

# 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

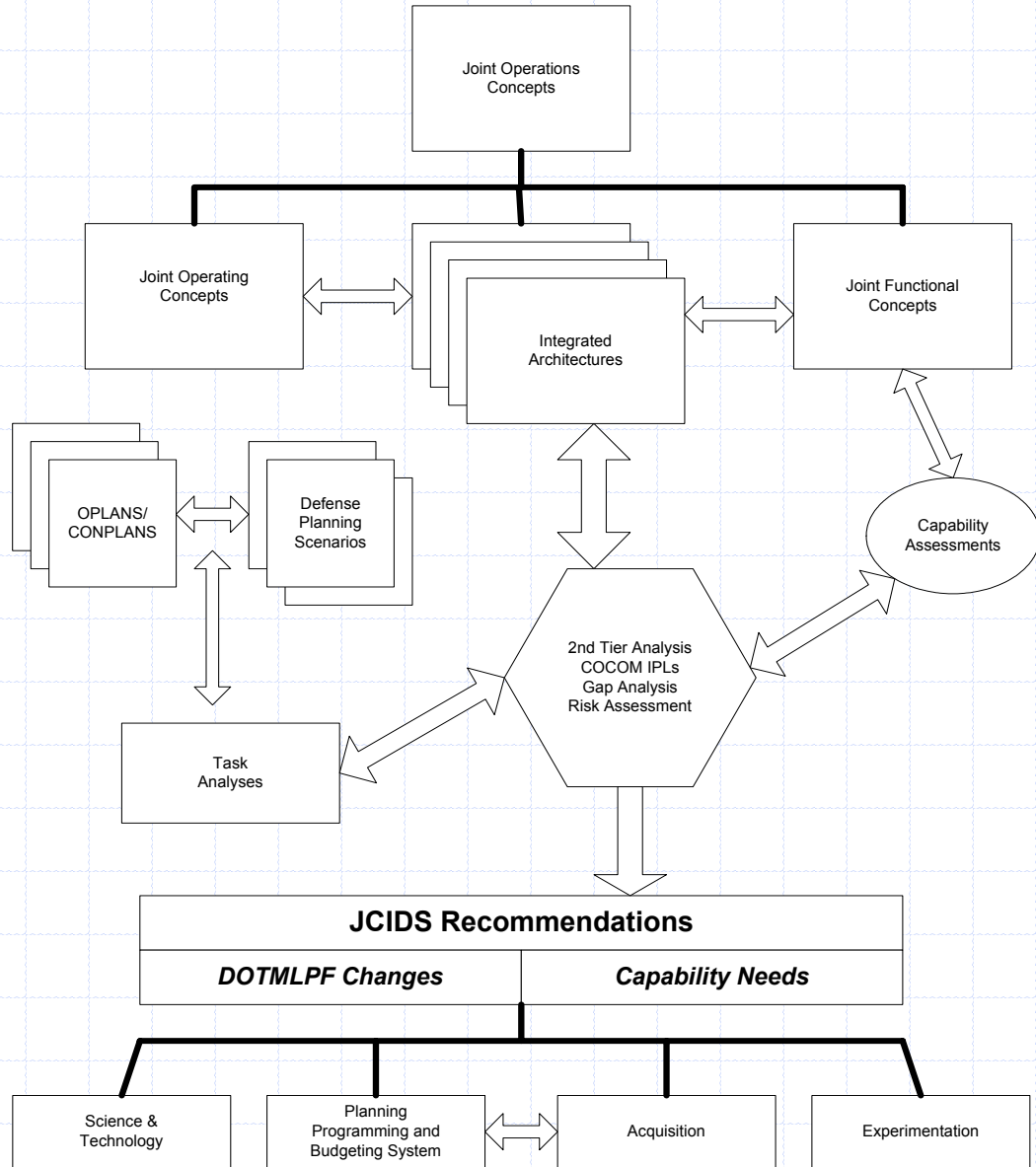


# Roadmaps – The basic steps

- ◆ 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.

