Welcome to the NASA Software Release System.

The Software Release System (SRS) will allow Agency software developers to generate and submit software release documents such as the Software Release Request Authorization (SRRA) and the Compliance Matrix in an automated fashion. The SRS will allow Agency SRAs to then easily route these software release documents for review with the added ability to perform parallel routing, use of time based reminders, tracking, and reporting to effectively manage the software release processes at their centers.

Login

Paperwork Reduction Act Statement: This information collection meets the requirements of 44 U.S.C. § 3507, as amended by section 2 of the Paperwork Reduction Act of 1995. You do not need to answer these questions unless we display a valid Office of Management and Budget control number. The OMB control number for this information collection is 2700-0153 and it expires on 9/30/2021. We estimate that it will take up to four (4) hours to read the instructions, gather the facts, answer the questions, and transmit. You may send comments on our time estimate above to: Peter Tran, Ames Research Center, Moffett Field, CA. 94035. Send only comments relating to our time estimate to this address, not the completed form.

Welcome to the NASA Software Release System.

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Submit New Release Request | Learn about SRS | Go To Request Dashboard

NEW TECHNOLOGY REPORT (NTR) LIST

Below is a list of the new technology reports on which you have been listed as an innovator. Please select from the list the case number for which you would like to prepare a software release package. If you do not see your software listed, this means an NTR has not yet been accepted for your software. An NTR must be accepted before you can proceed with a software release package. To submit an NTR, please visit: https://invention.nasa.gov/

Total: **8** NTRs

Case Number	Title
ARC-15722-1A	NETMARK 3.0
ARC-16459-1	Rapid Application Development Framework (Balboa)
ARC-16459-1A	Balboa - A Rapid Web 2.0 Application Development Framework Integrated with XDB
ARC-16564-1	NASA Technology Transfer System; Modules, Data and User Workflows
ARC-17820-1	Technology Transfer iPad App
ARC-18069-1	Automated Technology License Application System (ATLAS)
arc-tek-five	Alias enim autem sit a aperiam
arc-tektest-3000	Temporibus quae omnis optio nulla est molestias magni labore in est voluptates soluta ut ut rem dolor numquam

Software Release Package for ARC-TEK-FIVE

Submission of a new software release request requires the preparation of three documents. These documents are a Software Release Request Authorization (SRRA) Form, an NPR 7150.2C Compliance Matrix, and a Section 508 Compliance Checklist. You may prepare these documents in any order by clicking on the button below corresponding with the document you would like to prepare. All three documents must be completed in their entirety before your request can be submitted for review.

REQUEST AUTH FORM UNFILED

Start

NPR 7150.2C COMPLIANCE UNFILED

Start

SECTION 508 COMPLIANCE UNFILED

Start

Software Release Package Tracking for ARC-TEK-FIVE

Software Release Package Stage

Statuses for this stage

Software Release Package Status:

Center Engineering Technical Authority Review Status:

Center Safety and Mission Assurance Technical Authority Review Status:

HQ Chief Engineer Review Status:

HQ OSMA Review Status:

HQ Health and Medical Review Status:

Technical POC, NASA POC and Project/Program POC Review Stage

Statuses for this stage

Technical POC Review:

NASA POC Review:

Project/Program POC Review:

Initial SRA Review Stage

Statuses for this stage

Initial SRA Review Status:

Package Routing for Review Stage

Statuses for this stage

Technology Transfer Office Review Status:

Patent Counsel Office Review Status:

IT Security Office Review Status:

Export Control Office Review Status:

Section 508 Coordinator Office Review Status:

Other Review Status:

Final SRA Review Stage

Statuses for this stage

Final SRA Review Status:

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SOFTWARE RELEASE REQUEST AUTHORIZATION (ARC-TEK-FIVE)

Full Name Of Requestor:

Technology Case Number: ARC-00000-0

Version Number: E.g. 1.0

Version Date:

Software Title and Abbreviation: Software Title and Abbreviation

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SOFTWARE RELEASE REQUEST AUTHORIZATION (ARC-TEK-FIVE)

Save

NOTE: The software title and description shown below may be used in the NASA Software Catalog as marketing language to describe your software to prospective catalog customers. If the title and description as shown do not adequately or clearly describe your software product, please modify them as needed to provide a clear, succinct title and description that will be understood by all catalog customers.

The NASA Software Catalog, https://software.nasa.gov/ , is an online inventory of NASA's software which is available for use by industry, academia, other government agencies and/or the general public. Access to the software is determined by the release type restrictions (i.e. U.S. Government Only, U.S. Release, etc.)

Please indicate whether this software code should be listed in the NASA Software Catalog: (•) Yes ( ) No

Software Catalog Marketing Title [1]: Software Catalog Marketing Title will be the Marketing Title in the Software Release record and will appear on the Software Catalog site.

Software Catalog Marketing Description [2]: Software Catalog Marketing Description will be the Marketing Description in the Software Release record and will appear on the Software Catalog site.

Software Catalog Category:

☐ I acknowledge that I have reviewed the Software Catalog marketing title and description and that both clearly describe my software product and are suitable for public use in the catalog at https://software.nasa.gov.

[1] *Software Catalog Marketing Title will be the Marketing Title in the Software Release record and will appear on the Software Catalog site.*
[2] *Software Catalog Marketing Description will be the Marketing Description in the Software Release record and will appear on the Software Catalog site.*

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SOFTWARE RELEASE REQUEST AUTHORIZATION (ARC-TEK-FIVE)

Save

Brief Description of Software:

Brief Description of Software

What Type of Code Will Be Released?

○ Executable ○ Source ○ Source & Executable

What Operating System (O/S) Does Your Software Use?

☐ Apple iOS ☐ Android ☐ Microsoft Windows ☐ Linux ☐ OSX ☐ Other

Will A User Manual Be Released With Your Software?

○ Yes ○ No

Will Other Data Items Be Transferred With the Code:

○ Yes ○ No

Type of Release Requested:

○ License (Copyright and/or Patent) (NOTE: Not Considered a Type of Release But Review Required Per NPR 2210 Section 3.3)
○ Limited General U.S. Release (Limited to a Funded SAA Partner Where Not Government Purpose)
○ Government Purpose Only Release
○ U.S. Release (Recipient Must Be U.S. Person Or Company)
○ U.S. and Foreign Release (All U.S. Persons And Allowed Foreign Nationals)
○ Public Release
○ Open Source Release (No Release Restrictions)

How Do You Plan to Distribute Your Software?

i.e., CD-ROM, E-Mail Attachment, Download After E-Mailing Password, Download via Software Catalog Site

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SOFTWARE RELEASE REQUEST AUTHORIZATION (ARC-TEK-FIVE)

Save

Are There Any Programmatic Restrictions On Release of Your Software?

○ Yes ○ No

What Is The Classification And Safety Critical Designation Of The Software?

NOTE: Refer to NPR 7150.2C, Appendix D and NASA-STD-8739.8, Appendix A for an explanation of the classifications and safety critical designations for software.

- ○ Class A - Non-Safety Critical
- ○ Class A - Safety Critical
- ○ Class B - Non-Safety Critical
- ○ Class B - Safety Critical
- ○ Class C - Non-Safety Critical
- ○ Class C - Safety Critical
- ○ Class D - Non-Safety Critical
- ○ Class D - Safety Critical
- ○ Class E - Non-Safety Critical
- ○ Class E - Safety Critical
- ○ Class F

Does the Software Comply With the Software Engineering and Assurance Requirements of NPR 7150.2C and NASA-STD-8739.8, Software Assurance Standard, for the Applicable Software Classification?

NOTE: Questions concerning applicability of requirements should be directed to the local designated Software Engineering Technical Authority (for NPR 7150.2C) or Software Assurance Technical Authority (for NASA-STD-8739.8).

○ Yes ○ No

Is the Software Safety-Critical as Defined In NASA-STD-8739.8?

○ Yes ○ No

OPTIONAL: What Is the Software's Technology Readiness Level (TRL) as Defined in NPR 7120.8, NASA Research and Technology Program and Project Management Requirements?

Is the Software Section 508 Compliant?

○ Yes ○ No

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SOFTWARE RELEASE REQUEST AUTHORIZATION (ARC-TEK-FIVE)

Save

Does Your Software Include Any Embedded Computer Databases?

○ Yes ○ No

When Transferring Your Software, Will Your Software Include Other NASA or Government Software?

○ Yes ○ No

When Transferring Your Software, Will Your Software Include Any Third Party Software?

○ Yes ○ No

Does Your Software "Call" (used when run, but not included in a release) Any Open Source Software or Libraries?

○ Yes ○ No

Does Your Software "Call" (used when run, but not included in a release) Any Proprietary/Commercial Software or Libraries?

○ Yes ○ No

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SOFTWARE RELEASE REQUEST AUTHORIZATION (ARC-TEK-FIVE)

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Are There Any Known Export Restrictions That Apply to the Software?

○ Yes ○ No

Was Software Development Funded By the Military?

○ Yes ○ No

Does Your Software Contain Embedded Firewall Information or Require Ports to be Opened in the Firewall for Proper Operation?

○ Yes ○ No

Does Your Software Contain Embedded Credentials (e.g., Username/Password, Certificates, Encryption Keys)?

○ Yes ○ No

Does Your Software Analyze Network Traffic?

○ Yes ○ No

Does Your Software Use or Include Encryption?

○ Yes ○ No

Has the Software Application Data Owner Been Consulted to Ensure that Your Software Documentation, Embedded Files, Code, or Other Artifacts Do Not Contain Residual SBU Data?

○ Yes ○ No

Has the Software Been Screened to Determine if Your Software Documentation, Embedded Files, Code, or Other Artifacts Contain Any Personally Identifiable Information (PII)?

NOTE: If you have questions, please consult your Center Privacy Manager for assistance.
A Frequently Asked Questions (FAQ) Document Addressing NASA PII Can Be Found at:
https://inside.nasa.gov/ocio/information/info_privacy/pii_faq.html

○ Yes ○ No

Is the Software Command and Control (C&C)?

NOTE: Endorsement for release of C&C software is required by NPR 2210.1C, Section 2.6.3.

○ Yes ○ No

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SOFTWARE RELEASE REQUEST AUTHORIZATION (ARC-TEK-FIVE)

Save

GUIDANCE: The Technical POC is the technical person, who can be either a contractor or NASA employee.

Email Address: email@nasa.gov

First Name: First Name

Last Name: Last Name

Company Name: Company Name

Address 1: Company Address

Address 2: Suite or Room #

City: City

State:

Zip: Zip Code

Mail Code: Mail Code

Organization Code: Organization Code

Phone: (000)-000-0000

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SOFTWARE RELEASE REQUEST AUTHORIZATION (ARC-TEK-FIVE)

Save

GUIDANCE: The NASA POC is the NASA Civil Servant most familiar with the software (could be the COR for a NASA contract/grant).

Email Address: email@nasa.gov

First Name: First Name

Last Name: Last Name

Company Name: Company Name

Address 1: Company Address

Address 2: Suite or Room #

City: City

State:

Zip: Zip Code

Mail Code: Mail Code

Organization Code: Organization Code

Phone: (000)-000-0000

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SOFTWARE RELEASE REQUEST AUTHORIZATION (ARC-TEK-FIVE)

Save

GUIDANCE: The Project/Program Office person is the NASA Civil Servant lead for the project/program under which the software was developed. If the software isn't specific to a project or program, this person would be the NASA manager for the organization responsible for creation of the software.

Email Address: email@nasa.gov

First Name: First Name

Last Name: Last Name

Company Name: Company Name

Address 1: Company Address

Address 2: Suite or Room #

City: City

State:

Zip: Zip Code

Mail Code: Mail Code

Organization Code: Organization Code

Phone: (000)-000-0000

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SOFTWARE RELEASE REQUEST AUTHORIZATION (ARC-TEK-FIVE)

Save

Basic Information | Software Catalog | Software Details | Compliance | Other Sources | Security, Privacy, Command/Control | Technical POC | NASA POC | Project/Program POC | Attachments

Attachments

Attach Files

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7150.2C COMPLIANCE for ARC-TEK-FIVE

If you have already completed the Software Release Request Authorization (SRRA) form in this system, please follow the prompts provided in this section to complete the compliance matrix for your software. The system will already know the classification of your software based on your input in the SRRA section, and will be providing you with the appropriate sections to complete for that software classification.

If you are preparing your compliance matrix prior to completion of the Software Release Request Authorization (*SRRA) form, please refer to NPR 7150.2C and NASA-STD-8739.8 to determine the classification and safety criticality of your software. Once you have determined the appropriate classification, select the classification from the dropdown list below to begin completion of the compliance matrix.

Questions concerning applicability of requirements should be directed to the local designated Software Engineering Technical Authority (for NPR 7150.2C) or Software Assurance Technical Authority (for NASA-STD-8739.8).

Classification and Safety Criticality of Software.

Please select the classification from the dropdown list below:

Dashboard | Checklists Workbench

Back to Software Checklists

T150.2C COMPLIANCE for ARC 10969-1 *(Classification: Class A - Non-Safety Critical)*

If you have already completed the Software Release Requirements Checklists (SRRC) form in the system, please follow the prompts provided in this section to complete the compliance matrix for your software. The system will pre-populate the checklist with your previously entered responses, and will only prompt you to provide the appropriate artifacts or evidence for the software compliance matrix.

If you are starting your compliance matrix prior to completion of the Software Release Requirements Checklists (SRRC) form, please refer to NPR 7150.2C and NASA-STD-8739.8 to determine the applicability of the requirements and the acceptable artifacts or evidence that demonstrate that the requirement has been completed. Use the Software Release Requirements Checklists (SRRC) form to track completion of the compliance matrix.

Questions concerning specification of requirements should be directed to the local designated Software Engineering Technical Authority for NPR 7150.2C or Software Assurance Technical Authority for NPR 8715.25 or NASA-STD-8739.8.

Please select a method to complete the compliance matrix:

Start a new or continue an existing compliance matrix

NPR 7150.2C Section 5 | NPR 7150.2C Section 4 | NPR 7150.2C Section 3 | Resources

The rationale for the requirements is contained in the NASA-HDBK-2203. Programs/Projects may substitute a matrix that documents their mapping with the particular Section of NPR 7150.2C, if applicable. Table 2-Section 2 of NASA-HDBK-2203 has the requirements mapping matrices organized by class, tailoring field for each requirement, tailoring rationale, and approved signature lines.
The Compliance Matrix documents the program/project's mappings or intent to comply with the requirements of this NPR or provide a rationale for tailoring. It includes:
a. The section reference.
b. The unique requirement identifier.
c. The NPR 7150.2 requirement statement.
d. The Authority Level responsible for assessing a project's requirements mapping matrices and any requested tailoring from requirements in NPR 7150.2. The Authority Level responsible for providing authority on all Class E software projects and has joint responsibility on the cybersecurity requirements in section 5.11.
e. The applicability of the requirements in this NPR to specific systems and subsystems within the Agency's investment areas, programs, and projects is determined through the use of the NASA-wide definition of software classes.

Section 5.1.1 The project manager shall assess options for software acquisition versus development.

Technical Authority Center

Section 5.1.4 The project manager shall develop, maintain, and execute software plans that cover the entire software life cycle and, as a minimum, address the requirements of this directive with approved tailoring.

Technical Authority Center

Section 5.1.4 The project manager shall track the actual results and performance of software activities against the software plans. The project manager shall make software management data available to Classes A, including changes to commitments (e.g., software plans) that have been agreed to by the affected groups and individuals.

Technical Authority Center

Section 5.1.5 The project manager shall define and document the acceptance criteria for the software.

Technical Authority Center

Section 5.1.7 The project manager shall define and document the milestones at which the software development progress will be reviewed and audited.

Technical Authority Center

Section 5.1.8 The project manager shall require the software development(s) to periodically demonstrate that the software is on track to satisfy the requirements. As a minimum, the software development(s) will be required to allow the project manager and software assurance personnel to: a. Monitor product integration. b. Review the verification results and problem reports. c. Review trades studies and source data. d. Audit the software development processes and practices. e. Participate in software reviews and technical interchange meetings.

Technical Authority Center

Section 5.1.9 The project manager shall require the software developer(s) to provide NASA with electronic access to the source code developed for the project in a mutually agreed-upon format.

Technical Authority Center

Section 5.1.10 The project manager shall require the software developer(s) to provide NASA with electronic access to the source code developed for the project in a modifiable format.

Technical Authority Center

Section 5.1.11 The project manager shall comply with the requirements in this NPR that are marked with an 'X' in Appendix C consistent with their software classification.

Technical Authority Center

Section 5.1.13 Where approved, the project manager shall document and reflect the tailored requirements in the plans or procedures controlling the development, acquisition, and deployment of the affected software.

Technical Authority Center

Section 5.1.13 Each project manager with software components shall maintain a requirements mapping matrix or multiple requirements mapping matrices against requirements in this NPR, including those delegated to other parties or accomplished by contract vehicles or Space Act Agreements.

Technical Authority Center

Section 5.1.14 The project manager shall satisfy the following conditions when a COTS, GOTS, MOTS, or reused software component is to be used in a software application to meet big the software component are identified: 1. The software component includes documentation to fulfill its intended purpose (e.g., usage instructions). 2. Proprietary rights, if any, are sufficiently clear to allow the software component to be used for the intended purpose. 3. Future support for the software product is planned and adequate for project needs. 4. The software component is verified and validated to the same level expected to accept a similar software product developed to be reused as a The project has a plan to perform periodic assessments of vendor-reported defects to ensure the defects do not impact the selected software components.

Technical Authority Center

Section 5.1.2 To better estimate the cost of development, the project manager shall develop software cost estimates and associated cost parameters using the parameters for all Class A and B software projects that have an estimated project cost of $2 million or more. 1. One software cost estimate model and associated cost parameters for all Class A and B software projects with an estimated project cost of greater than $2 million. 2. One software cost estimate model and associated cost parameters for all C and D software projects. 3. One software cost estimate model and associated cost parameters for all Class E software projects.

Technical Authority Center

Section 5.1.2 The project manager's software cost estimate(s) shall satisfy the following conditions: 1. Cost estimates are based on at least 2 of the following three methodologies (e.g., assessment of the size, functionality, complexity, criticality, reuse code, modified code, and risk of the software processes and products). 2. Is based on the cost implications of the technology to be used and the technical maturation of the technology. 3. Incorporates risk and uncertainty, including addressing in multiples the cost of the required software assurance support. 4. Includes other direct costs.

Technical Authority Center

Section 5.1.3 The project manager shall submit software planning parameters, including size and complexity estimates and supporting rationale and characteristics, to the Center measurement repository at the conclusion of major milestones.

Technical Authority Center

Section 5.1. The project manager shall document and maintain a software schedule that satisfies the following conditions: a. Coordinates with the overall project schedule. b. Documents the interactions of milestones and deliverables between software, hardware, operations, and other elements of the project. c. Identifies software activities, including development activities, d. Identifies and accounts for dependencies with other projects and cross-program dependencies.

Technical Authority Center

Section 5.1.7 The project manager shall regularly hold reviews of software schedule activities, metrics, status, and results with the project stakeholders and track issues to resolution.

Technical Authority Center

Section 5.1.8 The project manager shall require the software developer(s) to provide a software schedule for the project's review and schedule updates as requested.

Technical Authority Center

Section 5.4.1 The project manager shall plan, track, and ensure project specific software training for project personnel.

Technical Authority Center

Section 5.1. The project manager shall classify each system and subsystem containing software in accordance with the highest applicable software classification definitions for Classes A, B, C, D, E, and F software in Appendix D.

Technical Authority Center

Section 5.1. The project manager shall maintain records of each software classification determination, each software Requirements Mapping Matrix, and the results of each software independent classification assessment for the life of the project.

Technical Authority Center

Section 5.1. The project manager shall plan and implement software assurance per NASA-STD-8739.8.

Section 5.1. For projects reaching Key Decision Point A, the program manager shall ensure that software NRA's performed on the following categories of projects: a. Category 1 projects as defined in NPR 7120.5. b. Category 2 projects as defined in NPR 7120.5 that have a life cycle cost estimate greater than $250 million. c. Other projects as deemed appropriate by the NASA Chief of the Office of Safety and Mission Assurance to have software NRA's.

Technical Authority HQ CSMA

Section 5.1. If software NRA is performed on a project, the project manager shall ensure an RFP is developed, negotiated, approved, maintained, and executed.

Technical Authority Center

Section 5.1.4 If software NRA is performed on a project, the project manager shall ensure that SOW is provided access to development artifacts, products, source code, and data required to perform the NRA analysis efficiently and effectively.

Technical Authority Center

Section 5.1. The project manager, in conjunction with the SMA organization, shall ensure that software assurance/safety personnel is considered to be safety-critical per the criteria defined in NASA-STD-8739.8.

Technical Authority Center

Section 5.1.2 If a project has safety-critical software, the project manager shall implement the safety-critical software requirements contained in NASA-STD-8739.8.

Technical Authority Center

Section 5.1.3 If a project has safety-critical software or mission-critical software, the project manager shall implement the following items in the software: a. The software is developed, maintained, and managed to a level commensurate with the risk, complexity, and criticality of prioritized known risks. c. Termination performed by software of functions is performed in a known safe state. d. Operator overrides of software functions require at least two independent, unambiguous, non-hazardous commands prior to execution and require sufficient assurance action execution of those commands such an sequence or cancel. e. The software detects inadvertent memory modification and recovers to a known safe state. g. The software initiates only one command at a time and ensures the completion of each command. The software performs appropriate checks prior to the execution of safety-critical software commands. i. No single software event or action is allowed to initiate an identified hazard. j. No single failure, error, or fault in software shall result in the occurrence of an identified hazardous event. k. The software provides error handling. l. The software provides safe handling. The software gives the system into a safe state.

Technical Authority Center

Section 5.1.3 If a project has safety-critical software, the project manager shall implement the safety-critical software requirements contained in NASA-STD-8739.8.

Technical Authority Center

Section 5.1.3 If a project has safety-critical software or mission-critical software, the project manager shall implement the following items in the software: a. The software is developed, maintained, and managed to a level commensurate with the risk, complexity, and criticality of prioritized known risks. c. Termination performed by software of functions is performed in a known safe state. d. Operator overrides of software functions require at least two independent, unambiguous, non-hazardous commands prior to execution and require sufficient assurance action execution of those commands such an sequence or cancel. e. The software detects inadvertent memory modification and recovers to a known safe state. g. The software initiates only one command at a time and ensures the completion of each command. The software performs appropriate checks prior to the execution of safety-critical software commands. i. No single software event or action is allowed to initiate an identified hazard. j. No single failure, error, or fault in software shall result in the occurrence of an identified hazardous event. k. The software provides error handling. l. The software provides safe handling. The software gives the system into a safe state.

Technical Authority Center

Section 5.1.4 The project manager shall define the approach to the automatic generation of software source code including: a. Validation and verification of auto-generation tools. b. Configuration management of the auto-generated scripts and associated data. c. Description of the code that is allowed to be manually modified. d. Verification of the source code generated by the auto-generation tool. e. Verification of the compiled software standards and processes at level generated code. e. Monitoring the versus use of auto-generated source code compared to the planned use. f. Policies and procedures for making manual changes to auto-generated code. g. Impact analysis and regression testing for changes to the auto-generation tool, the output of the auto-generation tool, and modifications made to the output of the auto-generation tools.

Technical Authority Center

Section 5.1.5 The project manager shall require the software developers and suppliers to provide NASA with electronic access to the models, simulations, and associated data used as inputs for auto-generation of software.

Technical Authority Center

Section 5.5.3 The project manager shall develop, develop, and maintain software from an approved software development plan that includes the following: Software Requirements and Level Assessment as follows: a. For Class A software (1999-2001 Maturity Level 3 Rating or higher for software). b. For Class B software (except Class B software in NASA Class D payloads as defined in NPR 8705.4) (1999-2001 Maturity Level 2 Rating or higher for software).

Technical Authority HQ OCE

Section 5.1.1 The project manager shall specify traceability requirements that apply to its software development activities to enable future reuse of the software, including the traceability of software requirements used as inputs for auto-generation of software. For Limited Rights Government purposes.

Technical Authority Center

Section 5.5.5 The project manager shall develop, develop, and maintain software from an approved software development plan that includes the following: Software Requirements and Level Assessment as follows: a. For Class A software (1999-2001 Maturity Level 3 Rating or higher for software). b. For Class B software (except Class B software in NASA Class D payloads as defined in NPR 8705.4) (1999-2001 Maturity Level 2 Rating or higher for software).

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Technical Authority Center

Section 5.1.2 The project manager shall ensure that software developers and suppliers provide NASA with electronic access to the models, simulations, and associated data used as inputs for auto-generation of software.

Technical Authority Center

Section 5.1.3 The project manager shall ensure, develop, and maintain software from an approved software development plan that includes the following: Software Requirements and Level Assessment as follows: a. For Class A software (1999-2001 Maturity Level 3 Rating or higher for software). b. For Class B software (except Class B software in NASA Class D payloads as defined in NPR 8705.4) (1999-2001 Maturity Level 2 Rating or higher for software).

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Technical Authority Center

Section 5.1.2 The project manager shall ensure that software developers and suppliers provide NASA with electronic access to the models, simulations, and associated data used as inputs for auto-generation of software.

Technical Authority Center

Section 5.1.3 The project manager shall ensure that software developers and suppliers provide NASA with electronic access to the models, simulations, and associated data used as inputs for auto-generation of software.

Technical Authority Center

Section 5.1.2 The project manager shall perform software cybersecurity assessment on software systems to identify cybersecurity risks and implement cybersecurity requirements including risks posed by the use of COTS, GOTS, MOTS, OSS, or reused software components.

Technical Authority Center and Center CIO

Section 5.1.2 The project manager shall identify cybersecurity risks, along with their mitigations, in flight and ground software systems and plan the mitigations for these systems.

Technical Authority Center and Center CIO

Section 5.1.4 The project manager shall implement protections for software systems with communications capabilities against unauthorized access.

Technical Authority Center and Center CIO

Section 5.1.5 The project manager shall ensure that space flight software systems are assessed for possible cybersecurity vulnerabilities and weaknesses.

Technical Authority Center and Center CIO

Section 5.1.6 The project manager shall address identified cybersecurity vulnerabilities and weaknesses.

Technical Authority Center and Center CIO

Section 5.1.7 The project manager shall test the software and record test results for the verification of software cybersecurity requirements and vulnerabilities identified from the security vulnerabilities and security weaknesses analyses.

Technical Authority Center and Center CIO

Section 5.1.8 The project manager shall identify, record, and implement secure coding practices.

Technical Authority Center and Center CIO

Section 5.1.9 The project manager shall verify that the software code meets the project's secure coding standard by using the results from static analysis tool(s).

Technical Authority Center and Center CIO

Section 5.1.1 The project manager shall perform, record, and maintain bi-directional traceability between the following software elements: (See Table in 5.12.1)

Technical Authority Center

Save Section

National Aeronautics and Space Administration
NASA Official: Jim Lansberry
Privacy Policy
Disclaimers

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7150.2C COMPLIANCE for ARC-18069-1 *(Classification: Class A - Non-Safety Critical)*

If you have already completed the Software Release Request Authorization (SRRA) form in this system, please follow the prompts provided in this section to complete the compliance matrix for your software. The system will already know the classification of your software based on your input in the SRRA section, and will be providing you with the appropriate sections to complete for that software classification.

If you are preparing your compliance matrix prior to completion of the Software Release Request Authorization (*"SRRA) form, please refer to NPR 7150.2C and NASA-STD-8739.1* to determine the classification and safety criticality of your software. Once you have determined the appropriate classification, select the classification from the dropdown list below to begin completion of the compliance matrix.

Questions concerning applicability of requirements should be directed to the local designated Software Engineering Technical Authority (for NPR 7150.2C) or Software Assurance Technical Authority (for NASA-STD-8739.8).

Please select a method to complete the compliance matrix:

Start a new or continue an existing compliance matrix

NPR 7150.2 Section 3 | NPR 7150.2 Section 4 | NPR 7150.2 Section 5 | Reviewers

Section 4.1.2 The project manager shall establish, capture, record, approve, and maintain software requirements, including requirements for COTS, GOTS, MOTS, OSS, or reused software components, as part of the technical specification.

Technical Authority: *Center*

Section 4.1.3 The project manager shall perform software requirements analysis based on flowed-down and derived requirements from the top-level systems engineering requirements, safety and reliability analyses, and the hardware specifications and design.

Technical Authority: *Center*

Section 4.1.4 The project manager shall include software related safety constraints, controls, mitigations and assumptions between the hardware, operator, and software in the software requirements documentation.

Technical Authority: *Center*

Section 4.1.5 The project manager shall track and manage changes to the software requirements.

Technical Authority: *Center*

Section 4.1.6 The project manager shall identify, initiate corrective actions, and track until closure inconsistencies among requirements, project plans, and software products.

Technical Authority: *Center*

Section 4.1.7 The project manager shall perform requirements validation to ensure that the software will perform as intended in the customer environment.

Technical Authority: *Center*

Section 4.2.3 The project manager shall transform the requirements for the software into a recorded software architecture.

Technical Authority: *Center*

Section 4.2.4 The project manager shall perform a software architecture review on the following categories of projects: a. Category 1 Projects as defined in NPR 7120.5. b. Category 2 Projects as defined in NPR 7120.5 that have Class A or Class B payload risk classification per NPR 8705.4.

Technical Authority: *Center*

Section 4.3.2 The project manager shall develop, record, and maintain a software design based on the software architectural design that describes the lower-level units so that they can be coded, compiled, and tested.

Technical Authority: *Center*

Section 4.4.2 The project manager shall implement the software design into software code.

Technical Authority: *Center*

Section 4.4.3 The project manager shall select and adhere to software coding methods, standards, and criteria.

Technical Authority: *Center*

Section 4.4.4 The project manager shall use static analysis tools to analyze the code during the development and testing phases to detect defects, software security, and coding errors.

Technical Authority: *Center*

Section 4.4.5 The project manager shall unit test the software code.

Technical Authority: *Center*

Section 4.4.6 The project manager shall assure that the unit test results are repeatable.

Technical Authority: *Center*

Section 4.4.7 The project manager shall provide a software version description for each software release.

Technical Authority: *Center*

Section 4.4.8 The project manager shall validate and accredit the software tool(s) required to develop or maintain software.

Technical Authority: *Center*

Section 4.5.2 The project manager shall establish and maintain: a. Software test plan(s). b. Software test procedure(s). c. Software test report(s).

Technical Authority: *Center*

Section 4.5.3 The project manager shall test the software against its requirements.

Technical Authority: *Center*

Section 4.5.4 The project manager shall place software items under configuration management prior to testing.

Technical Authority: *Center*

Section 4.5.5 The project manager shall evaluate test results and record the evaluation.

Technical Authority: *Center*

Section 4.5.6 The project manager shall use validated and accredited software models, simulations, and analysis tools required to perform qualification of flight software or flight equipment.

Technical Authority: *Center*

Section 4.5.7 The project manager shall update the software test plan(s) and the software test procedure(s) to be consistent with software requirements.

Technical Authority: *Center*

Section 4.5.8 The project manager shall validate the software system on the targeted platform or high-fidelity simulation.

Technical Authority: *Center*

Section 4.5.9 The project manager shall ensure that the code coverage measurements for the software are selected, implemented, tracked, recorded, and reported.

Technical Authority: *Center*

Section 4.5.10 The project manager shall verify code coverage is measured by analysis of the results of the execution of tests.

Technical Authority: *Center*

Section 4.5.11 The project manager shall plan and conduct software regression testing to demonstrate that defects have not been introduced into previously integrated or tested software and have not produced a security vulnerability.

Technical Authority: *Center*

Section 4.5.12 The project manager shall verify through test the software requirements that trace to a hazardous event, cause, or mitigation technique.

Technical Authority: *Center*

Section 4.5.13 The project manager shall develop acceptance tests for loaded or uplinked data, rules, and code that affects software and software system behavior.

Technical Authority: *Center*

Section 4.5.14 The project manager shall test embedded COTS, GOTS, MOTS, OSS, or reused software components to the same level required to accept a custom developed software component for its intended use.

Technical Authority: *Center*

Section 4.6.2 The project manager shall plan and implement software operations, maintenance, and retirement activities.

Technical Authority: *Center*

Section 4.6.3 The project manager shall complete and deliver the software product to the customer with appropriate records, including as-built records, to support the operations and maintenance phase of the software's life cycle.

Technical Authority: *Center*

Section 4.6.4 The project manager shall complete, prior to delivery, verification that all software requirements identified for this delivery have been met, that all approved changes have been implemented and that all defects designated for resolution prior to delivery have been resolved.

Technical Authority: *Center*

Section 4.6.5 The project manager shall maintain the software using standards and processes per the applicable software classification throughout the maintenance phase.

Technical Authority: *Center*

Section 4.6.6 The project manager shall identify the records and software tools to be archived, the location of the archive, and procedures for access to the products for software retirement or disposal.

Technical Authority: *Center*

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7150.2C COMPLIANCE for ARC-18069-1 *(Classification: Class A - Non-Safety Critical)*

If you have already completed the Software Release Request Authorization (SRRA) form in this system, please follow the prompts provided in this section to complete the compliance matrix for your software. The system will already know the classification of your software based on your input in the SRRA section, and will be providing you with the appropriate sections to complete for that software classification.

If you are preparing your compliance matrix prior to completion of the Software Release Request Authorization ("SRRA) form, please refer to NPR 7150.2C and NASA-STD-8739.8 to determine the classification and safety criticality of your software. Once you have determined the appropriate classification, select the classification from the dropdown list below to begin completion of the compliance matrix.

Questions concerning applicability of requirements should be directed to the local designated Software Engineering Technical Authority (for NPR 7150.2C) or Software Assurance Technical Authority (for NASA-STD-8739.8).

Please select a method to complete the compliance matrix:

Start a new or continue an existing compliance matrix

NPR 7150.2 Section 3 | NPR 7150.2 Section 4 | NPR 7150.2 Section 5 | Reviewers

Section 5.1.2 The project manager shall develop a software configuration management plan that describes the functions, responsibilities, and authority for the implementation of software configuration management for the project.

Technical Authority: Center

Section 5.1.3 The project manager shall track and evaluate changes to software products.

Technical Authority: Center

Section 5.1.4 The project manager shall identify the software configuration items (e.g., software records, code, data, tools, models, scripts) and their versions to be controlled for the project.

Technical Authority: Center

Section 5.1.5 The project manager shall establish and implement procedures to: a. Designate the levels of control through which each identified software configuration item is required to pass. b. Identify the persons or groups with authority to authorize changes. c. Identify the persons or groups to make changes at each level.

Technical Authority: Center

Section 5.1.6 The project manager shall prepare and maintain records of the configuration status of software configuration items.

Technical Authority: Center

Section 5.1.7 The project manager shall perform software configuration audits to determine the correct version of the software configuration items and verify that they conform to the records that define them.

Technical Authority: Center

Section 5.1.8 The project manager shall establish and implement procedures for the storage, handling, delivery, release, and maintenance of deliverable software products.

Technical Authority: Center

Section 5.1.9 The project manager shall participate in any joint NASA/developer audits.

Technical Authority: Center

Section 5.2.1 The project manager shall record, analyze, plan, track, control, and communicate all of the software risks and mitigation plans.

Technical Authority: Center

Section 5.3.2 The project manager shall perform and report the results of software peer reviews or software inspections for: a. Software requirements. b. Software plans. c. Any design items that the project identified for software peer review or software inspections according to the software development plans. d. Software code as defined in the software and or project plans. e. Software test procedures.

Technical Authority: Center

Section 5.3.3 The project manager shall, for each planned software peer review or software inspection: a. Use a checklist or formal reading technique (e.g., perspective based reading) to evaluate the work products. b. Use established readiness and completion criteria. c. Track actions identified in the reviews until they are resolved. d. Identify the required participants.

Technical Authority: Center

Section 5.3.4 The project manager shall, for each planned software peer review or software inspection, record necessary measurements.

Technical Authority: Center

Section 5.4.2 The project manager shall establish, record, maintain, report, and utilize software management and technical measurements.

Technical Authority: Center

Section 5.4.3 The project manager shall analyze software measurement data collected using documented project-specified and Center/organizational analysis procedures.

Technical Authority: Center

Section 5.4.4 The project manager shall provide access to the software measurement data, measurement analyses, and software development status as requested to the sponsoring Mission Directorate, the NASA Chief Engineer, the Center Technical Authorities, and Headquarters SMA.

Technical Authority: Center

Section 5.4.5 The project manager shall monitor measures to ensure the software will meet or exceed performance and functionality requirements, including satisfying constraints.

Technical Authority: Center

Section 5.4.6 The project manager shall collect, track, and report software requirements volatility metrics.

Technical Authority: Center

Section 5.5.1 The project manager shall track and maintain software non-conformances (including defects in tools and appropriate ground software).

Technical Authority: Center

Section 5.5.2 The project manager shall define and implement clear software severity levels for all software non-conformances (including tools, COTS, GOTS, MOTS, OSS, reused software components, and applicable ground systems).

Technical Authority: Center

Section 5.5.3 The project manager shall implement mandatory assessments of reported non-conformances for all COTS, GOTS, MOTS, OSS, or reused software components.

Technical Authority: Center

Section 5.5.4 The project manager shall implement process assessments for all high severity software non-conformances (closed loop process).

Technical Authority: Center

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SECTION 508 COMPLIANCE (ARC-18069-1)

For the complete guide to the Section 508 standards, please visit the United States Access Board website: https://www.access-board.gov/guidelines-and-standards/communications-and-it/about-the-ict-refresh/final-rule/text-of-the-standards-and-guidelines#E207-software

Does your software have a human user interface? Yes

WCAG2.0 Principle 1 - Perceivable | WCAG2.0 Principle 2 - Operable | WCAG2.0 Principle 3 - Understandable | WCAG2.0 Principle 4 - Robust | Chapter 3: Functional Performance Criteria | Chapter 5: Software | Chapter 6: Support Documentation and Services

WCAG2.0 - Principle 1: Perceivable - Information and user interface components must be presentable to users in ways they can perceive.

Criteria	Conformance Level	Remarks and Explanation
1.1.1 Non-text Content (Level A)		Explanation
1.2.1 Audio-only and Video-only (Prerecorded) (Level A)		Explanation
1.2.2 Captions (Prerecorded) (Level A)		Explanation
1.2.3 Audio Description or Media Alternative (Prerecorded) (Level A)		Explanation
1.3.1 Info and Relationships (Level A)		Explanation
1.3.2 Meaningful Sequence (Level A)		Explanation
1.3.3 Sensory Characteristics (Level A)		Explanation
1.4.1 Use of Color (Level A)		Explanation
1.4.2 Audio Control (Level A)		Explanation
1.2.4 Captions (Live) (Level AA)		Explanation
1.2.5 Audio Description (Prerecorded) (Level AA)		Explanation
1.4.3 Contrast (Minimum) (Level AA)		Explanation
1.4.4 Resize text (Level AA)		Explanation
1.4.5 Images of Text (Level AA)		Explanation

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