

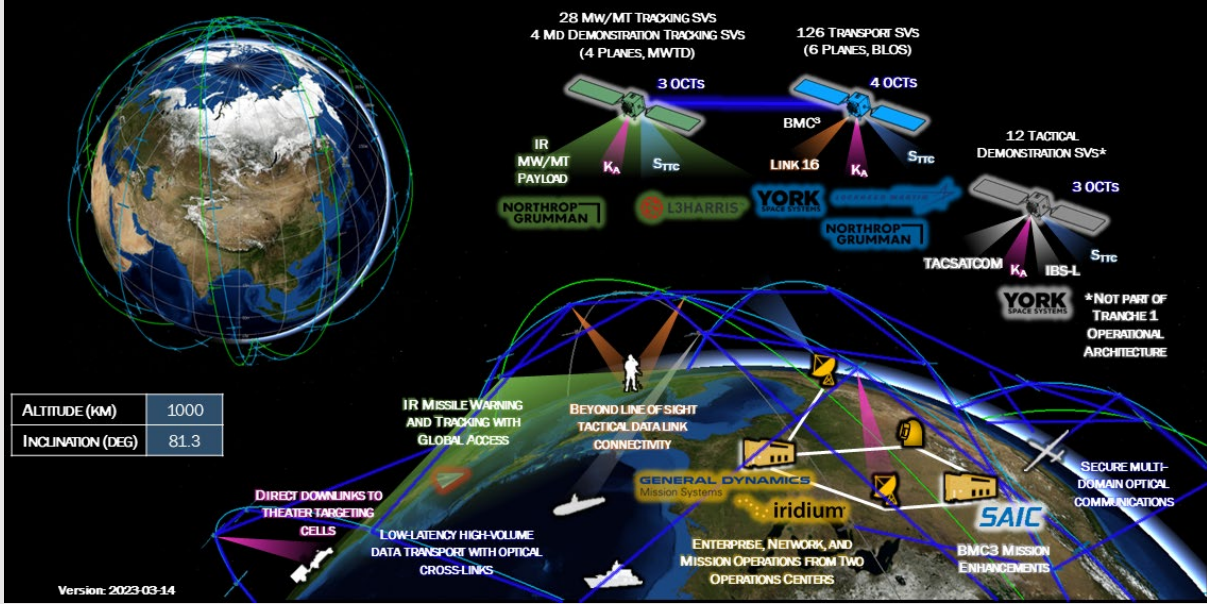
# Proliferated Warfighter Space Architecture



## Tranche 1

**Mission**   
**Speed. Delivery. Agility**

The Space Development Agency (SDA) is charged with the delivery of the Proliferated Warfighter Space Architecture (PWSA), a proliferated constellation of 100s of optically linked small satellites, in low-Earth orbit (LEO), delivering capability at speed to the warfighter. SDA leverages spiral development to deploy and proliferate new capability into a new generation of the PWSA every two years, called a “tranche,” to continually increase capability used by the warfighter.



*PWSA Tranche 1 Architecture*

### Tranche 1, The Initial Warfighting Capability Tranche

- Serves as the backbone for Joint All Domain Command and Control (JADC2), built on low-latency data transport, and sensor-to-shooter connectivity.
- Delivers regional persistence for Link 16, advanced missile tracking and missile warning (MW/MT), and beyond-line-of-sight (BLOS) targeting.
- 154 operational space vehicles (SVs), plus 4 demonstration SVs, equipped with optical communications terminals (OCTs) and Ka-band radio frequency (RF) receive/transmit capability.
  - 126 Transport SVs configured with Link 16 tactical data link (TDL) transmit/receive capability.
  - 28 Tracking SVs configured with an infrared (IR) sensor payload for MW/MT.
  - Four missile defense (MD) demonstration SVs configured with a higher fidelity IR sensor payload to demonstrate initial MD capability.
- T1 satellites will be operated from two SDA Space Operations Centers (Grand Forks Air Force Base, North Dakota; Redstone Arsenal, Alabama) and supported by a global network of ground entry points.
- The cost per Transport Layer satellite is approximately \$14 million.
- T1 launches are planned to begin near the end of 2024 and continue through 2025.

**T1DES - Tactical Demonstration SVs**

Tranche 1 Demonstration and Experimentation System (T1DES) will launch around the same timeframe as Tranche 1 and will demonstrate new capability to be proliferated in future Tranches of the PWSA. T1DES consists of 12 tactical demonstration satellites in LEO equipped with OCTs and communications payloads including:

1. Tactical Satellite Communications (TACSATCOM)
2. Integrated Broadcast System LEO (IBS-L)

The T1DES demonstration program will not be part of the T1 operational architecture.

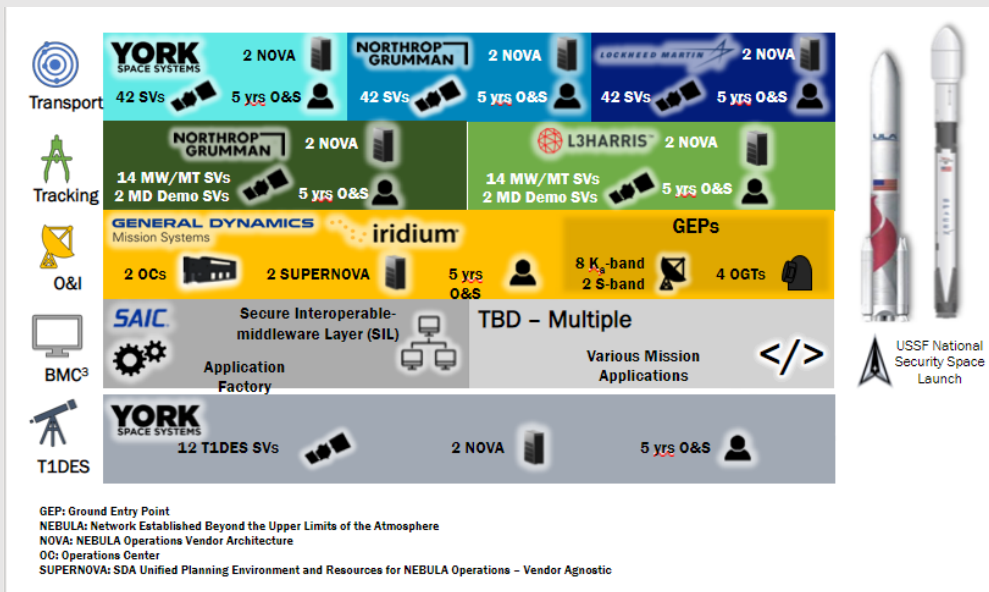
# Proliferated Warfighter Space Architecture

## Tranche 1

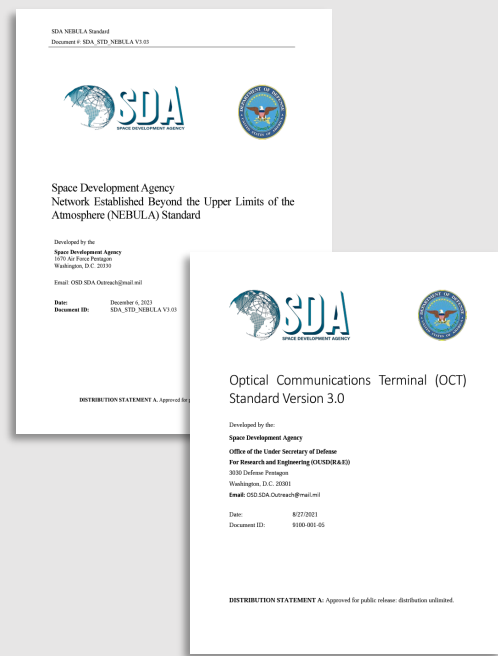


### PWSA Tranche 1 Team

The PWSA Tranche 1 is enabled by a team of multiple vendors to deliver both space and ground segments enabled by design and interoperability requirements listed in the SDA OCT Standard and Network Established Beyond the Upper Limits of the Atmosphere (NEBULA) Standard.



PWSA Tranche 1 Team



The SDA OCT Standard and SDA NEBULA Standard provide vendors design and networking requirements to enable interoperability of the PWSA

### High Level Capabilities

- Persistent Regional Access:**
  - Low-latency data connectivity
  - Data directly to tactical elements
  - Missile warning and missile tracking for conventional missiles and hypersonic glide vehicles
  - Link 16 tactical data link
  - Position, Navigation and Timing (PNT) resiliency and situational awareness
  - Integrated Battle Management, Command, Control and Communications (BMC3) data processing/management
- Periodic Regional Access:**
  - Multiple sensing types using mission partner contributions
- Demonstrations:**
  - On-orbit data fusion
  - Initial missile defense capability

### Tranche 1 Timeline

