



# **SPACE DEVELOPMENT AGENCY – SOUTH UPDATE**

**MR. BURKE “WILD” HARE**

**SITE DIRECTOR, SDA-SOUTH**

**29 November 2023**

**SEMPER CITIUS**



## WHO WE ARE

- Constructive Disruptors – always question status quo, change agent when necessary
- Space Development, Acquisition & Operations Professionals laser-focused on program execution and delivery
- Direct Reporting Unit in the USSF with mission, authorities, and autonomy to deliver warfighting capabilities to our joint forces on the ground

## WHY WE DO IT

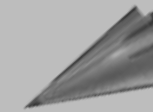
- Our customers asked for it.  
Minimum Viable Capability (MVC) for each tranche endorsed by our Warfighter Council (WFC)
- The threat demands it.  
National strategies call for action to deliver capabilities ahead of great power competition threats

## WHAT WE DO

**Proliferated Warfighter Space Architecture (PWSA)**, a resilient, military sensing and data transport capability via proliferated space architecture



Beyond-Line-Of-Sight (BLOS) targeting for time-sensitive ground and maritime targets



Hypersonic and advanced missile threat warning and tracking

## HOW WE DO IT

- Proliferation and Spiral Development
- Harness commercial space practices and technologies
- Trade performance  $\geq$  MVC, control costs to delivery on schedule
- Focus on execution, zero tolerance for distractions or unnecessary effort
- *“Semper Citius”*

# SEMPER CITIUS

In Latin, it means “always faster.” SDA recognizes that good enough capabilities in the hands of the joint warfighter sooner may be better than delivering the perfect solution too late. Because of this, it means we as an agency accept a higher level of risk, employ novel business models, and move to develop and field capabilities more quickly than you might see in “traditional” government agencies. We believe this builds resiliency into our people and our product—the Proliferated Warfighter Space Architecture.

When we say “semper citius,” we mean that we are moving at or ahead of the speed of the threat because we know the joint warfighter is counting on us.

SEMPER CITIUS

# SDA IN THE DEPARTMENT OF THE AIR FORCE



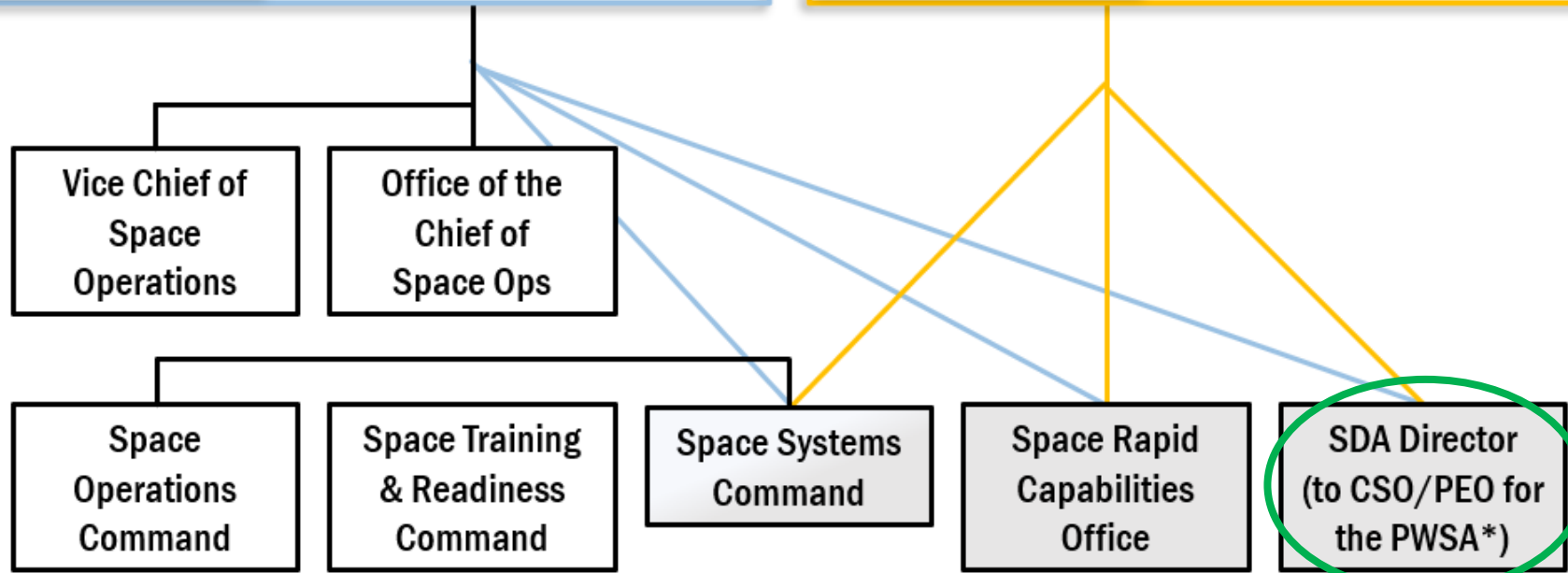
**GENERAL B.  
CHANCE SALTZMAN**

Chief of Space Operations,  
United States Space Force



**FRANK CALVELLI**

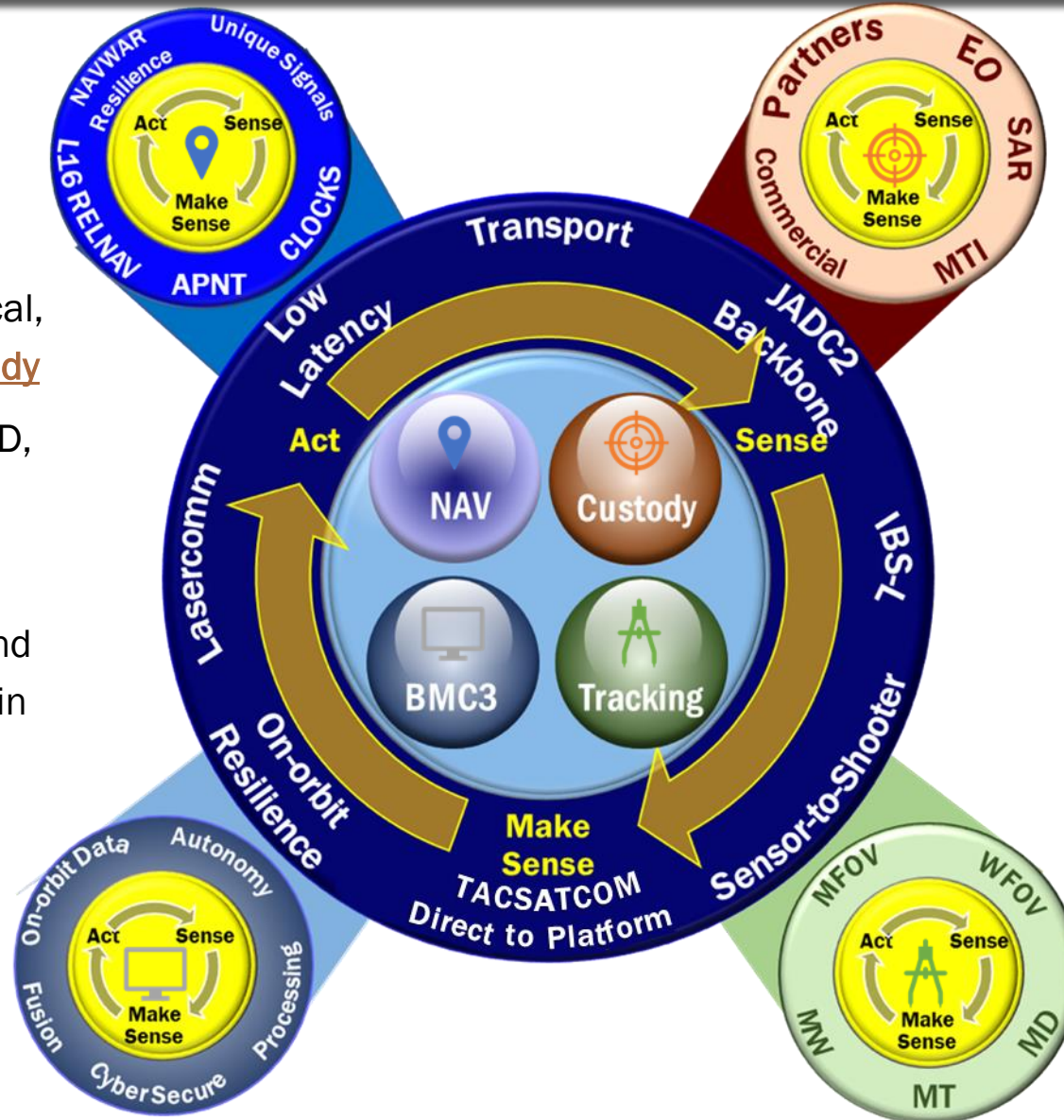
Assistant Secretary of the Air  
Force for Space Acquisition and  
Integration



\*Proliferated Warfighter Space Architecture

# THE PROLIFERATED WARFIGHTER SPACE ARCHITECTURE: A GLOBAL WEAPONS SYSTEM

- **Vision:** Space-based systems of systems providing surveillance and targeting as a service
- **Cornerstones**
  - Mission partner (National, tactical, commercial)-based target **Custody**
  - 24/7/365 **Tracking** (MW, MT, MD, fire control quality information)
  - On-orbit, cyber secure **BMC3**
  - Alternate Position, **Navigation** and Timing providing critical anchor in GPS-denied environments
- **Enabled** by a proliferated, resilient, low-latency, global, mesh **Transport** network
- **Advanced** by infusing ecosystem-wide **Emerging Capabilities**



# TRANCHE DESCRIPTIONS



0

**Tranche 0 (FY22) – *Warfighter immersion:*** Demonstrates the feasibility of a proliferated architecture in cost, schedule, and scalability towards necessary performance for beyond line of sight targeting and advanced missile detection and tracking.

1

**Tranche 1 (FY24) – *Initial warfighting capability:*** Regional persistence for Link 16, advanced missile detection, and beyond line of sight targeting plus demonstration of UHF and S-band tactical satellite communications.

2

**Tranche 2 (FY26) – *Enhanced warfighting capability:*** Global persistence for all in Tranche 1 plus demonstration of advanced tactical data link(s) and future proliferated missions.

3

**Tranche 3 (FY28) – *Sustained capability:*** Advanced improvements over Tranche 2 plus future warfighting applications. This includes better sensitivity for missile tracking, better targeting capabilities for BLOS, additional PNT capabilities, advances in lasercom, protected RF communications, and advancements in autonomous operations.

4

**Tranche 4 (FY30) – *Autonomous operations:*** continual advances across the architecture.

# T0 LAUNCH 1 & 2 SUCCESS SUMMARY

- On April 2, 2023, SDA successfully delivered the first 10 satellites of Tranche 0 on orbit.
  - Approx **30 months** from order to orbit for Transport satellites.
  - Even shorter timeline (approx. **27 months**) for Tracking satellites.
- September 2, 2023, SDA delivered an additional 13 Tranche 0 satellites on orbit for the PWSA.
  - Continue to drive schedule and cost down, resulting in a cost of approx **\$15 million** per Transport satellite.
- Highlights SDA's collaborative and creative approach, working with various government and industry partners to move quickly.
- Continue to demonstrate SDA can maintain schedule to deliver enhanced capabilities every two years.



Successful T0 Launch 1 April 2,  
around 7:29 am PT (Image Credit: SpaceX)



Successful T0 Launch 2 September 2,  
around 7:26 am PT (Image Credit: SpaceX)

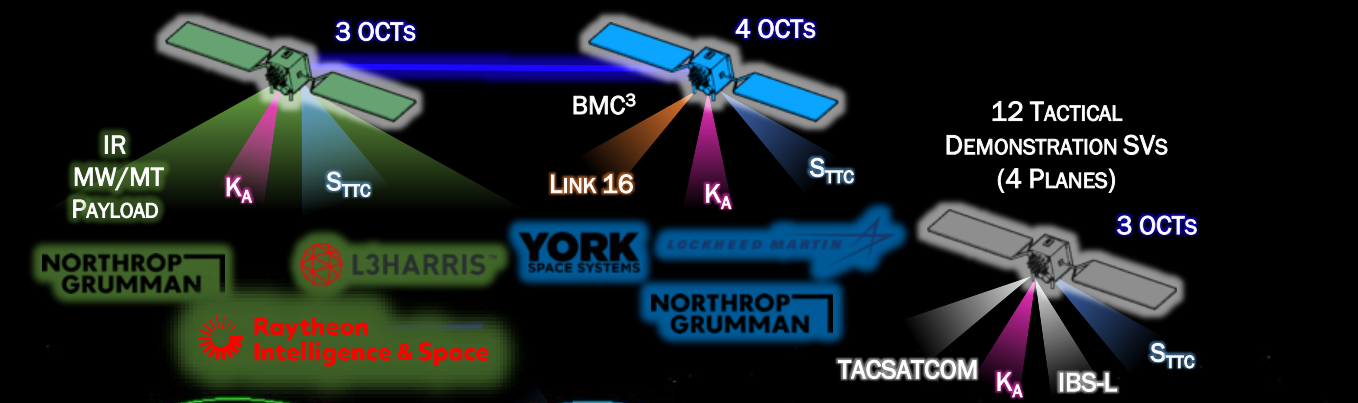
# TRANCHE 1 PROLIFERATED WARFIGHTER SPACE ARCHITECTURE (2025)



35 WFOV TRACKING SVs  
(5 PLANES, MWTD)

126 TRANSPORT SVs  
(6 PLANES, BLOS)

12 TACTICAL DEMONSTRATION SVs  
(4 PLANES)



NORTHROP GRUMMAN

L3HARRIS

YORK SPACE SYSTEMS

LOCKHEED MARTIN

NORTHROP GRUMMAN

Raytheon Intelligence & Space

YORK SPACE SYSTEMS

\*NOT PART OF TRANCHE 1 OPERATIONAL ARCHITECTURE

ALTITUDE (KM)	1000
INCLINATION (DEG)	81.3

BEYOND LINE OF SIGHT TACTICAL DATA LINK CONNECTIVITY

IR MISSILE WARNING AND TRACKING WITH GLOBAL ACCESS

DIRECT DOWNLINKS TO THEATER TARGETING CELLS

LOW-LATENCY HIGH-VOLUME DATA TRANSPORT WITH OPTICAL CROSS-LINKS

GENERAL DYNAMICS Mission Systems

iridium

ENTERPRISE, NETWORK, AND MISSION OPERATIONS FROM TWO OPERATIONS CENTERS

SAIC

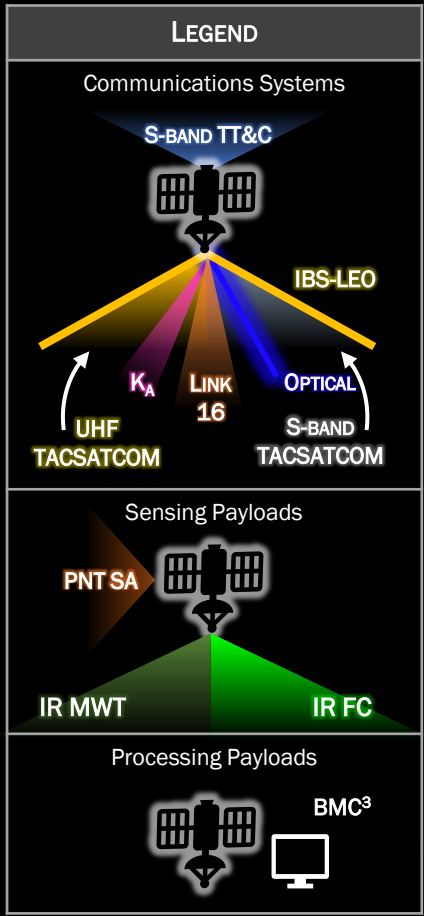
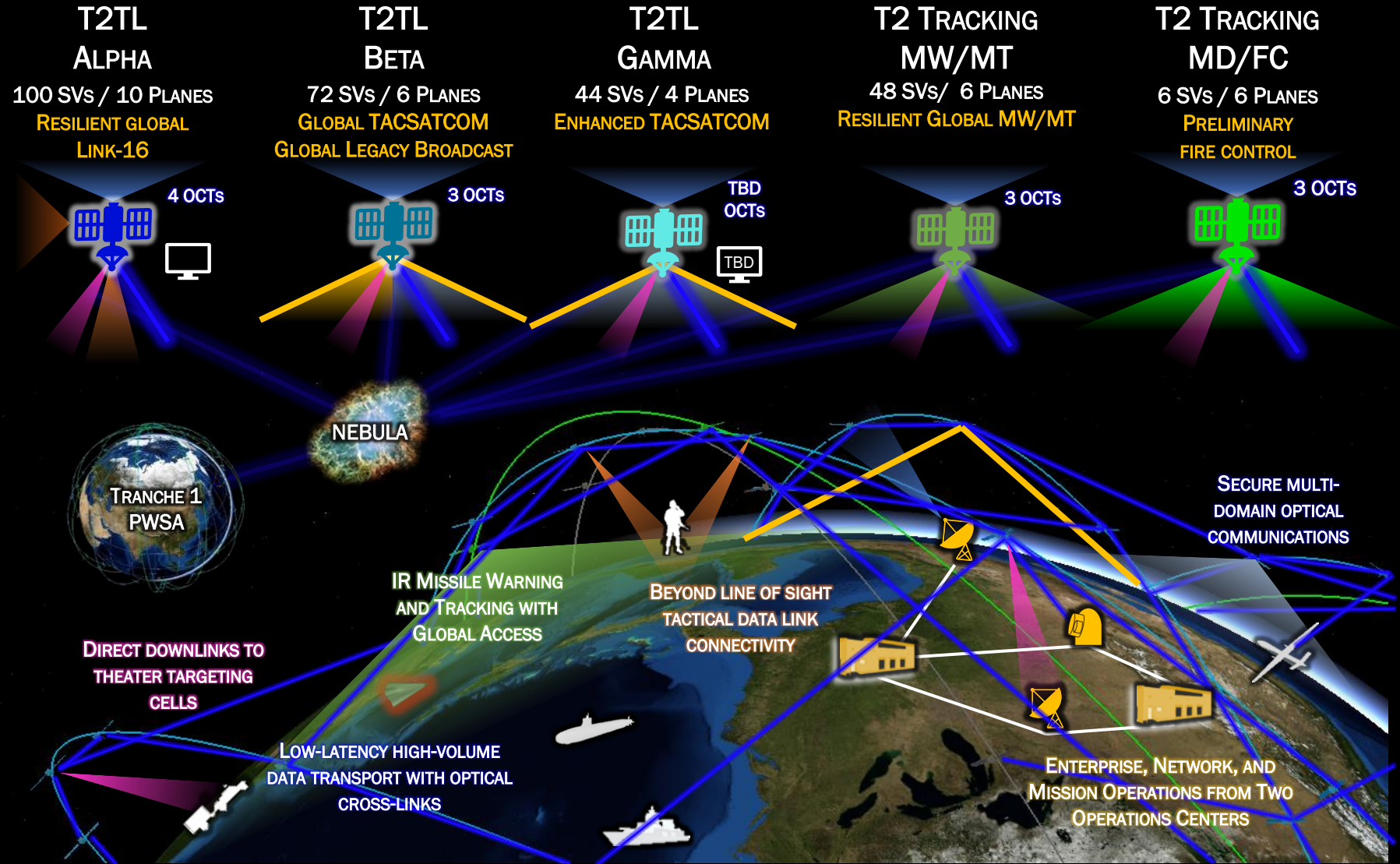
BMC3 MISSION ENHANCEMENTS

SECURE MULTI-DOMAIN OPTICAL COMMUNICATIONS

Version: 2023-03-14



# PROLIFERATED WARFIGHTER SPACE ARCHITECTURE TRANCHE 2 (2027)



# WHAT IS “SDA-SOUTH” ?



- SDA-South Missions: **PWSA Space Operations** and **SDA Mission Cells**
- Space Networking Operations Center-South (**SNOC-S**) status:
  - **On Schedule** to be ready for PWSA Tranche 1 Operations in FY24
  - Leveraged Existing Redstone Arsenal Facility
  - Redstone Arsenal Garrison Department of Public Works performing Refurbishment
  - Refurbishment Contract Awarded on Time FY22
- SDA-South personnel footprint to grow with deployment of PWSA Tranches.
  - **SDA-South Site Director**
  - **Security Cell**
  - **Test and Evaluation Cell**
  - **Space Vehicle Engineering**
  - **Emerging Capabilities Cell**
  - **Warfighter Integration Cell**
  - **Enterprise Operations Cell**
  - **Space Operations**
  - **BMC3 Cell**
  - **Transport Cell**



**SNOC-S is the U.S. Space Force’s only Satellite Command and Control Center in the Southeast United States and only operational space mission in the State of Alabama**

- SDA is a **constructive disruptor** - and demonstrate and field needed capabilities faster and cheaper
- SDA's two main pillars are **proliferation and spiral development**;
- SDA is focused on developing a **low-latency meshed communication network and sensing satellites** enabling:
  - Beyond-Line-Of-Sight (BLOS) targeting for existing weapon systems utilized across the military Services
  - Advanced missile tracking employing proliferated Low-Earth Orbit to conduct Overhead Persistent Infrared sensing
- SDA moves quickly to deliver **new capabilities to warfighter every 2 years**
  - Leveraging OTAs for acquisitions
  - Firm-Fixed-Price contract awards
  - Important for industry to bid realistically and deliver to capability based on established schedule
  - Carry forward lessons learned with planning, development and deployment of PWSA Tranches
- SDA is **creating a marketplace** to strengthen the space industrial base through scheduled solicitations, agnostic of incumbents
- SDA is **leading standards** that are being adopted by industry
  - Industry driving toward interoperability, compatibility.
- Delivery status
  - Tranche 0 launches to complete by end of 2023
  - Tranche 1 in Assembly, Integration and Testing; on schedule
  - Tranche 2 Acquisition progressing