



CONNECTED BATTLEFIELD

Connecting the Battlefield in Space

When the battle is moving at Mach 5+, minutes – even seconds – can mean the difference between mission success and mission failure. Data must get from sensor to shooter in a tactically relevant timeframe, with minimal lag time and zero interruptions. Moving that data through space while allowing users to remain undetected and free from interferers is foundational to the Department of Defense's pursuit of a Joint All-Domain

Command & Control (JADC2) operational environment.

Northrop Grumman is leveraging decades of mission experience on orbit to tackle a wide range of emerging threats. Our space capabilities form the eyes, ears and nervous system of the connected battlespace, securely delivering the right information to the right place, at the right time.

We are a leader in:

- Optical communications
- Data standards
- Multiple intelligence signal processing
- Mission-informed modeling and simulation
- End-to-end systems development, production and operations

Northrop Grumman is delivering the future of multi-service, multi-domain operations. Our trailblazing work on data sharing and translation, multi-domain operations and expanded connectivity is playing a critical role in helping our customers reach their JADC2 goals.



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LASER COMMUNICATIONS AND DATA STANDARDS

Competing on the 21st century battlefield requires moving massive amounts of data with next to no lag time to ensure end users have the time-critical data they need to defend themselves and their allies. Laser communications deliver just that. To field the technology at scale, you need a partner who understands the mission, data standards and – most importantly – has experience with end-to-end systems development, integration, and on-orbit operations.

Northrop Grumman has been at the forefront of laser communications development for 40 years and is one of only a few companies that has laser communications on orbit today.

NORTHROP GRUMMAN HAS:

- Extensive, mature end-to-end laser communications systems development in space, in the air and on the ground
- More than 12 active contracts developing architectures, integrating and operating missions, and delivering next generation hardware
- On-orbit, mission-informed systems modeling and simulation
- Production, integration and test facilities, along with space-qualified processes that deliver the highest-quality systems possible

Northrop Grumman is the market leader in laser communications.

A CASE STUDY

SPACE DEVELOPMENT AGENCY (SDA) PROLIFERATED WARFIGHTER SPACE ARCHITECTURE

Northrop Grumman is bringing its decades of military satellite communications experience to bear and strategically partnering with key commercial suppliers to deliver a proliferated low-Earth orbit data transport architecture that DoD is calling the “backbone of JADC2.” Our work on the Tranche 1 Transport Layer is fielding key technologies and infrastructure to enable future proliferated space missions responsive to warfighter needs.

Northrop Grumman is providing 42 communications satellites for the Tranche 1 Transport Layer intended to provide assured, resilient, low-latency military data and connectivity worldwide to US troops operating in the air, on the ground and at sea. Each Transport Layer satellite uses laser communications terminals, a joint effort between Northrop Grumman and its strategic laser communications supplier, Mynaric.

The Transport Layer will work in conjunction with the Tracking Layer, also being supported by Northrop Grumman, designed to track hypersonic ballistic missiles in flight and relay critical, life-saving data to U.S. troops on the ground.