




Net-Centric Operational Environment (NCOE)

Project Framework

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- Realization of a net-centric operations environment will significantly enhance DoD warfighting and business capabilities through greatly increased sharing of information and coordination of activities.
 - This realization requires the synchronization and integration of multiple programs. The number and complexity of the programs involved and shortcomings in current DoD processes make this realization a significant challenge for the Department.
 - NCOE initiative addresses the “key enablers” of the GIG core infrastructure.
 - NCOE is a cross-cutting initiative with the end objective being an overarching DoD plan that addresses cross-program: capabilities definition, program implementation, operations, and governance for the NCOE programs.

- **Task 1: NCOE Joint Integrating Concept (JIC) and illustrative CONOPS which will serve as the basis for a Capabilities Based Assessment (CBA)**
 - NCOE Enabling Concepts
 - JCIDS Documentation for NCOE Capabilities

- **Task 2: NCOE Implementation Roadmap and TOR**
 - NCOE Overarching Strategy
 - Implementation Roadmap
 - Analysis Of Organizational Roles And Responsibilities Identifying Overlaps And Gaps
 - Recommended Specific Modifications To Existing Unified Command Plan (UCP), MIDs, Organization Charters And Other Appropriate DoD Policies

- **Task 3: Governance/Management COAs and Alternative Solutions**
 - Comparison Of Options With Recommendations
 - Implementation Plan
 - Recommended Language For Changes In DoD Policy And Required Changes In Legislation if needed

Task 2-Objectives

- Task 2a: Develop a roadmap/implementation plan that ensures:
 - The NCOE program set (key enablers of the GIG core infrastructure [GIG-BE, JTRS, TSAT, NCES, GIG-IA, Teleport, {JNMS}]) are executed in a synchronized fashion so that the GIG evolves coherently and meets user needs
 - Also addresses other SATCOM programs (WGS, AEHF, MUOS), as well as cross-cutting areas such as spectrum, data strategy, system engineering, satellite terminals, and integrated network management
- Task 2b: Evaluate and clarify current Departmental roles and responsibilities in regard to advocacy, technical and acquisition oversight; define the appropriate governance structure for the NCOE portfolio

Roadmap/Implementation Plan Framework

- Vision
- Technical and Operational Design Tenets
- Assessment of Capability Deliveries
 - Issue/Risk Identification
 - Assessment and Prioritization
- Integrated Transition Plan
 - Synchronized Master Schedule
 - Investment Strategy
- Governance

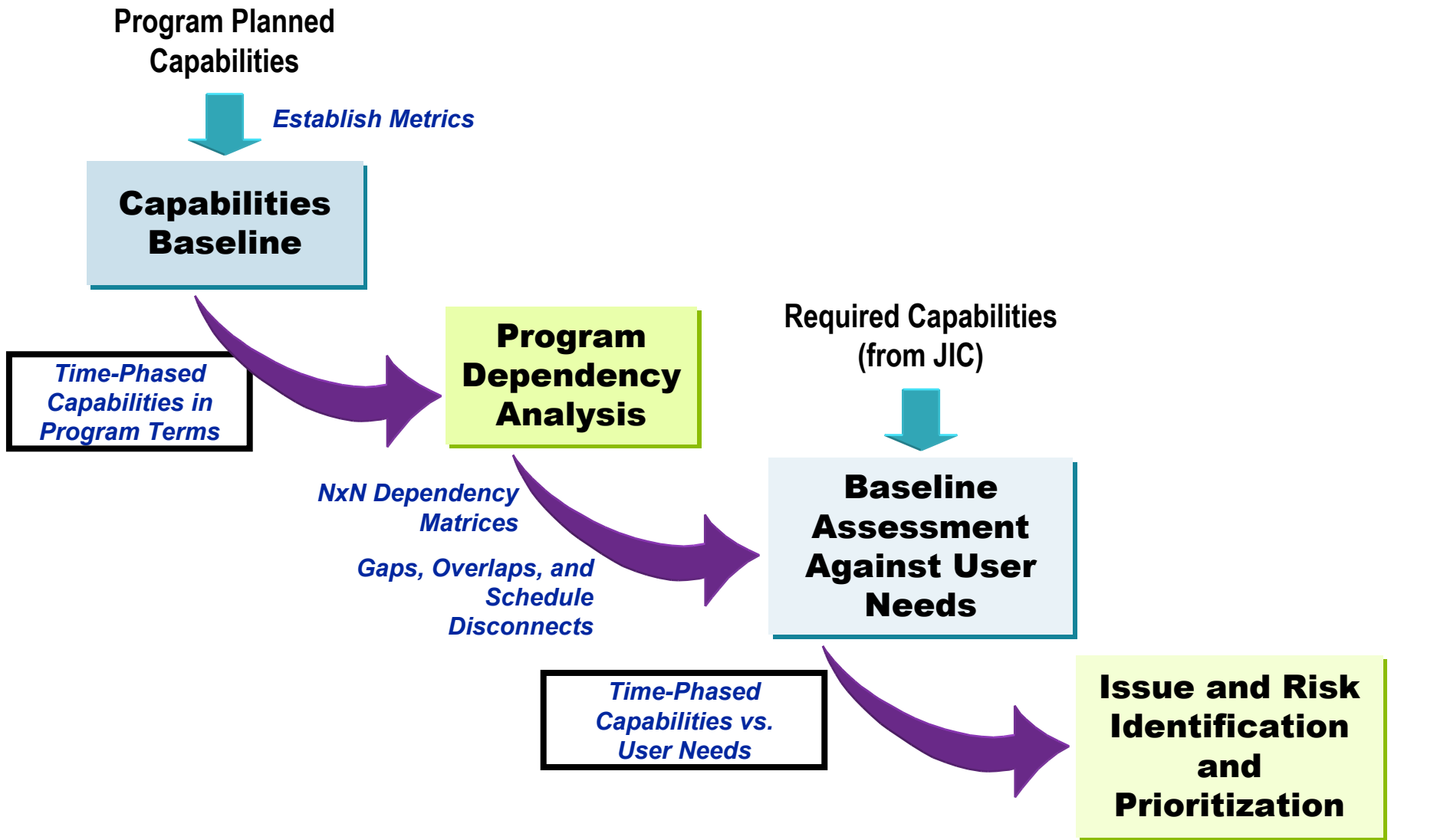


- **GIG Vision:** *Deliver “Power to the Edge” to enable and empower people at the edge of the network (“the edge” is considered wherever activity is occurring).*
 - We are building:
 - An agile, robust, interoperable and collaborative DoD
 - where warfighters, business and intelligence users all share knowledge
 - on a secure, dependable and global network
 - that enables excellent decision-making, effective operations and network-centric transformation

- **NCOE Project Objective:** *Enable and synchronize delivery of the key elements of the GIG core infrastructure in the context of future warfighting concepts.*
 - Support development of an enterprise information environment (EIE) that provides:
 - Robust global information transport
 - Integrated network management
 - Core enterprise services
 - Assured information

- Use of Internet Protocol (IP)
- Provide secure and available communications
- Only handle information once (OHIO)
- Post data in parallel with processing it
- Support smart pull of information (rather than smart push)
- Make “the system” data-centric
- Support application diversity
- Users can pull multiple applications to access data, or collaborate using the same application
- Applications are posted to the net, and metadata-tagged for user discovery
- Support assured information sharing through trusted accessibility
- Provide quality of service via data timeliness, accuracy, completeness, integrity, and ease of use

Capabilities Assessment Process



NCOE Capability Categories	Initial Capability Assessment Metrics
Robust Global Information Transport	<ul style="list-style-type: none">• Connectivity, interoperability• Reliability and availability• Capacity
Integrated Network Management	<ul style="list-style-type: none">• Network infrastructure monitoring and control• Network infrastructure performance reporting• Network infrastructure configuration management and planning• Integration of network and enterprise system management
Core Enterprise Services	<ul style="list-style-type: none">• Visible, accessible, and understandable data• Collaboration support• Scalable services (related to functionality and capacity)• Number of users (related to capacity)• Availability at end user• Latency or Responsiveness at end user (usually a time measure)• Restoration of Service to end user (time measure)
Assured Information	<ul style="list-style-type: none">• Assured information sharing• Highly available enterprise• Cyber situational awareness and network defense• Assured enterprise management and control

Teleport

Communications - Teleport					
Program		2008	2012	2015	2020
Teleport	Number of Sites	6 core sites+1 secondary site	6 core sites+1 enhanced secondary site	6 core sites+1 enhanced secondary site	6 upgraded core sites+1 enhanced secondary site
	SATCOM spectrum	Gen I&II, UHF, EHF (LDR & MDR), C band, X band, Ku band, Ka integration	Gen III, EHF (XDR) Upgrade, MUOS, Advanced Systems, Full IP/NETCENTRIC Implementation	Full operation capability (FOC) Gen II, EHF (XDR) Upgrade, MUOS, Advanced Systems, Full IP/NETCENTRIC Implementation, GN terminals upgrades, Initial T-SAT	Full operation capability (FOC) of upgrades, FOC T-SAT
	Teleport Capacity (Mbps)	520	700	950	1300
	Terrestrial Capacity (Mbps)	1 Gbps	2 Gbps	3 Gbps	4 Gbps
	Terrestrial Networks	DISN Fixed DISN Deployed	DISN, JTRS, WIN-T, Special Nets, Services nets	DISN, JTRS, WIN-T, FCS, TDC, ADNS	DISN, JTRS, WIN-T, FCS, TDC, ADNS
	Networking and Protocols	IP, Circuit Switched	IP only	Terrestrial and Space based IP	Advanced IP
	IA	Link encryption, TACLANE, HAIP	New versions HAIP, Partial Black Core Network	Black Core Network	Black Core Network

Example

N x N Dependencies Approach

Program	GIG-BE	Teleport	JTRS	TSAT	JNM	IA	NCES
GIG-BE						D	
Teleport							
JTRS						D	
TSAT						D	
JNM							
IA							
NCES						D	

Not complete

- “D” indicates that the program listed in the row is dependent on the program listed in the column
 - e.g., IA is an enabler of GIG-BE, JTRS, TSAT, and NCES

Integrated Transition Plan Development

Prioritized Risks/Issues from
Capability Assessment



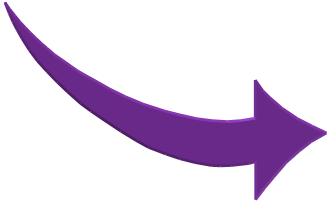
**Develop and
Assess
Candidate
Adjustments**

Based on Multiple Criteria:
Cost, Schedule, Technical,
Effectiveness, Risk

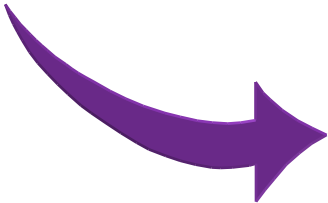


**Select "Best"
Adjustments**

*Explore various
alternatives to
mitigating
issues / risks*



*Use of decision
analytic tools*



- Synchronized Schedules
- Investment Strategies
- Test and Evaluation Strategies
- System Engineering Strategies
- Configuration Management Strategies

- Evaluate current Departmental Roles and Responsibilities (Advocacy, Technical, and Acquisition Oversight):
 - Identify duplicative or conflicting responsibilities
 - Identify roles and responsibilities required but not currently specified
 - Recommend specific modifications to current Unified Command Plans, MIDs, Organizational Charters, and other appropriate DoD and CJCS policies to improve and clarify organization roles and responsibilities

- Define the appropriate governance structure for the NCOE programs

Schedule & Milestones

