# ECX CROSS-MISSION GROUND & COMMUNICATIONS ENTERPRISE

## GSAW 2021

UNITED STATES
SPACE FORCE

# *GSAW 2021*

## Enterprise Ground Services


### Fight as an Enterprise MVP & Service Delivery Roadmap

**March 2021**

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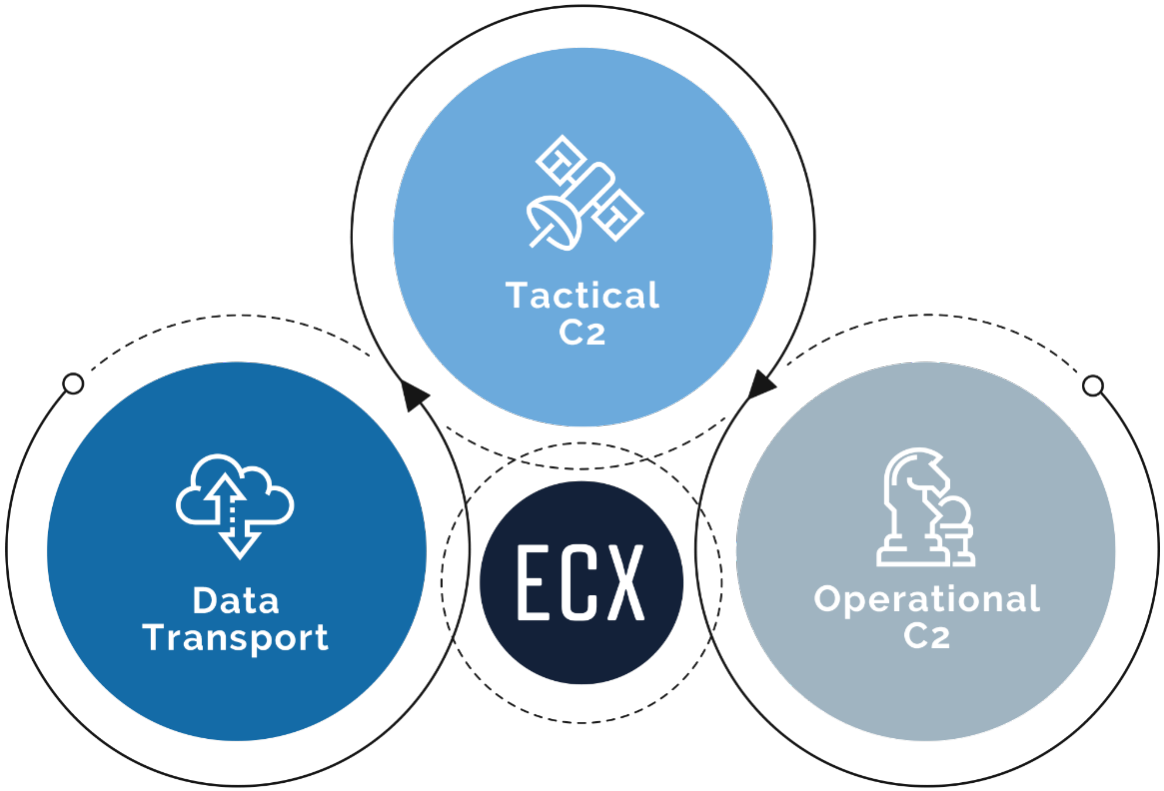
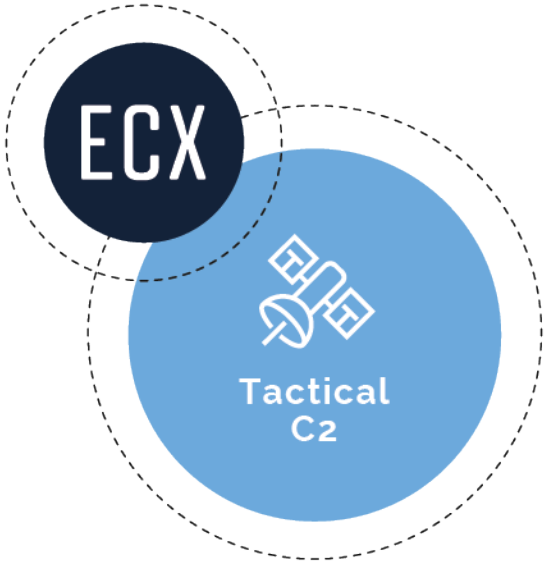
***The Aerospace Corporation***

# Cross Mission Ground (ECX)

## *Org Structure*




***ECX brings together synergistic ground programs from across SMC to collaborate, integrate and deliver.***



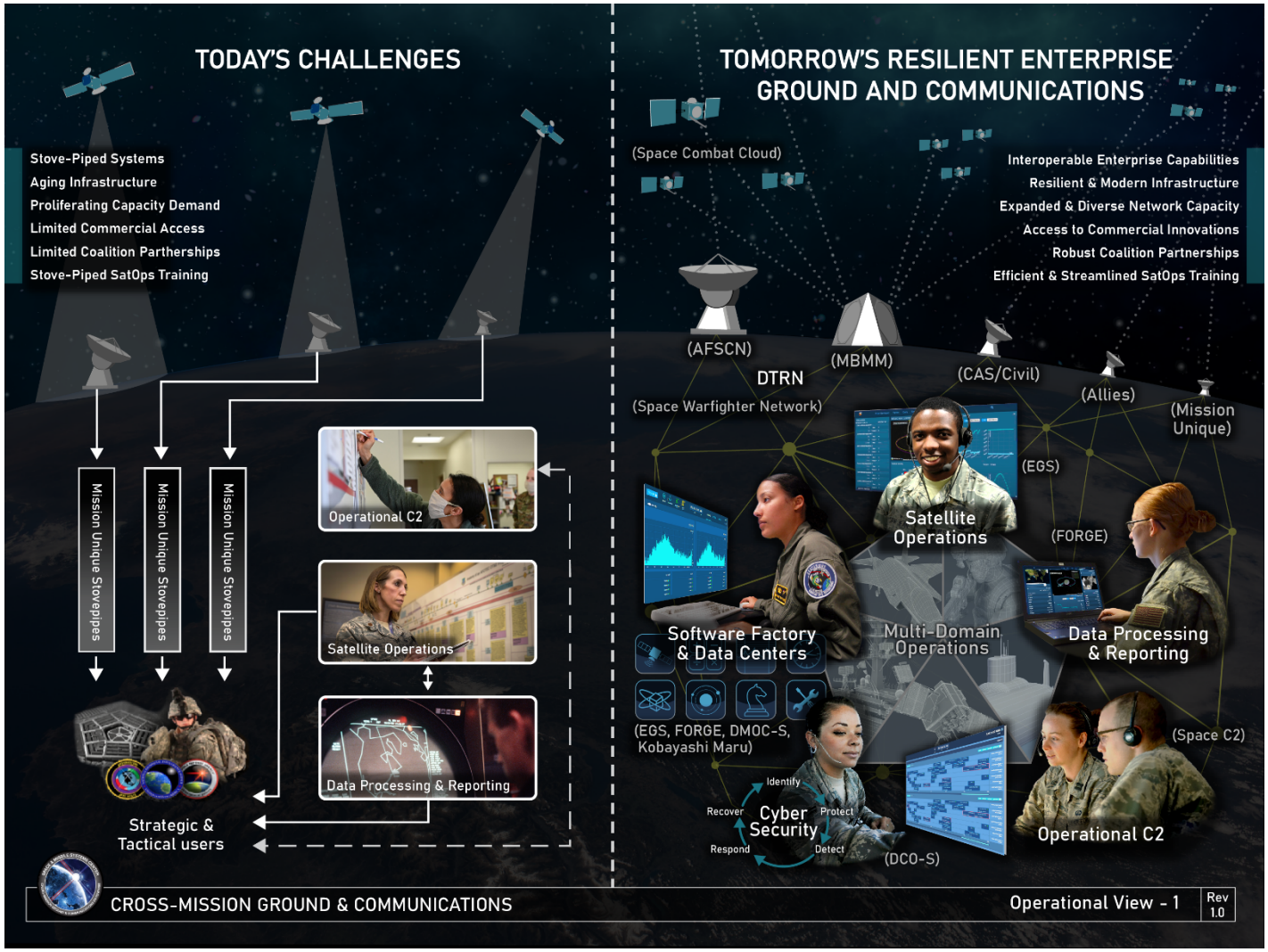

# Enterprise Ground Services
# EGS

***The Tactical C2 Division drives enterprise integration and modernization of tactical level C2 capabilities to transform Satellite Operations.***

**Enterprise Ground Services (EGS)** provides a suite of tactical satellite command and control (C2) services to the space enterprise using open standards and common platform that efficiently integrates capabilities across missions and enables a resilient enterprise ground architecture with cyber resiliency baked-in from the beginning.

# Cross Mission Ground (ECX) Operational View

*Notional*



# EGS Long Term Solution Roadmap

*22 Oct 20*

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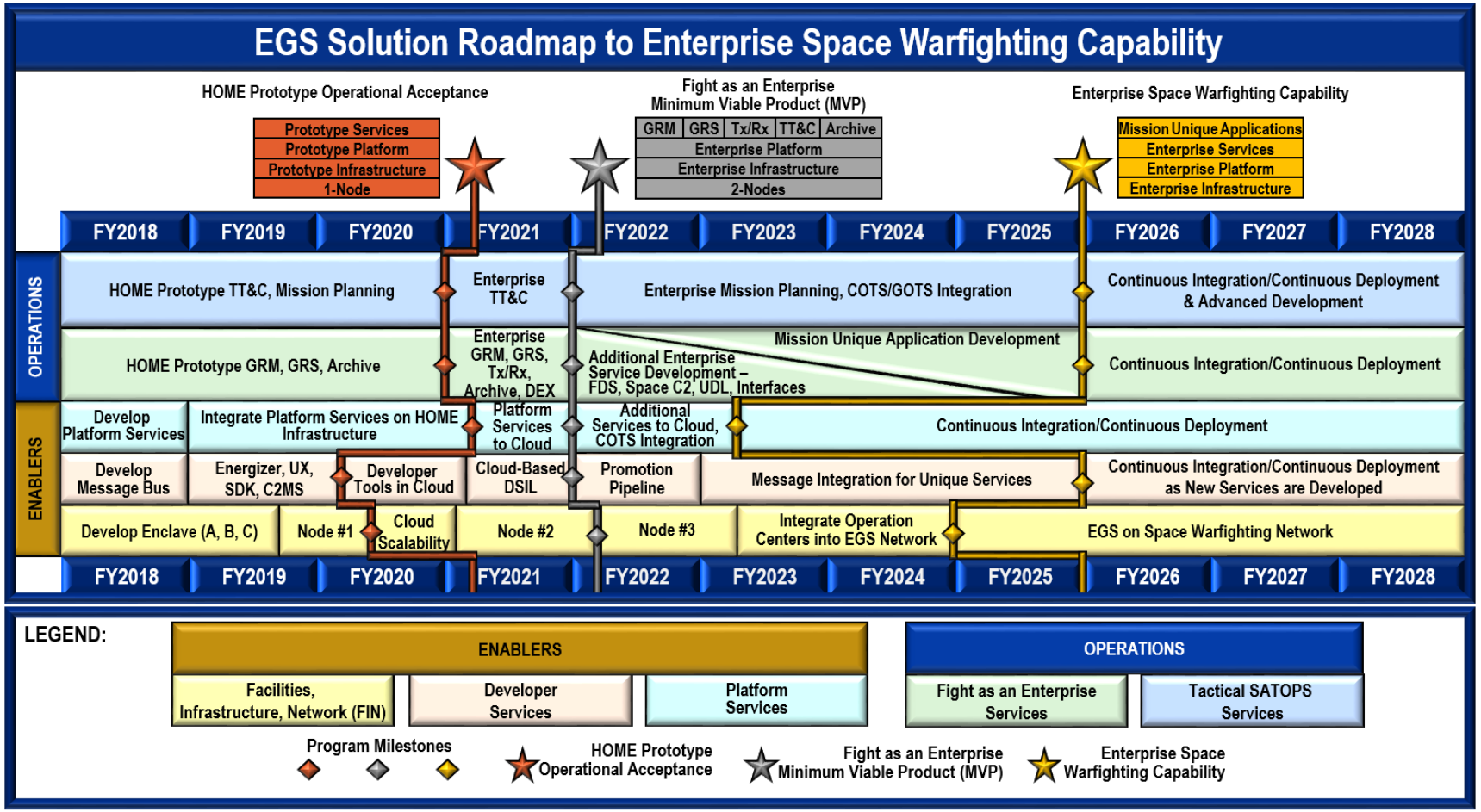
22 Oct 20

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# Fight as an Enterprise MVP

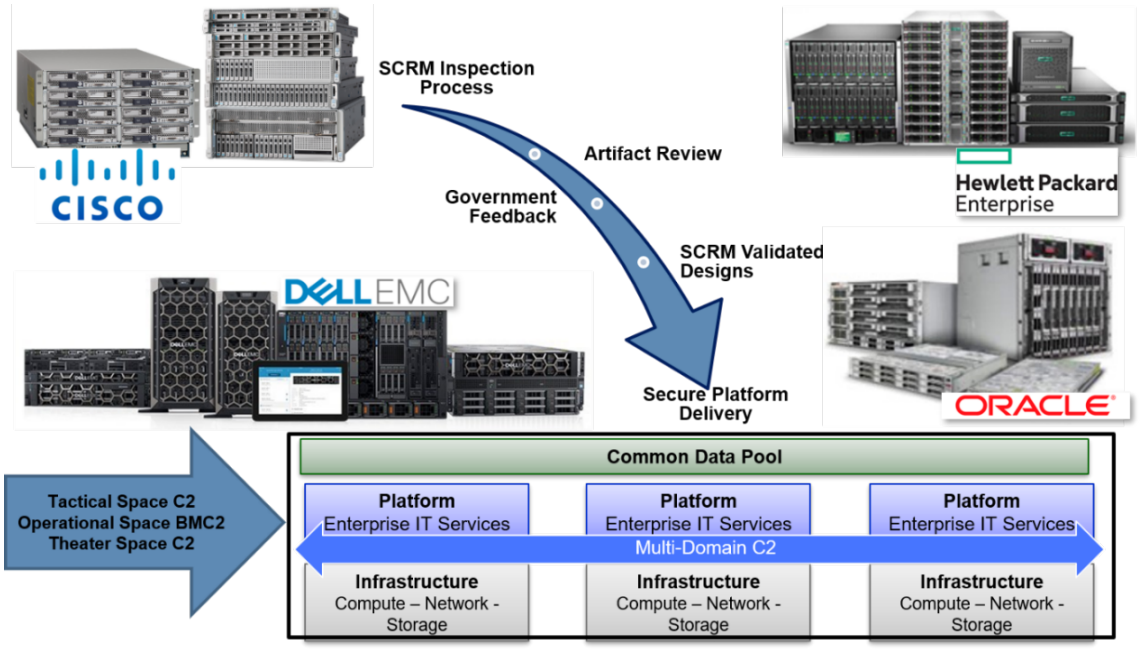
*Stove Piped Systems → Interoperable Enterprise Capabilities*

- **Government Owned Technical Baseline** – Open ecosystem that allows internal and external partners to develop connected systems of services.
- **Enterprise Service Catalog**
  - **Enterprise Message Bus** – Industry can take advantage of the Enterprise Bus Interface Group (EBIG) to understand and apply messaging specifications.
  - **ESDK** – The purpose of the SDK is to provide a reusable message container for all enterprise messages. This set of standardized messages will provide service developers with a messaging framework for application development. Through the creation of the ESDK, the government will promote competition, configuration flexibility, faster upgrade paths, and better innovation. The government considers these characteristics critical to the next generation of ground systems.
  - **Platform Services** – Common services for security, identity and connectivity, logging, encryption and core information technology needs.

# Fight as an Enterprise MVP

*Aging Infrastructure → Resilient and Modern Infrastructure*

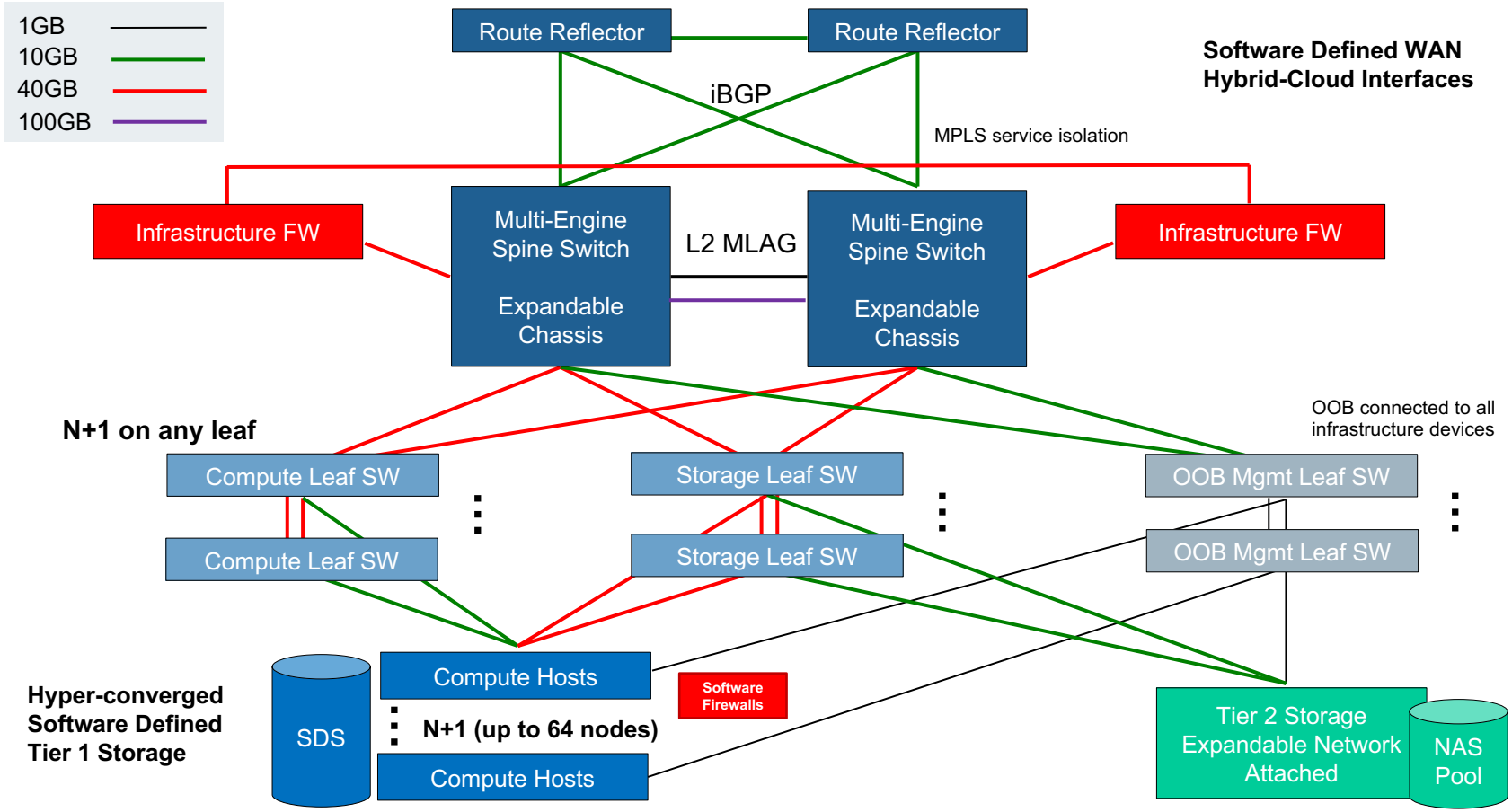
- Multi-Vendor solution
- Best in class components
- Open standards based
- Modular and interchangeable components
- Secure Supply Chain




The Fight as an Enterprise MVP infrastructure represents a modern and resilient scalable multi data-center distributed architecture with horizontally scalable compute, network and storage.

# Fight as an Enterprise MVP

*Proliferating Capacity Demand → Expanded and Diverse Network Capacity*




The Fight as an Enterprise MVP infrastructure uses a multi-vendor open standards approach to network architecture promoting best in breed functionality and modularity all validated in the ATL.

# Fight as an Enterprise MVP

*Limited Commercial Access → Access to Commercial Innovations*

Walkable ECX/ECXG focused campus in downtown COS where Dev Partners, Mission Partners, SE&I, FFRDC, and Industry teams seamlessly collaborate in an MLS environment.

- EGS Testbeds (Reference Implementations)
- EGS Collaboration Areas (Physical and Virtual)
- EGS SME Office Hours and Lunches of Wisdom

1. Building 555
   - Suite 102 – Collaboration Area
   - Colorado Room – Conference/Classrooms
2. Building 545
   - Suite 300 – EGS/ECX Innovation Hub
3. Toshiba Building
   - Server Room
   - (2) Seats
4. Building 557
   - Classified Facilities
5. Braxton Technologies
6. Exigo and Centauri
7. FTI

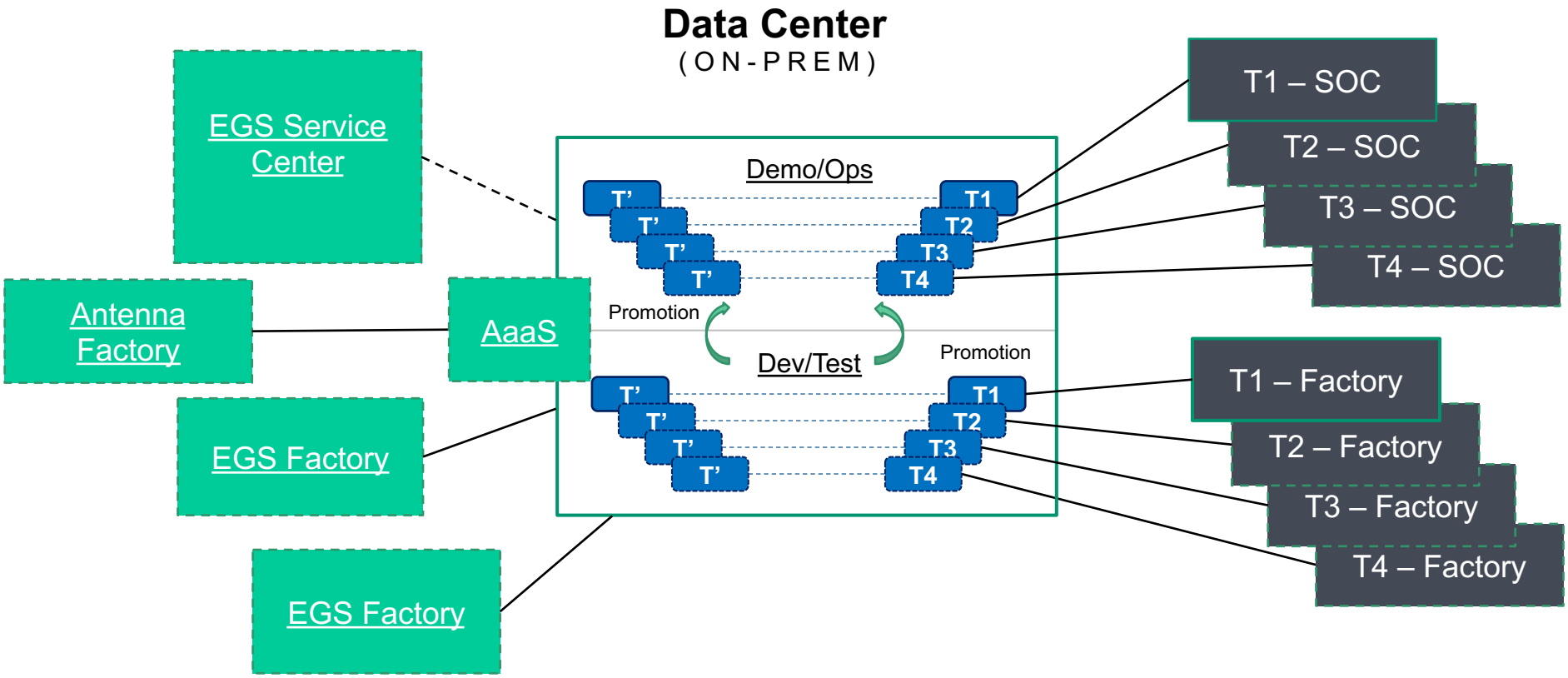
# Fight as an Enterprise MVP

*Campus Environment*

- **Culture**
  - Unclassified low entry barrier collaborative starting point
  - Badgeless Meritocricy – Best Idea Wins!
- **Physical and Virtual Tools and Environments**
  - Automated (Energizer) Distributed On Prem and Cloud Based Multi Tenant Integration Testbeds (Reference Implementations)
  - Open Reconfigurable Reserveable Hot Desks, Huddle and Conference Rooms (COVID Flexibility)
  - Secure Virtual Collaboration Tools (Chat, Video Conference, Knowledge Base, Repositories…)
  - Physical Whiteboards still hard to replace!

# Fight as an Enterprise MVP

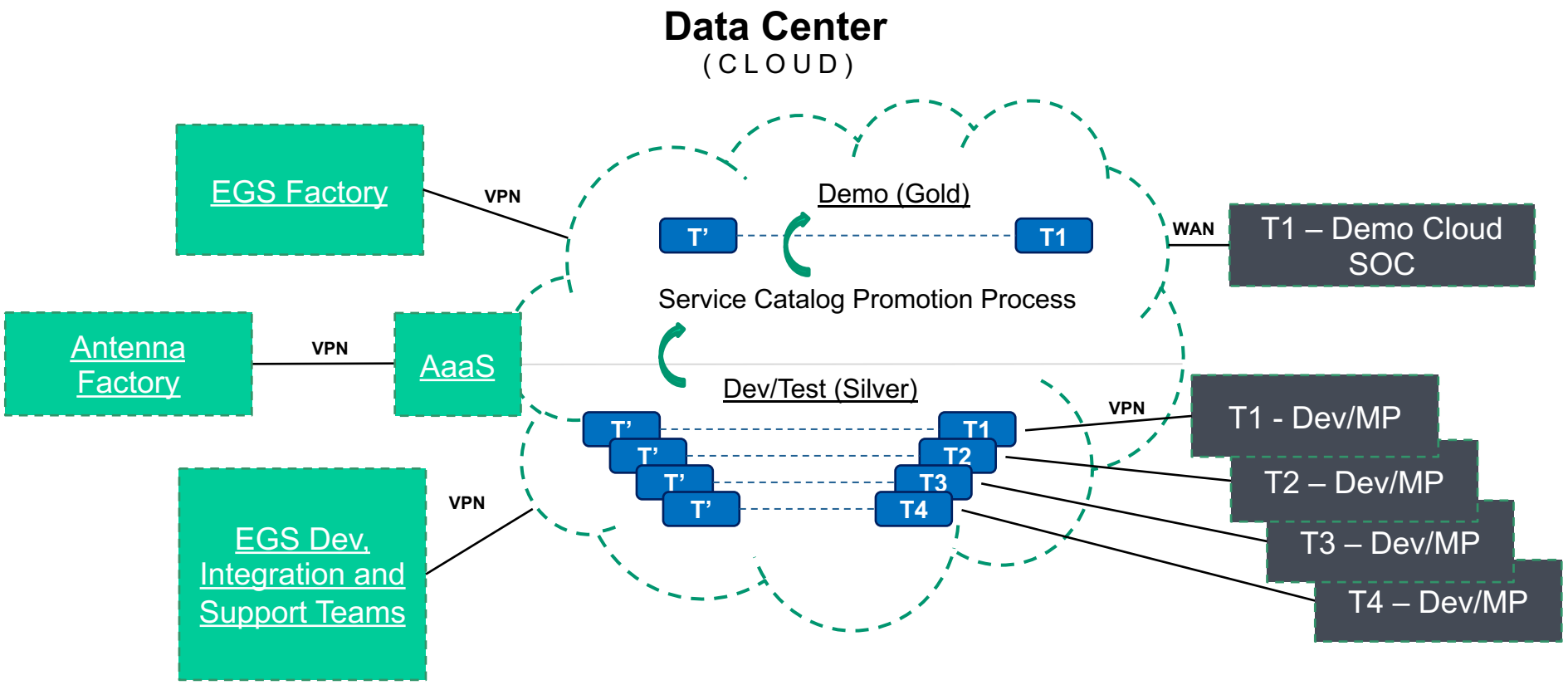
*Campus On-Prem Data Center Node Overview (Notional)*




EGS Factory/EGS Service Center connections allow EGS personnel access and connectivity to manage and maintain the multi-tenant prime environments at a Multiple classification Data Center.

# Fight as an Enterprise MVP

*Campus Cloud Data Center Node Overview (Notional)*




EGS Factory/EGS Service Center connections allow EGS personnel access and connectivity to manage and maintain the multi-tenant prime environments in the cloud.

# Fight as an Enterprise MVP

*Accelerators*

- **Government Owned Technical Baselines – Open Ecosystem**
- **SIL [Service Integration Lab] as a Service (SILaaS)**
  - Hybrid Multi-Cloud Multi-Tenant Based Architecture (Demostrable)
  - Automated Tenant Workload Mobility
  - Tenant Transparent Environment Deltas
  - Simulated and Live Contact Capable
  - Automated Multi-Classification Deployment, Promotion and Software Assurance Pipelines (In Progress)

*The Fight as an Enterprise MVP innovative SILaaS provides a distributed remotely accessible collaborative cloud and on-prem development, test and integration environment for ourselves and our partners.*

# Fight as an Enterprise MVP

*SIL Areas of Interest*

- **Automation**
  - *Infrastructure as Code Innovations*
  - *“Cloudless” workload mobility Innovations*
- **Cross Domain Solution Innovations**
- **Message Bus Innovations**
- **Multi-Level Security Innovations**
- **Zero Trust innovations**

# *Fight as an Enterprise MVP*

*Collaboration Opportunities and Feedback*

**SIL Partnerships**
Mr. Brian DeLong, NH-04
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**Enterprise Bus Interface Group (EBIG) &**
**Enterprise Software Development Kit (ESDK)**
Captain Shane Gardner
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**EGS Service Catalog**
Mr. Mike Owings
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ECX

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