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USNORTHCOM Integrated Architecture: A Means to an End

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Overview

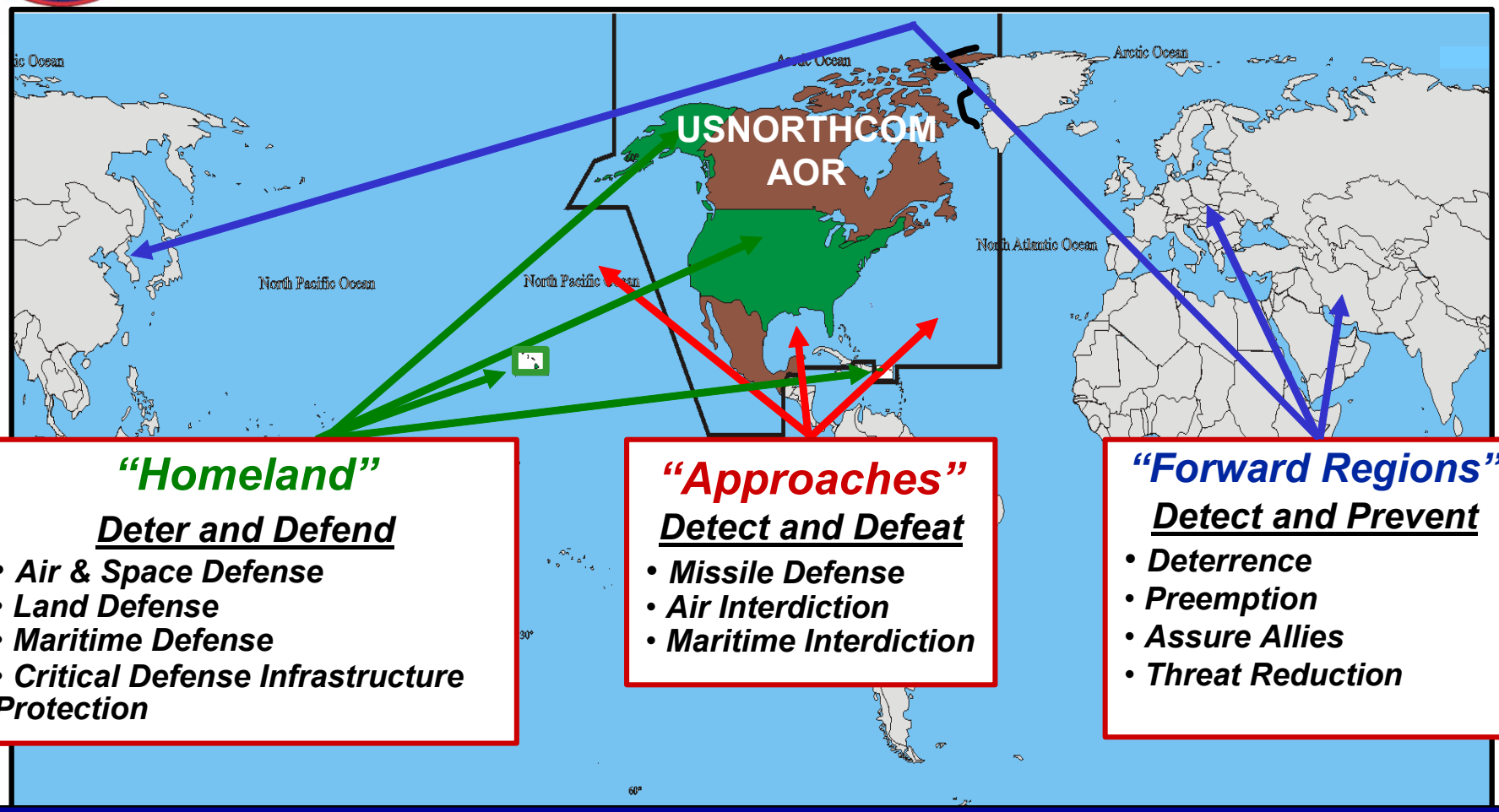
- United States Northern Command – Who We Are
- Architecture in the Federal Government
- Architecture Development & Processes at US Northern Command
- US Northern Command Architecture Tool
- US Northern Command Architecture Status and Progress

Mission & Vision Statements

United States Northern Command conducts military operations to deter, prevent and defeat threats and aggression aimed at the United States, its territories and interests within assigned areas of responsibility; as directed by the President or Secretary of Defense, provides military assistance to civil authorities, including consequence management operations

Deter, Prevent, Defeat, Mitigate:
Protecting Americans where they live and work

Concept of Operations



"Homeland"

Deter and Defend

- *Air & Space Defense*
- *Land Defense*
- *Maritime Defense*
- *Critical Defense Infrastructure Protection*

"Approaches"

Detect and Defeat

- *Missile Defense*
- *Air Interdiction*
- *Maritime Interdiction*

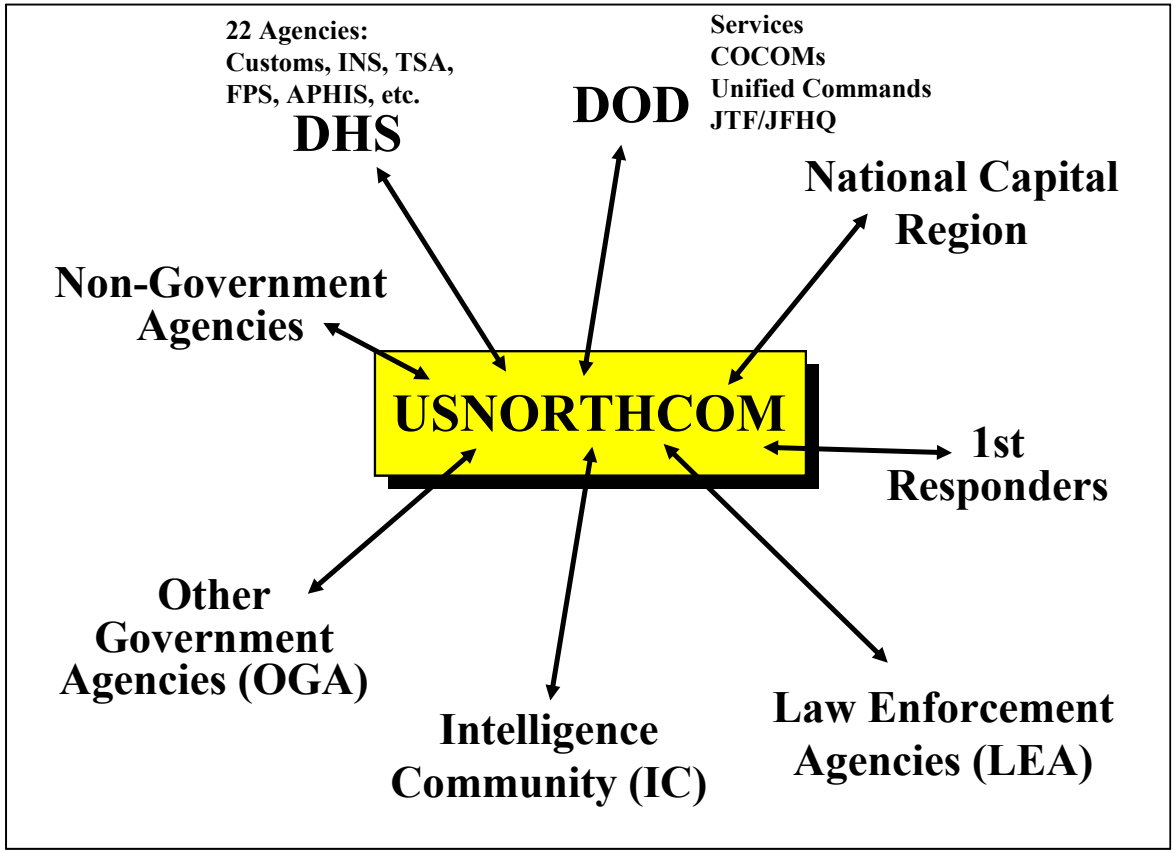
"Forward Regions"

Detect and Prevent

- *Deterrence*
- *Preemption*
- *Assure Allies*
- *Threat Reduction*

USNORTHCOM Layered Defense Concept

Connectivity - Communities of Interest



USNORTHCOM must interoperate with over 600 other agencies/entities

Architecture in the Federal Government

- **GAO Enterprise Architecture Management Maturity Framework (EAMMF)**
  - **Stage 1: Creating awareness**
  - **Stage 2: Building the management foundation**
  - **Stage 3: Developing products**
  - **Stage 4: Completing products**
  - **Stage 5: Leveraging to manage change**

- **2001 survey of 93 federal departments and agencies:**
  100% below Stage 5 (83% in Stages 1 or 2)

- **2003 survey of 96 federal departments and agencies:**
  99% below Stage 5 (90% in Stages 1 or 2) (7 years after Act)

Architecture is not easy to implement--
Average stage was 1.33 in 2003

Architecture Primary Functions

- **Identify DOTMLPF gaps, shortfalls, and duplications**
- **Identify prioritized solutions for the DOTMLPF gaps, shortfalls, and duplications (linked to strategic objectives, i.e, strategic vision key result areas, command critical capabilities, and Joint Mission Essential Tasks)**
- **Identify funding profiles for the DOTMLPF solutions**
- **Identify timelines for implementing the DOTMLPF solutions**
- **Identify technical standards and compliance for the N-NC information exchange environment**
- **Work subordinate unit mission needs to include JTFs, OPCON forces, etc.**
- **Manage the Enterprise Architecture as a Program**

Focus on the primary uses of the architecture data as we develop a net-centric architecture approach

Decision Support

1

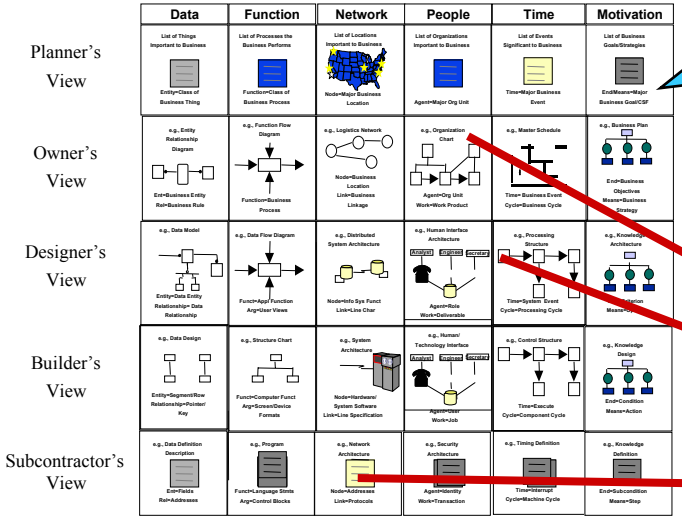
Gather N-NC enterprise information: mission, people, schedule, $$, etc...

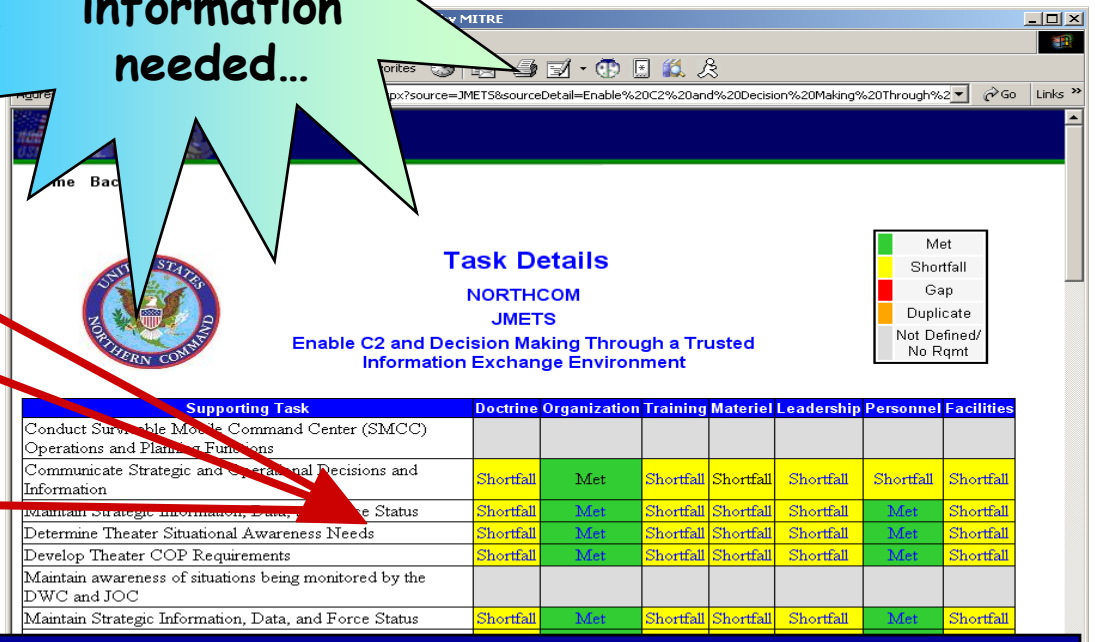
2

Issue arises! Specific information needed...

3

...combine into products needed to help analyze the issue and make a decision

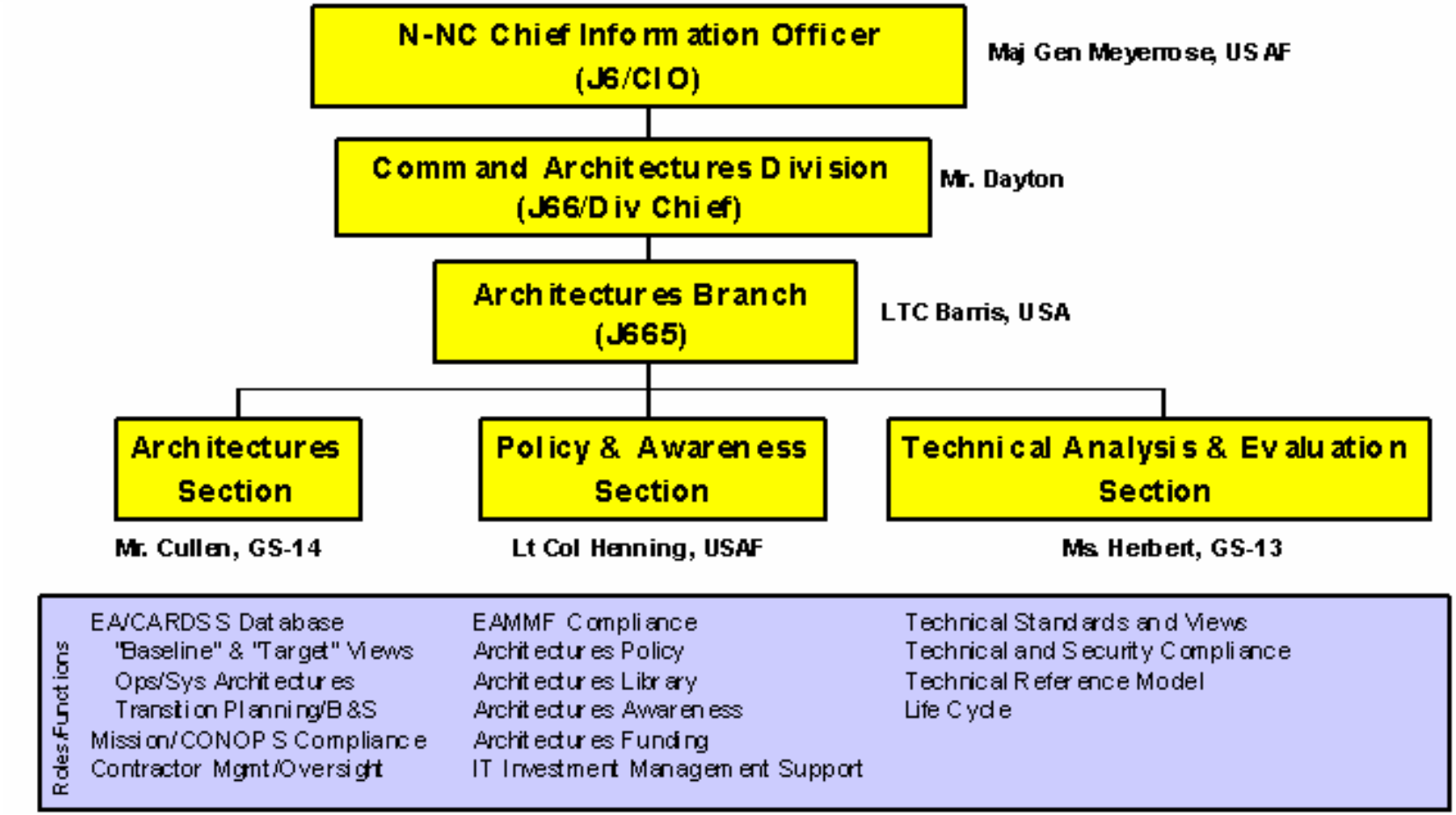




Supporting Task	Doctrine	Organization	Training	Materiel	Leadership	Personnel	Facilities
Conduct Survivable Mobile Command Center (SMCC) Operations and Planning Functions							
Communicate Strategic and Operational Decisions and Information	Shortfall	Met	Shortfall	Shortfall	Shortfall	Shortfall	Shortfall
Maintain Strategic Information, Data, [illegible] Status	Shortfall	Met	Shortfall	Shortfall	Shortfall	Met	Shortfall
Determine Theater Situational Awareness Needs	Shortfall	Met	Shortfall	Shortfall	Shortfall	Met	Shortfall
Develop Theater COP Requirements	Shortfall	Met	Shortfall	Shortfall	Shortfall	Met	Shortfall
Maintain awareness of situations being monitored by the DWC and JOC							
Maintain Strategic Information, Data, and Force Status	Shortfall	Met	Shortfall	Shortfall	Shortfall	Met	Shortfall

Combine data elements to answer questions or produce needed products

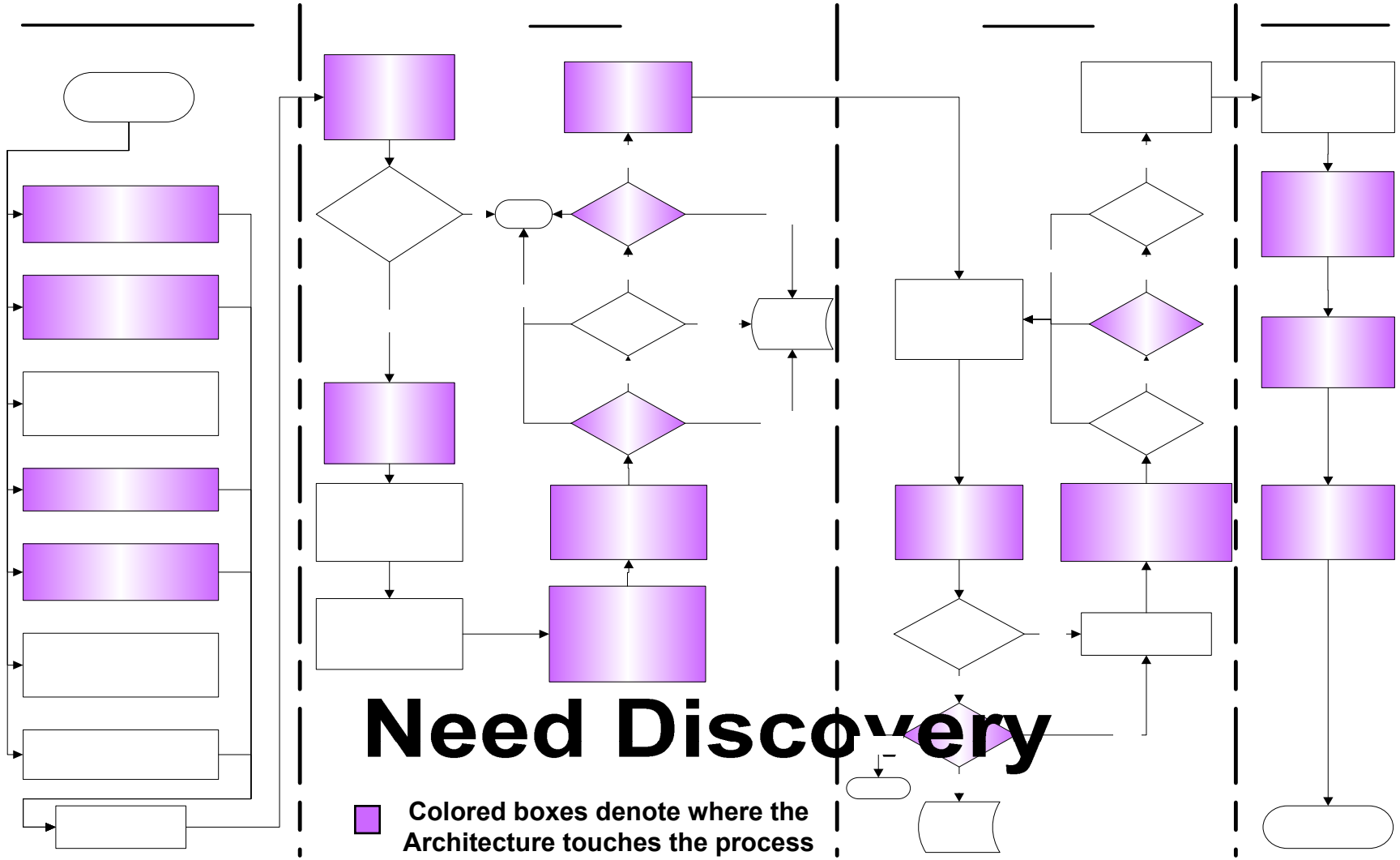
Chief Architect's Organization



Managing the architecture effort with a Program Management Office (PMO)

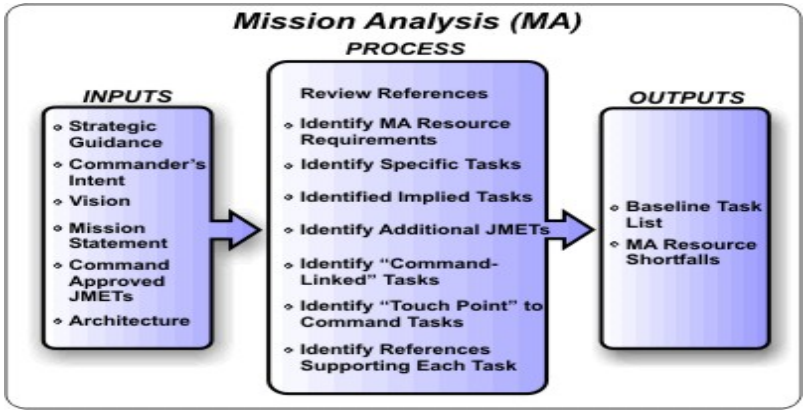
Integrated Process

Information Sharing Capabilities Management Process

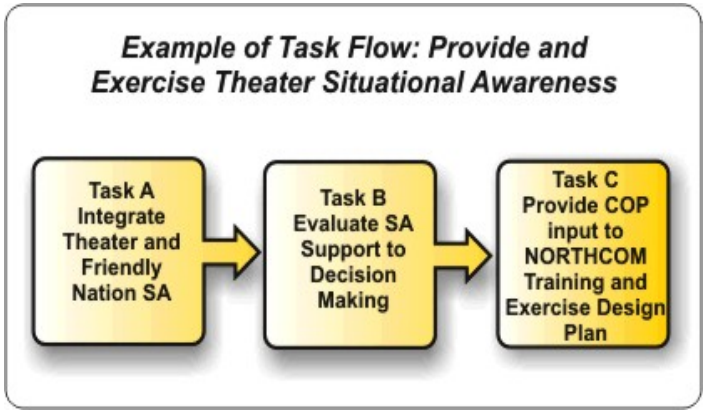


Enterprise Architecture Process

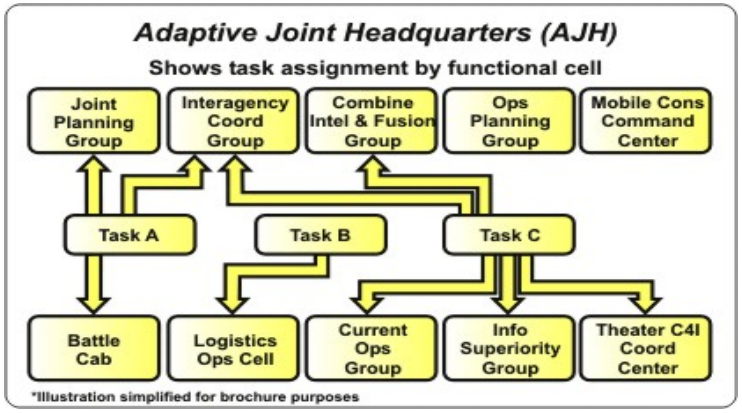
Step 1: Mission Analysis



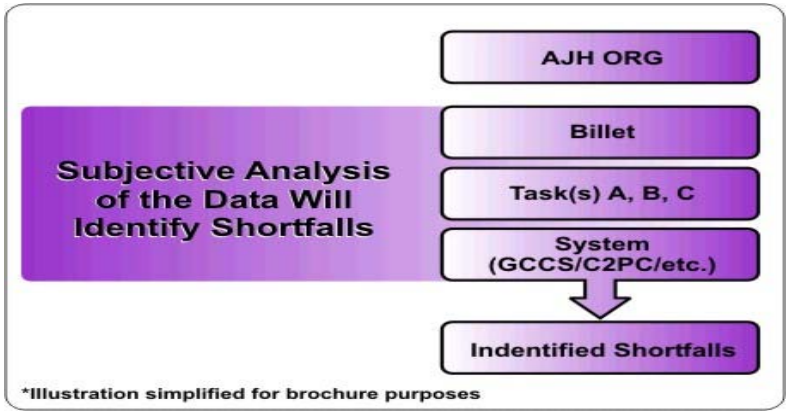
Step 2: Link Tasks by Info Exchange



Step 3: Map Tasks to Org Structure



Step 4: Identify DOTMLPF Needs



Architecture identifies gaps, shortfalls, and duplications

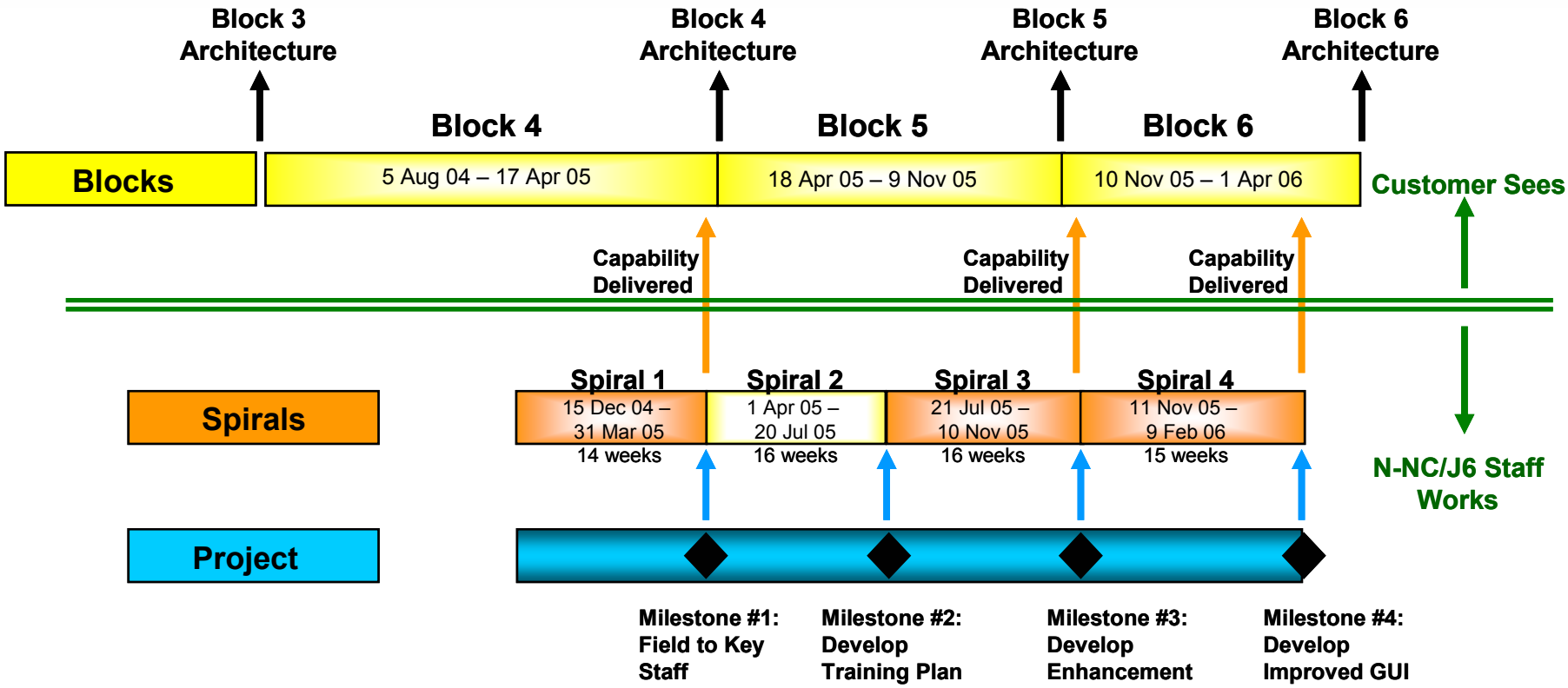
Adding Capabilities – Block & Spiral Approach

Spirals – Development cycles ≤ 16 weeks assigned to each project to focus the efforts of project managers, developers, and IT Investment Management staff. ***Development focus***

Blocks – Periods of time (linked to command-level events) that focus on providing capabilities to the commands. ***User capabilities focus***

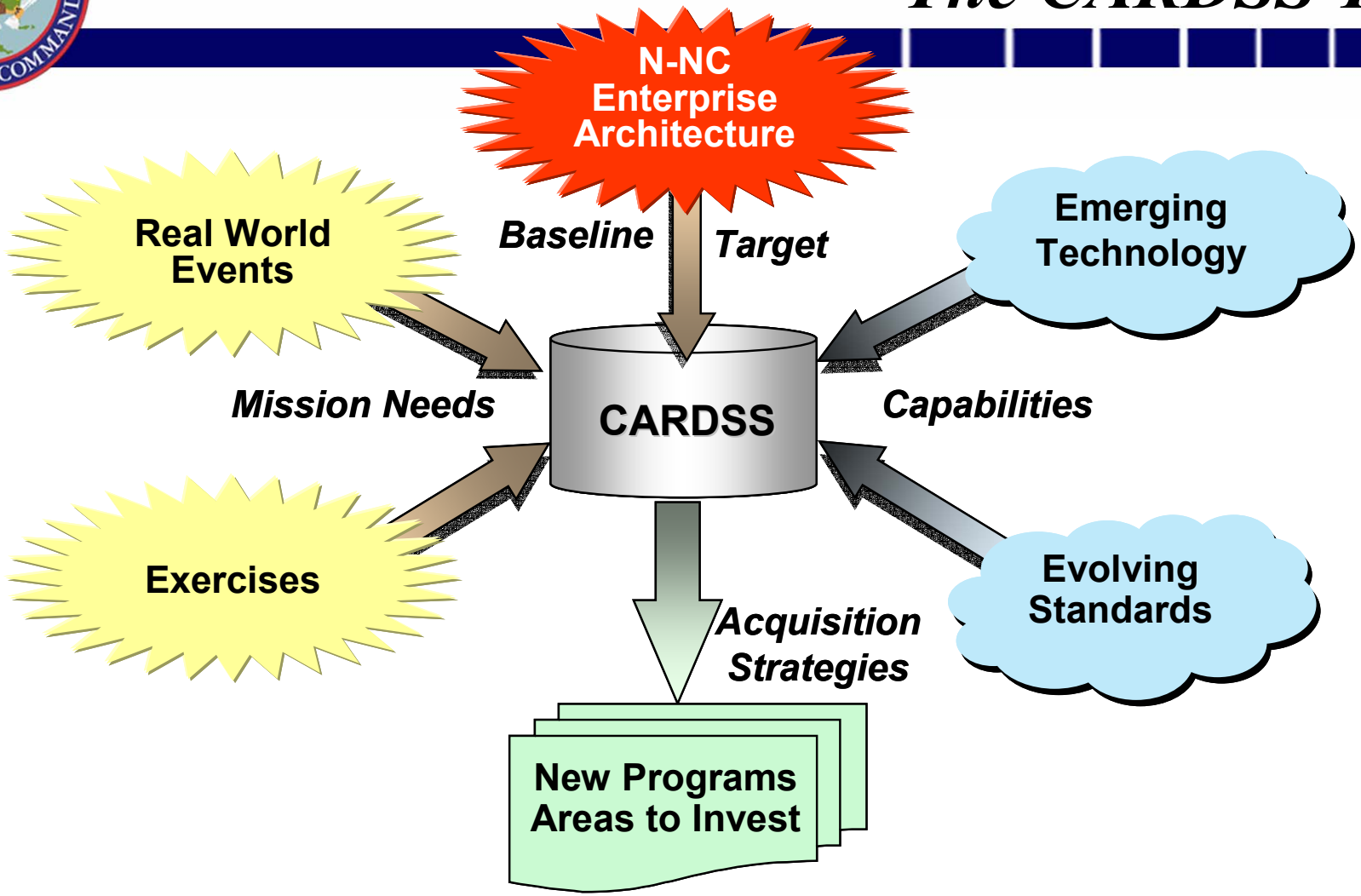
Spirals focus project management efforts
Blocks focus on user capabilities

Projects, Spirals, Blocks, & Architecture



Project development occurs in Spirals,
Upgrades occur in Blocks,
Target Architectures come from Block upgrade plans

The CARDSS Tool



Commands Architecture Repository and Decision Support Source

Assessing Progress

	Stage 1: Creating EA awareness	Stage 2: Building the EA management foundation	Stage 3: Developing EA products	Stage 4: Completing EA products	Stage 5: Leveraging the EA to manage change
Attribute 1: Demonstrates commitment		Adequate resources exist. Committee or group representing the enterprise is responsible for directing, overseeing, or approving EA.	Written and approved organization policy exists for EA development.	Written and approved organization policy exists for EA maintenance.	Written and approved organization policy exists for IT investment compliance with EA.
Attribute 2: Provides capability to meet commitment		Program office responsible for EA development and maintenance exists. Chief architect exists. EA is being developed using a framework, methodology, and automated tool.	EA products are under configuration management.	EA products and management processes undergo independent verification and validation.	Process exists to formally manage EA change. EA is integral component of IT investment management process.
Attribute 3: Demonstrates satisfaction of commitment		EA plans call for describing both the "as-is" and the "to-be" environments of the enterprise, as well as a sequencing plan for transitioning from the "as-is" to the "to-be." EA plans call for describing both the "as-is" and the "to-be" environments in terms of business, performance, information/data, application/service, and technology. EA plans call for business, performance, information/data, application/service, and technology descriptions to address security.	EA products describe or will describe both the "as-is" and the "to-be" environments of the enterprise, as well as a sequencing plan for transitioning from the "as-is" to the "to-be." Both the "as-is" and the "to-be" environments are described or will be described in terms of business, performance, information/data, application/service, and technology. Business, performance, information/data, application/service, and technology descriptions address or will address security.	EA products describe both the "as-is" and the "to-be" environments of the enterprise, as well as a sequencing plan for transitioning from the "as-is" to the "to-be." Both the "as-is" and the "to-be" environments are described in terms of business, performance, information/data, application/service, and technology. Business, performance, information/data, application/service, and technology descriptions address security. Organization CIO has approved current version of EA. Committee or group representing the enterprise or the investment review board has approved current version of EA.	EA products are periodically updated. IT investments comply with EA. Organization head has approved current version of EA.
Attribute 4: Verifies satisfaction of commitment		EA plans call for developing metrics for measuring EA progress, quality, compliance, and return on investment.	Progress against EA plans is measured and reported.	Quality of EA products is measured and reported.	Return on EA investment is measured and reported. Compliance with EA is measured and reported.

maturation

Source: GAO.

Stage 5
Leveraging the EA to Manage Change

Stage 4
Completing EA Products

Stage 3
Developing EA Products

Stage 2
Building EA Management Foundation

Stage 1
Creating EA Awareness

INCREASING MATURITY

Using GAO's Enterprise Architecture Management Maturity Framework (EAMMF) to assess progress

EAMMF Assessment

As of 15 Aug 04

STAGE 1: Creating EA Awareness	STAGE 2: Building the EA Mgt Foundation	STAGE 3: Developing EA Products	STAGE 4: Completing EA Products	STAGE 5: Leveraging the EA to Lead Change
If an organization has plans to develop and use an architecture yet hasn't satisfied the criteria in stage 2, it is considered in stage 1.	1. Adequate resources exist	10. Written and approved organization policy exists for EA development.	16. Written and approved organization policy exists for EA maintenance.	24. Written and approved organization policy exists for IT investment compliance with EA.
	2. Committee or group representing the enterprise is responsible for directing, overseeing, or approving EA.	11. EA products are under configuration management	17. EA products and management processes undergo independent verification and validation.	25. Process exists to formally manage EA change.
	3. Program office responsible for EA development and maintenance exists.	12. EA products describe or will describe both the "as-is" and the "to-be" environments of the enterprise, as well as a sequencing plan for transitioning from the "as-is" to the "to-be."	18. EA products describe both the "as-is" and the "to-be" environments of the enterprise, as well as a sequencing plan for transitioning from the "as-is" to the "to-be."	26. EA is integral component of IT investment management process.
	4. Chief Architect exists.	13. Both the "as-is" and the "to-be" environments are described or will be described in terms of business, performance, information/data, application/service, and technology.	19. Both the "as-is" and the "to-be" environments are described in terms of business, performance, information/data, application/service, and technology.	27. EA products are periodically updated.
	5. EA is being developed using a framework, methodology, and automated tool.	14. Business, performance, information/data, application/service, and technology descriptions address or will address security.	20. Business, performance, information/data, application/service, and technology descriptions address security.	28. IT investments comply with EA.
	6. EA plans call for describing both the "as-is" and the "to-be" environments of the enterprise, as well as a sequencing plan for transitioning from the "as-is" to the "to-be."	15. Progress against EA plans is measured and reported.	21. Organization CIO has approved current version of EA.	29. Organization head has approved current version of EA.
	7. EA plans call for describing both the "as-is" and the "to-be" environments in terms of business, performance, information/data, application/service, and technology.		22. Committee or group representing the enterprise or the investment review board has approved current version of EA.	30. Return on EA investment is measured and reported.
	8. EA plans call for business, performance, information/data, application/service, and technology descriptions to address security.		23. Quality of EA products is measured and reported.	31. Compliance with EA is measured and reported.
	9. EA plans call for developing metrics for measuring EA progress, quality, compliance, and return on investment			

ELEMENT CRITERIA STATUS

- SATISFIED
- PARTIALLY SATISFIED
- NOT SATISFIED

Achieve Stage 5 by 30 September 2005 !!!!


UNITED STATES
NORTHERN COMMAND