Word cloud from May 15, 2015
MSC BSA IT Pilot Decision Package
• Clearly defining roles, responsibilities and the governance structure to establish clear authorities of the Agency CIO for management and oversight of the NASA IT portfolio as required by FITARA and other policies and regulations. (1.Roles & Responsibilities, 2.Governance)
• Implementing a federated/hybrid approach to data centers in order to develop an agency level data center enterprise architecture to serve as a decision framework for consolidation of assets, strategic sourcing, and future investments. (3.Data Center)
• Executing a network transformation initiative to enable a seamless, integrated agency system that provides reliable, secure and lower cost services enabling cross center collaborations. (4.Ccommunications)
• Consolidating end-user services for both workstations and collaboration tools to improve security, maintain interoperability standards, maximize efficiencies and meet growing demands for that work across the agency and extend to external partners. (5.Workstations, 6.Collaboration)
• Conducting a zero-based review of IT Security spending to actively and clearly understand the agency risk posture and inform action plans and investment strategies. (7.Security)
Types of NASA IT Services

- **Enterprise Services** – Services that are provided to users across the entire agency using a standard set of technologies and a single, agency-wide service provisioning method. There are two types of enterprise services:
  - **Mandatory** – these services are required to be consumed where this type service is needed. Waivers are required to not utilize this type service.
  - **Optional** – these services are offered to users across the agency but are optional and typically will be funded through demand-based methods.

- **Center Services** – Services that are not required to be delivered at the Enterprise level but are standardized by a center for users at that center. They will be required to comply with NASA IT standards and policy such as enterprise architecture and security.

- **Unique IT Services** – IT services and products that are implemented for a group of users below the enterprise or center level. These services may be implemented for a department, program, project, or team. They will be required to comply with NASA IT standards and policy such as enterprise architecture and security.

Note that any of these services could be either highly specialized or non-highly specialized although highly specialized is typically associated with Unique IT.
IT Operating Model Framework

<table>
<thead>
<tr>
<th>Standard</th>
<th>Contract/Service</th>
<th>Unique</th>
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<tr>
<td>Agency</td>
<td>Center</td>
<td>Project/Group</td>
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<td>More Efficient</td>
<td>More Flexible</td>
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**Standard**
- Used to maximize Agency integration/collaboration, effectiveness, efficiency, and simplify security where requirements are common and not tightly coupled to unique missions.

**Contract/Service**
- Used where there is value in standardizing products and tools to improve integration, simplify security, while retaining local management and operations control.

**Unique**
- More Flexible
- Used to gain value of aggregated demand and minimize acquisition overhead while allowing product and management model choice.

- Diversification
  - Used to maximize project/center flexibility and speed where requirements are tightly coupled to unique missions and outweigh potential economies of scale, increased integration and security complexity.
Current NASA IT Operating Model Examples

- **Standard**
  - Agency
    - SAP, Email, WAN, ICAM
    - ACES Seats & Gold Build
    - SOC
  - Center
    - LAN Ops
    - Cloud Services Office
    - Enterprise
    - Federated Management
  - Project/Group
    - VPNs
    - Sharepoint
    - Maximo

- **Service/Contract**
  - Agency
    - ACES Catalog
    - SEWP
  - Center
    - WEST Prime ELMT
    - Data Centers
    - Center IT contracts
  - Project/Group
    - Project Firewalls
    - Non ACES computers
    - Collaboration Tools
    - Engineering Tools
    - Mission Data Centers & LANS
    - Mission Applications

- **Unique**
  - More Efficient
  - More Flexible
IT BSA Decision Implications

**Standard**
- Agency
  - LAN Ops 4
  - Firewalls 4
  - VPNs 4
  - Enterprise Collaboration Suite 6
  - Cloud Services Office 3
  - Risk Management Framework 7
- Center
  - Standards for Collaboration Tools 6
  - Maximo

**Product/Tool**
- LAN Engineering 4
- Enterprise Collaboration Suite 6
- Cloud Services Office 3
- Risk Management Framework 7

**Unique**
- Project/Group
  - Standards for Collaboration Tools 6
  - Maximo

**More Efficient**
- ACES Seats for 80% 5
- More Efficient

**More Flexible**
- Remaining non-ACES Seats 5
- More Flexible

**Strategic Sourcing**
- WEST Prime
- ELMT
- SEWP
- Strategic Sourcing Guidance 2.3
- ACES Catalog

**Federated Management**
- Data Centers 3
- Center IT contracts

**Mission Applications**
- Mission Data Centers & LANS

**Diversification**
- Engineering Tools
- Mission Applications
Clearer roles, better decisions, and intentional operating model choices that enable service, effectiveness, efficiency, collaboration, and security to meet current and future mission needs

- The IT BSA decisions provide clearer governance structures, roles, and tools for visibility that will enable intentional and improved decisions regarding IT operating models.
- The IT BSA decisions direct and/or reaffirm some shifts in operating models for data centers, communications, workstations, collaboration tools and security.
- The IT BSA decisions DO NOT centralize all NASA IT.
- IT is both a subject of BSA and IT is an enabler of BSA and the larger NASA operating model shift.
Decision 1: Roles and Responsibilities
Decisions

- Create a Level 0 through Level 3 management structure
- Clearly define responsibilities and authorities for each level
- Appoint level 2 Program Executives for each IT domain
- Include a strategic path forward beyond improved IT governance which allows for incremental/gradual growth in operational maturity and IT management improvement

Scope

- CIO program oversight and management authorities apply to all non-highly specialized IT including NSSC IT investments
  - Enterprise
  - Center
  - Unique

- CIO governance roles and processes associated with highly specialized IT are focused on enabling the CIO’s IT authority through increased insight and strengthened influence
Leadership, planning, policy direction, and investment oversight of NASA information technology (IT). IT vision enables Agency Mission, Vision, Goals; Provides Enterprise Architecture.

Management oversight of the planning, design, integration, and delivery of NASA’s Enterprise IT projects and services, IT authority including investment review and architecture compliance for all IT.

Delegated program oversight from Level 1 for their program and IT authority for the investment review and compliance for all IT in their portfolio/domain. Maintains current knowledge of project status and provides analysis of the project’s risks and ability to meet it commitments. provides overall architecture for program/domain.

Design and implement projects that align with the approved domain service roadmaps. Ensure project or services adhere to the CIO Program/Project Management Policies and Service Delivery Guidelines.
BSA IT Roles and Responsibilities Implementation Plan: Overview of Approach

• **Establishment of 6 IT Programs**
  7120.7 implementation of security, communication, data center & computing, applications, end user services, and information management programs
  • Program Executives at Level 2, Program Offices at Level 3
  • ITSD will manage Security Program and establish Enterprise Security Program Office
  • Program Executives execute program oversight and IT authority
  • Program Offices assigned to centers and focus on delivery
  • PEs coordinate non-enterprise IT with Center CIOs

• **Program Authority and IT Authority**
  • Program Authority for services managed by CIO
  • IT Authority for oversight, insight and compliance

• **Role of Center CIO**
  • Operate as an extension of the Agency CIO and have input into shaping strategic direction and evolution of the enterprise service through their role in the CLT
  • Share accountability for effective implementation, utilization, and evolution of the enterprise services
  • Program authority for Center IT and IT authority for all unique IT at the center

• **Matrix Model**
  • Leverages center IT resources to support enterprise services via a matrix reporting structure

• **Mission Directorate Representatives**
  • Focal points for IT issues across mission directorates
  • Rely on Center CIOs for IT authority and facilitate cross-center program opportunities and issues
BSA IT Roles and Responsibilities Implementation Plan Schedule

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**Establish EA, PMO, Program Framework, etc.**

**Implement Communications Program**

**Implement Security Program**

**Implement End User Program**

**Implement Data Center, Apps, and Info. Mgmt. Programs**
Decisions

- Restructure and streamline misaligned, duplicative, and ineffective IT Boards
- CIO and CFO conduct a formal IT Annual Capital Investment Review (ACIR) as part of the PPBE process
- Work with the Agency Procurement Officer to formalize guidance on strategic sourcing for IT. (I.e. Strategic Sourcing)
- Strengthen and expand role of CIO in monitoring agency IT program performance (non-highly specialized)
- CIO Conduct Functional Reviews of Centers (rotating on 3 year basis)

Scope

- All NASA IT, including highly specialized and the NASA Shared Services Center (NSSC) IT projects and services.
- However, the CIO governance roles and processes associated with highly specialized IT are focused on enabling the CIO’s IT authority through increased insight and strengthened influence
Governance boards informed to execute IT decisions with improved transparency through inputs from IT investment planning (ACIR), IT acquisition management (Strategic Sourcing), IT Performance Management (IT Program Reviews), and IT Compliance (Center Functional Reviews)
Mission Support Council (MSC)

Information Technology Council (ITC)

IT Program Management Board (ITPMB)

CIO Leadership Team (CLT)

Applications Program Board
Communications Program Board
Computing Services Program Board
End User Program Board
IT Security Program Board
Information Management Program Board

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<th>Reports to</th>
<th>ITC</th>
<th>ITPMB</th>
<th>CLT</th>
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<td>• MSC</td>
<td>• ITC</td>
<td>• ITC</td>
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<tr>
<td>Decision Authority</td>
<td>• Chief Information Officer (CIO)</td>
<td>• CIO</td>
<td>• CIO</td>
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<td>Purpose</td>
<td>• Serves as the Agency’s senior decision-making body focused on information resources management (IRM), including information management and information technology (IT)</td>
<td>• Serves as the governing body for Agency-wide IT programs and projects within the scope of NPR 7120.7, providing a forum for high-level Agency participation in oversight and evaluation</td>
<td>• Serves the CIO as an advisory body on IT management and operations</td>
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<tr>
<td>Membership</td>
<td>• CIO (Chair)</td>
<td>• Deputy CIO (Chair)</td>
<td>• CIO (Chair)</td>
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<td>• Chief Financial Officer</td>
<td>• Associate CIO, CIO Capital Planning and Governance Division (ex officio)</td>
<td>• Deputy CIO</td>
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<td>• Chief Engineer</td>
<td>• Office of the Chief Engineer representative</td>
<td>• Associate CIOs (4)</td>
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<td></td>
<td>• Assistant Administrator for Procurement</td>
<td>• CLT representative (Rotating annually)</td>
<td>• Center CIOs (10)</td>
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<td>• Assistant Administrator for Human Capital</td>
<td>• Center representatives (2) (Rotating annually)</td>
<td>• JPL CIO</td>
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<td>• Assistant Administrator for OSI</td>
<td>• Mission Directorate representatives (2) (Rotating annually)</td>
<td>• NSSC CIO</td>
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<td>• Assistant Administrator for Protective Services</td>
<td>• Enterprise Architecture Lead representative (ex officio)</td>
<td>• Mission Directorate representatives</td>
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<td>• Associate Directors of Centers (10)</td>
<td>• IT Security representative (ex officio)</td>
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<td>• Deputy Associate Administrators of MSD, Science, HEO, Aero, and STMD (5)</td>
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<td>• NSSC Executive Director</td>
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## IT Investment Decision Matrix

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<tr>
<th>Investment Threshold</th>
<th>Scope of Decision</th>
<th>EC</th>
<th>MSC</th>
<th>ITC</th>
<th>CIO (CLT)²</th>
<th>Program Boards</th>
<th>Center ITC</th>
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¹ Additional criteria in Appendix G
² Management decisions by CIO using CLT as advisor
³ APMC governance process per NPR 7120.5

A = Approve
C = Concur
E = Escalation
R = Recommend
I = Input

17
Decision 3: Data Center
Decisions

- Develop an integrated, Agency-wide data center architecture to guide future investments.
- OCFO/OCIO review / approve any investments in new or existing data centers (including institutional and mission/program investments) – PPBE FY18.
- CIO Computing Services Program Office to continue collaborating with Centers via the Cloud community of interest forum to increase understanding and adoption of cloud services.
- Center CIOs should ensure all center-based cloud efforts are coordinated with the CSPO.

Scope

- All NASA data center and computing requirements.
- Program Authority over data centers and computing delivered by OCIO.
- Investment insight, security and architectural compliance for highly specialized computing and data centers.
- Coordination with CSPO required for all cloud computing efforts.
BSA Data Center Implementation Plan
Overview of Approach

- **Data Center Architecture**
  - Develop an architecture document that serves as a single resource for decision makers. Include elements such as NASA’s Computing Strategy, a business architecture, decision models, service architectures, and performance architectures.
  - This document will guide governance decisions associated with computing and data center investments including modernization.

- **Cloud Computing Adoption**
  - CSPO serves as the focal point for enterprise managed cloud framework standardization and deployment.
  - CSPO will collaborate with Center CIOs and incorporate center personnel into the evolution of the cloud framework. CSPO will assist with analysis of cloud alternatives for new computing and data center requirements.
  - Provides clearer engagement processes to insure visibility and cloud alternative consideration.

- **Data Center and Computing Program Establishment**
  - Will formalize Program with 7120.7 Program Plan.
  - Will establish Program Board to assist with governance and portfolio oversight.
  - Will continue the monthly Cloud Computing Community of Interest meetings to increase interest in cloud and educate the community on key cloud products and issues.
  - Clarify the role of CSPO in cloud computing and clarify the related data center and computing policies through a letter to be issued by the NASA CIO.

- **Data Center/Computing investment review**
  - Use Annual Capital Investment Review (ACIR) process to capture the full set of proposed investments and changes to the portfolio in the planning stages.
  - Implement “year of execution” reviews for investments presented during the year of execution that are not in the plan. Develop templates to capture relevant data for analysis.
### Data Center Architecture

- Data center and computing architecture will be used to guide investment decisions
- New governance processes will be leveraged for improved insight
- Governance structure will drive decisions based on criteria
- Architecture will guide both data center and computing modernization and new development
- Cloud alternatives will be required to be assessed to avoid capital investments where feasible
- Assumes continued consolidation efforts with hybrid architecture

### Establishment of Data Center and Computing Program

- Will formalize efforts to oversee and guide data center and computing portfolio
- Better positions NASA to comply and respond with federal requirements and reporting
- Will create a formal board at level 3 for data center and computing
- Will leverage existing capabilities including Computing Services Program Office (CSPO)
- Architecture, organization, resources, governance built out in Data Center and Computing Program Plan

### Investment Insight for Data Center and Computing

- All data center and computing planned investments will be reported as part of new ACIR process
- Data Center and Computing program executive will oversee investment analysis and portfolio management
- Will leverage Center and Program resources to participate
- All new cloud computing investments will be coordinated with CSPO to insure standardization, security, and visibility
- Requires Center SME cognizance and visibility along with coordination with MD IT representatives
Decision 4: Communications
Decisions
- Realign voice services, network operations and transformation funding under the Agency CIO to enable enterprise funded and managed approach
- Reduce risk to enable a successful network transformation

Scope & Rationale
- Reinforces approved agency direction for Network Transformation of NASA’s Corporate Network
- Mitigates implementation risk through
  - Improved review process allowing Project Teams and Centers to focus on key issues
  - Assessment and disposition of implementation dependencies
  - Addresses significance of the culture change associated with implementation
- Establishes a single point of accountability for managing the Agency’s network transformation and ongoing operations and sustainment
- Enables Agency CIO to align IT network investments with Agency priorities to achieve Network Transformation, IT Security improvements and longer term gains in efficiency
- Scope and criticality of the network transformation initiative, combined with the maturity of the Enterprise Communications Service domain, make this a viable area to implement an alternate funding strategy
Overview of Approach

- **Establishment of Formal Communications Services Program per 7120.7**
- **Transition to Enterprise Service Management of LAN, Voice, and Cable Plant Services**
  - Labor, maintenance budgets consolidated and centralized under OCIO
  - During FY16, CSO develops target architectures, assesses existing Center operating budgets, and aligns spend plans for FY17 to provide flexibility to meet contract requirements in most efficient manner
- **Agency Communications Services team works with Centers to balance network transformation activities with local Center service delivery commitments**

- **Strategic Investment Management**
  - Infrastructure investments opportunities assessed and prioritized against network transformation and performance commitments
  - IT Investment fund created for FY17 and FY18 as funding source to include some communications investments;
  - Using governance, investment proposals necessary for successful network transformation vetted and funded
  - Savings achieved through centralization efficiencies reinvested to cover future obsolescence needs

- **Network Transformation Commitment and Accountability**
  - Agency CIO will issue clear guidance to Centers regarding Agency network transformation efforts.
  - Agency CIO will communicate Agency and Center-specific deliverables and dependencies and why necessary for successful transformation
### BSA Communications Implementation Plan

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#### Strategic Investment Management

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<th>FY16 Q4</th>
<th>FY17 Q1</th>
<th>FY17 Q2</th>
<th>FY17 Q3</th>
<th>FY17 Q4</th>
<th>FY18 Q1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidance to Centers on Governance</td>
<td>Collect, Prioritize, Approve FY16/17 Investment Proposals</td>
<td>Implement FY16 Investments</td>
<td>Implement FY17 Investments</td>
<td>Approve FY18 Investment Proposals</td>
<td>Develop Investment Wedge from Centralized Savings</td>
<td>Implement FY18 Investments</td>
<td></td>
</tr>
</tbody>
</table>

- **Network Transformation Project Milestones**

- **Network Transformation Commitment**

- Agency CIO to Issue Guidance regarding Network Transformation
- Agency, Center CIO’s monitor, manage change associated with network transformation
Decision 5: End User Services: Workstations
Decisions

- Consolidate Non-ACES Workstations support administration and support where feasible by the end of FY 2017.
- Set a target for each Center to obtain at least 80% of their desktop, laptop, and workstation computing services through the Agency End User Contract (ACES) by December 31, 2017.
- Require Center CIO-approved waiver for all non-ACES systems, following consistent Agency waiver guidance and a single enterprise waiver system. Assess compliance with this policy during the annual function reviews.

Scope

- Equipment: all laptops, desktops, workstations, and tablets used by NASA personnel. Also referred to as a “compute seat.”
- Support: all contracts which include compute seat support services and/or compute seat procurement elements identified in their statement of work/performance work statement. Includes Enterprise contracts, local IT Support contracts, programmatic support contracts, etc.
BSA Workstations Implementation Plan
Overview of Approach

• **Center Contract Consolidation**
  - Centers inventory their contracts to identify those contracts which include services in scope of the workstations decision.
  - Centers identify a target contract to consolidate onto and develop a consolidation schedule that reflects contract/task performance periods.
  - Centers ensure non-ACES workstations are acquired through SEWP.

• **ACES Utilization**
  - Centers establish a baseline of center workstations eligible to be supported by ACES, based on a consistent inventory methodology and requirement.
  - Centers below 80% utilization may assign a local project manager and develop plans, based on lessons learned from other centers, as to how they’ll reach the target figure.

• **Waiver Process**
  - The Agency will work with stakeholders to leverage Center best practices and develop an automated waiver process.
  - Centers assess waiver compliance during annual function reviews.

• **Agency End User Services team works with Centers on any necessary contract changes to support customer requirements, as well as address local contractor performance challenges.**
Decision 6: End User Services: Collaboration Tools
Decisions

- Define Core Suite of Collaboration Tools and standards to meet the majority of NASA requirements
- Core Collaboration Tools Identified and Managed by EUS by 11/15/2015
- Funding - AMO (Agency IT Services) or NSSC Working Capital Fund for development, migration and operations of base capability. Above base funded by requiring organizations no later than PPBE18.
- Provisioning via an Enterprise contract or Service (NEACC, ACES, NSSC, other), based on existing contract cycles.

Scope

- Synchronous Communications:
  » IM / Presence, Texting, Telephony
- Conferencing:
  » Audio, Video, Application Sharing
- Asynchronous Communications:
  » Email, Email List Services, Voicemail
- Content Creation, Sharing & Storage:
  » File Sync and Share, Enterprise Content Management, Discussion Forums, Blogs, Wikis, Secure External File sharing
- Social Networking:
  » Enterprise Social Networking
Enterprise Collaboration Services
- Authoritative Toolset for the Agency
- BLE status (similar to how we treat Email today)
- Provided via Enterprise Contracts

Optional Pay-per Use Services
- Can be provided via Center or Enterprise
- Should not duplicate Enterprise Core suite functionality
- Justification required

Mission-Specific Services
- Ad-hoc
- Duplication permitted per justification

Under continued portfolio analysis and operational monitoring, unique requirements and emerging technologies should be driven into the enterprise solution as necessary.

Pre-decisional for NASA use only
Near Term Strategy:
- **Identify approved Collaboration Tools**
  - Data Call for Inventory of Collaborative Tools by Center/org
  - Centers’ Assignment of Collaboration SME
  - Identification of existing services that can meet approved criteria for collaborative tools
  - Development of initial standards and governance controls for collaborative services
  - Publishing of approved services information to NASA community
    - (Hosting Center, POC, service-specific details, security level, etc.)
  - Transition planning of unapproved services (funded by sustaining Organization)

Long Term Strategy:
- **Gather Requirements & Develop Business Case**
  - Tool-agnostic, use-case driven end user requirements
  - Development of Business Case Analysis to assess feasibility of implementing enterprise-level core suite of tools
  - Will explore funding re-alignment options as required to enable Base-Level of Entitlement (BLE) for core suite
  - **Implementation of Business Case Analysis Decision**, which will be voted upon by ITC
  - Transition Planning of remaining Center-level providers of Collaboration Solutions to be provided in the Enterprise

Pre-decisional for NASA use only
Decision 7: Security
Decisions

- Establish an Agency IT Security risk management framework/strategy and IT security architecture that aligns with NASA’s business risks.
- Conduct an independently-led zero-base review of IT Security spending and the alignment to the IT security strategy.

Scope

- IT Security is a cross-cutting service that applies to all IT assets and information across the Agency, Missions and Centers.
- IT Security Risk Management must support risk-based decisions across the Agency, Missions and Centers.
- IT Security Architecture should be optimized across the Agency, Missions and Centers.
Overview of Approach

• **Risk Management Strategy**
  • Agency risk management strategy designed to integrate IT Risk Management processes across Agency, Missions and Centers.
  • Defines and documents risk response strategies and criteria that will be implemented via the IT Security Architecture and informs risk-informed investment decisions.

• **IT Security Architecture**
  • Utilizes NIST Cyber-security Framework to inform IT Security Program structure and content.
  • Delivers baseline set of Agency IT Security capabilities that form the nucleus of a holistic integrated IT Security Architecture.
    • Risk Information Security & Compliance System (RISCS)
    • Continuous Diagnostics and Mitigation (CDM)

• **Zero-Based Review (ZBR)**
  • ZBR was completed in the 1QFY16 and the findings indicated some inefficiencies and inconsistencies in the use of resources between the Agency and the Centers.
  • The ZBR findings will serve as input into the broader ACIR review of the security portfolio as part of PPBE.
  • Recommended actions will go to ITC
  • Agency-wide security services will be delivered through IT Security Program Office (ITSPO) as part of new program structure
Backup Slides

Backup
Center Integration into Level 0-3 Functional Organization

**Level 0:** Center CIO Functions as an extension of Agency CIO. Provides oversight of the non-specialized IT and has insight into the highly specialized IT.

**Level 1:** Program Integration may be led at Center, as appropriate.

**Level 2:** Program Executives may be located at the Center where Agency-level capability expertise exists.

**Level 3:**
- Center SMEs collaborates with Service Offices providing insight into Center and Mission services within the domain.
- Projects
  - Enterprise – Centers provide cost, management, technical, and schedule inputs to Service Office in compliance with NPR 7120.7 Program / Project.
  - Center – Centers provide status of Center-specific projects / Mission-specific projects ensuring adherence to Enterprise and Domain Architecture.

*Note that the implementation plan does include some clarifications to this original chart:
- Service Offices are renamed Program Offices.
- Program Executive for Security and Security Program will be aligned with ITSD.*
<table>
<thead>
<tr>
<th>Program Executives</th>
<th>Program Managers</th>
<th>Center CIOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Will operate at Level 2 and focus on high level program oversight for enterprise services and projects within their program</td>
<td>• Operates at Level 3 and leads service operations and projects within the program</td>
<td>• Extension of NASA CIO at Level 0 with shared accountability for enterprise IT service at their center</td>
</tr>
<tr>
<td>• Delegate program management to Level 3 center-based program office</td>
<td>• Develops detailed program architecture</td>
<td>• Has input into the direction of enterprise services and resolution of critical issues through CLT and assigned Center SME</td>
</tr>
<tr>
<td>• Delegated oversight and insight into all IT assets and services within their portfolio</td>
<td>• Coordinates with Center CIOs to leverage available resources at centers to support enterprise services and projects</td>
<td>• Delegated IT authority for all IT at the Center</td>
</tr>
<tr>
<td>• Leverages Center CIOs for portfolio insight of non-enterprise IT</td>
<td>• Manages enterprise contracts within program</td>
<td>• Ensures Center SMEs responsible for cognizance, insight, and compliance of all center IT in their portfolio</td>
</tr>
<tr>
<td>• Develops strategic portfolio roadmap</td>
<td>• Ensures communication, coordination, and responsiveness with Center SMEs to address issues and evolve services</td>
<td>• Align with agency priorities and may allocate some center staff via matrix model to enterprise IT services and projects</td>
</tr>
<tr>
<td>• Works with MD IT representatives on cross-center program opportunities and issues</td>
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</tbody>
</table>
Integrated Approach for IT BSA Governance Decision
FY16 – Implementation Year
FY17 – First Full Year in Operations

Legend
Agency Performance Governance
IT Council
IT Guidance
Strategic Sourcing
IT Program Review
Center Funct. Review
Annual Capital Investment Review Process
Performance Management Process

<table>
<thead>
<tr>
<th>CY 2015</th>
<th>FY 2016 (Implementation for Governance Changes)</th>
<th>Calendar Year 2016</th>
<th>FY 2017 (First Full Year of Operations)</th>
<th>Calendar Year 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>Q2</td>
<td>Q3</td>
<td>Q4</td>
<td>Q1</td>
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</tbody>
</table>

**Governance**
- Issue Policy Update for NPD/NPR 2800
- Rebaseline EA
- Issue Strategic Sourcing Guidance (via OP)

**IT BSA Implementation Planning**
- Design/Integrate IT Program Review processes (leveraging existing processes when practical)
- Complete Budget Formulation & Submit
- Baseline Portfolio Analysis
- Pass-back
- Assess Prior FY Results
- SOAR Self Assessment
- Quarterly IT Program Reviews (Led by Associate CIOs)
- Monthly IT Program Reviews (Led by Program Executives)
- Monthly Center IT Program Reviews (Led by Center CIOs)

**Processes**
- ACIR Data Call
- Center ACIR
- Pgm ACIR
- Complete Budget Formulation & Submit
- Baseline Portfolio Analysis
- Pass-back
- Assess Prior FY Results
- SOAR Self Assessment
- Quarterly IT Program Reviews (Led by Associate CIOs)
- Monthly IT Program Reviews (Led by Program Executives)
- Monthly Center IT Program Reviews (Led by Center CIOs)

**IT Program Review**
- Confirm Execution Yr. Plan & Certify Budget
- Confirm Strategy, Measures, SPG & EA
- Update EA
- Update IRM Strategy
- Complete Budget Formulation & Submit

**Center Funct. Review**
- Update IRM Strategy
- Complete Budget Formulation & Submit

**IT Council**
- Design/Integrate IT Program Review processes (leveraging existing processes when practical)
- Complete Budget Formulation & Submit

**IT Guidance**
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**IT Program Review**
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- Update IRM Strategy
- Complete Budget Formulation & Submit

**Strategic Sourcing**
- Issue Policy Update for NPD/NPR 2800
- Rebaseline EA
- Issue Strategic Sourcing Guidance (via OP)

**Calendar Year 2016**
- Q1
- Q2
- Q3
- Q4

**Calendar Year 2017**
- Q1
- Q2
- Q3
- Q4

**Legend**
- NASA CIO (Agency Performance Governance)
- IT Council
- IT Guidance
- Strategic Sourcing
- IT Program Review
- Center Funct. Review
- Annual Capital Investment Review Process
- Performance Management Process

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# BSA Governance Plan Key Impacts

<table>
<thead>
<tr>
<th>Governance Boards</th>
<th>Capital Investment Review</th>
<th>Strategic Sourcing for IT</th>
<th>Program/Functional Reviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishment of ITC with Center AD, HQ MD Deputy participation</td>
<td>Annual review of all Agency IT investments via PPBE process</td>
<td>Agency CIO and Agency Procurement Officer will formalize guidance on further IT strategic sourcing for categories such as workstations, laptops, and software licenses</td>
<td>Program executives will lead monthly program reviews</td>
</tr>
<tr>
<td>Elimination of ITMB</td>
<td>Provides insight to better prioritize IT spending and to drive efficiencies in base budget</td>
<td>Provides NASA compliance with FITARA</td>
<td>Reviews will evaluate performance and address compliance/health issues</td>
</tr>
<tr>
<td>Establishment of 6 program boards</td>
<td>Provides NASA compliance with FITARA</td>
<td>Requires partnership with CFO/CIO to ensure IT investment plan aligns with budget</td>
<td>Will include insight into non-enterprise IT assets and services in the portfolio</td>
</tr>
<tr>
<td>Clear decision rights and escalation paths</td>
<td>Requires more granularity and higher quality in IT investment reporting</td>
<td>Will update procurement policies to ensure alignment with updated IT governance and improve CIO insight of IT acquisitions</td>
<td>Functional reviews will provide OCIO with deeper view of compliance at center level</td>
</tr>
<tr>
<td>Establishment of consistent Center level governance</td>
<td>Center CIO integrates insight into institutional and program IT investments</td>
<td>IT governance boards will oversee compliance along with insight from procurement</td>
<td>Will rotate centers on 3 year basis</td>
</tr>
</tbody>
</table>
# BSA IT Security Implementation Plan

## Schedule

<table>
<thead>
<tr>
<th>FY16 Q4</th>
<th>FY17 Q1</th>
<th>FY17 Q2</th>
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<th>FY18Q1</th>
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<tr>
<td>ConOps Socialization</td>
<td>Methodology Definition</td>
<td>Formal Risk Management Training</td>
<td>Policy, Procedures and handbook updates</td>
<td>Risk-informed Investment Portfolio Cycle</td>
<td></td>
</tr>
<tr>
<td>7120.8 Implementation Approach</td>
<td>Agency Cyber Risk Cycle Enterprise and Missions/Centers Pilots</td>
<td>Integrated Cyber Risk Cycle with RISCS</td>
<td></td>
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</tr>
</tbody>
</table>

## IT Security Risk Management

- Existing tool transitions and data migration;
- RISCS A&A Module
- DHS-CDM Production Rollout Begins
- RISCS IT Waiver Module

## IT Security Architecture

- RISCS SOC Incident Management Module
- RISCS Supply Chain Module
- DHS-CDM Production Rollout Complete

## Full Operational Capability

## Zero-Based Review

- ITSPO Roles and Responsibilities
- ITSPO Program Plan Development
- ITSPO Operational
**IT Security Risk Management**

- Centers and Missions will participate in the Agency-wide risk management strategy to inform all levels.
- Centers and Missions will need to modify their existing risk processes and roles and responsibilities to incorporate the new Agency-wide strategy.
- Significant participation will be required by Centers and Missions to support the definition of the Agency-wide strategy, processes and criteria to ensure success.
- Requires significant outreach to OCIO user community including system owners on how they are expected to participate.

**IT Security Architecture**

- Centers and Missions will utilize the new Agency-wide tools.
- Centers and Missions will need to modify their existing processes to incorporate the new tools.
- Requires significant outreach to user community including systems owners since they use some of these new tools.
- Deployment and integration of the new tools will impact Centers’ and Missions’ existing IT infrastructure.

**Zero-Based Review**

- Centers and Missions will participate in the new OCIO Annual Capital Investment Review (ACIR) process.
- ITC will disposition final recommendations based on ACIR input.
- Centers and Missions will utilize Agency-provided IT Security services delivered through the new IT Security Program Office (ITSPO).
- Significant participation will be required by Centers and Missions to support the definition of the ITSPO and associated processes and integration points.
CIO Insight and Program IT

**CIO Insight**

- IT Plan (NPR 7120.5)
- SIBCs (through ACIR)
- PR Review
- Acquisition Review
- Program Review
- Relationships

**Insight Tools**

- 1. Status Quo (Unique/diversified)
- 2. Compliance Actions
- 3. Strategic Sourcing
- 4. Product Standardization
- 5. CIO Service (Provision Infrastructure)
- 6. CIO Service (Provision Applications)

**Partner with Program on possibilities**

**Leverage Governance for Decisions**

**Implement Decisions**
IT Portfolio Optimization Approach

NASA Mission & Business Goals

Requirements
- People (Skills, Resource levels)
- Process Maturity
- Technology Profile
- Governance

Portfolio “Health”
- Mission and Business Impact
- Quality of Service
- Customer Experience
- Cost, Distribution
- Efficiency
- Productivity

Current and Future State Data Capture (SIBC, Program Reviews)

Capability Portfolios
- IT Service Portfolios
- IT Asset Portfolios
  - Sub-Portfolio 1
  - Sub-Portfolio 2
  - Sub-Portfolio …

Decision Quality Data

Cross-Cutting Analysis & Opportunity Identification

- Mission and Business Impact
- Quality of Service
- Customer Experience
- Cost, Distribution
- Efficiency
- Productivity

Investment Planning & Decisions
- Tolerate
- Invest
- Eliminate
- Migrate

Position Papers & Investment Proposals

Standards, Technology Trends
- Enterprise Service
- Cloud (IaaS, PaaS, SaaS)
- Federated Management
- Strategic Sourcing
- Etc.

Enterprise Architecture & Alternative Operating Models

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