NASA Procedural Requirements

NPR 2200.2D
Effective Date: September 07, 2016
Expiration Date: September 07, 2021

COMPLIANCE IS MANDATORY FOR NASA EMPLOYEES

Requirements for Documentation, Approval and Dissemination of Scientific and Technical Information

Responsible Office: Office of the Chief Information Officer

Table of Contents

Preface

P.1 Purpose
P.2 Applicability
P.3 Authorities
P.4 Applicable Documents and Forms
P.5 Measurement/Verification
P.6 Cancellation

Chapter 1. Publication and Dissemination of NASA Scientific and Technical Information (STI)

1.1 Purpose of and Caveats for this NASA Procedural Requirements Document
1.2 NASA Scientific and Technical Information (STI) Defined

Chapter 2. Responsibilities

2.1 NASA Mission Directorate Associate Administrators (MDAAs), Chief Engineer, Chief Scientist, Chief Technologist, Chief Technology Officer, Center Directors, and Mission Support Office Associate Administrators (MSOAAs)
2.2 NASA Chief Information Officer (CIO)
2.3 Agency Office of the Chief Information Officer (OCIO) STI Program Executive
2.4 STI Program Office (STIPO)
2.5 Center Directors
2.6 Center STI Managers

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

2.7 Center DAA Representatives
2.8 Managers Who Approve STI at Centers
2.9 Contracting Officers (COs)
2.10 Contracting Officer's Representatives (CORs)
2.11 Grant Officers (GOs)
2.12 Center Grant Technical Officers (GTOs)
2.13 Authors of STI
2.14 NASA STI Program

Chapter 3. STI Process Requirements

3.1 Review and Approval
3.2 Selection of Publication Channels
3.3 Storage, Retention, and Archiving NASA Scientific and Technical Information
3.4 Reproduction, Duplication, and Printing of NASA Scientific and Technical Information
3.5 Dissemination of NASA STI

Chapter 4. NASA Scientific and Technical Information (STI) Report Series

4.1 Purpose
4.2 Assigning Publications to the NASA Scientific and Technical Information (STI) Report Series
4.3 Scientific and Technical Information (STI) Work Undertaken for Another Government Agency, Company, or University
4.4 Scientific and Technical Information (STI)-Related Work Funded by One Center and Performed by Another
4.5 Responsibility for the NASA Scientific and Technical Information (STI) Report Series
4.6 Standards for NASA Scientific and Technical Information (STI) Report Series Publications
4.7 Submittal of Publications to the NASA Scientific and Technical Information (STI) Program
4.8 Standards for Protection of Intellectual Property
4.9 Disclaimers
4.10 Distribution Notices
4.11 Level of Review
4.12 Use of International System of Units (SI)

Chapter 5. Symposium Presentations and External Publications

5.1 Purpose
5.2 General Requirements
5.3 Projected Visuals and Journal Articles
5.4 Requirements for Symposium Presentations
5.5 Requirements for External Publications

Chapter 6. Reviews and Approvals

6.1 Purpose

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

6.2 Policy and Legal Requirements
6.3 Appeal Process for NASA STI Documents
6.4 Professional and Technical Reviews
6.5 Document Availability Authorization (DAA)
6.6 Special Concerns

Chapter 7. Dissemination of STI

7.1 Purpose
7.2 General Requirements
7.3 Projected Visuals and Journal Articles
7.4 Requirements for Symposium Presentations
7.5 Publication of Journal Articles and Open Access Requirements

Appendix A. Definitions

Appendix B. Acronyms

Appendix C. Sample Forms Used to Publish STI

Appendix D. Types of NASA Scientific and Technical Information (STI) Publications and Related Procedural and Standards Information

Appendix E. Documentation, Approval, and Dissemination Procedures

Appendix F. Front and Back Covers, Title Pages, and Spines

Appendix G. Reference List for Book Numbers

Appendix H. Sample Errata for Cover Page, Back of Title Page, and Report Documentation Page

Appendix I. Notices for NASA Scientific and Technical Information (STI) Documents with Limited Distribution

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Appendix J. Reference List for International System of Units (SI)

Appendix K. Database Subject Divisions and Categories

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Preface

P.1 Purpose

a. In accordance with the National Aeronautics and Space Act, NASA will "provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof." Unless a determination is made that public dissemination of information will be prohibited or restricted (pursuant to U.S. statute, regulation, or Agency policy), NASA information is broadly made available to the public. NASA's responsibility is to not only broadly disseminate STI but also to safeguard sensitive and restricted STI and to protect (archive) this information to ensure its access and use for the future.

b. This NASA Procedural Requirements (NPR) identifies requirements for approving (via the NASA Form 1676, Document Availability Authorization (DAA)), publishing, and disseminating NASA scientific and technical information (STI) under the policy set forth in NASA Policy Directive (NPD) 2200.1.

P.2 Applicability

a. This NPR is applicable to NASA Headquarters and NASA Centers, including Component Facilities and Technical and Service Support Centers, and to the Jet Propulsion Laboratory (JPL), a Federally Funded Research and Development Center (FFRDC). This NPR is applicable to other contractors, grant recipients, or parties to cooperative agreements only to the extent specified in their contracts, grants, or cooperative agreements.

b. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms: "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is recommended, but not required, "will" denotes expected outcome, and "are/is" denotes descriptive material.

c. Treatment of NASA STI produced under NASA contracts, grants, and cooperative agreements will be in accordance with Federal and NASA regulations, including the Federal Acquisitions Regulation (FAR), the NASA FAR Supplement 1835, 2 CFR 1800, 14 CFR 1274, and the Grant & Cooperative Agreement Manual (GCAM), except in the case of approved waivers and exemptions.

d. All NASA STI and NASA-funded STI, if it is released by or on behalf of NASA, should be reviewed and approved by the DAA process (via NASA Form (NF) 1676 or NF-1676B for those Centers that use the Agency Electronic DAA (EDAA) system, or another Center-specific form), including NASA STI produced by NASA contractor or grantee authors if the NASA STI is released by or for NASA.

e. NASA contractors and grantees whose contract, grant, or cooperative agreement contains a pre-review requirement will have all NASA STI reviewed and approved by NASA regardless of whether the contractor or grantee releases the STI for or on behalf of NASA or for or on behalf of their own company or institution.

f. This NPR applies to all STI published, disseminated, and presented containing NASA-sponsored

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

or -funded STI except as excluded in this directive.

g. In this directive, all document citations are assumed to be the latest version unless otherwise noted.

P.3 Authority

a. National Aeronautics and Space Act, 51 USC § 20113(a).

b. NPD 2200.1, Management of NASA Scientific and Technical Information (STI).

P.4 Applicable Documents and Forms

a. Subject Matter of Copyright: United States Government Works. 17 USC § 105.

b. Rehabilitation Act of 1973, Section 508, as amended, 29 U.S.C § 794d.

c. Government Performance and Results Act of 1993, Pub. L. 103-62, 107 Stat. 285 (1993).

d. Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 CFR 200.

e. Grants and Cooperative Agreements, 2 CFR 1800.

f. Cooperative Agreements with Commercial Firms, 14 CFR 1274.

g. International Traffic in Arms Regulations (ITAR), 22 CFR 120-130.

h. Export Administration Regulations (EAR), 15 CFR 730-744.

i. NASA Federal Acquisition Regulations (FAR) Supplement, §§ 1835.010, 1835.011, 1835.070, 1852.235-70, 1852.235-73, 1852.235-74.

j. OMB Circular A-130, Management of Federal Information Resources (11/28/2000).

k. NPD 1490.1, NASA Printing, Duplicating, and Copying Management.

l. NPD 2190.1, NASA Export Control Program.

m. NPD 2210.1, External Release of NASA Software.

n. NPD 2230.1, Research Data and Publication Access.

o. NPR 1441.1, NASA Records Management Program Requirements.

p. NPR 1450.10, NASA Correspondence Management and Communications Standards and Style.

q. NPR 1600.1, NASA Security Program Procedural Requirements.

r. NPR 2190.1, NASA Export Control Program.

s. NPR 2210.1, Release of NASA Software.

t. NPR 2810.1, Security of Information Technology.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

u. NPR 7120.7, NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements.

v. NPR 8621.1, NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping.

w. NASA Interim Directive 1600.55, Sensitive But Unclassified (SBU) Controlled Information.

x. NASA Standard (NASA STD) 2820, Encryption and Digital Signature Standards.

y. NASA Publications Guide for Authors, NASA/SP-2015-7602 (Rev. 2).

z. NASA Scientific and Technical Information Standards, NASA/SP-2006-6114.

aa. NASA Grants and Cooperative Agreement Manual (GCAM).

bb. NASA Procurement Information Circular (PIC) 03-03.

cc. NASA Grant Information Circular (GIC) 07-02.

dd. NF-1676, NASA Scientific and Technical Information Document Availability Authorization, Electronic Form.

ee. NF-1676B, NASA Scientific and Technical Information Document Availability Authorization, Hardcopy Form.

ff. American National Standards Institute/National Information Standards Organization (ANSI/NISO) Z39.18, Scientific and Technical Reports - Preparation, Presentation and Preservation.

gg. ANSI/NISO Z39.23, Standard Technical Report Number Format and Creation.

P.5 Measurement/Verification

a. In assessing whether NASA is achieving the STI policies set forth in this NPR (based on Government Performance and Results Act reporting requirements), the Agency will measure, on an annual basis, the following performance trends to determine the value of the STI Program:

(1) Capture of NASA STI - NASA collects NASA STI from a variety of sources to facilitate the use of such information by scientists, engineers, researchers, businesses, universities, and the public.

(2) This activity will be measured by the number of STI items that are collected and input into the STI database on an annual basis (tracked monthly).This measurement will be tracked and analyzed by the Scientific and Technical Information Program Office (STIPO).

(3) Access to STI-NASA will increase the number of STI documents that it makes available in electronic format.

(a) This activity will be measured by the STIPO by the number of electronic documents it makes available via its STI systems.

(b) This measurement will be tracked annually by the STIPO.

(4) Dissemination of STI - NASA will track the number of primary electronic distributions or accesses of STI, including electronic searches (Web page views), to determine the usage of its

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

products and services.

(a) This activity will be measured annually (tracked monthly) by the number of Web page accesses in addition to the number of usages, such as STI downloaded, of STI products and services.

(b) This measurement will be tracked and analyzed by STIPO.

(5) Customer satisfaction-NASA (by STIPO and based on inquiries to the Information Desk) will analyze comments and suggestions 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. This information will be tracked annually by the Agency STI Program. (6) Effectiveness of the STI review process-NASA will measure the effectiveness of the STI review process in the NF1676 through the results of the annual compliance review and associated reports to the Center Directors.

(7) Protection of STI-this assessment of NASA will be based on the accreditation designations of systems that support acquiring, processing, storing, transmitting, and maintaining its information and on the protection of the information.

(8) Effectiveness of STI protection-the evaluation of NASA information protection will be evaluated based on the number and degree of security incidents reported and adjudicated by the NASA Security Operations Center.

(9) On a yearly basis, STI metrics will be presented at the Baseline Performance Review (BPR).

P.6 Cancellation

NPR 2200.2C, Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information, dated April 19, 2011.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Chapter 1. Publication and Dissemination of NASA Scientific and Technical Information

1.1 Purpose of and Caveats for this NASA Procedural Requirements Document

1.1.1 This chapter defines STI, delineates responsibilities associated with the publication and dissemination of STI, and provides an overview of NASA's process for approving, publishing, and disseminating the results of NASA's STI activities. The associated requirements are detailed in the following chapters. See Appendix A for definitions and Appendix B for acronyms used in this NPR.

1.1.2 Any restrictions or limitations placed on NASA contractors and grantees regarding the publication, dissemination, or presentation of STI produced under a contract or grant will be consistent with 48 CFR Chapter 18 for contracts and with 14 CFR §1260 for grants and cooperative agreements.

1.1.3 Information protected for national security reasons under appropriate security classification should be treated in accordance with NASA Interim Directive (NID) 1600.55 and NPR 2810.1. NASA Centers are responsible for handling and storing classified NASA STI.

1.1.4 Declassified STI publications will be sent to NASA STI Program with a properly completed and signed DAA form (see also Section 4.5). The declassified STI should be properly marked as unclassified (revised cover, title page, and page markings) and be accompanied by documentation authorizing the declassification as outlined in NPR 1600.2. (For information on NASA STI Program, see http://www.sti.nasa.gov.)

1.1.5 For additional procedures that relate to technology commercialization materials and computer programs, see NPD 2210.1 and NPR 2210.1.

1.1.6 For additional procedures that relate to export-controlled information and for STI that is to be disseminated to foreign persons, see NPD 2190.1 and NPR 2190.1.

1.1.7 Throughout this NPR, references to NASA Centers include NASA Headquarters, Component Facilities, Technical and Service Support Centers, and JPL.

1.1.8 References to Center positions, offices, and job titles include the equivalent position at NASA Headquarters, Component Facilities, Technical and Service Support Centers, and JPL.

1.1.9 In all matters relating to STI, NASA directives and the requirements of JPL's prime contract apply to JPL.

1.1.10 Terminology across Centers varies for offices, job titles, and position titles. This NPR uses terminology developed by the STI Program Office but does not preclude Centers from using their own equivalent terms and titles.

1.1.11 STI will be reviewed for Sensitive But Unclassified (SBU) and other sensitive or restricted information and marked according to specified requirements for those categories.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

1.1.12 Information quality guidelines and handling Influential and Highly Influential Scientific Assessments are outlined in the NASA Guidelines for Quality of Information (https://www.nasa.gov/offices/ocio/qualityinfo/index.html) and managed by the NASA Information Quality Officer.

1.2 NASA Scientific and Technical Information Defined

1.2.1 STI is defined as the results (the analyses of data and facts and resulting conclusions) of basic and applied scientific, technical, and related engineering research and development.

1.2.2 NASA STI is STI derived from NASA activities, including those generated by NASA-sponsored or -funded research and development and related efforts, where NASA has the right to publish or otherwise disseminate the STI. NASA STI may be produced directly by NASA or under NASA contracts, grants, and cooperative agreements. For example, NASA STI includes STI authored by a NASA employee as part of the employee's official duties, STI co-authored by a NASA employee and a non-NASA employee, and STI authored by an employee of a contractor or grantee funded by NASA in which NASA has the right to publish or otherwise disseminate the STI.

1.2.3 NASA STI is published or disseminated using mechanisms that include the NASA STI Report Series, NASA Web sites, and non-NASA scientific and technical channels such as professional society journals, books and/or book chapters, conference presentations, or conference proceedings. NASA STI may include, but is not limited to, technical publications and reports; preprints, as-accepted manuscripts, and journal articles; meeting, workshop, and conference publications and presentations; conference proceedings; and preliminary or non-published STI, including any of these examples that will be loaded to a public Web site or are in multimedia formats. NASA disseminates STI almost exclusively in online formats via the NASA Technical Reports Server (NTRS).

1.2.4 The following information is excluded from the requirements of this NPR:

a. Information published in policy documents such as NASA directives and NASA technical, engineering, or safety standards (NPD 7120.4).

b. Information published as a result of mishap investigations (NPR 8621.1).

c. Proposal information marked with confidentiality notices furnished to NASA by contractors or grantees.

d. New Technology Reports (NTR)/Invention Disclosures. Note that although NTRs are not defined as STI, STI may include information that discloses an invention, so it will be handled according to Invention Disclosure processes.

e. Raw and processed scientific and technical data and data sets independent of the analysis of the data and resulting conclusions. A DAA review is not required for these data, but they may require export control approval outside of the DAA. However, STI publications or presentations that include data are subject to this directive, and the author shall provide a link to the data, if possible.

f. All software, including research, technical, development, operational, and off-the shelf software. See https://software.nasa.gov.

g. Tech Briefs and Technical Support Packages (TSPs).

h. STI derived from NASA-funded contracts, grants, and cooperative agreements when published or

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

released by the contractors or grantees on their own behalf without direction from NASA.

i. Scientific and technical documents exchanged with NASA international partners under established international agreements with foreign governmental entities. (Individual documents may require review by the Center Export Administrator prior to release. NASA employees transferring export-controlled technical data under a NASA international agreement will reference the international agreement clause "Transfer of Goods and Technical Data" requirements and consult with the Center Export Administrator for specific guidance).

j. STI released or published by NASA civil servants when the STI is produced on their own behalf, using information (NASA or otherwise) already available in the public domain, and not part of their official Government duties (such as in the case of graduate coursework, theses, or dissertations).

k. Individual photos or imagery, unless they contain analysis of research and data. They, however, may require export control approval outside of the DAA review.

l. Public affairs, outreach, informational, and educational materials created from information (NASA or otherwise) already available in the public domain.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Chapter 2: Responsibilities

2.1 The NASA Mission Directorate Associate Administrators (MDAAs), Chief Engineer, Chief Scientist, Chief Technologist, Center Directors, and Mission Support Office Associate Administrators (MSOAAs) shall:

a. Be responsible for activities under their cognizance, ensuring that they comply with NPD 2200.1 and this NPR, applicable laws and regulations, and other referenced direction.

b. Be responsible for STI under their purview, ensuring that it is reviewed technically, as required by this NPR.

c. Maintain awareness of the NASA Guidelines for Quality of Information (https://www.nasa.gov/offices/ocio/qualityinfo/index.html).

d. Serve on the Agency STI Board of Advisors to provide feedback to the program's current and future initiatives and coordination with the research and development producers/users within NASA.

2.2 NASA Chief Information Officer (CIO) shall:

a. Manage the implementation of, and assess the effectiveness of the Agency STI Program; designate the NASA CIO STI Program Executive and a STIPO; and review and approve a STIPO program plan.

b. Update or have updated NPD 2200.1 and this NPR, according to scheduled revisions.

c. To the extent practicable, acquire (collect), manage, disseminate (or provide access to), safeguard, and archive NASA STI from NASA-authored and/or NASA-funded research for use by NASA and NASA contractors and grantees and, where appropriate, the public.

d. To the extent practicable, collect or provide access to domestic and international non-NASA STI pertinent to NASA's mission and programs for use by NASA, NASA contractors, and grantees through exchange agreements with noncommercial domestic and international entities.

e. Provide for the widest practicable and appropriate dissemination of STI resulting from NASA's research effort, unless restricted by U.S. statute, regulation, or Agency policy, while precluding the inappropriate dissemination of NASA SBU information, in keeping with the National Aeronautics and Space Act.

f. Establish policies and procedures to protect and disseminate NASA STI in a manner consistent with U.S. laws and regulations, Federal information policy, National Institute of Standards and Technology Security Standards, intellectual property rights, technology transfer protections requirements, and budgetary and technological limitations. Publish and make available its NASA STI as promptly as possible to maximize the benefit of the research.

g. Through the STIPO, ensure that producers of NASA STI (including contractors and grantees in accordance with the requirements of their funding agreements) are aware of Agency requirements and procedures prescribed by this NPR and the references given herein. Review of technical accuracy is currently accomplished outside of the DAA process. See more on Professional and Technical Reviews in section 6.3.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

h. Ensure that NASA-funded STI received from contractors and grantees--if published, released external to the Agency, or made available to foreign persons by, or under the direction of NASA (versus release by the contractor or grantee independent of direction by NASA)--is released in accordance with this NPR, the DAA approval, and in accordance with specific requirements in the contract, grant, or cooperative agreement.

i. Ensures the development of SATERN training to provide a standard process and information set to all Agency personnel.

2.3 The Agency Office of the Chief Information Officer (OCIO) STI Program Executive shall:

a. Determine the strategic direction and approve the program plan for the STI Program.

b. Allocate funds for the STIPO.

c. Coordinate the Agency's STI-strategy with the NASA CIO, MDAAs, Chief Engineer, Chief Scientist, Chief Technologist, Center Directors, and MSOAAs.

d. Ensure that the information system for the electronic collection of NASA STI by the NASA STI Program has a security assessment and an authorization to operate in accordance with NPR 2810.1 at a security category for SBU information in accordance with NID 1600.55.

e. Ensure that the activities listed for the STI Program Office are carried out.

2.4 The STI Program Office (STIPO) shall:

a. Coordinate with the NASA Agency OCIO STI Program Executive to recommend STI policy and procedures via NPD 2200.1 and this NPR and implement the approved policy and procedures.

b. Ensure that NASA STI that is received at NASA STI Program is shared with entities required by U.S. statute, such as, but not limited to, the National Archives and Records Administration (NARA), Government Publishing Office (GPO), National Technical Information Service (NTIS), and other national and international partners.

c. Operate and manage an Agency-level STI Program in accordance with NPR 7120.7 and an annual Program Commitment Agreement initiated by the Agency CIO and agreed to by the STIPO's Center CIO.

d. Coordinate the development, operation, and maintenance of a virtual electronic collection of NASA STI by overseeing the operation and maintenance of STI Program and/or any successor facilities, systems, partnerships, or institutes.

e. Appoint personnel to serve on Agency-level and external teams pertinent to STI.

f. Negotiate and implement STI data-sharing agreements to facilitate the collection, purchase, and dissemination of STI. This does not include data-sharing agreements that are the responsibility of missions, projects, and programs. The STIPO shall conduct an annual review to ensure that all Centers are in compliance with NPD 2200.1. The annual review will include:

(1) An evaluation of implementation at the Centers of the DAA review process described in NPD 2200.1 and this NPR.

(2) A report of the findings of this review to each Center Director and the Center STI Manager to facilitate improvements when warranted.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

2.5 Center Directors shall:

a. Ensure that all STI activities under their cognizance are performed in accordance with NPD 2200.1, this NPR, pertinent laws and regulations, and referenced documents.

b. Designate individuals to serve as the Center STI Manager and as the Center DAA representative.

c. In coordination with the Center STI Managers, establish and implement a plan to ensure awareness of the STI review requirements contained in this NPR.

d. Ensure that corrective actions associated with improvement areas cited in the yearly compliance review are implemented at their Center.

2.6 Center STI Managers shall:

a. Ensure that the Center is aware of policies and procedures indicated in NPD 2200.1 and this NPR. This awareness includes appropriate training in STI (including System for Administration, Training, and Educational Resources for NASA (SATERN) training) and information security protection for STI.

b. Ensure that the Center documents the number, types, titles, authors, and availability of STI that is published or released external to the Agency by, or at the direction of, the Center.

c. Ensure that the STI, as well as the approved DAA, is submitted to NASA STI Program.

d. If the STI originated from a NASA contract or grant, coordinate with the appropriate Contracting Officer (CO), Contracting Officer's Representative (COR), Grant Officer (GO), and/or the Grant Technical Officer (GTO) to determine if NASA wants to publish the STI.

e. In coordination with Center Directors, establish and implement a plan to ensure awareness of the STI review requirements contained in this NPR.

f. Ensure that NASA STI Program has STI from their Centers, as well as the corresponding DAA forms, before the documents have reached the end of their retention period and are discarded.

g. Participate in the annual STI Compliance Reviews and institute any needed improvements following the results of these reviews.

h. Be responsible for instituting a process to ensure that timely (prior to needed release date) notification is given to authors, initiators, and approvers of STI, including, as a minimum, the disposition of the STI, either approved or disapproved, to help ensure that only appropriately approved STI is released.

2.7 Center DAA Representatives shall:

a. Coordinate with the Center's authors, STI Manager, COs, CORs, GOs, GTOs, and managers who approve STI in order to track, file, and transfer the NF-1676 and its associated STI, after approval, to NASA STI Program.

b. Monitor and take action on reports of rejected DAA and other DAA problems in coordination with STI Program.

c. Ensure that all DAA forms have received a quality review before the document and DAA form are fully approved and sent to NASA STI Program (see Appendix D).

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

2.8 Managers Who Approve STI at Centers shall:

a. Ensure that STI in their areas of responsibility receives appropriate technical review and management review (through the DAA) prior to NASA publication, release outside the Agency, or being made available to foreign persons.

b. Consult with the Center's DAA representative, COs, CORs, GOs, GTOs, and STI Manager, as necessary, to ensure STI received appropriate reviews.

c. Be responsible for coordinating the quality of their publications with this NPR.

2.9 Contracting Officers (COs) shall:

a. Receive the final STI reports (and additional STI reports required by the contract) from contractors, and submit the reports to the COR for review and acceptance.

b. Ensure that STI requirements and information security protection consistent with this NPR and NPR 2810.1 are placed in NASA contracts.

2.10 Contracting Officer's Representatives (CORs) shall:

a. Coordinate with the CO regarding contract issues and with the Center STI Manager regarding publication issues.

b. Ensure that contractor-produced STI receives a DAA review if the Center elects to publish or release the STI external to the Agency or will make the STI available to foreign persons by, or under the direction of, NASA.

c. Send a copy of the DAA-approved STI and the associated DAA form to the STI Manager and/or DAA representative.

d. Comply with Center procedures for notifying the contractor if and when the STI is approved for publication by NASA.

2.11 Grant Officers (GOs) shall:

a. Receive copies of reports from the grantee (or via the NASA Shared Services Center) and coordinate with the Center GTO or other appropriate person to initiate the DAA process if the Center elects to publish or otherwise release the STI external to the Agency or will make the STI available to foreign persons by, or under the direction of, NASA.

b. Ensure that STI requirements consistent with Agency needs and this NPR are placed in NASA grants and cooperative agreements.

2.12 Center Grant Technical Officers (GTOs) shall:

a. Receive final reports.

b. Review and accept final reports.

c. Ensure that the DAA is initiated if NASA elects to publish any report.

2.13 Authors of STI (see also Section P.2) shall:

a. Coordinate with appropriate managers, the Center STI Manager, and their Center technical

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

publication office to select the appropriate channel for release of STI.

b. Publish or otherwise release external to NASA (including via the Internet) only STI that has been reviewed at the appropriate organizational level for technical accuracy and conformance with applicable law, policy, and publication standards, and has been approved for release as prescribed by this NPR and the references cited herein.

c. If STI is believed to be SBU, all levels of authorships and approval are responsible for coordinating with the applicable NASA designating official in accordance with NID 1600.55 so that a determination of SBU status can be made prior to the DAA review. Whether or not the STI is being authored and intended for release, the STI should be assessed and identified as SBU, where appropriate.

d. If the author is a non-NASA author, coordinate with the author's COR or GTO, who will initiate the DAA when NASA plans to release the document, or if the contractor or grantee author will release it for or on behalf of NASA and the STI requires a DAA (see Section 1.3.10.). Additionally, the author shall comply with terms and conditions in their contract, grant, or cooperative agreement for depositing as-accepted manuscripts of journal articles to the PubMed Central system. For more information, see NASA's Open Data Web site at: https://open.nasa.gov/open-data/.

e. Release NASA STI only as approved by the DAA review (for non-NASA authors when they release NASA STI for or on behalf of NASA; see Section P.2), if the author is a NASA or non-NASA author.

f. NASA authors shall comply with NASA's policy, NPD 2230.1, by following the DAA process and complete validation steps required for the release of as-accepted manuscripts on the PubMed Central system. For more information, see NASA's Open Data Web site at: https://open.nasa.gov/open-data/.

2.14 NASA STI Program shall:

a. Acquire (collect), organize, disseminate, and archive (through NARA) approved STI.

b. Disseminate NASA STI to the Government Publishing Office, Federal Depository Libraries, and the National Technical Information Service.

c. Provide products and services for NASA related to STI content management of research and development information.

d. Use only information systems that have a NASA-approved security assessment and Authorization to Operate in accordance with NPR 2810.1 to process, store, or transmit NASA information.

e. Coordinate with other NASA offices and Federal agencies to facilitate compliance with policy outlined in NPD 2230.1 in regard to STI publications.

f. Maintain and operate the Electronic Document Availability Authorization (EDAA) system, in accordance with STIPO requirements, for NASA.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Chapter 3: Process Requirements for STI

3.1 Review and Approval

3.1.1 NASA STI will be published and electronically disseminated through a wide variety of electronic and online disseminations. All dissemination of STI is done electronically. Typical channels include Web sites, journals, digital presentations at meetings or workshops, and the NASA STI Report Series.

3.1.2 NASA STI that is intended for an audience external to NASA (or STI presented at internal conferences or meetings at which foreign persons may be present), regardless of channel or media, will be reviewed and approved by NASA personnel via the DAA prior to each instance of its publication, dissemination, or presentation by or for NASA (see Chapter 6); however, all STI will be assessed and appropriately marked for sensitivity or restrictions.

3.1.3 NASA STI will be approved via the DAA review process prior to being published, disseminated, or presented external to NASA (or presented at internal meetings or conferences at which foreign persons may be present). The technical review and management approval requirements vary depending on the information content and publication channel. See more on Professional and Technical Reviews in section 6.3.

3.1.4 NASA STI will be published and undergo, at a minimum, a technical review of STI content, which is accomplished outside of (typically before an approver signs) the DAA dissemination review.

3.1.5 NASA STI will undergo a dissemination review by organizational managers, Export Control, and Legal via the DAA process.

3.1.6 NASA STI will be released only to NASA personnel if the STI has been submitted without a completed DAA form.

3.1.7 NASA STI will include in electronic format, a standard front cover, title page, and Standard Form (SF) 298 (Report Documentation Page (RDP), see Appendix C). If STI is intended for the NASA STI Report Series, authors who are at NASA Centers that use the EDAA system do not have to include the SF-298, because this system collects the data elements required by SF-298.

3.2 Selection of Publication Channels

3.2.1 NASA and NASA-funded authors publish in the NASA STI Report Series, as well as in non-NASA channels such as society journals, trade journals, oral presentations with written or visual documentation to professional societies, and proceedings of scientific and technical conferences and workshops. Authors of oral presentations without written or visual documentation should have an abstract approved via the DAA.

3.2.2 Authors shall initially select the appropriate channel (see Appendix D) in consultation with their technical management or the COR or GTO (if applicable) and/or the Center technical publications office.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

3.2.3 Selection will be based on the content of the document and the intended readership. The selection is subject to review and approval as part of the Center review process. See Section 5.5.2 for guidance concerning duplicate publication.

3.2.4 Authors who choose to publish in the NASA STI Report Series shall select, in consultation with their technical management or the COR or GTO, a document type from the following six types of NASA STI Report Series publications described in detail in Appendix D.1:

a. Technical Publication (TP)

b. Technical Memorandum (TM)

c. Contractor Report (CR)

d. Conference Publication (CP)

e. Special Publication (SP)

f. Technical Translation (TT)

3.2.5 If specified in the contract, grant, or cooperative agreement, NASA contractors or grantees shall submit a final report of their work.

3.2.6 NASA contractors or grantees shall provide appropriate acknowledgment of NASA support in the final report and identify the contract(s), grants(s), or cooperative agreement(s) involved. See 48 CFR Chapter, Sections 1804, 1827, 1835, and 1852; and 2 CFR 1800, 14 CFR 1274 and the GCAM.

3.2.7 NASA may elect to publish the final versions of the final reports in the NASA CR series. NASA also may decide to select a report authored by a contractor or grantee for publication in another series. Such reports should meet all criteria for the selected series.

3.2.8 The final reports will be reviewed and approved at the level(s) required for that series. Chapter 6 details review and approval processes for these reports.

3.2.9 NASA and NASA-sponsored authors who conduct oral presentations of scientific and technical findings at conferences and workshops may distribute copies of their DAA-reviewed and approved presentation to attendees.

3.2.10 NASA and NASA-sponsored authors who conduct oral presentations of scientific and technical findings at conferences and workshops shall publish their presentations in the NASA STI Report Series to ensure that their work is captured in the STI repository (internal and public interfaces). Chapter 5 includes detailed requirements pertaining to symposium presentations and external publications.

3.2.11 NASA and NASA-sponsored authors of NASA SP-4000 series documents shall coordinate pre-manuscript activities with the Agency History Office, which manages these documents.

3.3 Storage, Retention, and Archiving NASA Scientific and Technical Information.

3.3.1 All NASA and NASA-funded personnel shall ensure that their work is documented and

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

archived for future use.

3.3.2 Following approval via the DAA process, NASA and NASA-sponsored authors shall send an electronic copy of the NASA and NASA-funded STI to NASA STI Program via the Center's STI Manager or designated organization. (For alternative media, as identified in Appendix D.4, two copies are required.) These review and archiving requirements apply to content meeting the definition of STI, including, but not limited to, the NASA STI Report Series, articles submitted to professional journals, papers presented at technical meetings, visuals-only presentations, and meeting papers that have not been included in NASA CPs.

3.3.3 NASA personnel who retire from or leave the Agency for other reasons shall coordinate submission and approval of their STI and the corresponding DAA form through the Center's STI Program review process. The Center's STI Manager or DAA Representative will forward the approved STI to NASA STI Program.

3.3.4 Before an author places NASA STI on a NASA Web site that is accessible to the public, the STI will be approved via the DAA review and Web site content reviews specified in NPR 2810.1.

3.3.5 NASA STI Program automatically archives the STI that it receives in appropriate formats, as identified in Section 4.7 and Appendix D. If alternative formats are used that NASA STI Program cannot archive, authors shall provide additional copies or other formats that can be archived for long-term retention. NASA STI Program provides onsite and offsite storage for its database and full-text versions of STI in addition to sending appropriate (unclassified/unlimited) archive information to NARA, GPO (the Superintendent of Documents and the Federal Depository Libraries), the NASA libraries, and National Technical Information Service (NTIS).

3.3.6 Authors shall also contact their Center's Technical Publications and Records Managers to determine if additional archiving requirements exist for their Center.

3.3.7 NASA Centers shall keep copies of their DAA forms on file for a minimum of five years unless required for an alternative or longer period because of the nature of the information or the cognizant Center's records retention schedules, as required by NARA. DAAs submitted via the EDAA system are by default maintained for a minimum of five years.

3.3.8 Center DAA representatives shall coordinate with the Center's authors, STI Manager, COs, CORs, GOs, GTOs, and STI approving managers for the following activities:

a. Tracking STI while it is being approved.

b. Keeping STI and the DAA form on file (in accordance with NPR 1441.1).

c. Transferring copies of the DAA form and its associated STI, after approval, to NASA STI Program so that a permanent record is maintained.

3.3.9 Center DAA representatives shall coordinate with the NASA STI Program to ensure that the DAAs were sent to the representatives once the DAAs have reached their Record Retention Schedules.

3.3.10 Center DAA representatives shall coordinate with Center records managers before disposing of temporary STI records at their Centers, to ensure that NASA STI Program has a copy of their NASA STI and the associated NF-1676.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

3.4 Reproduction, Duplication, and Printing of NASA Scientific and Technical Information.

3.4.1 All disseminations of STI are done electronically. In the event that an author needs print copies, NASA authors of STI shall coordinate with NASA Headquarters and Center technical publications offices to use NASA duplicating or copying facilities or regional GPOs in accordance with NPD 1490.1.

3.4.2 NASA authors shall use electronic formats that are 508 compliant (see Section 4.1).

3.4.3 STI that is assessed as SBU will be minimally reproduced or duplicated based on a need to know, and it will have appropriate markings in place prior to duplication or reproduction, in accordance with NPR 2810 and NID 1600.55.

3.5 Dissemination of NASA STI

3.5.1 NASA STI Report Series documents; conference, meeting, and symposia presentations; and external publications receive the widest practicable electronic and online dissemination by NASA as indicated on the DAA. This includes online sites and a large number of electronic feeds, such as other Government agencies, commercial search engines, new and emerging dissemination venues (depending on if the STI is publicly available or needs to be restricted). STI is also announced via social media. The NASA STI Program has primary responsibility to distribute NASA STI.

3.5.2 Authors shall contact their Center technical publications office for information on additional author-initiated distribution because some restrictions and approvals apply, especially on restricted or limited information.

3.5.3 Unless restricted for reasons explained in Sections 6.2.4 and 6, NASA STI will be disseminated via the NTRS public interface, which is a worldwide dissemination vehicle. STI also makes required distributions to other Federal agencies.

3.5.4 NASA STI Program announces the availability of NASA STI publications in a variety of national and international channels and media.

3.5.5 NASA STI Program adds bibliographic citations describing NASA STI publications to the STI repository (internal and public interfaces).

3.5.6 NASA STI Program also serves as the historical repository for NASA-funded publications acquired by the Program. For additional information, see Section 3.3.

3.5.7 Authors shall have their STI reviewed and approved via the DAA form prior to any dissemination of STI, including dissemination to fulfill requests for information or for publication/release external to NASA.

3.5.8 Authors who wish to publish STI through non-U.S. channels will follow the requirements for DAA and shall also obtain approval from the Headquarters Office of International and Interagency Relations (OIIR) if the document involves a designated area (see NPR 1450.10).

3.5.9 The Headquarters OIIR shall review and clear the correspondence package that is intended for a designated area.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

3.5.10 STI that is sensitive (restricted or limited) should only be released on a need-to-know basis in accordance with its markings (per NID 1600.55).

3.5.11 Guidance for marking STI documents that contain SBU information will be marked in accordance with NASA policies and procedures for SBU in addition to those requirements established under information type-specific policies such as export controlled information, proprietary information, or Personally Identifiable Information (PII).

3.5.12 For situations in which sensitive (restricted or limited) STI is mis-released (released not in accordance with its markings or never marked and subsequently found to be sensitive), report the mis-release to the Security Operations Center (SOC) immediately, and contact the cognizant responsible office for appropriate mitigation processes, reporting, and handling to correct and contain the mis-release.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Chapter 4. NASA STI Report Series

4.1 Purpose

4.1.1 This chapter references the standards for publishing NASA STI in the NASA STI Report Series. See Chapter 5 for a discussion about publishing NASA STI through professional journals and similar periodicals or via the proceedings of conferences, symposia, and workshops.

4.1.2 All scientific and technical findings derived from NASA activities will be disseminated either as one of the NASA STI Report Series defined in Chapter 3 or through suitable non-NASA scientific and technical channels.

4.1.3 Authors shall make a reasonable effort to ensure their STI is 508-compliant, regardless of the type of STI or scientific and technical channels. For more information, see http://www.hhs.gov/web/508/accessiblefiles/checklists.html.

4.1.4 Authors shall use plain language, where possible, in accordance with the Plain Writing Act of 2010 (H.R. 946/Public Law 111-274) October 13, 2010.

4.1.5 NASA STI Program indexes and catalog NASA STI Report Series publications into the STI repository (internal and public interfaces) and ensure that these publications are archived at NARA.

4.1.6 NASA STI Report Series publications may be disseminated widely if the content is not restricted or limited by law or NASA policy.

4.1.7 Managers shall review all NASA-funded STI via the DAA form, prior to being published, disseminated, or presented external to NASA (or presented at internal meetings or conferences at which foreign persons may be present).

4.1.8 NASA STI Program holds STI Report Series publications that are sent without notification of a DAA review until appropriate release notification is received from the STI manager.

4.1.9 NASA STI Program will limit availability of STI to only NASA personnel until a DAA is received. STI will make several attempts to obtain a DAA from the manager. See Chapter 6 for more information on the review and approval process for STI.

4.2 Assigning NASA Report Numbers to Publications in the NASA STI Report Series.

4.2.1 Section 3.2.4 and Appendix D define the six types of publications that comprise the NASA STI Report Series and explain the process for selecting the appropriate type.

4.2.2 After the series type is selected and approved, the publication will be assigned a NASA report number by the STI Program Information Desk, via the Center STI Manager.

4.2.3 Authors shall use the same NASA number but add the language in parentheses for documents that are published in English and another language, for example NASA/TP-2015-123456 (in English) and NASA/TP-2015-123456 (in Russian).

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

4.3 STI Work Undertaken for Another Government Agency, Company, or University.

4.3.1 When a NASA employee or person performing under a NASA contract or grant works with or undertakes work for another Government Agency, they shall report their scientific and technical findings in the NASA STI Report Series.

4.3.2 The author shall acknowledge joint project or sponsorship acknowledgements on the cover, title page, and RDP.

4.3.3 Such publication does not preclude the other Government agency from publishing the work in its own series.

4.3.4 Authors shall indicate NASA's support on the title page or first page of the work in situations in which a NASA employee or person performing under a NASA contract or grant works with or undertakes work with a company or university and the company or university publishes the results.

4.4 STI-Related Work Funded by One Center and Performed by Another.

4.4.1 When NASA work is sponsored or funded by one NASA Center and performed by another NASA Center, the Center performing the work shall report the scientific and technical findings in the NASA STI Report Series.

4.4.2 The Center performing the work shall be responsible for approval, production, and issuance of the document.

4.4.3 The Center performing the work shall acknowledge the sponsorship on the cover, title page, and RDP (for those Centers not using the EDAA) (see Appendix C).

.

4.5 Responsibility for the NASA STI Report Series.

4.5.1 Responsibility for production and dissemination of all NASA STI publications is set forth in NPD 2200.1.

4.5.2 The STIPO shall manage the Agency's STI program.

4.5.3 The STIPO shall maintain control of the production and distribution of the six types of NASA STI Report Series publications described in Section 3.2.4 and Appendix D.

4.5.4 The NASA OCIO Information Management (IM) Program Executive, the STI Program Office, the NASA Center STI managers, and technical publications managers shall carry out production and distribution.

4.5.5 The author, technical management, and the Center technical publications manager shall ensure that the necessary funds are available from the originating NASA Center or Headquarters office to

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

cover the cost of producing and printing the report, if applicable. (For reports that are to be printed, contact the Agency or Center printing officer and the technical publications manager.)

4.5.6 Managers shall ensure that all NASA STI published by or for NASA, regardless of publication type or media used, meets the reviews and approvals set forth in Chapter 6 before the STI is published, disseminated, or presented external to NASA (or presented at internal conferences or meetings at which foreign persons may be present).

4.5.7 The author and his or her management shall ensure that the required reviews are completed and approved and signatures are obtained in cooperation with the COR or GTO, if applicable (e.g., for Contractor Reports (CRs)). (See Section 4.5.8 for special procedures for CRs.)

4.5.8 Specific Procedures for CRs.

a. STI Program processes NASA CRs (reports prepared by contractor or grantee) into the formal CR series only after the cognizant NASA manager and CO, COR, GO, or GTO approve the report as acceptable under the terms of the contract, grant, or cooperative agreement.

b. When specified in the contract, grant, or cooperative agreement, contractors or grantees shall submit final STI reports to the NASA CO, COR, GO, or GTO of record. For specifics, see the NASA Federal Acquisition Regulations (FAR) Supplement (NFS, updated Dec. 1, 2008, http://www.hq.nasa.gov/office/procurement/regs/nfstoc.htm), Sections 1835.010, 1835.011, 1835.070, 1852.235-70, 1852.235-73, 1852.235-74, and their referenced sections, and 2 CFR 1800, 14 CFR 1274 and the GCAM. See also Procurement Information Circular (PIC) 03-03 and Grant Information Circular (GIC) 07-02. Only electronic submissions will be accepted.

c. Contractors and grantees shall notify NASA that they have transmitted their final report to the NASA CO, COR, GO, or GTO at the NASA Center that sponsors their work by sending notification to e-mail help@sti.nasa.gov.

d. Contractors and grantees shall electronically submit an RDP for NASA STI Report Series documents. (See Appendix C. The RDP is not required when the EDAA system is used, since that system contains the elements captured on the RDP.)

e. Authors shall include the standard cataloging elements specified in Appendix D.3.5. on the covers and title pages of submitted reports.

4.5.9 Translations of STI performed by and for NASA represent a resource investment; therefore, NASA STI Program collects technical translations (TTs) for inclusion in the STI repository. Due to changes in copyright law, most TTs will be restricted to NASA personnel only, unless Agency or Center Legal Counsel has approved TTs for wider distribution due to written permission from the rights holder.

a. When arranging translation services, managers shall require service providers (e.g., in a contract clause) to submit one copy of each TT to NASA STI Program.

b. The Originating Center shall translate STI TTs into English and provide the translated copy to the NASA STI Program along with its approved NF1676.

c. The person requesting the translation shall ensure that information concerning copyright of the original source document accompanies the translation submitted to NASA STI Program. This information will assist NASA STI Program in determining distribution limitations and expedite future dissemination of a technical translation.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

d. The person requesting a translation shall enter copyright information for TTs on the DAA form.

e. Copyright information for TTs includes, but is not limited to, the title of the book or article, the name of the book or journal in which the copyrighted information was originally published, the publisher's name and address, the publication date, and any copyright notice appearing on the document, book, or journal in which the copyrighted information was originally published.

4.6 Standards for NASA STI Report Series Publications.

4.6.1 Authors shall adhere to the standards cited for STI Report Series documents. These standards are listed in Appendix D.3.

4.6.2 Minor typographical errors such as misspellings, minor omitted or repeated words, or grammatical errors that do not result in an incorrect meaning will not require correction. For other errors, APPENDIX H. Sample Errata for Cover Page, Back of Title Page, and RDP Page includes examples of an Erratum, Corrected Copy, and Revised Copy.

4.6.3 Use an Erratum if the errors are minimal but of sufficient importance to warrant correction. Erratum requirements are as follows:

4.6.3.1 The report number and publication date should be the same as on the original report.

4.6.3.2 Add an Erratum statement and month/year of revision to the cover and title page, and to Block 13, SUPPLEMENTARY NOTES, on the RDP if the paper-based DAA form is used: "An Erratum was added to this report Month 20XX."

4.6.3.3 Add a list summarizing the changes to the back of the title page and, if more space is needed, on page iii.

4.6.3.4 Do not correct document content.

4.6.3.5 Disseminate the Erratum in accordance with the original distribution.

4.6.4 Issue a Corrected Copy if there are numerous errors that cannot be made clear in an Erratum. Corrected Copy requirements are as follows:

4.6.4.1 Add the suffix "(Corrected Copy)" to the end of the report number.

4.6.4.2 Add the Corrected Copy statement and month/year of revision to the cover and title page, and to Block 13, SUPPLEMENTARY NOTES, on the RDP if the paper-based DDA form is used: "Corrected Copy issued Month 20XX."

4.6.4.3 The Corrected Copy report date should be the same as the original report.

4.6.4.4 Disseminate the Corrected Copy in accordance with the original distribution.

4.6.4.5 Insert a list summarizing the corrections on page iii.

4.6.4.6 Correct document content, including the report number footer.

4.6.5 Issue a Revised Copy if incorrect information needs to be substantially changed or updated.

4.6.6 Revised Copy requirements are as follows:

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

a. Add the suffix "/REVx" to the report number, where x = 1 for the first revision, 2 for the second revision, and so forth.

b. The year should not be changed in the Revised Copy report number.

c. Change the publication date to the current month and year on the cover, title page, and RDP (if used).

d. Add the following statement to the cover and title page, and to Block 13, SUPPLEMENTARY NOTES, on the RDP (if used):

This Revised Copy, numbered as NASA/TM - XXXX-000000/REVx, [current] month year, supersedes the previous version, NASA/TM - XXXX-000000, [original] month year, in its entirety.

e. Add a brief reason for the Revised Copy (provided by author) and the superseding statement to the back of the title page and, if more space is needed, on page iii.

f. Correct document content, including the report number footer.

4.6.7 Because style and format standards for NASA STI publications are provided in several sources, if conflicting guidance is encountered, the sequence of the following list governs selection of the appropriate standard:

a. NPR 2200.2, Requirements for Documentation, Approval, and Dissemination of NASA NPR Scientific and Technical Information (STI).

b. NPR 2810.1, Security of Information Technology.

c. NASA/SP-2005-7602/REVI, NASA Publications Guide for Authors and updated versions.

d. NASA/SP-2006-6114, NASA STI Standards.

e. NASA/SP-1990-7084, Grammar, Punctuation, and Capitalization.

f. 29 USC 794d, Section 508 of the Rehabilitation Act.

g. Public Law (PL) 105-220, Title IV, Subsection 408(b), as amended--Section 508 of the Rehabilitation Act (29 United States Code (USC) 794d).

h. Instructions issued by NASA Centers that implement the requirements of this NPR.

i. Government Printing Office Style Manual, latest edition.

j. Industry-standard style manuals or specifications.

4.6.8 Refer to the following instructions when re-marking and handling documents that were previously export-controlled and/or contained restricted-access information that has been downgraded:

a. When STI is no longer subject to restriction, re-mark (that is, downgrade the restriction or limitation) the STI and notify NASA STI Program of the subsequent availability by sending the re-marked document and a copy of the new or modified DAA through the Center technical publications office or STI manager. See NPR 1600.1.

b. Line through the original marking electronically.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

c. Indicate the new marking next to or above the original marking by stating "restriction changed to [insert new dissemination access], on date [insert month, day, and year], by authority of [insert originating office that is responsible for and has the authority to change the distribution notice]."

d. Indicate this new information on the cover, the title page, and block 12, DISTRIBUTION/AVAILABILITY STATEMENT, of the RDP.

e. In order to ensure that there is a record of the changes, do not simply change the access limitation or insert a new cover, title page, or RDP.

f. Mark STI in accordance with its restrictions or sensitivity (see NPR 1600.1 and NID 1600.55 for SBU content, including the cover sheet).

4.7 Submittal of Publications to NASA STI Program.

4.7.1 Authors shall submit their approved STI to NASA STI Program with a copy of the DAA form. For submittal information, see Appendix D.4.

4.7.2 Authors shall submit in encrypted format (by the Agency standard encryption) STI that contains restricted-access information. See NPR 2810.1 and NASA STD 2820.

4.7.2.1 If encryption mechanisms and infrastructure are not available, contact STI Program for information.

4.7.2.2 Mark CDs (including their internal electronic files) and DVDs with the applicable restriction and mail in an envelope that does not indicate the restricted nature of the content. For additional information, see NPR 1600.1.

4.7.2.3 Encrypt export-controlled information, as defined as International Traffic in Arms Regulations (ITAR, 22 CFR 120-130) and Export Administration Regulations (EAR), 15 CFR 730-744).

4.8 Standards for Protection of Intellectual Property.

Authors and approvers shall ensure that standards for authorship, references, inclusion of copyrighted material, trademarks and trade names, copyright status, and publishers' agreements are handled in accordance with NASA's standards for protection of intellectual property, as indicated in Appendix D.6.

4.9 Disclaimers.

Authors and approvers shall ensure that the use of disclaimers is in accordance with NASA's standards, as shown in Appendix D.7.

4.10 Distribution Notices

.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

4.10.1 Authors and approvers shall ensure that distribution notices are included on STI documents if the distribution is limited or restricted.

4.10.2 Include limitations and restrictions, such as ITAR, EAR, Small Business Innovative Research (SBIR), proprietary information, and copyrighted information on distribution notices as discussed in Chapter 6.

4.10.3 These limitations and restrictions will be determined for STI via the DAA.

4.11 Level of Review.

4.11.1 Indicate the level of technical or professional review that the STI has received on the back of the title page (or in nontraditional media, in the introductory information that would equate to the back of a title page). See Section 6.3 for specifics. Examples include:

a. This material has been technically reviewed by [insert: a committee of peers, expert single reviewer, technical management].

b. This material has been professionally reviewed by [insert: the Headquarters Directorate or NASA Center].

4.12 Use of International System of Units (SI).

4.12.1 Use SI in all NASA scientific and technical publications when the activities being documented or reported are performed using SI units. According to NPD 7120.4, it is NASA policy to adopt SI measurement, defined by ANSI/Institute of Electrical and Electronics Engineers (IEEE) Standard 268, as the preferred system of weights and measures for NASA.

4.12.2 Scientific and technical activities performed using U.S. Customary Measures may be documented or reported using U.S. Customary Measures.

4.12.3 Clearly state which form of measurement was used in the report. Appendix J contains references that provide guidelines for the use of SI and for the conversion of SI to inch-pound measures or inch-pound measures to SI.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Chapter 5. Symposium Presentations and External Publications

5.1 Purpose.

This chapter gives the requirements that apply when NASA employees prepare papers for or participate in scientific and technical symposia and when they prepare and submit information (e.g., monographs or journal articles) for external (non-NASA) publication. Criteria for the payment of page charges for Government-sponsored research results published in professional journals are also given. Requirements presented in this chapter will apply to contractors and grantees only if these policies and standards are provided under the terms of their contracts or grants.

5.2 General Requirements.

5.2.1 Prepare papers and articles according to formats and standards set by individual societies and journals.

5.2.2 Ensure that dissemination of information in symposium presentations or in external publications is approved in accordance with procedures included in Chapter 6.

5.2.3 Indicate NASA support in presentations and publications.

5.2.3.1 Ensure that all symposium presentations and external publications that are derived from NASA research and development and related efforts by contractor and grantee clearly indicate NASA's support, preferably as a first-page footnote, unless the required style requires acknowledgement in another manner.

5.2.3.2 Include the notice of copyrighted information provided in Appendix I, Exhibits I.6.a-c on the cover, title page, and RDP (See Appendix D.6.6.2) for works authored by NASA employees as part of their official duties and submitted for external (non-NASA) publication in scientific and technical journals, symposia proceedings, or similar works.

5.2.4 Provide copies for the STI repository.

5.2.4.1 NASA authors presenting papers not prepared as preprints in the TM series and authors of articles submitted to journals shall provide an electronic copy of each paper or article or the electronic file to the NASA STI Program for inclusion in the STI repository along with a copy of the approved DAA form.

5.2.4.2 Authors shall coordinate this activity through their Center's STI manager or technical publications office.

5.2.4.3 Add citations and a copy of these papers, as submitted, to the STI repository with information concerning the expected publication.

5.3 Projected Visuals and Journal Articles.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

5.3.1 Ensure that projected visuals and journal articles that are not made part of the NASA numbered series are reviewed via the DAA process.

5.3.2 Send these documents with their approved DAA form and an abstract to STI Program for archiving by the Center DAA representative.

5.4 Requirements for Symposium Presentations.

5.4.1 NASA employees presenting papers at symposia shall ensure that the papers contain substantive content in the discipline concerned, make a positive contribution to the state of knowledge, and reflect the high professional standards under which NASA operates.

5.4.2 NASA employees presenting papers shall ensure that papers proposed for presentation at symposia will be reviewed in accordance with the cognizant NASA Headquarters or Center review requirements and the procedures included in Chapter 6.

5.4.3 The reviewer shall consider technical accuracy, appropriateness to the subject matter of the meeting, compatibility with NASA's interest and responsibilities, avoidance of classified or restricted-access information, and quality of the data and information in the review.

5.4.3.1 Because many presentations of papers are followed by the presentations' incorporation in proceedings or other professional publications, the technical quality and value of such presentations will be of paramount consideration in the review.

5.4.3.2 NASA Headquarters or Center reviewers shall ensure in their reviews that papers that describe NASA program activities are properly presented at symposia by personnel well acquainted with the activities.

5.4.4 Presentation of unclassified information.

5.4.4.1 Presenters shall deliver all NASA unclassified presentations or papers in unclassified sessions (sessions that are not labeled classified or with any form of SBU content, and that do not have attendance restricted to persons having prescribed security clearances and an established need to know) in order to promote NASA's ability to meet its statutory requirement (National Aeronautics and Space Act, 51 USC 20112) of ensuring the widest practicable and appropriate dissemination of STI.

5.4.4.2 Include NASA unclassified and non-sensitive presentations or papers in unclassified documents whenever feasible.

5.4.5 Presentation of protected information.

5.4.6 Restricted-access information will only be presented at restricted-access meetings. Restricted-access information is information whose publication or distribution is restricted by law, regulation, or policy such as described in Section 6.2.4.

5.4.6.1 Omit protected information from symposium presentations so that meetings can be open when possible and so that publications resulting from these meetings can be made available to the public.

5.4.6.2 Restrict protected information to special sessions at which attendees have been appropriately cleared.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

5.4.7 NASA meeting organizers shall produce one of the following documents when NASA sponsors an unclassified meeting or workshop in which restricted-access information is presented (e.g., information covering technology that needs to be protected from public disclosure):

a. A limited-distribution document that contains the entire meeting results.

b. Or preferably, an unclassified/unlimited distribution document that contains as much information as possible and an appropriately marked companion document containing only the information that needs to be restricted.

5.4.7.1 Limit distribution of the companion document according to the type of restriction.

5.4.7.2 Clearly mark restricted-access information as such on each page containing the restricted information.

5.4.8 Presentation of classified information.

5.4.8.1 Identify, mark, and handle classified information in accordance with NID 1600.55.

5.4.8.2 Include classified information in symposium presentations, classified sessions, and/or classified proceedings or other publications only when it is essential to the presentation.

5.4.9 NASA employees presenting classified information shall prepare and publish their paper in the TM series as a preprint if it needs to be distributed at a conference.

5.4.10 If the RDP is used, state the name and date of the meeting in Block 13, SUPPLEMENTARY NOTES, for the preprint. The name and date of the meeting may also be placed on the title page.

5.4.11 NASA meeting organizers shall only make commitments, such as producing and distributing a NASA Conference Publication (CP) which will result in NASA becoming the principal resource for a symposium when NASA sponsorship is approved by the Center Director or designee.

5.4.12 NASA meeting organizers shall collect permissions from non-NASA authors to allow NASA to publish and distribute content contributed to proceedings which will be released as a CP.

5.5 Publication of Journal Articles and Open Access Requirements.

5.5.1 Publication of journal articles typically follow the sequence below, each of which require DAA processing.

5.5.2 Preprint - A preprint is the journal article version that is submitted to the journal publisher to request acceptance and publication. Complete a DAA for preprints prior to submission to a publisher, preprint archive, and/or external peer review committee. A preprint may be released to STI repositories if this option is checked on the DAA.

a. Publications authored solely by U.S. Government employees as part of their official duties are not protected by copyright in the United States per 17 USC § 105. Because there is no copyright to assign to a publisher if NASA-authored STI is published through a non-NASA publication, NASA may use and distribute the preprint.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

b. When an article produced under a NASA-funded contract, grant, or cooperative agreement is published in a professional journal, the non-Government author often assigns copyright to the publisher. Under the contract grant, or cooperative agreement, NASA has a license to use and distribute information resulting from the contract, grant, or cooperative agreement. Thus, NASA may use and distribute the preprint.

5.5.3 As-accepted Manuscript - An as-accepted manuscript is the version of the journal article that has been accepted for publication by a journal publisher and includes changes requested by the publisher and made by the author during the peer-review process. It typically includes the same content as the published article in the journal but frequently (not always) does not include the publisher's form or format. NASA Civil Servant authors shall fulfill the requirements of NPD 2230.1, Research Data and Publication Access, by submitting a DAA (or a revised DAA) for the as-accepted manuscript. As-accepted manuscripts processed via the DAA will be deposited to NASA's as-accepted manuscript repository (NIH's PubMed Central) as well as the NTRS. Author completes validation steps required for the release of as-accepted manuscripts on the PubMed Central system. As-accepted manuscripts are released to STI repositories 12 months after their publications date. For more information see NASA's Open Data Web site at https://open.nasa.gov/open-data/.

5.5.4 Reprint - A reprint is the version that is published in the journal by the publisher. It will typically have the date of publication and volume number. Some Federal agencies and publishers also call these the Version-of-Record manuscript. Submit a DAA (or a revised DAA) for reprints. Reprints require publisher permission in order to release to STI repositories.

5.5.5 Payment of charges imposed by publishers for including articles or papers in their publications is the responsibility of the originating Center. Guidelines for the use of private publishers are given in Section 7.8.

5.5.6 The publication of STI through non-NASA channels does not preclude the publication of equivalent information by NASA. For example, if significant findings are reported initially in a prominent journal (in which space limitations might constrain complete presentation of text and figures), a more detailed documentation of these findings may be published in an appropriate NASA STI Report Series publication.

5.5.7 To avoid duplication, authors shall not publish identical NASA material through different channels with the following exception: preprints of journal articles (e.g., journal articles as submitted to the journal) or presentations made at professional meetings that may or may not appear in subsequently published proceedings may be published as a TM or CR.

5.5.8 Authors shall note on the RDP and the DAA form that the report is a preprint of a journal article.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Chapter 6. Reviews and Approvals

6.1 Purpose.

This chapter gives the review and approval requirements through which NASA ensures the quality and integrity of its STI, provides for its widest practicable and appropriate dissemination, and protects information (based on statute, regulation, or policy) which should not be disseminated to various audiences.

6.2 Policy and Legal Requirements.

6.2.1 The NASA STI Program distributes information produced by and for NASA to NASA, its contractors and grantees partners, and the public. This function fulfills the mandate of Section 20112 (a) of the National Aeronautics and Space Act, which requires NASA to provide for the widest practicable and appropriate dissemination of information concerning its activities and the results thereof. Reinforcing this Space Act requirement, the Office of Management and Budget (OMB), in Circular A-130, Management of Federal Information Resources, establishes the clear policy that the Agency will be responsible for and is expected to disclose information to the public consistent with the Agency's mission.

6.2.2 All NASA STI that does not meet any of the criteria for distribution limitations described herein will be considered to be approved for public release.

6.2.3 NASA STI Program will make available information approved for public release to any and all pertinent distribution channels, in keeping with the policy set forth in OMB Circular A-130 and the OSTP Open Access requirements.

6.2.4 Protection of STI.

6.2.4.1 Pursuant to law, certain types of information will be protected from public disclosure. The Freedom of Information Act (FOIA) provides guidance regarding categories of information that are exempt from mandatory release under FOIA. Dissemination of information may also be restricted under other laws, regulations, or policy. NPR 1600.1 provides additional information for Classified National Security Information (CNSI) and NID 1600.55 provides additional information for SBU.

6.2.4.2 As used in this NPR, restricted-access information means information the publication or distribution of which is restricted by law, regulation, or policy. Restricted-access information includes CNSI (of which STI does not handle) and SBU. SBU includes personal information subject to protection under OMB mandate and Government-wide regulations PII and Information in Identifiable Form (IIF)), information subject to the Privacy Act of 1974, proprietary information of the Government or others, such as Limited Rights received under a contract, trade, secret/confidential commercial information other than Limited Rights Data, or SBIR (Small Business Innovation Research) data. Other forms of restricted STI include export-controlled information, information developed under agreements and subject to Section 20131 (b) of the National Aeronautics and Space Act, copyrighted information, and documents disclosing inventions. Public access to restricted-access information is prohibited or restricted.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

6.2.4.3 Unless a determination is made that public release of information should be prohibited or restricted, NASA STI is made available to the public. Certain types of information are, however, restricted from dissemination via NASA to the public, including on public Web sites (see NID 1600.55 and Appendix I).

6.2.4.4 Refer any questions regarding whether or not certain types of information will be protected from public disclosure to the NASA Headquarters or Center Patent or Intellectual Property Counsel, Export Control Administrator, Information Technology Security Officer, and Physical Security Officer.

6.2.5 A management approver and Export Control shall approve NASA STI that has been previously reviewed and approved via the DAA for one venue but is being submitted to another venue to ensure that no content has been changed.

6.2.5.1 Before NASA STI (including STI that has been received from NASA-funded contractors and grantees) may be published or otherwise disseminated external to NASA (or presented at internal meetings or conferences at which foreign nationals or those without the need to know may be present), it will be undergo DAA review to determine whether it contains information that has prohibited or restricted access.

6.2.5.2 The DAA review is intended to ensure that NASA does not inappropriately release information to which public access should be prohibited or limited.

6.2.5.3 The DAA review for STI is required whether publication is accomplished through printing, submission to external channels for publication through any media, or published electronically on systems accessible by persons or institutions outside of NASA. This review is also applicable to presentations that are to be made before professional audiences, whether or not the presentation is accompanied by written material.

6.2.5.4 Although NASA STI may be produced either directly by NASA or under NASA contracts, grants, and cooperative agreements, the DAA review process applies only to the publication and dissemination of NASA STI by NASA or for NASA.

6.2.5.5 This mandatory review also applies to such STI uploaded to public Web sites.

6.2.5.6 Unless otherwise specified in NASA contracts or grants, NASA shall not restrict its contractors and grantees from publishing NASA-funded information themselves.

6.2.5.7 I n situations in which the contractor or grantee independently (that is, outside of the terms and conditions of contract, grant, or cooperative agreement) publishes STI, NASA is not considered to have published, disseminated, or presented the information, so the DAA review is not required.

6.2.5.8 Contractors or grantees shall review their information and ensure that it fulfills the following requirements as required by U.S. laws and regulations:

a. Conforms with laws and regulations governing its distribution, including intellectual property rights, export control, and national security.

b. Complies with restrictive markings to the extent that the contractor or grantee is given access to data necessary for the performance of the contract, grant, or cooperative agreements which contains restrictive markings.

6.2.5.9 NASA may, if award is not subject to this NPR and it is requested by the contractor, grantee,

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

or cooperative agreement participant, perform a DAA review of STI published or disseminated by contractors or grantees.

6.2.5.10 When a document is sent to STI Program without a DAA, STI Program will restrict the document to NASA personnel only and not make it publicly available.

6.3 Appeal Process for NASA STI Documents.

6.3.1 If a person does not agree with the decision regarding dissemination of a document, as established by the original DAA process at a Center, he or she will appeal the decision by requesting a re-review of the document by Center management within 30 days of notification and notify the STI Program Office (via help@sti.nasa.gov).

6.3.2 If a person does not agree with this appeal process decision, they may raise the issue to the Agency Chief Information Officer who shall involve the pertinent Center Program Manager, Center Director or designee, and Mission Directorate within 30 days of notification.

6.3.3 T he Agency Chief Information Officer shall respond to the non-agreeing person within 30 days of involving the pertinent Center Program Manager, Center Director or designee, and Mission Directorate.

6.3.4 If the document falls within the definitions of influential or highly influential information as specified by the OMB Section 515 Data Quality Guidelines, the requester should follow the Agency established procedures for data quality re-reviews as specified by the Agency data quality manager (see www.nasa.gov/offices/ocio/qualityinfo/index.html).

6.4 Professional and Technical Reviews.

6.4.1 Review Guidance

6.4.1.1 A ll STI will receive either a NASA Professional or Technical Review, although this is done outside of and prior to the approval via the DAA (NF-1676 or NF-1676B, known as EDAA).

6.4.1.2 Recommendations for the level of professional or technical review for each type of STI is indicated below in Section 6.4.3.1.

6.4.1.3 Journal articles will be reviewed via the DAA prior to release for external peer reviews.

6.4.1.4 Professional reviews (also called editorial and content reviews) will be performed by individuals or groups with technical knowledge or background tempered by interdisciplinary expertise in history, education, and program management.

a. Professional reviews assess the quality of the document content in terms of its readability, communication of information, and suitability for a particular audience without particular focus on content.

b. Technical Translations (see Section 6.4.3) require a professional review that consists of evaluating whether the work should be translated into English and associated permission to use copyrighted information (this review is indicated on the EDAA as code "0 - None"); written copyright permission, if any copyrighted work was included, will be obtained for this series.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

6.4.1.5 Technical reviews will be performed by peers with expertise within the technical discipline of the activity or research being documented.

a. Technical reviews will assess the technical integrity and merit of the activity or research being performed and the results being documented without regard to the effectiveness of the document at communicating the information.

b. When managers approve the DAA, they certify that an appropriate technical review has been conducted and that the material is technically correct and appropriate for the dissemination ascertained by the DAA process.

c. Categories of Technical Reviews include: Single Expert, Peer Committee, NASA Technical Management, and OMB Review (for those items that fall under the Information Quality Guidelines specified in Section 6.4).

d. Single Expert Review is indicated on the EDAA as code "1 Single Reviewer" and is an expert in a particular field or subject who can assess the technical quality of the STI.

e. Peer Committee is indicated on the EDAA as code "2 Peer Committee" and is a group of specialists or experts able to support, defend, and assess the technical quality of the STI.

f. NASA Technical Management is indicated on the EDAA as code "3 NASA Technical Management" and is someone aware of and who approves the publication of the STI.

g. The OMB Review is done outside of the STI process, although the document requires approval via the DAA. Once the DAA is approved, the document is submitted to the Agency Information Quality Guidelines process as indicated in Section 6.4.

6.4.2 Review Responsibilities.

6.4.2.1 The NASA Officials-in-Charge (OICs) of Headquarters Offices and Directors of Centers shall ensure the appropriate review and approval of the content of NASA-sponsored STI resulting from work conducted under their authority for presentation or publication through any channels and in any media, including electronic dissemination.

6.4.2.2 The author, working in collaboration with his or her technical supervisor, the COR, or GTO (for NASA STI originating from a NASA contract or grant), will initially recommend the subject division and category for the STI Database for a NASA STI document or contractor or grantee report.

6.4.3 NASA STI Report Series documents will be reviewed according to the criteria in Section 6.4.3.1.

6.4.3.1 The officials mentioned in Section 6.4.2 will ensure that the appropriate minimum review of NASA STI Report Series documents is completed, as indicated by the following levels of NASA STI Report Series professional and technical review requirements:

a. Technical Publication (TP) -Technical review by committee of peers or expert single reviewer.

b. Technical Memorandum (TM) - Review by technical management.

c. Contractor Report (CR) - Review by NASA technical management or expert reviewer(s).

d. Conference Publication (CP) - Review by technical management.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

e. Special Publication (SP) - Professional review controlled by originating Headquarters office or NASA Center.

f. Technical Translation (TT) - TT requires some printing authorization, justification of translation effort, and permission to use copyrighted information will be obtained.

6.4.3.2 Level of review will be indicated on the back of the title page (see Appendix F).

6.5 Document Availability Authorization (DAA).

6.5.1 The DAA process is based on statutory requirements for NASA and is coordinated with the Headquarters Offices of General Counsel, Office of International and Interagency Relations, Office of the Chief Information Officer, Office of Procurement, and Security and Program Protection. The responsibility held by the OICs of Headquarters offices is delegated to NASA Center Directors (with the exception of policy and standards information requiring review by the OIIR).

6.5.2 The DAA review is NASA's compliance review for the publication, dissemination, and presentation of NASA STI by or for NASA through any channel or media. The DAA review determines if STI needs to have restricted access, such as for export-controlled information, proprietary STI, and documents disclosing an invention. NASA STI may be subject to one or more of the restrictions described below. Documents containing restricted-access STI will include notices applicable to all valid restrictions (see the exhibits in Appendix I) as well as one of the document distribution limitations listed in Section 6.5.19, along with any appropriate expiration date.

6.5.3 Copying and disseminating such documents will be done in conformance with Federal laws, Government-wide and NASA policy, procedural requirements, and applicable notices.

6.5.4 A minimal DAA will be signed by the NASA Export Control Administrator and the intellectual property attorney.

a. A minimal DAA is defined as an NF1676 that states there are no export control or intellectual property restrictions.

b. A minimal DAA will be used for STI that is dated 1985 or older and is being sent to STI Program for the first time.

c. STI dated 1986 or newer should use a full NF1676.

d. A minimal DAA should contain information as specified in Appendix E.1.11.

6.5.5 This NPR does not set policy for National Security Review (NSR) information. The DAA review process is not used to review classified information. NASA Headquarters and Center originating offices are responsible for classified STI. Final security classification rests with NASA Headquarters' Office of Protective Services. Processes for documents containing information subject to security classification are addressed in NPR 1600.1 and NPR 2810.1.

6.5.6 NASA Headquarters and Center originating offices, in conjunction with Headquarters and Center Export Administrators, are responsible for the review and approval of policy and plans for the intended release of NASA technical and programmatic information to a NASA international partner.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

6.5.7 The NASA Headquarters and Center originating offices also are responsible for ensuring appropriate review and approval of all material intended for publication, dissemination, and presentation when such material contains information pertaining to the Department of Defense (DOD) (e.g., aeronautics programs, space launches, or space operations) regardless of the source of the materials. The DOD Office of Security Review shall be contacted for review of NASA documents that have DOD equities, and the Headquarters OIIR can facilitate this review.

6.5.8 Export Control Reviews.

6.5.8.1 Export control limitations are applied to information subject to:

a. 22 United States Code (USC) 2778 et seq., Arms Export Control Act.

b. Public Law (PL) 96-72 Stat. 503, 50 USC app. 2401 et seq., Export Administration Act of 1979.

c. 22 Code of Federal Regulations (CFR) Parts 120-130, International Traffic in Arms Regulations (ITAR).

d. 15 CFR Parts 730-774, Export Administration Regulations (EAR).

e. Certain Other Regulations

6.5.8.2 Export control regulations establish lists or categories of technical data subject to export control that may not be exported or disclosed to foreign persons without proper authority. The term "exported" includes providing information or making information available to a foreign person (including a U.S. citizen representing a foreign person if that individual intends to provide the information to a foreign person) either within the United States or abroad.

6.5.8.3 STI information will not be placed on the open Internet without export-control review.

6.5.8.4 The export control review ensures that NASA STI Report Series documents; conference, meeting, and symposia presentations; abstracts; and external publications containing information subject to control under pertinent U.S. export laws or regulations are suitably protected.

6.5.8.5 Each controlled report, presentation, abstract, or publication will be reviewed and approved by or in conjunction with the Headquarters or Center Export Administrator prior to the dissemination, in any media, to audiences that may include foreign persons. Examples follow:

a. Presentations at internal meetings at which foreign persons are likely to attend.

b. Presentation at open meetings in the United States that may include foreign persons.

c. Presentations at meetings held in foreign countries.

d. Publications intended for public dissemination or distribution.

e. Unrestricted electronic releases over the Internet.

6.5.8.6 The Center Export Administrator will approve the abstract, complete report, and presentation prior to release.

6.5.8.7 Under certain conditions, officials overseeing specific contracts or projects will, on a case-by-case basis, be granted limited delegations of authority to approve publications when the contracts or projects are restricted to topics exempt from export controls. These limited delegations are coordinated through the NASA OIIR and the cognizant NASA Headquarters mission

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

directorate.

6.5.9 Sensitive But Unclassified (SBU) Information.

6.5.9.1 Information on SBU is given in NID 1600.55. For more information about this category of information, contact the NASA Headquarters Office of Chief Information Officer. NASA STI restricted under ITAR, EAR, SBIR, trade secret/commercial confidential, or subject to Section 20131 (b) of the National Aeronautics and Space Act is considered to be SBU and to be marked with the appropriate notice (ITAR, EAR, SBIR, etc.) on the cover, title page, and SF-298, RDP, and the appropriate restriction on each inside page on which the SBU information is displayed.

6.5.9.2 NASA STI that is marked as export controlled under the ITAR or EAR is not automatically SBU but has been declared SBU by a designated SBU official.

6.5.9.3 The cognizant designating official makes the SBU assessments and determination. See NID 1600.55 for the definition of and further guidance on designating officials, assessment, marking, and management of SBU information.

6.5.9.4 NASA STI restricted from public Web sites is not considered to be SBU unless it also falls under another restriction.

6.5.9.5 Sensitive Personally Identifiable Information (PII) may not be included in STI documents. For information on what constitutes sensitive PII, see NPR 1382.1 and contact your Center Privacy Manager or Agency Chief Privacy Officer.

6.5.10 ITAR documents follow 22 CFR Parts 120-130.

6.5.10.1 The ITAR implements the Arms Export Control Act and contains the United States Munitions List (USML). The USML identifies articles, services, and related Technical Data that are designated as "Defense Articles" and "Defense Services," pursuant to Sections 38 and 47(7) of the Arms Export Control Act. The ITAR is administered by the U.S. Department of State. Technical Data, as defined in the ITAR, do not include information concerning general scientific, mathematical, or engineering principles commonly taught in schools, colleges, and universities or information in the public domain (as that term is defined in 22 CFR 120.11). It also does not include basic marketing information on function and purpose or general system descriptions. For purposes of the ITAR, the following definition applies.

6.5.10.2 A "Defense Article" (as defined in 22 CFR 120.6) is any item or Technical Data on the USML (22 CFR 121.1). The term includes Technical Data recorded or stored in any physical form, models, mockups, or other items that reveal Technical Data directly relating to items designated in the USML. Examples of Defense Articles included on the USML include the following:

a. Launch vehicles, including their specifically designed or modified components, parts, accessories, attachments, and associated equipment.

b. Certain remote-sensing satellite systems, including ground control stations for telemetry, tracking, and control of such satellites, as well as passive ground stations if such stations employ any cryptographic items controlled on the USML or if they employ any uplink command capability, all components, parts, accessories, attachments, and associated equipment (including ground support equipment) that is specifically designed, modified, or configured for such systems. (See 22 CFR 121.1 for the complete listing.)

c. Technical Data (as defined in 22 CFR 120.10) is information that is required for the design,

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

development, production, manufacture, assembly, operation, repair, testing, maintenance, or modification of Defense Articles. This includes information in the form of blueprints, drawings, photographs, plans, instructions, and documentation.

d. Classified information relating to Defense Articles and Defense Services.

e. Information covered by an invention secrecy order (35 USC 181 et seq., Patent Rights in Inventions Made With Federal Assistance; 35 CFR Part 5).

f. Software directly related to Defense Articles, including, but not limited to, system functional design, logic flow algorithms, application programs, operating systems, and support software for design, implementation, test, operations, diagnosis, and repair. Note that software is not considered STI and has a separate review and approval process.

6.5.10.3 If NASA STI contains Technical Data concerning Defense Articles as defined above, it is restricted by ITAR, and all copies should bear the ITAR Notice shown in Exhibit I.1 in Appendix I. Release or distribution of the same information by NASA contractors is subject to the same notice.

6.5.10.4 The restriction notice will appear on the cover, title page, and RDP.

6.5.10.5 Each page that contains ITAR information will be marked ITAR at the top and bottom.

6.5.11 Export Administration Regulations (EAR; 15 CFR Parts 730-774).

6.5.11.1 The EAR implements the Export Administration Act and contains the Commerce Control List (CCL). The CCL lists dual-use commodities, technology, and software subject to the export control authority of the U.S. Department of Commerce. The items on this list are export controlled for reasons of national security, foreign policy, proliferation, and/or short supply. These regulations are administered by the U.S. Department of Commerce. Dual use is used to distinguish EAR-controlled items that can be used both in military and other strategic uses and in civil applications from items covered by the ITAR, the Department of Energy, or the Nuclear Regulatory Commission. Information subject to EAR export restrictions includes specific technology identified in the CCL (15 CFR 774). CCL definitions follow:

a. Technology (Supplement 2 to 15 CFR 774) is specific information necessary for the development, production, or use of a product on the CCL. The information may be in the form of Technical Data or technical assistance.

b. Technical Data may take forms such as blueprints, plans, diagrams, models, formulas, tables, engineering designs and specifications, manuals, and instructions written or recorded on other media or devices such as disk, tape, or read-only memories.

c. Software is a collection of one or more computer or microcomputer programs fixed in any tangible medium of expression.

d. Development information is specific information necessary for any stages prior to serial production, such as design, design research, design analyses, design concepts, assembly and testing of prototypes, pilot production schemes, design data, process of transforming design data into a product, configuration design, integration design, and integration design layouts.

e. Production Information is specific information necessary on any production stages, such as product engineering, manufacture, integration, assembly (mounting), inspection, testing, and quality assurance.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

f. Use Information is specific information necessary for operation, installation (including onsite installation), maintenance (checking), repair, overhaul, and refurbishment.

g. Examples of information not subject to export control under the EAR include the following:

(1) Information that is publicly available via literature, library, patent, or seminar.

(2) Fundamental, basic, and applied research in which the resulting information is ordinarily published and shared broadly within the scientific community, as well as university-based, corporate, or Federally Funded Research and Development Center (FFRDC)-based research that has no restrictions on publication of the resulting information.

(3) Educational information taught in a college catalog course.

(4) Information contained in patent applications that are not subject to 37 CFR Part 5 secrecy orders.

(5) Basic marketing information on function or purpose or general system descriptions that the producer would make available to its closest competitors at no more than the cost of reproduction.

6.5.11.2 If NASA STI contains "Technology" controlled by EAR, all copies of the cover, title page, and RDP will bear the EAR Notice shown in Exhibit I.2 in Appendix I.

6.5.11. 3 Each page that contains EAR information will be marked EAR at the top and bottom. Release or distribution of the same information by NASA contractors is subject to the same notice.

6.5.12 Programs and projects that are determined by the Center or Agency export control administrators to be wholly fundamental research can be expedited via NF-1676 using the Blanket Availability Authorization. Additional information for determining fundamental research will be found in NASA Fundamental Research Designation Guidelines (NPR 2190.2, Appendix D, which is under way) by the NASA Export Control Administrator. A copy of the documentation that designates a program or project as fundamental research should be forwarded to the Center's STI Program (STI Manager).

6.5.12.1 NASA STI from these programs or projects designated as fundamental research will be sent through the Center's STI process via the NF-1676, with the blanket authorization checked, and with signature approval by the master original blanket authorization's approver, prior to release or providing access to it to foreign persons.

6.5.12.2 STI not designated as fundamental research will be handled in accordance with NPR 2200.2 and requires full DAA review, including an export control review by the appropriate NASA Export Control Official before such information is released.

6.5.13 Proprietary and sensitive STI will be protected.

6.5.13.1 Proprietary information refers to information that is owned by someone. The owner has proprietary rights (i.e., a legal property right) in the information that allows the owner to exclude others from using, selling, reproducing, displaying, or distributing the information. As defined in NPR 1600.1 (NID 1600.55 for SBU), sensitive information is information determined to have special protection requirements to preclude unauthorized disclosure, to avoid compromises, risks to facilities, projects or programs, threat to the security and/or safety of the source of information, or to meet access restrictions established by laws, directives, or regulations.

6.5.13.2 For the purposes of the DAA review and this NPR, proprietary STI is STI that contains

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Limited Rights Data received under a contract, SBIR Data received under an SBIR contract, trade secret/confidential commercial information other than Limited Rights Data or SBIR Data, data subject to Section 20131 (b) of the Space Act, copyrighted information, and information disclosing inventions.

6.5.14 Limited Rights Data.

6.5.14.1 Limited Rights Data are data developed at private expense that are delivered to the Government under a Government contract and that embodies trade secrets or are commercial or financial and confidential or privileged, or that pertain to items, components, or processes developed at private expense. Information that constitutes Limited Rights Data will be marked with a Limited Rights Notice in accordance with FAR clause 52.227-14 when delivered to the Government. If such data are not marked with the Limited Rights Notice, the Government has no obligation to withhold the data from public release.

6.5.14.2 Any questions regarding what constitutes Limited Rights Data, or regarding its marking, use, or dissemination, will be referred to the NASA Headquarters' or the Center Patent or Intellectual Property Counsel.

6.5.14.3 Documents containing Limited Rights Data will bear the Limited Rights Notice shown in Exhibit I.4 in Appendix I and one of the document distribution limitations listed in Section 6.5.19.1.

6.5.14.4 Copying and disseminating of such documents will be done in conformance with this notice.

6.5.14.5 Any questions regarding appropriate markings or legends and applicable document distribution limitations will be referred to the NASA Headquarters or Center's Patent or Intellectual Property Counsel.

6.5.15 SBIR information will be protected.

6.5.15.1 Small Business Innovation Research (SBIR) information is information first produced by an SBIR contractor which are not generally known; have not, without obligation as to their confidentiality, been made available to others by the contractor; or are not already available to the Government. Data developed under an SBIR contract, if marked with the SBIR rights notice specified in the contract, will be withheld from public release in accordance with the SBIR contract, usually for four years. If such information is not marked with the SBIR rights notice, the Government has no obligation to withhold the information from public release.

6.5.15.2 Any questions regarding what constitutes SBIR information, or regarding its marking, use, or dissemination, will be referred to the NASA Headquarters' or the Center Patent or Intellectual Property Counsel.

6.5.15.3 To provide a commercialization incentive to SBIR contractors, it is NASA's policy to restrict all SBIR program reports from public disclosure for the period specified in the contract for SBIR Data, unless the contractor has granted permission to publicly release the report sooner. If a letter of permission from the contractor is on file, SBIR program reports may be made publicly available immediately.

6.5.15.4 Restricted SBIR program documents should bear the SBIR Rights Notice shown in Exhibit I.5 in Appendix I and one of the document distribution limitations listed in Section 6.5.19, along with the appropriate expiration date.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

6.5.15.5 Copying and disseminating of such documents will be done in conformance with this notice.

6.5.15.6 Any questions regarding appropriate markings or legends and applicable document distribution limitations will be referred to the NASA Headquarters' or the Center's Patent or Intellectual Property Counsel.

6.5.16 Trade secret/confidential commercial information.

6.5.16.1 Under certain limited circumstances, NASA employees may be provided access to third-party trade secret or confidential commercial information other than Limited Rights Data or SBIR Data for inclusion in NASA STI. A "trade secret" is information that is used in a business, is secret, or gives a competitive advantage to the person with knowledge of it. The party delivering such information will include a proprietary notice that indicates the restricted nature of the information when delivered to the Government. If such information is properly marked by the originator, NASA agrees to handle the information in accordance with the markings. When NASA STI containing trade secret or confidential commercial information is published or otherwise disseminated by or for NASA, the cognizant program or project office is responsible for ensuring that such data are properly identified and marked to indicate restricted dissemination.

6.5.16.2 Any questions regarding what constitutes trade secret or confidential commercial information, or regarding its marking, use, or dissemination, must be referred to the NASA Headquarters' or the Center Patent or Intellectual Property Counsel.

6.5.16.3 If NASA STI is restricted because of trade secrets or confidential commercial information other than Limited Rights Data or SBIR Data, all distributed copies should contain the marking or legend supplied by the originator of the information and, if applicable, one of the document distribution limitations listed in Section 6.5.19.

6.5.16.4 In accordance with 2 CFR 1800.909 and 14 CFR 1274.905, in limited circumstances, information first produced by a recipient may be marked as trade secret/commercial confidential information and is maintained in confidence for a period of two to five years (see terms and conditions of award). In such cases, an appropriate expiration date of the limitation may be included in the distribution statement on the STI.

6.5.16.5 Copying and dissemination of marked information must be consistent with its markings or legends and any applicable document distribution limitations.

6.5.16.6 Any questions regarding appropriate markings or legends and applicable document distribution limitations must be referred to the NASA Headquarters' or the Center's Patent or Intellectual Property Counsel.

6.5.17 Information subject to Section 20131 (b) of the Space Act.

6.5.17.1 Under certain limited circumstances, NASA employees may produce technical information that may be treated as trade secret information. Section 20131 (b) of the Space Act provides that information or data produced by NASA employees in carrying out NASA's participation in an agreement entered into under the Space Act may be protected for a period of up to five years if such information would constitute a trade secret or confidential commercial information if it had been produced by the non-Government party. This provision is generally applicable to agreements that have the objective of developing commercial products or processes. Such data is properly marked by the cognizant NASA project office. NASA agrees to protect the data for the period of time

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

established in the agreement between NASA and the other party, up to five years.

6.5.17.2 If NASA STI is restricted because of information subject to Section 20131 (b) of the Space Act, all distributed copies will contain one of the document distribution limitations listed in Section 6.5.19.1 and Appendix I along with the appropriate expiration date of the limitation.

6.5.17.3 Copying and dissemination of marked information will be consistent with its markings or legends and any applicable document distribution limitations.

6.5.17.4 Any questions regarding appropriate markings or legends and applicable document distribution limitations should be referred to the NASA Headquarters' or the Center's Patent or Intellectual Property Counsel.

6.5.18 Copyright.

6.5.18.1 A copyright owner is the owner of the exclusive rights comprised in a copyright. A copyright provides the copyright owner the exclusive right to--or authorize others to--reproduce the copyrighted work, prepare derivative works based on the copyrighted work, distribute copies of the copyrighted work to the public, perform the copyrighted work publicly, and display the copyrighted work publicly. Others are restricted from exercising the exclusive rights reserved to the copyright owner without the copyright owner's permission. (See also Appendix D.6.)

6.5.18.2 Contracts, grants, and cooperative agreements often permit the contractor or grantee to assert copyright in reports and other publications first produced in the performance of the specified activity (e.g., works containing or based on data first produced under a NASA contract, grant, or cooperative agreement) and published in academic, technical or professional journals, symposia proceedings, or similar works. In order for a contractor to assert copyright in a document, the contract, grant, or cooperative agreement will contain specific language that grants copyright permission to the contractor or grantee.

6.5.18.3 When copyright is asserted, the contractor or grantee should include a copyright notice and acknowledgment of Government sponsorship (including contract, grant number, or cooperative agreement) of the work when it is published. Ordinarily, the Government receives a Government-purpose license (also called Federal-purpose license) in the copyrighted work. The cognizant program or project office provides written notification to the responsible Center Technical Publications Office of instances in which documents containing a copyright notice are provided without a license authorizing public distribution.

6.5.18.4 Under most contracts, grants, and cooperative agreements, a Government purpose license includes the right to use, modify, reproduce, release copies to the public, perform publicly, and display publicly a copyrighted work or authorize others to do so for governmental purpose. Under a Government purpose license, the Government may use the work within the Government without restriction and may release or disclose the work outside the Government for Government purposes. Under Section 20112 of the Space Act, it is a governmental purpose to provide for the widest practicable and appropriate dissemination of information concerning NASA's activities and their results. Thus, public distribution of the results of work funded by NASA is a governmental purpose. However, although NASA may publicly release copyrighted works in which it has a Government purpose license, these works are still protected by copyright, and recipients of the works will comply with the copyright law: for example, they may not further copy or distribute the copyrighted work without permission of the copyright owner.

6.5.18.5 Documents produced by Government employees in the performance of official duties are

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

not subject to copyright protection in the United States per 17 USC § 105. However, the U.S. Government may obtain copyright protection in other countries depending on the treatment of government works by the national copyright law of the particular country. For additional information, contact the NASA Headquarters' or the Center's Patent or Intellectual Property Counsel. (See also CENDI, the Federal STI Managers Group, at http://www.cendi.gov, especially their "Frequently Asked Questions About Copyright," at http://www.cendi.gov/publications/04-8copyright.html.)

6.5.18.6 If NASA STI is restricted because of copyrighted content, all distributed copies may bear the appropriate notice for copyrighted information shown in Appendix I. Release or distribution of the same information by NASA contractors is subject to the same notice.

6.5.19 Document distribution limitations.

6.5.19.1 Document distribution limitations determined during the DAA review and indicated on the NF1676 follow:

a. U.S. Government Agencies and U.S. Government Agency Contractors Only.

b. U.S. Government Agencies Only.

c. NASA Personnel and NASA Contractors Only.

d. NASA Contractors and U.S. Government Agencies Only.

e. NASA Personnel Only.

f. Distribution Limited to U.S. Persons.

g. Available Only With Approval of Issuing Office (Mission Directorate or NASA Center).

6.5.19.2 When STI is no longer subject to restriction (or following the date cited in "Limited until..."), the cognizant NASA Center (program officials and Export Control Administrators or Patent or Intellectual Property Counsel) will re-mark the STI and provide NASA STI Program with a copy of the new or modified DAA through the Center's Technical Publications Office or STI Manager. Because NASA STI Program is a contractor support organization, it is not approved to change or alter authorization categories that it receives from the Centers or Headquarters.

6.5.19.3 Prior to loading a NASA document to a public Web site, refer to NID 1600.55. If restrictions apply according to this document, authors and approvers shall use the Exhibit I.3 restriction in Appendix I.

6.5.20 Documents disclosing inventions.

6.5.20.1 Information that is otherwise approved for public release may be withheld if it discloses an invention. The publication of information disclosing an invention by any party before the filing of a patent application may create a bar to a valid patent. Accordingly, under 35 USC 205 and implementing regulations, agencies are to withhold from release to the public documents that contain information about an invention in which the Government owns or may own a right, title, or interest (including a nonexclusive license). This applies to inventions made and reported by NASA employees, contractors, and grantees. Release is delayed in order for a patent application to be filed or, if a decision not to file is made, until release is approved by the NASA Headquarters' or the Center's Patent or Intellectual Property Counsel.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

6.5.20.2 When NASA STI discloses an invention, the invention will also be formally disclosed to NASA via the NASA Electronic New Technology Reporting Web site, eNTRe, at http://invention.nasa.gov, or on NF-1679, Disclosure of Invention and New Technology, also available at the eNTRe Web site.

6.5.20.3 The party making and disclosing or reporting the invention be responsible for notifying the Agency as to the nature of the information and the invention to which it relates.

6.5.20.4 In the case of reports submitted under contract, grant, or cooperative agreement, notification be made to the Contracting Officer or Grant Officer, the designated Patent Representative, and the STI Manager.

6.5.20.5 In the case of NASA-prepared documents, notification be made to the Project Officer, the Center Patent or Intellectual Property Counsel, and the STI Manager.

6.5.20.6 Regardless of the availability category and any blanket availability authorization that may have been granted, all documents that disclose an invention (except security-classified documents that disclose an invention) for which notification has been made be withheld by the originating office, with notice to the Center Technical Publications Manager, until the patent applications process is complete (that is, an application is filed with the U.S. Patent and Trademark Office, or a decision not to file an application is made and release is approved by the Center Patent or Intellectual Property Counsel).

6.5.20.7 Such withholding does not require NASA Program Office approval. Security-classified documents that disclose an invention be withheld until approved for release under applicable security guidelines.

6.5.21 Use of restrictions other than those specified in this chapter will receive prior approval by the Headquarters Office of General Counsel.

6.5.22 Requests for use of nonstandard restrictions will include the following information:

a. Clear statement of who can and cannot receive the document.

b. Time limit for the restriction.

c. Reason for the restriction.

d. Copy of the legal citation on which the proposed restriction is based.

6.5.23 Documentation of DAA review and approval.

6.5.23.1 Approvals will be documented on NF1676 or the Center-specific implementation of this form.

6.5.23.2 The DAA also documents which restrictions, if any, will be applied to the distribution of the publication or presentation. Individuals originating STI in any form may consult with the NASA Headquarters' or the Center's DAA representative and the Headquarters' or Center's Export Administrator--who can explain the availability categories and authorization requirements--and with their NASA Program or Project Manager, COR, or Grants Technical Officer (GTO).

6.5.23.3 Copies of NF1676 are available from the Center or Headquarters Forms Manager and are also accessible via the NASA Forms Web site (https://nef.nasa.gov (Internal to NASA)).

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

6.5.24 The Agency has developed and is instituting an Agency electronic DAA (NF-1676B), which is being rolled out Center-by-Center as resources allow. Centers will not develop or institute their own automated system other than those previously in existence as of the date of this NPR (i.e., Langley, Stennis, and Johnson). After all other Centers have been converted to this Agency system, these three Centers will be phased to the EDAA.

6.6 Special Concerns.

6.6.1 Grants and cooperative agreements.

6.6.1.1 The widest practicable dissemination will be made of results of a NASA grant or cooperative agreement, subject to the restrictions in Section 6.2.4.2.

6.6.1.2 If the results of a NASA grant or cooperative agreement are published as a CR, they will meet the requirements for CRs specified in Section 4.6.

6.6.1.3 The DAA review of reports published in the NASA STI Report Series will be initiated by the Grant Technical Officer or by the applicable Headquarters program office. For grants and cooperative agreements that are subject to restrictions, see also Sections 6.2, 6.5, and 7.2.

6.6.1.4 The following reports that NASA elects to publish or release require a DAA review and approval prior to release by NASA:

a. Reports that the grantee releases or publishes on behalf of NASA require a DAA review.

b. Grant reports that a grantee publishes or releases on their own behalf, even if it is sponsored by NASA, do not need a DAA review and approval, unless their award specifically requires NASA review and approval prior to release.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Chapter 7. Dissemination of STI

7.1 Overview

To ensure the widest practicable and appropriate dissemination of the results of NASA STI activities, NASA maintains an electronic and alternative media duplication capability, adheres to printing regulations that direct printing and reproduction procedures, and maintains a variety of distribution mechanisms that ensure easy access to the NASA STI Report Series, as well as to other STI-related products and services.

7.2 Distribution and Dissemination.

7.2.1 The NASA STI Program Director shall determine general distribution requirements for the NASA STI program.

7.2.2 The author and his or her management shall determine distribution and dissemination requirements for individual publications in coordination with the general requirements of the NASA STI Program Director.

7.2.3 All duplicating or printing of NASA STI will be performed in accordance with NPD 1490.1.

7.2.4 NASA STI Program be responsible for the primary dissemination of NASA STI, which is done electronically.

7.2.5 Documents on a public Web site will also meet requirements in NPR 2810.1.

7.3 Duplication and Printing.

7.3.1 NASA disseminates STI electronically. On occasion, a Center may also require hard-copy duplication or printing. The duplication or printing of publications in the NASA STI Report Series, if a Center elects to do so, will be accomplished through Center Technical Publications Offices using NASA Headquarters or Center duplicating or copying facilities and/or the GPO, in accordance with NPD 1490.1. Special handling is required for limited or restricted STI.

7.3.2 The dissemination of STI in electronic or alternative media, which may or may not be issued jointly with a print version, in the NASA STI Report Series will be made in accordance with the standards in Section 4.7.

7.4 Archiving of NASA STI.

NASA STI that is unlimited and does not have a copyright will be sent to the NARA in electronic format in accordance with NPR 1441.1.

7.5 Duplication for Secondary Distribution.

7.5.1 NASA STI Program be responsible for subsequent requests for NASA STI. This is called

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

secondary distribution.

7.5.2 NASA STI Program fulfills requests for STI in electronic formats.

7.6 Dissemination/Distribution of NASA STI Report Series.

7.6.1 Information on dissemination and distribution of NASA STI is given in Appendix E.

7.6.2 Authors and approvers shall ensure that a copy of their STI is sent to NASA STI Program so that it is included in the NASA dissemination process. Any additional dissemination will be in accordance with NASA's release requirements, as cited in the references to this NPR.

7.7 FOIA Requests.

For FOIA requests, requesters shall follow the Agency FOIA procedure, as specified at http://www.nasa.gov/FOIA/index.html.

7.8 Use of Commercial or Nonprofit Publishers.

7.8.1 The decision to use commercial or nonprofit publishers (e.g., society and nonprofit publishers) for printing NASA STI will involve the considerations below.

7.8.1.1 When appropriated funds have been used to create information to be published, printing services will be provided by GPO.

7.8.1.2 When appropriated funds have been used to create information to be published, the information will not be made available to a private publisher for initial publication.

7.8.1.3 If appropriated funds have not been used, other factors (e.g., type and content of the publication, audience, statutory requirements, past practice, and distribution to depository libraries) will be taken into consideration.

7.8.1.4 Both the Office of the General Counsel and the office responsible for the preparation of the work will be consulted.

7.8.1.5 The contractual arrangement with the publisher would not be a procurement or assistance transaction, but rather a Space Act Agreement (see NPD 1050.1).

7.9 STI Compliance Audit.

7.9.1 The STI Program Office shall oversee an STI compliance audit consisting of Measure 1 (if DAAs were correctly completed and if incorrect DAAs were corrected in a timely fashion), and Measure 2 (if all STI received an approved DAA prior to release or publication).

7.9.2 The STI Program Office shall send the Center Directors the findings of the STI compliance audit and ensure that corrective measures are taken so that all STI at their Centers are released after an approved DAA.

7.9.3 On a yearly basis, Centers shall respond to the findings of the STI compliance audit for

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Measure 1 (if DAAs were correctly completed and if incorrect DAAs were corrected in a timely fashion), and Measure 2 (if all STI received an approved DAA prior to release or publication).

7.9.4 Center Directors shall ensure that a yearly STI Communication Plan relating the need for DAA review is developed and communicated at their Center.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Apppendix A. Definitions

Accession, accessioning. Process by which documents are added to the STI repository.

Agency. Unless otherwise qualified, the term Agency refers to NASA.

As-accepted manuscript. Version of the journal article that has been accepted for publication by a journal publisher and includes changes requested by the publisher and made by the author during the peer-review process. It typically includes the same content as the published article in the journal but frequently (not always) does not include the publisher's form or format. Authorized requester. Individual or organizational user properly registered with the NASA STI Program to receive STI services and products (also see "user registration").

Availability. Degree of authorized access to a given document based on approved distribution limitations.

Classified National Security Information (CNSI). Information that is protected against unauthorized disclosure IAW Executive Order 13526, "Classified National Security Information," and is marked to indicate its classified status when in documentary form.

Conference paper full-text document. Complete papers (not just abstracts) which contain text (e.g., Introduction, Background, Apparatus, Procedure, Analysis, and Conclusions) as well as tables, figures, equations, references, and appendixes, if they are part of the complete document.

Conference presentation. Projected visuals of details, figures, and tables from a full-text conference publication. Presented at a physical or virtual gathering.

Copyrighted document. Document for which the exclusive legal rights under the Copyright Law (right to reproduce, modify, distribute, perform publicly, and display publicly) have been asserted by the author of the work.

Dissemination/distribution. Dissemination is normally referred to as the process by which STI is transmitted to the user community. Distribution is normally referred to as the transmittal of STI electronically or by hard copy and/or alternative media to authorized users. In this NPR, these two terms are used interchangeably. Government distribution or dissemination means, in accordance with OMB Circular A-130, Management of Federal Information Resources, the Government-initiated distribution of information to the public. Dissemination within the meaning of the Circular does not include distribution limited to Government employees or agency contractors or grantees, intra-agency or interagency use or sharing of Government information, and responses to requests for agency records under 5 USC 552, Freedom of Information Act (FOIA), or the Privacy Act.

Document. Information package that may consist of printed hard copy, alternative media, DVDs, CDs, or electronic versions.

Document Availability Authorization (DAA) Representative. Person who coordinates with Center authors, STI Manager, Technical Publications Manager, COs, CORs, Grants Officers, Grant Technical Officers, and managers to have the STI approved in order to track, file, and transfer the DAA and its associated STI, after approval, to NASA STI Program. Accountable to the Center STI Manager.

Document Availability Authorization (DAA) review. Process by which NASA determines which restrictions, if any, need to be placed on the availability of a document. The form used in this process is NASA Form (NF)1676 or 1676B, NASA Scientific and Technical Information (STI) Document Availability Authorization (DAA), available at https://nef.nasa.gov (Internal to NASA).

Duplicating or copying facility. Any location having at least one employee operating, duplicating or copying equipment on a full-time basis, excluding authorized printing plants.

Electronic dissemination or distribution. Delivery of information through the use of electronic communications or machine-readable representations of documents or release via the Internet.

Electronic Document Availability Authorization (EDAA). The NF1676B version of the DAA that is being implemented as the Agency form for all Centers.

Export Administration Regulations (EAR). U.S. export control regulations (15 CFR 730-774) administered by the U.S. Department of Commerce that require limited availability for technical data pertaining to commodities, technology, and software listed on the Commerce Control List. NASA STI reports subject to restriction under this regulation often are referred to as EAR documents.

Foreign national. For the purpose of general security protection, considerations of national security, and access accountability, a foreign national is any person who is not a citizen of the United States. This includes lawful permanent residents (i.e., holders of green cards) or persons admitted with refugee status to the United States. (See NPR 1600.1, Chapter 10.)

Grantee. The organization that receives funding from NASA under a grant or cooperative agreement.

Information in Identifiable Form (IIF), see NPR 1382.1A. IIF is any representation of information that permits the identity of an

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

individual to whom the information applies to be reasonably inferred by either direct or indirect means.

International Traffic in Arms Regulations (ITAR). U. S. export control regulations (22 CFR 120-130) that require limited availability for technical data that pertain to commodities, technology, and software listed on the United States Munitions List (USML). NASA STI reports subject to restriction under this regulation are often referred to as ITAR documents.

Invention. Information on any way of doing or making things, new technology, machine, manufacture, design, or composition of matter, or any new and useful improvement thereof, or any variety of plant, which is or may be patentable under the patent laws of the United States.

Management approver. Person who understands the technical content of the STI and who can approve its publication or release; this can be a branch head, division chief, directorate manager, or other designations familiar with the content.

Mis-release. Document that has been released, published, or shared internally with Foreign Nationals prior to the STI being approved via the DAA process.

NASA internal distribution. Distribution to NASA personnel, contractors and grantees, or partners who are not foreign persons and with the understanding that the STI is not permitted to be redistributed. If foreign persons will have access to the information, even if the distribution is limited, a DAA review of the STI is required.

NASA STI. STI produced by NASA or under NASA funding agreements where NASA has the right to publish or otherwise disseminate the STI. For example, NASA STI includes STI authored by a NASA employee as part of the employee's official duties, STI co-authored by a NASA employee and a non-NASA employee, and STI authored by an employee of a contractor or grantee funded by NASA where NASA has the right to publish or otherwise disseminate the STI.

NASA STI Report Series. Discrete report designations that characterize NASA and NASA contractor STI reports. The NASA STI Report Series comprises six types of publications: Technical Publication (TP), Technical Memorandum (TM), Contractor Report (CR), Conference Publication (CP), Special Publication (SP), and Technical Translation (TT).

NASA Technical Reports Server (Public). STI database interface that contains STI approved for public release.

NASA Technical Reports Server (Registered). STI database interface that contains all STI, including restricted and limited STI and for which users will register and be cleared for access. New technology. Content related to or that may relate to invention or patent disclosures.

Non-Sensitive PII. Non-Sensitive PII is information that is available in public sources the disclosure of which cannot reasonably be expected to result in personal harm.

Open access. Publications that are made freely available, typically online, to the public worldwide, with no charges imposed for access.

Oral/visual presentation. Material originally transmitted verbally. Can be subsequently transcribed into paper or electronic form.

Paper copy. Full-sized reproduction of a document on paper.

Personally Identifiable Information (PII). Refers to information which can be used to distinguish or trace an individual's identify, such as their name, social security number, biometrics records, etc., alone, or when combined with other personal or identifying information that is linked or linkable to a specific individual, such as date and place of birth, mother's maiden name, etc.

Preprint. Journal article version that is submitted to the journal publisher to request acceptance and publication.

Printing. Processes of composition, duplicating, silk-screen processes, binding, and the end items of such processes.

Professional journals. Scientific, technical, and trade publications produced by professional, technical, and/or academic organizations.

Professional review. Review that may also be called editorial and content review; these are performed by individuals or groups with technical knowledge or background tempered by interdisciplinary expertise in history, education, and program management. Such reviews will assess the quality of the document content in terms of its readability, communication of information, and suitability for a particular audience without particular focus on content. Projected visual. Single image projected for viewing by a group.

Publication. Process of officially releasing a NASA document for public or restricted access through print, electronic, or alternative media. Also, the resultant document.

Publicly available. Availability assigned to STI information for which distribution and use are unrestricted (i.e., unclassified/unlimited).

Reports. See "NASA STI Report Series."

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Reprint. Version of journal article that is published in the journal by the publisher. It will typically have the date of publication and volume number. Some Federal agencies and publishers also call these the Version of Record manuscript.

Review paper. Comprehensive review of literature or other research that includes extensive analysis and comparison of the literature or research.

Scientific and technical information. NASA STI is defined as the results (the analyses of data and facts and resulting conclusions) of basic and applied scientific, technical, and related engineering research and development.

Secondary dissemination/distribution. Dissemination/distribution by NASA STI Program when an approved user or customer requests a document (dissemination on demand).

Security classified. Documents containing classified information as defined in NPR 1600.1, similar regulations, or directives of other Government agencies (e.g., the Department of Defense). Security classified documents are not handled by the STI program.

Sensitive But Unclassified (SBU). Unclassified information or material determined to have special protection requirements to preclude unauthorized disclosure. See NID 1600.55. Sensitive PII (Personally Identifiable Information). A subset of Personally Identifiable Information, which if lost, compromised, or disclosed without authorization, could result in substantial harm, embarrassment, inconvenience, or unfairness to an individual. See https://inside.nasa.gov/ocio/information/info_privacy/pii_faq.html.

Sponsored research report. Report that is sponsored by NASA but performed by another agency (CRSX) or sponsored by another agency but performed by NASA (TMSX).

STI Database. Database that contains NASA and NASA-funded STI. Also referred to as NASA Technical Reports Server.

STI Manager. Person responsible for the overall Center STI program in coordination with the Center Technical Publications Manager and Center DAA Representative.

Subject division. Specific subject areas used to categorize documents that are used in NASA announcement journals (e.g., aeronautics, astronautics, chemistry, and materials). A complete listing of the subject divisions and the subject categories included in each division covered by the STI repository is provided in Appendix I.

Symposia. Technical conferences, seminars, and similar meetings held by Government agencies, professional societies, universities, or industrial organizations.

Technical Publications Manager. Person who coordinates with the Center STI Manager and DAA Representative to ensure that STI activities assigned to the Center are handled as specified in NPD 2200.1 and NPR 2200.2. Accountable to the STI Manager.

Technical Review. Review that typically is performed by peers having expertise within the technical discipline of the activity or research being documented. These reviews assess the technical integrity and merit of the activity or research being performed and the results being documented without regard to the effectiveness of the document at communicating the information.

Third-party content. Content that does not originate from Federal Government employees or via Federal Government-funded work.

Trademark. Word or symbol that is used to identify a particular product or service in a way that distinguishes it from other similar products or services. A trademark may be registered.

Trade name. Trade name or commercial name that identifies a specific business, product, or vocation.

U.S. person. Person (as defined in §120.14 of this part) who is a lawful permanent resident as defined by 8 USC 1101(a)(20) or who is a protected individual as defined by 8 USC 1324b(a)(3). It also means any corporation, business association, partnership, society, trust, or any other entity, organization, or group that is incorporated to do business in the United States. It also includes any governmental (Federal, state, or local) entity. It does not include any foreign person as defined in §120.16 of this part. http://www.ecfr.gov/cgi-bin/text-idx?SID=54d7bfc8a6c5620fb214b0404c9d2245&mc=true&node=se22.1.120_115&rgn=div8

User registration. The process by which eligible organizations and individuals become authorized to receive STI services and products from the NASA STI Program.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Appendix B. Acronyms

ACI	Administratively Controlled Information
ANSI	American National Standards Institute
ASCII	American Standard Code for Information Interchange
BPR	Baseline Performance Review
CCL	Commerce Control List
CD	Compact Disc
CD-ROM	Compact Disc-Read-Only Memory
CFR	Code of Federal Regulations
CIO	Chief Information Officer
CNSI	Classified National Security Information
CO	Contracting Officer
COR	Contracting Officer's Representative
CP	Conference Publication
CR	Contractor Report
CUI	Controlled Unclassified Information
DAA	Document Availability Authorization (NF-1676)
DOD	Department of Defense
DVD	Digital Video Disc
EAR	Export Administration Regulations
EDAA	Electronic Document Availability Authorization
FAR	Federal Acquisition Regulations
FFRDC	Federally Funded Research and Development Center
FOIA	Freedom of Information Act
FOUO	For Official Use Only
GCAM	Grants and Cooperative Agreement Manual
GIC	Grant Information Circular
GO	Grant Officer
GPO	Government Publishing Office
GTO	Grants Technical Officer
HTML	Hyper Text Markup Language
IEEE	Institute of Electrical and Electronics Engineers
IIF	Information in Identifiable Form
ISBN	International Standard Book Number

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

ISO	International Organization for Standardization
ISSN	International Standard Serial Number
ITAR	International Traffic in Arms Regulations
JPL	Jet Propulsion Laboratory
LCCN	Library of Congress Control Number
MDAA	Mission Directorate Associate Administrator
MSOAA	Mission Support Office Associate Administrator
NARA	National Archives and Records Administration
NASA-STD	NASA Technical Standard
NF	NASA Form
NFS	NASA FAR Supplement
NID	NASA Interim Directive
NISO	National Information Standards Organization
NPD	NASA Policy Directive
NPR	NASA Procedural Requirements
NSR	National Security Review
NTIS	National Technical Information Service
NTR	NASA Technical Reports
NTRS	NASA Technical Reports Server
OCIO	Office of the Chief Information Officer
OIC	Official-in-Charge
OIIR	Office of International and Interagency Relations
OMB	Office of Management and Budget
OSTP	Office of Science and Technology Policy
PDF	Portable Document Format
PIC	Procurement Information Circular
PII	Personally Identifiable Information
PL	Public Law
PS	Post Script
RDP	Report Documentation Page (SF-298)
ROM	Rough Order of Magnitude
SAR	Same as Report
SATERN	System for Administration, Training, and Education Resources for NASA
SBIR	Small Business Innovation Research
SBU	Sensitive But Unclassified
SF	Standard Form

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

SFTP	Secure File Transfer Protocol
SP	Special Publication
STI	Scientific and Technical Information
STIPO	Scientific and Technical Information Program Office
STRN	Standard Technical Report Number
TM	Technical Memorandum
TP	Technical Publication
TRS	Technical Reports Server
TSP	Technical Support Packages
TT	Technical Translation
UPN	Unique Project Number
URL	Uniform Resource Locator, or Web address
USC	United States Code
USMA	U.S. Metric Association
UU	Unclassified/Unlimited
WBS	Work Breakdown Structure
WU	Work Unit number
XML	Extensible Markup Language

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Appendix C. Forms Used to Publish STI

C.1 Forms used to process STI include: NASA Form (NF) 1676, NASA Scientific and Technical (STI) Document Availability Authorization (DAA) and Instructions, the EDAA implementation of this form, and the Report Documentation Page (SF-298).

C.1.1 See the latest version and instructions for the NF1676 and EDAA at https://nef.nasa.gov/ (Internal to NASA).

C.1.2 NASA requires this form for all STI to be published and disseminated external to NASA or presented at internal meetings at which foreign persons are invited or likely to be present.

C.2 NF1676B and Instructions: Note: At the time this NPR was approved, some seven Centers were converting to and/or already using the Agency EDAA system, which is the NF1676B. Other Centers continue to use the electronic version of the NF1676 (see http://nef.nasa.gov (internal to NASA) or Center-based DAA systems).

C.3 SF298: See http://www.gsa.gov/portal/forms/download/116146 for this form. If the EDAA is used, the SF298 is not required because the EDAA encompasses data elements of the SF298.

C.4 NASA Supplementary Instructions to Complete Standard Form (SF) 298, Report Documentation Page (RDP): NASA uses this intergovernmental form (available at http://www.gsa.gov/portal/forms/download/116146) that does not allow customization. Look for special notes (NOTE) if NASA's procedures differ slightly from other agencies.

Block 1:	NOTE: NASA uses month and year (February 2015) on the covers and title pages of its documents. However, this OMB form is coded for block 1 to accept data in the following format: day, month, and year (ex.: day (23), month (02), year (2015) or 23-02-2015, which means February 23, 2015). For this block, use the actual date of publication (on the cover and title page and add 01 for the day. Example is March 2015 on the cover and title page and 01-03-15 for block 1.
Block 2:	Technical Publication, Technical Memorandum, etc.
Block 3:	Optional for NASA
Block 4:	Insert title and subtitle (if applicable)
Block 5a:	Complete if have the information
Block 5b:	Complete if have the information

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Block 5c:	Optional for NASA
Block 5d:	Optional for NASA; if you have a cooperative agreement number, insert it here
Block 5e:	Optional for NASA
Block 5f:	Required. Use funding number (work unit (WU) number, unique project number (UPN), work breakdown structure (WBS) number, etc.)
Block 6:	Complete (ex.: Smith, John J. and Brown, William R.)
Block 7:	NASA Center, City, State, Zip Code ex.: National Aeronautics and Space Administration Langley Research Center Hampton, Virginia 23681-2199 You can also enter contractor's or grantee's organization name here, below your NASA Center, if they are the performing organization for your Center
Block 8:	Center tracking number (ex.: L-17689)
Block 9:	National Aeronautics and Space Administration Washington, DC 20546-0001
Block 10:	NASA (and other organization, if applicable)
Block 11:	ex.: NASA/TM - 2015-123456
Block 12:	ex.: Unclassified-Unlimited Subject Category: ex.: 71 (see http://www.sti.nasa.gov/sti-tools/) If unclassified, unlimited, and Web compliant, "Available electronically via the NASA Technical Reports server at http://www.ntrs.nasa.gov. If restricted or limited, also put restriction or limitation on cover and title page.
Block 13:	ex.: Smith and Brown, Langley Research Center. An electronic version can be found at http://_____, etc.
Block 14:	Self-explanatory

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Block 15:	Use terms from the NASA Thesaurus http://www.sti.nasa.gov/sti-tools/ Subject Division and Categories Fact Sheet http://www.sti.nasa.gov/sti-tools/ or Machine-Aided Indexing tool http://www.sti.nasa.gov/nasaonly/webmai/
Block 16a, b, c:	Complete all three
Block 17:	UU (unclassified/unlimited) or SAR (same as report)
Block 18:	Self-explanatory
Block 19a:	NASA STI Information Desk (e-mail: help@sti.nasa.gov)
Block 19b:	NASA STI Information Desk at: 757-864-9658

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Appendix D. Types of NASA STI Publications and Related Procedural and Standards Information

D.1 Description of NASA STI Report Series.

D.1.1 For information regarding the selection of a report series, see the following table. This table lists the types of documents that may be published and disseminated in the NASA Scientific and Technical Information (STI) Report Series.

Manuscript contents	Appropriate series
Article for a professional journal	None required; TP for expanded treatment and TM for preprint
Article for a technical magazine	None required; TP for expanded treatment and TM for preprint
Atlas of scientific imagery	TP or SP
Bibliography continuing extensive annotation	SP TP
Minimal annotation	TM
Contractor or grantee results and findings	CR, TP, or SP
Critical review of the literature	TP
Critical tables	TP
Data compilation extensive use limited use	TP TM
Design standards	TP
Dissertation or thesis by employee, relating to work	TM
Dissertation or thesis by NASA contractor or grantee (if funded by NASA)	CR
Engineering report	TP
Handbook	TP
History	SP
Letter (e.g., for a professional journal)	None required
Limited distribution report	TP, TM, CR
Literature survey, review	TP
Management report	SP (6000 series)
Manual	TP or TM

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Monograph	TP
Preliminary results report	TM
Preprint of paper for a professional meeting	TM
Proceedings of a workshop, conference, seminar, etc.	Conference Publication (CP)
Program description or summary	SP
Report to another agency	TM
Research report	TP
Review paper	TP
Security-classified report	TP, TM, CR
Sponsored research report NASA sponsor Non-NASA sponsor	CR TM
State-of-the-art review	TP
Technical report--complete, comprehensive	TP
Textbook, scientific or technical	TP
Translation	TT
Working paper (external circulation)	TM

D.1.2 The TP series comprises reports of completed research or of a significant phase of research that present the results of NASA programs. TPs usually include extensive data or theoretical analysis, but they may also be compilations of significant scientific and technical data or information deemed to be of continuing reference value. TPs are akin to professional or technical publications that are peer-reviewed. However, TPs have less stringent limitations on manuscript length and extent of graphic presentations often imposed by professional and society publishers. In addition to reports documenting research, the types of documents assigned to this series also include the following:

a. Bibliographies of STI literature in defined subject areas with abstracts and/or extensive annotation.

b. Technical handbooks, critical tables, and extensive data compilations.

c. Design standards documented in the NASA Technical Standards Program, in accordance with NPD 8070.6.

d. Scientific and technical textbooks and manuals.

e. State-of-the-art summaries, including critical reviews or surveys of a body of scientific or technical literature.

f. Technical reports or monographs that provide complete and comprehensive treatment of significant contributions to scientific and technical knowledge or a critical evaluation of selected, previously published research.

D.1.3 The TM series records scientific and technical findings that are preliminary or of specialized

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

interest (e.g., quick-release reports, working papers, and bibliographies) that contain minimal annotation. TMs do not contain extensive analysis. The types of documents assigned to this series include:

a. Preliminary data (quick-release reports).

b. Working papers for professional peers beyond the basic work unit or for external circulation.

c. Individual papers prepared for presentation at or preprints for professional meetings or symposia which may or may not be published in proceedings or journals.

d. Preliminary proceedings of professional meetings or symposia sponsored or cosponsored by NASA. When the proceedings are not complete, the extent of the content (e.g., abstracts only or primarily projected visuals) is indicated in block 13, SUPPLEMENTARY NOTES, of Standard Form (SF) 298, Report Documentation Page (RDP).

e. Theses or dissertations that relate to Agency work, written by NASA employees only.

f. Bibliographies that are written by NASA employees, contractors, and grantees that present listings of STI literature with minimal annotations.

g. Computer program application documentation in an STI report or item (actual computer programs fall outside the STI Program).

h. Limited-use data compilations.

i. Reports to other agencies or non-NASA-sponsored research results.

D.1.4 The CR series comprises reports of scientific and technical findings by NASA-sponsored contractors and grantees as well as dissertations or theses by NASA contractors or grantees (if funded by NASA).

D.1.4.1 CRs may contain findings of completed or significant scientific and technical work or findings of preliminary or specialized interest. All CRs are subject to the minimum review requirements listed in Section 4.2.4. See also Appendix E.

D.1.4.2 A final report or non-required report authored by a contractor or grantee may be selected by the NASA COR or technical management for publication as a NASA SP, TP, or as part of a CP in lieu of publication as a CR (see Appendix D.1.5.2 for CP requirements.) A given report may be published in one series only. (See Appendix D.1.5.2 for CP exception). Such reports meet all criteria for the selected series and are reviewed and approved at the level(s) required for that series.

D.1.5 The CP series contains collected papers from scientific and technical conferences, symposia, seminars, or other meetings sponsored or cosponsored by NASA. Conference proceedings may be preprinted as a TM and distributed to attendees at conferences even though distribution as a CP is planned.

D.1.5.2 It is sometimes practical to publish a conference proceedings in both series. For example, if a significant amount of time will elapse between presenting the abstracts and illustrations as a TM and the full proceedings as a CP, or if handouts of the abstracts are needed for the conference and the papers have not yet been collected, publication in both series would be appropriate. When abstracts have been published as a TM and the proceedings are subsequently published as a CP, an entry in block 13, SUPPLEMENTARY NOTES, of the RDP for the CP indicates that the CP supersedes the

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

TM.

D.1.6 The SP series--which records scientific, technical, or historical information from NASA programs, projects, and missions--is most often concerned with subjects having substantial public interest. The STI Program assigns numbers for SPs in the under-3000 and 3000-3999 range series; the Agency History Office assigns numbers for SPs in the 4000 range series. Examples of topics covered by this series and the ranges of numbers assigned to the various topics include the following:

a. General series (numbered below 3000, e.g., NASA/SP-2015-2999).

b. Handbooks and data compilations (numbered in 3000 series, e.g., NASA/SP-2015-3000).

c. The history and chronology series (numbered in 4000 series, e.g., NASA/SP-2015-4000) follows:

(1) 4000: Reference works

(2) 4100: Management histories

(3) 4200: Project histories

(4) 4300: Center histories

(5) 4400: General histories

(6) 4500: Monographs in Aerospace history

(7) 4600: Electronic media (CDs and DVDs)

(8) 4700: Historical conference proceedings

(9) 4800: Societal impact of spaceflight

D.1.6.1 Numbers in the 5000 range were originally assigned to technology utilization information, but this type of information is now published outside the NASA STI Report Series.

D.1.6.2 The management publications series (numbered from 6000 to 6999, e.g., NASA/SP-2015-6000) documents requirements, plans, theories, or techniques for management or administration of NASA-sponsored scientific and technical work. It includes NASA projects or programs that have application to more than one Center, to other Government agencies, or to partnerships with industrial or international organizations. Although reports discussing methods of scheduling, funding, or staffing may be included, reports containing specific costs or labor figures are not appropriate. When the primary content of a report is scientific findings or technical development, another series, such as TM or TP, is to be used.

D.1.6.3 The bibliographic series (numbered from 7000 to 7999, e.g., NASA/SP-2015-7000) includes regularly published abstracts, continuing bibliographies, indexes, publication guides, and announcement journals.

D.1.7 The TT series consists of English-language translations of non-English scientific and technical material pertinent to NASA's mission. A translation of material protected by copyright is a derivative work, the distribution of which is constrained by international copyright law. However, TTs are retained at NASA STI Program for U.S. Government use subsequent to the initial request for the translation. See Appendix D.6.6.4 for more information on translations.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

D.2 NASA STI Report Series Procedural Information.

D.2.1 The STI program uses a standard numbering system based on American National Standards Institute (ANSI)/National Information Standards Organization (NISO) Z39.23, "Standard Technical Report Number (STRN) Format and Creation," to ensure the assignment of unique report numbers to the NASA STI Report Series. The report numbers are composed essentially of the Agency acronym (NASA), a series acronym (e.g., TM), a publication year (e.g., 2015), and the report number. The report number appears on the front cover, title page, and RDP of all NASA STI Report Series documents in the standard STI report number format (e.g., NASA/TM-2015-123456). Report numbers for revised reports, reports comprising more than one volume, or reports with supplements include the appropriate suffix(es) (e.g., NASA/TM-2015-123456/REV2, NASA/TM-2015-123456/VOL2, or NASA/TM-2015-123456/SUPPL2). If more than one suffix is used, it is connected to the other suffix(es) with a hyphen (e.g., NASA/TM-2015-123456/REV2-VOL2).

D.2.2 For documents that are published in English and another language, use the same NASA number but add the language in parentheses (e.g., NASA/TP - 2015-123456 (in English) and NASA/TP - 2015-123456 (in Russian)).

D.2.3 Report numbers are requested during the development of a NASA STI Report Series document. Report numbers are obtained by sending a request for the report number to the Center STI Manager, who requests the number from the NASA STI Program Information Desk via mail, fax, or e-mail (http://www.sti.nasa.gov).

D.2.3.1 The request is made by a Center Publications Office representative.

D.2.3.2 The request includes the requester's name, phone number, fax number, mail stop, e-mail address, and the type of report number requested. The report number is issued to the recipient within one working day of the request receipt.

D.3 Standards for NASA STI Report Series Publications.

D.3.1 These standards apply to the NASA STI Report Series regardless of the medium chosen (e.g., electronic, audio, CD, DVD, Web site, etc.). Although the data elements detailed here are required, the formatting of the STI may be adapted as necessary to fit the media. Publication of NASA STI in any media conforms to NASA's information technology standards and guidelines as specified in NPR 2810.1. See Section 1.4.4 for minimum standards for cases in which there is limited funding for producing the documents or media. Page mechanics for the NASA STI Report Series standard front and back covers and title pages are depicted in Appendix F of this document. Appendix F also illustrates the use of the standard elements (report number, title, etc.) described in Appendix D.3.5.1. The covers and title pages in Appendix F are available on the NASA STI Program home page (http://www.sti.nasa.gov, Publish STI). The use of the standard covers and title pages depicted in Appendix F is required for printed STI.

D.3.2 For electronic or alternative media, layouts may be adapted as needed; however, the standard data elements are to be included regardless of media.

D.3.3 Use of color.

D.3.3.1 The author should consider if the use of color in the STI is necessary to convey scientific and technical material in a clear and unambiguous manner rather than being merely decorative. The

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

use of color in duplicating or printing is in accordance with NPD 1490.1. In situations in which color is used, additional symbols (such as different types of lines and patterns) should be added, if possible, so that the meaning is clear in black and white.

D.3.3.2 Alternatively, the actual color name may be indicated on the key and data to accommodate Web presentation and Public Law (PL) 105-220, Title IV of the Rehabilitation Act, Subsection 508 compliance requirements. See Appendix D.3.11.4 for additional considerations of Section 508 compliance for documents to be posted on Web sites.

D.3.4 The design and content of the front and back covers and title pages of NASA STI Report Series Publications, except for SPs, are standardized in accordance with industry standards, such as American National Standards Institute (ANSI)/National Information Standards Organization (NISO) Z39.18, Scientific and Technical Reports - Preparation, Presentation, and Preservation, and Agency standards, such as those detailed in NPD 1490.1. This standardization provides a recognizable NASA image, speed, and economy of production and reproduction, consistency of cataloging information, and lowest recycling cost. Therefore, the front and back covers and title pages of NASA STI reports, except for SPs, contain the standard elements listed in Appendix D.3.5.1-6. See Appendix F for samples.

D.3.4.1 Standard elements for front covers follow:

a. Report number(s). If another Agency's, Center's, or contractor's report or document number is added to the NASA report number, it is positioned to the right or below the NASA report number.

b. NASA insignia; other logos (see Appendix D.3.8).

c. Title of report.

d. Author name(s), affiliation(s), and location(s).

e. Optional one-color line art or black-and-white photo or image.

f. Distribution notices if applicable, See Chapter 4 and Appendix I, including limitations and restrictions such as:

g. International Traffic in Arms Regulations (ITAR), Export Administration Regulations (EAR), Sensitive But Unclassified (SBU), Small Business Innovation Research (SBIR), proprietary information, or copyright notices are placed on the cover, title page, RDP, and the appropriate restriction on each inside page on which the SBU information is displayed. Note that other Federal agencies might use the term Controlled Unclassified Information (CUI).

h. Authors may choose to add conference information, such as conference name, location, dates, and sponsor.

i. Joint project or sponsorship information, if appropriate.

j. Rule (graphic straight line).

k. Month and year.

D.3.4.2 The standard element for the back of front covers is the NASA STI program profile.

D.3.4.3 Standard elements for title pages include all cover elements (except artwork) plus the following:

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

a. Editor name and affiliation, if applicable (for edited CPs, TPs, or TMs when the editor has contributed scientific and technical expertise and judgment).

b. Agency name and address (corporate source).

c. Contract statement and number, if applicable.

d. Joint project or sponsorship information, if appropriate.

e. Conference information (name of conference, location, dates, sponsors, etc.), if applicable.

f. Distribution notices, if applicable (see Chapter 4).

D.3.4.4 Standard elements for the backs of title pages follow:

a. Acknowledgment, if applicable.

b. Disclaimers, if applicable.

c. A statement announcing that the document is available from NASA STI Program. In some cases, the document may also be available from NTIS.

d. Documents that are marked to be available from NTIS are to be unlimited, unclassified (no restricted-access data). See the sample back of the title page in Appendix F.5.

e. International Standard Serial Number (ISSN), International Standard Book Number (ISBN), and/or Library of Congress Control Number (LCCN), if applicable (see Appendix G).

f. Level of technical or professional review.

D.3.4.5 The back cover is blank except for a rule (e.g., graphic straight line) at the bottom of the cover. If documents are printed, a mailing label that includes the addressee, the return address, and appropriate postage may be affixed to the Center of the back cover. No text or images other than the rule may be placed below the last line of the address on the mailing label.

D.3.4.6 Standard elements for spines follow (see Appendix F for a sample):

a. Report number.

b. Title.

D.3.5 NASA recommends the use of one-color line art and black-and-white photography on the front cover of NASA STI Report Series publications only in the image area, as illustrated in Appendix F. Such line art and photographs are required to meet the graphics standards of the originating Center. Line art on a cover is required to be approved by the Center's graphics coordinator.

D.3.6 The figure used on the cover is from the report that it is used on to ensure that it has received export review.

D.3.7 When NASA partners with or jointly funds work with another agency, noncommercial organization, or a university, the logo or seal of the cosponsor may appear on the cover to the right or below the NASA insignia will be in accordance with the NASA guidelines for the use of logos and insignia at http://www.nasa.gov/offices/ogc/ip/logo.html.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

D.3.7.1 The NASA insignia does not appear with the logos of private companies on publications. In rare exceptions, such as certain partnership situations, the Office of Communications, Public Service Division at Headquarters, may approve a proposed use.

D.3.7.2 NASA program organizational logos are not used on covers.

D.3.8 Sometimes a nonstandard design is needed for the front cover and title page of a NASA STI Report Series publication of particular note. Such designs contain the standard elements indicated in Appendix D.3.4.6. The use of a nonstandard design and the associated additional design labor cost are justified and authorized on a case-by-case basis using Center-specific procedures. The nonstandard design is in accordance with NASA Graphics Standards.

D.3.8.1 The nonstandard design needs to be approved by the Headquarters' or Center's graphics coordinator. For duplicated or printed publications, the requirements are set forth in NPD 1490.1 and approved by the Headquarters or Center Printing Officer for legality and necessity.

D.3.8.2 For information retrieval purposes, include the work unit (WU) number, work breakdown structure (WBS) number, or the unique project number (UPN) on the RDP in block 5f, WORK UNIT NUMBER.

D.3.8.3 For a symposium presentation preprinted as a TM or published as a CP, the meeting or symposium is identified in block 13, SUPPLEMENTARY NOTES.

D.3.8.4 The abstract included on the RDP is informative rather than descriptive. It states the objectives of the investigation, the methods employed (e.g., simulation, experiment, or remote sensing), the results obtained, and the conclusions reached.

D.3.8.5 The abstract is limited to a maximum of 200 words.

D.3.9 Revised Reports, Errata, and Corrected Copies.

D.3.9.1 See Sections 2.6.2-5.

D.3.9.2 Block 13, SUPPLEMENTARY NOTES, of the RDP indicates whether or not the revised report supersedes the original report.

D.3.9.3 The standards that apply to paper copy revisions also apply to electronic media. For example, a file on a Web site (such as on the public interface to the NASA Technical Reports Server) is not replaced with a revised file without indicating the appropriate revision elements and date of revision. Indicate on the cover that an erratum, a corrected copy, or a revision has been added along with the date of this action. In addition, on page iii insert a listing of the information that is being corrected. Distribution of revised electronic media is in accordance with the original distribution.

D.3.9.4 Other requests for correction are made to the Center's STI manager or by e-mail to NASA STI Program at help@sti.nasa.gov. You may also consult the STI help page at http://www.sti.nasa.gov/contact-us.

D.3.10 Special factors for document legibility.

D.3.10.1 Handwritten elements of any kind are not used in NASA STI Report Series documents.

D.3.10.2 Publications are required to be professional in appearance (i.e., completed using

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

word-processing or computer equipment).

D.3.10.3 Publications will be capable of electronic transmission.

D.3.10.4 It is important to produce publications that are legible in a variety of media.

D.3.10.5 Typefaces smaller than 10 points (or hard-to-read fonts online) on the original text affect quality and usefulness and are not to be used. Typefaces smaller than 8 points are not to be used on figure captions or the RDP.

D.3.11 Standards for Electronic and Alternative Media (Including Multimedia)

D.3.11.1 NASA requires that an electronic copy or Uniform Resource Locator (URL, or Web address) of all NASA STI Reports Series publications be submitted to NASA STI Program through the Center STI Manager or delegated Center organization.

D.3.11.2 Publications using multimedia components are acceptable; however, contact the Center Technical Publications Office and/or NASA STI Program to find out if the specific multimedia format can be reproduced and archived by NASA STI Program. If NASA STI Program cannot reproduce or archive the multimedia format, authors may be required to send additional copies.

D.3.11.3 When considering electronic and alternative media forms of disseminating of STI, authors are required to meet the content requirements of Appendix D.1, the data elements of Section 2.6, and the required reviews in Chapter 4, as well as the requirements of submittal to NASA STI Program. Although content and data elements are required, actual formatting and presentation of the STI may be adapted, as necessary, to fit the specific media.

D.3.11.4 Information that is presented on the Web is also required to comply with Section 508 requirements (PL 105-220, Subsection 508(a), as amended). Authors are advised that documents that extensively use a two-column format, that contain complex tables with table headers that span the column tables, or that use color (without supporting graphic symbols or indications in the text of what the color indicates) are difficult for visually impaired or other disabled persons to view or access with current assistive technology. In these situations, use of either a Hyper Text Markup Language (HTML) or Extensible Markup Language (XML) version in addition to the Portable Document Format (PDF) file may be useful.

D.4 Submittal of Publications to STI Program.

D.4.1 NASA requires that an electronic copy of STI be sent to NASA STI Program. Secure File Transfer Protocol (SFTP) to STI Program is the preferred method of transfer. As an alternative, NASA STI Program can be notified of the location of the STI if it resides on a Web site or in an existing document repository to which NASA STI Program may gain access. Submission of STI includes the transfer of both the electronic document and a copy of the approved DAA form through the Center's STI manager or technical publications office to NASA STI Program. Electronic files and alternative media (CD-ROM or DVD) submitted to NASA STI Program are required to conform to the medium-specific standards described in Sections 2.5.2-6. Also see Section 6.2.4.2 and Appendix C.2. For information regarding submitting electronic copies of export-controlled or limited access information, see Appendix D.4.3. . D.4.2 Contact your Center STI manager to electronically submit reports to NASA STI Program. STI Program Information Desk will provide the Center STI manager with procedures. NASA Centers transfer unlimited and unclassified electronic files to STI Program after the DAA review is completed. Restricted STI is encrypted (by

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

the Agency standard encryption). Transfer of files to NASA STI Program may occur via the following:

a. SFTP b. Electronic media c. CDs formatted to International Standards Organization (ISO) 9660 standards d. DVDs e. E-mail attachment (up to 20 megabytes) f. XML

D.4.3 Documents that are export-controlled, restricted, or limited are encrypted prior to sending to NASA STI Program. NASA STI Program does not accept classified STI, which is handled by the cognizant Center's security office.

D.4.4 NASA STI Program will accept the following electronic file formats, which are listed in order of preference:

a. Searchable PDF b. Postscript (PS), levels 1 and 2

c. American Standard Code for Information Interchange (ASCII), Microsoft Word, MS PowerPoint, and Corel WordPerfect

d. HTML - self-contained files only (files with links to external sources cannot be processed)

D.4.5 Submission requirements for electronic formats follow:

D.4.5.1 Store a single document in one file.

D.4.5.2 Store conference proceedings or other compilations of chapters, works, or papers in multiple files: one containing the complete document cover to cover and one file for each of the individual papers.

D.4.5.3 Include the completed RDP as the last page of the document file. (For SPs, include the RDP as a separate file.) Note that if the RDP is not the last page of the document file but is stored in a separate file, it will not become part of the document when printed or part of the full-text files available through the STI repository.

D.4.5.4 Send a copy of the DAA as a separate file. Do not include it in the document. The DAA provides NASA STI Program evidence of the DAA approval process and enables NASA STI Program to appropriately add the document to the STI repository and subsequently disseminate it.

a. In order for NASA STI Program to further distribute your document, provide the file in "publication format." This means that the file includes all pages required to output as a print product (i.e., covers, front matter, RDP, and blank pages). This will ensure proper page positioning throughout the document if it is printed.

b. Special formatting features such as thumbnails and bookmarks are not required, but PDFs containing them will be accepted by STI Program.

c. Do not apply a restriction or permission password to the PDF. These can cause problems for STI Program and end users.

D.4.5.5 NASA STI Program will accept CDs formatted to ISO 9660 standards and DVDs.

D.4.5.6 Two copies of the CD-ROM or DVD are submitted and accompanied by a copy of the DAA form in electronic format (a separate file from the alternative media).

D.4.6 NASA STI Program can accept the following compression format: Zip.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

D.4.7 File-naming conventions.

D.4.7.1 Name the file to clearly identify the contents using the report number or other identifying text, followed by the standard three- or four-character extension that represents the application:

a. NASATM-2015-123456.pdf

b. Rocketsandpeople.docx

D.4.7.2 A NASA CP submitted as one PDF file and each paper submitted as a separate file.

a. NASACP-209555.pdf (the cover-to-cover CP).

b. NASACP-209555.pdf-01 (the first paper in the CP, where -02 would be the second paper in the CP, etc.).

D.4.7.3 Symbols are not used in file names with the exception of underscores and hyphens.

D.4.7.4 An underscore is used for the DAA file (e.g., Filename_DAA.pdf).

D.4.7.5 Do not use either forward (/) or backward (\) slashes because they have different meanings in Windows and UNIX systems.

D.4.8 The procedures for restricted-access information (information whose publication or distribution is restricted by law, regulation, or policy as defined in Section 4.2.4) are cited in Chapter 4.

D.4.9 For information regarding the handling of documents that were previously export-controlled or restricted-access but have subsequently been downgraded, see Section 2.6.9.

D.5 Availability of Electronic and Alternative Media Publications from NASA STI Program normally makes STI available as a searchable PDF. For information on other formats, contact the STI Program Office.

D.6 Standards for Protection of Intellectual Property.

D.6.1 Authorship.

D.6.1.1 With the exception of NASA histories, the authorship of NASA publications is reserved for persons who participate in the performance of the work from which the STI results and who can effectively defend the main technical content of the publication to a peer group. Because of the complexity of scientific and technical work, many publications have multiple authors. The authors' names appear in a sequence that indicates their respective responsibility for the reported results; that is, the first author is the chief contributor and writer, and other authors follow in the order of their responsibility for the work.

D.6.1.2 NASA employees are not listed as co-authors of CRs.

D.6.1.3 When NASA employees contribute to rather than monitor contract, grant, or cooperative agreement work, such work is published in another series such as TM, TP, or SP.

D.6.1.4 Recognition of editorship is justified when the editor has contributed scientific and technical expertise and judgment. It is appropriate to acknowledge significant contributions directly related to the substantive content or preparation of a NASA STI Report Series publication by individuals other

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

than the authors.

D.6.1.5 When an acknowledgment of contribution is warranted, it is included in a paragraph on the back of the title page.

D.6.2 References.

D.6.2.1 Reference to work by others is acknowledged in all NASA STI Report Series. Proper citation of references is the author's responsibility. The style and format of the reference list may follow accepted practice in the discipline of the report. When there is no preferred style, the name/date style of citation in text (e.g., Anders, 1971, 1972; Smith, 1974) with a corresponding reference list, alphabetized by name, is preferred.

D.6.2.2 Reference to unpublished work or information acquired through personal communication is clearly identified as such, and is not to be represented as published information, even if publication is pending.

D. 6.2.3 Internal reports that have not been approved for publication outside the originating Center are considered to be unpublished. This identification is included in a parenthetical note in the text and in the reference list with an appropriate notation such as unpublished, to be published, personal communication, or internal report.

D.6.2.4 Under no circumstances should an author represent another's work as his or her own.

D.6.3 Inclusion of copyrighted material.

D.6.3.1 Credit will be given for material taken from non-NASA publications and included in a NASA STI Report Series publication:

a. In the case of copyrighted source material, authors secure permission from the copyright holder to use, reproduce, and distribute the copyrighted material as part of a NASA STI Report Series publication and attach it to the EDAA. In addition, authors are responsible for ensuring that an appropriate copyright notice or acknowledgment (as directed by the copyright holder) is included within the text of the NASA STI Report Series publication.

b. Copyright status is entered on the RDP (block 12a), if used.

D.6.3.2 Any questions regarding obtaining such permissions or for acknowledging a copyright is referred to the NASA Headquarters' or the Center's patent or intellectual property counsel (see Section 4.5.16 and Appendix D.6.5).

D.6.3.3 When NASA is granted permission by the copyright holder to use copyrighted material in connection with a NASA-sponsored meeting or conference, the following copyright notice is used:

> Copyright (c) [year of first publication] [name of copyright owner]. NASA has been granted permission to publish and disseminate this work as part of [name of CP]. All other rights retained by the copyright owner.

D.6.3.4 For notices of copyrighted information applicable to other situations or other rights granted (e.g., assignment or license for Government purposes only), contact the Center patent or intellectual property counsel.

D.6.4 The use of trademarks and trade names is discouraged because NASA considers it improper to

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

advertise, endorse, or criticize commercial products or services in its publications. Use generic names whenever possible. Trademarks may be included if their use is the only way to specify material or equipment that is necessary to reproduce the results. However, in such cases, a trademark is used as a proper adjective (i.e., capitalized and modifying the generic term) and on its first appearance in the text is accompanied by the name of its registered owner. When trade names and trademarks are used in a publication, a disclaimer such as the following is added to the publication on the back of the title page:

> Trade names and trademarks are used in this report for identification only. Their usage does not constitute an official endorsement, either expressed or implied, by the National Aeronautics and Space Administration.

D.6.5 Copyright status.

D.6.5.1 No U.S. copyright protection is available for a work of the U.S. Government: that is, a work produced by an employee of the U.S. Government as part of his or her official duties (see 17 USC, Section 105). For works produced by a NASA employee that are published outside the United States, NASA--as the employer--is the owner of any foreign copyright that can be asserted on the work. A publisher of a professional journal can republish a U.S. Government work, but the publisher cannot legally assert copyright in U.S. Government work as published unless the publisher has added original, copyright-protected material. In such a case, the publisher's copyright protection extends only to the original material that has been added by the publisher. If a publisher publishes a U.S. Government work and does not add original, copyright-protected content, NASA may reproduce and disseminate an exact copy of the published work either in paper copies or on a NASA public Web site. If the publisher adds original materials such as a publisher-prepared abstract or peer review comments, the NASA author and/or Center gets permission to reuse or republish the article that was published in the journal. However, NASA may use the U.S. Government work as originally submitted to the publisher for any purpose.

D.6.5.2 Unlike works of the U.S. Government, works produced under a Government contract, grant, or cooperative agreement are protected under U.S. Copyright Law. The author or initiator of the DAA review enters a contractor or grantee's ownership of copyright on the DAA form (check Copyrighted in Section 3c and include a distribution limitation, if appropriate, in Section 3d). The appropriate Notice for Copyrighted Information is placed on the cover, title page, and RDP with any additional information shown on the back of the title page (see Chapter 4 and Appendix I, Exhibit I.6).

D.6.5.3 Unless provided otherwise in the contract , a contractor may assert, without prior approval of the CO copyright in scientific and technical articles based on or containing data first produced in the performance of the contract and published in academic, technical, or professional journals; symposia proceedings; or similar works. The contractor does not assert copyright in any other data produced under a Government contract (e.g., final reports or other deliverables) unless permission is granted in writing by the CO or by the terms of the contract. When copyright is asserted, the contractor includes a copyright notice and acknowledgment of Government sponsorship (including contract number) on any published reports; and the Government, and others acting on its behalf, receive a license to reproduce, publish, or otherwise use the copyrighted work for governmental purposes. If copyright has not been asserted, the Government has unlimited rights in data first produced under the contract. Consult the NASA Headquarters' or the Center's patent or intellectual property counsel with questions regarding permissible use of works copyrighted by NASA. Whether or not a contractor has asserted copyright, the contractor may publish data produced or specifically

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

used by the contractor in the performance of the Government contract in compliance with the data rights clause in the contract. Under the standard data rights clause (see FAR 52.227-14), contractors may use, release to others, reproduce, distribute, or publish unless the information is subject to export-control or national security laws or regulations or includes restrictive markings as described in Section 4.2.5.6. Contact the Center's patent or intellectual property counsel for additional information.

D.6.5.4 Terms and conditions in grants and cooperative agreements generally allow the grantee to assert copyright. NASA has adopted, in 2 CFR 1800, OMB Uniform Administrative Requirements, Cost Principles, and Audit Required for Federal Award as found at 2 CFR 200. 2 CFR 200.315 provides that a grantee may assert copyright in any work that was developed under the grant or cooperative agreement. The Government obtains a license to reproduce, publish, or otherwise use the work for Federal purposes and to authorize others to do so. For cooperative agreements with commercial firms, when cost share is required, see 14 CFR Sections 1274.208 and 1274.905. The terms of the particular cooperative agreement specify respective rights of the parties. Contact the Center's patent or intellectual property counsel or the NASA Shared Services Center to determine copyright terms in the cooperative agreement.

D.6.5.5 When an article produced under a NASA-funded contract, grant, or cooperative agreement is published in a professional journal, the non-Government author often assigns copyright to the publisher. Under the contract, grant, or cooperative agreement, NASA has a license to use and distribute such articles as submitted to the publisher; however, permission from the publisher is obtained to reuse or republish the article as published in the journal. In addition, other non-Government works in a journal may be copyrighted by their authors or assigned to the publisher, and the publisher may copyright the layout of the entire journal (i.e., the selection, coordination, or arrangement of articles in the journal).

D.6.5.6 NASA does not reuse or republish entire publications such as conference proceedings or technical journals unless permission is obtained from all copyright owners involved.

D.6.6 Publishers' Agreements.

D.6.6.1 If a NASA-authored work is to be published by a commercial publisher, authors consult the NASA Headquarters' or the Center's Patent or Intellectual Property Counsel concerning any agreements with publishers. Questions regarding whether a work was prepared as part of an employee's official duties are referred to the NASA Headquarters' or the Center's patent or intellectual property counsel.

D.6.6.2 Generally, commercial publishers seek an assignment of copyright in works that they publish. If requested to sign a publisher's agreement, NASA employees inform the publisher of their employment status and do not sign any document purporting to transfer a U.S. copyright as a prerequisite to publication.

a. For papers authored only by Government employees, NASA authors inform publishers that the paper is a U.S. Government work and is not protected in the United States under the U.S. Copyright laws and that, therefore, there is no U.S. Copyright to be transferred. In addition, a U.S. Government work may be protected under foreign copyright laws. If NASA approves transfer of a foreign copyright, an agreement to transfer the foreign copyright is executed by the NASA General Counsel and reserves a Government license in the work.

b. Some publisher agreements, such as for academic and scientific journals, include a signature

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

block for the U.S. Government author. The Government author certifies in that block that the manuscript was prepared as part of that author's official duties.

c. NASA authors may sign such signature blocks. If this signature block is missing, the following statement is included either on the agreement or in a cover letter:

> The work entitled [add title] was prepared as part of my official duties as an employee of the U.S. Government and, in accordance with 17 USC 105, is not available for copyright protection in the United States.

D.6.6.3 If the work is a joint effort with a person whose contribution was not made as part of official duties as a U.S. Government employee, the statement informs the publisher that the employee prepared the work as part of official duties as a U.S. Government employee in co-authorship with another person, identify the co-author(s), and request the publisher to note that the U.S. Government contributed to the published work.

D.6.6.4 For works protected by copyright (i.e., not in the public domain) permission of the copyright holder is required before a work may be translated from one language to another. Such a translation is considered to be a derivative work under copyright law. Permission to translate a work and to make and distribute copies of the translation is obtained from the copyright holder. Any questions regarding obtaining such permission are referred to the NASA Headquarters' or the Center's patent or intellectual property counsel.

D.7 Disclaimers.

D.7.1 The use of disclaimers is acceptable; however, avoid the use of disclaimers that call attention to unedited material or deny technical responsibility of the issuing Center. Disclaimers are placed on the back of the title page.

D.7.2 A disclaimer is acceptable if it is employed to alert the reader that a particular publication:

a. Is a presentation of preliminary findings, subject to revision as analysis proceed. b. Is a formal draft or working paper, intended to solicit comments and ideas from a technical peer group. c. Is a preprint of a paper to be presented at a professional meeting. d. Uses a trade name or trademark for accurate reporting and does not intend endorsement. e. Gives acknowledgment. f. Gives availability of the document (from NASA STI Program or NTIS). g. Indicates the ISSN. h. Indicates the level of technical or professional review (see Section 2.11).

D.7.3 For preprints, include the following disclaimer, or a similar disclaimer, if applicable, on the cover and back of the title page:

> This is a preprint of a paper intended for presentation at a conference. Because changes may be made before formal publication, this preprint is made available with the understanding that it is not to be cited or reproduced without the permission of the author.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Appendix E. Documentation, Approval, and Dissemination Procedures

E.1 General Procedures.

E.1.1 When planning a publication, it is recommended that authors contact the NASA Center Technical Publications Office or STI Manager to discuss the publication's outline and format, production, authorization, review and approval, printing or reproduction (if applicable), distribution, and deadline requirements.

E.1.2 The NASA Center Technical Publications Office or STI Manager assesses, with the author and his or her technical management, the following:

a. Series in which the STI Report Series is published, based on the content and intended audience and the applicable subject categories (see Appendix D and Appendix K)

b. Review and approval requirements

c. Level of edit and production effort

d. Artwork and functional color requirements

e. Estimated length and number of copies (if applicable)

f. Electronic file requirements

E.1.3 The NASA Center Technical Publications Office or STI Manager coordinates with the Center Printing Officer to estimate the required production and printing costs (if applicable) and provides the resulting cost information to the author.

E.1.4 The Center Technical Publications Office or STI Manager helps to determine the existing policy for funding of the publication, if applicable.

E.1.5 The NASA Center Technical Publications Office or STI Manager obtains a report number in the appropriate series from NASA STI Program, if applicable (see Appendix D.2.4).

E.1.6 The author, COR, or GTO ensures that the required reviews are completed and that approvals are obtained (see Chapter 4).

E.1.7 The author delivers the manuscript to the NASA Center technical publications office in draft, final, or camera-ready form (if the report is to be printed or reproduced in hard copy) accompanied by the following:

a. A completed RDP, which is included as the last page of the report for all NASA STI reports SPs (see Appendix C). For SPs, a completed RDP is included but submitted as a separate file.

b. The DAA form. Production of the report may begin prior to the submittal and approval of the DAA. The report is not released without an approved DAA (see Chapter 4).

c. Additional approvals include any other approvals and/or authorizations required by the NASA Headquarters office or Center authorizations including, but not limited to, publishing and release

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

authorizations, funding authorization, professional and technical review approvals, security officer approvals, and printing and duplicating authorizations.

E.1.8 The NASA Center Technical Publications Office or STI Manager ensures that the manuscript is reviewed for conformance to the standards in Section 2.6 and to NASA Headquarters or Center standards and recommends and/or incorporates final changes to produce the final copy.

E.1.9 The author and the Center Technical Publications Office or STI manager review and approve the final copy.

E.1.10 NASA STI Program disseminates STI in electronic formats. If an author or Center also determine the need to print the document in hard copy, it is the responsibility of the respective Center to do so in addition to supplying the electronic file to NASA STI Program. For requirements for alternative forms of electronic media (CDs or DVDs), contact your Center Technical Publications Office or STI Manager.

E.1.11 A minimal DAA, which may be submitted in an e-mail, contains the following information:

a. Title of document b. Report number of document (if applicable) c. Publication date of document (if available) d. Person and Center sending the e-mail e. Confirmation that the document has been reviewed for export control and intellectual property restrictions f. Confirmation that the document has been reviewed by a technical reviewer or program/project manager or branch head g. Date reviewed h. Required dissemination instructions

E.1.12 NASA has four types of dissemination/distributions of its STI:

a. Initial (primary) - Dissemination or distribution made at the time the report is first produced b. Center c. Author d. Secondary (i.e., requests on demand)

E.1.13 The NASA STI Program is responsible for the distribution of STI in electronic formats. For STI in alternative media formats (CDs or DVDs) and for alternative media format supplements to electronic STI, the Center provides to NASA STI Program the number of copies necessary for distribution. If a Center elects to do a hard-copy printing, the Center is still required to send an electronic file to NASA STI Program.

E.1.14 NASA STI Program provides the widest practicable dissemination of publications in the NASA STI Report Series. If the document is unclassified/unlimited, NASA STI Program sends a copy to NASA Centers, domestic and international organizations, corporations, and universities that are registered with NASA STI Program to receive NASA STI publications in any or all of the 11 broad subject divisions. This includes other Government agencies, NTIS, the Superintendent of Documents/GPO, and the Federal Depository libraries (unclassified/unlimited STI only).

E.1.15 NASA STI Program makes the appropriate distribution on the basis of the approved registration. NTIS, the Superintendent of Documents/GPO, and the Federal Depository libraries do not handle restricted information. Centers are not approved to distribute restricted documents other than to NASA STI Program and to authors who are approved to receive them. Any distribution by an author is reviewed by the appropriate Center's personnel (export control, general counsel, etc.).

E.1.16 Unclassified NASA STI is submitted to NASA STI Program. NASA STI Managers, CORs, or GTOs ensure that copies of all unclassified publications are forwarded in the appropriate electronic formats to NASA STI Program once the publications have been approved via the DAA process. See http://www.sti.nasa.gov/, Publish STI, Draft STI, Electronic File Formats for

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

appropriate types of electronic formats. For unclassified STI containing restricted-access information as described in Section 4.2.4, use the notices indicated in Chapter 4 and Appendix I. Such STI is electronically transferred in an encrypted format approved by NASA or sent in hard-copy or electronic form on CD-ROM, or DVD if encryption is not available.

E.1.16.1 One electronic copy of each NASA STI Report Series publication is sent to NASA STI Program. One hard copy is requested but not required. (The hard copy may be used to validate that math and symbols have not encountered font or symbol substitutions during transmission.) For NASA STI reports that are submitted using alternative media that NASA STI Program cannot accommodate, contact NASA STI Program to determine the number of copies that are to be provided so that they can make the appropriate distribution.

E.1.16.2 Documents provided to NASA STI Program are processed into the STI database and announced in a variety of published bibliographies and other external resources.

E.1.17 A Center may elect to distribute copies of the STI internally to appropriate approved personnel (such as to their records management office, export control office, or other specific organizations. The Center is responsible for this distribution.

E.1.18 Authors may also request that their Center provide a supplementary distribution of NASA STI publications to the initial distribution. The author distribution may include known authors in the field, conference registrants, members of organizations or groups known to have an interest in the field, and/or persons who have requested similar prior papers. This distribution may also contain the names of persons included in lists obtained from contractors and other agencies. For restricted-access STI, authors ensure that the names of potential recipients for this distribution have been approved by their Center management and Center export control prior to the Center or the author making this distribution.

E.1.18.1 Secondary distributions are sent to authorized requesters on demand. This distribution is the responsibility of NASA STI Program.

E.1.18.2 For additional information concerning announcement and dissemination or distribution, contact the STI Information Desk by phone, e-mail, or postal mail:

Phone:	757-864-9658
E-mail:	help@sti.nasa.gov
Postal Mail:	NASA STI Information Desk Mail Stop 148 NASA Langley Research Center Hampton, VA 23681-2199

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Appendix F. Front and Back Covers, Title Pages, and Spines

Cover samples illustrate the standard elements (e.g., report number and title) described in Appendix D.3.5 of this NPR. Templates are available on the NASA STI program home page (http://www.sti.nasa.gov/publish-sti/#rpt-temp). Two samples are given below that are not included in this URL.

F.1 Back of title page

Acknowledgments

Insert acknowledgments here. Insert acknowledgments here. Insert acknowledgments here. Insert acknowledgments here. Insert acknowledgments here.

Instruction: If the report is restricted or limited, delete National Technical Information Service address below.

This report contains preliminary findings subject to revisions as analysis proceeds.

This report is a formal draft or working paper intended to solicit comments and ideas from a technical peer group.

This report is a preprint of a paper intended for presentation at a conference. Because changes may be made before formal publication, this preprint is made available with the understanding that it will not be cited or reproduced without the permission of the author.

Trade names and trademarks are used in this report for identification only. Their usage does not constitute an official endorsement, either expressed or implied, by the National Aeronautics and Space Administration.

Level of Review: This material has been technically reviewed by technical management.

Available from

NASA STI Program
Mail Stop 148
NASA Langley Research Center
Hampton, VA 23681–2199

National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
703–605–6000

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

[Optional information]
Available in electronic form at http://

F.2 Front cover with limited distribution notice

Sensitive But Unclassified (SBU)/ITAR*

NASA/TM—Year–000000

First Line Title
Second Line Title
Third Line Title

Author(s) name(s)
Name of Center, City, State

Choose appropriate distribution from this list and place in box below.

U.S. Government Agencies and U.S. Government Agency Contractors Only

NASA Contractors and U.S. Government Agencies Only

U.S. Government Agencies Only

NASA Personnel and NASA Contractors Only

NASA Personnel Only

Available Only With Approval of Issuing Office, [Insert Program Office or NASA Center here.]

Name of Center, City, State ZIP

Distribution Limited to U.S. Person

International Traffic in Arms Regulation (ITAR) Notice

This document contains information which falls under the purview of the U.S. Munitions List (USML), as defined in the International Traffic in Arms Regulations (ITAR), 22 CFR 120–130, and is export controlled. It shall not be transferred to foreign nationals, in the U.S. or abroad, without specific approval of a knowledgeable NASA export control official, and/or unless an export license/license exemption is obtained/available from the United States Department of State. Violations of these regulations are punishable by fine, imprisonment, or both.

Insert statement here from block 3d on NF–1676 or from PR section 4.5.17.1.

WARNING: This document is SENSITIVE BUT UNCLASSIFIED (SBU). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C. 552) or other applicable laws or restricted from disclosure based on NASA policy. It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with NASA policy relation to SBU information and is not to be released to the public or other personnel who do not have a valid "need-to-know" without prior approval of an authorized NASA official (see NPR 1600.1).

***If the ITAR is determined to be SBU**

Month Year

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Sensitive But Unclassified (SBU)/ITAR*

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Appendix G. Reference List for STI Book Numbers

G.1 NASA STI Report Series Numbers (Required)

Authorized NASA Headquarters or Center personnel may obtain NASA STI Report Series numbers by:

a. Calling the NASA STI Information Desk at 757-864-9658.

b. Faxing the NASA STI Information Desk at 757-864-6500.

c. E-mailing the NASA STI Information Desk help@sti.nasa.gov.

d. Writing the NASA STI Information Desk, NASA STI Program, Mail Stop 184 Langley Research Center, Hampton, VA, 23681-2199.

G.2 Optional Items.

G.2.1 The International Standard Serial Number (ISSN) is:

a. Used for serial titles (periodicals, annuals, and other publications regularly issued under the same title).

b. Available from the Library of Congress, National Serials Data Program, Washington, DC 20540.

G.2.2 The International Standard Book Number (ISBN) is:

a. Used by libraries and bookstores as an aid in book publishing.

b. Available from the U.S. ISBN Agency, 630 Central Ave., New Providence, NJ 07974 (http://www.isbn.org).

c. Note: NASA maintains a block of ISBNs; for additional information on how to assign an ISBN for an STI document, contact the STI Program Office or the STI Information Desk (help@sti.nasa.gov).

G.2.3 The Library of Congress Card Control Number (LCCN) is:

a. Used for monographic publications selected and cataloged by the Library of Congress.

b. Available from the Library of Congress, Cataloging in Publication Division, Washington, DC 20540 (http://www.loc.gov/publish/pcn).

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Appendix H. Sample Errata for Cover Page, Back of Title Page, and RDP Page

Below is a sample errata for a cover page, back of title page, and RDP page.

Below is a sample errata for a cover page, back of title page, and RDP page.

NASA/TM–2016-000000 [Retain original report year and number.]

First Line Title

Second Line Title

Third Line Title

Author
Langley Research Center, Hampton, Virginia

An Erratum was added to this report [current] month 20XX

Month XXXX [Retain original report date.]

Erratum

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Cover page
Add the following statement:
An errata was added to this document, Month Year

Back of the title page (or insert as page iii)

Errata
Issued Month Year for

NASA/TM—Year–000000
Document Title
Author Name

Month Year

(List a summary of the changes)

RDP page (SF–298)
Insert the following statement in the supplementary notes:
An errata was added to this document, Month Year.

NPR 220, Section 2.8.20

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

NASA STI Program…in Profile

Since its founding, NASA has been dedicated to the advancement of aeronautics and space science. The NASA scientific and technical information (STI) program plays a key part in helping NASA maintain this important role.

The NASA STI program operates under the auspices of the Agency Chief Information Officer. It collects, organizes, provides for archiving, and disseminates NASA's STI. The NASA STI program provides access to the NTRS Registered and its public interface, the NASA Technical Reports Server, thus providing one of the largest collections of aeronautical and space science STI in the world. Results are published in both non-NASA channels and by NASA in the NASA STI Report Series, which includes the following report types:

- TECHNICAL PUBLICATION. Reports of completed research or a major significant phase of research that present the results of NASA Programs and include extensive data or theoretical analysis. Includes compilations of significant scientific and technical data and information deemed to be of continuing reference value. NASA counter-part of peer-reviewed formal professional papers but has less stringent limitations on manuscript length and extent of graphic presentations.

- TECHNICAL MEMORANDUM. Scientific and technical findings that are preliminary or of specialized interest, e.g., quick release reports, working papers, and bibliographies that contain minimal annotation. Does not contain extensive analysis.

- CONTRACTOR REPORT. Scientific and technical findings by NASA-

- CONFERENCE PUBLICATION. Collected papers from scientific and technical conferences, symposia, seminars, or other meetings sponsored or co-sponsored by NASA.

- SPECIAL PUBLICATION. Scientific, technical, or historical information from NASA programs, projects, and missions, often concerned with subjects having substantial public interest.

- TECHNICAL TRANSLATION. English-language translations of foreign scientific and technical material pertinent to NASA's mission.

Specialized services also include organizing and publishing research results, distributing specialized research announcements and feeds, providing information desk and personal search support, and enabling data exchange services.

For more information about the NASA STI program, see the following:

- Access the NASA STI program home page at http://www.sti.nasa.gov

- E-mail your question to help@sti.nasa.gov

- Phone the NASA STI Information Desk at 757-864-9658

- Write to:
  NASA STI Information Desk
  Mail Stop 148
  NASA Langley Research Center
  Hamption, VA 23681–2199

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

NASA/TM–2016-000000 [Retain original report year and number.]

First Line Title
Second Line Title
Third Line Title

Author
Langley Research Center, Hampton, Virginia

An Erratum was added to this report [current] month 20XX

National Aeronautics and
Space Administration

Glenn Research Center
Cleveland, Ohio 44135

Erratum

Month XXXX [Retain original report date.]

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Acknowledgments

Insert acknowledgments here. Insert acknowledgments here. Insert acknowledgments here.
Insert acknowledgments here. Insert acknowledgments here.

Erratum

Issued [current] month XXXX for

NASA/TM—XXXX–000000 [Original report year and number]
Report title
Author(s) name(s)

Month XXXX [Original report month and year]

[List information being corrected.]

[Add p. iii if more space is needed.]

[Do NOT correct the document content.]

[Do NOT change the footer or file name.]

Level of Review: This material has been technically reviewed by technical management.

Available from

NASA STI Program
Mail Stop 148'
NASA Langley Research Center
Hampton, VA 23681–2199

National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
703–605–6000

[Optional information]
Available in electronic form at http://

Erratum

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Erratum

Issued [current] month XXXX for

NASA/TM—XXXX–000000 [Original report year and number]
Report title
Author(s) name(s)

Month XXXX [Original report month and year]

[List information being corrected.]

[Do NOT correct the document content.]

[Do NOT change the footer or file name.]

Erratum

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188
The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.			
1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE		3. DATES COVERED *(From - To)*
4. TITLE AND SUBTITLE			5a. CONTRACT NUMBER
			5b. GRANT NUMBER
			5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)			5d. PROJECT NUMBER
			5e. TASK NUMBER
			5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)			8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSOR/MONITOR'S ACRONYM(S)
			11. SPONSOR/MONITOR'S REPORT NUMBER(S)
12. DISTRIBUTION/AVAILABILITY STATEMENT			
13. SUPPLEMENTARY NOTES			
14. ABSTRACT			
15. SUBJECT TERMS			
16. SECURITY CLASSIFICATION OF:		17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE		19b. TELEPHONE NUMBER *(Include area code)*

Standard Form 298 (Rev. 8/98)
Prescribed by ANSI St. Z39.18

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Appendix I. Notices for NASA STI Documents with Limited Distribution

Note: (Optional. Confer with Center STI Manger for best practice.) Insert the applicable document distribution limitation statement (shown below) from block 3d on NF–1676 or from Section 6.5.19.1.

U.S. Government Agencies and U.S. Government Agency Contractors Only

NASA Contractors and U.S, Government Agencies Only

U.S. Government Agencies Only

NASA Personnel and NASA Contractors Only

NASA Personnel Only

Available Only With Approval of Issuing Office, [insert Program Office or NASA Center here].

Name of Center, City, State Zip

Distribution Limited to U.S. Persons

Exhibit I.1.1 Distribution limitation statements

International Traffic in Arms Regulation (ITAR) Notice

This document contains information which falls under the purview of the U.S. Munitions List (USML), as defined in the International Traffic in Arms Regulations (ITAR), 22 CFR 120–130, and is export controlled. It shall not be transferred to foreign nationals, in the U.S. or abroad, without specific approval of a knowledgeable NASA export control official, and/or unless an export license/license exemption is obtained/available from the United States Department of State. Violations of these regulations are punishable by fine, imprisonment, or both.

Insert statement here from block 3d on NF–1676 or from NPR section 6.5.19.1

Exhibit I.1.2 International Traffic in Arms Regulations (ITAR) notice

Export Administration Regulations (EAR) Notice

This document contains information within the purview of the Export Administration Regulations (EAR), 15 CFR 730.774, and is export controlled. It may not be transferred to foreign nationals, in the U.S. or abroad, without specific approval of a knowledgeable NASA export control official and/or unless an export license/license exception is obtained/available from the Bureau of Industry and Security, United States Department of Commerce. Violations of these regulations are punishable by fine, imprisonment, or both

Insert statement here from block 3d on NF–1676 or from NPR section 6.5.19.1

Exhibit I.2 Export Administration Regulations (EAR) notice

Do not release on a public Web site.
See NPR 2810.1A "Security of Information Technology" for details.

Exhibit I.3 Notice for NASA Web guidelines

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Limited Rights Notice

These data are submitted with limited rights under Government Contract NAS3–00000 (and subcontract if appropriate). These data may be reproduced and used by the Government with the express limitation that they will not, without written permission of the Contractor, be used for purposes of manufacture nor disclosed outside the Government. This Notice shall be marked on any reproduction of these data in whole or in part.

Insert statement here from block 3d on NF–1676 or from NPR section 6.5.19.1

INFORMATION CONTANINED HEREIN IS PROPRIETARY IN ACCORDANCE WITH FAR 52 227–14.

Exhibit I.4 Limited Rights notice

SBIR Rights Notice

These SBIR data are furnished with SBIR rights under Contract NAS3–00000. For a period of 4 years after acceptance of all items to be delivered under this contract, the Government agrees to use these data for Government purposes only, and they shall not be disclosed outside the Government (including disclosure for procurement purposes) during such period without permission of the Contractor, except that subject to the forgoing use and disclosure prohibitions, such data may be disclosed for use by support contractors. After the aforesaid 4-year period, the Government has a royalty-free license to use, and to authorize others to use on its behalf, those data for Government purposes, but is relieved of all disclosure prohibitions and assumes no liability for unauthorized use of these data by third parties. This notice shall be affixed to any reproductions of these data, in whole or in part

Insert statement here from block 3d on NF—1676 or from NPR section 6.5.19.1

Date for public release: 00/00/Year

INFORMATION CONTAINED HEREIN IS PROPRIETARY FOR 4 YEARS IN ACCORDANCE WITH FAR 52.227–20

Exhibit I.5 Small Business Innovation Research (SBIR) Rights notice

Notice for Copyrighted Information

This manuscript has been authored by employees of Company name under Contract/Grant/ Cooperative Agreement No. NAX3–00000 with the National Aeronautics and Space Administration. The United States Government has a nonexclusive, irrevocable, worldwide license to prepare derivative works, publish or reproduce this manuscript for publication acknowledges that the United States Government retains such a license in any published form of this manuscript, All other rights are retained by the copyright owner.

Exhibit I.6.1 Notice for copyrighted information (prepared under contractors/grants/ cooperative agreements-)

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Notice for Copyrighted Information

This manuscript is a work of the United States Government authored as part of the official duties of employee(s) of the National Aeronautics and Space Administration. Not copyright is claimed in the United States under Title 17, U.S. Code. All other rights are reserved by the United States Government. Any publisher accepting this manuscript for publication acknowledges that the United States Government retains a nonexclusive, irrevocable, worldwide license to prepare derivative works, publish or reproduce the published form of this manuscript, or allow others to do so, for United States Government purposes.

Exhibit I.6.2 Notice for copyrighted information (Government works)

Notice for Copyrighted Information

This manuscript is a joint work of employees of the National Aeronautics and Space Administration and employees of Company name under Contract/Grant No. NAX3–00000 with the National Aeronautics and Space Administration. The United States Government may prepare derivative works, publish or reproduce this manuscript, and allow others to do so. Any publisher accepting this manuscript for publication acknowledges that the United States government retains a nonexclusive, irrevocable, worldwide license to prepare derivative works, publish or reproduce the published form of this manuscript, or allow others to do so, for United States Government purposes.

Exhibit I.6.3 Notice for copyrighted information (joint works)

Exhibit I.6. Notices for copyrighted information

Trade Secret and Confidential Commercial

If NASA STI is restricted due to trade secret or confidential commercial information, all distributed copies will contain the marking or legend supplied by the originator of the information and, if applicable, one of the document distribution limitations.

Sample statements

Trade Secret Notice

This information is furnished with trade secret information under NASA Contract NAS3–00000. For a period of 0 years after publications, the Government agrees to use this information for Government purposes only and it shall not be disclosed outside the Government (including disclosure for procurement purposes) during such period without permission of the Contractor, except that subject to the foregoing use and disclosure prohibitions, such information may be disclosed for use by support contractors. After the aforesaid 0-year period, the Government has a royalty-free license to use, and to authorize others to use on its behalf, this information for Government purposes, but it is relieved of all disclosure prohibitions and assumes to no liability for unauthorized use of this information by third parties. This notice shall be affixed to any reproductions of this information, in whole or in part.

Insert statement here from block 3d of NF–1676 or from NPR Section 6.5.19.1

Date for general release 00/00/Year

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Confidential commercial Notice
Because of patentable information contained within, this document is restricted to

Insert statement here from block 3d of NF–1676 section 6.5.19.1

Date for public release 00/00/Year

Confidential Commercial Notice
This document was written under U.S. Government Space Act Agreement _____ and is restricted to

Insert statement here from block 3d of NF–1676 section 6.5.19.1

Date for public release 00/00/Year

Confidential Commercial Notice
This document was written under U.S. Government License _____ and is restricted to

Insert statement here from block 3d of NF–1676 section 6.5.19.1

Date for public release 00/00/Year

Exhibit I.7. Trade Secret and Confidential Commercial notices

WARNING: This document is SENSITIVE BUT UNCLASSIFIED (SBU). It contains information that may be exempt from public release under the Freedom of Information Act (5 U.S.C. 552) or other applicable laws or restricted from disclosure based on NASA policy. It is to be controlled, stored, handled, transmitted, distributed, and disposed of in accordance with NASA policy relating to SBU information and is not to be released to the public or other personnel who do not have a valid "need-to-know" without prior approval of an authorized NASA official (see NID 1600.55).

In any document distribution limitation statement (from block 3d of NF–1676 section 6.5.19.1) other than NASA Personnel Only is chosen, include the boxed statement above on the COVER only. The Sensitive But Unclassified (SBU) marking below will be displayed with the appropriate notice (ITAR, EAR, SBIR, etc.) on the cover, title page, and Standard Form (SF) 298, Report Documentation Page (RDP), and the appropriate restriction on each inside page where the SBU information is displayed. Marking requirements will be in accordance with NID 1600.55 in lieu of NPR 1600.1.

SENSITIVE BUT UNCLASSIFIED (SBU)/ITAR

Exhibit I.8. SBU notice.

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Appendix J. Reference List for International System of Units (SI)

J.1 "Standard for Use of the International System of Units (SI)-The Modern Metric System" IEEE/ASTM-S1 10.

J.2 Reference List for SI Measurements: Artusa, Elisa A.: SI (Metric) Handbook. NASA TM-109197, 1994.

This reference provides information for understanding SI units, symbols, and prefixes, as well as style and usage in documentation in both the U.S. and in the international business community; conversion techniques; limits, fits, and tolerance data; and drawing and technical writing guidelines. It also provides information on SI usage for specialized applications like data processing and computer programming, science, engineering, and construction. Related information in the appendixes includes legislative documents, historical and biographical data, a list of SI documentation, rules for determining significant digits and rounding, conversion factors, shorthand notation, and a unit index. J.3 Institute of Electrical and Electronics Engineers: American National Standard Illustrations for Publication and Projection. ANSI Y15.1M, ANSI, New York, 1979 (1986).

J.4 USMA's Guide to the Use of the Metric System (SI Version). 15th ed., 2000.

J.5 ASTM International: SI Quick Reference Guide.
www.astm.org/DIGITAL_LIBRARY/MNL/PAGES/MNL12060D.htm

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

Appendix K. Database Subject Divisions and Categories

K.1 Divisions and Categories.

K.1.1 The subject divisions and categories used to catalog NASA STI reports before they are processed and entered in the STI repository internal interface follow.

K.2 For additional information concerning these subject divisions and categories, refer to http://www.sti.nasa.gov/sti-tools/

K.3 STI Repository Subject Divisions and Categories

AERONAUTICS

01 Aeronautics (General)
02 Aerodynamics
03 Air Transportation and Safety
04 Aircraft Communications and Navigation
05 Aircraft Design, Testing and Performance
06 Avionics and Aircraft Instrumentation
07 Aircraft Propulsion and Power
08 Aircraft Stability and Control
09 Research and Support Facilities (Air)

ASTRONAUTICS

12 Astronautics (General)
13 Astrodynamics
14 Ground Support Systems and Facilities (Space)
15 Launch Vehicles and Launch Operations
16 Space Transportation and Safety
17 Space Communications, Spacecraft Communications, Command and Tracking
18 Spacecraft Design, Testing and Performance
19 Spacecraft Instrumentation and Astrionics
20 Spacecraft Propulsion and Power

CHEMISTRY AND MATERIALS

23 Chemistry and Materials (General)
24 Composite Materials
25 Inorganic and Physical Chemistry
26 Metals and Metallic Materials
27 Nonmetallic Materials
28 Propellants and Fuels
29 Space Processing

ENGINEERING

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

31 Engineering (General) 32 Communications and Radar
33 Electronics and Electrical Engineering
34 Fluid Mechanics and Thermodynamics
35 Instrumentation and Photography
36 Lasers and Masers
37 Mechanical Engineering
38 Quality Assurance and Reliability
39 Structural Mechanics

GEOSCIENCES

42 Geosciences (General)
43 Earth Resources and Remote Sensing
44 Energy Production and Conversion
45 Environment Pollution
46 Geophysics
47 Meteorology and Climatology
48 Oceanography

LIFE SCIENCES

51 Life Sciences (General)
52 Aerospace Medicine
53 Behavioral Sciences
54 Man/System Technology and Life Support
55 Exobiology

MATHEMATICAL AND COMPUTER SCIENCES

59 Mathematical and Computer Sciences (General)
60 Computer Operations and Hardware
61 Computer Programming and Software
62 Computer Systems
63 Cybernetics, Artificial Intelligence and Robotics
64 Numerical Analysis
65 Statistics and Probability
66 Systems Analysis and Operations Research
67 Theoretical Mathematics

PHYSICS

70 Physics (General)
71 Acoustics
72 Atomic and Molecular Physics
73 Nuclear Physics
74 Optics
75 Plasma Physics
76 Solid-State Physics
77 Physics of Elementary Particles and Fields

SOCIAL SCIENCES

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.

80 Social and Information Sciences (General)
81 Administration and Management
82 Documentation and Information Science
83 Economics and Cost Analysis
84 Law, Political Science and Space Policy
85 Technology Utilization and Surface Transportation

SPACE SCIENCES

88 Space Sciences (General)
89 Astronomy
90 Astrophysics
91 Lunar and Planetary Science and Exploration
92 Solar Physics
93 Space Radiation

GENERAL

99 General

This document does not bind the public, except as authorized by law or as incorporated into a contract. This document is uncontrolled when printed. Check the NASA Online Directives Information System (NODIS) Library to verify that this is the correct version before use: https://nodis3.gsfc.nasa.gov.