



# Industry Day Briefing IT Infrastructure Integration Program (I<sup>3</sup>P) Overview

Office of the Chief Information Officer

Mike Hecker

April 21, 2009

VISION: Integrated, secure, and efficient information technology and solutions that support NASA



# Industry Days Schedule: April 21, 2009

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- 9:00 a.m. Event Logistics – Joe Sparmo
- 9:05 a.m. OCIO Welcome and I<sup>3</sup>P Overview – Mike Hecker
- 9:50 a.m. I<sup>3</sup>P Enterprise Service Management – Cliff Ward
- 10:50 a.m. Break
- 11:00 a.m. Enterprise Service Desk & Service Request System – Ken Griffey
- Noon Break
- 12:45 p.m. NICS – Brad Solomon
- 2:15 p.m. Break
- 2:25 p.m. NEDC – Tony Anania
- 3:55 Closing Comments – Bobby German, NASA CIO (acting)
- 4:15 Adjourn



# Agenda

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- **NASA's IT Complexity**
- **NASA's IT Strategy**
- **Current Status of Infrastructure Integration**
- **Managing Delivery of Agency Wide Services**
- **Summary**

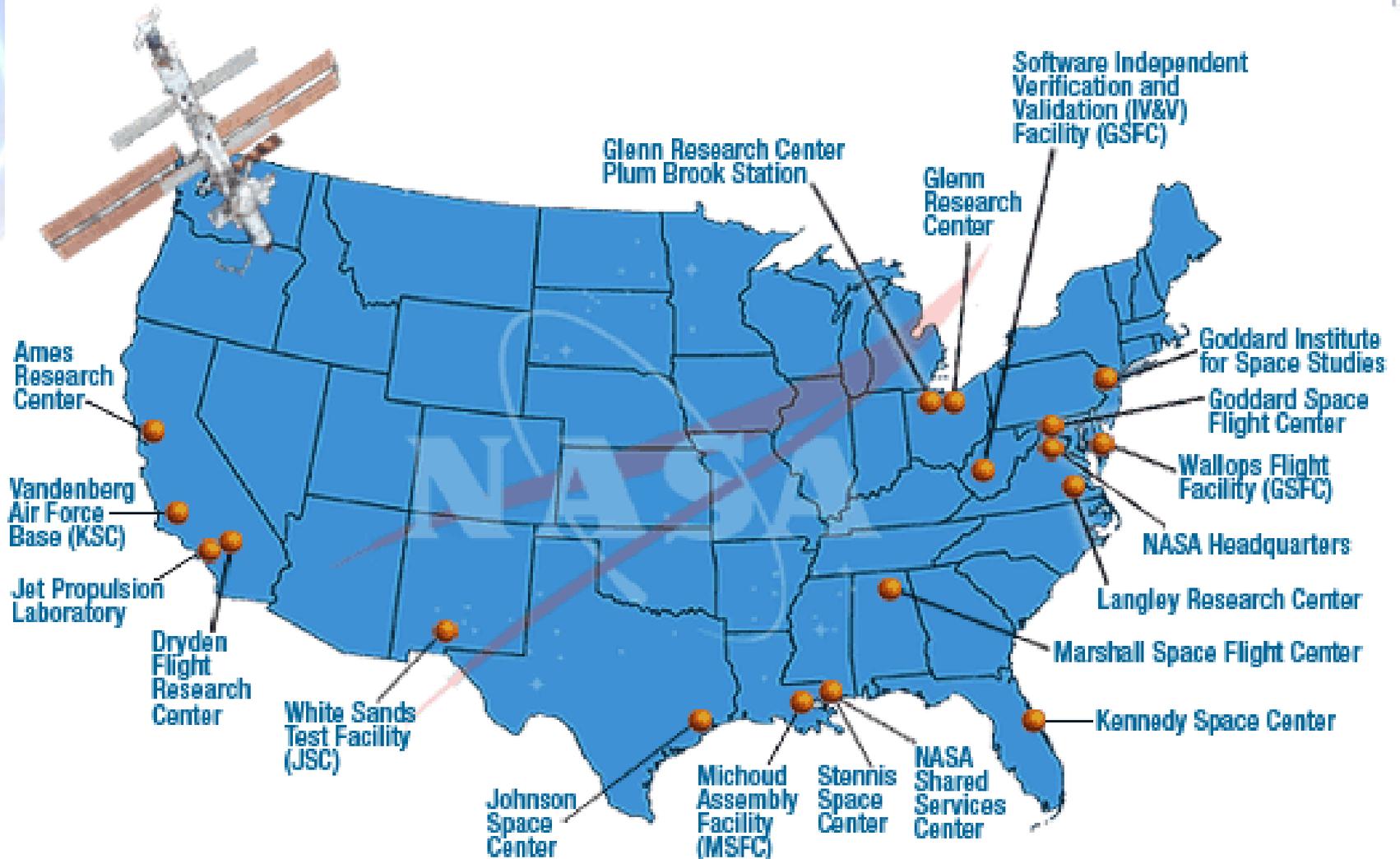
## Reminder

**This information is preliminary and subject to change when the final RFP is released.**



# NASA's Dispersed Geography

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# NASA's IT Environment

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## Users

- 18,000 Employees
- 44,000 Contractors

## Spending

- \$1.8 B annually

## Systems/Applications

- > 2,500 Applications
- NOMAD e-mail: 56K accounts
  - 530K/day messages delivered

## Websites

- >8,000 websites
- ~4K public & ~4K internal

## NASA IT Workforce

- 667 FTE and 2,386 WYE managed by CIOs
- 1,167 C.S. positions with IT as primary competency

## Networks

- Three Wide Area Networks, six million IP addresses
- >80 connections to Internet service providers
- >200 connections to universities and partners

## Devices and Data Centers

- >80,000 Desktops/Laptops
- >15K servers in at least 34 Data Centers



# Strategic Initiatives

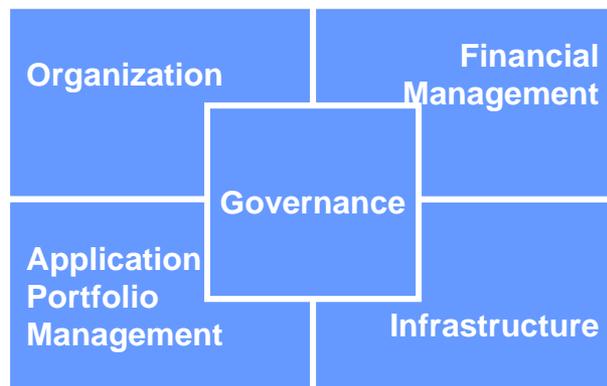
(Approved by NASA Strategic Management Council, September 2007)

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**Organization** - Realign NASA IT organization to reflect the role of the CIO and better connect the CIO with customers

**Application & Tools**  
Assign ownership of application portfolios and create a CIO-facilitated process to drive application standardization and efficiencies

**Overall** – Reaffirm and clarify the role of the CIO and define core IT services that shall be delivered by the CIO



**Governance** – Create governance structure and processes to engage key stakeholders, inform IT investment decisions, and apply project management discipline to IT projects

**Finance** – Increase visibility into IT budgeting and spending through management controls and fund base IT services through CIO managed funding

**Infrastructure** – Improve integration, security, and efficiency by consolidating infrastructure and management control



# Why IT Infrastructure Integration?

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- **Based on gap analysis of exiting capabilities, NASA identified six top-level initiatives for IT infrastructure integration.**
  1. **Define network perimeter and consolidate network management.**
  2. **Establish Agency network visibility of IT assets and consolidate Agency security monitoring and management.**
  3. **Enable cross-Center collaboration and strengthen user authorization.**
  4. **Migrate systems to physically secure and properly managed Data Centers.**
  5. **Make NASA's information easier to discover and access.**
  6. **Standardize and consolidate the management of end-user devices.**
- **OCIO has set a strategy for meeting these requirements.**



# Requirements for IT Infrastructure Integration

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- **OCIO strategy for meeting IT infrastructure integration requirements:**
  - First priority is communications: Consolidate and secure NASA's networks.
  - In parallel, move end-user devices to ODIN as a single service provider.
  - Next Step: Evolve and implement enterprise Data Center strategy.
  - Continue migration of Web content to the NASA.GOV portal.
  - Execute using existing contracts, eventually transition to a set of Agency-wide contracts for IT services.
- **To implement, OCIO is managing transformation as a program.**
  - Established IT Infrastructure Integration Program (I<sup>3</sup>P)
  - Developed transition plan for services related to end-user devices, Data Centers, communications, and infrastructure applications



# Scope of NASA's IT Infrastructure

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**Highly Specialized**

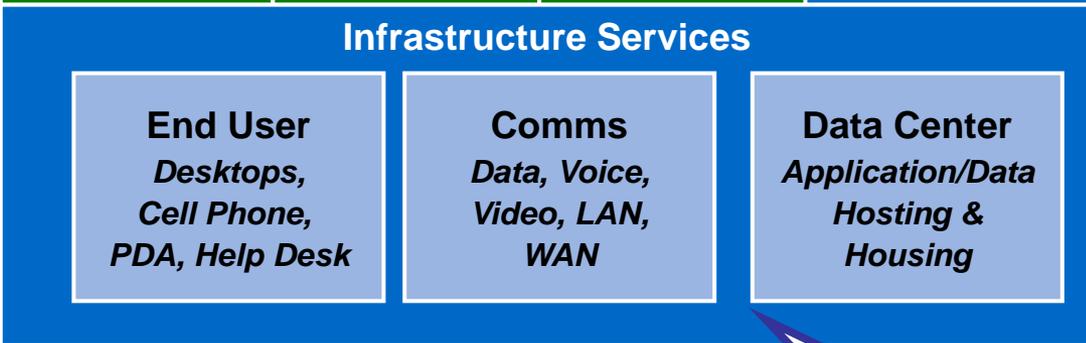
Examples:

*Avionics software*

*Real-time Control Systems*

*Onboard Processors*

*Deep Space Network*



IT Infrastructure includes those common applications that everyone uses on a day-to-day basis, primarily for office automation

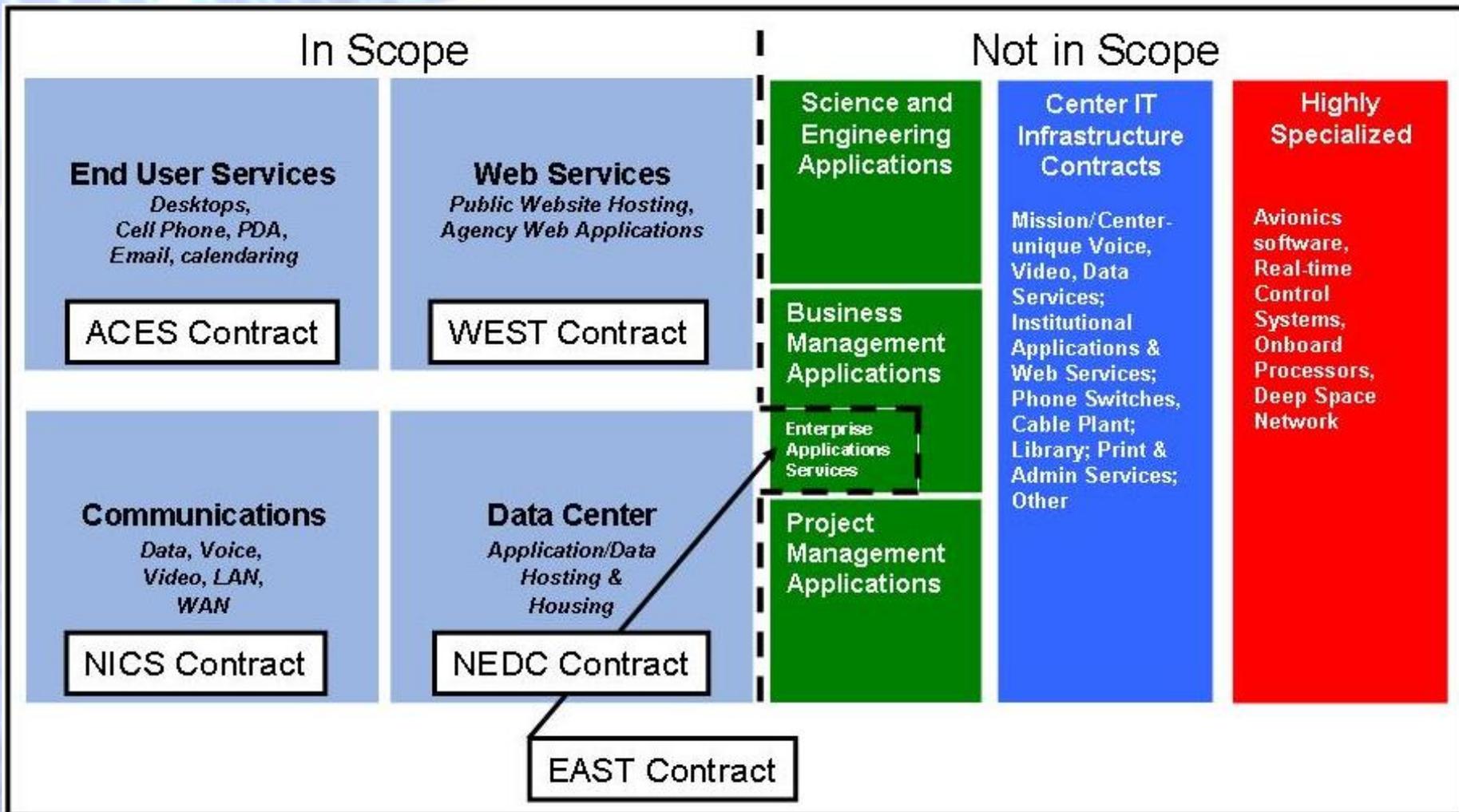
IT that is an embedded component of a flight system, experiment, simulator, ground support environment, or mission control center. Does not necessarily include the IT infrastructure that supports those embedded components.

IT Infrastructure includes the services and hardware for End User Devices, Communications, and Data Centers



# Five Procurements Drive NASA's IT Transformation

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# Communications Services

## Target Architecture and Transition Plan

### Strategy

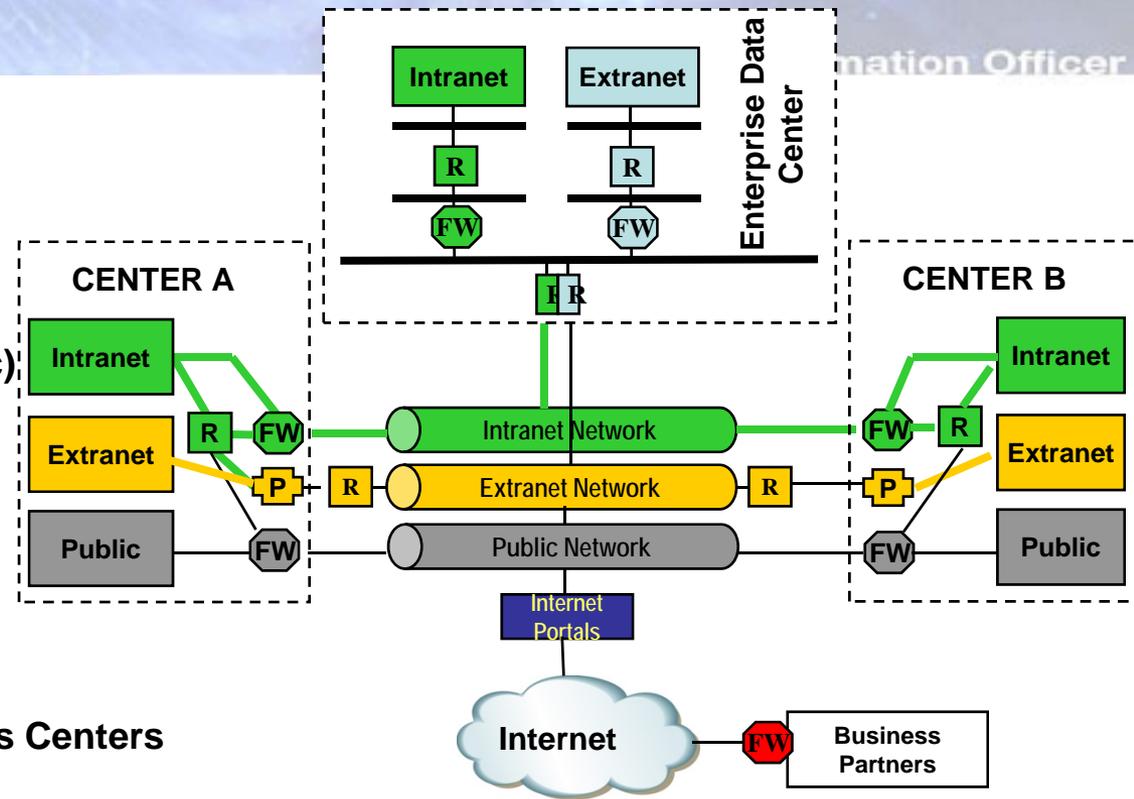
- Consolidate NASA’s Wide Area Network and Center’s Local Area Networks
- Add Zones (Intranet, Extranet, Public) and Controlled Access to Internet
- Centrally manage NASA’s networks

### Benefits

- By controlling access to zones and Internet, improve security
- By integrating networks, provides seamless operations across Centers
- By reducing number of networks, eventually realize cost savings

### Status

- Using phased approach to manage cost and risk
- Phase I: Redesign and upgrade of Wide Area Network is under way
- Phase II: Redesign Center Networks under way
- Phase III: Integration of Center Networks with Wide Area Network begins in FY10





# Authentication, Authorization, Security

## Target Architecture and Transition Plan

### Strategy

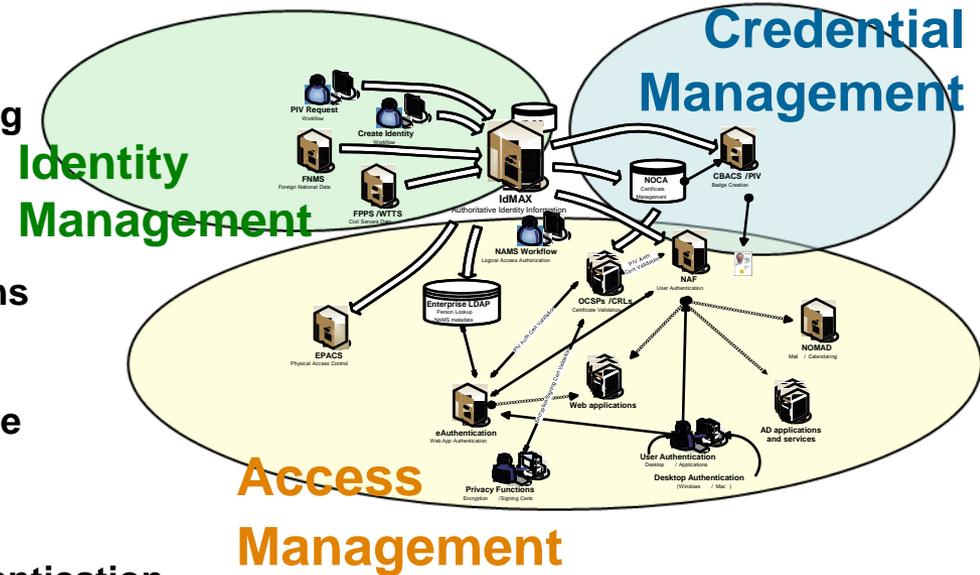
- Deploy agency-wide solution for accessing IT applications and services
- Establish electronic identity and use single directory to track users
- Provide access control using combinations of RSA tokens, smartcards, user name and password
- Ensure proper access controls are in place for applications that hold PII and SBU

### Benefits

- Improve security through two-factor authentication
- Allow users to access IT resources regardless (e.g., printers) of location or Center
- As applications migrate to agency-wide services, eventually realize single sign on (one user name and password to access any application)
- Cost savings are realized through consolidation

### Status

- Deploying smartcard readers to desktops; pilots under way at several Centers
- NASA consolidated active directory (NCAD) system deployment halfway completed
- Centers adding two-factor authentication to VPNs
- Applications with PII now require two-factor authentication when accessed from Internet





# End User Services

## Target Architecture and Transition Plan

### Strategy

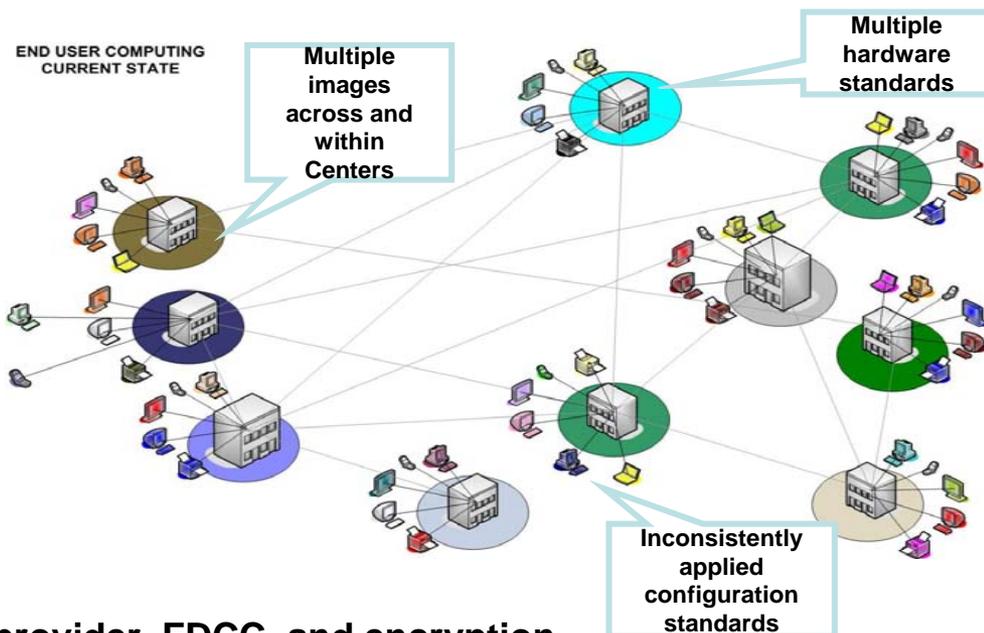
- Transition desktops, laptops, PDAs, cell phones to single service provider (ODIN)
- Deploy Common Security Configuration via FDCC (Federal Desktop Core Configuration)
- Deploy data at rest (DAR) encryption for desktop and laptop hard drives
- Upgrade e-mail service and incorporate records management

### Benefits

- Improve security by using single service provider, FDCC, and encryption
- By upgrading e-mail architecture, improve e-mail availability, mailbox sizes and spam filtering
- Reduce cost by consolidating into a single e-mail solution (NOMAD)

### Current Status

- Transition of Government Accounts to ODIN largely completed; contractors will finish by 2010.
- Transition to single e-mail and calendaring solution is completed.
- Upgrade to Exchange 2007 will be completed in May 2009.
- FDCC deployment is in progress.
- Data at rest solution starts deployment this year.





# Website Services

## Target Architecture and Transition Plan

### Strategy

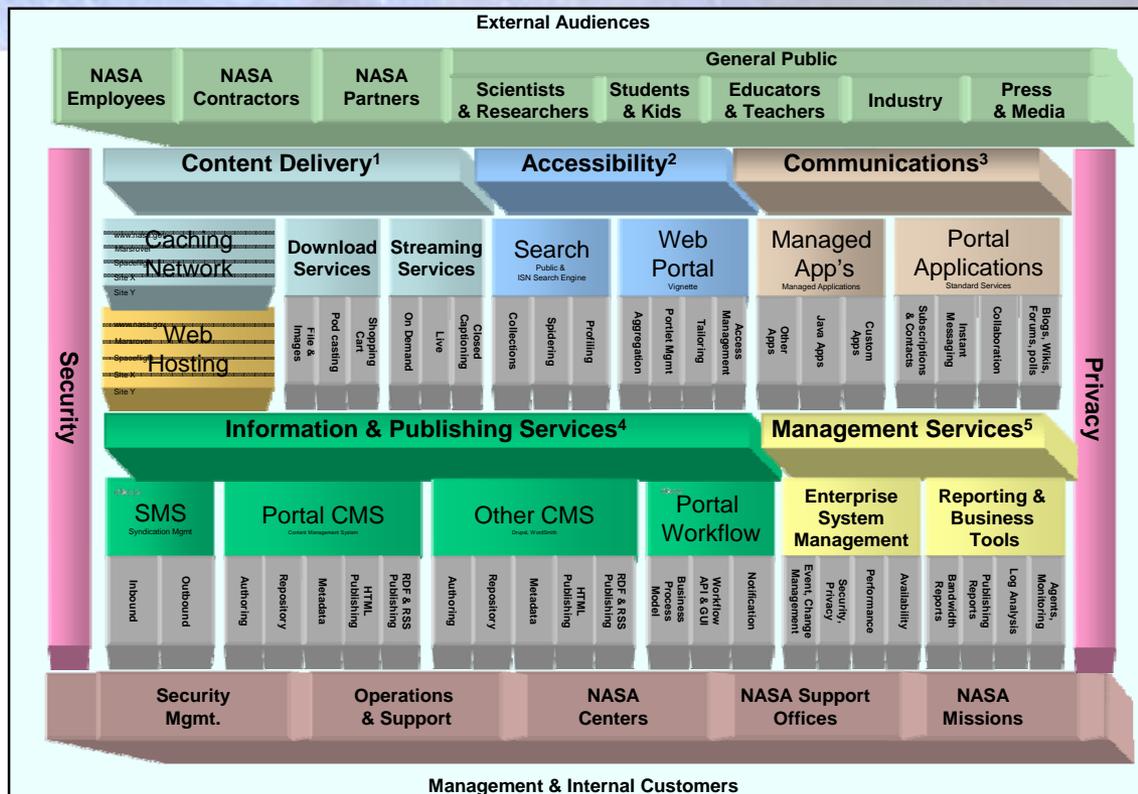
- Continue supporting website services for NASA.GOV
- Transition all public facing websites to NASA.GOV environment

### Benefits

- Efficiency: Reduce NASA's total investment in web servers, storage, and development tools
- Security: Ensure websites meet federal, OMB, NASA requirements for controlling access, meeting FISMA, and handling PII
- Integration: Provide consistent strategic message to public, improve search capability

### Current Status

- Continuing transition of external facing websites to NASA.GOV
- Piloting functionality for social networking tools
- Assessing requirements for meeting Presidential initiatives of RECOVERY.GOV and DATA.GOV





# Enterprise Data Center Services

## Current and Target Architecture

### Strategy

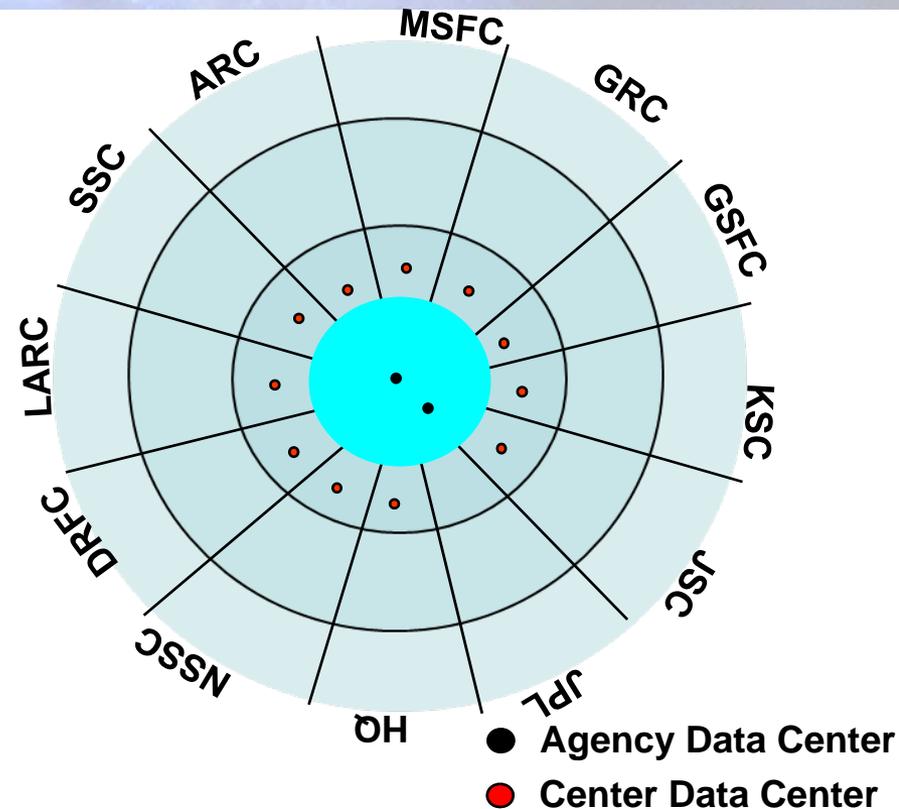
- Consolidate into a set of agency-wide data centers
- By exception, centers will maintain some services locally

### Benefits

- Improved availability and access to applications and data
- Consistent level of service across NASA
- Cost savings through consolidating and virtualizing hardware

### Current Status

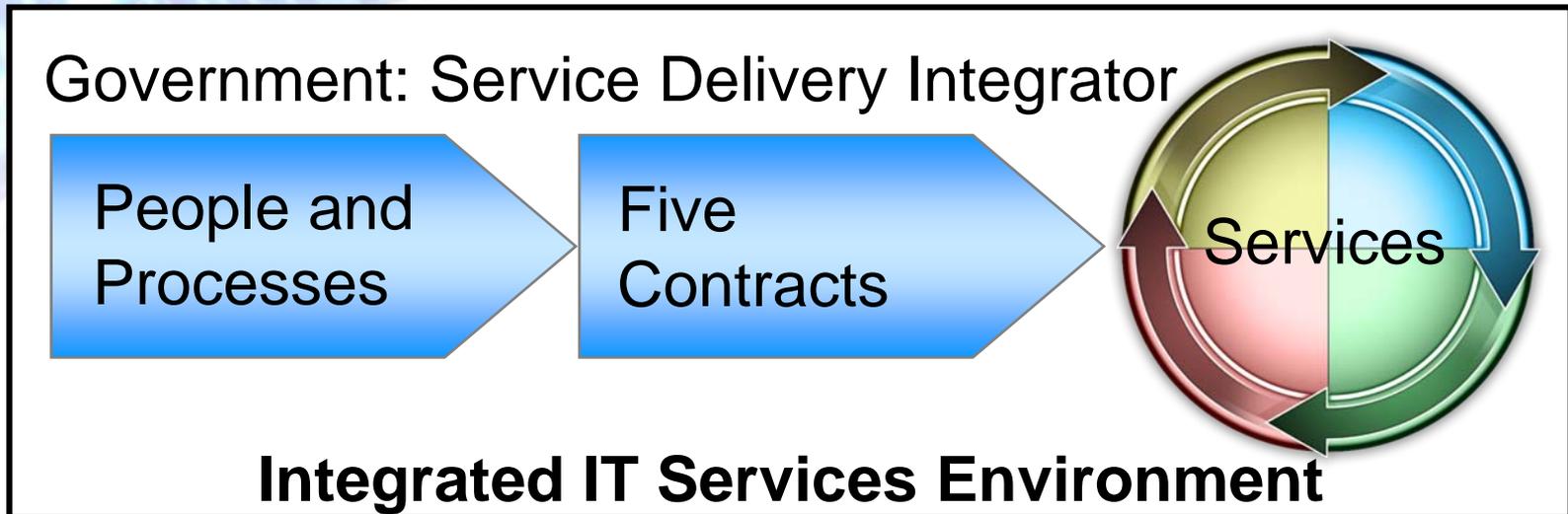
- Established Data Center Project Office at KSC
- Finalized procurement strategy
  - Contract for outsourced Data Center
  - Same vendor assumes responsibility for operating current Data Centers
  - Transition applications and services to Agency Data Center starts in FY10
- Establishing waiver criteria for services that will not transition
  - Applications with latency, availability requirements that Data Center and network can not support
  - Waivers to be approved by OCIO





# What This Means to I<sup>3</sup>P Procurements

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- NASA fulfills role of Service Delivery Integrator.
- Foundational element for integration is Enterprise Service Desk.
- Each RFP describes cross-functional requirements for integration.



# Summary

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- **Continuing consolidation of IT through current projects and contracts**
- **In parallel, working procurements for Agency-wide IT services**
  - **NASA is committed to the strategy of Agency-wide IT services and Agency-wide procurement**
  - **Seeking industry input**
    - **Good comments to make RFPs solid**
    - **Innovative ideas about better ways to do business**

