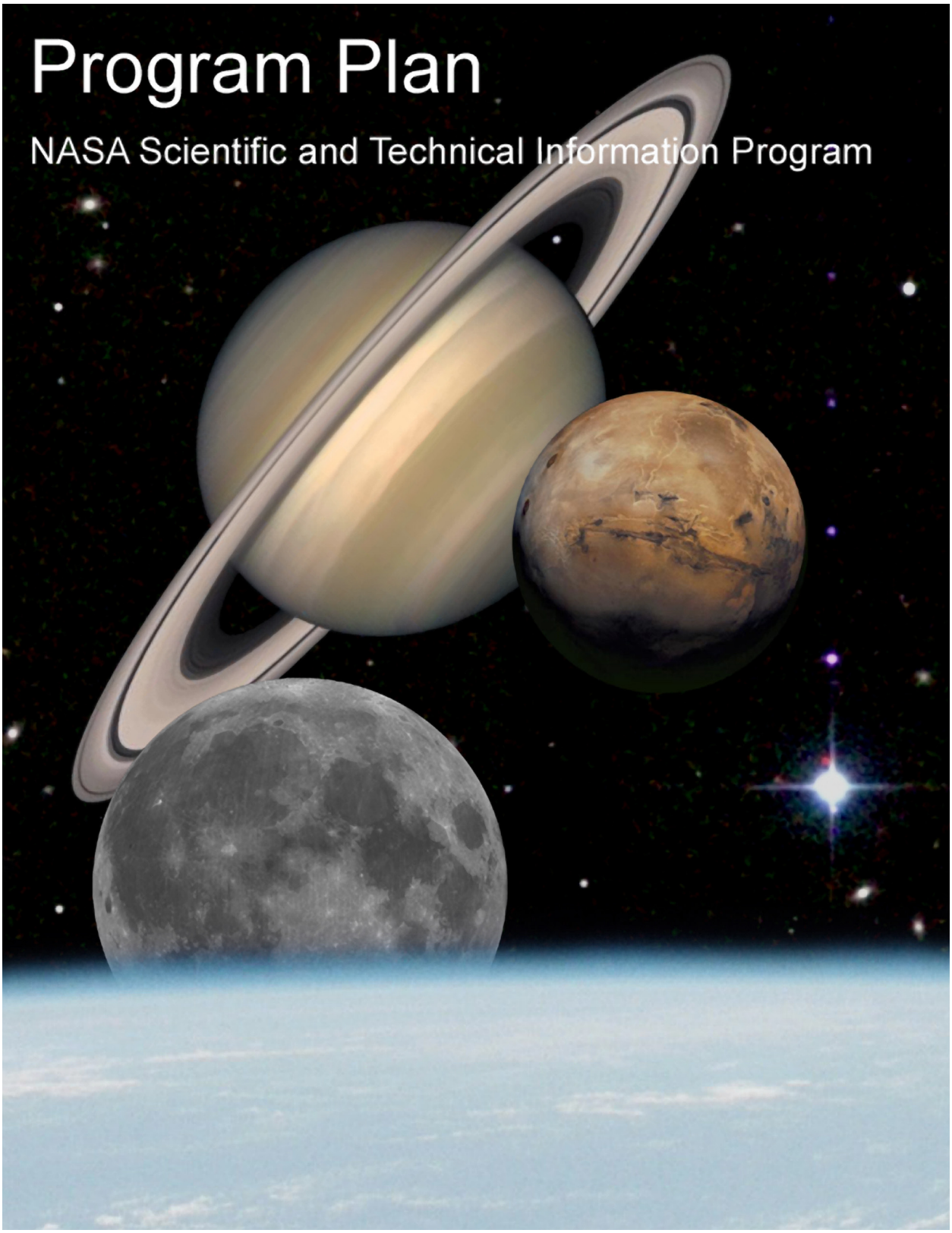
Program Plan

NASA Scientific and Technical Information Program



NASA STI Program Office
http://www.sti.nasa.gov

Program Plan

NASA Scientific and Technical Information Program

"This plan [Vision for Space Exploration] does not undertake exploration merely for the sake of adventure, however exciting that may be, but seeks answers to profound scientific and philosophical questions, responds to recent discoveries, will put in place revolutionary technologies and capabilities for the future, and will genuinely inspire our Nation, the world, and the next generation."

Excerpt from "The Vision for Space Exploration" February 2004

From the STI Program Office

STI Program Overview

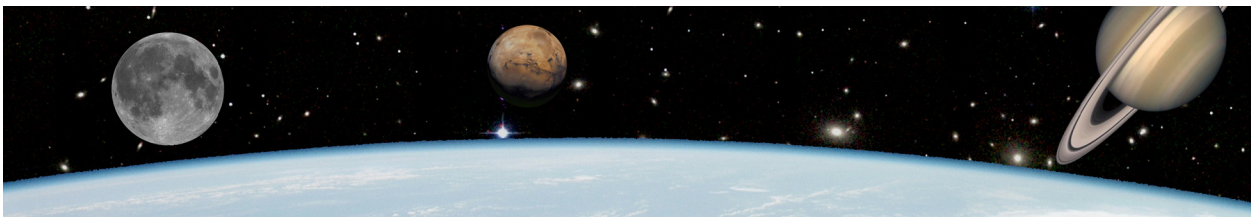
Updates

Customers and Stakeholders

NASA's and Nation's Future Needs

STI Program Office, Located at NASA Langley Research Center
Hampton, VA 23681-2199

http://www.sti.nasa.gov



From the STI Program Office

Throughout this century, NASA will be faced with great challenges and even greater opportunities. Following a period of reevaluation and reinvention, we will move rapidly forward to leverage new partnerships, approaches, and technologies that will enhance the way that we do business.

NASA's Scientific and Technical Information (STI) Program, which functions under the auspices of the Agency's Chief Information Officer (CIO), is an integral part of NASA's future. The program supports the Agency's missions to communicate scientific knowledge and understanding and to help transfer NASA's research and development (R&D) information to the aerospace and academic communities.

The STI Program helps ensure that the Agency will remain at the leading edge of R&D by quickly and efficiently capturing NASA and worldwide STI to use for problem solving, awareness, and knowledge management and transfer. The acquisition, use, and dissemination of STI, therefore, are essential not only to the Agency but also to the Nation's economic competitiveness.

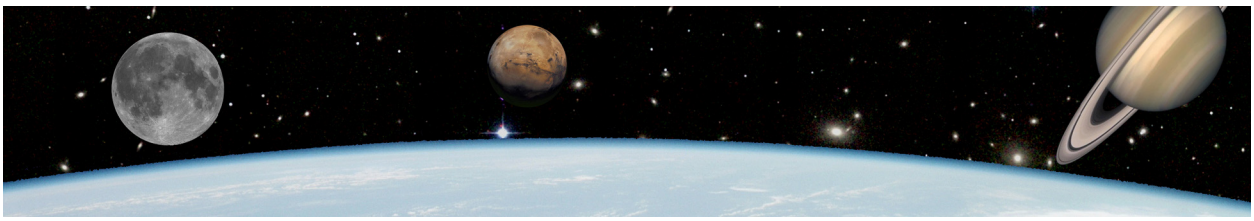
As NASA improves our information technology infrastructure and forges ahead with new proven technologies to facilitate information flow, we must, in tandem, effectively manage and coordinate our information content to leverage its full power for effective communication and decision making. This is an exciting challenge, and one in which the NASA Office of the CIO is uniquely designed and organized to accomplish.

This Program Plan describes the STI Program, its customers and future directions, and why the program is essential to NASA, the Nation, and the international scientific and technical communities. The Program Plan was originally developed following an Agency-wide STI reengineering effort that assessed the program from the customer and the stakeholder (those with vested interests in the program) viewpoints. Customers, stakeholders, NASA Center and Agency personnel, and external partners participated in this assessment. The Program Plan is updated following analysis of feedback and realignment to NASA's missions and goals.

The STI Program looks forward to the challenges ahead, and we invite you to participate with us to continue to improve, leverage, and safeguard NASA's unique national resource and treasure in STI for today and for generations to come.

As Wayne Hale wrote in "Adjusting Our Thinking," Letter from Wayne Hale to the Space Shuttle Team, January 27, 2004: "Write down what you have learned; pass it on to those who are starting to consider future designs. We must make sure that the next launch—and landing—and those that follow are safe and successful. That will be our finest contribution to the future, carrying the torch ahead."

George J. Roncaglia, Head
STI Program Office
Agency-wide STI Program



STI Program Overview

What It Is and Why It Is Essential to NASA and the Nation

The Scientific and Technical Information (STI) Program collects, organizes, manages, publishes, disseminates, and provides for long-term retention of NASA's research and development (R&D).

STI includes a variety of both formal peer-reviewed information (reports, journal articles, and conference proceedings) and other forms of informal ("gray") literature and knowledge (presentations, data sets, and documents in repositories).

The STI Program provides products and services to enable NASA's customers and stakeholders to quickly locate and leverage NASA's R&D and to keep abreast of national and international advances in science and engineering. Examples of products and services include:

- STI database, which has 3.9 million citations and a growing number of full-text digital NASA documents. Two interfaces to NASA's STI database are:
    - NASA Aeronautics and Space Database (NA&SD), which serves NASA and its contractors and grantees and other Federal government agencies and their contractors and grantees
    - NASA Technical Report Server (NTRS), which includes an increasing number of NASA's full-text documents available to the public
    - These interfaces receive approximately 40,000(NA&SD) and 240,000 (NTRS) hits per month
- Agency-wide STI website, which receives more than 3.6 million hits per month, and links to a wealth of research and information
- STI Help Desk, which helps customers locate and obtain NASA's information and handles approximately 500 inquiries per month

- STI Program's Document Availability Authorization review process, which facilitates peer data quality reviews and ensures that proprietary, restricted, and limited STI is correctly marked, handled, and disseminated, as appropriate

- Miscellaneous products, such as the machine-aided indexing tool, publications templates, purchases of commercial data for NASA, and automated alert products to help locate STI

- The NASA Center for AeroSpace Information (CASI), NASA's STI contractor, which acquires, organizes, disseminates, and helps ensure that NASA's STI is both safeguarded and archived for long-term access; CASI maintains NA&SD and NTRS

These are just a few examples of STI products and services that are provided to NASA's customers. These customers include

- NASA personnel and NASA contractors and grantees
- Federal and other government agencies and their supporting personnel
- Universities and educational institutions
- Information partners
    - National Technical Information Service (NTIS)
    - Government Printing Office (GPO)
    - National Archives and Records Administration (NARA)
    - Defense Technical Information Center (DTIC)
    - CENDI (association of U.S. Departments of Commerce, Energy, Defense, and Interior, and NASA)
    - Private/government entities
- Commercial entities
- Aerospace community
- Public

NASA's STI is an essential product of research, facilitates technology transfer and commercialization, and enhances the competitive edge of U.S. aerospace companies and educational institutions. NASA's STI is an integral part of the Agency's information transfer and is critical to NASA's mission and vital to the Nation. By ensuring a fast, two-way process of internal and external information exchange, the STI Program helps NASA avoid duplication of research, time, and cost and makes its wealth of information available to benefit its customers.

We in the STI Program promote an aggressive, cost-effective, and relevant Agency-wide STI Program—one that has strong ties to the information technology trends within and outside the Agency and is based on customer needs and partnership arrangements within NASA and outside the Agency. In addition, we continue to pursue a strong leadership position outside NASA in forming partnerships with other agencies and organizations to leverage cost-savings and efficiency benefits in identifying, publishing, archiving, and disseminating STI.

STI Defined

Scientific and Technical Information (STI) consists of the results (facts, analyses, and conclusions) of basic and applied scientific, technical, and related engineering research and development. STI also includes management, industry, and economic information relevant to this research.

In other words, STI is a collection of information (in any media format) that represents a body of scientific, technical, or management knowledge identified as having value to accomplish NASA's missions.

Examples of STI traditional products are

- Research reports (STI Report Series)
- Journal articles (preprints and reprints)
- Conference proceedings
- Presentations

Other examples of STI include

- Data sets
- Wind tunnel and satellite data
- Technical videos
- Scientific and technical imagery (photographs)
- On-line scientific bibliographic databases
- Technical resource locators
- Laboratory notes
- Preliminary technical information (marked as such)
- Lessons learned
- Scientific and technical operation information
- Management information related to the operation of scientific and technical programs and projects

Scope and Benefits of the STI Program

The STI Program supports the acquisition, organization, management, and dissemination, and long-term retention and safeguarding of STI relevant to NASA's research and development and missions. The purpose of the NASA STI Program is to

- Help ensure that NASA research is cost-effective by providing NASA personnel with access to existing NASA and worldwide research results. In this way, the NASA STI Program reduces duplication and increases productivity, which not only increases the yield of the tax dollars invested in NASA research but also accelerates scientific progress

- Support the work of the U.S. aerospace industries. To maintain their competitiveness, they rely on current knowledge of R & D developments in NASA, the United States, and the world

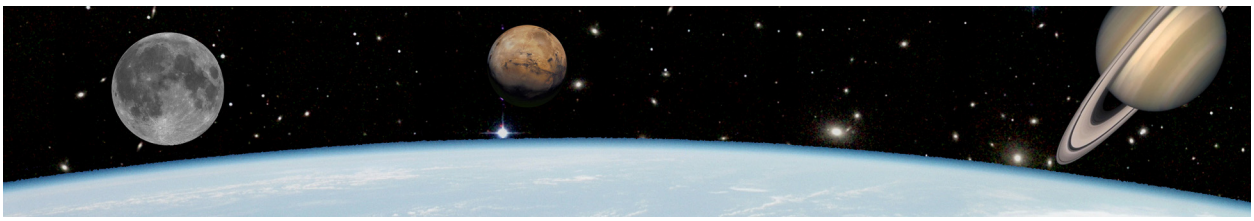
- Share the results of NASA's research with the world, as appropriate

NASA's upcoming achievements in exploring the universe, the Moon and Mars, and the near-Earth and space environments beyond have and will continue to capture worldwide attention. The STI Program, under the auspices of NASA Headquarters and the STI Program Office at Langley Research Center, strives to link all aspects of STI content management for our customers and stakeholders benefit.

STI Program: An Integral Part of NASA's Information Infrastructure

NASA's R&D and missions produce a wealth of important STI that is essential to the Agency, U.S. aerospace companies and educational institutions, and the Nation. The STI Program is an integral part of gathering and disseminating this mission-related information. This program is not only part of NASA's information infrastructure but also is an important link in bringing the results of NASA's research to the Nation and its citizens.

We in the STI Program strongly believe in the need to share NASA's scientific and technical information. We are excited about the future, and look forward proudly to the challenges and opportunities that lie ahead to serve the Agency and the Nation.



Updates:

Improving the Way We Do Business

Vision

The NASA STI program will lead the Agency in collecting, organizing, and providing digital aerospace information a to every customer.

To support this vision, we affirm that we will

- Partner with information technology and content providers both within NASA and externally to provide leadership and advances in acquiring, publishing, managing, disseminating, and safeguarding NASA's unique treasure of scientific and technical information
- Create virtual access to a broad array of STI, with a focus on full-text digital dissemination to the desktop
- Increase the amount and scope of STI that is made available to our customers and stakeholders
- Provide NASA and the U.S. aerospace community with prompt, convenient access to STI from NASA and global sources to support U.S. leadership in research and development

Mission

As the official STI broker for NASA, the STI Program will quickly, efficiently, and cost-effectively provide the NASA community with desktop access to STI produced by NASA and the world's aerospace community.

We will also provide the aerospace community and the general public access to the intellectual scientific and technical information output and achievements of NASA. This includes collecting, organizing, and making available NASA, U.S. and worldwide STI pertinent to NASA's current and future missions.

Goals

The STI Program will focus on the following primary goals:

- Acquire, organize, and provide fast access to NASA and worldwide STI
    - Increase the amount of NASA STI that is made available and is in digital format
    - Increase the amount of non-NASA STI available to customers
    - Provide for the safeguarding of NASA's legacy and current collection of STI
- Utilize Enterprise Architecture and Data Reference Model best practices to work toward an interoperable environment
- Expand the collection of electronic documents, and when possible and economical, provide these documents directly to the desktop in full-text format
- Form strategic partnerships to facilitate access to worldwide STI
- Become a leader in providing aerospace information

The STI Program will work toward the following secondary goals:

- Be a model for managing STI
- Aggressively form partnerships to collect and disseminate STI
- Help enhance the public's understanding of the assets that NASA's information provides to its customers and help educate them on how to locate this information

Objectives

The objectives of the STI Program are as follows:

- Provide access to wider variety of gray literature
- Upgrade or replace STI legacy systems
- Provide published and unpublished STI, such as technical reports, informal STI, collaborative project documentation, and STI in document management repositories
- Accelerate acquisition of digitized STI

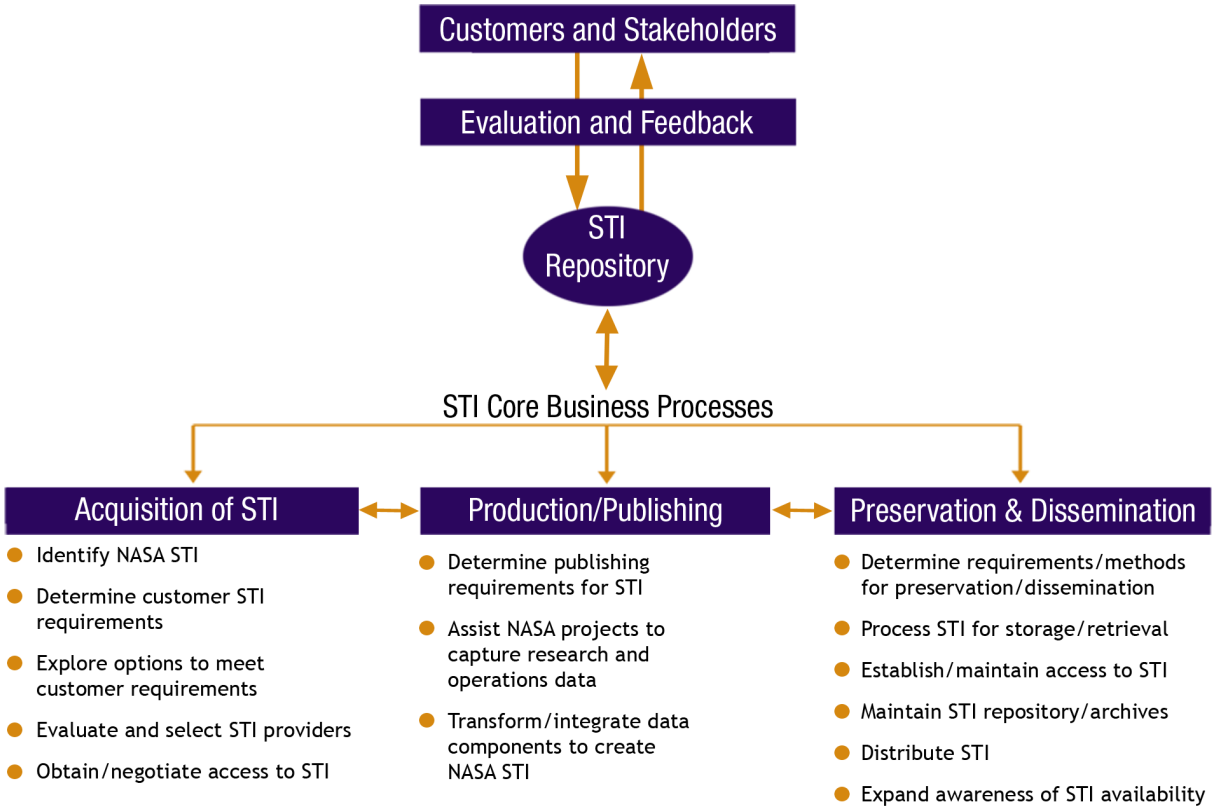
- Digitize legacy documents
- Create a dynamic STI web presence for easy location of STI
- Provide standards and tools to increase interoperable, interactive, and instantaneous digitally formatted STI (machine-aided indexing, metadata standards, schema, taxonomies, data reference model)
- Increase the infusion of worldwide STI through national and international collaboration
- Safeguard NASA's STI through a comprehensive and tested disaster recovery plan
- Provide appropriate full-text NASA documents to the public in support of the E-GOV Act

Operational Focus

The STI Program Office, in partnership with NASA Headquarters, the Centers, and other NASA organizations, customers, stakeholders, and suppliers will accomplish the following:

- Reduce the number of interfaces to the STI database and improve their customer functionality
- Focus on providing full-text (as possible) STI digital formats direct to the desktop
- Customize products and services, based on user category
- Provide for the safeguarding of the legacy and current NASA collection
- Accelerate coordination at the Center level to ensure that NASA STI is acquired by the Program
- Use test beds and benchmarking to evaluate innovative ideas for the Program and "partner" with Centers that provide "best-in-class" services and products
- Focus on customer awareness and training to better leverage STI tools
- Ensure a coordinated and focused Agency approach that makes use of partnerships for Program implementation and best-in-class organizations and teaming arrangements
- Provide training and other guidelines to assist users locate, publish, and preserve NASA's STI, including proper handling of sensitive, restricted, and commercially sensitive STI

NASA STI Essential Business Processes



Approach and Organizational Structure

Our approach is to

- Design and implement the STI Program based on customer and stakeholder needs, within budgetary limitations
- Stress partnerships among NASA Headquarters, the STI Program Office at Langley, the Centers (both Center STI programs and Center organizations that produce STI), and external government and industry STI organizations
- Use evaluation and metrics to improve program performance
- Aggressively move toward taking a leadership role in STI among other government agencies and industry.

The organization and responsibilities of the STI Program and other organizations within NASA are given below.

Headquarters STI Program

The Headquarters program is responsible for planning and managing implementation of the Agency STI Program; assessing the effectiveness of the Agency STI Program; designating a Headquarters executive for STI; designating an STI Program Office (STIPO); and reviewing and approving the STIPO plan and implementation.

Agency-Wide STI Program

The STIPO is responsible for the following activities, as documented in a signed Cost, Schedule, and Performance Agreement (CSPA) between the NASA Chief Information Officer and the Langley Research Center Chief Information Officer

- Develop and implement Agency STI policy and procedures in the form of a NASA Policy Directive (NPD) and NASA Procedural Requirements (NPR), with Headquarters approval
- Develop the STI Program Plan
- Establish policy for and negotiate and execute external agreements, such as international,

  national, and interagency STI agreements, in cooperation with Headquarters and appropriate Mission Support organizations
- Establish policy for, negotiate, and execute dissemination agreements with secondary sources or distributors of STI
- Establish metrics for the Agency STI Program under the oversight and ultimate approval of Headquarters
- Implement the STI Program consistent with laws, regulations, policies, and agreements pertaining to the NASA STI Program and the dissemination of information to the public.

  This includes adherence to the Agency's STI policy, strategic-level Program Plans, and the STI Program funding stream
- Ensure that the Agency's STI budget is expended on activities required to achieve the approved Program Plan
- Lead efforts to ensure continuing relevancy of NASA's STI process and procedures, such as reengineering and process improvement when required; maintain and revise the NPD and NPR for STI; include customers and NASA Centers in the process of improving STI processes and procedures

- Oversee the operation and maintenance of the Center for AeroSpace Information
- Develop policy and procedures and maintain and operate systems for the collection, identification, production/publication, tracking, and dissemination of NASA STI
- Support the elimination of redundancy from Agency and Centers processes, procedures, an systems involving the identification, acquisition, publication, tracking, dissemination, and access of NASA STI to include
    - Seek to coordinate the development and maintenance of a virtual warehouse of NASA STI
    - Determine feasibility, suitability, and cost effectiveness of using or partnering with other organizations (Federal or private) to minimize redundancy of coverage and systems to achieve the goals of the program
    - Strive to acquire economical commercial sources of STI in meeting the Agency's needs
- To extent practicable, involve the Centers in activities affecting STI policies and plans
- Participate in relevant to STI activities in CENDI (Commerce, Energy, NASA, Defense, and Interior STI managers group)
- Benchmark and implement new technologies and data management formats to benefit NASA, as budget allows

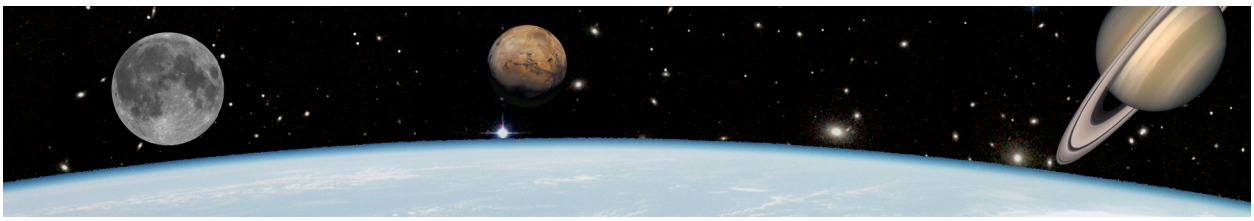
STI Programs at NASA Centers

The NASA Centers are responsible for

- Designating an STI Manager and a Document Availability Authorization representative at the Center, who duties are specified in NPD 2200.1A
- Acquiring, tracking, and producing or having produced NASA STI related to their Center mission
- Ensuring that Center STI reaches the STI database in electronic format
- Sharing information, statistics, recommendations, and expertise, in addition to participating in Agency-wide teams, to improve Agency-wide STI program

Other Organizations at NASA Centers

Identifying, tracking, and acquiring NASA's STI for the STI Database are not solely the responsibilities of the STI Program. Other NASA organizations have the responsibility to contact the STI Program at their Centers to determine how to get their project, mission, and organizational STI into the NASA STI Database. It is the responsibility of every NASA employee and NASA-funded contractor to ensure that NASA's STI is preserved for the Nation and its citizens.



Customers and Stakeholders

Current and future customers and stakeholders of the STI Program are listed below.

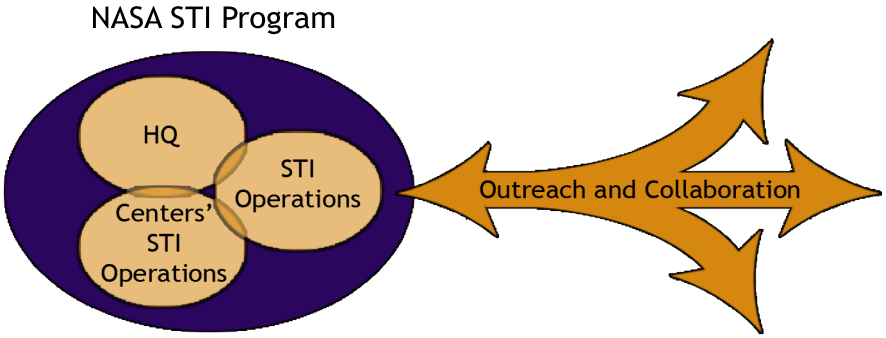
Internal Customers and Stakeholders

- NASA and contractor engineers, scientists, and support staff
- NASA management
- NASA technology transfer and commercialization programs
- NASA Office of Education and Office of Public Affairs
- NASA Headquarters
- STI personnel
- NASA Chief Information Officers

External Customers and Stakeholders

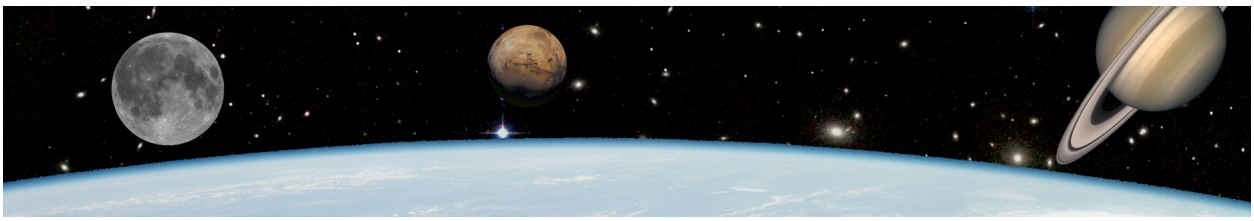
- Federal and other government agencies
- Universities and other Educational institutions
- Commercial STI providers
- General Public
- Foreign and domestic partners

NASA STI Overview



- Customers and Stakeholders
- Chief Scientists and Engineers
- Enterprise and Mission Leaders
- Centers' Management
- Technology Commercialization
- Business Office/Procurement

- Bring customers and decision makers into process
- Create unified program and resources driving to common goals
- Actively pursue NASA's and STI's missions



Looking Toward NASA's and the Nation's Future Needs

The concepts listed below are critical to future STI growth and alignment:

- Incorporate the information needs of NASA strategic vision and missions into the STI acquisition, preservation, and dissemination

- Focus on an aggressive but collaborative approach to effect change; this involves

  - Centers' management
  - Chief Information Officers
  - Enterprise and mission leaders
  - Chief scientists and engineers
  - Customers and key stakeholders
  - Technology commercialization
  - Business office and procurement personnel

- Distribute STI functions to lowest level possible through a phased-in timeline

- Focus on fully integrated, customer-focused electronic information services, including use of a segmented database; services will be provided to the desktop when feasible

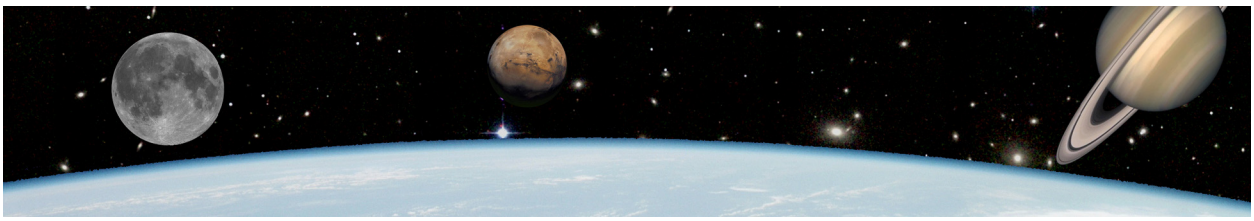
- Focus on core areas and corresponding but simplified support processes (education of services and products, planning, metrics, standards, budget and resource management, training and education, STI tools and techniques, and communication and integration)

- Ensure these processes and knowledge of these processes continue to exist to protect to protect and include STI that is restricted, proprietary, or commercially sensitive so it is not blocked from the communities who need it

- Monitor STI exchange agreements to ensure that there is a balance of STI exchange and that competitive worldwide information and translations are entering the database

- Proactively leverage partnerships within NASA and outside the Agency to achieve the STI Program goals

- Protect and test the systems for the legacy and existing STI , including disaster recovery, backup, off-site storage, and, when possible, fail-over or other safeguard existing technologies



Metrics To Measure Success

NASA will

- Capture NASA STI
  - NASA will increase the quantity of NASA STI that the program captures
- Increase access to NASA STI
  - NASA will increase the number of electronic documents that it makes available
- Disseminate NASA STI
  - NASA will track the number of primary distributions or accesses of STI, including electronic searches (Web page hits), to determine the usage of its products and services
- Measure customer satisfaction
  - NASA will analyze comments and questions received from internal users and user groups (especially NASA, NASA contractors, and NASA grantees) and external users (when received on a voluntary basis) to improve its STI services and products

For additional information about this NASA STI Program Plan or the NASA STI Program, contact the STI Program Office at Langley Research Center at email: sti+id@larc.nasa.gov, at fax number 757-864-7484, or at email: George.J.Roncaglia@nasa.gov.

Authoritative References:

- NASA NPD 2200.1A, “Management of NASA Scientific and Technical Information (STI)”
- NPR 2200.2B, “Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information (STI)”
- The Vision for Space Exploration
- President’s Management Agenda