



Ames Procedural Requirements

APR 7120.5

Effective Date: ____ December 23, 2025__

Expiration Date: ____ December 23, 2030__

COMPLIANCE IS MANDATORY

Subject: Project Management for Space Flight Systems

Responsible Office: Code D / Office of the Chief Engineer

CHANGE LOG

Status [Baseline /Revision /Cancelled]	Document Revision	Date of Change	Description
Baseline	-		New baseline. The entirety of the APR was revised to delete all information covered by NPR 7120.5, what remains covers the tailoring authorities for NPR 7120.5 requirements delegated to the Centers for adjudication.

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PREFACE

P.1 PURPOSE

- a. This Ames Procedural Requirement (APR) establishes the tailoring authorities for NPR 7120.5 requirements that have been delegated to the Centers for adjudication.
- b. This APR also establishes the schedule/timelines for projects to coordinate approval from the appropriate NPR 7120.5 tailoring authorities.

P.2 APPLICABILITY

- a. This directive is applicable to ARC and associated facilities.
- b. This directive applies to contractors, grant recipients, or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants, or agreements.
- c. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is recommended, but not required, "will" denotes an expected outcome, and "are/is" denotes descriptive material.
- d. In this directive, all document citations are assumed to be the latest version unless otherwise noted.
- e. This APR applies to all projects governed by NPR 7120.5.
- f. For those NPR 7120.5 activities where ARC is responsible for a task within a project led by an organization outside of ARC, procedural requirements are jointly negotiated by the cognizant Decision Authorities (DAs) and delineated in the statement of work or customer agreement for the task. That agreement establishes the hierarchy and reconciliation of the procedural requirements to be applied.

P.3 AUTHORITY

- a. NPR 7120.5 NASA Space Flight Program and Project Management Requirements

P.4 APPLICABLE DOCUMENTS AND FORMS

- a. NPR 7123.1 NASA Systems Engineering Processes and Requirements.

P.5 MEASUREMENT/VERIFICATION

- a. Verification of conformance to requirements in this directive are measured through Center and Responsible Organizational management reviews, self-assessments, and subsequent analysis and reports of conformance to requirements, as well as periodic internal audits. Measuring effectiveness will at a minimum use customer satisfaction data.

P.6 CANCELLATION

- a. APR 7120.5, Project Management for Space Flight Systems, dated May 21, 2018.

Eugene Tu
Director

DISTRIBUTION STATEMENT:

Internal and external distribution.

CHAPTER 1 RESPONSIBILITIES

1.1 Managers of NPR 7120.5 Projects shall:

- a. Refer to Chapter 2 to identify the authorities responsible for adjudicating tailoring requests.
- b. Coordinate tailoring of requirements with all the applicable Authorities.
- c. Provide all the applicable Authorities a case for the requested tailoring, including relevant engineering analysis; alternatives; schedule, cost, and performance impacts; and residual risk assessments.
- d. Identify all proposed tailoring at the Systems Requirements Review (SRR) or equivalent.
- e. Coordinate with the Tailoring Authorities to have all tailoring proposals approved such that they can be documented in the Preliminary Project Plan and presented at the Mission Definition Review/ Systems Definition Review (MDR/SDR).
- f. Regain approval by the tailoring Authorities for any previously approved tailoring impacted by changes to the approved Project Plan.

1.2 Tailoring Authorities, as identified in Chapter 2, shall:

- a. Provide the Project with a list of any information and/or preferred formats that they require to adjudicate a request for tailoring, beyond those stated in paragraph 1.1c.
- b. Provide the Project its tailoring adjudication such that they can be documented in the Preliminary Project Plan and presented at the MDR/SDR.

CHAPTER 2 DELEGATED AUTHORITIES

2.1 OCE Delegated Requirements

- a. Requirements specified in NPR 7120.5, owned by OCE, and delegated to centers are subsequently owned by authorities indicated in Appendix B's Table B (Tailoring Authorities for OCE Requirements Delegated to the Center).

2.2 OCFO Delegated Requirements

- a. Requirements specified in NPR 7120.5, owned by OCFO, and delegated to centers are subsequently owned by the Ames Chief Financial Officer as the tailoring authority.

2.3 OSMA Delegated Requirements

- a. Requirements specified in NPR 7120.5, owned by OSMA, and delegated to centers are subsequently owned by the Director of Safety and Mission Assurance (Code Q).

APPENDIX A. ACRONYMS

ACE	Ames Chief Engineer
APR	Ames Procedural Requirement
ARC	Ames Research Center
DA	Decision Authority
MDR	Mission Design Review
OCE	Office of Chief Engineer
OCFO	Office of Chief Financial Officer
OSMA	Office of Safety and Mission Assurance
SDR	Systems Design Review
SRR	Systems Requirements Review

APPENDIX B. ARC TAILORING AUTHORITIES FOR NPR 7120.5 REQUIREMENTS DELEGATED TO THE CENTER BY OCE

Note: Projects are required to coordinate approval with all Authorities indicated with an “X.”

Table B. Tailoring Authorities for OCE Requirements Delegated to the Center

Paragraph/ Section	NPR 7120.5 Requirement Statement	Tailoring Authority		
		Managing Organization Director	ARC Chief Engineer (ACE)	Other
2.2.4	Each program and project shall perform the LCRs and KDPs identified in its respective life-cycle figure in accordance with NPR 7123.1, applicable Center practices, and the requirements of this document.	X		
Table I-1 Uncoupled and Loosely Coupled Program Milestone Products and Control Plans Maturity Matrix				
Table I-1	3.a. Mission Directorate requirements and constraints [Baseline at SRR] [Required per NPR 7123.1]	X	X	
Table I-1	3.b. Traceability of program-level requirements on projects to the Agency strategic goals and Mission Directorate requirements and constraints [Baseline at SDR] [Required per NPR 7123.1]	X	X	
Table I-1 Uncoupled and Loosely Coupled Program Plan Control Plans				
Table I-1	6. Systems Engineering Management Plan [Baseline at SDR] [Required per NPR 7123.1]		X	
Table I-1	10. Configuration Management Plan [Baseline at SDR] [Required per NPR 7120.5; additional information in NPR 7123.1 and SAE/EIA 649]	X	X	
Table I-2 Tightly Coupled Program Milestone Products Maturity Matrix				
Table I-2	3.a. Mission Directorate requirements and constraints [Baseline at SRR] [Required per NPR 7123.1]	X	X	
Table I-2	3.b. Traceability of program-level requirements on projects to the Agency strategic goals and Mission Directorate requirements and constraints [Baseline at SDR] [Required per NPR 7123.1]	X	X	
Table I-3 Tightly Coupled Program Plan Control Plans Maturity Matrix				
Table I-3	6. Systems Engineering Management Plan [Baseline at SDR] [Required per NPR 7123.1]		X	
Table I-3	7. Verification and Validation Plan [Baseline at PDR] [Required per NPR 7120.5, additional information in NPR 7123.1]		X	
Table I-3	10. Mission Operations Plan [Baseline at ORR] [Required per NPR 7120.5]	X	X	
Table I-3	14. Configuration Management Plan [Baseline at SDR] [Required per NPR 7120.5; additional information in NPR 7123.1 and SAE/EIA 649]	X	X	

Paragraph/ Section	NPR 7120.5 Requirement Statement	Tailoring Authority		
		Managing Organization Director	ARC Chief Engineer (ACE)	Other
Table I-4 Headquarters and Program Products for a Project				
Table I-4	2.b. Documentation of program-level requirements and constraints on the project (from the Program Plan) and stakeholder expectations, including mission objectives/goals and mission success criteria [Baseline at SRR] [Required per NPR 7123.1]	X	X	
Table I-4 Project Technical Products				
Table I-4	1. Concept Documentation [Approve at MCR] [Required per NPR 7123.1]	X	X	
Table I-4	2. Mission, Spacecraft, Ground, and Payload Architectures [Baseline mission and spacecraft architecture at SRR; Baseline ground and payload architectures at SDR/MDR] [Required per NPR 7123.1]	X	X	
Table I-4	3. Project-Level, System, and Subsystem Requirements [Baseline project-level and system-level requirements at SRR; Baseline subsystem requirements at PDR] [Required per NPR 7123.1]	X	X	
Table I-4	4. Design Documentation [Baseline at CDR] [Required per NPR 7123.1]	X	X	
Table I-4	5. Operations Concept Documentation [Baseline at PDR] [Required per NPR 7120.5]	X	X	
Table I-4	6. Technology Readiness Assessment Documentation [Required per NPR 7120.5 Appendix F FA Template]	X	X	
Table I-4	7. Engineering Development Assessment Documentation [Required per NPR 7120.5 Appendix F FA Template]		X	
Table I-4	8. Heritage Assessment Documentation [Required per NPR 7120.5 Appendix F FA Template]		X	
Table I-4	11. Verification and Validation Report [Baseline at MRR/FRR] [Required per NPR 7123.1]		X	
Table I-4	12. Operations Handbook [Baseline at ORR] [additional information in NPR 7120.5 Appendix A]	X	X	
Table I-4	16. Decommissioning/Disposal Plan [Baseline at DR] [Required per NPR 7123.1]	X	X	
Table I-5 Project Plan Control Plans Maturity Matrix				
Table I-5	6. Systems Engineering Management Plan [Baseline at SRR] [Required per NPR 7123.1]		X	
Table I-5	9. Verification and Validation Plan [Baseline at PDR] [Required per NPR 7120.5, additional information in NPR 7123.1]		X	
Table I-5	11. Mission Operations Plan [Baseline at ORR] [Required per NPR 7120.5]	X	X	
Table I-5	15. Integration Plan [Baseline at PDR] [Required per NPR 7120.5]	X	X	
Table I-5	16. Configuration Management Plan [Baseline at SRR] [Required per NPR 7120.5; additional information in NPR 7123.1 and SAE/EIA 649]	X	X	

Paragraph/ Section	NPR 7120.5 Requirement Statement	Tailoring Authority		
		Managing Organization Director	ARC Chief Engineer (ACE)	Other
Table I-6 Single-Project Program Milestone Products Maturity Matrix				
Table I-6	3. Traceability of Agency strategic goals and Mission Directorate requirements and constraints to program/project-level requirements and constraints [Baseline at SRR] [Required per NPR 7123.1]	X	X	
Table I-6 Single-Project Program Technical Products				
Table I-6	1. Concept Documentation [Required per NPR 7123.1]	X	X	
Table I-6	2. Mission, Spacecraft, Ground, and Payload Architectures [Baseline mission and spacecraft architecture at SRR; baseline ground and payload architectures at SDR/MDR] [Required per NPR 7123.1]	X	X	
Table I-6	3. Project-Level, System, and Subsystem Requirements [Baseline project-level and system-level requirements at SRR; baseline subsystem requirements at PDR] [Required per NPR 7123.1]	X	X	
Table I-6	4. Design Documentation [Baseline at CDR] [Required per NPR 7123.1]	X	X	
Table I-6	5. Operations Concept Documentation [Baseline at PDR] [Required per NPR 7120.5]	X	X	
Table I-6	6. Technology Readiness Assessment Documentation [Required per NPR 7120.5 Appendix F FA Template]	X	X	
Table I-6	7. Engineering Development Assessment Documentation [Required per NPR 7120.5 Appendix F FA Template]		X	
Table I-6	8. Heritage Assessment Documentation [Required per NPR 7120.5 Appendix F FA Template]		X	
Table I-6	11. Verification and Validation Report [Baseline at MRR/FRR] [Required per NPR 7123.1]		X	
Table I-6	12. Operations Handbook [Baseline at ORR] [additional information in NPR 7120.5 Appendix A]	X	X	
Table I-6	16. Decommissioning/Disposal Plan [Baseline at DR] [Required per NPR 7123.1]	X	X	
Table I-7 Single-Project Program Plan Control Plans Maturity Matrix				
Table I-7	6. Systems Engineering Management Plan [Baseline at SRR] [per NPR 7123.1]		X	
Table I-7	9. Verification and Validation Plan [Baseline at PDR] [Required per NPR 7120.5, additional information in NPR 7123.1]		X	
Table I-7	11. Mission Operations Plan [Baseline at ORR] [Required per NPR 7120.5]	X	X	
Table I-7	15. Integration Plan [Baseline at PDR] [Required per NPR 7120.5]	X	X	
Table I-7	16. Configuration Management Plan [Baseline at SRR] [Required per NPR 7120.5; additional information in NPR 7123.1 and SAE/EIA 649]	X	X	