The PM DCATS Universe

**MISSION:** Enable information dominance for the Army, Department of Defense, National Command Authority, and International Partners by acquiring, implementing, and sustaining strategic satellite and terrestrial communications, and leading technologies to meet current and future requirements.

**VISION:** Be the best project management professionals and subject matter experts that deliver the most efficient and effective products and services within our core competencies.

A diverse portfolio of over 30 strategic satellite and terrestrial communications systems
PM DCATS Major SATCOM Components

Tech Control

- Carrier
- Multiplexers
- Routers
  - Aggregation
  - Serial to Packet
  - Transport
- Digital Cross connect
- Encryption

Baseband

- Modems
- Satellite Mux
- TRANSEC/Crypto
- IP Convergence
- Routers

Inter-Facility Link

- L-Band SW (MET) Combiner

Wideband Control

- 21 Subsystems performing:
  - Planning
  - Spectrum Management
  - Link Management
  - Payload Control

Terminals

- MET
  - AN/GSC-52
  - AN/GSC-39
  - AN/FSC-78
  - AN/GSC-70
- Block UP/DOWN Converters

Disn

Carrier

Multiplexers

Routers

• Aggregation
• Serial to Packet
• Transport

Digital Cross connect

Encryption

Modems

Satellite Mux

TRANSEC/Crypto

IP Convergence

Routers

L-Band SW (MET) Combiner

Wideband Control

21 Subsystems performing:

- Planning
- Spectrum Management
- Link Management
- Payload Control
DISA Objective Architecture
Joint Information Environment – POA&M

**Initial Focus on Big Rocks**
- Network Normalization
- Data Center Consolidation
- Identity and Access Management
- Enterprise Services
- Governance

*Note: Level of Programmatic, Execution and Operational Risks are captured and mitigated as implementation occurs*

**Mission Effectiveness**

- **Undefendable**
  - Limited

- **Defendable**
  - Maximized

- **Cyber Security**
  - Operational Flexibility

- **Services to JIE**
  - Disparate MilDep Plans
  - DoD JIE

- **Increased Security**

- **IT Efficiencies**

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**JIE – Inc 1**
- Conduct BCA and site survey
- Develop implementation plan
- Data Center Consolidation
- Publish data center standards
- Close 69 data centers
- Designate 5 core data centers

**Network Normalization**
- Implement security architecture
- Consolidate service desks
- Define Single Security Architecture
- Define minimum SATCOM Worldwide Enterprise Gateway requirement
- Publish Tactical Terminal Convergence Plan

**Enterprise Services**
- Initial Standard Records Management process
- Enterprise Portal subsumes DKO/AKO
- Cross Domain IOC
- Identity and Access Mngt
  - Initial Data Tagging & enhanced person ID
  - Enterprise E-mail Directory Service

**JIE – Inc 2**
- Conduct BCA and site survey
- Develop implementation plan
- Regional or global focus to be defined by BCA

**Data Center Consolidation**
- Establish 5 more core data centers
- Initial Tactical Data Centers

**Network Normalization**
- Continue Inc 1 initiatives
- Converge 16 or 44 SATCOM Gateways
- Eliminate 3 Tactical Terminals

**Enterprise Services**
- Converge 1 or 4 SATCOM Gateways
- Initial Unified Capabilities

**Identity and Access Mngt**
- Continue Inc 1 initiatives
- Start phase out of point-to-point cross domain solutions

**JIE – Inc 3**
- Conduct BCA and site survey
- Develop implementation plan
- Regional or global focus to be defined by BCA

**Data Center Consolidation**
- 10 more core data centers
- Final Tactical Data Centers

**Network Normalization**
- Continue Inc 2 initiatives
- Consolidate Commercial Ka at Enterprise Gateways
- Network Normalization

**Enterprise Services**
- Renew Cloud E-Mail Contract
- Complete Enterprise Portal
- Initial Unified Capabilities

**Identity and Access Mngt**
- Credentialing and authentication services

**JIE – Inc 4**
- Conduct BCA and site survey
- Develop implementation plan
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**FY2012**
- SHAPE

**FY2013**
- JIE – Inc 1
- Data Center Consolidation
  - Conduct BCA and site survey
  - Develop implementation plan
  - Publish data center standards

**FY2014**
- Normalize
- JIE – Inc 2
  - Data Center Consolidation
    - Conduct BCA and site survey
    - Develop implementation plan
    - Publish data center standards
    - Close 69 data centers
    - Designate 5 core data centers

**FY2015**
- Optimize
- JIE – Inc 3
  - Data Centers Consolidation
    - Conduct BCA and site survey
    - Develop implementation plan
    - Publish data center standards
    - Close 69 data centers
    - Designate 5 core data centers

**FY2016**
- JIE – Inc 4
  - Data Centers Consolidation
    - Conduct BCA and site survey
    - Develop implementation plan
    - Publish data center standards
    - Close 69 data centers
    - Designate 5 core data centers

**FY2017**
- Sustain
  - Data Center Consolidation
    - Conduct BCA and site survey
    - Develop implementation plan
    - Publish data center standards
    - Close 69 data centers
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**FY2018**
- Sustain
  - Data Center Consolidation
    - Conduct BCA and site survey
    - Develop implementation plan
    - Publish data center standards
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**Unclassfiied**

**Network Modernization – SATCOM**

**Joint Information Environment – POA&M**

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- **IT Efficiencies**
Wideband MILSATCOM

- Each new Wideband Global Satellite (WGS):
  - Has more capacity than 10 DSCS satellites
  - Adds high capacity Ka band
  - Has a digital channelizer to route beam to beam or beam to multiple beams
  - Supports new missions (e.g. COTM and AISR)

- Currently four WGS are on orbit with six more on contract

- PM DCATS provides terminals and baseband anchoring the WGS

- PM DCATS provides the payload control systems for WGS along with planning tools, spectrum monitoring tools and RF link management equipment
Where We Are Going

- Migrating from primarily trunk based FDMA to:
  - Everything over IP using Multi-Frequency Time Division Multiple Access (MFTDMA) technologies
    - Net Centric Waveform (NCW)
    - Joint IP Modem (JIPM)
    - Enhanced Bandwidth Efficient Modem (EBEM) with Ethernet Service Extension Module (ESEM)
  - Eliminating Multiplexers
  - Use MPLS convergence routers to allow selection of alternate SATCOM paths
  - Open up traditionally closed Wideband MILSATCOM transport to better facilitate end-to-end NetOps management
  - Integrated Management for Terminal and Baseband providing situational awareness
Next Big Thing in SATCOM

- **Digital Intermediate Frequency (IF)**
  - Allow SATCOM modems to exist entirely in the digital domain
  - Eliminates banks of SATCOM modems at Gateway sites
  - Allows all Gateway sites to function the same (no distinction between STEP, Teleport or Gateway other than terminal type)
  - Allows hardware location independence and multi-site continuous COOP
  - Worldwide remote management and control

- Currently teaming on Digital IF Working Group with eight DoD stakeholders including DISA, AF and S&TCD

- Do a tech insertion into the MET and Baseband programs when the technology reaches TRL 7
Enterprise Gateway Locations

Enterprise Site (Includes STEP and Teleport)
STEP/TELEPORT
- Single STEP
- Dual STEP
- Training Site
- Test Site

Sites not shown
Special V
Special VII
Special XI
Tech Control Modernization

- Primary purpose of a Tech Control Facility is to aggregate circuits on an Army installation, ensuring secure and reliable transport via the Wide Area Network (WAN)

- Provides Situational Awareness
  - Circuit/trunk status
  - Control, Monitor and Alarm (CMA) for both network and facilities systems
  - Circuit/trunk restoration

- Provides Operational Control
  - Establish, terminate, reconfigure and reroute circuits/trucks

- Interface between users and the WAN
  - Protocol translation
  - Backhaul to users

- Ongoing modernization projects support UC migration strategy to IP by employing
  - Serial To Packet technology
  - Class and Quality of Service – Design ongoing in coordination with DISA
# TCF Tech Refresh Strategy

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<th>FY14</th>
<th>FY15</th>
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- **ARP**: Activity Plan
- **CONTR**: Contract
- **Site Prep**: Site Preparation
- **TCF 1-4 Upgrades**: TCF 1-4 Upgrades
- **TCF 5-8 Upgrades**: TCF 5-8 Upgrades
- **TCF 9-12 Upgrades**: TCF 9-12 Upgrades
- **RFP Release**
- **Contract Award**
- **Contract Completion / Work Acceptance**
Summary

- We are in the process of migrating to everything over IP from our trunk/multiplexer based SATCOM systems.
- The fabric of our entire satellite Gateway architecture is becoming IP centric itself better promoting any to any communications without restrictions.
- We are planning to upgrade our core Tech Control Facilities beginning FY15 to better serve within the JIE construct.