ONR sensor and software suite hunts down more than 600 suspect boats

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Chief Maritime Enforcement Specialist Rob Wills of the US Coast Guard's Maritime Security Response Team and Gambian navy Lt. Simon Peter Mendy discuss tactical operations while aboard a fishing vessel in Gambia's Exclusive Economic Zone during joint operations with USS Simpson (FFG 56). Simpson recently supported African Maritime Law Enforcement Partnership operations, a branch of the Africa Partnership Station, in an effort to build maritime safety and security on and off shore. Credit: US Navy photo by Mass Communication Specialist 1st Class Daniel Mennuto/Released

A new sensor and software suite sponsored by the Office of Naval Research (ONR) recently returned from West Africa after helping partner nations track and identify target vessels of interest as part of an international maritime security operation, officials announced July 10.

Researchers deployed the system, called "Rough Rhino," aboard U.S.

aircraft, ships and partner nation ships operating in waters off the coast of Senegal and Cape Verde. Sailors and Coast Guardsmen could access and control the sensors both afloat and ashore, as well as share information in a real-time common operating picture.

"It provides a comprehensive maritime domain awareness picture for dark, gray and light targets—vessels that range from no electronic emissions to those that cooperatively report their name and positions, said Dr. Michael Pollock, ONR's division director for electronics, sensors and networks.

Rough Rhino was responsible for finding targets during the most recent two-week African Maritime Law Enforcement Partnership (AMLEP) operation. The primary missions are aimed at assisting and building the host nation's capability to interdict and counter narcotics, human trafficking and illegal fishing.

Maritime Enforcement Specialist 3rd Class Brian Smith of the US Coast Guard's Pacific Area Tactical Law Enforcement Team 107 makes his way down USS Simpson's (FFG 56) pilot ladder to a rigid hull inflatable boat. Simpson recently supported African Maritime Law Enforcement Partnership operations, a branch of the Africa Partnership Station, in an effort to build maritime safety and security on and offshore. Credit: US Navy photo by Mass Communication Specialist 1st Class Daniel Mennuto

On any given day, the distributed intelligence, surveillance and reconnaissance (ISR) system tracked more than 600 targets, identified vessels of interest and culminated in 24 boardings by Gambian, Senegalese and U.S. maritime security teams. For future operations, Gambia and Senegal will continue to work with African partner nations to build and maintain maritime security and safety.

"Rough Rhino provided them one of the clearest maritime operational pictures that they've ever seen," said Pollock. "They could detect, locate, quantify and confirm detailed activities of all vessels in their respective countries' exclusive economic zones."

AMLEP provided an opportunity to test the prototype Rough Rhino system in an operationally and tactically relevant environment, allowing designers and developers to see firsthand where the system needs improvement. The system includes: radar, optics, electronic surveillance and integrated software modified and developed by ONR contractors and the Naval Research Laboratory. The system was installed on the Naval Research Laboratory's VXS-1 P-3, USS Simpson and Senegalese ships SNS Poponguine and SNS Djiffere.

"The unique aspect to this project is how the research directly supports an ongoing operation and how we can immediately ingest operator feedback" said Pollock. He added that the software is constantly rewritten annually from the ground up to keep up with changing technology, sensor improvements, and fleet and operator needs.

To date, the system has participated in five major operations, including AMLEP 2011 and 2012. Participants particularly liked the system's ease of use, requiring little training, and clarity, as well as its information storage and retrieval abilities, which can be used to support after-action

reviews and legal prosecutions.

AMLEP is a joint mission conducted by the U.S. Africa Command, U.S. Naval Forces Africa, U.S. Coast Guard Atlantic Area and multiple West African navies and coast guards. AMLEP is the operational portion of the Africa Partnership Station (APS) initiative in which African navies employ their professional skill, knowledge and experience to combat crime at sea.

Since 2007, the U.S. Navy has worked alongside African partner navies and coast guards through a series of APS training events and regional exercises to improve maritime safety and security. Additionally, operations such as AMLEP provide participants with numerous opportunities to operate together and develop productive relationships through real-world situations.

Provided by Office of Naval Research