

# PORTABLE RANGE OPERATIONS AND TEST NETWORK

Comprehensive, secure test architecture for fixed and mobile range platforms



Photo courtesy of the Naval Surface Warfare Center, Port Hueneme Division

The U.S. Army's Portable Range Operations and Test Network (PROTN) is a cutting-edge and adaptable system designed to revolutionize the way the U.S. Army Space and Missile Defense Command conducts testing, evaluation and training for its advanced hypersonic weapon systems and communication technologies.

As a prime contractor on the Hypersonic Test Engineering, Mission Planning and Systems (HyTEMPS) program, Arcfield supports the design, development, operation, and maintenance of the PROTN system. This mobile and versatile solution enhances operational efficiency and effectiveness across various environments and represents a significant advancement in the Department of Defense's (DOD) test capabilities.

## TEST RANGE AUGMENTATION

This unique, portable and modular solution enhances multi-range test architectures where range capabilities and test assets are insufficient, not connected, or non-existent. The PROTN suite enables the establishment of a comprehensive test architecture that supports pre-mission, real-time and post-mission activities across dispersed fixed and mobile platforms.

PROTN currently interfaces with multiple Major Range and Test Facility Bases (MRTFB), including Cape Canaveral Space Force Station, NAWCWD China Lake and Point Mugu, Pacific Missile Range Facility, Wallops Flight Facility, Reagan Test Site, and others.

## FEATURES

### MOBILITY AND FLEXIBILITY

The PROTN system was designed to be easily transported and rapidly deployed to any location, allowing the DOD to conduct realistic testing and training in a wide range of settings. This enables the assessment of weapon systems and communication networks under real-world conditions, providing valuable insights for operational planning and decision-making.

### INTEGRATED TEST AND EVALUATION

PROTN seamlessly integrates test and evaluation capabilities to bolster internal and industry research and development efforts. The system's comprehensive suite of tools enables precise data collection and analysis, allowing engineers and operators to evaluate the performance of various technologies, identify potential issues and fine-tune designs to optimize effectiveness.

### CAPABILITY SCOPE

PROTN's modularity extends to its ability to tailor nodes and capabilities for each site in the test architecture. Each variant of PROTN can function as a network gateway for data transport and can be expanded to include multiple functions such as real-time video relay, live telemetry ingestion and processing, synchronized mission simulation, data analysis, voice transport, among other major capabilities. This adaptability ensures PROTN can scale its function to meet the individual needs of the broader range architecture.

### COMMUNICATION AND NETWORKING

The PROTN system facilitates communication and networking among various test elements and personnel, streamlining coordination and information exchange during evaluations. PROTN utilizes terrestrial circuits and SATCOM

paths, allowing for diverse and flexible solutions for transporting data from test ranges and remote environments. This integrated approach enhances collaboration and data-sharing, leading to improved situational awareness and more informed decision-making.

### WHY ARCFIELD

Arcfield has supported the U.S. Army Space and Missile Defense Command Technical Center and its mission to develop hypersonic vehicle technologies for more than 15 years. The company has also delivered end-to-end hypersonic and nuclear deterrence mission support to defense and intelligence agencies for more than six decades. This comprehensive experience differentiates us from our peers and provides us with unique insight to directly support front-end engineering while validating models and simulations with real-world test results. We work shoulder to shoulder with our government customers and vehicle developers to ensure the rapid deployment of systems to meet the short- and long-term requirements of combatant commanders.

#### CONVENTIONAL PROMPT STRIKE

U.S. Navy photo of successful hypersonic missile launch test in Wallops Island, VA taken by Amy Smith.

For the event, Arcfield delivered live 3D imaging of the rocket's surroundings as it traveled above Mach 5 speed.

