A Roadmap for Developing Architectures in a Net-centric World

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Agenda

- The Challenge of Change
- What is an Architecture?
- Why Architectures?
- Architecture as a Discipline
- Roadmaps
- Example: The Joint Planning Process
- Creating Roadmaps
- Utilizing Architectures
The Challenge of Change

‘Pushing’ Change
- Information Transfer Requirements
  - Interoperability
  - Integration
  - Convergence
- Technology Evolution
- Compressed Time frames for action
- Non-linearity

‘Pulling’ Change
- Data that is:
  - Valid
  - Current
  - Confirmable
  - Useful in the immediate future
- BOTH Blue and Red are important
What is an Architecture

- Structure of Components that work together
- Interrelationships among Components
- Principles and Guidelines governing their design and evolution over time.

An architecture defines how a process or system, or both, are supposed to work together.
Why Architectures?

Architectures are a means for looking at the present in an organized way and planning for the future.

Fundamental change requires more than models or simulations alone can provide.

Formal process—Planning, Defining and Understanding—need an organized means to reach their potential.
Architectures as a Discipline

The C4ISR Framework
- Operational C2 Architectures
- Systems-based C2 Architectures

Standard Data
- C2 Core Data Model
- Core Architecture Data Model

Common understanding of terms and products
Common language across architectures
Roadmaps – The basic steps

- Identification – Defining the problem
- Planning – Determining methods for solutions
- Analysis – Understanding the baseline and future needs
- Decision-making – Developing priorities for action
- Funding – Providing resources for change
- Development – Executing change
The Joint Planning Process

Joint Capabilities Integration and Development System [JCIDS]
Creating Roadmaps

Goal is to facilitate creation of an architecture that:

- Presents a feasible solution
- Creates a logical, efficient way to procure/develop the solution
- Defines methods for testing interoperability
- Presents a complete approach to DOTMLPF change

Result is an executable, net-centric solution that serves the purposes for which it was created.

The architectural views become the blueprint for development and/or change
Utilizing Architectures

In a Net-centric environment, architectures:

- Map the development of systems, families of systems [FOS], and systems of systems [SOS] along with the transmission paths of their data
- Reduce ambiguity, clarify and simplify understanding
- Ensure consistent data routing to subscribers
- Lend additional clarity to critical activities
In Summary

- **Architectures** provide a description of current process, and a view of the desired future state.
- **Roadmaps** provide a level of scoping that further clarifies an expected result.
- Roadmaps are critical to Net-centric efforts where the avoidance of extraneous activity is important, and efficient paths to critical data is an absolute.