Maritime Port Resiliency and Security Research Testbed

Science and Technology

SAFEGUARDING OUR NATION'S CRITICAL INFRASTRUCTURE

The United States Maritime Transportation System (MTS) is a sophisticated network of waterways, ports, and intermodal connections that facilitates the movement of people and goods on the water and supports recreational use by the public. The MTS is a highly complex system of systems where many types of facilities, vessels, barges, and infrastructure components operate every day to ensure safe and efficient maritime commerce. It is a vital part of the U.S. economy, generating 13 million jobs and contributing $649 billion to the U.S. Gross Domestic Product. The MTS is a key component to the national economy and supply chain. However, because it is heavily reliant on interlocking networks with stakeholders at all levels of government and industry, disruptions to operations can severely impact the supply chain and U.S. economic health. The United States Coast Guard's (USCG) mission in the cyber domain is to protect this multifaceted system to ensure safe and free navigation of U.S. waterways by protecting navigation infrastructure through developing new cyber capabilities.

ASSESSING CYBER THREAT LANDSCAPE OF PORTS

The objective of this Department of Homeland Security (DHS) Science and Technology Directorate effort is to produce a research study analyzing maritime port networks to understand how the resources are deployed and identify research, development, test, and evaluation needs that are unique to the MTS. This testbed study aims to better understand how commercial port operators deploy their Information Technology (IT) and Operational Technology (OT) systems, the resiliency of these systems, and what improvements can be made to the USCG's regulatory authority to secure the commercial port cyber domain[1].

The result of this study will be research into the state of IT and OT implementations at commercial ports and assessment of USCG regulatory authorities pertaining to cyber security. This research focus area shall include an analysis of commercial networks' resiliency against cyber threats.

[1] Under Executive Order. 14116, Executive Office of the President, Feb. 21, 2024

STRENGTHENING MARITIME'S CYBERSECURITY POSTURE

To address the growing need for effective cybersecurity measures within the maritime port domain, Congress has identified funding within the 2021 DHS Appropriations Act to establish the Maritime Port Resiliency and Security Research Testbed to support the design and development of tactics, techniques, and procedures for effective threat response to critical maritime infrastructure.

This effort is a collaboration amongst industry, academia, and DHS to develop a secure, modern, hardware-in-the-loop (HIL) testbed for the maritime port resiliency and security sector that is capable of adapting, evolving, and responding to emerging threats. It will serve as one of a suite of tools that stakeholders could employ to study and improve the resilience of communities with the MTS.

PERFORMERS

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