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Engineering Unified NetOps for the Defense Information Enterprise

23-Apr-2012

V1.3

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Operational Characteristics of the Enterprise Infrastructure – NetOps Implications

Always On	NetOps is a non-stop, all-day/everyday, real-time mission.
End-to-End Service	All tiers; all layers; all levels; from providers to consumers and back -- all enabling resources (network, spectrum, SATCOM, computing, applications, data, etc.) must be managed (monitored and controlled, operated and defended) as a reliable, efficient, and secure service-oriented fabric.
Full Spectrum Ops	NetOps must ensure resiliency in the face of adversaries, systemic flaws, human error, entropy, and natural events.
Contested Battlespace	NetOps must accommodate the resource diversity, user and mission customization, and rapid pace of change intrinsic to Cyberspace capabilities and essential for success in Cyberspace operations.
Interoperable	NetOps must provide assured availability, delivery, and protection of information and supporting infrastructure anywhere and everywhere required for DoD missions.
Global Mission	

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Topics to be Addressed

- What are the drivers for unified NetOps?
  - DISA, DoD CIO, Joint Information Enterprise
- What principles guide the transformation to unified NetOps?
- How is the DISA NetOps PMO working to realize and facilitate this transformation?
  - Governance approach
  - Service Assurance Framework
  - NetOps Integration Framework
- How is the DISA NetOps PMO working with other organizations to synchronize efforts and expedite outcomes?
  - NetOps Relationship Model (GOTD)
  - Operational Framework (GOTD)

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Bottom Line Up Front

- Consolidation for enhanced effectiveness and efficiency is underway across the DoD – NetOps included
- Proactively tackling the challenges sooner rather than later will set us on the right track and contribute to meeting expectations
- Official Joint Information Enterprise Roles & Responsibilities and POA&Ms – if and when they are promulgated – will likely drive many decisions and COAs – we will have to adjust
- Need to unify – or at least progress toward it – on multiple dimensions concurrently, but almost surely not in lock step
- The DISA NetOps PMO – in collaboration with GO, NS, ESD, CDC, ITSMO, EE, CIAE, and others – is tackling some foundational needs:
  - Governance of the NetOps capability delivery process and solution set
  - Engineering NetOps into and across the DISA service delivery lifecycle
  - Integration of existing and future NetOps capabilities into the DISA OSS

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Drivers for Unified NetOps

- **DISA Campaign Plan**
  - **Agency enterprise-level NetOps integration**
    - **Stand-up of the DISA NetOps PMO is one part of the solution strategy**
- **DoD CIO Campaign Plan**
  - **NetOps mission-level integration**
    - **Architecture to enable holistic NetOps, inclusive of IA/CND, to optimize performance across the Operate & Defend mission**
  - **Builds on guidance already in the Joint CONOPS for GIG NetOps and DoDI 8410.02**
- **Joint Information Enterprise**
  - **DoD enterprise-level unification**
    - **DoD IT Effectiveness Task Force**
  - **Joint Enterprise Services**

NetOps targets from the DoD CIO Campaign Plan
Future State
• Consolidated NetOps environment provides greater efficiency, effectiveness, and security due to centrally managed architectures, standards, and standardized joint processes
• Global NetOps visibility of information assets enables dynamic reallocation to meet shifting operational demand

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Principles for Transformation to Unified NetOps

- Understood to be an evolutionary process
  - Employ the JIE 5-phase model:
    - Plan, Shape, Normalize, Optimize, Sustain
  - Use pragmatic methods in the absence of funding for major new development or acquisition:
    - Aggregate, Integrate, Converge, Federate, Consolidate … Unify
- Current operations must not be negatively impacted
- Service delivery must not be degraded
- Resulting capabilities must match or exceed current capabilities
- Objective measures of effectiveness and efficiency must demonstrate value

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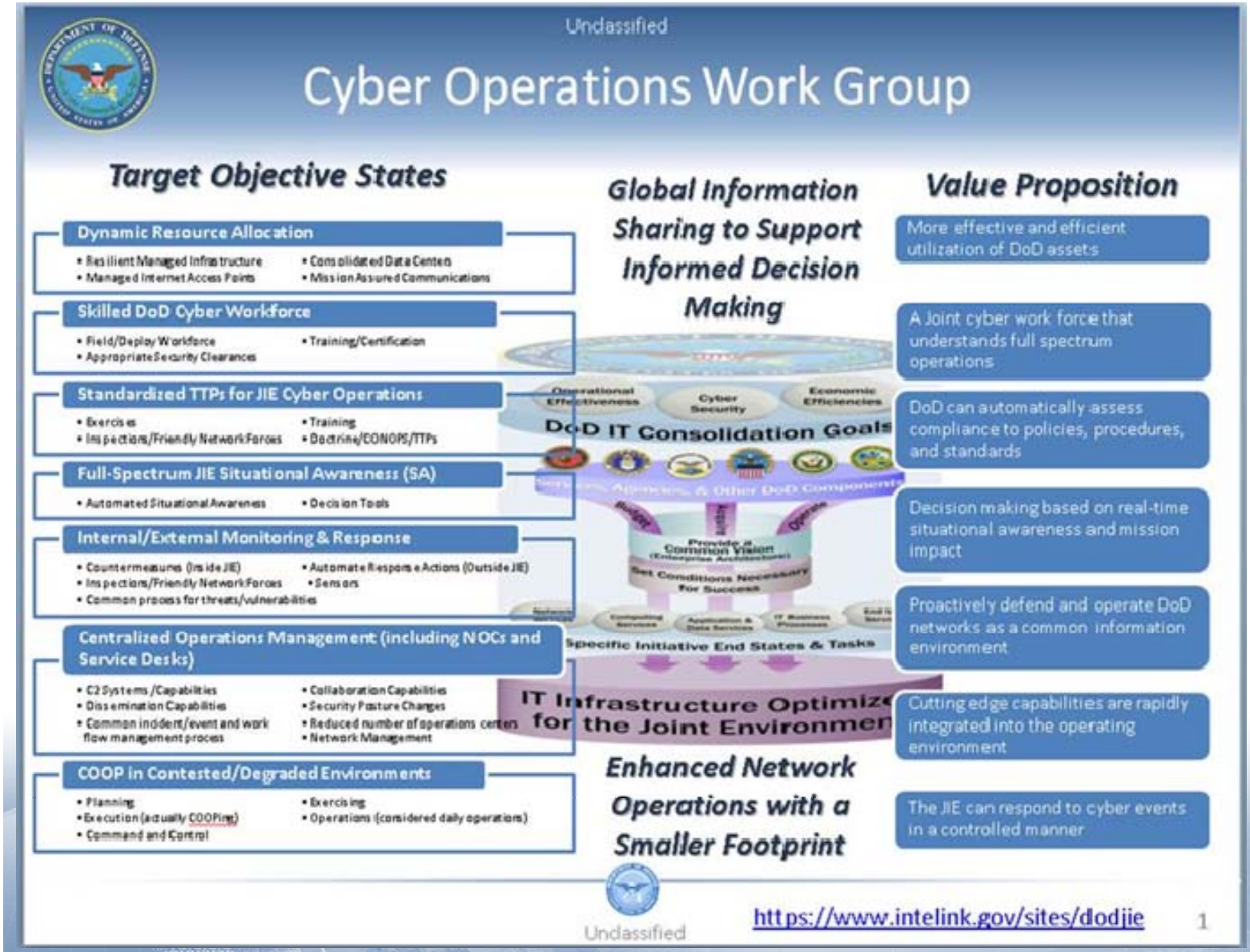
NetOps – Operate and Defend – for the Joint Information Enterprise



- **Broader scope of responsibility over a larger consolidated domain**
- **More demanding requirements for performance, timeliness, throughput, cost-effectiveness, etc.**
- **Greater mission criticality and greater visibility concerning success and failure.**
- **NetOps will have to get leaner, faster, and sharper to meet the challenges – and the opportunities!**

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NetOps PMO Efforts

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Initiatives Launched by the DISA NetOps PMO

- **Institutionalizing NetOps PMO Processes & Governance**
  - Standardizing IPT Management and delivery of NetOps capabilities
  - Establishing the PMO through formal issuance of the charter
  - Providing repeatable methods for delivering agency-wide NetOps capabilities
  - Building consensus based on objectives and outcomes
- **Service Assurance Framework for Enterprise Services**
  - Foundational to Agency for Service Catalog, Order Management, and establishment of Enterprise Service offerings
  - Decomposing DISA services into resource components
  - Assessing existing capabilities to perform Service Management
- **NetOps Integration Framework and Architecture**
  - Enabling the integration of capabilities to optimally operate and assure the enterprise infrastructure
  - Testing the framework using PEO-MA IA tools as use cases

Aligned with ITSMO DESMF and GO OF efforts

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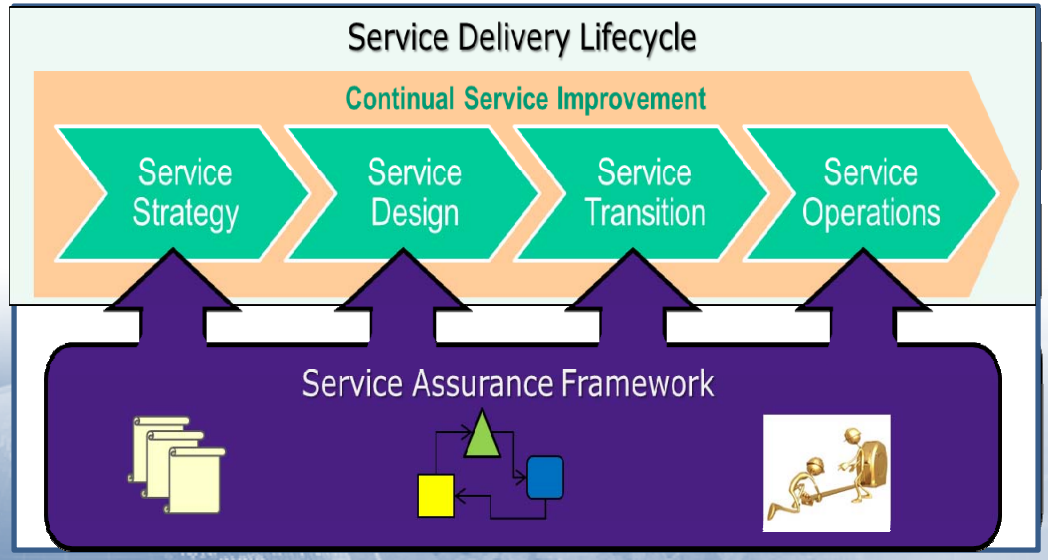
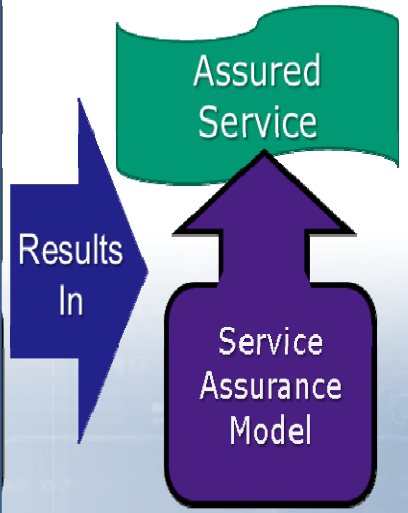
Service Assurance Framework

- The Service Assurance Framework (SAF) is the set of guidance, processes, and resources the agency uses in all phases of its service delivery lifecycle to assure the availability, delivery, and protection of the information and infrastructure necessary to support all DoD missions that depend on them.
- The SAF is the Agency's methodology for engineering NetOps into the Information and Communication Technology services it delivers.
- The SAF enables us to realize "Operate *to* Assure" – i.e., to deliver comprehensive service assurance via unified service management.
- The SAF institutionalizes "comprehensive" and "unified" in agency NetOps capabilities.

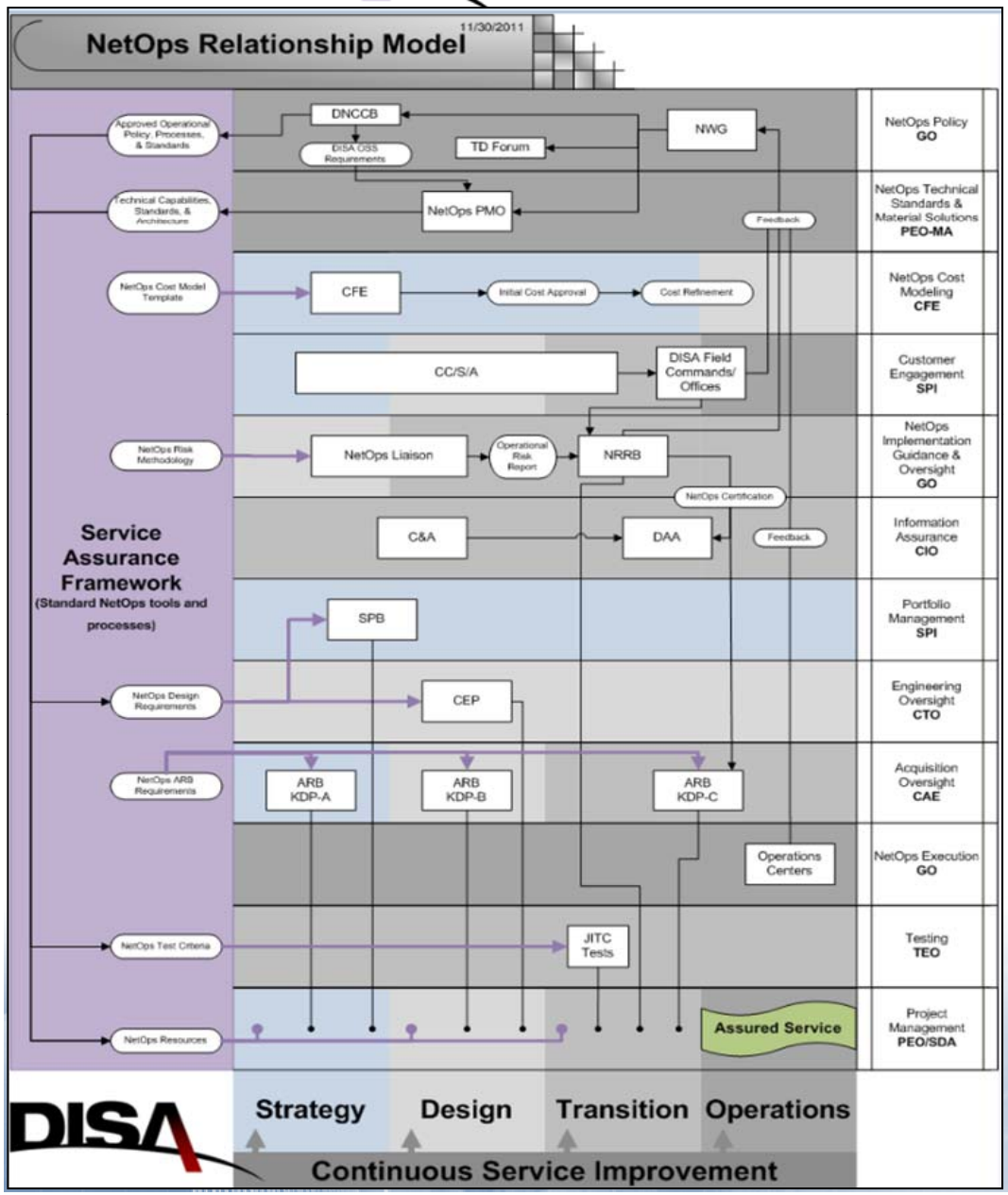




SAF Components:

- Service Decomposition
- NetOps Requirements for Services
- NetOps Technical Standards
- NetOps Test Criteria
- NetOps Cost Model
- (More components to be added as identified)…

NetOps Relationship Model



- DISA Operations Tech Director (GOTD) Product
- Confluence of two initiatives:
  - NetOps Readiness Review Process (GO)
  - Service Assurance Framework (NetOps PMO)
- Depicts how the SAF aligns to decisions
- A first cut of what the SAF contains and how it will be used by the agency
  - A foundation for further coordination between GO and the NetOps PMO to accurately represent this complex and dynamic reality

NetOps Integration Framework

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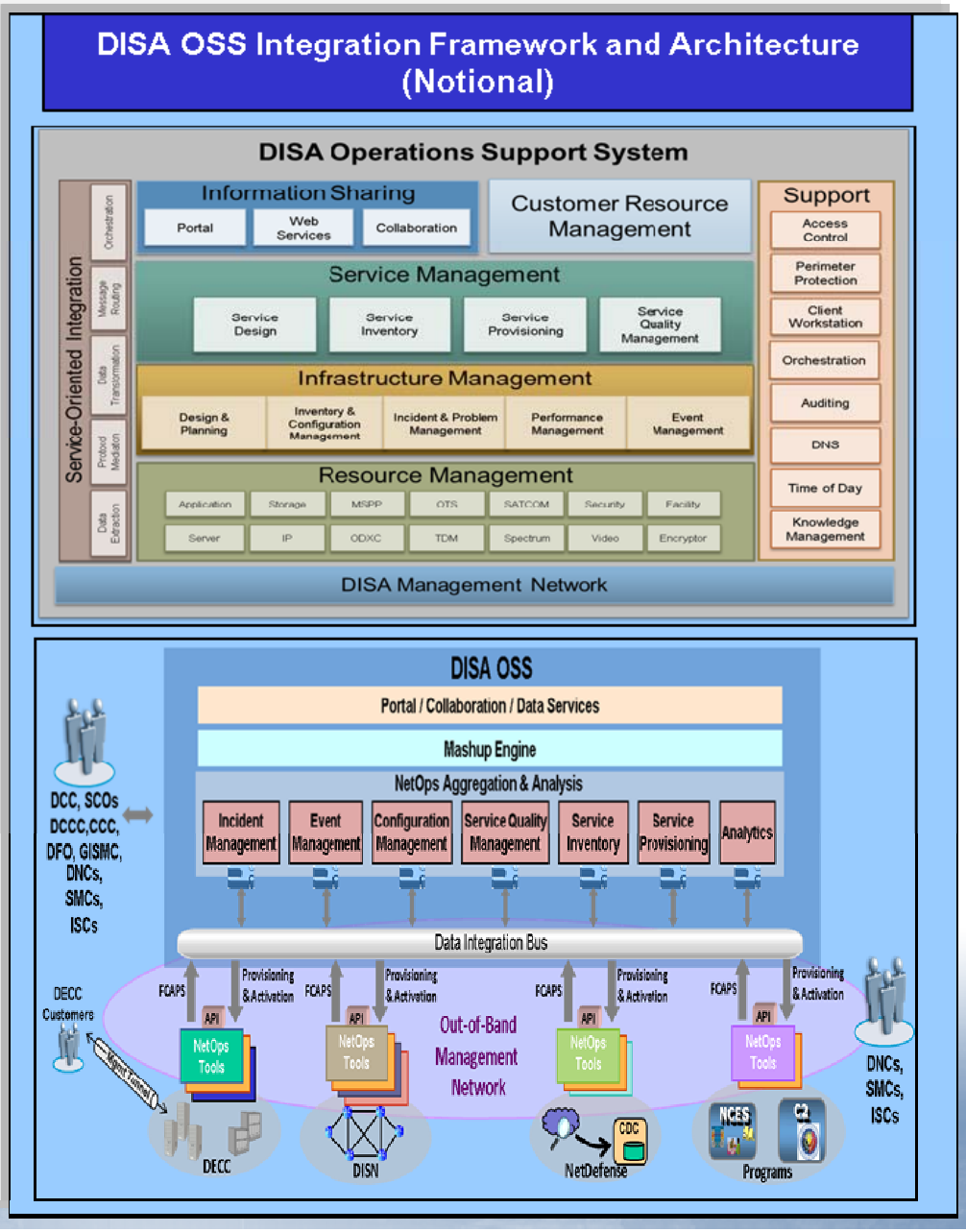
- The methodology and technical artifacts that focus DISA NetOps capability development towards realizing a coherent system that assures the DISA Enterprise Infrastructure.
- The architecture defines what the NetOps capabilities manage, how they are integrated, and how they interface with external systems and users.
- The framework formalizes how the architecture is used to support decision making on evolving NetOps capabilities
- While the SAF is primarily used by the project managers that deliver services, the NetOps Integration Framework & Architecture is used internal to the DISA NetOps PMO to evolve NetOps capabilities



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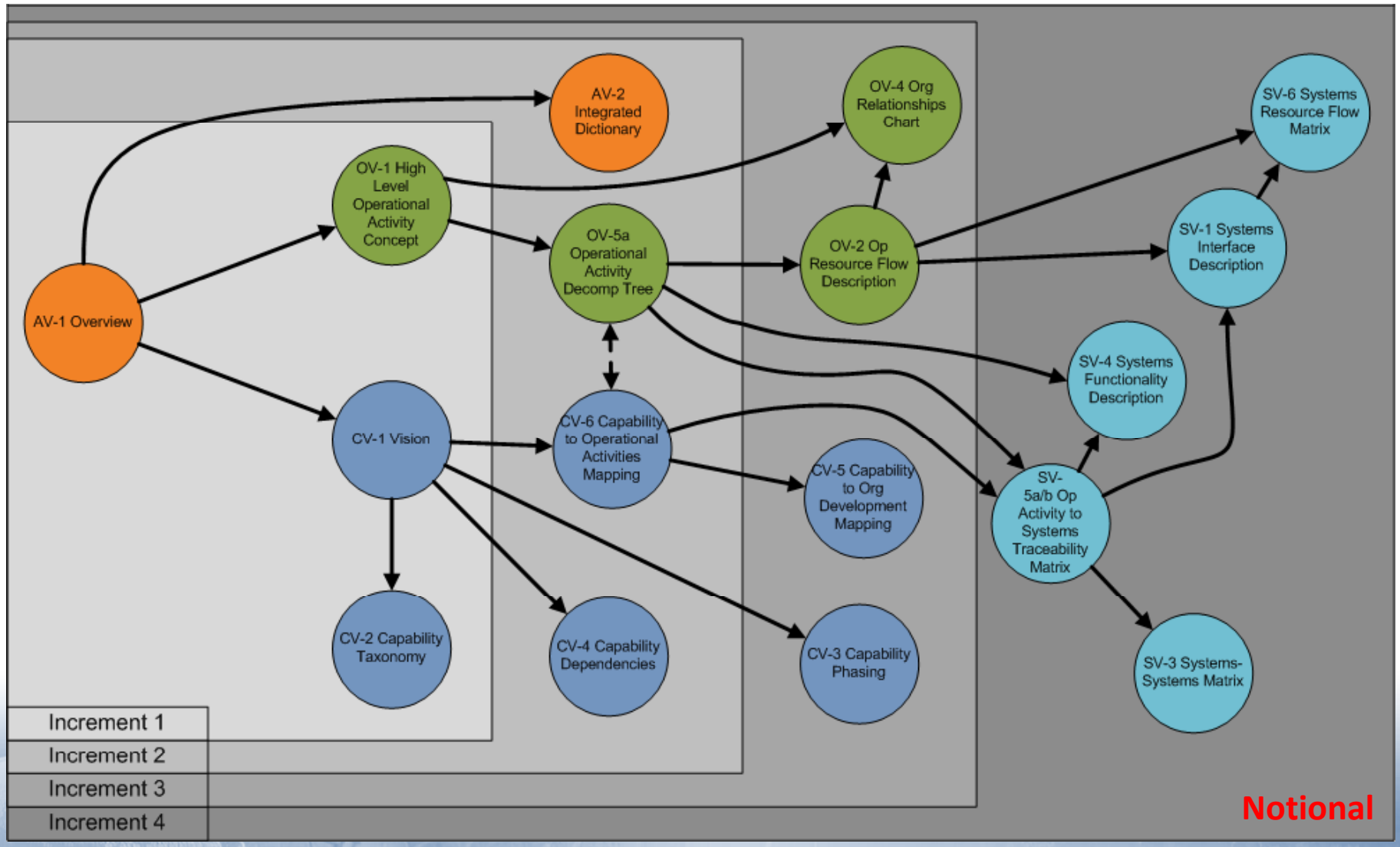
DISA OSS Architecture Development Progression



Bringing it All Together

OV-1 for NetOps PMO Initiatives

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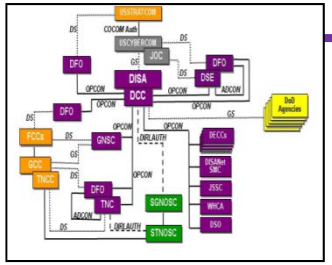
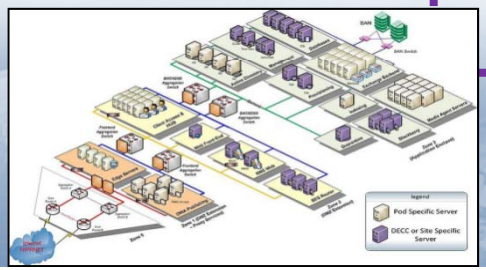
Existing NetOps Tools

USCYBERCOM

Operations



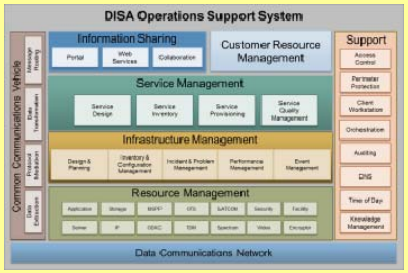
Enterprise Services



NetOps Capability Requirements

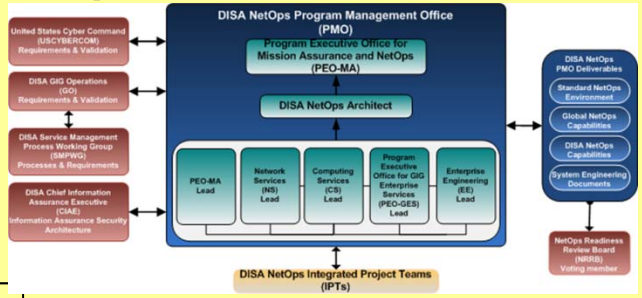
NetOps Integration Framework

Assess integration alternatives that incrementally improve NetOps



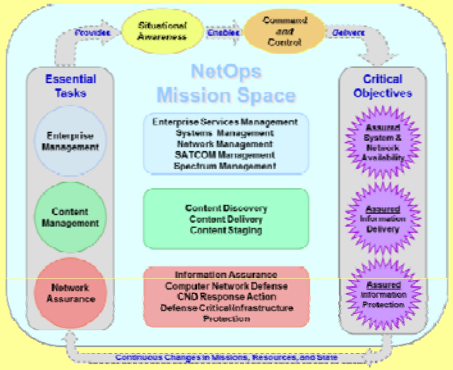
NetOps Process & Governance

Uses the NetOps Integration and Service Assurance Frameworks through unity of effort to optimize NetOps of the Enterprise Infrastructure and Services

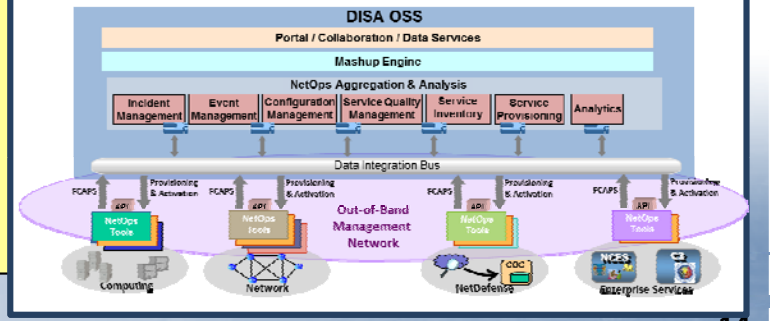


Service Assurance Framework

Assure availability, delivery, and protection of all enterprise services in a consistent, deliberate method



Objective: Unified NetOps



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Questions?