regional sensors. An unclassified data fusion engine then analyzes the data and provides law enforcement agencies with real-time actionable information, including vessel tracking information. The CSS also provides a secure, service-based framework that can integrate into existing user networks without requiring a re-design of hardware infrastructure.

The CSS houses multiple tools that provide users with different capabilities. One CSS tool in development, the Smart Chart Automatic Identification System (AIS), is a smartphone app that provides boat owners with free access to maritime safety and security information and tools, such as nautical charts, weather overlays, cruising guidance, vessel locations, and more. In return, users voluntarily report the location of their boats, thereby helping law enforcement officials to differentiate between potential smugglers and legitimate boating traffic.

A more secure maritime border

The CSS will provide a more complete national maritime picture and enable users to more efficiently use and preposition law enforcement assets, both on and offshore, resulting in increased apprehensions and seizures. USCG and CBP will benefit from reduced aircraft and vessel operating hours, which will save valuable fuel, manpower, and maintenance resources.

Accomplishments and upcoming milestones

The Department of Defense, intelligence community, USCG and CBP have been key partners in the development of CSS. The initial version of CSS was installed at CBP's Air and Marine Operations Center in December 2012 for preliminary evaluation. Smart Chart AIS was made available as a free download to the public in the summer of 2013. New acoustic and satellite data feeds are currently being integrated and tested.



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