DEFEATING TODAY'S THREATS.
READYING FOR TOMORROW'S.

The United States faces a competitive strategic environment with great power rivals and other adversaries wielding sophisticated technologies and weapons. From hypersonic missiles to nuclear proliferation, the challenges are complex— and the stakes are vast.

Every day, the National Security Engineering Center (NSEC) federally funded research and development center works to ensure that we have the best equipped, trained, and informed warfighters in the world.

NSEC delivers research, engineering, and analytical solutions to the Department of Defense and the Intelligence Community. Since 1958, NSEC has contributed transformational innovations to essential systems such as the Semi-Automated Ground Environment (SAGE), the nation's first air-defense system. These include Joint STARS, the Air Force/Army airborne ground surveillance, battle management, command and control aircraft, and Intelink, the first secure intranet used by the Intelligence Community.

> "Through rapid innovation, trusted technical expertise, and objective analysis, NSEC helps the Defense Department and Intelligence Community meet today's critical challenges and prepare for what's next."
>
> Keoki Jackson, General Manager, National Security Sector

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Today, NSEC is helping modernize the nation's nuclear command, control, and communications (NC3) system and addressing the threat of enemy missile attacks against the homeland and our deployed forces. We're developing great power competition tools and strategies to address everything from Russian "gray zone" influence operations to surveillance or interference threats in Chinese-based telecommunications infrastructure.

Following are a few examples of how NSEC is supporting our national defense:

DOD-WIDE JADC2: Orchestrating Capabilities Across Domains

The U.S. National Defense Strategy recognizes that the joint force must be able to rapidly plan and execute operations simultaneously across all warfighting domains—land, sea, air, space, and cyber. So NSEC is bringing the Services and the Intelligence Community together to enable the Joint All-Domain Command and Control (JADC2) approaches needed by the United States and its allies to rapidly plan, synchronize, and execute operations efficiently.

ARMY TLS: Developing the Army Terrestrial Layer System

NSEC is working on the Army Terrestrial Layer System, a ground-based system on vehicles that combines electronic warfare, signals intelligence, and cyber capabilities on one platform. NSEC is helping develop a modular hardware and a containerized software computing framework to allow brigade combat teams to understand, shape, and influence their operating environments. When complete, the system will detect, identify, and locate targeted emitters and allow friendly forces to attack targeted receivers.

NAVY NOA: Dealing with Aggression Short of Physical Conflict

How should the Navy handle aggression such as cyber and disinformation campaigns, or unsafe intercepts of and interactions with U.S. ships and aircraft? NSEC supports Naval Operational Architecture (NOA) efforts to create a digital engineering environment and a cloud-native software factory. NOA will provide a resilient way to command and control distributed Naval forces in highly contested and deeply information-based environments.

AIR FORCE GBSD: Engineering a Dominant System Faster

NSEC is working on the Air Force's Ground-Based Strategic Deterrent (GBSD) program, the next-generation intercontinental ballistic missile system slated to replace all 450 Minuteman III missiles. NSEC will help deliver GBSD's Digital Engineering ecosystem (DES) and integrate modeling, simulation, and analysis capabilities to ensure efficient design and development. DES will allow the Air Force to rapidly respond to changing threats, field advanced capabilities, and engineer dominant systems faster.

U.S. STRATEGIC COMMAND NC3: Modernizing Nuclear Command, Control, and Communications

NC3 is essential to our nation's strategic deterrent. NSEC is working with U.S. Strategic Command to develop new, innovative, and highly resilient NC3 systems to respond to the fast-changing threats facing our nation. To help modernize NC3 and ensure that our commanders can communicate securely with nuclear forces worldwide, NSEC is providing requirements, processes, and tools necessary to deliver enterprise capabilities and make risk-based, data-driven decisions.

JADC2: Joint All-Domain Command and Control Systems

Connecting ...
the right **SENSOR**
to the right **SHOOTER**
across any **DOMAIN**
at any **TIME**

MITRE's mission-driven teams are dedicated to solving problems for a safer world. Through our public-private partnerships and federally funded R&D centers, we work across government and in partnership with industry to tackle challenges to the safety, stability, and well-being of our nation.

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