

Proliferated Warfighter Space Architecture

Tranche 0



Tranche 0, the warfighter immersion tranche, demonstrates the feasibility of a proliferated architecture in cost, schedule, and scalability toward necessary performance for beyond line of sight targeting and advanced missile detection and tracking.

- 28 Tranche 0 space vehicles (SVs)– 20 Transport Layer SVs and 8 Tracking Layer SVs
- Commercially acquired SpaceX F9R (reusable) rocket launching from Vandenberg Space Force Base, Space Launch Complex (SLC) 4 East, over two launches, targeting March and late August 2023.
 - The SVs will be distributed in two orbital planes; Inclination: 80°; Altitude: 1000km
- A third launch, hosted by the Missile Defense Agency, will deliver the final Tranche 0 Tracking SVs built by L3Harris to orbit along with MDA’s Hypersonic and Ballistic Tracking Space Sensor (HBTSS) satellites. Together, the MDA and SDA satellites will be able to view the same test articles at the same time from the same orbit.
- The first group of Proliferated Warfighter Space Architecture (PWSA) satellites will launch four years after standing up the agency and just over two years after awarding contracts to build these satellites.
- Cost is approximately \$15 million per Transport SV.

SDA will deliver the minimum viable product for Tranche 0 by Summer 2023.

- Demonstrates the low latency data transport and missile warning/tracking capabilities of the PWSA and enables the warfighter to integrate PWSA capabilities into their planning for future exercises and operations (warfighter immersion).
- The warfighter immersion opportunities will take place before Tranche 1 begins to launch in late 2024.

Tranche 0 consists of a total of 28 optically-connected SVs:

- **Transport:** 20 SVs which form the mesh satellite communications network. These SVs are deployed in two configurations:
 - **Group A (SVA):** 13 mesh node SVs equipped with two **optical communications terminals (OCTs)** each & **radio frequency (RF)** receive/transmit capability.
 - **Group B (SVB):** 7 SVs, with SVA configuration, plus **tactical data link (TDL)** receive/transmit capability.
- **Tracking:** 8 SVs equipped with the **wide field of view (WFOV)** sensor payload and two OCTs each.

Performers

Contractors	Launch 1 – Q2 FY23	Launch 2 – Q4 FY23	Launch 3 – 2024*	Ground Testbed
YORK SPACE SYSTEMS	5 SVAs, 3 SVBs	1 SVB		1 SVA
LOCKHEED MARTIN	–	7 SVAs, 3 SVBs		
SPACE X	2 SVs	2 SVs		
L3HARRIS™	–		4 SVs	

*Launch plans listed below are notional. Manifests are confirmed approx. 30 days before launch.

*Launch 3 hosted by Missile Defense Agency

High Level Capabilities

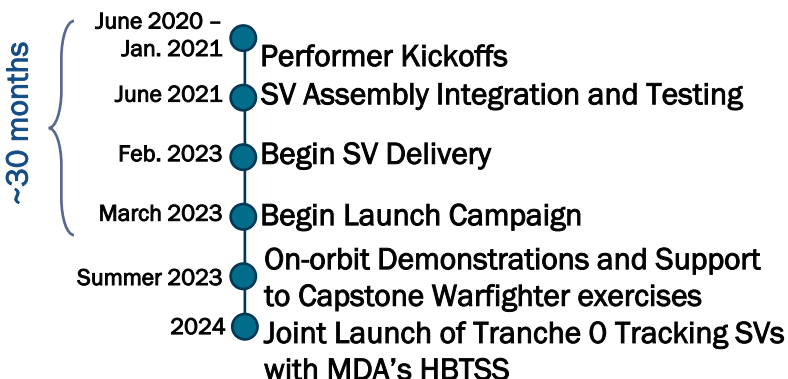
Periodic Regional Access

- Low latency data connectivity
- Data directly to tactical elements
- Hypersonic glide vehicle detection & tracking
- Alternate position, navigation & timing (PNT)
- Data disseminated to theater targeting cells

Demonstrations

- Beyond line of sight targeting
- Missile warning/missile tracking
- On-orbit fusion
- Multi-phenomenology ground-based sensor fusion

SDA’s Tranche 0 Timeline



Mission

Speed. Delivery. Agility.



Recognized as the Department of Defense’s constructive disruptor for space acquisition, the Space Development Agency (SDA) will quickly deliver needed space-based capabilities to the joint warfighter to support terrestrial missions through development, fielding, and operation of the Proliferated Warfighter Space Architecture. SDA capitalizes on a unique business model that values speed and lowers costs by harnessing commercial development to achieve a proliferated architecture and enhance resilience. SDA will deliver a minimum viable product - on time, every two years- by employing spiral development methods, adding capabilities to future generations as the threat evolves.