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Signatures:

John D. Poole 16 Jan 03 John P. Stentz 16 Jan 03 Sean O'Keefe 13 Jan 03
DDCI/CM Date ASD-C3I NASA Administrator Date

Charles A. Shedd 27 Dec 02 AFSPC/CC 27 Dec 02 Peter S. Pace 12 Jan 03
USSTRATCOM/J6 Date AFSPC/CC USecAF/ DNRO Date

Michael V. Hayden 1 Jan 03 Director DISA 6 Jan 03 B. A. Allard 31 Dec 02
DIRNSA Date Director DISA AF-PEO Date

John L. Johnson 13 Jan 03 A. Brown 01 Feb 03 Peter J. Greville 13 Jan 03
HQMC-C4 Date Joint Staff - J6 Army - G6 Date

E. Z. Ziegler 1 Jan 03 Army-ASA(ALT) 25 Dec 02 J. R. Young 2 Jan 03
Navy - No 1 Date Army-ASA(ALT) ASN (RD&A) Date

Dave Winkler 11 Jan 03
IC-CIO Date

TCO Charter Signed off 12 Feb 03

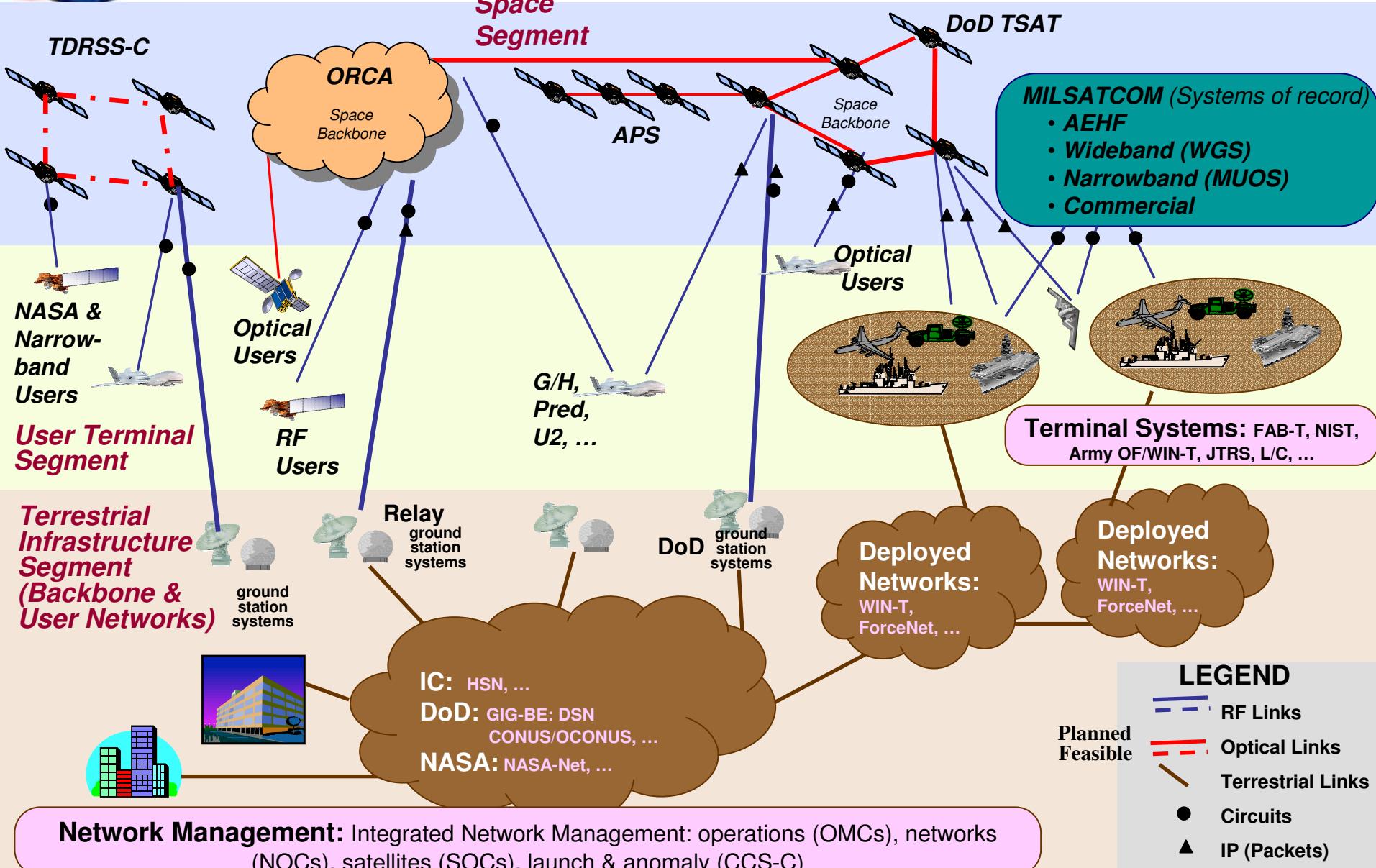


Transformational Communications Architecture (TCA)

Milsat 2004

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TCA Baseline Overview 2011-2015





TCA Attributes

- Independent and Interoperable Systems across IC, DoD, NASA
- Net Centric Operations Enabled by IP and Guaranteed Service
- Dynamic Allocation of Net Resources; Highly Available Infrastructure
- Black Core Source Encrypted
- End-to-End Security Architecture
- More user Transparent, Highly Automated Network Management and IA
- Processed (X, Ka, EHF), Protected, Survivable, and Endurable Comms (EHF)
- COTM enabling higher capacity and smaller, more flexible terminals
- Synchronized terminal development, fewer types & smaller terminals
- Enable more Perceptive, Persistent, Global, and Robust ISR
- 24/7 contact availability with all space and airborne assets (MA S-band)
- Integrated Mission Planning Capability

TCA will be updated and reviewed periodically (every 2 years to sync up with PPBS processes) to accommodate changing requirements and technologies

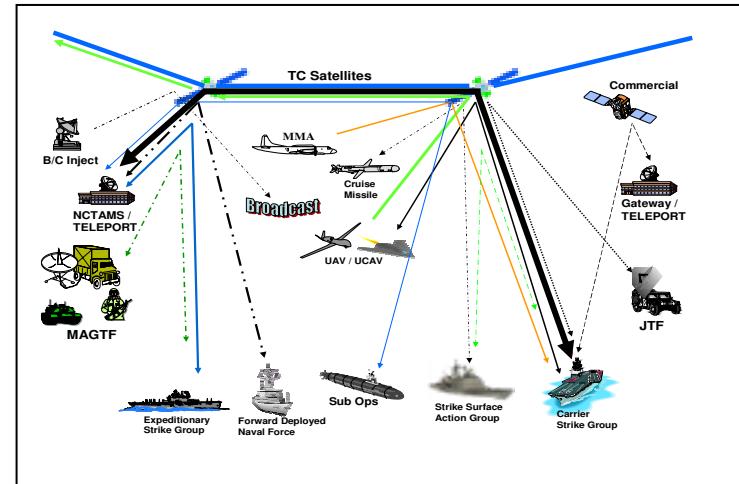


TCA Supports Multiple Military Service Visions

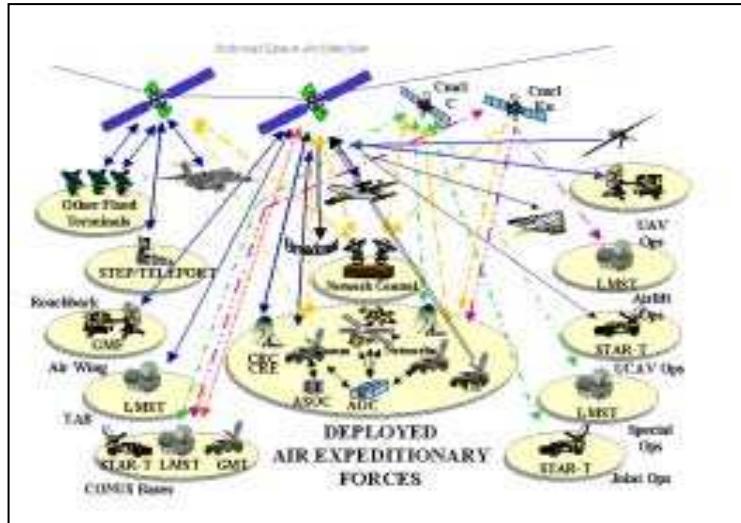
Army Future Force



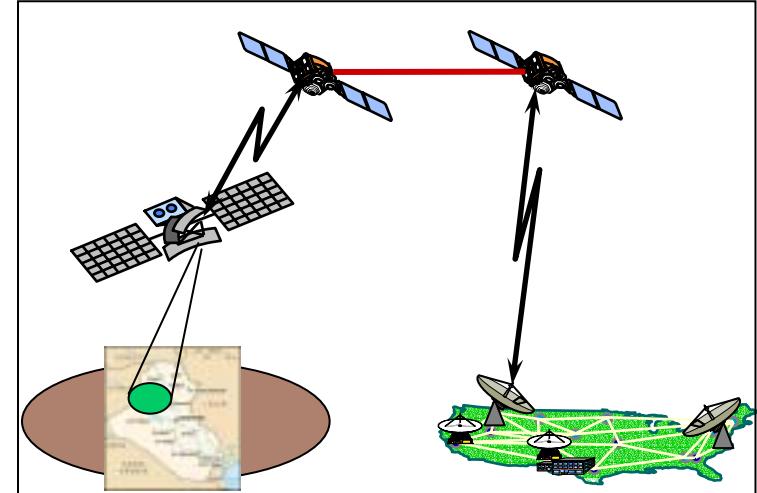
Navy SeaPower 21



AF Air Expeditionary Force



Space Based Radar – MTI

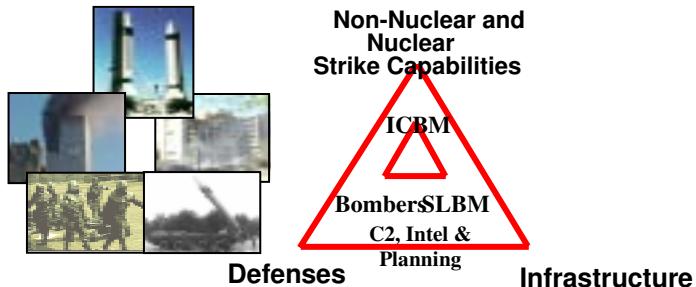




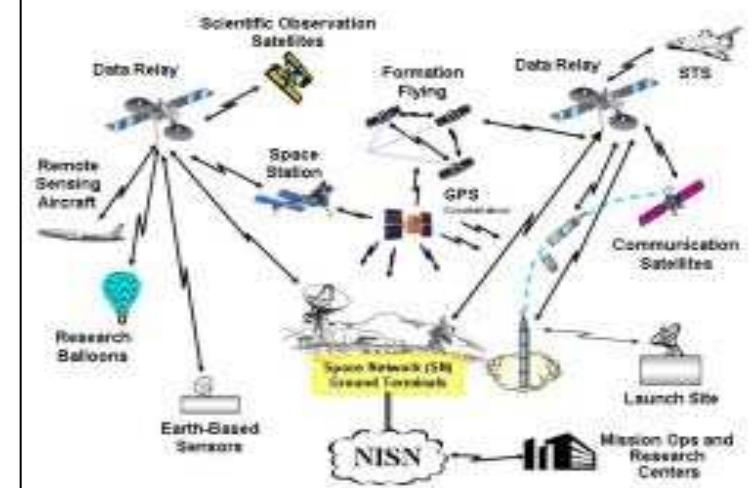
TCA Supports National & Civil Space Visions

Strategic Systems

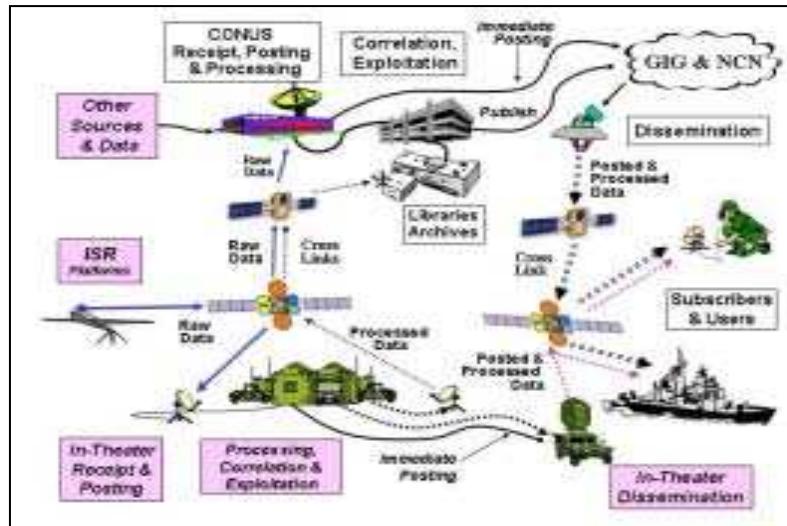
Capability Based – Full Threat Spectrum
 Multiple Options
 Network-Centric Operations
 Integrated Capabilities
 Continuous Technology Refreshment
Unified, Flexible, and Adaptable C2



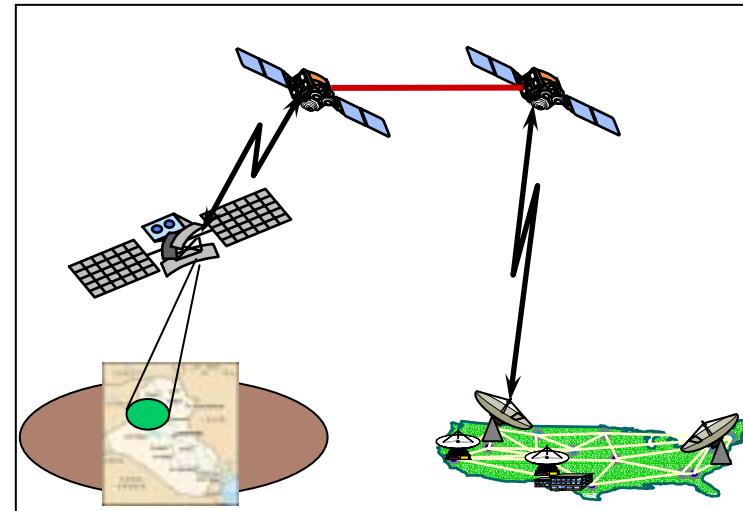
NASA Missions



IC Missions



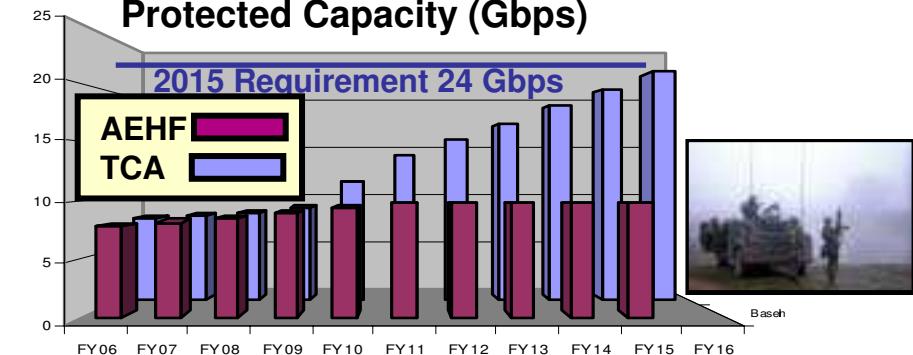
Remote Sensing Data Backhaul



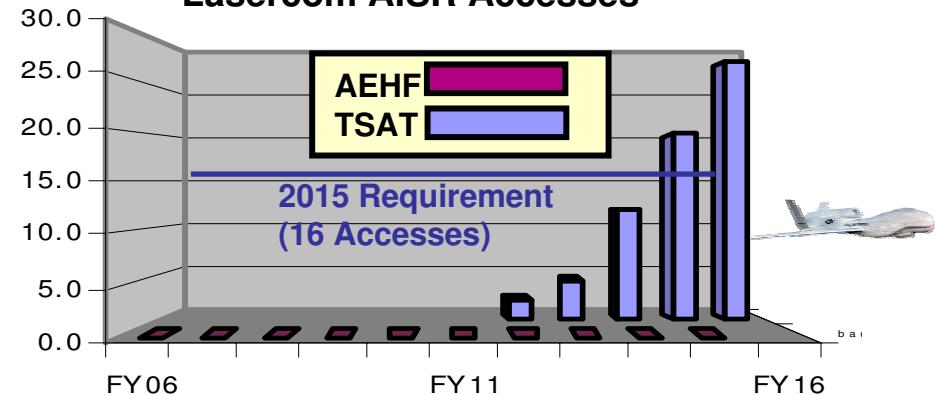


TCA Performance

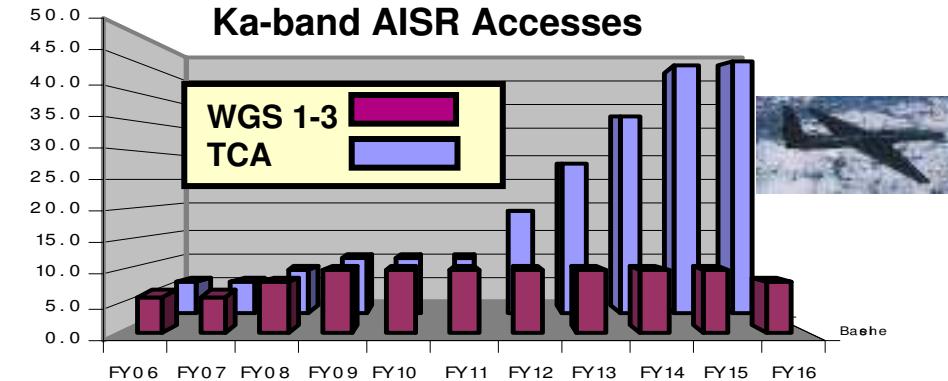
Protected Capacity (Gbps)



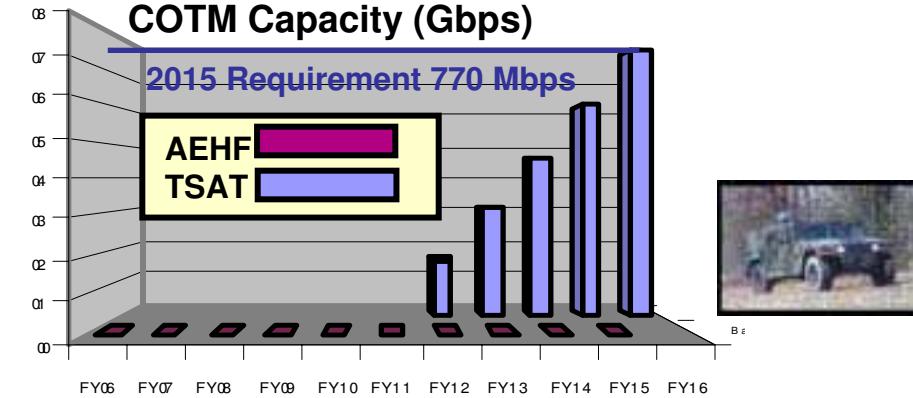
Lasercom AISR Accesses



Ka-band AISR Accesses



COTM Capacity (Gbps)



as of 2 Mar 04

Transformational Communications Architecture – An Opportunity for Change

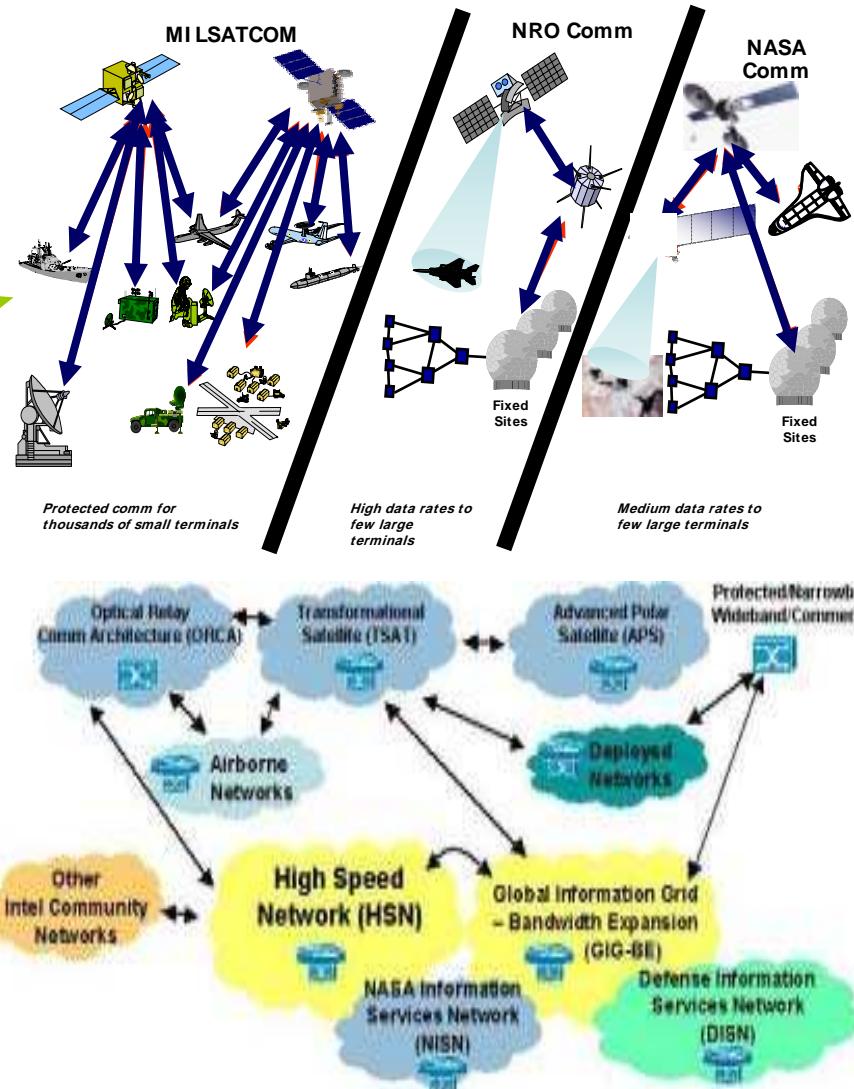
Path Without TCA

- Enhanced capabilities within stovepipes
- Very limited Interoperability with segregated svcs
- Sensor to Shooter Latency
- Non-synchronized Terminal Developments
- Limited ability to support emerging Information Dissemination Management (IDM) vision

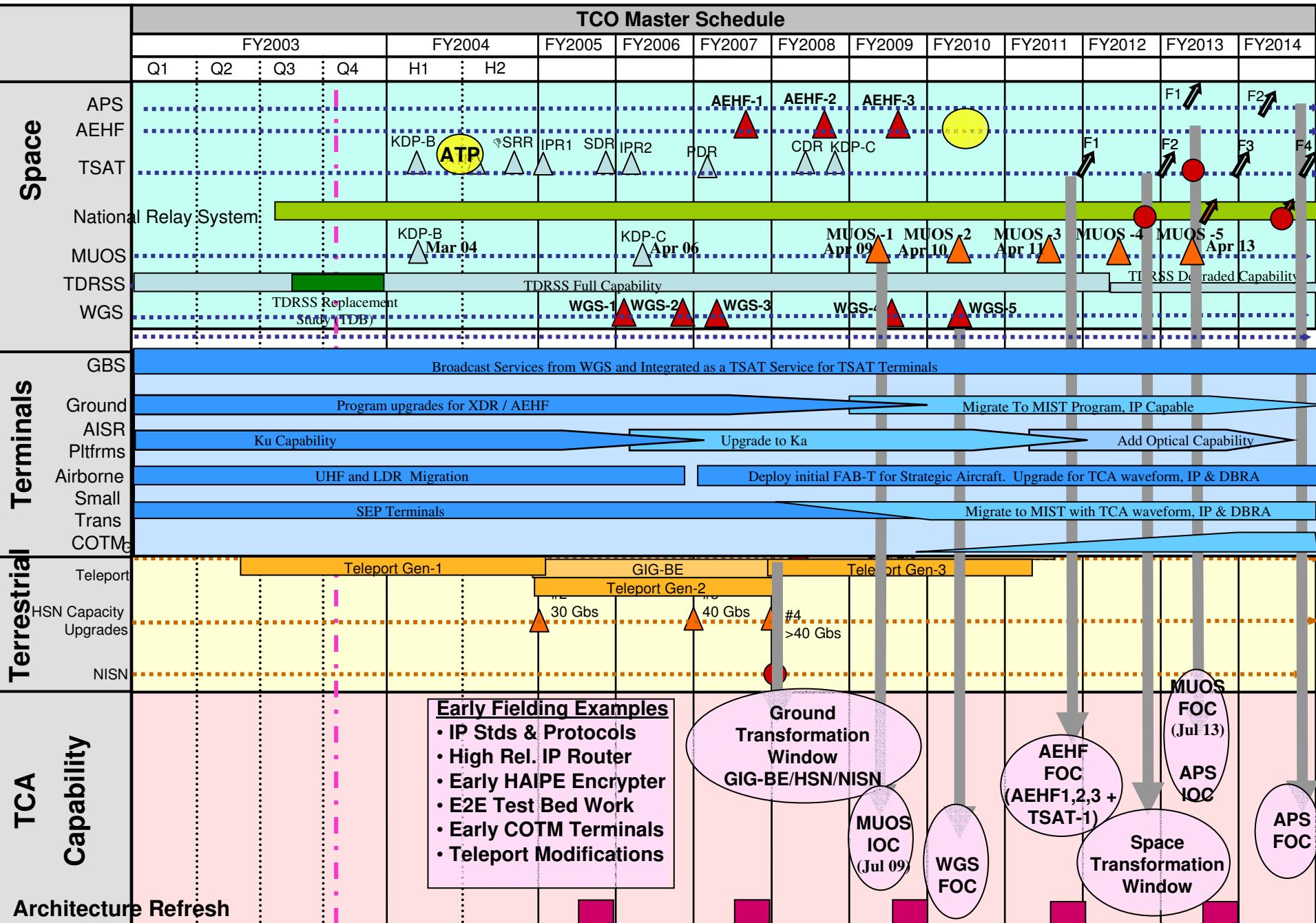
>\$5B/year
Communication
Investment

Path With TCA

- Enables Network Centric Operations
- Standards Based Interoperability and Integrated Services
- Increased communications connectivity and capacity
- Robust, adaptable, dynamic and flexible network services
- Integrated Operations Centers
- Accommodates Multi Security Levels
- Enables new information exploitation models, i.e. fusion



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4 Mar 04

Backups



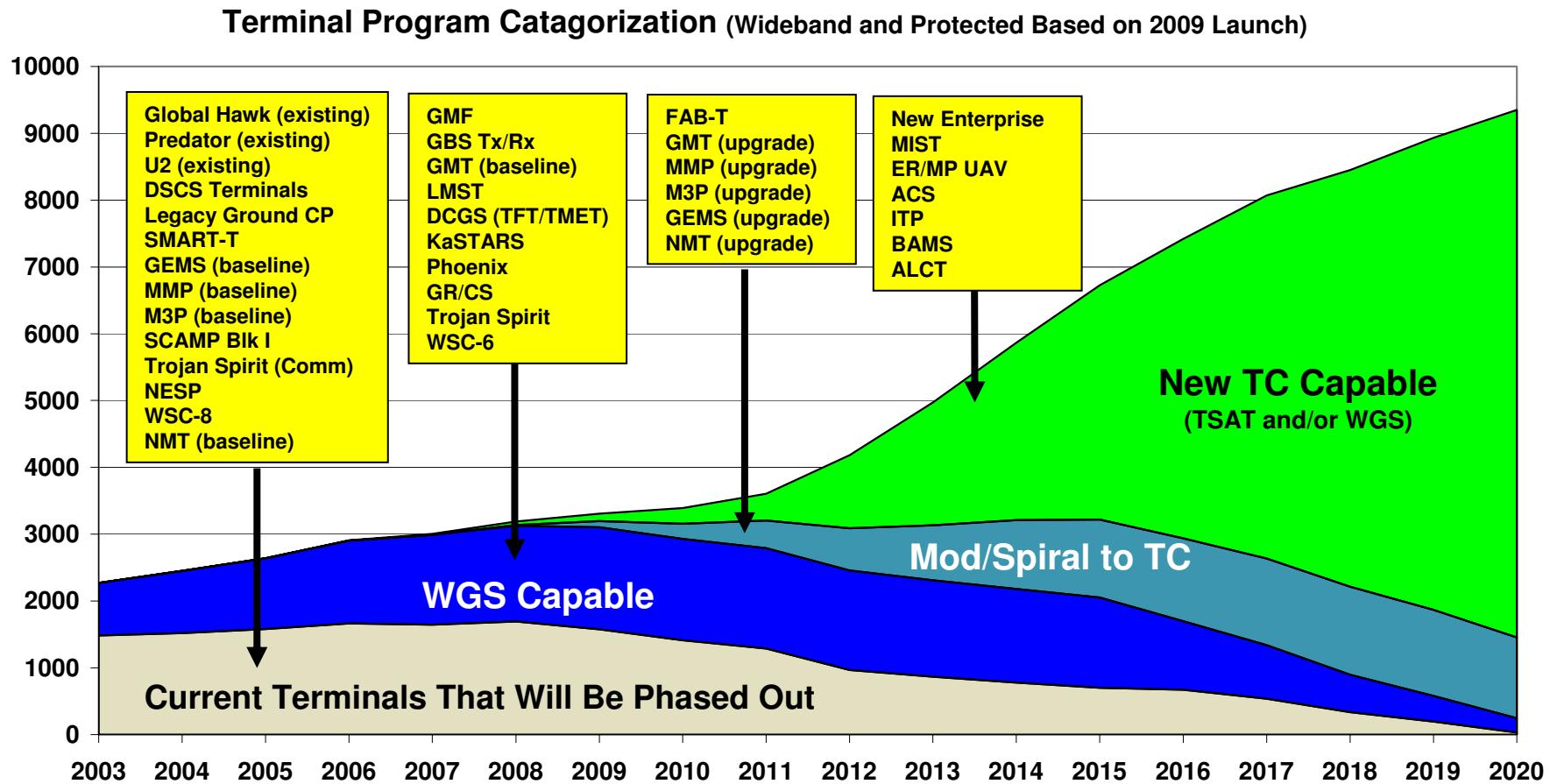
Purpose

RADM Fisher

- TCA Overview and Attributes
- SBR, AISR, and COTM in TCA
- TCA Risk Management
 - Consolidated Satellite Program
 - Consolidated Ground Infrastructure

***Address SBR and TCA Architecture Relationships
from JROCM 237-03***

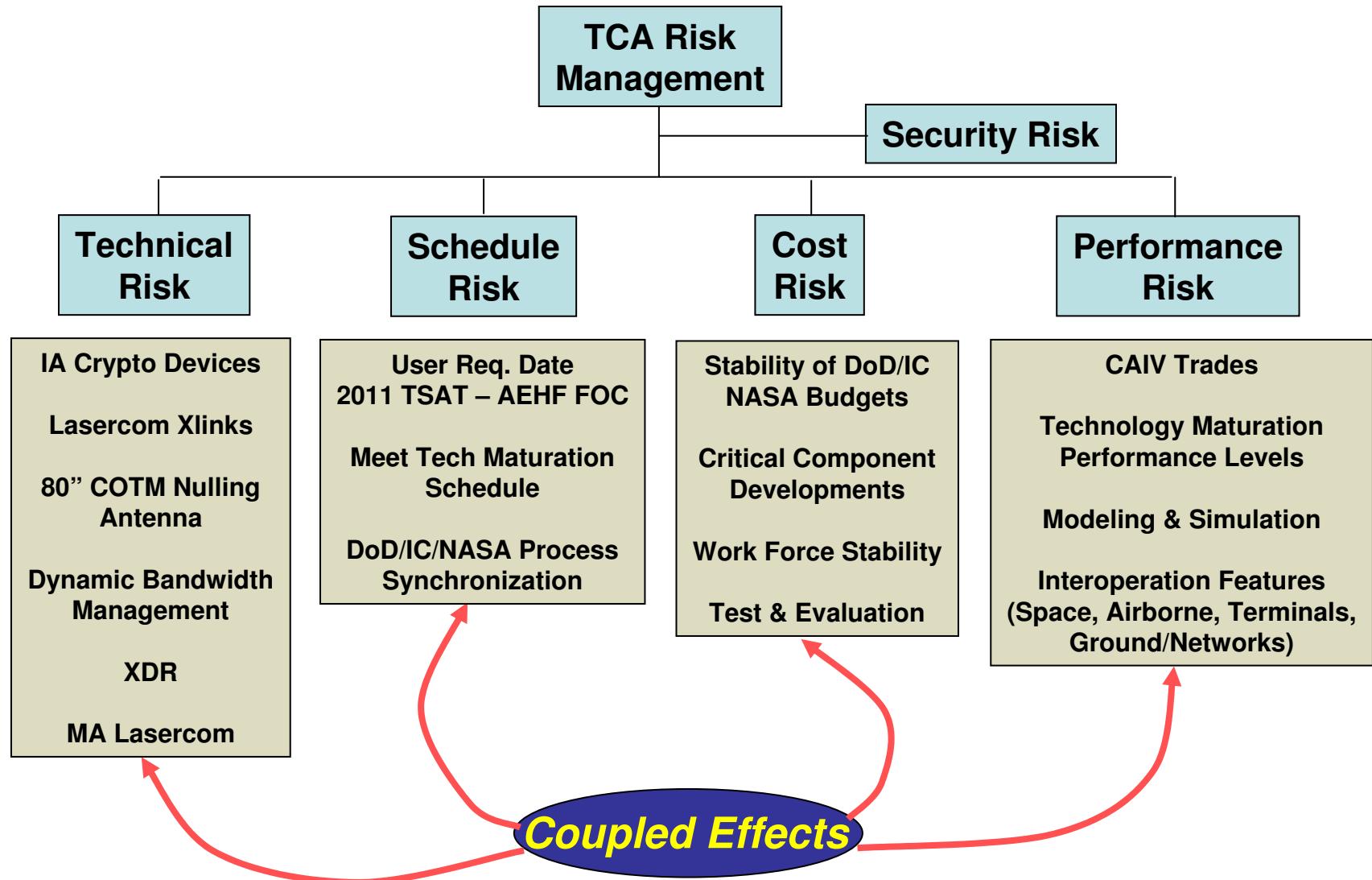
TCO Working to Synchronize Terminals



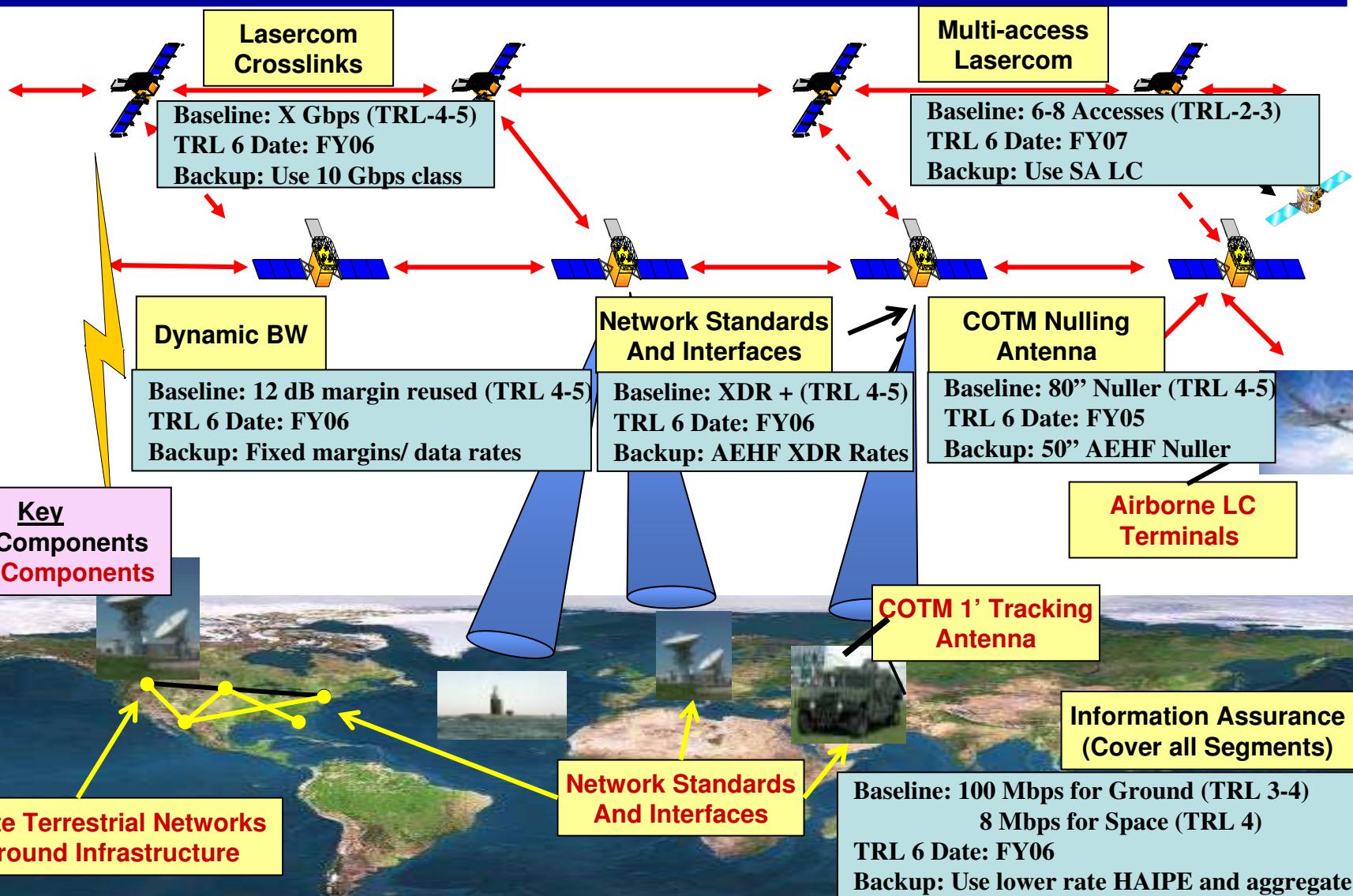
- Terminal Programs Have Considered the Best Programmatic Path For Migration with the following options:
 - 1) Current Terminal that will be Phased Out
 - 2) Current Terminals that will be supported in TC (WGS)
 - 3) Modified or Spiral Upgrade Terminals
 - 4) New Terminal Programs



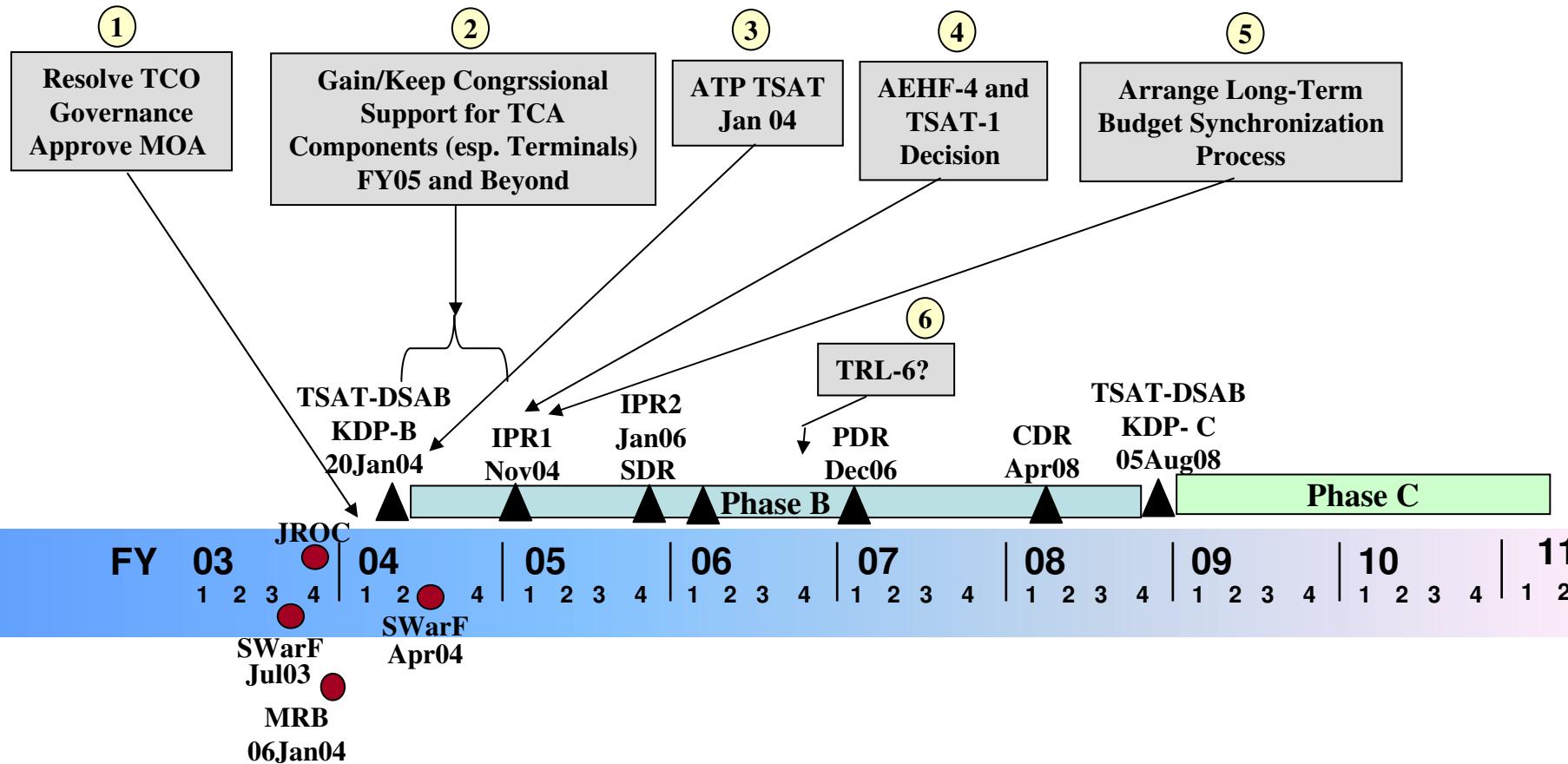
TCA Risk Management



TCA Key Capability Insertions



TCA Decision Path





TCA Governance Options

Integrated/ Consolidated Model

(like MDA)

Acquisition Funding
DoD/ NFIP/ NASA



Chief Sys Engr

Technology Monitor
IA Monitor
Protection Monitor

Space JPO

Terminal JPO

Terrestrial JPO

Network Ops/Mgmt

APS
TSAT
AEHF
WGS
MUOS
ORCA
TDRSS-C

Army
Air Force
Navy
Marine Corps
JTRS
NASA
NRO/ IT/ DTS
Teleports

GIG-BE
NISN
HSN

NASA
NRO
DISA
Services

Attributes

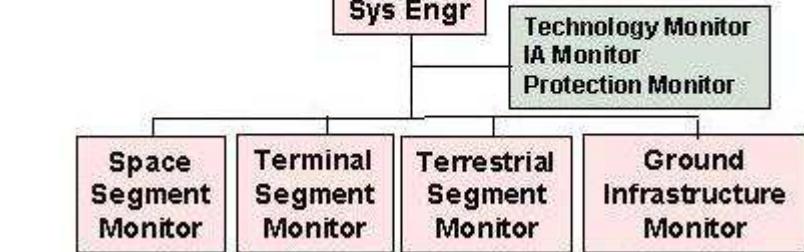
- Creates New Authorities
- Possible Incr. Effectiveness
- Increased Risk & Cost
- Mixing of Money
- High Interdependency/ Close Coupling
- High Complexity
- Dissimilar Policies
- Priority Mgmt Challenge

Independent/ Interoperable Model

Acquisition Funding
Managed Separately
By DoD, IC, NASA

Communications
Functional Area
Integration
Office

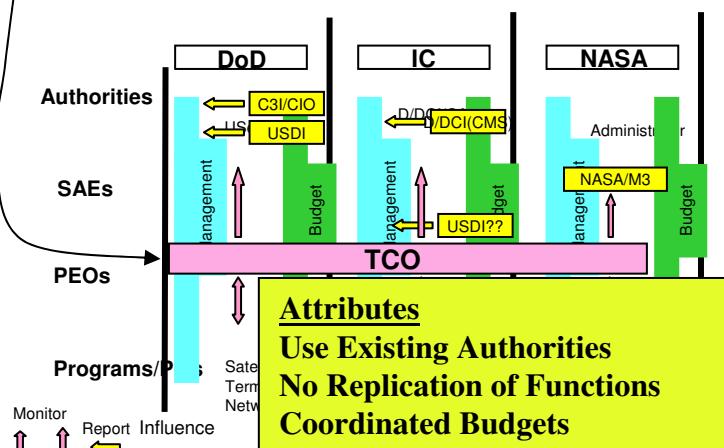
Work with
Other FAIOs
Space Control
Space Access
ISR
Prec Nav Timing



Budget
Synch.

PA&E, J8
CMS

CSAF
CSA
CNO
CMC
USecAF
USD (AT&L)
IC/CMS
AA/NASA

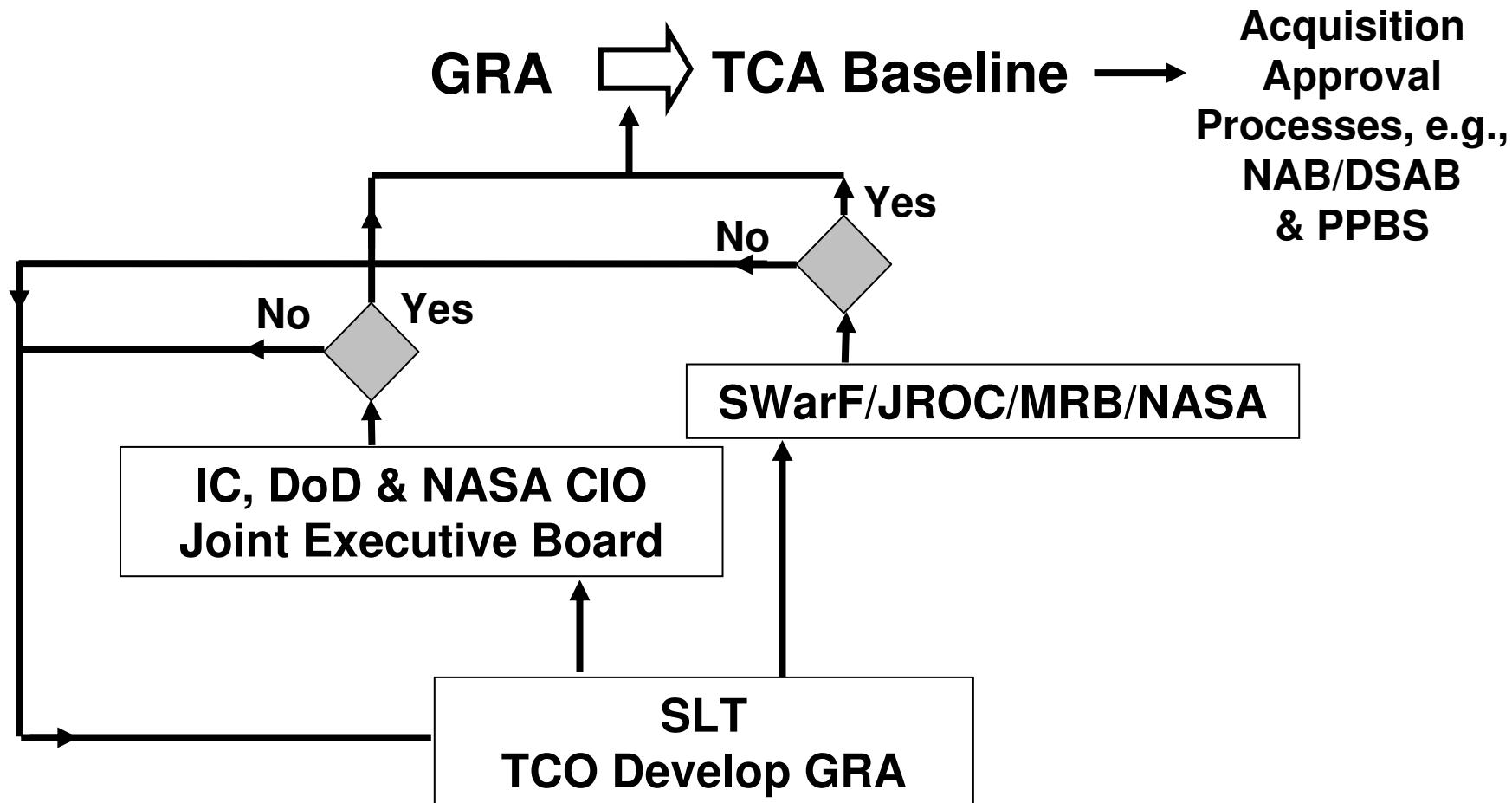


Attributes

- Use Existing Authorities
- No Replication of Functions
- Coordinated Budgets
- Flex./ Effective/ Loose Coupling
- Less Risk and Cost



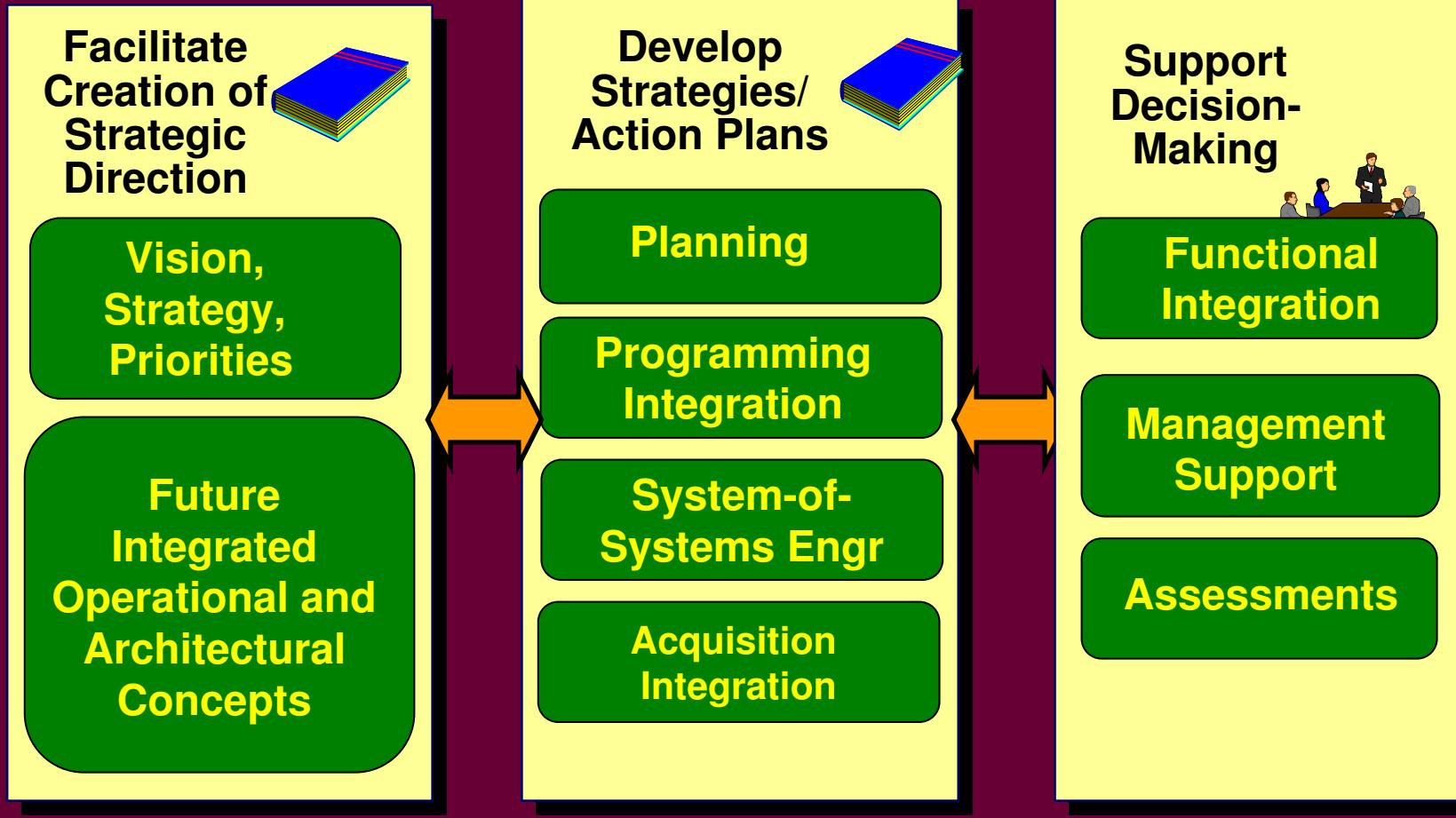
De facto and Recommended TCA Governance Process



The TCO must work within the Existing Approval Authorities



Organizational CONOP



National Security Space Office

