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NASA Procedural Requirements

COMPLIANCE IS MANDATORY

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Request Notification of Change (NASA Only)

Subject: Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information

Responsible Office: Office of the Chief Information Officer

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Chapter 2. NASA STI Report Series

2.1 Purpose

2.1.1 All significant scientific and technical findings derived from NASA activities are distributed or disseminated either in one of the NASA STI Report Series defined in this chapter or through suitable non-NASA scientific and technical channels. This chapter provides the standards for publication of NASA STI in the NASA STI Report Series. See Chapter 3 for a discussion of publication of NASA STI through professional journals and similar periodicals or via the proceedings of conferences, symposia, and workshops.

2.2 Assigning Publications to the NASA STI Report Series

2.2.1 NASA STI Report Series Types. The NASA STI Report Series comprises six types of publications. These are described in detail in section 2.3:

- a. Technical Publication (TP)
- b. Technical Memorandum (TM)
- c. Contractor Report (CR)
- d. Conference Publication (CP)
- e. Special Publication (SP)
- f. Technical Translation (TT)

2.2.2 STI Processing. NASA indexes and catalogues the STI Report Series documents into the NASA Aeronautics and Space Database and its public interface, the NASA Technical Report Server, as appropriate, and ensures (through NASA CASI) that these documents are archived at NARA. The STI Report Series also gains wide dissemination, as appropriate.

2.2.3 Electronic Copy. NASA requires that an electronic copy or URL (and requests that a hard copy) of all NASA STI Reports Series be submitted to NASA CASI through the Center STI Manager or delegated Center organization. All NASA-funded STI must be reviewed via NF-1676, or a Center equivalent form, prior to it being published, disseminated, or presented external to NASA (or presented at internal meetings or conferences at which foreign nationals may be present). NASA STI Report Series that are sent to NASA CASI without notification of a DAA review will be held until appropriate release notification is received. After several attempts to obtain a DAA, NASA CASI will limit STI to NASA personnel only until a DAA is received. See Chapter 4 for more information on the review and approval process for STI.

2.2.4 Basis for Series Selection. Selection of the correct series in which a document is published is based on its content. See section 1.5 and Appendix B for guidelines on series selection. The author makes the preliminary determination in conjunction with technical management or the COTR (if applicable) and the Center Technical Publications Office. Selection is subject to approval as part of the Center review process.

2.2.5 Report Series Number Assignment

2.2.5.1 When the series is selected and approved, the publication is assigned a NASA report number. Authors contact their Center's Technical Publications Office to obtain a number from NASA CASI, which is NASA's repository for STI. The report number is prefixed by the Agency acronym and the two-letter abbreviation that indicates the series. Examples include NASA/CP--2005-123456 and NASA/TM--2005-123456.

2.2.5.2 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--2005-123456 (in English); NASA/TP--2005-123456 (in Russian)).

2.2.6 STI Work Undertaken for Another Government Agency, Company, or University

2.2.6.1 When a NASA employee or person performing under a NASA contract or grant works with or undertakes work for another Government agency, they should report their scientific and technical findings in the NASA STI Report Series. Appropriate indication of the joint project or sponsorship should be given on the cover, title page, and SF-298, Report Documentation Page (RDP). Such publication does not preclude the other governmental agency from publishing the work in its own series.

2.2.6.2 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, authors should indicate NASA's support on the title page or first page of the work.

2.2.7 STI-Related Work Funded by One Center and Performed by Another

2.2.7.1 When NASA work is sponsored or funded by one NASA Center and performed

by another NASA Center, the scientific and technical findings should be reported in the NASA STI Report Series. The Center performing the work is responsible for approval, production, and issuance of the document. Appropriate indication of sponsorship is given on the cover, title page, and the RDP (SF-298).

2.3 Description of the NASA STI Report Series

2.3.1 For additional information regarding the selection of a report series, see Appendix B, "Types of NASA Publications and Related STI Report Series."

2.3.2 Technical Publication (TP)

2.3.2.1 This series comprises reports of completed research or of a significant phase of research that presents 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 the NASA counterpart to peer-reviewed formal professional papers but have less stringent limitations on manuscript length and extent of graphic presentations. In addition to reports documenting research, the types of documents assigned to this series 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. Authors should also document their design standards in the NASA Technical Standards Program, in accordance with NPD 8070.6, Technical Standards.
- 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.

2.3.3 Technical Memorandum (TM)

2.3.3.1 This series records scientific and technical findings that are preliminary or of specialized 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 later 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 viewgraphs," is indicated in the Supplementary Notes block of SF-298, 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, and that present listings of STI literature with minimal annotations.
- g. Computer program application documentation.
- h. Limited-use data compilations.
- i. Reports to other agencies or non-NASA sponsored research results.

2.3.4 Contractor Report (CR). This series comprises reports of scientific and technical findings by NASA-sponsored contractors, grantees, and cooperative agreement recipients and dissertations or theses by NASA contractors or grantees (if funded by NASA).

2.3.4.1 Content of CRs. 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 4.2.3. See Appendix B.

2.3.4.2 Publication of CRs in Other Series. A final report or non-required report authored by a contractor, grantee, or cooperative agreement recipient may be selected by the NASA COTR or technical management for publication as a NASA CP, SP, or TP in lieu of publication as a CR. A given report may be published in one series only. Such reports must meet all criteria for the selected series and must be reviewed and approved at the level(s) required for that series.

2.3.5 Conference Publication (CP). This series contains collected papers from scientific and technical conferences, symposia, seminars, or other meetings sponsored or cosponsored by NASA.

2.3.5.1 Preprints. Conference proceedings may be preprinted as a TM and distributed to attendees at conferences even though distribution as a CP is planned.

2.3.5.2 Publication of Conference Proceedings in Both Series. 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 the Supplementary Notes block of SF-298, RDP, for the CP indicates that the CP supersedes the TM.

2.3.6 Special Publication (SP). This series, which records scientific, technical, or historical information from NASA programs, projects, and missions, is most often concerned with subjects having substantial public interest. 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--2005-2999.

- d. Handbooks and data compilations (numbered in 3000 series), e.g., NASA/SP--2005-3000.
- c. History and chronology series (numbered in 4000 series), e.g., NASA/SP--2005-4000.

4000: reference works

4100: management histories

4200: project histories

4300: Center histories

4400: general histories

4500: Monographs in Aerospace History

4600: electronic media (data CDs and DVDs)

4700: historical conference proceedings.

- d. Numbers in the 5000 range were originally assigned to technology utilization information, but this type of information is now published outside the STI Report Series.
- e. Management publications series (numbered from 6000 to 6999), e.g., NASA/SP--2005-6000. This series 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, should be used.
- f. Bibliographic series (numbered from 7000 to 7999), e.g., NASA/SP--2005-7000. Regularly published abstracts, continuing bibliographies, indexes, publication guides, and announcement journals.

2.3.7 Technical Translation (TT). This 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 CASI for U.S. Government use subsequent to the initial request for the translation. See section 2.8.7.5 for more information on translations.

2.4 Responsibility for the NASA STI Report Series

2.4.1 Policy

2.4.1.1 Responsibility for production and dissemination of all NASA STI publications is set forth in NPD 2200.1, Management of NASA Scientific and Technical Information (STI).

2.4.2 Responsibilities

2.4.2.1 The STIPO is responsible for the management of the Agency STI program and maintains control of the production and distribution of the six STI Report Series

described in section 2.3. This responsibility is carried out through the NASA Headquarters STI Program Director and the NASA Centers STI Managers and Technical Publications Managers.

2.4.3 Preliminary Procedures

2.4.3.1 The author, technical management, and the Center Technical Publications Manager ensure that the necessary funds are available from the originating NASA Center or Headquarters office to cover the cost of production and printing of the report, if applicable. For reports that are to be printed, contact the Agency's or Center's Printing Officer and the Technical Publications Manager.

2.4.4 Reviews and Approvals

2.4.4.1 All NASA STI published by or for NASA, regardless of publication type or media used, must meet the reviews and approval set forth in Chapter 4 before the STI is published, disseminated, or presented external to NASA or presented at internal conferences or meetings at which foreign nationals are expected to be present. The author and his/her management ensure that the required reviews are completed and approved and signatures obtained in cooperation with the COTR, if applicable (e.g., for CRs).

2.4.5 Special Procedures

2.4.5.1 NASA CRs (reports prepared by contractor, grantee, or cooperative agreement recipients) will be processed into the formal CR series only after the cognizant CO or COTR and NASA manager approve the report as an acceptable deliverable under the terms of the contract, grant, or cooperative agreement.

2.4.6 Submittal of Reports

2.4.6.1 When specified in the contract, grant, or cooperative agreement, contractors, grantees, and cooperative agreement recipients must submit final reports to the NASA CO or COTR of record. For specifics, see the "NASA FAR Supplement" (updated February 3, 2003, <http://www.hq.nasa.gov/office/procurement/regs/>) sections 1835.010, 1835.011, 1835.070, 1852.235-70, 1852.235-73, 1852.235-74 and their referenced sections, and the Grants and Cooperative Agreements Handbook (NPR 5800.1, sections 1260.22, 1260.75, 1260.151, 1274.921, 1274.933 and their referenced sections). See also Procurement Information Circular (PIC 03-03) entitled "Scientific and Technical Information," dated February 3, 2003.

2.4.6.2 The use of electronic formats for submission is highly recommended. Contractors, grantees, and cooperative agreement recipients must provide NASA CASI an electronic copy of the letter transmitting the final report to the NASA CO or COTR by sending it to eft_ftp@sti.nasa.gov, "attention acquisitions unit." (For help, contact e-mail: help@sti.nasa.gov.) Also submit an SF-298 for STI Report Series documents. (See Appendix C.) Covers and title pages of submitted reports must include the standard cataloging elements specified in section 2.5.3.

2.4.7 NASA Technical Translations

2.4.7.1 Translations of scientific and technical information performed by and for NASA represent a resource investment; therefore, NASA CASI collects technical translations for inclusion in the NASA Aeronautics and Space Database.

2.4.8 Submittal of NASA Technical Translations to NASA CASI

2.4.8.1 NASA activities arranging for translation services (e.g., through the award of a contract for translation services) should incorporate the requirement to submit one copy of each technical translation to NASA CASI in those arrangements (e.g., a contract clause), thereby relieving the requester of the responsibility to ensure that copies of translations are forwarded for input into the NASA Aeronautics and Space Database. If the producer of a translation is not required to submit one copy of each technical translation to NASA CASI, the requester must ensure that a copy of the translation is forwarded to NASA CASI for inclusion in the Technical Translations series.

2.4.9 Provision of Copyright Information

2.4.9.1 To assist NASA CASI in determining distribution limitations and to expedite future dissemination of a technical translation, the requester should ensure that information concerning copyright of the original source document accompanies the translation submitted to NASA CASI. This information is also entered on NF-1676. Such information 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.

2.5 Standards for STI Report Series Publications

2.5.1 These standards apply to the STI Report Series regardless of the medium (e.g., electronic, video, audio, CD-ROM, website, etc.) chosen. While 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 must also conform to NASA's information technology standards and guidelines as specified in NPR 2810.1, Security of Information Technology. See section 1.4.3 for minimum standards for cases in which there is limited funding for production of the documents or media. Page mechanics for the STI Report Series standard front and back covers and title pages are depicted in Appendix D of this document. Appendix D also illustrates the use of the standard elements (report number, title, etc.) described in section 2.5.3. The covers and title pages in Appendix D 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 D is required for printed STI. For electronic or alternative media, layouts may be adapted as needed; however, the standard data elements must be included regardless of media.

2.5.2 Use of Color

2.5.2.1 Use of Color in Printed Versions of the NASA STI Report Series

The use of color in printed publications increases printing costs; therefore, color printing is used in printed versions of the NASA STI Report Series only when necessary to convey scientific and technical material in a clear and unambiguous fashion rather than the desire to use decorative elements. The added design and production costs for the portrayal of information in color are justified and authorized by the NASA Headquarters or Center Printing Officer. The duplicating or printing requirements must be in accordance with NPD 1490.1, NASA Printing, Duplicating, Copying, Forms, and Mail Management and must be approved by the Agency or Center Printing Officer for legality

and necessity. Contact your Center Technical Publications Office or Graphics Coordinator to determine alternative methods to portray content (such as in charts and graphs) so that they do not require the use of color. See sections 2.5.2.2 and 2.5.2.3.

2.5.2.2 Use of Color in Electronic Versions of the NASA STI Report Series

If color enhances the content of NASA STI Report Series documents in electronic format, its use is appropriate. However, authors should not use color alone to indicate scientific data in charts and graphs; in situations in which color is used, additional symbols (such as dots, crosshatch, etc.) should also be used to indicate the meaning of the color or the actual color name should be indicated on the key and data for cases to accommodate web presentation and Section 508 (PL105-220) compliance requirements. See section 2.5.14.2 for additional considerations of Section 508 compliance for documents to be posted on websites.

2.5.2.3 The use of color increases the file size of electronic documents, which may slow dissemination in a website environment. Because some users have black-and-white monitors and printers, the benefits of color may also be lost in those cases.

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

2.5.3 Standard Front and Back Covers and Title Pages

2.5.3.1 The design and content of the front and back covers and title pages of NASA STI Report Series, except for SPs, are standardized in accordance with industry standards, such as American National Standards Institute/National Information Standards Organization (ANSI/NISO) Z39.18, "Scientific and Technical Reports - Preparation, Presentation and Preservation," and Agency standards, such as those detailed in NPD 1490.1, NASA Printing, Duplicating, Copying, Forms, and Mail Management and NPR 1490.5, NASA Procedural Requirements for Printing, Duplicating, and Copying Management. 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, must contain the standard elements listed below.

2.5.3.2 Standard Elements for Front Covers

- 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 should be positioned to the right or below the NASA report number).
- b. NASA insignia (the "meatball"); other logos as appropriate (see section 2.5.5).
- c. Title of report.
- d. Author name(s), affiliation, and location.
- e. Optional one-color line art or black-and-white photo or image.
- f. Distribution notices, if applicable. Distribution notices, including limitations and restrictions such as ITAR, EAR, Small Business Innovation Research (SBIR), proprietary information, or copyright notices must be placed on the cover, title

page, and RDP (SF-298).

- g. Conference information. Authors may choose to add conference information, such as conference name, location, dates, and sponsor.
- h. Joint project or sponsorship information, if appropriate.
- i. Rule (graphic straight line).
- j. Month/year.

2.5.3.3 Standard Elements for the Back of Front Covers

- a. NASA STI program profile.

2.5.3.4 Standard Elements for Title Pages. Cover elements (except artwork) plus those below:

- a. Author name(s), affiliation(s), and locations.
- b. Editor name and affiliation, if applicable (for edited CPs, TPs, or TMs when the editor has contributed scientific and technical expertise and judgment).
- c. Agency name and address (corporate source).
- d. Contract statement and number, if applicable.
- e. Joint project or sponsorship information, if appropriate.
- f. Conference information (name of conference, location, dates, sponsors, etc.), if applicable.
- g. Distribution notices, if applicable. See Chapter 4.

2.5.3.5 Standard Elements for the Back of Title Pages

- a. Acknowledgment, if applicable.
- b. Disclaimers, if applicable.
- c. Statement announcing that the document is available from NASA CASI. In some cases, the document may also be available from the NTIS. Documents that are marked to be available from NTIS must be unlimited, unclassified (no restricted-access data). See the sample back of the title page in Appendix D of this document.
- d. International Standard Serial Number (ISSN), International Standard Book Number (ISBN), and/or Library of Congress Control Number (LCCN), if applicable. See Appendix E.
- e. Level of technical or professional review.

2.5.3.6 Standard Elements for Back Cover. 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.

2.5.3.7 Standard Elements for Spines

- a. Report Number.
- b. Title.
- c. See Appendix D for a sample.

2.5.4 Artwork and Photography. NASA recommends the use of one-color line art and black-and-white photography on the front cover of the NASA STI Report Series only in the image area, as illustrated in Appendix D. Such one-color line art and black-and-white photographs must meet the graphics standards of the originating Center and must be approved by the Center Graphics Coordinator.

2.5.5 Cosponsor Logos. 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 and must be in accordance with the NASA guidelines for the use of logos and insignia at <http://www.hq.nasa.gov/office/pao/insignia>

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

2.5.5.2 NASA program organizational logos are not acceptable for use on covers.

2.5.6 Nonstandard Front Cover and Title Page

2.5.6.1 Sometimes a nonstandard design is needed for the front cover and title page of a NASA STI Report Series of particular note. Such designs must contain the standard elements indicated in section 2.5.3. 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 must be in accordance with NASA graphics standards and must be approved by the Center Graphics Coordinator. For duplicated or printed publications, the requirements are set forth in NPD 1490.1, NASA Printing, Duplicating, Copying, Forms, and Mail Management and must be approved by the Center Printing Officer for legality and necessity.

2.5.7 Report Documentation Page (RDP) - SF-298

2.5.7.1 Requirements

2.5.7.2 An RDP (SF-298) is required for all documents published in the NASA STI Report Series. It provides the information necessary to index and correctly categorize the report. Directions for preparation of the RDP are given on the back of the form. A sample RDP (SF-298) is included in Appendix C. Except for NASA SPs, the completed RDP is positioned as the last page of the report. For documents that are to be printed, the RDP is printed so that it faces the back cover. For SPs, the RDP (SF-298) is forwarded to NASA CASI with, but not printed and bound in, the SP. For SPs in electronic formats, the RDP is a separate file. See also <http://www.sti.nasa.gov/nasaonly/pi> <http://www.sti.nasa.gov/nasaonly/publish/SF298instr.pdf> for "NASA Supplementary Instructions To Complete SF-298 (Rev. 8/98 version)."

2.5.7.3 Prior to dissemination, the information that is entered on SF-298 must be verified against the information that is on the approved NF-1676 or Center implementation of

this form.

2.5.7.4 For a classified report, the title and the abstract are followed by the classification of each in parentheses. Unclassified titles and abstracts are followed by a "(U)." Whenever possible, the title and abstract of a classified report are unclassified. Classified reports are handled by the NASA Centers and are not sent to NASA CASI.

2.5.7.5 For information regarding how to indicate that a previously export-controlled or restricted-access document has subsequently been downgraded and has a new distribution requirement, see section 2.5.16.

2.5.8 Funding Numbers

2.5.8.1 For information retrieval purposes, include the Work Unit (WU) number, Work Breakdown Structure (WBS) number, or the Unique Project Number (UPN) on the RDP (SF-298) in block 5(f).

2.5.9 Supplementary Notes

2.5.9.1 For a symposium presentation preprinted as a TM or published as a CP, identify the meeting or symposium in the block designated for Supplementary Notes.

2.5.10 Abstract

2.5.10.1 The abstract included on the RDP (SF-298) should be informative rather than descriptive and should state the objectives of the investigation, the methods employed (e.g., simulation, experiment, or remote sensing), the results obtained, and the conclusions reached. Limit the abstract to a maximum of 200 words.

2.5.11 Handwritten NASA STI Reports

2.5.11.1 Handwritten elements of any kind are not acceptable. Publications included in the NASA STI Report Series must be professional in appearance (i.e., typeset or completed using word-processing equipment), and must be capable of electronic transmission.

2.5.12 Revised Reports, Errata, and Corrected Copies

2.5.12.1 A revised report must be issued in situations in which the technical data have been substantially changed or updated. The standard report number format is the year and number of the original report followed by the REV extension, e.g., NASA/TM--2005-123456/REV1. The current month and year should be included on the report cover and title page. The Supplemental Notes section of the RDP (SF-298) should indicate whether or not the revised report supersedes the original report.

2.5.12.2 An errata should be issued if the errors are minimal but of sufficient importance to warrant correction. Minor typographical errors usually do not require correction. A typical setup for an errata is shown in Appendix F. The distribution of an errata is made in accordance with the original distribution. A corrected copy should be issued if there are numerous errors that cannot be made clear in an errata. The standard report number format for a corrected copy is the year and number of the original report followed by "Corrected Copy" in parentheses. The report date is the same as the original report. Distribution is made in accordance with the original distribution.

2.5.12.3 The standards that apply to paper copy revisions also apply to electronic media. For example, a file on a website (such as on the NASA Technical Reports Server

(NTRS)) should not be replaced with a revised file without indicating the appropriate revision elements and date of revision. This clarification should be indicated on the cover that an errata, a corrected copy, or a revision has been added along with the date of this action in addition to inserting on page iii a listing of the information that is being corrected. Distribution of revised electronic media should be in accordance with the original distribution.

2.5.12.4 Other requests for correction are made to the Center's STI Manager or to NASA CASI at e-mail help@sti.nasa.gov.

2.5.13 Special Factors for Document Legibility

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

2.5.13.2 For documents that may be printed, oversized image areas and foldouts to present oversized charts cannot be adequately reproduced in subsequent electronic formats.

2.5.13.3 Typefaces smaller than 10 points (or hard-to-read fonts online) on the original copy affect the quality and usefulness.

2.5.14 Standards for Electronic and Alternative Media (Including Multimedia)

2.5.14.1 In considering electronic and alternative media forms of disseminating of STI, authors must meet the content requirements of section 2.3, the data elements of section 2.5, and the required reviews in Chapter 4, as well as the requirements of submittal to NASA CASI. Although content and data elements are required, actual formatting and presentation of the STI may be adapted, as necessary, to fit the specific media.

2.5.14.2 Information that is presented on the Web must also comply with Section 508 requirements (PL105-220, Subsection 508(a), as amended). Authors should be cognizant that documents that extensively use a 2-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 an HTML or XML version in addition to the PDF may be useful.

2.5.15 Sources for Standards

2.5.15.1 Style and format standards for NASA scientific and technical 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 2200.2B, Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information (STI).
- b. NASA/SP--2005-7602, NASA Publications Guide for Authors and updated versions.
- c. Public Law 105-220, Title IV, Subsection 408(b) amended Section 508 of the Rehabilitation Act (29 U.S.C. 794d).
- d. "NASA Internet Publishing Content Guidelines," NITR-2810-3.
- e. Instructions issued by NASA Centers that implement the requirements of this NPR.

1. Government Printing Office Style Manual, latest edition.
9. Industry-standard style manuals or specifications.

2.5.16 Re-Marking and Handling Documents That Were Previously Export-Controlled and/or Contain Restricted-Access Information That Has Been Downgraded

2.5.16.1 When STI is no longer subject to restriction, NASA Centers' program officials, Export Control Administrators, and/or Patent or Intellectual Property Counsel, as appropriate, are responsible for re-marking (downgrading the restriction/limitation) the STI and notifying NASA CASI 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. Because NASA CASI is a contractor facility, it is not approved to change or alter dissemination information. See also section 4.5 and NPR 1600.1, NASA Security Program Procedural Requirements.

2.5.16.2 The original marking should be electronically "lined through" and the new marking should be indicated 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 authority to change the distribution notice]." Indicate this new information on the cover, the title page, and block 12 of SF-298. Do not simply change the access limitation and insert a new cover, title page, and SF 298 so that there is no record of the subsequent change.

2.6 Submittal of Publications to NASA CASI

2.6.1 NASA requires that an electronic copy (and recommends that a hard copy) of STI be sent to NASA CASI or that NASA CASI be notified of the location of the STI if it resides on a website or in an existing document repository to which NASA CASI may gain access. This is accomplished through submitting the document and a copy of the approved NF-1676 or Center implementation of this form through the Center's STI Manager or Technical Publications Office to NASA CASI. The hard copy may be used to reference that math and symbols have not been altered during electronic transmission. Electronic, alternative media, and hard copy reports and supplements to reports submitted to NASA CASI must conform to the following standards, depending on the medium. See sections 4.5 and Appendix C, C.2. For information regarding submitting electronic copies of export-controlled or limited access information, see section 2.6.9.

2.6.2 Electronic File Formats

2.6.2.1 Contact your Center's Technical Publications Manager or NASA CASI Help Desk (301-621-0390) to electronically submit reports to NASA CASI. The Help Desk will provide the Center's Technical Publications Offices with procedures.

2.6.2.2 NASA Centers can transfer unlimited/unclassified electronic files to CASI after the DAA review is completed via the NF-1676 or Center implementation of this form. Transfer of files to NASA CASI may occur via:

- a. FTP.
- b. Your Center's Technical Report Server (TRS).
- c. Electronic Media:

1. 3.5-in. MS-DOS diskettes
2. CD-ROMs formatted to ISO 9660 standards (for more information see URL http://www.y-adagio.com/public/standards/iso_cdromr/tocont.htm)
3. E-mail attachment (up to 5 megabytes in size)

2.6.2.3 NOTE: Documents that are export-controlled, restricted, or limited must be encrypted prior to sending to NASA CASI. NASA CASI does not accept classified STI, which is handled by the cognizant Center's security office.

2.6.2.4 NASA CASI will accept the following electronic file formats, which are listed in order of preference:

- a. Adobe Portable Document Format (PDF).
- b. Postscript (PS) Levels 1 and 2.
- c. ASCII.
- d. Word or WordPerfect.
- e. HyperText Markup Language (HTML) - self-contained files only; files with links to external sources cannot be processed.

2.6.2.5 The submission requirements for electronic formats are as follows:

- a. Store a single document in one file.
- b. 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.
- c. Include the completed RDP (SF-298) as the last page of the document file. (For SPs, include the RDP as a separate file.) Note: 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 NASA Aeronautics and Space Database.
- d. Send a copy of the DAA (NF-1676 or Center implementation of this form) but do not include it in the document. The DAA provides NASA CASI evidence of the DAA approval process and enables NASA CASI to appropriately add the document to the NASA Aeronautics and Space Database and subsequently disseminate it.
- e. In order for NASA CASI to further distribute your document, provide the file in "publication format." This means that the file should include 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.

2.6.2.6 Notify NASA CASI via e-mail whenever files are transferred or loaded to your Center's Technical Report Server. Identify the file names of the reports and the full path or URL. NASA CASI requires the full path in order to locate the correct file. Address the e-mail to: eft_ftp@sti.nasa.gov

2.6.2.7 NASA CASI has established aliases for this e-mail address to ensure that it alerts

appropriate staff that files are waiting to be processed.

2.6.3 Alternative Media

2.6.3.1 NASA CASI requires two copies of alternative media containing STI, e.g., CD-ROM, videotape, and audiotape.

2.6.4 Computer Diskettes and CD-ROM's

2.6.4.1 NASA CASI will accept the following:

- a. 3.5-in. MS-DOS diskettes.
- b. CD-ROM's formatted to ISO 9660 standards (URL <http://www.y-adagio.com/public/st>
http://www.y-adagio.com/public/standards/iso_cdromr/tocont.htm).

2.6.4.2 Submission requirements: Two copies of the diskette or CD-ROM accompanied by a copy of the DAA (NF-1676) in either electronic format (a separate file from the alternative media) or a print copy.

2.6.5 Microfiche

2.6.5.1 NASA CASI can accept the following formats:

- a. 98 frames per 105mm x 148mm fiche.
- b. 24-to-1 reduction ratio.

2.6.5.2 Submission requirements: Silver master(s) accompanied by a copy of the DAA (NF-1676) or Center-equivalent form in either electronic format (a separate file from the alternative medium) or a print copy.

2.6.6 Videotape and Audio Files

2.6.6.1 NASA CASI can accept the following videotape formats: (R) Betacam SP.

2.6.6.2 Submission requirements: Two copies of the videotape accompanied by a copy of the DAA (NF-1676) or Center equivalent form in either electronic format (a separate file from the alternative medium) or a print copy.

2.6.7 Compression Formats

2.6.7.1 NASA CASI can accept the following compression formats: >Zip.

2.6.8 File-Naming Conventions

2.6.8.1 Name the file to clearly identify the contents using the report number or other identifying text, followed by a three-character extension that represents the application:

- a. NASA/TM--2005-123456.pdf.
 - b. Rocketsandpeople.pdf.
 - c. Worddocument.doc.
 - d. NASA/CP submitted as one pdf, and each paper submitted as a separate file
- a. NASA/CP--209555.pdf - the cover-to-cover CP

- b. NASA/CP--209555.pdf-01 represents the first paper in the CP; 02 represents the second paper in the CP, etc.

2.6.9 Electronic Transfer via Internet and E-mail of Restricted-Access Information

2.6.9.1 The following procedures for restricted-access information (information whose publication or distribution is restricted by law, regulation, or policy as defined in section 4.2.2) are in addition to procedures cited for unclassified/unlimited STI and procedures cited in Chapter 4.

2.6.9.2 STI containing restricted-access information that is submitted via the Internet or e-mail must be encrypted. The minimum level of required encryption is secure socket layer (SSL). See NPR 2810.1, Security of Information Technology, and NASA Technical Standard NASA-STD-2820, Encryption and Digital Signature Standards. Until such mechanisms and infrastructure are available, a paper copy or electronic file loaded to a CD-ROM will be accepted. Paper copies and CD-ROMs (including their internal electronic files) must be marked with the applicable restriction and mailed in an envelope that does not indicate the restricted nature of the content. For additional information, see also NPR 1600.1, NASA Security Program Procedural Requirements.

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

2.6.9.4 For information regarding the handling of documents that were previously export-controlled or restricted-access but have subsequently been downgraded, see section 2.5.16.

2.7 Availability of Electronic and Alternative Media Publications from NASA CASI

2.7.1 NASA STI publications are available from NASA CASI in the formats cited in the following sections:

2.7.2 Electronic Formats. (PDF for NASA Aeronautics and Space Database registered users.)

2.7.3 Computer Diskette. (Computer diskette output is available in like-to-like MS-DOS, Windows, and Macintosh formats.) When STI is provided to NASA CASI on computer diskette, NASA CASI can copy and distribute this medium on demand.

2.7.4 Videotape. (Videotape output is available in Betacam SP, High-8, VHS, and Super VHS formats.)

2.7.5 CD-ROM. (When STI is provided to NASA CASI on CD-ROM, NASA CASI can copy and distribute this medium on demand.)

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2.8.1.3 Editor. Recognition of editorship is justified when the editor has contributed scientific and technical expertise and judgment.

2.8.2 Acknowledgment of Significant Input and Routine Support

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2.8.3.1 Reference to Work by Others. Reference to work by others must be 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.

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- h. Indicates the level of technical or professional review (see section 2.11).

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