



Hypersonic Weapon Systems

GOAL

To develop, integrate, and deliver hypersonic warfighting and kill chain capabilities that enable access, deterrence, and domination of the surface warfare battlespace.

Background

Our nation is in fierce competition with adversaries in developing offensive hypersonic weapons and countermeasures. NSWCDD, with its expertise in strategic weapons, advanced gun systems, and missile defense, has critical experience in hypersonic weapons. The hypersonic weapons thrust will further strengthen and cultivate this expertise into a dedicated hypersonic technologies workforce.

Objectives

Lead Surface Navy Offensive and Defensive Hypersonic Weapon Systems Integration

NSWCDD possesses expertise across the kill chain including threat sensing, combat command and decision, fire control and swift platform integration. Leveraging this expertise, we will conduct military utility studies to select the best technologies to advance, as well as inform warfighters of the value and contribution of a weapon system through analysis of tactical-use cases. We will lead technology roadmap activities to inform stakeholder investments and identify opportunities to integrate prototypes. We will establish platform-specific test sites to ensure effective combat and weapon system software integration.

Lead National R&D Efforts Focused on Advancing the Surface Navy's Hypersonic Weapons Portfolio

NSWCDD will spearhead R&D efforts in hypersonic weapons that will define the future of naval operations and ensure the security of our maritime interests. We will accelerate the design, testing and deployment of hypersonic weapon technologies through collaborative R&D efforts across governmental agencies, private industry and research institutions, as well as using NISE funding to aggressively prototype an array of capabilities. This objective will create a range of hypersonic weapons that can engage targets, provide strategic deterrence and safeguard national maritime security interests.

Expand Our Roles and Responsibilities in the Development of Hypersonic Weapon Defense

NSWCDD continues to amplify roles and responsibilities in the realm of defensive weapon system capabilities. By actively engaging in the development of current cutting-edge defensive

technologies, we are enhancing our expertise in countering emerging threats. We will enhance the Missile Defense Agency's hypersonic defense mission by developing, prototyping and transitioning defensive hypersonic technologies. We will work with the intelligence community to develop analytical tools to accurately represent the threat. We will contribute to the enhancement and diversification of defensive kinetic and directed-energy technologies by participating in the R&D, testing and deployment of advanced defensive weapon systems.

Develop and Prototype Concepts for Offensive Surface Hypersonic Weapon Systems

NSWCDD will develop and integrate engineering and science technologies for hypersonic capabilities, expanding our role beyond Conventional Prompt Strike. We will assist in identifying potential shortfalls in existing plans to modernize our fires capabilities and leverage our 70 years of strategic and tactical missile program experience. Our expertise in prototyping and high-speed testing will support hypersonic weapon demonstrations, including at-sea tests and terminal effects evaluation. We will continue integrating offensive weapon systems into naval platforms, aiming to facilitate hypersonic weapon options across the spectrum, ensuring deterrence and dominance in contested regions.

Establish Novel Test and Evaluation Capabilities to Complement the Nation's Hypersonic Weapons Development

We are creating new test and evaluation (T&E) capabilities and facilities to advance hypersonic weapon systems R&D and deployment. Expanding T&E will speed up development and identify design optimizations and potential issues early. Our Hypersonic Integration and Test Facility will enhance T&E with hardware-in-the-loop analyses, integration, terminal effects, aero science capabilities. The HIT Facility will allow for performance reconstruction for hypersonic weapon systems. We will also expand the broad ocean area capability, including facilities for better equipment and asset management.

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