



Information Management Program Overview -DRAFT

Office of the Chief Information Officer

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Description of Information Management

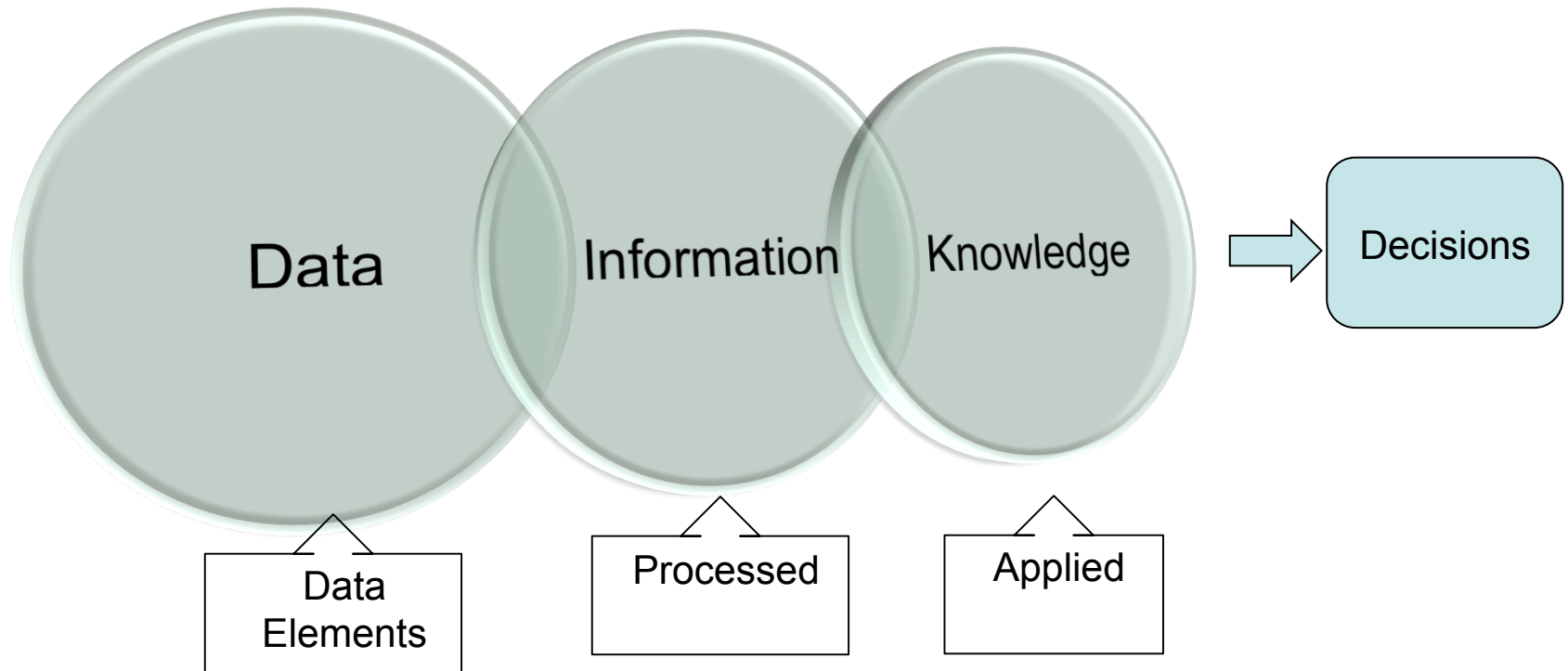
- Information Management is a key driver to the Office of the Chief Information Officer's (OCIO's) alignment with NASA's business and Mission. The OCIO's ability to create value for our stakeholders is realized through our ability to understand the Who, What, Where, When, Why, and the How of information use in the decision-making process.
- As the Information Management Program (IMP) matures, specific outcomes will have to be developed. However initially, there has to be information gathering and multi-year, high-level strategic goals that set the direction for the Program Executive (PE) and OCIO Management to ensure that value and efficiencies are realized in the program through transparency.
- The Information Management Program will provide insight and/ oversight of Information Management activities across NASA.



Why Information Management Program

- Enterprise library services management
 - » Enhance mission value by providing consistent, efficient and effective access to enterprise information, subscriptions and collaborative functionality.
- Governance/Compliance and Information Architecture and Standards
 - » Incorporate compliance, governance, architecture, standards and accountability for information in a consistent and simplified manner (through existing NASA Procedural Requirements (NPR) 7120.7 and NPR 7120.8 processes).
- Scientific and Technical Information (STI)
 - » Maximize the potential of the information by ensuring, open access and public access policies are implemented for releasable information and appropriate access control is implemented for internal information.
- Enterprise and specialized search
 - » Transform information collection, access and use for next generation of NASA engineers, scientists, and other NASA personnel.

Data-Driven Decision Making





Challenges

- Consistency in services across NASA (e.g. library services, search services)
- Immature strategic direction for the overall information management environment.
- Standardized contract language that enables data integrity, control and access during and after the contract is put in place.
- Limited resources for deploying, managing or improving information management.
- Large number of diverse business needs and issues to be addressed.
- Internal politics impacting on the ability to coordinate activities enterprise-wide.
- Demonstrating efficiencies and optimization of services that have been managed and funded at the Center Level (Library)
- Compliance to Government laws, regulations, and policies
- Aligning to Mission requirements
- Alignment with NASA governance processes.



IT and IM Strategic Plan Alignment

NASA IT Mission

To increase the productivity of scientists, engineers, and mission support personnel by responsively and efficiently delivering reliable, innovative and secure IT services.

NASA IT Vision

The NASA IT organization is the very best in government

NASA Guiding Principles for IT

Mission-Enabling, Innovative, Teamwork, Secure, Affordable, Integrated, Effective, Efficient

IT Strategic Goal 1: Capabilities

Transform NASA's IT infrastructure and application services to better meet evolving stakeholder needs and support mission success.

IT Strategic Goal 2: Cybersecurity

Enhance and strengthen IT Security and Cyber security to ensure the integrity, availability, and confidentiality of NASA's critical data and IT assets.

IT Strategic Goal 3: Sustainability

Enable innovative, sustainable, and transparent mission support through effective IT planning, enterprise architecture, and governance.

IM Goals and Objectives

- Transform information collection, access and use for the next generation of NASA engineers, scientists, and other NASA personnel.
- Maximize the potential of the information. Ensure that Open Access, Public Access policies are implemented for releasable information and Access Control is implemented for internal use information.
- Increase innovations and agility to mission and business programs
- Ensure high quality information through enterprise library services.

IM Goals and Objectives

- Provide an information architecture and standards for secure information management
- Increase access and insight to existing data
- Improve quality of service and consistency in information management
- Reduce redundancies and identify authoritative sources of data
- Ensure security requirements are met in information architecture and standards and data integration projects

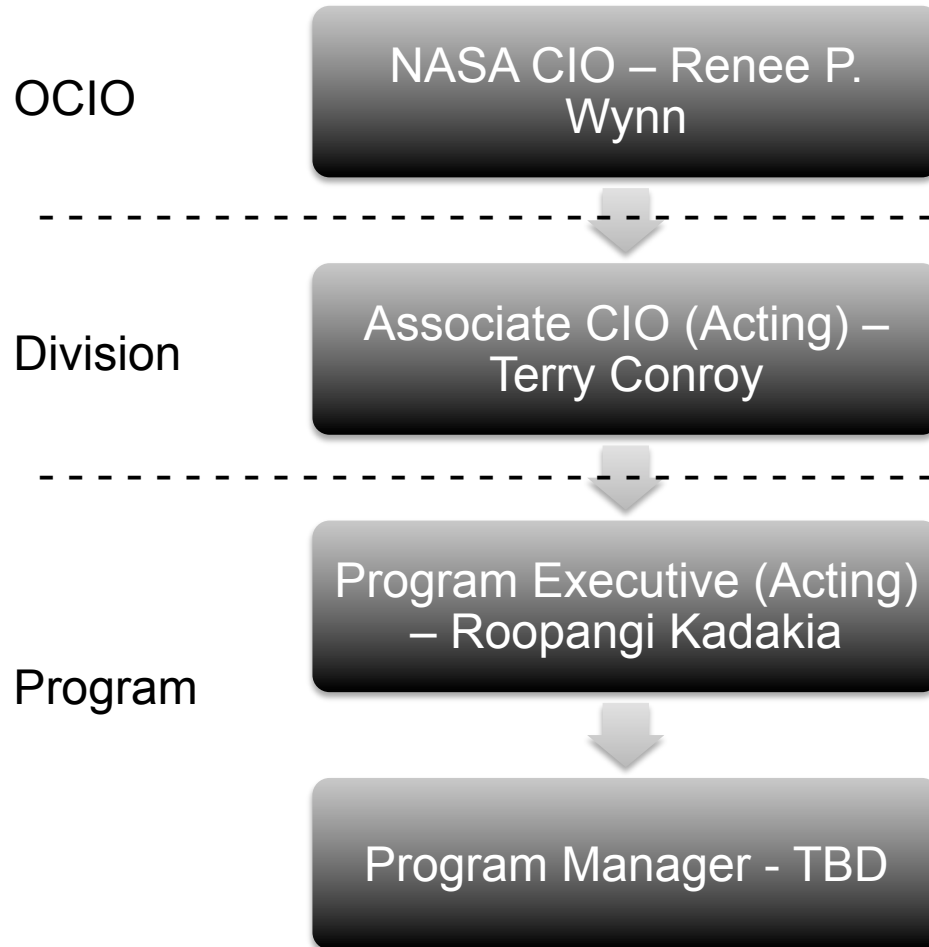
IM Goals and Objectives

- Coordinate with Chief Technology Officer for IT on building the roadmap for implementing new Data technologies
- Reduce IT costs and increase customer satisfaction
- Incorporate compliance, governance and accountability for information (through existing NASA Procedural Requirements (NPR) 7120.7 and NPR 7120.8 processes)

To improve NASA's ability to collect the information once, and re-use to its fullest potential. Manage information securely throughout its lifecycle while providing open standards and ease of access ensuring right information, at the right time to the right people

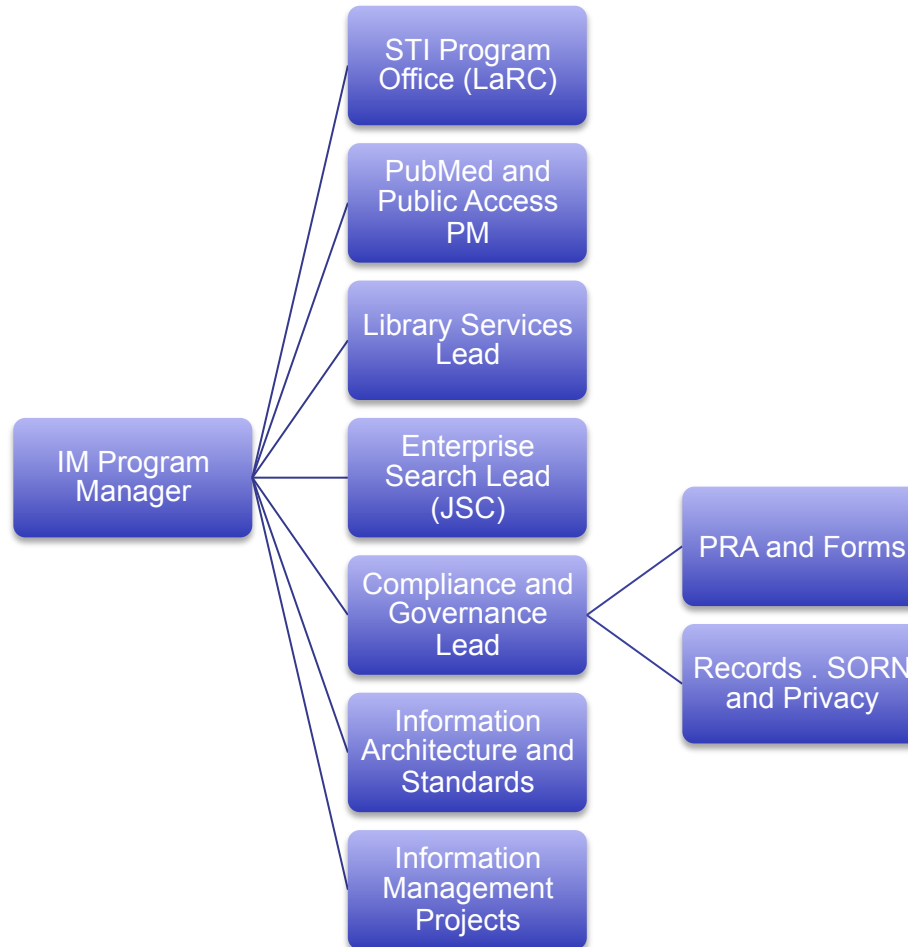


Program Organization





IM Program Office (IMPO)





Information Management Program

The BSA Implementation Plan requires the establishment of an Information Management Program consisting of the Scientific and Technical Information (STI) Program Office, Library Services, Enterprise Search, PubMed Central, Information Governance and Compliance, Standards and Applied Information Architecture, and the Information Management Program Office.

Enterprise Library Services Management	Enterprise-wide library services and products.
Governance/Compliance	Ensure Laws, Regulations, Mandates and Policies are adhered to across all information repositories.
Scientific and Technical Information (STI)	Acquires, processes, archives, announces, and disseminates NASA STI and acquires worldwide STI of critical importance to NASA and the Nation.
PubMed Central and Public Access	NASA will utilize NIH's Pub Med Central System for this effort.
Enterprise and specialized search	Center search, custom and secure search, application-based search, metrics, and auto-classification through managed taxonomy.
Applied Information architecture/ standards	Insight and/or oversight to the development, deployment and execution of effective Information architecture and standards.
Information Management Projects	Provide investment review, Insight and Oversight to information management projects.



Information Management Program

Issue	<p>NASA Libraries do not function as a unified agency-wide service. There is no overarching business process that supports the libraries effort to provide the most relevant, best quality, best cost information services and resources in the most cost effective and efficient manner.</p>
Observation	<ul style="list-style-type: none"> • Lack of Agency Leadership, Coordination and Consistent Operational Model for NASA Library Services. • Absence of Technical Architecture for NASA Library Services • Unrealized opportunities for collaboration, coordination, and efficiencies • Currently services are procured at the Center Level and provided in an inconsistent, un-shareable manner.
Recommendation	<ul style="list-style-type: none"> • Ensure access to Center library resources are available throughout NASA through proper firewall rule sets. • Promote Agency-wide license agreements by creating a subscription catalog of library services and products. Agreements negotiated by the NSSC and available to all NASA Centers. • As Center Library contracts expire, apply strategic sourcing principles to any new contracts. Center-based contracts allow subject matter expertise to be shared across the Agency or possibly an Agency-wide contract for these services should be pursued. • Establish Agency-wide library information services as part of the Information Management Program
Impact	<ul style="list-style-type: none"> • Enterprise-wide Library subscription services. • Unified Library Services functions can leverage enterprise discounted pricing for information resources and services. • Increased discovery of NASA information both in digital and in print formats can be accessed by all Missions, Programs, and Centers.



Information Management Program

Issue	NASA Enterprise Search Services are not utilized across all the Centers and the ability to find internal information assets is difficult at best and not integrated from an enterprise perspective.
Observation	<ul style="list-style-type: none">• Two Centers, the NASA Engineering Network and various portals and websites utilize the enterprise search capability currently.• HEO's Integrated Collaboration Environment (ICE) and LaRC will implement the capability in FY17.• Chief Knowledge Officer's requirement - Coordinated and integrated efforts to improve knowledge visibility and access through improved search.
Recommendation	<ul style="list-style-type: none">• Integrate/consolidate all Center Search Services, including indexing of content and Program/Center taxonomies• Integrate Custom or Secure Search Services and maintain applications authentication and authorization structure.• Develop APIs for search based applications and support for developing and implementing search based applications based on requirements.
Impact	<ul style="list-style-type: none">• Cost reduction - Unifying search capabilities may save license, infrastructure, operation costs up to 40% for non-participating Center. Capabilities will increase significantly from an enterprise services perspective.• Ability to modify metadata in index without erasing existing metadata.• Utilize Cloud Infrastructure and Integration, no capital investment, pay for what we use• Ability to scale capacity faster and provide more collections• Ability to find relevant information across Centers.



Information Management Program

Issue	Improve the public's access to the results of federally funded research and ensure that governance and compliance can be measured end to end, from award to all deliverables associated with the funding.
Observation	<ul style="list-style-type: none">• The ability to ensure that Data Management Plans and publications are associated with the associated funding sources requires coordination with the Offices of Procurement, General Council, CIO, and all the Mission Directorates.• Collaboration and coordination with other agency for consistent policy and processes is critical to the successful implementation of this policy.
Recommendation	<ul style="list-style-type: none">• 100% of accepted peer-reviewed publications and associated data will be uploaded and tagged into PubMed Central. This includes all accepted peer-reviewed publications resulting from funding FY16 and beyond.• Develop an end-to-end process, integrated into the Scientific and Technical Information Program services for compliance with the February 22, 2013 Office of Science and Technology Policy (OSTP) Memorandum for the Heads of Executive Departments and Agencies, "Increasing Access to the Results of Federally Funded Scientific Research."
Impact	<ul style="list-style-type: none">• Public Access of Research Data and Peer Reviewed Publications has the potential to increase the pace of scientific discovery and promote more efficient and effective use of government funding and resources• Insight of all NASA research data repositories promotes accessibility and sharing and preserving data are central to protecting the integrity of science of facilitating validation of results and to advancing science by broadening the value of research data to disciplines other than the originating one and to society at large.• Integration into the Scientific and Technical Information processes for seamless management of research and Scientific information.



Expected Outcomes Information Program

- Outcomes
 - » Consistent Library Services across NASA
 - » Public Access to Scientific and Technical Information and accepted peer-reviewed publications and associated Data
 - » Ability to find internal information across NASA
 - » Quality of services and consistency will be improved (e.g., performance, security, mobility)
 - » Data/Information will be protected and preserved for the long term
 - » Consistent compliance processes that are aligned to NASA governance processes

 - » **Right information to the right people at the right time**



Information Program Strategy/Approach- Redo

- Develop and Mature the Information Management Program
 - » Coordinate with Management, Missions, and Program Offices on issues pertaining to information management.
 - » Coordinate with application and data management staff on issues regarding data management, sharing, transport, analytics, and data mining
 - » Institutionalize the Program with operational support
 - » Develop and support consistent and sustainable data services
 - » Program conceptualization through operations
 - » Agency-level approval and support
- Prioritize and implement data integration projects through fragmented internal data sources by partnering with NASA Stakeholders (examples are OCE, HEO, CKO)
 - » Facilitator for end-to-end data integration projects
 - » Enable new levels software applications and data integration
 - » Develop executive level relationships with Programs, Mission Directorates and Offices



Information Program Strategy/Approach (cont.)

- Leverage data to enable NASA to make data-driven decisions
 - » Basis for new paradigms in data-driven decision making and management
 - » Enable new efficiencies working with mission projects
- Implement policies and process to enhance data quality through effective practices in data protection, data disposal and data upkeep.
 - » Work closely with the CISO to ensure compliance
 - » Lifecycle Strategies for data – inception through archive
- Governance and policy for management of information and data. It is also the practice of putting in place measures to mitigate risk
- Strategic Alignment with IRM Goals, Security, Enterprise Architecture, Chief Knowledge Officer, Mission Directorates – Goal/Objective



Questions?