



Ground Systems: Enabling Space Transformation

**Brig Gen Larry James
SMC Vice Commander**

Integrity - Service - Excellence

SMC Mission



Space
Support



Force
Application



Space
Control



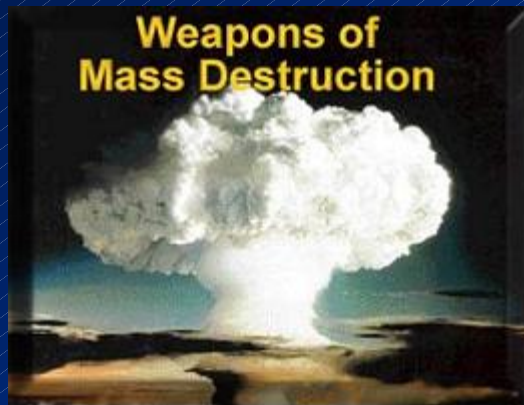
Space Force
Enhancement

Deliver unrivaled space and missile systems to the joint warfighter and our nation



**Providing Support to the Warfighter through
Air and Space Integration**

Environment of Uncertainty



National Security Space: Part of an Integrated Battlefield



Transforming Space

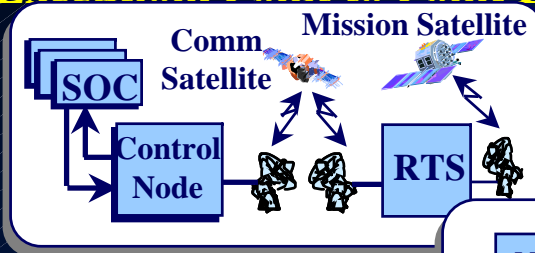
- **Joint**
- **Operationally Responsive**
- **High Operations Tempo**
- **Increased Speed - Command & Control**
- **Precise / Tailored Effects**
- **Flexible**
- **Greater Lethality / Increased Survivability**
- **Networked Sea, Land, Air & Space Capabilities**
- **Information Superiority-Enabled Concepts of Operation**
- **Global**
- **Greater Degree of Self-synchronization**



SPACE & MISSILE

AFSCN Architecture Evolution

Centralized Control, Centralized Execution. Point to Point Links



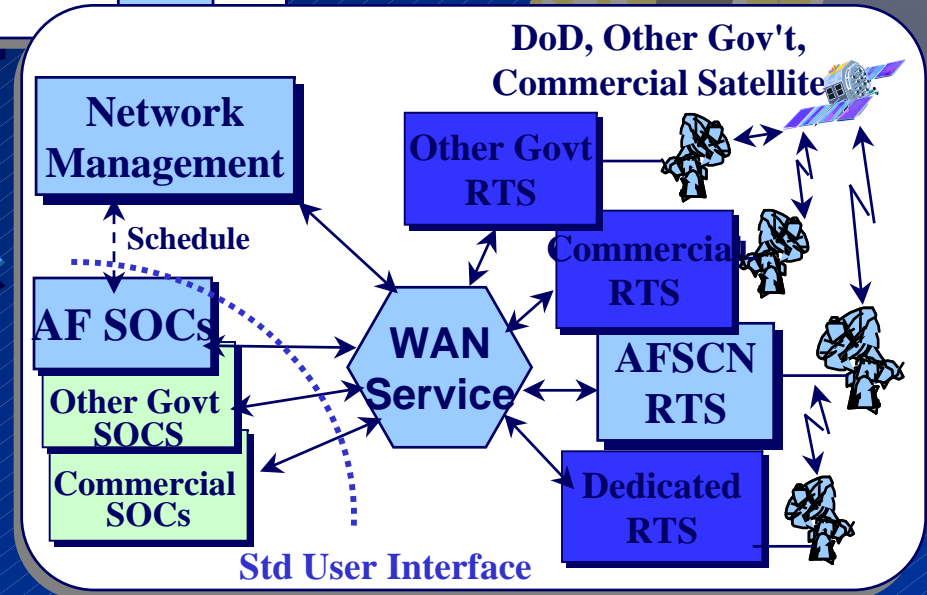
Past

Centralized Control, Decentralized Execution, DISN Network



Present

Centralized Scheduling, Decentralized Execution, Multi-User WAN Service



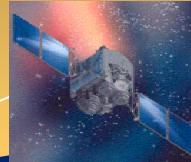
Future

- **Interoperability**
- **CCSDS/SLE**
- **Standards**

Command & Control System- Consolidated (CCS-C)



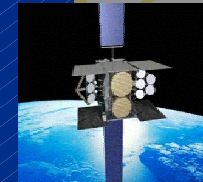
✓ Core TT&C
Jun 03



✓ DSCS
Nov 04



Milstar
Sep 05



WGS
Feb 06



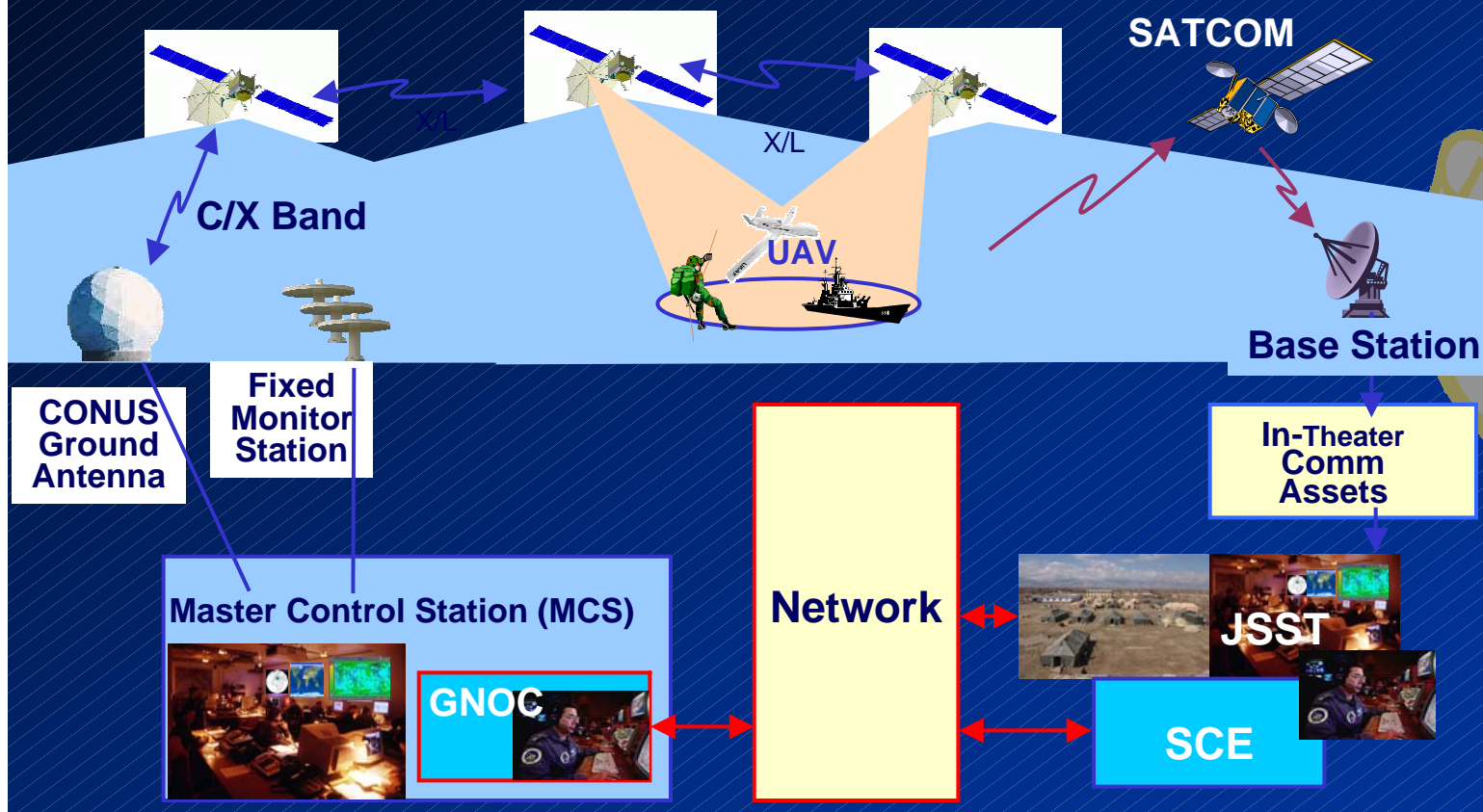
AEHF
May 07

- Integrated MILSATCOM C2
- Successful Acquisition



GPS

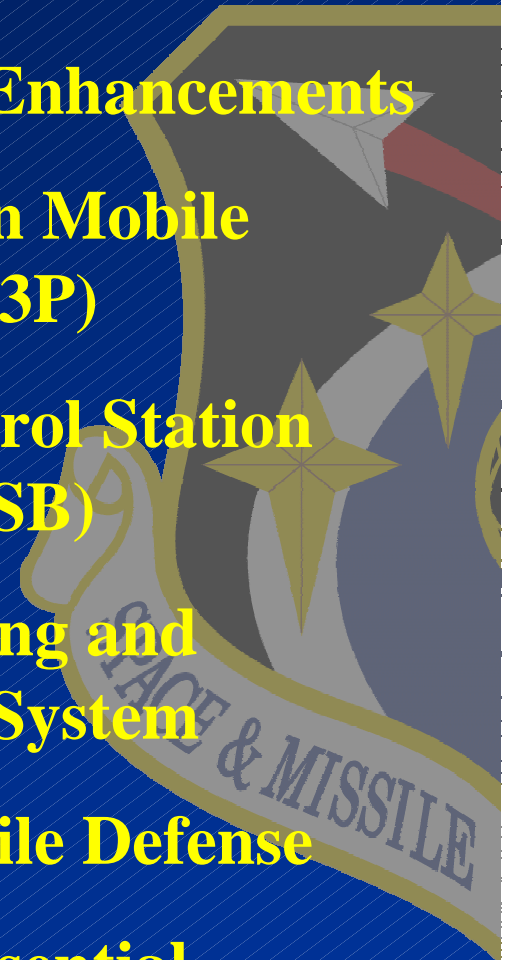
- 40 Years and Decades to Come
- OCS Evolution to OCX Architecture



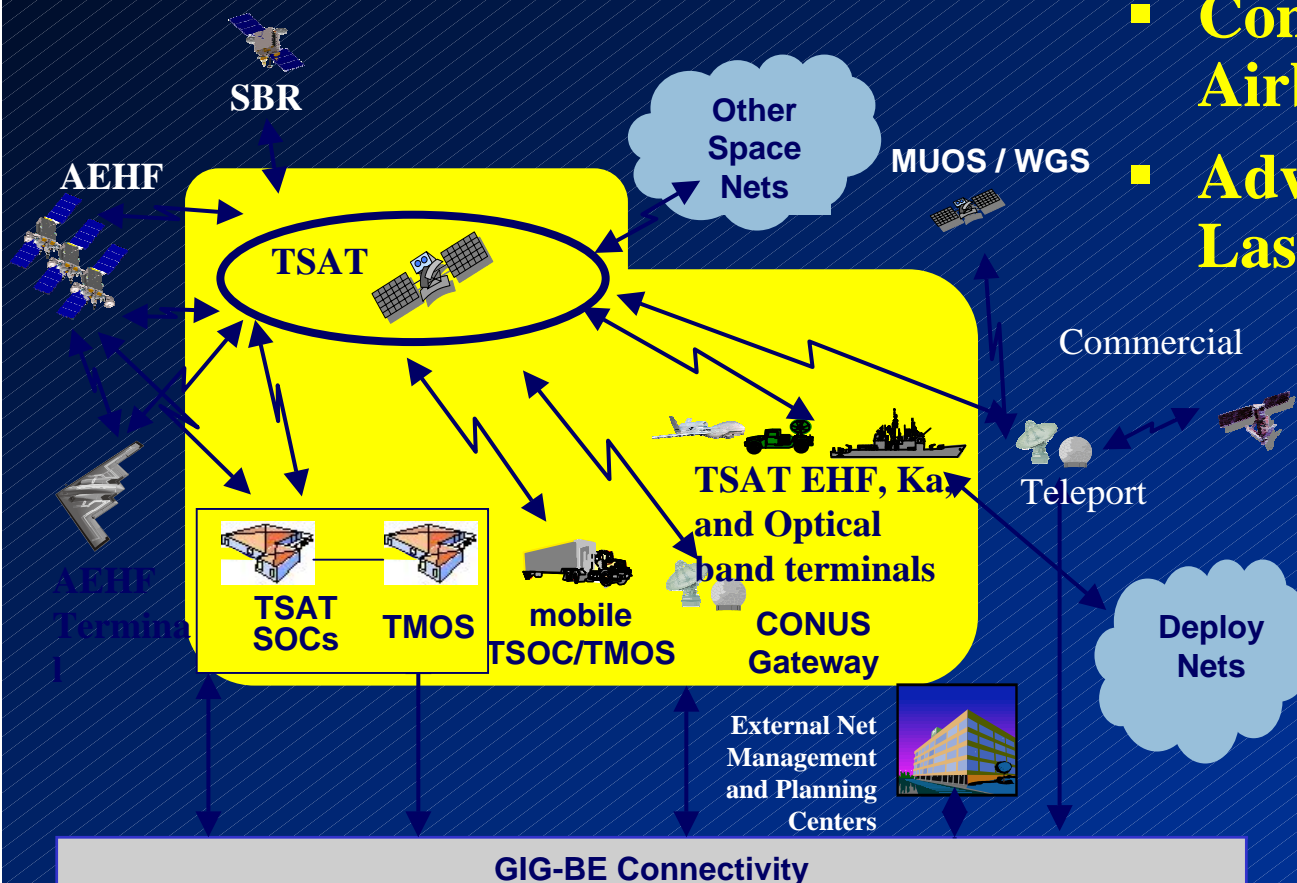
SBIRS



- **Operational Enhancements**
- **Multi-Mission Mobile Processor (M3P)**
- **Mission Control Station Backup (MCSB)**
- **Space Tracking and Surveillance System**
- **Ground Missile Defense**
- **Flexibility Essential**



TSAT



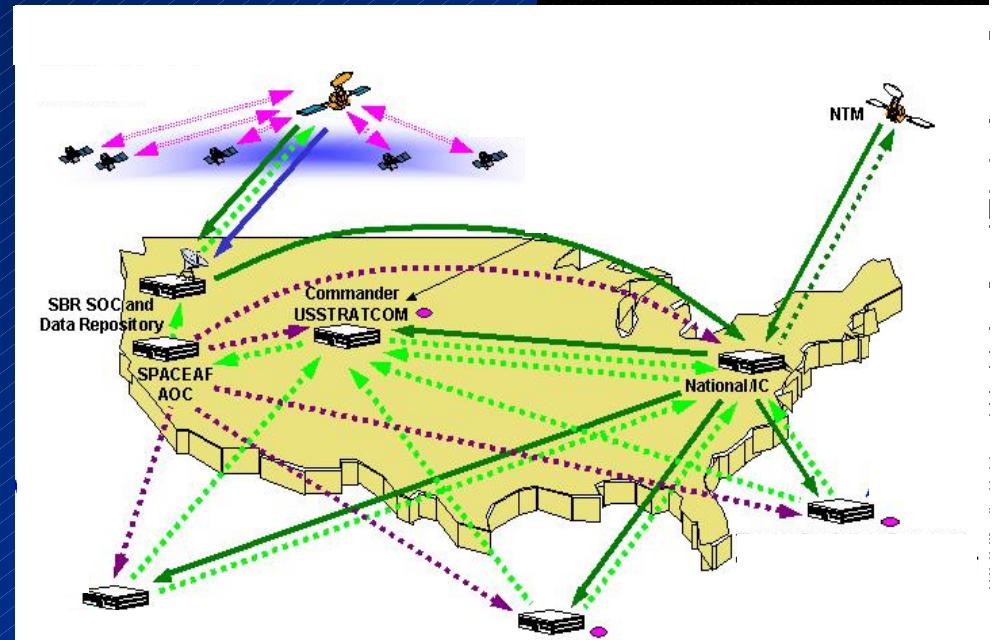
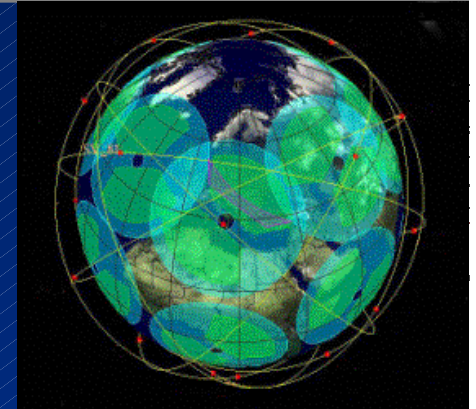
- Internet Protocol Spaced Based Communications, Extends GIG
- Connects to Space & Airborne ISR Platforms
- Advanced Technologies: Laser, RF and Network
 - Interoperability Standards
 - Security
 - Policy Based Network Management

Space Radar

“When all of our military can continuously locate and track moving targets -- with surveillance from air and space -- warfare will be truly revolutionized.”

*President George W. Bush,
December 11, 2001*

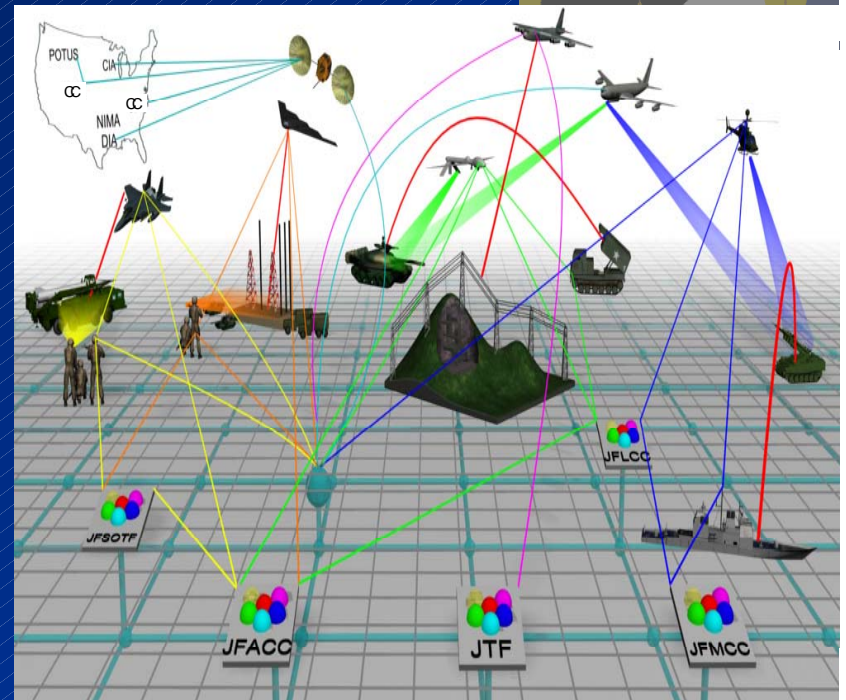
- **Software Intensive**
- **Interoperability**
- **Bandwidth**



Joint Warfighting Space

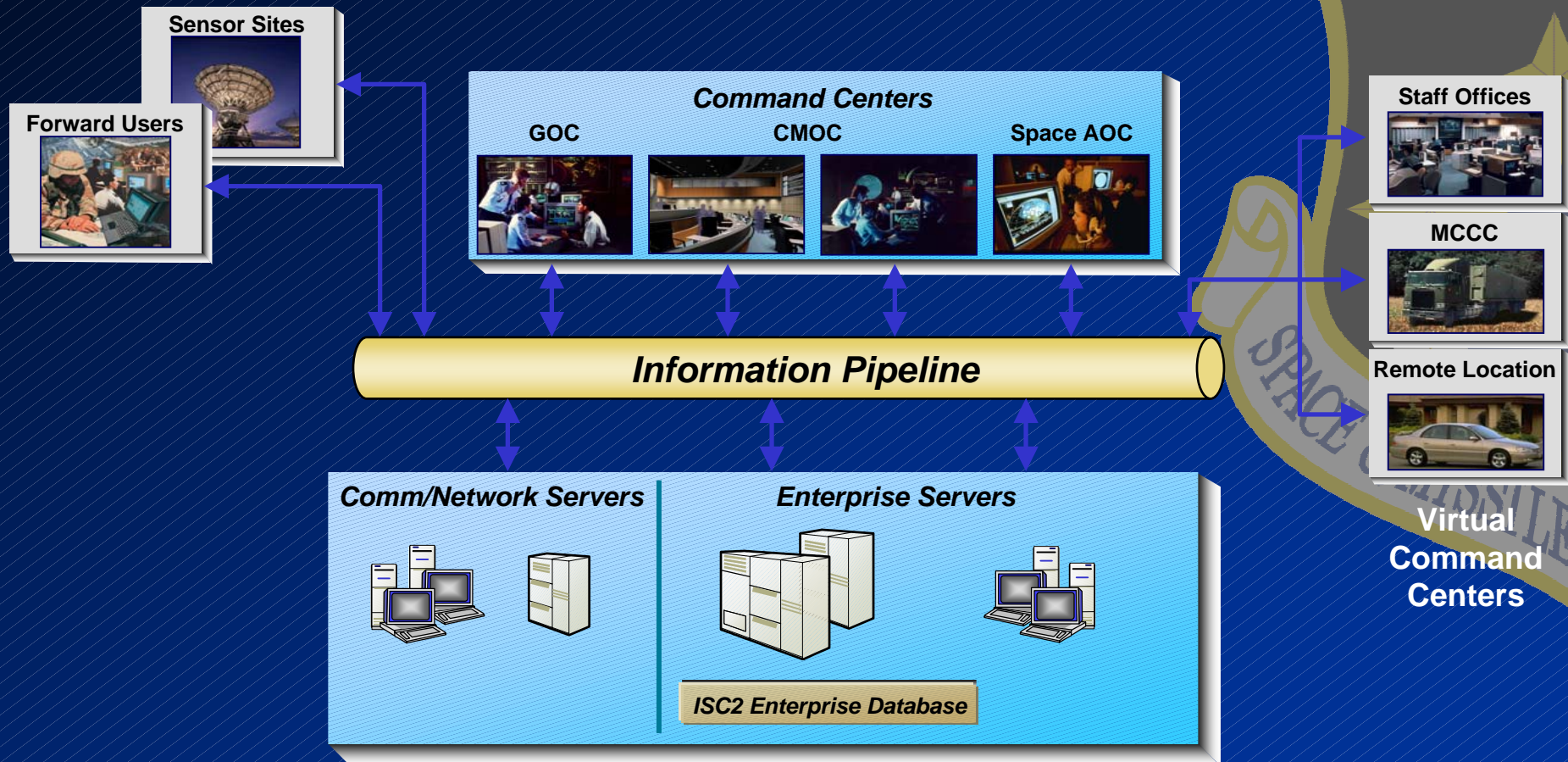
Joint Warfighting Space (JWS) is a rapid reaction, networked space constellation, dedicated to the Joint Force Commander and integrated with National Security Space (NSS) systems

- Operationalize space directly to the benefit of the warfighter
- “Tactical” Application
- Rapid launch - hrs not wks
- Microsats / Small Sats
- Interoperability
- C2 from theater



CCIC2S

- Enterprise System Architecture
- Common Interoperable C2 Infrastructure



Ground Challenges

- **Joint Forces/Users**
- **Development Teams**
- **Technology**
- **Software**
- **Flexibility**
- **Interoperability**
- **Security**



