DISA
A Combat Support Agency

How DoD leverages Emerging Technologies

CTO

May 2012

Version 2.0

Discussion Topics

- Introduction
- How should you engage DISA?
- Leveraging the DISA Process
- Summary
- Questions

How should you engage DISA?

- Contact the DISA Chief Technology Officer (CTO) office
  - The focal point for ***all*** new technologies entering the Agency
- Must answer these questions; Will your proposal:
  - Be a COCOM priority?
  - Meet the Deputy Assistant Secretary of Defense, Rapid Fielding criteria?
  - Align with DISA's Campaign Plan Line of Operations?
  - Fit into the DISA CTO Technology Watch List or the OSD Science & Technology Integrated Priority List operational needs?
- Engage as early as possible!

Emerging Technology Process

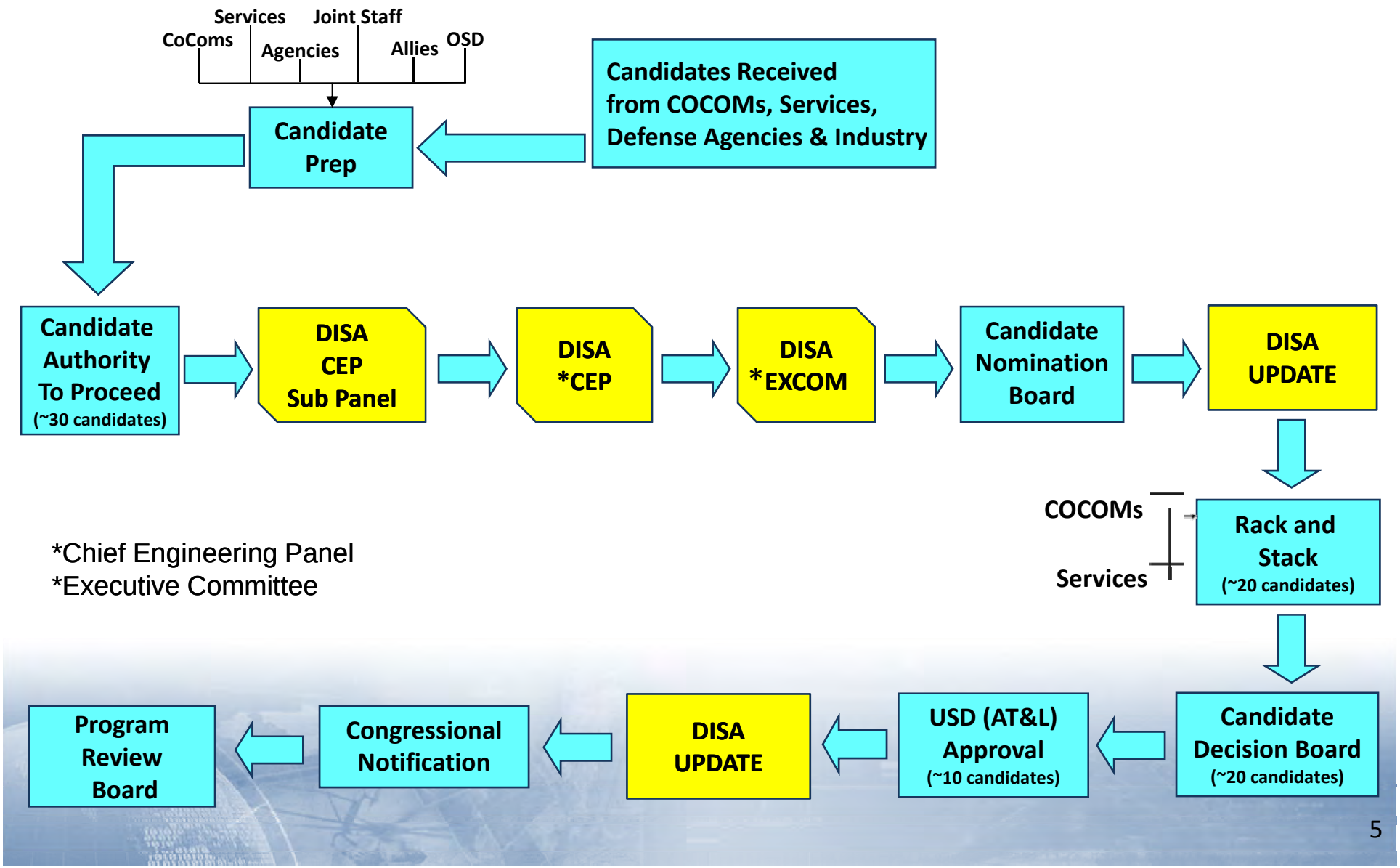
Joint Capability Technology Demonstration (JCTD) & Coalition Warfare Program (CWP)

- Address COCOM needs with innovative concept and mature technology
- Provide capability solution with operational concepts and tactics, techniques & procedures
- Assess solutions in Warfighter Operational Demonstrations
- Usually joint, often combined / coalition / interagency / transformational
- Rapid Results: 1 to 3 years or less to final demonstration and a prototype interim capability
- Multiple funding sources with a Transition Agreement

Emphasis on Demonstration and Transition…try with intent to buy

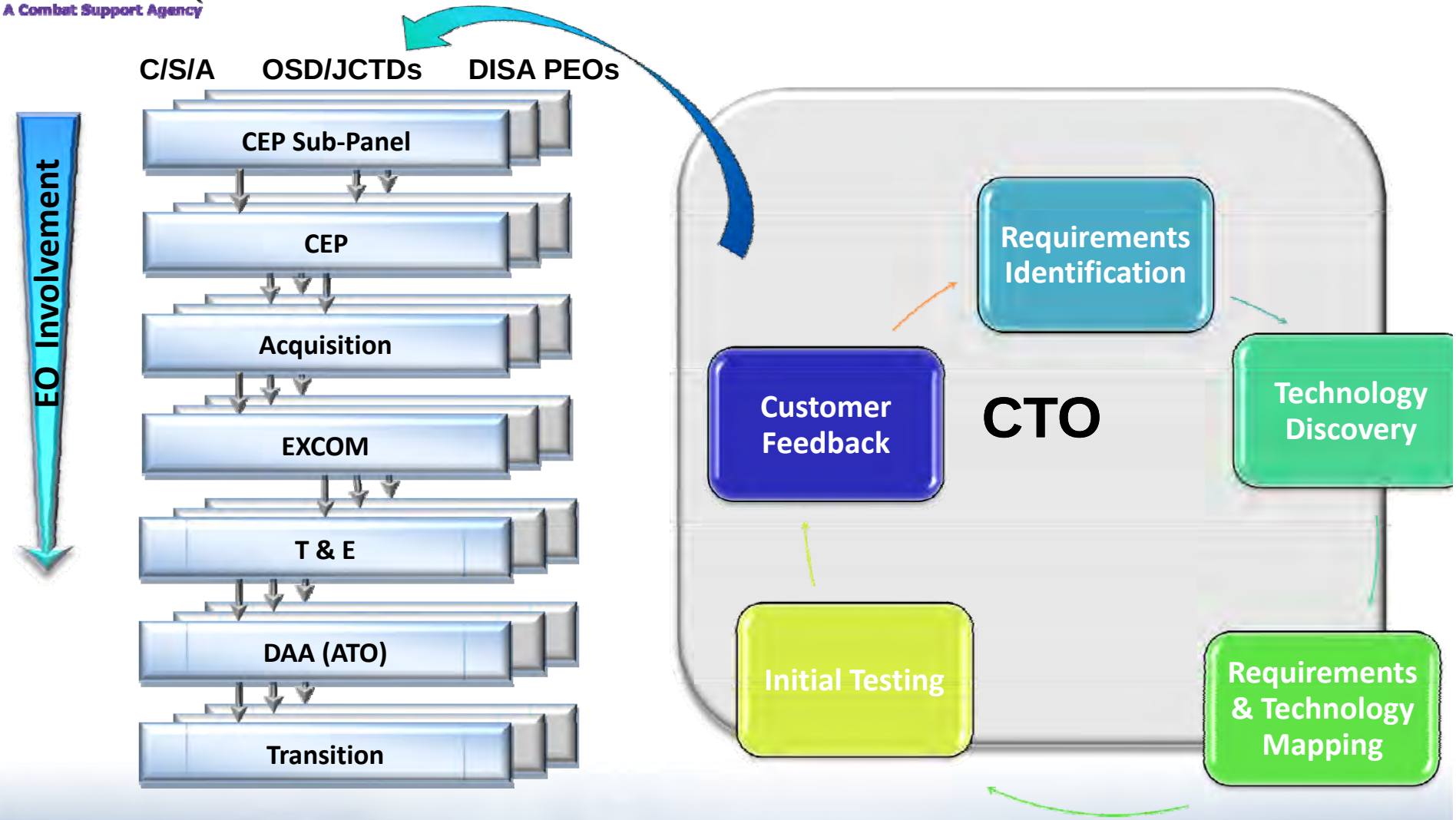
Emerging Technology Approval Process

Identification, Selection & Approval



*Chief Engineering Panel
*Executive Committee

Internal DISA Transition



"We must engage in a continual dialogue with key partners and technology-development leaders to be in the forefront of emerging technology and to be in position to influence its environment."

- DISA Campaign Plan 2011 - 2012

Summary

- Not aware of all the technology available
  - However, need to maintain technological edge

- Need your HELP in identifying immediate DoD technology gaps
  - Looking for fresh ideas

- Anticipating to partner through industry agreements, emerging technology initiatives, and JCTDs

- Remember: DISA CTO Office is the focal point for ***all*** new technologies entering the Agency

Challenge each of you to assist in leveraging new and innovative technologies in support of the warfighter

DISA
A Combat Support Agency

Questions

Backups

Past Technologies

National Senior Leadership Decision Support Service (NSLDSS)

DISA
A Combat Support Agency

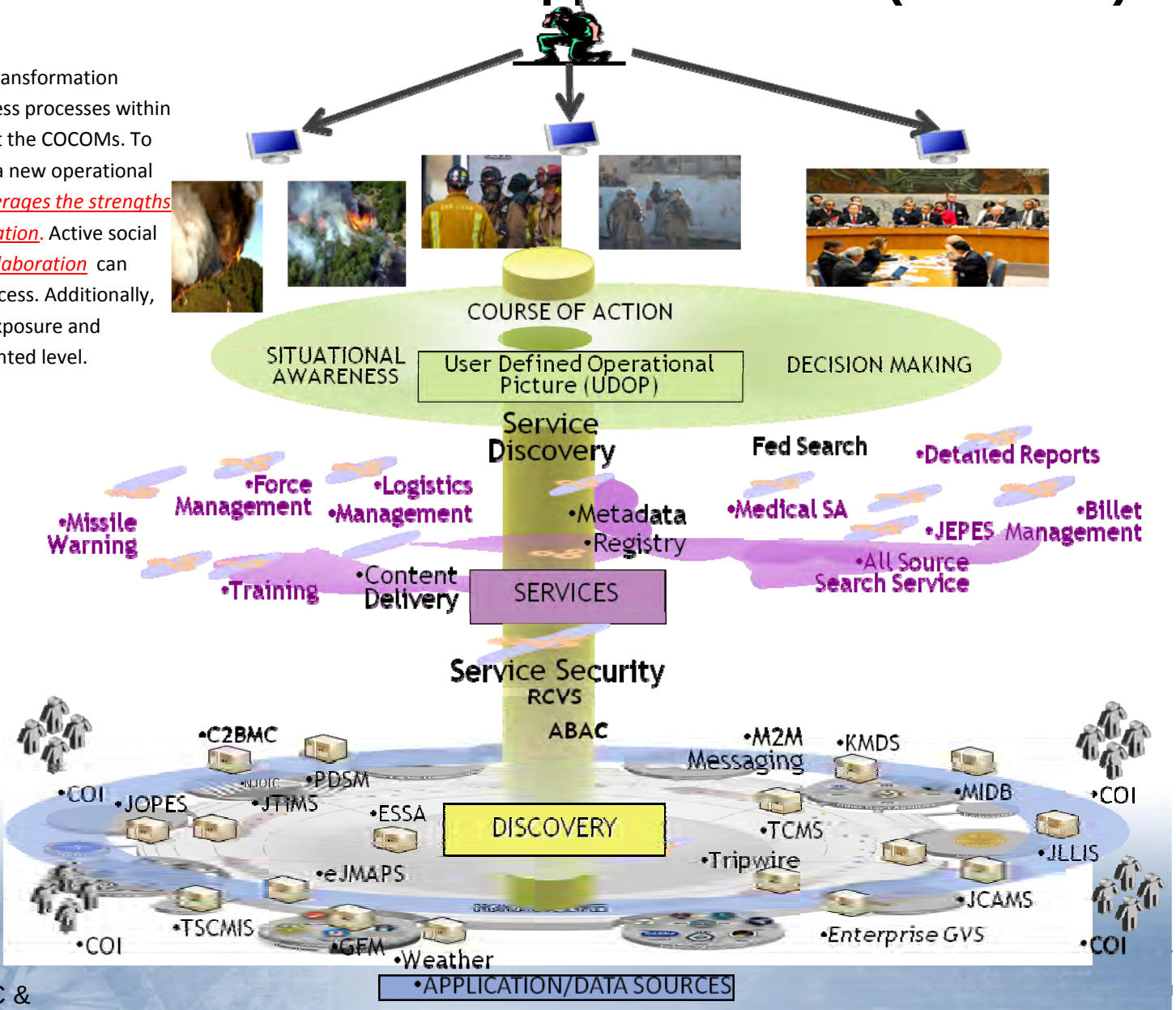
Objective: The Joint Staff has initiated a transformation effort to improve global awareness business processes within the staff's operations and also throughout the COCOMs. To support this improved global awareness, a new operational model is required which accesses and *leverages the strengths of intellectual capital regardless of its location*. Active social networking conducted over *persistent collaboration* can achieve the increase in the level of this access. Additionally, this transformation requires the secure exposure and discovery of information at an unprecedented level.

Desired Capabilities:

1. Situational Awareness
2. Course of Action (Planning and Development)
3. Decision Making

Capability Outcomes:

1. Strategic Watch (Visualization)
2. Widget Framework
3. ABAC
4. Joint User Messaging



Status: Transitioned to PEO-C2C & PEO ES

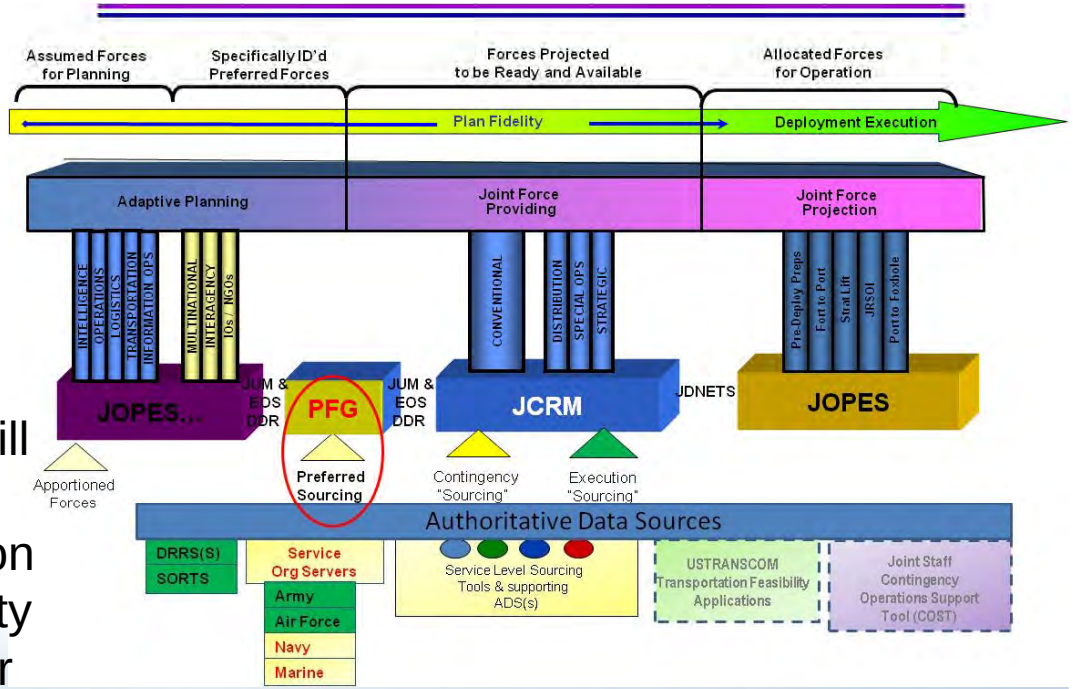
Current Technologies

DISA
A Combat Support Agency

Preferred Force Generation (PFG)

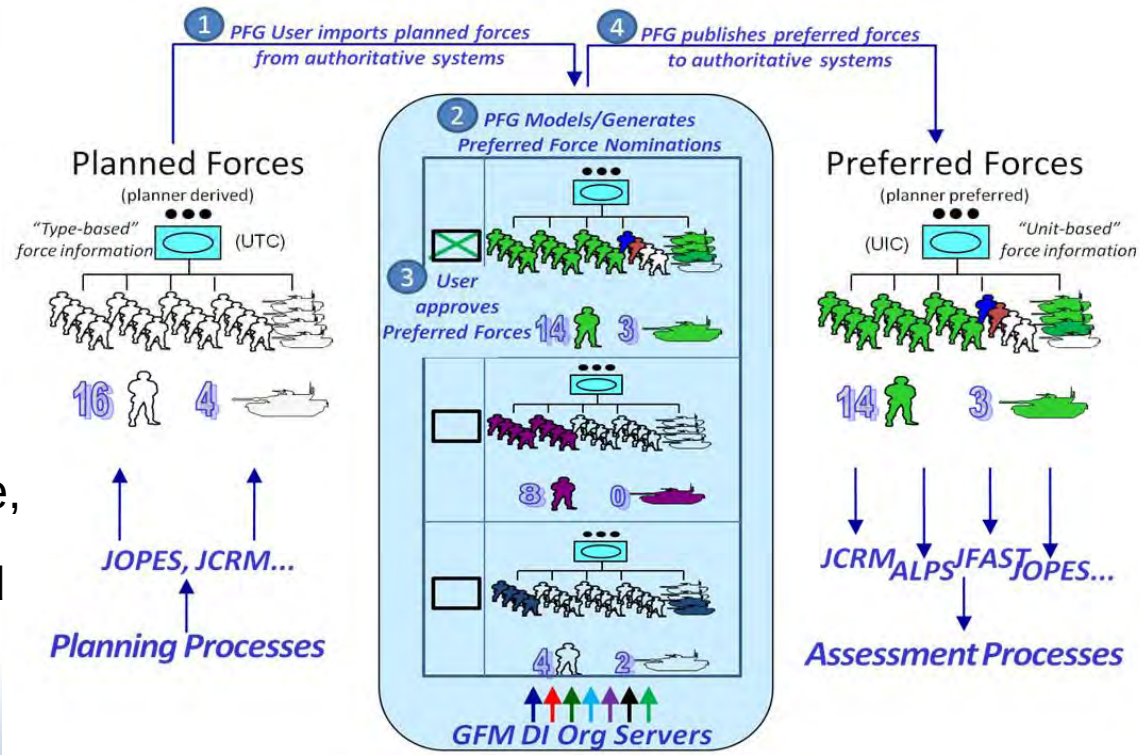
PFG Problem Statement

- Warfighter Problem Force Providers are unable to source every plan developed by combatant commands. As a result, COCOM planners develop many contingency plans using less-complete, “type-based” force information rather than “unit-based” force information, which skews feasibility and risk assessments leading up to SecDef IPRs.
- Intended Outcome
  - PFG will provide deliberate planners an automated capability to more rapidly and accurately identify and select “preferred forces” for each plan.
  - Preferred Force information will help optimize employment, sustainment, and transportation planning and improve feasibility and risk assessments to better inform SecDef IPR processes.



PFG Capability

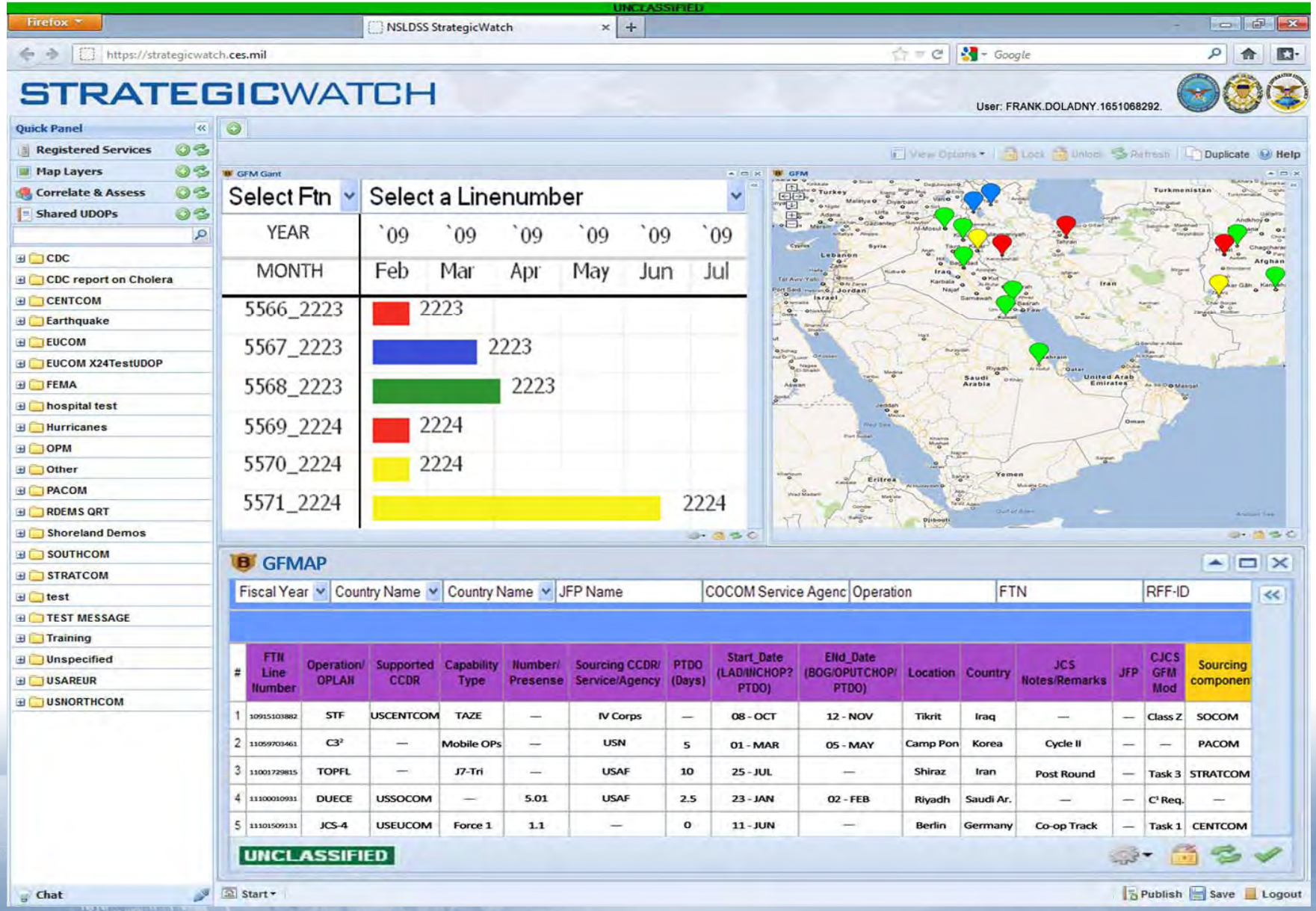
- Review/select TPFDD from PFG Plan Library
- Filter TPFDD to establish a “working slice” of UTCs
- Review/Select PFG modeling guidance and criteria
- Model/Generate Preferred Force Candidates
- Review/modify/save Preferred Force Candidates
- View GFM DI (Org Server) Force Structure Information (OUID, Billets, Equip, Force Structure)
- Review/approve Preferred Force list; publish to external systems
- Select, filter, share/collaborate, model, compare, publish multiple sourced or unsourced TPFDDs



DISA
A Combat Support Agency

Strategic Watch

Strategic Watch



DISA
A Combat Support Agency

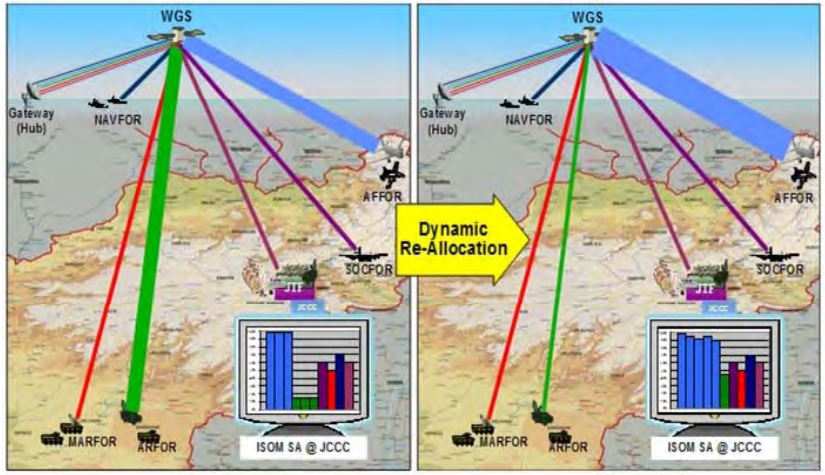
Integrated SATCOM-GIG Operations & Management (ISOM)

ISOM

ISOM objectives*:

1. **Enhanced Situational Awareness (SA) for DoD Gateway Reachback**
   - **Integrated Operational Picture available to all GIG Management Elements via Web Services**
   - **Limited mission planning support to address surge requirements**

ISOM (OV-1)



2. **Dynamic allocation and provisioning of SATCOM and GIG resources for DoD Gateway Reachback**
   - **Quickly (within minutes) adapt to changes in mission profiles or priorities (current processes take hours/days)**
   - **Dynamically (within system limitations) shift resources between networks to aid mitigation of outages, congestion, etc.**

*** These are consistent with those defined in the SATCOM-GIG Integration Roadmap**

These ISOM capabilities greatly improve mission-critical command and control (C2) delivery to the warfighter.

Future Technologies

DISA
A Combat Support Agency

Global Force Management (GFM) User Defined Operational Picture (UDOP)

STRATEGICWATCH

User: GFM UDOP

Quick Panel

Registered Services

maps

USGS

USGS Earthquake ShakeMaps

The primary purpose of providing this information to CMDR & Staffs is:

1. Situational Awareness
2. Highlight Force Sourcing & Closure Issues

- Seek one time entry of Operation Name and CCMD or series of FTNs to facilitate data flow through the windows.
- Filters must be designed to manage high volume of FTN/ULN/TTN's
-Also need the ability to tag "Key ULNs or FTNs" for tracking high-interest units and movements
-Need ability to track movement of self-deployers
- Eventually seek to identify and display differences between planned vs. actual execution

Shared UDOPs

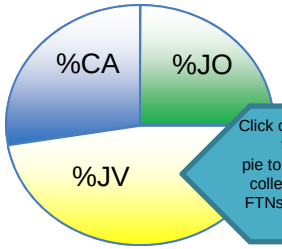
Chat

Start

Logout

Force Request

- JCRM data source
  - By FTN: CCMD Approved (CA), JS Validated (JV), JFP Ordered (JO), Not Approved (NA) status
- Initial filter by Operation Name /CCmd for all windows



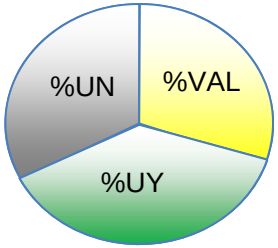
Click on part of the pie to filter the collection of FTNs in table

Potential built in logic to highlight FTN lines with issues

	CA	JV	JO
FTN-1	Date	Date	Date
FTN-2	Date	Date	Date
FTN-3	Date	Date	Date

Force Sourcing

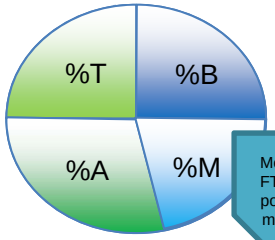
- JOPES data source
  - By FTN/ULN: UIC Not Assigned (UN), UIC Assigned (UY), ULN Validated (VAL)



ULN/ Status	UIC NO	UIC YES	VAL
FTN-1/ULN-A	Date	Date	Date
FTN-1/ULN-B	Date	Date	Date
FTN-1/ULN-C	Date	Date	Date

Force Transport Scheduling

- IGC(S) & JOPES data source
  - By FTN/ULN: Transport Validated (T), Lift Allocated (A), Manifested (M), Both Allocated & Manifested (B) status

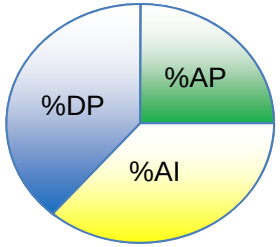


Mouse over FTN line for pop-up with more detail

	T	A	M	B
FTN-1/ULN-A	Date	Date	Date	Date
FTN-1/ULN-B	Date	Date	Date	Date
FTN-1/ULN-C	Date	Date	Date	Date

Force Movement

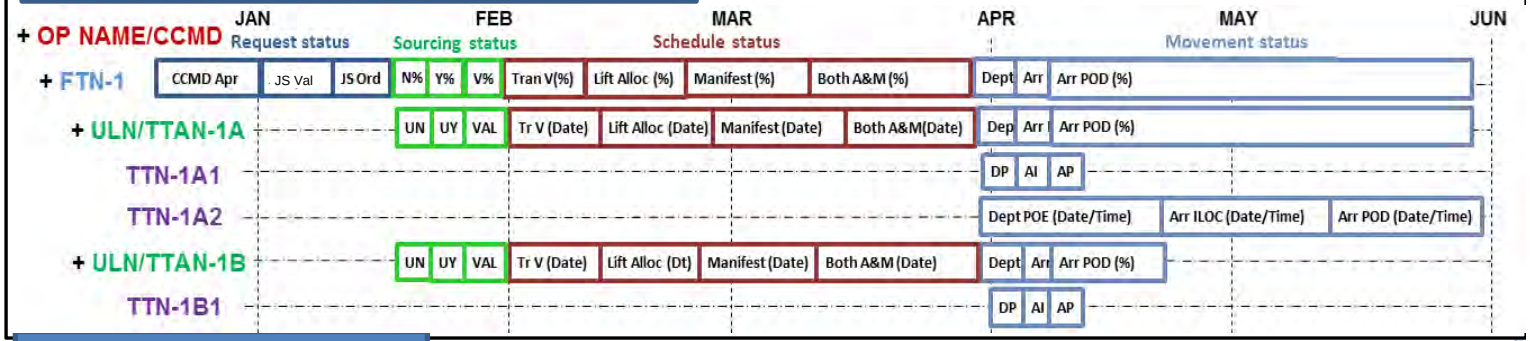
IGS(S) data source for Actual Movement data
- Possibly JOPES for Planned Movement data comparison
- Depart POE (DP), Arrive ILOC (AI), Arrive POD (AP)



	POE	ILOC	POD
FTN-1/ULN-A/TTN-1	Date/Tm	Date/Tm	Date/Tm
FTN-1/ULN-A/TTN-2	Date/Tm	Date/Tm	Date/Tm
FTN-1/ULN-B/TTN-1	Date/Tm	Date/Tm	Date/Tm
FTN-1/ULN-B/TTN-2	Date/Tm	Date/Tm	Date/Tm

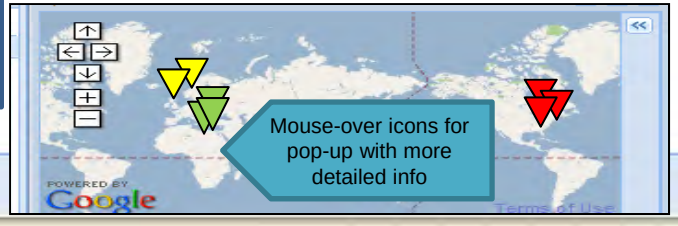
Force Tracking Gantt (End-to-End)

- JCRM, JOPES, & IGC(S) as data sources
- Display FTN/ULN-TTAN/TTN activity on timeline as data populates



Force Movement (Map)

- IGS(S) data source for actual movement data
  - Depart POE, Arrive ILOC, Arrive POD



Mouse-over icons for pop-up with more detailed info

TTN Icon Thresholds

PAX	CARGO
ALL	ALL STONS
> 50	> 100 STONS
> 100	> 500 STONS
> 200	> 1000 STONS
> 500	0-100 STONS
NONE	NONE

Information Volume and Velocity (IV2)

IV2

Detects activity trends and generates visuals to support targeting & audience assessment, message development & propagation and nodal analysis

IV2

- Captures all real-time sources on the web: text, images, videos
- Integrates with social media
- Multi-lingual/sentiment analysis
- Built in real-time self learning
- Predictive information to decision makers as it occurs

Web-scraping Based Threat Assessment Dashboard

Social media activity spiking

Two way info flow

Protesters gathering

Traditional News Media

- Reports during & after event
- One-way info flow

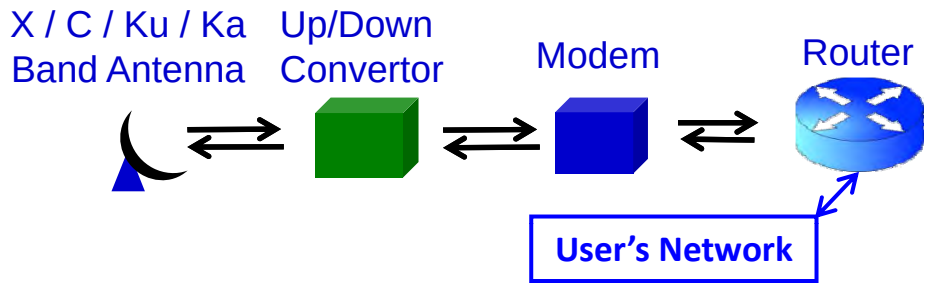
Decision Makers

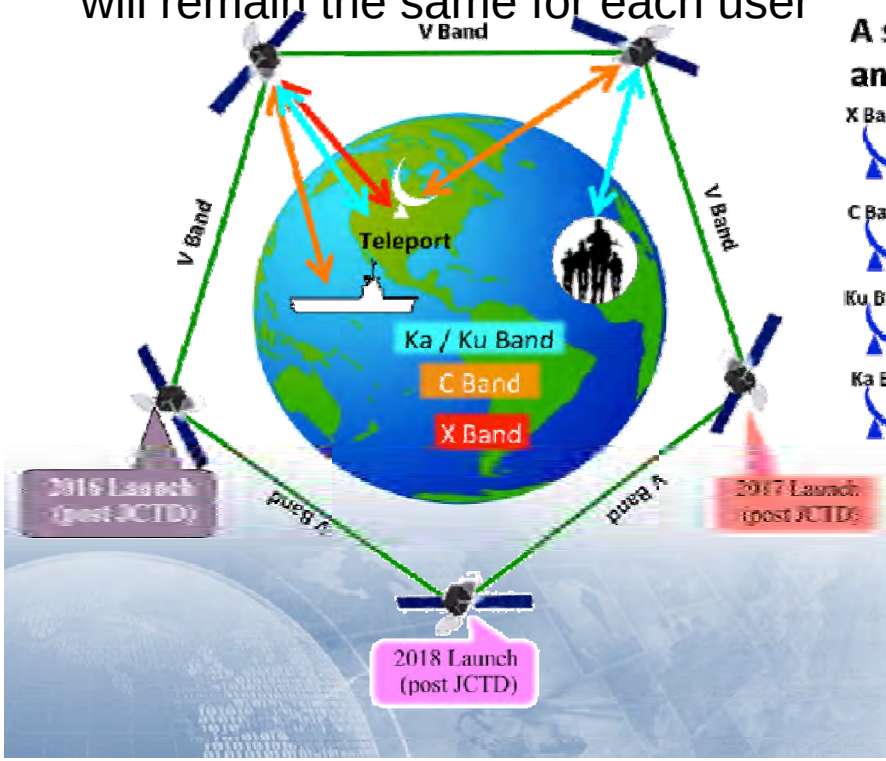
Longhaul IP Network Crosslinks (LINX)

LINX

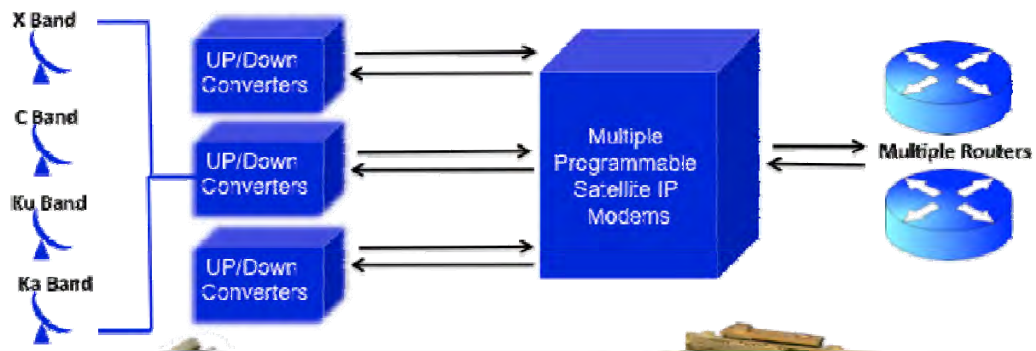
- CONUS Teleport provides connectivity to the GIG
- User ground stations will use current and planned DOD modems/routers for connectivity to DISN services
- All other systems behind the router will remain the same for each user

Each satellite ground station will use existing or planned DOD hardware for the information flow below:





A simplified block diagram of the LINX satellite payload hardware and the payload just prior to flight integration and testing is below:



Programmable Satellite IP Modem

Space Based Router