

NASA Procedural Requirements

NPR 2210.1C

Effective Date: August 11, 2010

Expiration Date: August 11, 2015

Subject: Release of NASA Software

Responsible Office: Office of the Chief Technologist

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DISTRIBUTION:

NODIS

Preface

P.1. PURPOSE

This NASA Procedural Requirements (NPR) establishes procedures and responsibilities for the reporting, review, assessment, and release of software created by or for NASA. These procedures ensure that NASA software is reported and released according to law and NASA policies, with appropriate restrictions on the use and redistribution of the software. The unrestricted release of NASA software, as defined in Appendix A at paragraph A.2.7, is prohibited.

P.2. APPLICABILITY

a. This NPR is applicable to NASA Headquarters and Centers, including Component Facilities, and to JPL to the extent specified in its contract.

b. This NPR is applicable to the reporting, review, assessment, and release of all software:

(1) Created exclusively by, or jointly with, NASA employees as part of the NASA employee's official duties;

(2) Created by a non-Federal party where intellectual property rights to the software have been assigned to the U. S. Government, or have been licensed to the Government where the license authorizes the Government to further release the software; or,

(3) In the lawful possession of NASA, except as otherwise stated in subparagraphs d through g.

c. This NPR applies to software that (1) is or has been used in a NASA program, (2) was produced by or for NASA, or (3) may have significant commercial value or utility to potential private or public sector users or applications outside of NASA.

d. This NPR does not apply to software that has been classified pursuant to Executive Order 12958 by an Original Classification Authority and is designated and marked as Top Secret, Secret, or Confidential.

e. This NPR does not apply to software released without restriction as to use or disclosure prior to October 17, 1997 (the original issue date of NPD 2210.1) unless such software has been modified to add new functionality since it was released.

f. This NPR does not apply to bug fixes. Bug fixes alone may be released without complying with the requirements of this NPR. Previously released software that has been modified only by incorporating bug fixes may be released to the same recipient(s) without requiring additional reporting, reviews or agreements under this NPR. For applicability of this NPR to minor code enhancement of pre-existing software, see paragraph 1.7.3.1.

g. This NPR does not apply to computer databases, as defined at paragraph A.1.2, Web pages with integrated databases, data input to or output from a computer program, as defined at A.1.1.3., (such as data models), or software documentation, as defined at A.1.14, unless such documentation discloses software source code.

(1) In accordance with applicable laws and regulations, Centers have discretionary authority to publicly release computer databases and software documentation depending on the Government's rights and obligations with regard to such data.

(2) Upon request and depending on the Government's intellectual property rights and any other legal restrictions on release (e.g., export control), NASA computer programs that are used to read and manipulate computer databases may be publicly released with the computer databases, but only if such computer programs are not commercially available. For the release of software documentation, see A.1.14. In addition, certain types of information are restricted from dissemination via NASA public Web sites in accordance with NPR 2810.1, Security of Information Technology, section 11.3.9, Internet Publishing Content Requirements.

h. In general, software, as defined in section A.1, is not considered a record under the Freedom of Information Act (FOIA) and, therefore, is not subject to the mandatory release requirements of the FOIA. Requests for software under the FOIA shall be coordinated between the Center FOIA Office and the Center Software Release Authority.

P.3. AUTHORITY

NPD 7120.4, NASA Engineering and Program/Project Management Policy, dated March 16, 2010.

P.4. APPLICABLE DOCUMENTS

a. 44 U.S.C., Chapter 36, E-Government Act of 2002 (PL 107-347).

b. NASA Supplement to the FAR (NFS), 48 CFR Subpart 1807.1, Acquisition Planning.

c. NPD 1440.6, NASA Records Management.

d. NPD 2000.1, Authority To Take Certain Actions For The General Counsel.

e. NPD 2090.6, Authority to Enter Into License Agreements and Implementation of Licensing Authority.

f. NPD 2091.1, Inventions Made By Government Employees.

g. NPD 2190.1, NASA Export Control Program.

h. NPD 2110.1, Foreign Access to NASA Technology Transfer Materials.

- i. NPD 2810.1, NASA Information Security Policy.
- j. NPD 7500.2, NASA Innovative Partnerships Program.
- k. NPR 1441.1, NASA Records Retention Schedules.
- l. NPR 2190.1, NASA Export Control Program.
- m. NPR 2810.1, Security of Information Technology.
- n. NPR 7120.5, NASA Space Flight Program and Project Management Requirements.
- o. NPR 7120.7, NASA Information Technology and Institutional Infrastructure Program and Project Management Requirements.
- p. NPR 7120.8, NASA Research and Technology Program and Project Management Requirements.
- q. NPR 7150.2, NASA Software Engineering Requirements.
- r. NPR 7500.1 NASA Technology Commercialization Process.
- s. NASA-STD-8719.13, Software Safety Standard.
- t. NASA-STD-8739.8, Software Assurance Standard.

P.5. MEASUREMENT/VERIFICATION

The NASA Technology Transfer System (NTTS) shall be used to record and maintain metrics data on all software reported and released under this NPR. Performance measures will be implemented to assess the Agency's compliance with intellectual property rights associated with computer software distributed by the Agency in accordance with Executive Order 13103, Computer Software Piracy.

P.6. CANCELLATION

NPR 2210.1A, External Release of NASA Software, dated January 04, 2002.

/S/

Robert D. Braun, Ph.D.
Chief Technologist

CHAPTER 1. Responsibilities

1.1 Office of the Chief Technologist (OCT)

1.1.1 The Chief Technologist is responsible for the overall management of the NASA software release policy established by NPD 7120.4 and shall establish and implement software release procedures, requirements, and supplemental policy with the General Counsel or designee.

1.1.2 The Chief Technologist shall charter a Software Release Authority Working Group (SRAWG) to oversee the software release process.

1.1.2.1 The SRAWG shall coordinate with the Software Working Group (SWG), chartered by the Office of the Chief Engineer and defined in NPD 7120.4, to ensure appropriate visibility of software issues within the Agency.

1.1.2.2 The Chairperson of the SRAWG shall be a member of the SWG.

1.1.2.3 The Center official designated by the Center Director, or his/her designee(s), is responsible for coordinating a technology commercialization assessment of software deemed within the scope and purpose of this NPR.

1.2 General Counsel

1.2.1 The General Counsel and the Agency Counsel for Intellectual Property (ACIP), or their designee(s), are responsible for providing and maintaining the NASA Model Software Usage Agreement(s) (SUA), the legal instrument(s) employed in releasing NASA software, as described herein.

1.2.2 Uniformity in SUA(s) across Centers shall be achieved to the maximum extent practicable.

1.2.2.1 When requested to modify a NASA model SUA, or create a new model SUA, the Center official designated by the Center Director, and the ACIP, or their designee(s), shall work jointly toward establishing mutually acceptable standardized language for SUA(s), as well as determining acceptability of requests for modifications to the model SUA(s). A list of the types of model SUAs is provided in Appendix D.

1.2.3 The ACIP and the Center Patent or Intellectual Property (IP) Counsel (or Center Chief Counsel, at Centers without Patent or IP Counsel), or their designee(s), are responsible for providing appropriate legal counsel with respect to an Intellectual Property and Releasability Rights Assessment under Section 2.4 of this NPR on software prior to its approval for all releases defined in Appendix A, paragraphs A.2.2 through A.2.6, except for an Approved for NASA Release (A.2.6.5). Where applicable, the Center Chief Counsel shall also be consulted.

1.2.4 The ACIP and the Center Patent or IP Counsel (or Center Chief Counsel, at Centers without Patent or IP Counsel), or their designee(s), in cooperation with the Center SRA, are

responsible for preparing the SUA(s) and any other necessary legal instruments(s) employed in releasing NASA software and for consulting applicable contracting officers regarding release of software as Government Furnished Information (GFI) under Section 2.8.6.2.

1.3 Center Export Administrator (CEA)

1.3.1 The CEA is responsible for coordinating an export control assessment on all software prior to its Approval for Public Release, Approval for Open Source Release, or Approval for U.S. and Foreign Release, as described under paragraphs A.2.2, A.2.3, or A.2.4 (i.e., assisting with a determination whether the software, or some portion thereof, is subject to export restrictions under either the Export Administration Regulations or the International Traffic in Arms Regulations).

1.3.2 When a foreign release of software is contemplated (including a release to a foreign entity within the United States), the CEA shall be consulted to ensure that such release complies with applicable export laws and regulations, and the NASA Export Control Program. See also NPD 2190.1A and NPR 2190.1, both entitled “NASA Export Control Program.”

1.4 Center Directors

1.4.1 The Center Director, or designee, is responsible for appointing an individual(s) to carry out responsibilities specified in sections 1.1.2.3, 1.2.2.1, 1.7.2, 2.3.1, 2.4.4.5, 2.5.1, 3.6.2, and A.1.9 of this NPR.

1.4.2 The Center Director, or designee, is responsible for appointing an individual as the Center Software Release Authority (SRA) or for appointing a group of individuals as the Software Release Group. A Software Release Group shall have a team leader or chairperson designated as the Center SRA.

1.5 NASA Inspector General

1.5.1 The NASA Inspector General, or designee, is responsible for appointing an individual or group of individuals as SRA for the purpose of determining the release of forensic software developed by the Office of Inspector General for law enforcement purposes. The SRA appointed for this purpose shall comply with the requirements of this NPR.

1.6 Center Information Technology Security Manager (ITSM)

1.6.1 The ITSM is responsible for identifying to the Center SRA security risks inherent in the release of specific software and for determining how to eliminate or manage those risks as needed. The Center ITSM shall develop guidance on when an IT security assessment may be needed, including a standard checklist to assist the Center SRA in the identifying IT security risks associated with the release of software that shall require an IT security assessment, and shall be consulted, as warranted by the guidance, by the Center SRA and the responsible software development and assurance organizations prior to the release of the software. An example of a standard checklist for IT Security compliance is provided in Appendix F – Example

Checklist for Identification and Mitigation or Elimination of Information Technology Security Risks Associated With the Release of Software.

1.7 Software Release Authority (SRA)

1.7.1 The Center SRA is responsible for ensuring that all releases of applicable software are accomplished in accordance with this NPR.

1.7.2 The Center SRA is responsible for managing the software release process implemented by this NPR in coordination with the Center Patent or IP Counsel, the Center official designated by the Center Director, or his/her designee(s), the CEA, the Center ITSM, the Center Procurement Office, the Center Office or Project responsible for the software, and other Center offices as necessary.

1.7.3 The Center SRA may establish supplemental procedures and guidance to support the implementation and administration of the software release process and to determine the applicability of this NPR to software funded or developed by the Center (e.g., determining the applicability of this NPR to software that may be outside the purpose and scope of this NPR).

1.7.3.1 Minor code enhancements to pre-existing software that do not materially alter the operation of the pre-existing software may not be subject to the requirements of this NPR. When requested, the Center SRA shall review minor code enhancements and consult with the Center Patent or IP Counsel to determine the applicability of this NPR to the minor code enhancement. Where the Center SRA determines that this NPR does not apply to a particular minor code enhancement, the minor code enhancement alone may be released without complying with the requirements of this NPR.

1.7.3.2 Previously released software that has been modified only by incorporating such a minor code enhancement may be released to the same recipient(s) without requiring additional reporting, reviews, or SUAs under this NPR.

1.7.3.3 Given that NASA is in the forefront in development and enhancement of systems to support human capital programs and processes and that NASA proactively shares such systems with the Federal community in support of the e-Government Act of 2002 (PL 107-347, Chapter 36 of Title 44 U.S.C.) and the Office of Management and Budget's Human Resources Line of Business Initiative of 2008, NASA human capital software applications shall generally be assigned release restrictions of "Approved for Public Release," "Approved for Open Source Release," or "Approved for U.S. Government Purpose Release," as defined in paragraphs A.2.2, A.2.3, and A.2.6, respectively.

1.7.4 The Center SRA shall:

a. Be the Center representative on the SRAWG;

b. Retain an original SUA or Software Release Record, as described in paragraphs A.1.18 and A.1.17, respectively, for each software released in accordance with this NPR and NPR 1441.1; and

c. Document each individual release of software in the Software Release section of the NASA Technology Transfer System (NTTS). If an electronic copy of the original signed SUA or release record is maintained by the Center SRA, the original paper copy may be discarded. A backup copy may also be attached electronically to the appropriate NTTS record.

1.8 Responsible Center Offices or Projects

1.8.1 The Center Office or Project that has responsibility for a particular software is responsible for recommending a desired release category under section A.2 and shall notify the Center SRA of the following:

a. Any programmatic restrictions on release of the software;

b. The software's classification (i.e, Class A - H) as defined in NPR 7150.2, NASA Software Engineering Requirements;

c. Whether the software complies with the software engineering and assurance requirements of NPR 7150.2 and NASA-STD-8739.8, Software Assurance Standard, for the applicable software classification;

d. Whether the software is safety-critical software as defined in NASA-STD-8739.8, and if so, whether it complies with the software safety requirements of NASA-STD-8719.13, Software Safety Standard;

e. The software's Technology Readiness Level (TRL) as defined in NPR 7120.8, NASA Research and Technology Program and Project Management Requirements (and reproduced in Appendix E of this NPR);

f. Any software documentation, as defined in paragraph A.1.14, that is proposed (or available) for release with the software;

g. Whether any known export restrictions apply to the software;

h. Whether the software includes any Open Source or other third party software;

i. Whether Open Source Release of the software is proposed; and

j. Whether the software includes any embedded computer databases.

1.8.2 Before the release of any software, the Office or Project that has responsibility for the software, with the assistance of the SRA, shall coordinate with the NASA Center 508 Coordinator, as defined in A.1.10, for the purposes of obtaining a decision from the Coordinator

regarding the software's Section 508 compliance, including any appropriate exceptions in accordance with NASA policy and implementation of Section 508 compliance.

1.8.3 Open Source Software Development, as defined in paragraph A.1.8, may be used as part of a NASA project only if the Office or Project that has responsibility for acquisition or development of the software supports incorporation of external Open Source Software into software. In addition, the Office or Project responsible for the software acquisition or development shall:

- a. Determine the ramifications of incorporating such external Open Source Software during the acquisition planning process specified in NASA FAR Supplement Subpart 1807.1, Acquisition Plans; and
- b. Consult with the Center Patent or IP Counsel early in the planning process (see 2.4.2.1) as the license under which the Open Source software was acquired may negatively impact NASA's intended use.

CHAPTER 2. Reporting, Review, and Assessment of Software

2.1 Center Awareness and Orientation Activities

2.1.1 The Center SRA shall conduct awareness activities and orientation sessions for Center civil servants and contractors to support the implementation of this NPR.

2.2 Software Reporting

2.2.1 Software subject to this NPR, as described in paragraph P.2 and as determined by the Center SRA under paragraph 1.7, shall be reported to NASA.

2.2.1.1 The Center SRA shall ensure that software is reported in accordance with this section 2.2 and is inventoried in the NTTS.

2.2.2 The reporting requirement applies to new software that has not yet been reported and to software previously reported where new functionality or new innovators have been added to the software since it was reported.

2.2.2.1 The reporting requirement does not apply to bug fixes or minor enhancements that the Center SRA has determined are not subject to this NPR. If there are questions on reporting software, contact the Center Patent or IP Counsel or other Center personnel responsible for assisting in the reporting of inventions.

2.2.3 Except for an Approved for NASA Release (as defined in A.2.6.5), software shall be reported prior to any release.

2.2.3.1 To minimize delays during software development or review among NASA Centers, if approved by the Center SRA, software released as an Approved for NASA Release may be reported after the release.

2.2.4 In accordance with NPD 2091.1, Inventions Made By Government Employees, each NASA employee who makes an invention embodied by software shall report such invention to the Center Patent or IP Counsel or other Center personnel responsible for assisting in the reporting of inventions.

2.2.5 In accordance with the Patent Rights or New Technology clauses in NASA contracts and subcontracts, contractors and subcontractors shall report subject inventions and reportable items that include software created by their employees to the NASA New Technology Representative named in their contracts.

2.2.5.1 The NASA New Technology Representative shall provide the Center Patent or IP Counsel with access to contractor New Technology Reports (NTR) disclosing software.

2.2.6 Generally, NASA does not use grants to develop software; however, where a grantee has developed software as a consequence of performing activities under a grant, the grant obligates the grantee to report the software if it is considered to be a potentially patentable software-related invention.

2.2.7 Software shall be reported electronically using the NASA electronic New Technology Reporting system (eNTRe) located at <http://invention.nasa.gov> (preferred method) or in hard copy using NASA Form (NF) 1679 "Disclosure of Invention and New Technology (Including Software)," also available at the eNTRe web site.

2.2.7.1 All software disclosures shall:

- a. Identify the individuals contributing to the concept expressed by the software (i.e., the underlying functional method or process that is implemented by the software) as well as those individuals involved in coding the actual software;
- b. Indicate where the software is an improvement or innovation and provide version number;
- c. Identify any proprietary software, software owned by a non-Federal entity, or open source software that is incorporated into the software being disclosed; and,
- d. Indicate whether a license has been obtained in situations where proprietary software, software owned by a non-Federal entity, or open source software has been incorporated into the software being disclosed and attach a copy of the license to the disclosure.

2.3 Review and Assessment Coordination

2.3.1 The Center SRA shall coordinate the review and assessment of reported software by the Center Patent or IP Counsel as described in Section 2.4, the Center official designated by the Center Director, or his/her designee(s), as described in Section 2.5, the CEA as described in Section 2.6, and the Center ITSM as described in Section 2.7.

2.4 Intellectual Property and Releasability Rights Assessment

2.4.1 The Center Patent or IP Counsel shall provide appropriate legal counsel with respect to an Intellectual Property and Releasability Rights Assessment of all reported software to determine NASA's rights in the software, to determine the suitability of software for patent and/or copyright protection, and to identify any appropriate release restrictions as defined in paragraphs 2.4.4.1 to 2.4.4.4.

2.4.2 The Center Patent or IP Counsel shall provide appropriate legal counsel with respect to the Government's rights in software for the purposes of assessing NASA's right to release the software. Determination of the Government's rights is required before the software may be released.

2.4.2.1 In order to release the software, the Government must have clear rights in the software, such as an ownership interest, a Government purpose license, or other appropriate license or permission from third party owners. If the reported software does not include any proprietary software or software owned by a Non-Federal entity, or the Government has a license/permission to use any such software included in the reported software (e.g. Government Purpose or Open Source license), the software may be preapproved as “Approved for U.S. Government Purpose Release,” as defined in A.2.6.

2.4.2.2 Where it is known that Open Source Software, as defined in A.1.7, is included in software proposed for release, the Center Patent or IP Counsel shall prior to any release:

a. Review the external Open Source Software license and assess any special risks that may be involved; and

b. Confirm that NASA has obtained clear rights from any third party rights owners (such as through an assignment or license) to make the Open Source Release.

2.4.2.3 When it is known that Open Source Software Development, as defined in A.1.8., may be used as part of a NASA project, the Center Patent or IP Counsel shall consult with the Office or Project that has responsibility for acquisition or development of the software (see 1.8.3.) to assess any risks that may negatively impact NASA’s intended use.

2.4.3 The Center Patent or IP Counsel shall provide appropriate legal counsel for determining the suitability of reported software for patent and/or copyright protection.

2.4.3.1 The Center Patent or IP Counsel shall provide appropriate legal counsel in the determination of authors and inventors of software and whether (1) the software qualifies as patentable subject matter, and (2) is a work of the U.S. Government as defined in paragraph 2.4.3.3. The software invention, e.g., the underlying functional concepts and/or ideas implemented by the software, may be protected through patenting, whereas the actual software code, which expresses those concepts, may also be protected through copyright.

2.4.3.2 Patents. NASA can obtain domestic and/or foreign patents on the ideas, algorithms, and processes underlying the software if they satisfy the requirements for patentable subject matter. Normally, all parties with an ownership interest must assign their interest in the software to the Government before NASA will file a patent application.

2.4.3.3 Copyrights. Software created solely by an officer or employee of the U. S. Government as part of that person's official duties is a work of the U. S. Government. Copyright protection is not currently available in the United States for a work of the U. S. Government. However, the Government can claim foreign copyrights for software created by its employees and can receive and hold U.S. and foreign copyrights transferred to it by assignment.

2.4.3.4 NASA can direct its contractors to assert their worldwide (U.S. and foreign) copyright and assign it to the U.S. Government when software is created under a NASA contract. If the contractor provides an acceptable plan to commercialize the software, the Contracting Officer, in

consultation with the Center Patent or IP Counsel and the Center Office or Project that has responsibility for the software, may provide the contractor written permission to assert copyright in the software code. Where such permission is provided, the contractor retains the copyright with the Government retaining a license for use by and for the Government. This Government purpose license does not, however, include the right to distribute the software to the public. Such software may be distributed for Government purposes as defined in paragraphs 2.4.4.3 and A.2.6, unless a broader license has been obtained by the Government.

2.4.4 Center Patent or IP Counsel shall provide appropriate legal counsel with respect to evaluating and classifying reported software under one or more of the categories listed in the following subparagraphs. As circumstances change, the software may be reevaluated and reclassified as appropriate.

2.4.4.1 Releasable Without Nondisclosure Obligations. Software that has been categorized as Approved for Public Release and becomes Publicly Releasable Software as defined in paragraph A.1.9 is releasable without nondisclosure obligations in the SUA. Software that has not been categorized as Approved for Public Release but (a) is a work of the U.S. Government as defined in paragraph 2.4.3.3, (b) is not export restricted, (c) is not and is not expected to be the subject of a patent application, and (d) for which there is no plan for further development or beta testing, may be released without nondisclosure obligations in the SUA. This type of release shall be used with caution to avoid creating a statutory bar to patenting.

2.4.4.2 Releasable With Nondisclosure Obligations. In general, software, as valuable property, is not an Agency record under the FOIA, and, therefore, is not subject to the mandatory disclosure provisions of the FOIA. Thus, with limited exceptions, software may be categorized as releasable with nondisclosure obligations. The limited exceptions include software that (a) contains an embedded computer database that is itself releasable under the FOIA, (b) is so related to a releasable computer database that the computer database would be unintelligible or unusable without the software, and (c) preserves information relative to the Agency's structure, operation, or decision-making process.

a. To avoid creating a statutory bar for patenting, software that is being reviewed by the Center Patent or IP Counsel for patentable subject matter and the filing of a patent application shall be categorized as releasable with nondisclosure obligations.

b. Additionally, software that is part of an application for patent filed in the U. S. Patent and Trademark Office, or with any foreign patent office, shall be categorized as releasable with nondisclosure obligations.

c. Software categorized as Releasable with Nondisclosure Obligations shall include nondisclosure provisions in the SUA when released.

2.4.4.3 Releasable Only for U.S. Government Purposes. Software that has U.S. Government purpose only restrictions on use, copying, distribution, etc., shall be categorized as Releasable Only for U.S. Government Purposes.

a. Software so categorized shall be used only for U.S. Government purposes. A U.S. Government purpose is any activity in which the U. S. Government is a party, including contracts, grants, cooperative agreements, and Space Act Agreements.

b. Government purposes include a release for use in competitive procurements for the Government, but do not include a release for commercial purposes or a release to the public. Thus, the Government may release or disclose such software outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose the software for Government purposes only.

c. Center Patent or IP Counsel shall determine whether nondisclosure provisions should be included in an SUA for release of software categorized as Releasable Only for U.S. Government Purpose.

2.4.4.4 Not Releasable. This category includes software in which the associated copyright is owned by a non-Federal party. Software in the lawful possession of NASA that was obtained under a contract, license, or other agreement that prohibits any further use, duplication, or disclosure, shall be categorized as Not Releasable; and, unless subsequent permission is granted by its owner, such software shall not be released. Even with such permission, an export control assessment in accordance with paragraph 2.6 is required if the proposed release is to a foreign person.

2.4.4.5 Licensable Software. Software categorized as Licensable Software, as defined in paragraph A.1.4, shall be consistent with technology transfer objectives and shall be coordinated with the Center Patent or IP Counsel and the Center official designated by the Center Director, or his/her designee(s).

a. The licensing of software is governed by Government-wide licensing regulations (37 CFR Part 404) and NPR 2090.6, Authority to Enter Into License Agreements and Implementation of Licensing Authority.

b. While the licensing of software under NPR 2090.6 is not considered a release under this NPR, in general, before Licensable Software is approved for licensing, it normally goes through the same review and assessment process as described in this Chapter.

2.5 Technology Transfer Assessment

2.5.1 The Center official designated by the Center Director, or his/her designee(s), shall coordinate an assessment of any reported software's TRL and technology transfer potential.

2.5.1.1 The assessment shall consider the software's value or utility to potential private or public sector users and applications outside of NASA. Software Technology Readiness Levels are provided in Appendix E. Section 4.6 of NPR 7500.1, NASA Technology Commercialization Process, provides guidance on providing assessments of technical transfer potential.

2.5.2 External individuals or organizations and NASA contractors, grantees, and Space Act Agreement partners, with whom NASA has nondisclosure arrangements to protect against the unintended public release of NASA-funded software, may provide research and analysis in support of the Technology Transfer Assessment.

2.5.3 The assessment shall include strategies and recommendations for the transfer of the software which will maximize its benefit to NASA, the U.S. public, and the U.S. economy.

2.5.4 Upon approval by the Center SRA, a Project Release for use under a NASA contract or grant may be made prior to a Technology Transfer Assessment (see also 3.2.5.2.a).

2.6 Export Control Assessment

2.6.1 The decision to support a foreign release of software (i.e., a release made directly to, or made accessible to, any individual outside of the United States or a foreign person in the United State) shall be made by the Center SRA in consultation with the Center Office or Project that has responsibility for the software and the CEA.

2.6.2 A foreign release of software may be made only if the CEA approves the release. Prior to approval of a foreign release, the CEA shall conduct an Export Control Assessment of software to determine export control requirements and shall provide guidance and oversight to ensure that any intended foreign release of software complies with applicable export control laws and regulations as well as the NASA Export Control Program.

2.6.2.1 The CEA shall ensure that any intended foreign release of NASA software complies with:

a. The U.S. State Department's International Traffic in Arms Regulations for software falling within the scope of the United States Munitions List, or

b. The U.S. Department of Commerce's Export Administration Regulations for software falling within the scope of the Commerce Control List, as applicable.

2.6.2.2. While an export control assessment is only required for a release that legally constitutes an export, it may be requested and used for decision making by the Center SRA in determining appropriate categorization and availability for release in other situations.

2.6.3 All requests for the release of command and control (C&C) software for flight operations shall have the endorsement of the NASA Center or Program officials with management responsibility for development, acquisition, and implementation of the requested C&C software.

2.6.3.1 All requests for the release of C&C software are subject to the Export Control Assessment established by this NPR. The Center Counter-Intelligence official shall be consulted as part of the export control assessment of C&C software.

2.6.3.2 During the Export Control Assessment of C&C software considered for release, the CEA, as warranted, shall consult with the Center Inspector General's Office.

2.6.4 Applicability - The export control laws cover the release of technical data, including software, outside the United States and the release of technical data, including software, to a foreign person in the United States, to a U.S. person representing a foreign person, or to persons on U.S. sanctioned-parties or denied-parties lists (see NPR 2190.1).

2.6.4.1 A release of software to a foreign person located in the United States or abroad or broad access by the public (e.g., on the Internet) are both considered to be an export.

2.6.4.2 A Public Release, as described in paragraph A.2.2, or an Open Source Release, as described in paragraph A.2.3, is always considered an export due to its availability to any foreign person, and thus requires CEA approval.

2.6.4.3 A U.S. and Foreign Release as described in paragraph A.1.2.4 may be an export, depending on the recipient.

2.6.4.4 A release of export-controlled software shall include the appropriate export classification and be limited to U.S. persons as defined in title 22 CFR 120.15 and parties not appearing on any U.S. sanctioned-parties or denied-parties lists unless approval to export the software has first been obtained by the CEA.

a. Additionally, any software that is being exported shall prominently display appropriate Export Administration Regulations (EAR) and International Traffic in Arms Regulations (ITAR) legends, if the software has been determined to be export controlled by the CEA.

2.6.5 Unauthorized Foreign Release - An employee who releases export-controlled software without authorization risks violating the EAR or the ITAR, which may result in criminal, civil, or administrative action against both the Agency and the employee.

2.7 Information Technology Security Assessment

2.7.1 The Center ITSM shall advise and assist the Center SRA and the responsible software development and assurance organizations in the identification and the mitigation or elimination of information technology security risks associated with the release of software considered within the scope and purpose of this NPR. A key objective of Center ITSM advice and assistance is to ensure the integrity of NASA information technology systems and to prevent unauthorized access to NASA computing resources.

2.7.2 ITSM guidance may include a standard checklist or specific criteria for use by the Center SRA and/or the responsible software development and assurance organizations in performing an IT security assessment of all software considered for release. An example of a standard checklist for IT Security compliance is provided in Appendix F.

2.7.3 If the checklist requires interpretation in its application, the Center SRA or the responsible software development and assurance organizations shall consult with their Center ITSM to provide clarification.

2.7.3.1 Software that is modified to mitigate or eliminate identified IT Security risks prior to its release shall be reassessed upon the documented completion of risk reduction measures.

2.7.4 The results of the IT security assessment of the software considered for release shall be documented by the software development organization project manager, in accordance with NPD 7120.4, and provided to the Center SRA for use in determining the release of software in accordance with the ITSM guidance.

2.7.4.1 A copy of the assessment results shall be provided to the Center ITSM. The Center SRA and the Center ITSM, as deemed warranted by either party, shall jointly consider a given IT security assessment prior to the release of the subject software.

2.8 SRA Release Determination

2.8.1 The Center SRA shall ensure that the release of applicable software created by and for the Center is accomplished in accordance with this NPR and in a timely manner.

2.8.2 Upon consulting with the Software Innovator, the Center SRA has the authority to categorize software as Software Code Baseline, Software Product Baseline, Software Accepted (As Built) Baseline, or Publicly Releasable Software as those terms are defined in paragraph A.1, Software Terminology.

2.8.3 When a release of NASA software is requested, the Center SRA shall consult with the Center Office or Project that has responsibility for the software to determine a recommended release category as described in paragraph A.2, Release Terminology.

2.8.4 In establishing release restrictions for specified software, the Center SRA shall consider programmatic objectives and the recommendations and determinations resulting from the release assessments described in paragraphs 2.4 through 2.7.

2.8.4.1 The Center SRA shall then identify, consistent with the established release restrictions, the approved option(s) for releasing specified software as defined in paragraph A.2 and implemented in Chapter 3.

2.8.5 Finally, the Center SRA will consult with the Center Patent or IP Attorney to determine the proper SUA for a release of NASA software. A list of the type of model SUAs is provided in Appendix A.D. A model SUA(s) may be revised for a particular release only after consultation with the Center Patent or IP Counsel or designee.

2.8.6 Except in the case of an Open Source Release (see 3.2.2.3.), a SUA shall be signed or otherwise agreed to by the recipient before the requested software may be released to the recipient.

2.8.6.1 In the case of a Public Release or an Open Source Release, a recipient's agreement may be, for example, by click-wrap agreement or terms of use under the agreement.

2.8.6.2 In the case of a Project Release under a Government contract, software may be released by NASA to NASA's support service contractors as Government Furnished Information (GFI) under the contract, and the contract or other Contracting Officer direction may serve as the SUA if the Center Patent or IP Counsel concurs. If software is to be released as GFI, the SRA shall work with the applicable Contracting Officer and obtain sufficient information to document the release.

2.8.6.3 A SUA issued for any purpose other than an Open Source Release shall, at a minimum, include a Software Release Record as defined in paragraph A.1.17 and described in 3.6.1, the disclaimer and indemnification provisions as required in paragraph 3.4 and the notices of paragraph 3.5 as required in this NPR and may also include provisions for nondisclosure and export control as required.

2.8.6.4 A SUA shall also specify any restrictions on use and disclosure of said software imposed by NASA on the recipient.

2.8.6.5 For all releases other than an Intra-NASA Release, Open Source Release or Public Release via click wrap agreement, a SUA shall be issued by the Center SRA (or Contracting Officer if released under 2.8.6.2), or designee, and an original SUA or Software Release Record shall be retained by the SRA, or designee.

2.8.7 Each software release shall be documented in the NTTS.

2.8.7.1 An SUA is a Government record and shall be maintained for disposition per guidance provided in NPD 1440.6, NASA Records Management, and NPR 1441.1, NASA Records Retention Schedules.

CHAPTER 3. Release Options and Restrictions

3.1 General Considerations

3.1.1 Generally, after consultation with the Center Patent or IP Counsel, software shall be categorized as Releasable Without Nondisclosure Obligations, Releasable With Nondisclosure Obligations, Releasable Only for U.S. Government Purposes, or Not Releasable as described in paragraph 2.4.4.

3.1.2 The Center SRA is authorized to release software with more restrictive conditions than recommended by Center Patent or IP Counsel and the CEA, provided that the SRA works with the Center Patent or IP Counsel to prepare the appropriate SUA. However, in no event shall the Center SRA release software with less restrictive conditions than recommended by Center Patent or IP Counsel in paragraphs 2.4.4.1 through 2.4.4.4, by the CEA in section 2.6, or by the Center ITSM in section 2.7.

3.2 Specific Release Requirements. In addition to the requirements associated with the categories identified in paragraphs 2.4.4.1 – 2.4.4.2, the following specific requirements and restrictions for release of software apply to the release options defined in paragraph A.2.

3.2.1 Approved for Public Release (as defined in paragraph A.2.2)

3.2.1.1 This release category indicates there are no export, nondisclosure, or other restrictions on the software and requires concurrence by the CEA and Center Patent or IP Counsel.

3.2.1.2 Once software has been approved for Public Release, all other release types may be allowed as appropriate.

3.2.1.3 Software Approved for Public Release does not require a Technology Transfer Control Plan per section 3.5 of NPR 2190.1. Additionally, it is recognized that foreign entities may have access to Software Approved for Public Release. This is consistent with and is not prohibited by NPD 2110.1, Foreign Access to NASA Technology Transfer Materials (since further software development by the foreign recipient may be applied to NASA missions).

3.2.1.4 Under this release category, further transfer of the software by the recipient without the prior written approval of NASA may be authorized.

3.2.1.5 All releases under this category, other than via a click-wrap agreement, require an SUA be issued in accordance with paragraph A.1.18.

3.2.1.6 NASA protects and controls the use of its name, seal, insignia, and initials (see 14 CFR Part 1221). Therefore, NASA software that is categorized as Approved for Public Release shall not include the name or initials of "NASA" in the software name or acronym.

3.2.2 Approved for Open Source Release (as defined in paragraph A.2.3)

3.2.2.1 Open Source Software developed by or for NASA shall be released under the NASA Open Source Agreement (NOSA) unless external Open Source Software incorporated into the NASA Open Source Software requires use of a different open source license or unless approved by Center Patent or IP Counsel.

a. Open Source Software shall not be released using a different open source license, unless Center Patent or IP Counsel reviews the license to assess risks associated with its use and approves its use.

3.2.2.2 If a proposed release of Open Source Software includes the release of external Open Source Software, care shall be taken to ensure that the pertinent license for such external Open Source Software is acceptable. For example, at least one widely used external open source license does not currently include an indemnification provision and further requires that all software distributed with that external Open Source Software be distributed under the same license terms.

a. Therefore, except for an Approved for Interagency Release or Approved for NASA Release, both the Center Office or Project that is responsible for the software and Center Patent or IP Counsel shall review and approve any proposed distribution of Open Source Software that includes external Open Source Software.

3.2.2.3 When software categorized as Approved for Open Source Release is released as Open Source Software, the software recipient is provided with a copy of, or access to, the NOSA or other open source license and the recipient's acceptance of the NOSA or other open source license is effective upon download or use of the software. Thus, a signed SUA (e.g., a signed copy of the NOSA) is not required for this type of release.

3.2.2.4 NASA protects and controls the use of its name, seal, insignia, and initials (see 14 CFR Part 1221). Therefore, NASA software that is categorized as Approved for Open Source Release shall not include the name or initials of "NASA" in the software name or acronym.

3.2.3 Approved for U.S. and Foreign Release (as defined in paragraph A.2.4)

3.2.3.1 Due to Agency policy reflected in NPD 2110.1, this category shall be approved only for "Software Accepted (As-Built) Baseline" that may have special considerations, such as public health and safety benefits, or where special circumstances accrue economic benefit to the U.S.

3.2.3.2 Normally, further transfer of the software by the recipient without the prior written approval of NASA is not allowed under this release category.

3.2.3.3 This release category shall be approved with great care and requires concurrence by the CEA.

3.2.3.4 All releases under this category require an SUA be issued in accordance with paragraph A.1.18.

3.2.3.5 Nondisclosure and export control provisions shall be included as directed by the Center Patent or IP Counsel and CEA, respectively.

3.2.4 Approved for U.S. Release Only (as defined in paragraph A.2.5)

3.2.4.1 Normally, further transfer of software by the recipient without the prior written approval of NASA is not allowed under this release category.

3.2.4.2 All releases under this category require an SUA be issued in accordance with paragraph A.1.18.

3.2.4.3 Nondisclosure and export control provisions shall be included as directed by the Center Patent or IP Counsel and CEA, respectively.

3.2.4.4 Release may be made by the Center directly or by the Center via a designated NASA agent for software transfer and distribution (i.e., NASA contractor, grantee, or Space Act Agreement partner). A U.S. Release via a designated agent shall be subject to this NPR. Restrictions on the use and distribution of software via a designated agent may be established by NASA.

3.2.5 Approved for U.S. Government Purpose Release. Except for (1) a civil servant-to-civil servant exchange of software within the same NASA Center, (2) a civil servant-to-civil servant exchange of a particular software within the project that has responsibility for that software, or (3) software released as Government Furnished Information (GFI) under a NASA contract or grant, an SUA is required for all subcategories under the Approved for U.S. Government Purpose Release (as defined in paragraphs A.1.2.6.1 through A.1.2.6.5). Once a release of a particular software to a NASA project other than the project that has responsibility for that software has been approved and released via an SUA, that software may be further released civil servant-to-civil servant within that project without further review under this NPR. Nondisclosure and export control provisions shall be included in SUAs as directed by the Center Patent or IP Counsel and CEA, respectively. Permission to redistribute NASA software to contractors and/or subcontractors for use under a Government contract may be included, as appropriate.

3.2.5.1 Approved for Beta Release (as defined in paragraph A.2.6.1). The Center SRA shall authorize a Beta Release only upon NASA's receipt and acceptance of nondisclosure and feedback agreements. A Beta Release is only appropriate for the purpose of obtaining test and evaluation comments and feedback on the operation of a computer program from beta release recipients.

a. A Beta Release to a foreign organization, consistent with paragraphs A.2.6.2.c and 3.2.5.2c, shall be authorized by the SRA only after consultation with and concurrence by the CEA.

3.2.5.2 Approved for Project Release (as defined in paragraph A.2.6.2). The Center SRA shall authorize a Project Release only through written contract, SUA, or other agreement. Nondisclosure and export control provisions shall be included as directed by the Center Patent or

IP Counsel and CEA, respectively. At a minimum, NASA shall obtain Government purpose license rights to any software enhancements or derivative works made by the software recipient. Approved for Project Release includes the following categories of release:

a. Project Release for use under NASA contracts or grants (see paragraph A.2.6.2a). The release shall specifically limit the use of the software to the contractor and specifically identified subcontractors. Upon approval by the Center SRA, the release may be implemented by the responsible technical project monitor and may be made before the Technology Transfer Assessment is completed.

(1) If released as GFI under a contract or grant, use of the software shall be limited to accomplishing work under that contract or grant.

(2) If released under a separate SUA, use of the software shall be limited to accomplishing work under the contract(s) or grant(s) listed in the SUA.

b. Project Release in the United States for use under a Space Act Agreement, cooperative project, exchange program, or other agreement between NASA and another organization (see paragraph A.2.6.2b). The release shall be specifically limited to the use of the software by the stated recipient, solely to accomplish the work described in the agreement, or if further distribution is approved, delineated in any NASA-approved distribution of the released software.

c. Project Release for use by a foreign organization to implement an international cooperative project established by NASA in a project agreement with the foreign cooperating or sponsoring agency (see paragraph A.2.6.2c). The release shall be specifically limited to use of the software by the stated recipient and shall prohibit any further distribution.

(1) Any such release shall be in accordance with the international agreement and the NASA Export Control Program.

3.2.5.3 Approved for Developmental Release (as defined in A.2.6.3). This category is generally a type of Project Release for use under a NASA contract where Software Product Baseline is released specifically for further development on behalf of the Government but not including operational use.

3.2.5.4 Approved for Interagency Release (as defined in A.2.6.4). This type of release is for use by another U.S. Government agency and shall include any use restriction (e.g., for governmental purposes only or for internal Government use only) associated with the software. If the receiving Agency is authorized to further release the software, provisions to flow down disclaimer and indemnification provisions to the further recipients are required.

3.2.5.5 Approved for NASA Release (as defined in A.2.6.5). This type of release is between NASA Centers. The SUA for this type of a release is a simple acknowledgement of receipt of the software that identifies any restriction on NASA's right to use the software. The acknowledgement, which may be done via click-wrap acceptance, shall include any use

restriction (e.g., for governmental purposes only or for NASA internal use only) associated with the software but does not require disclaimer or indemnification provisions.

a. If the receiving Center plans on releasing it to a Center contractor, the receiving Center shall use a Project Release under paragraph 3.2.5.2a.

b. Approved for NASA Release may include a "NASA Remote Access" wherein NASA grants access to computers and associated software to those acting on behalf of NASA for Government purposes; however, approval for "NASA Remote Access" requires appropriate Center-level review to include vetting the identities of parties to whom the software would be released.

3.2.6 The Center SRA shall not authorize an Unrestricted Release (as defined in paragraph A.2.7).

3.3 Patent and Copyright Licensing

3.3.1 Patent and copyright licensing to external entities is not considered a release under this NPR. Patent and copyright licensing is implemented under NPD 2090.6. However, in general, before software is approved for licensing, it shall go through the same review and assessment process as described in Chapter 2 herein.

3.4 Disclaimer and Indemnification

3.4.1 All software released by NASA, except for an Approved for NASA Release, shall contain appropriate disclaimer and indemnification provisions stating that the software is provided "as is" without any warranty, expressed or implied and that the recipient waives any claims against, and indemnifies and holds harmless, the Government and its contractors and subcontractors.

3.4.1.1 The disclaimer and indemnification provisions shall be included in the SUA and, where practicable, shall be displayed on software startup and/or, for software delivered in tangible form, be attached as a label to the software medium released.

3.4.1.2 Use of any exceptions to the disclaimer and indemnification clauses shall be approved by the Center Office of Chief Counsel or Center Patent or IP Counsel as appropriate. With the approval of counsel, reference to indemnification may be removed when: (1) a Recipient is a state government entity (e.g., a state college/university) or U.S. Government entity prohibited by state or Federal law from agreeing to indemnify; (2) NASA software is distributed with, or as part of, external Open Source Software obtained by NASA under a license that does not include indemnification provisions and that requires all software distributed with that external Open Source Software to be distributed under the same license terms; or (3) in the case of a Project Release under a Government contract, the software is provided as Government Furnished Information (GFI) under the contract or as otherwise approved by Center Office of Chief Counsel or Center Patent or IP Counsel.

3.4.1.3 Sample disclaimer and indemnification provisions are provided as follows:

a. This software is provided "AS IS" without any warranty of any kind, either expressed, implied, or statutory, including, but not limited to, any warranty that the software will conform to specifications, any implied warranties of merchantability, fitness for a particular purpose, or freedom from infringement, any warranty that the software will be error free, or any warranty that documentation, if provided, will conform to the software. In no event shall the U.S. Government, or its contractors or their subcontractors, be liable for any damages, including, but not limited to, direct, indirect, special or consequential damages, arising out of, resulting from, or in any way connected with this software, whether or not based upon warranty, contract, tort, or otherwise, whether or not injury was sustained by persons or property or otherwise, and whether or not loss was sustained from, or arose out of the results of, or use of, the software. The U.S. Government disclaims all warranties and liabilities regarding third party software, if present in the NASA generated software, and distributes it "AS IS."

b. Recipient agrees to waive any and all claims against the U.S. Government its contractors and their subcontractors and shall indemnify and hold harmless the U.S. Government and its contractors and their subcontractors for any liabilities, demands, damages, expenses, or losses that may arise from recipients' use of the software, including any damages from products based on, or resulting from, the use thereof.

c. If further release or distribution of this software is permitted, recipient agrees to obtain this identical waiver of claims, indemnification, and hold harmless agreement with any entities that are provided with the software.

3.5 Notices

3.5.1 Copyright and restrictive notices, as applicable, shall be included in the SUA.

3.5.1.1 Where practicable, copyright and restrictive notices shall be embedded in the software, displayed on software startup, and/or be attached as a label to the software medium released.

3.5.1.2 Copyright Notice. Software released by NASA shall normally include a copyright notice.

a. Unless a copyright notice is required pursuant to paragraph 3.5.1.2e below, the Center SRA may choose not to require the use of a copyright notice when the software is distributed to another NASA Center, another Federal Agency, or to a NASA contractor, grantee, cooperative agreement, or Space Act Agreement partner using a SUA with appropriate nondisclosure provisions.

b. For purposes of the year of first publication used in the copyright notices below, publication means the first distribution of software to an entity external to NASA as a Public Release or Open Source Release as described in paragraphs A.2.2 and A.2.3, respectively. If software has only been released under one of the more restrictive release categories that do not allow further release, it is not considered to be published and only an unpublished work copyright notice shall be used. If a particular software version includes all or parts of earlier versions that have been released at different times, the year of first publication may include multiple years or a range of years that correspond to the various releases (e.g., Copyright 2001, 2003, 2005 or © 2002-2004).

c. The SRA shall consult with the Center Patent or IP Counsel to determine if a copyright notice is required and, if so, the proper copyright notice to include in the software or SUA.

d. The following are example copyright notices.

(1) For unpublished software that is a work of the U.S. Government, i.e., software coded entirely by U.S. Government employees as part of their employment, use:

Unpublished Work Copyright [year software version completed] United States Government as represented by the Administrator of the National Aeronautics and Space Administration. No copyright is claimed in the United States under Title 17, U.S. Code. All Other Rights Reserved

(2) For published software that is a work of the U.S. Government, use:

Copyright [year of first publication] United States Government as represented by the Administrator of the National Aeronautics and Space Administration. No copyright is claimed in the United States under Title 17, U.S. Code. All Other Rights Reserved.

(3) For unpublished software created in whole or in part by a non-Federal entity and assigned to the U.S. Government, use:

Unpublished Work Copyright [year software version completed] United States Government as represented by the Administrator of the National Aeronautics and Space Administration. All Rights Reserved.

(4) For published software created in whole or in part by a non-Federal entity and assigned to the U.S. Government, use:

Copyright [year of first publication] United States Government as represented by the Administrator of the National Aeronautics and Space Administration. All Rights Reserved.

e. In the event NASA has been granted the right to release software owned by third parties (e.g., through written permission or license from the software owner), any third party copyright notices on such software shall be included in the SUA or in a readme file within the software (e.g., as is the practice in Open Source Releases).

3.5.1.3 Restrictive Notice.

a. The following general restrictive notice shall be included in the SUA for all releases except for an Approved for NASA Release:

This software may be used, reproduced, and provided to others only as permitted under the terms of the contract or other agreement under which it was acquired from the U.S. Government. Neither title to nor ownership of the software is hereby transferred. This Notice shall remain on all copies of the software.

b. Any specific use and disclosure restrictions shall also be specified in the SUA.

3.6 Software Release Records and Metrics Reporting

3.6.1 Software Release Records. The Center SRA shall establish and maintain Software Release Records as defined in A.1.17. The unrestricted release of NASA software (i.e., without an appropriate SUA or release record as defined in paragraphs A.1.18 and A.1.17, respectively) is prohibited. An unidentified release of NASA software does not provide NASA with the ability to measure the interest generated by the software or track the owner of a particular version of the software.

3.6.1.1 Software and Software Release Records shall be safeguarded, retained, and disposed of per guidance provided in NPR 1441.1.

3.6.2 If the release is solely by electronic means, an Internet Protocol Address, by itself, is insufficient for identification purposes. In an effort to track usage and maintain accurate records, each recipient shall be requested to register with a NASA point of contact for all transfers of Public Release or Open Source software for which no Software Release Record was required (e.g., release by click wrap agreement). The Center official designated by the Center Director, or his/her designee(s), is the point of contact for the purposes of establishing this registration regarding software release at that Center.

3.6.3 The performance measures or metrics, as established by NPD 7120.4, shall be reported semiannually (due 2 weeks following the end of 2nd and 4th fiscal year quarters) by the Center SRA to the Chief Technologist at NASA Headquarters.

3.6.3.1 To the extent feasible, NTTS shall be used to record and maintain metrics data.

Appendix A. Definitions

A.1 Software Terminology

A.1.1 "Click Wrap Agreement" is a form of Software Usage Agreement used when providing the software over the Internet that requires a user to read and accept the terms of a usage agreement before the user may download, install, or use the software.

A.1.2 "Computer Database" means a collection of data in a form capable of being processed by a computer through the use of a computer program performing the function of storing, manipulating, or formatting.

A.1.3 "Computer Programs" means a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.

A.1.4 "Licensable Software" means software for which the U.S. Government owns a domestic or foreign copyright, or a patent application or issued patent claiming the software or the underlying process or method implemented by the software.

A.1.5 "New Technology Representative" is a NASA civil servant designated to administer the "New Technology" or "Patent Rights" clause in procurement contracts and to receive disclosures by the contractor of subject inventions and reportable items made under the contract. A full description of the New Technology Representative's responsibilities is set forth in 1827.305-370 of the NASA FAR Supplement.

A.1.6 "Object Code" or "Executable Code" means machine language; that programming language which is directly readable and executable by a computer.

A.1.7 "Open Source Software" means software where the recipient is free to use the software for any purpose, to make copies of the software and to distribute the copies without payment of royalties, to modify the software and to distribute the modified software without payment of royalties, to access and use the source code of the software, and to combine the software with other software in accordance with Open Source licenses/agreements. Open Source Software is a subcategory of Publicly Releasable software.

A.1.8 "Open Source Software Development" means either: (1) the incorporation of external Open Source Software into software developed by or for NASA; or (2) the original development by or for NASA of software intended for Open Source release.

A.1.9 "Publicly Releasable Software" means software for which a recommendation of Public Release has been made to the Center SRA by the Center Office or Project that has the responsibility for the software, with concurrence by the Center official designated by the Center Director, the Center Patent or IP Counsel, and the CEA, or their designees, and any other applicable officials required herein. Publicly Releasable Software may or may not be protected by a copyright or patent.

A.1.10 “NASA Center 508 Coordinator” is that person at a Center responsible for ensuring the Center’s activities, which include software release, are compliant with The Workforce Investment Act of 1998, which amended Section 508 of the Rehabilitation Act of 1973. The NASA Center 508 Coordinators are identified at www.nasa.gov/accessibility/.

A.1.11 “Software” is defined in NPD 7120.4. In accordance with NPD 7120.4, Software as used in this NPR for purpose of the reporting, review, and assessment requirements of this NPR includes computer programs in both source and object code but does not include computer databases, software documentation, or technical papers unless they disclose source code. Applicable software documentation may be released with the software.

A.1.12 "Software Accepted (As-Built) Baseline" is the baseline established after the software has been accepted by the intended NASA user. Software Accepted (As-Built) Baseline contains updated versions of the items in the Software Product Baseline, with corrections for nonconformance found during the acceptance process.

A.1.13 “Software Code Baseline” is the baseline established at the end of the software implementation phase. During the software implementation phase, the software is coded and unit tested. All documentation is produced in quasi-final form, including internal code documentation. At the end of the phase, all required products are ready for delivery, subject to modification during integration and testing. It includes:

- a. Software detailed design specification.
- b. Build and test plans.
- c. The code itself.
- d. Code level documentation.
- e. Users manuals.
- f. Test procedures for the integration and test phase.
- g. Data needed for operation of the software.

A.1.14 "Software Documentation" means documentation and data pertaining to the development and operation of software and that explains the capabilities of the software or provides operating instructions for using the software to obtain the desired results. Software Documentation may be provided as owner's manuals, user's manuals, installation instructions, operating instructions, and other similar items. Software Documentation may include design details, algorithms, processes, procedures, rules, flow charts, formulae, and related information that would enable particular NASA software, or functional equivalents thereof, to be reproduced or created. Premature release of such information may jeopardize intellectual property protection and commercialization of the software to which it relates. Thus, it is advisable that such information not be released unless the Center Patent or IP Counsel has approved the software for release.

A.1.15 “Software Innovator” means a person who designs and creates software and includes individuals contributing to the concept expressed by the software (i.e., the developers of the underlying functional method or process that is implemented by the software) as well as those individuals involved in coding the actual software.

A.1.16 “Software Product Baseline” is the baseline established at the completion of the Integration and Test Phase. Software Product Baseline is ready for acquirer acceptance testing and delivery. It includes, in addition to the updated contents of the Software Code Baseline, the following:

- a. The tested code.
- b. Final versions of all products and documents.

A.1.17 “Software Release Record” is the form of documentation by which the release of NASA software is recorded. A Software Release Record contains the recipient's name, address, phone number, and e-mail address and the date of transfer, name, and version of software transferred.

A.1.18 “Software Usage Agreement” (SUA) is the legal document issued by NASA that defines the terms and conditions of release. A SUA is signed or otherwise agreed to by the recipient to allow the recipient to receive the requested software.

A.1.19 "Source Code" means a representation of object code in a human readable programming language such as BASIC, FORTRAN, C++, Ada, JAVA, and SQL.

A.2 Release Terminology

A.2.1 The release categories identified in paragraphs A.2.2 through A.2.6 constitute a hierarchy from least to most restrictive. Once a particular release category has been approved, software may be released under that category or under any of the more restrictive release categories. See Chapter 3 for specific release restrictions associated with the release options defined below.

A.2.2 "Approved for Public Release" - This release category is the broadest release category possible and may be approved only if Software Accepted (As-Built) Baseline has been categorized as Publicly Releasable Software as defined in paragraph A.1.9.

A.2.3 "Approved for Open Source Release" - Open Source Software is a subcategory of Publicly Releasable Software. This release category may be approved only if software has been designated as Open Source Software as defined in paragraph A.1.7 or has been developed under an Open Source Software Development as defined in paragraph A.1.8.

A.2.4 "Approved for U.S. and Foreign Release" - This release category authorizes what is essentially a U.S. Release, as defined in paragraph A.2.5, where release can be also be made to foreign persons, as defined at 22 CFR 120.16.

A.2.5 "Approved for U.S. Release Only" - This release category authorizes the release of Software Accepted (As-Built) Baseline for use by U.S. persons only. It does not remove Export Control Program restrictions.

A.2.6 "Approved for U.S. Government Purpose Release" - This large, but restrictive, release category includes the following five subcategories.

A.2.6.1 "Approved for Beta Release" - A limited release of the Software Code Baseline for Government purposes of acquiring evaluation comments and feedback.

A.2.6.2 "Approved for Project Release" - Any release of the Software Product Baseline or the Software Accepted (As-Built) Baseline to be used on behalf of the U.S. Government. A project Release is appropriate in the following situations:

- a. For use under U.S. Government contracts or grants;
- b. In the United States for use under a Space Act agreement, cooperative project, exchange program, or other agreement between the U.S. Government and another organization; or
- c. For use by a foreign organization if determined by NASA to be required to implement an international cooperative project established by NASA in an international agreement with the foreign cooperating or sponsoring agency.

A.2.6.3 "Approved for Developmental Release" - A release of the Software Product Baseline specifically for further development on behalf of the Government and not including operational use.

A.2.6.4 "Approved for Interagency Release" - A release of any software for use by another U.S. Government agency.

A.2.6.5 "Approved for NASA Release" - A release of any software between NASA Centers.

A.2.7 "Unrestricted Release" - The unrestricted access to, or distribution of, software, including electronic transmission, to an individual or organization outside NASA or its contractors or grantees, without an appropriate SUA or release record. This type of release is not allowed by Agency policy.

Appendix B. Acronyms

ACIP – Agency Counsel for Intellectual Property

CEA – Center Export Administrator

EAR – Export Administration Regulations

eNTRe – NASA Electronic New Technology Reporting System

FAR – Federal Acquisition Regulations

FOIA – Freedom of Information Act

GFI – Government Furnished Information

IP – Intellectual Property

OCT – Office of the Chief Technologist

ITAR – International Traffic in Arms Regulations

ITSM – Information Technology Security Manager

JPL – Jet Propulsion Laboratory

NASA – National Aeronautics and Space Administration

NIST - National Institute of Standards and Technology

NOSA – NASA Open Source Agreement

NPD – NASA Policy Directive

NPR – NASA Procedural Requirement

NTR – New Technology Report

NTTS – NASA Technology Transfer System

SUA – Software Use Agreement

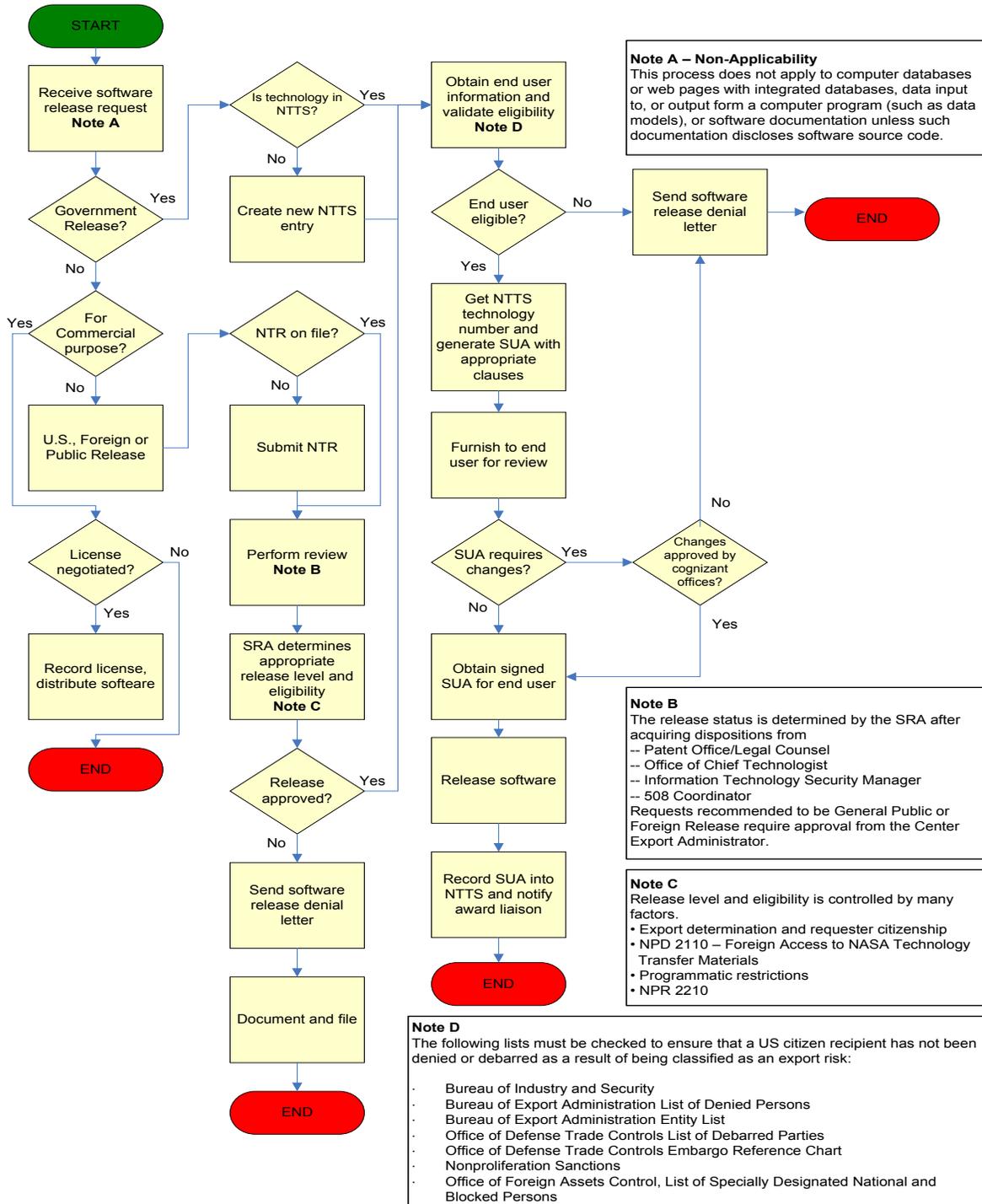
SRA – Software Release Authority

SRAWG – Software Release Authority Working Group

SWG – Software Working Group

TRL – Technology Readiness Level

Appendix C. Software Release Checklist Flow Chart



Appendix D. Types of Model Software Usage Agreements

D.1 NASA Open Source Agreement (NOSA)

D.2 General Public Release

D.3 Noncommercial Public Release

D.4 General U.S. Release

D.5 Government Purposes Only - Project Release Under a Contract/Grant/Agreement

D.6 Government Purposes Only - Interagency Release

D.7 Government Purposes Only - Intra-NASA Release

D.8 Beta/Evaluation Release

Appendix E. Software Technology Readiness Levels (as defined in Appendix J, NPR 7120.8).

E.1 TRL 1 Basic Principles observed and reported. In particular, regarding software, TRL 1 indicates scientific knowledge generated underpinning basic properties of software architecture and mathematical formulation.

E.2 TRL 2 Technology concept and/or application formulated. In particular, regarding software, TRL 2 is the point at which invention begins, practical application is identified but is speculative, no experimental proof or detailed analysis is available to support the conjecture, and underlying algorithms are clarified and documented.

E.3 TRL 3 Analytical and experimental critical function and/or characteristic proof-of-concept. In particular, regarding software, TRL 3 indicates development of limited functionality to validate critical properties and predictions using non-integrated software components.

E.4 TRL 4 Component and/or breadboard validation in laboratory environment. In particular, regarding software, TRL 4 indicates key, functionally critical, software components are integrated, and functionally validated, to establish interoperability and begin architecture development. Relevant Environments and performance in this environment predicted.

E.5 TRL 5 Component and/or breadboard validation in relevant environment. In particular, regarding software, TRL 5 indicates End to End Software elements implemented and interfaced with existing systems conforming to target environment, including the target software environment End to End Software System, tested in relevant environment, meets predicted performance; operational environment performance predicted.

E.6 TRL 6 System/subsystem model or prototype demonstration in a relevant environment (ground or space). In particular, regarding software, TRL 6 indicates prototype software partially integrated with existing hardware/software systems and demonstrated on full-scale realistic problems.

E.7 TRL 7 System prototype demonstration in a space environment. In particular, regarding software, TRL 7 indicates prototype software is fully integrated with operational hardware/software systems demonstrating operational feasibility.

E.8 TRL 8 Actual system completed and flight qualified through test and demonstration (ground or space). In particular, regarding software, TRL 8 indicates the final product in its final configuration is successfully demonstrated through test and analysis for its intended operational environment and platform (ground, airborne, or space.)

E.9 TRL 9 Actual system flight proven through successful mission opportunities. In particular, regarding software, TRL 9 indicates that the final product is successfully operated in an actual mission.

Appendix F. Example Checklist for Identification and Mitigation or Elimination of Information Technology Security Risks Associated With the Release of Software

F.1 IT Security Questions

- a. Does your Software perform parallel processing through NASA firewalls, which might contain embedded firewall information? If yes, explain.
- b. Does your Software analyze network traffic? If yes, explain.
- c. Does your Software have encryption? If yes, explain.
- d. Is the Software applicable to NIST Special Publication 500-223 Computer Systems Technology and NIST Special Publication 500-234? If yes, explain.
- e. Does the software contain sensitive information related to NASA Computer Systems or Networks (such as embedded account information, IP addresses, computer host names, or similar sensitive information)? If yes, explain.
- f. Does the software contain embedded Personally Identifiable Information (PII) about NASA employees? If yes, explain.