

# Space & Missile Systems Center



## SMC Enterprise Acquisition

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# Strategy to Pivot the Space Enterprise

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***Deliver an integrated open space architecture, able to rapidly on-board Allied, commercial & mission partner capabilities and advanced technologies at the speed required to outpace the threat, that enables multi-domain coalition architectures.***

- The future resilient space architecture must:
  - Enable decision & weaponizing speed across multi-domain operations to achieve & maintain decision superiority and initiative for the joint commander
  - Enhance resilience of capabilities w/multi-layer architectures, partnerships & protection strategies
  - Field scalable architectures able to rapidly integrate commercial, Allied and mission partner capabilities and advanced technologies
  - Enhance rate of production via development, partnership & business practices improvements
  - Create more opportunities for operator innovation, experimentation & feedback

AFSPC and SMC implementing architecting, acquisition and partnership actions to evolve the architecture, enhance production & capability integration to deliver the resilient space enterprise.



# Space Enterprise Architecture & Acquisition Needs

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## Missile Warning

## Precision Navigation & Timing

## Intelligence Surveillance & Reconnaissance

## Space Domain Awareness

## Space Control

## Space-Based Environmental Monitoring

## Satellite Communication

### Space Enterprise Capability Needs

**Enhanced Resiliency:** Assured warfighter ops across spectrum of conflict -- HVA Resilience/Protection; Layered diverse / disaggregated architecture; resilient, secure comms and ground

**Architecture Agility:** Create agile open architecture capability of rapidly onboarding new tech, new capabilities and partner capabilities to include commercial/allied capabilities

**Seamless Multi-domain Integration:** Create dynamic space C3I architecture capable of resilient path diverse communications between C2, space, and terrestrial warfighters / weapon systems – vital to MDC2 and Theater Tactical Space Support

### Space Enterprise Acquisition Needs

**System of System Engineering:** Ensuring seamless Protection / HVA architecture interoperability. Creating enterprise products and standards/interfaces to enable mission partner integration

**Rapid Acq / Fielding:** Create rapid prototyping capability to include 14 AF DevOps Cells (CDD), Early Ops Experimentation Cells (RSC & Catalyst Campus), Rapid Contracting (SpEC OT), and Enterprise Acq Strategies (e.g. Combat Bus)

**Ensure Multi-domain Acq Development:** Create end-to-end demos with space/user equipment (NTS-3), theater experimentation cells, and supporting AFWIC & ABMS use cases



# Enterprise Architecture Dimensions

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## The “Verticals”

CAT: Capability Area Team

### Enduring Mission Capabilities

*(What Missions We Deliver)*

- Create dynamic requirements framework capable of rapidly allocating mission/requirements to a family of systems

## The “Field”

### Enterprise Environment

*(Why it exists and Where it lives)*

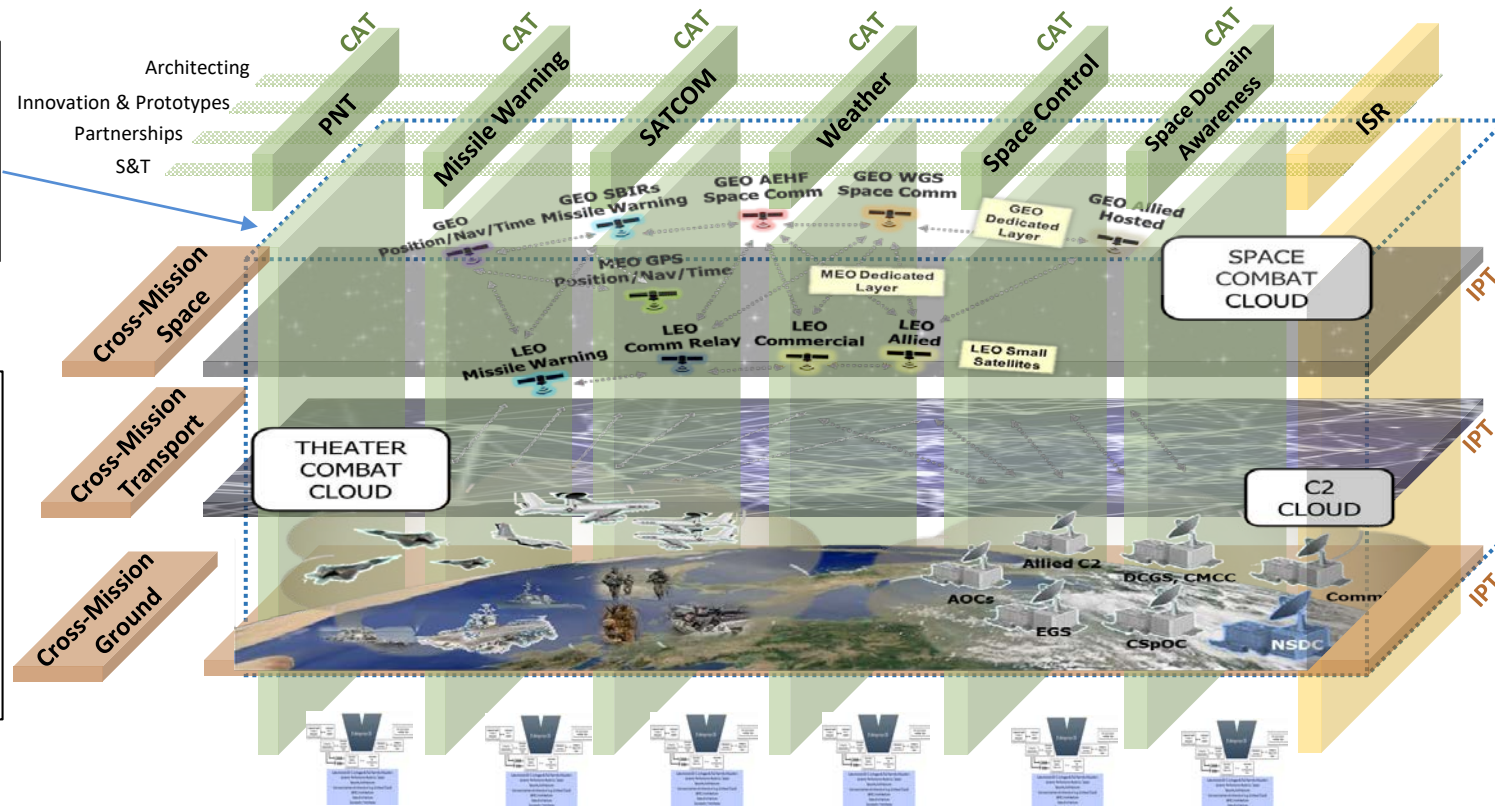
- Strategic architectural LOE

## The “Horizontals”

### Common Functions

*(Ensuring Enterprise Delivery)*

- Derived capabilities to meet enterprise objectives
- System of Systems Engineering



We are creating the Enterprise Processes and Products to Simultaneously Evolve the “Verticals” and “Horizontals”





# 2030 Space Enterprise Architecture

## (AFSPC Key Lines of Effort)

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**Cross-Mission Space:** Layered, interoperable space segment leveraging Allied and Commercial capabilities. Acquisition leveraging innovation and production efficiencies, modular open source interfaces & competition to enable speed, adaptability & resilience to outpace threat.

**Cross-Mission Transport:** Networked, interoperable, diverse transport layer to enable data dissemination to and from weapons systems, C2 nodes, and data lakes. Protected systems enabling data sharing and tasking of US, Allied, and Commercial assets for resilient space & joint operations.



**Cross-Mission Ground:** Responsible, agile, and resilient ground capabilities that enable C2 and data capture between space and all mission partners. Common service & application layers enabling resilient C2 across the space enterprise with linkages to multi-domain.



# Space Enterprise Focus Areas

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## Cross-Mission Space

- Enhance production for space-layer (Continuous Product Agility)
  - Partnership & Capture cells,
  - High-rate payloads (PNT, EM, SSA)
    - MBSE/Digital Twins

## Cross-mission Transport

- Create open networked architecture
- Enable agile C3I operations (network management and path diverse comm)
- Enable machine-to-machine for cross-cueing & hand-off

## Cross-mission Ground

- Enhance cross-mission DevSecOps ecosystem
  - Enhance common development
  - Enable C2 of hybrid architectures
- Create ops beachheads for rapid on-boarding

## Space/Cyber

- Life-cycle cyber protection
- Cross-mission cyber security (ground, systems, network & data)



## Space Maneuver/Logistics

- Alternative orbits/cis-lunar
  - Agile Launch
- Dynamic Logistics--enhanced maneuver & On-orbits servicing

## Cross-mission Data

- Create cross-mission data ecosystem
  - Enable cross-mission data analytics
- Enhance access to traditional/non-traditional analytic teams
  - Tools/Apps for C2/weapons/sensors

## Multi-domain Ops Integration

- Direct inject to theater C2/weapons
- Theater experimentation (ACC/PACAF/USAFE)
- Ensure seamless cross-mission multi-domain integration (C2, comm, network, data)

## "Virtual" Warfare Center

- Create ecosystem to plan, test, train, exercise & wargame
- Shared access by developers & operators (prototypes & TTPs)
- Linked to adv development architectures (sims, MBSE, digital twins)
  - Supports Red vs. Blue exercises

Aligned with AFSPC/CC's challenges that must be solved to field resilient space capabilities to joint operators