SIB NPR 7120.5F Waiver Process

# Purpose

The purpose of this document is to add clarification to the tailoring / waiver process for NASA Procedural Requirement 7120.5F: NASA Space Flight Program and Project Management Requirements. Specifically, this document will ***only*** deal with the requirements that have been designated to the Strategic Insights and Budget (SIB) per NPR 7120.5F Compliance Matrix[[1]](#footnote-1). **Table 1** provides a summary of these requirements, the associated paragraph in NPR 7120.F that the requirement resides and affect project/program type.

Table 1: NPR 7120.5F Requirements Designated to the Strategic Investments Division

|  |  |  |
| --- | --- | --- |
| **Requirement Statement** | **Paragraph Reference** | **Affected Project/Program Type** |
| Documented Cost and Schedule Baselines [Baseline at SDR] [Required per NPR 7120.5] | Table I-1 | Uncoupled and Loosely Coupled Program Milestone Products and Control Plans Maturity Matrix |
| Documentation of Basis of Estimate (cost and schedule) [Baseline at SDR] [Required per NPR 7120.5] | Table I-1 |
| Documented Cost and Schedule Baselines [Baseline at PDR] [Required per NPR 7120.5] | Table I-2 | Tightly Coupled Program Milestone Products Maturity Matrix |
| Documentation of Basis of Estimate (cost and schedule) [Baseline at PDR] [Required per NPR 7120.5] | Table I-2 |
| CADRe [Baseline at SRR] [Required per NPR 7120.5] | Table I-4 | Project Management, Planning, and Control Products |
| Schedule [Baseline Integrated Master Schedule at PDR] [Required per NPR 7120.5] | Table I-4 |
| Cost Estimate [Baseline at PDR] [Required per NPR 7120.5] | Table I-4 |
| Basis of Estimate (cost and schedule) [Required per NPR 7120.5] | Table I-4 |
| Confidence Level(s) and supporting documentation [Baseline at PDR] [Required per NPR 7120.5] | Table I-4 |
| External Cost and Schedule Commitments [Baseline at PDR] [Required per NPR 7120.5] | Table I-4 |
| CADRe [Baseline at SRR] [Required per NPR 7120.5] | Table I-6 | Single-Project Program Management, Planning, and Control Products |
| PMB [Baseline at PDR] [Required per NPR 7120.5] | Table I-6 |
| Schedule [Baseline Integrated Master Schedule at PDR] [Required per NPR 7120.5] | Table I-6 |
| Cost Estimate (Risk-Informed or Schedule-Adjusted Depending on Phase) [Risk-informed and schedule-adjusted baseline at PDR] [Required per NPR 7120.5] | Table I-6 |
| Basis of Estimate (cost and schedule) [Required per NPR 7120.5] | Table I-6 |
| Confidence Level(s) and supporting documentation [Baseline at PDR] [Required per NPR 7120.5] | Table I-6 |
| External Cost and Schedule Commitments [Baseline at PDR] [Required per NPR 7120.5] | Table I-6 |
| CADRe [Baseline at SRR] [Required per NPR 7120.5]  | Table I-6 |
| PMB [Baseline at PDR] [Required per NPR 7120.5] | Table I-6 |
| Projects, single-project programs (and other programs at the discretion of the MDAA) with a life-cycle cost (LCC) or initial capability cost (see Section 2.4.1.3.b) estimated to be greater than $250 million shall perform earned value management (EVM) and comply with EIA-748, Standard for Earned Value Management Systems for all portions of work including in-house and contracted portions of the project.  | 2.2.8 | Projects and single-project programs |
| Program and project managers with programs and projects subject to EVM shall utilize the NASA EVM Capability Process for in-house work.  | 2.2.8.1 |
| EVM system requirements for contracted work shall be applied to suppliers in accordance with the NASA Federal Acquisition Regulation (FAR) Supplement, independent of phase and the $250 million threshold (https://www.hq.nasa.gov/office/procurement/regs/NFS.pdf.).  | 2.2.8.2 | Contracts under NASA FAR Supplement |
| Mission Directorates shall conduct an IBR in preparation for KDP C and for major changes that significantly impact the cost and schedule baseline.  | 2.2.8.3 | Projects and single-project programs |
| EVMS surveillance shall be conducted on contracts and programs and projects with in-house work to ensure continued compliance with EIA-748, Standard for Earned Value Management Systems. | 2.2.8.4 |
| During Formulation, the Decision Memorandum shall establish a target LCC or initial capability cost range (and schedule range, if applicable) as well as the Management Agreement addressing the schedule and resources required to complete Formulation.  | 2.4.1.3 | All projects and programs |
| For single-project programs and projects with a LCC or initial capability cost greater than or equal to $1 billion, the Decision Memorandum shall establish a high and low value for cost and schedule with the corresponding JCL value at KDP B. | 2.4.1.3a  | Single-project programs and projects with a LCC or initial capability cost greater than or equal to $1 billion |
| All single-project program managers and project managers shall document the Agency’s LCC estimate or initial capability cost estimate and other parameters in the Decision Memorandum for Implementation (KDP C), and this becomes the ABC. | 2.4.1.5 | Single-project programs and projects  |
| For all single-project programs and projects with a definite Phase E end point, the Agency’s LCC estimate and other parameters shall become the ABC. | 2.4.1.5a |
| For single-project programs and projects that have an indefinite Phase E end point and plan for on-going production and operations during Phase E, the initial capability cost estimate and other parameters shall become the ABC.  | 2.4.1.5b |
| Tightly coupled programs shall document their LCC estimate in accordance with the scope defined in the FAD or PCA, and other parameters in their Decision Memorandum at KDP I and update it at subsequent KDPs. | 2.4.1.7 | Tightly coupled programs |
| Programs or projects shall be rebaselined when: (1) the estimated development cost exceeds the ABC development cost by 30 percent or more (for projects over $250 million, also that Congress has reauthorized the project); (2) the NASA AA judges that events external to the Agency make a rebaseline appropriate; or (3) the NASA AA judges that the program or project scope defined in the ABC has been changed or the project has been interrupted.  | 2.4.1.8 | All programs and projects with an ABC |
| The program or project shall document the basis of estimate (BOE) for cost estimates and planned schedules in retrievable program or project records. | 2.4.2 | All programs and projects |
| Single-project programs with an estimated LCC under $1 billion and projects with an estimated LCC greater than $250 million and under $1 billion shall provide a range of cost and a range for schedule, each range (with confidence levels identified for the low and high values of the range) established by a probabilistic analysis and based on identified resources and associated uncertainties by fiscal year.  | 2.4.3.1 a. | Single-project program |
| Single-project programs and projects with an estimated LCC greater than or equal to $1 billion shall develop a JCL and provide a high and low value for cost and schedule with the corresponding JCL value (e.g., 50 percent, 70 percent). | 2.4.3.1 b. | Single-project programs and projects with an estimated LCC greater than or equal to $1 billion |
| At KDP C, single-project programs (regardless of LCC) and projects with an estimated LCC greater than $250 million shall develop a cost-loaded schedule and perform a risk-informed probabilistic analysis that produces a JCL.  | 2.4.3.2 | Single-project programs (regardless of LCC) and projects with an estimated LCC greater than $250 million |
| At CDR, single-project programs and projects with an estimated LCC greater than or equal to $1 billion shall update their KDP C JCL and communicate the updated JCL values for the ABC and Management Agreement to the APMC for informational purposes.  | 2.4.3.3 | Single-project programs and projects with an estimated LCC greater than or equal to $1 billion |
| At KDP D, single-project programs and projects with an estimated LCC greater than or equal to $1 billion shall update their JCL if current reported development costs have exceeded the development ABC cost by 5 percent or more and document the updated JCL values for the ABC and Management Agreement in the KDP D Decision Memorandum. | 2.4.3.4 |
| When a single-project program (regardless of LCC) or project with an estimated LCC greater than $250 million is rebaselined, a JCL shall be calculated and evaluated as a part of the rebaselining approval process. | 2.4.3.5 | Single-project program (regardless of LCC) or project with an estimated LCC greater than $250 million |
| At KDP B, Mission Directorates shall plan and budget single-project programs and projects with an estimated LCC greater than or equal to $1 billion based on a 70 percent JCL or as approved by the Decision Authority.  | 2.4.4.1 | Single-project programs and projects with an estimated LCC greater than or equal to $1 billion |
| At KDP C, Mission Directorates shall plan and budget single-project programs (regardless of LCC) and projects with an estimated LCC greater than $250 million based on a 70 percent JCL or as approved by the Decision Authority. | 2.4.4.2 | Single-project programs (regardless of LCC) and projects with an estimated LCC greater than $250 million |
| At KDP B and KDP C, any JCL approved by the Decision Authority at less than 70 percent shall be justified and documented in a Decision Memorandum. | 2.4.4.3 | All programs and projects required to conduct JCL |
| At KDP C, Mission Directorates shall ensure funding for single-project programs (regardless of LCC) and projects with an estimated LCC greater than $250 million is consistent with the Management Agreement and in no case less than the equivalent of a 50 percent JCL or as approved by the Decision Authority. | 2.4.4.4 | Single-project programs (regardless of LCC) and projects with an estimated LCC greater than $250 million |
| At KDP C, any funding approved by the Decision Authority that is inconsistent with the Management Agreement or less than 50 percent JCL shall be justified and documented in a Decision Memorandum. | 2.4.4.5 | All programs and projects required to conduct JCL |
| Tightly coupled, loosely coupled, and uncoupled programs shall provide analysis of the program’s risk posture to the governing PMC as each new project reaches KDP B and C or when a project’s ABC is rebaselined. | 2.4.5 | Tightly coupled, loosely coupled, and uncoupled programs |

# Review of Tailoring Requirements

There are two mechanisms for tailoring the requirements in 7120.5F[[2]](#footnote-2). Requests for tailoring may be submitted in the form of the Compliance Matrix[[3]](#footnote-3) or by using a waiver request (see the NASA Space Flight Program and Project Management Handbook) individually or in groups. Regardless of whether the waiver is documented as a stand-alone document or as part of the Compliance Matrix, signatures must be obtained from the organization responsible for that requirement. This section summarizes each mechanism with regards to the SIB designated requirements.

## Compliance Matrix

The Compliance Matrix is provided to streamline the waiver and deviation process described in paragraph 3.5 in NPR 7120.5F. If the Compliance Matrix is completed in accordance with NPR 7120.5F Appendix C instructions, it meets the requirements for requesting tailoring and serves as a group submittal for waivers to NPR 7120.5F. If the compliance Matrix changes or if compliance is phased for existing programs or projects, updated version of the Compliance Matrix are incorporated into an approved Formulation Agreement or Program or Project Plan revision. For a complete conversation on the NPR 7120.5F Compliance Matrix please refer to Appendix C within NPR 7120.5F. This section will address the specific SIB designated requirements with regards to how to fill the Compliance Matrix.

If the Program or project (P/p) plans to fully comply with the requirements summarized in **Table 1** on this document, then no signature is required from the SIB and the P/p can merely fill the “Comply?” column to “FC” for “fully compliant”.

If the estimated lifecycle cost for a project is below the provided thresholds provided in 7120.5F, then requirements would be designated as “N/A” for “non applicable” with the justification of “The requirement does not apply due to the estimated lifecycle cost for [project] is below threshold”. The CADRe requirements currently have no documented threshold.

If the P/p decides to tailor one of the requirements that have been designated to the SIB, a “T” for tailored must go in the Compliance Matrix and an appropriate justification must be written. Approval will need to be made by the approving authority. For all the requirements summarized in **Table 1** in this document, that person would be Craig McArthur, Director of SIB. For further discussion on the process of getting this signature, please refer to **Instructions** in this document.

If a Program, project, or Mission Directorate wishes to conduct a pre-customized compliance matrix template or a pre-approved blanket tailoring compliance matrix; the same process as outlined above would still apply (refer to **Instructions** in the document for specifics).

## Waiver Request

A waiver is a documented authorization releasing a program or project from meeting a requirement after the requirement is put under configuration control at the level the requirement will be implemented. A waiver request may also be submitted in lieu of the Compliance Matrix.

With regards to the SIB designated requirements waiver process, the procedure will be the same as the tailoring process (refer to **Instructions** in this document). The SIB will work with the P/p to determine the appropriate approval signatories. The NASA Space Flight Program and Project Management Handbook has more detail on the waiver process and guidelines.

# Instructions

If a designated SIB requirement requires tailoring, this section will describe the process for which to get the tailoring approved by the SIB. Please note, this process is for individual tailoring requests that require more detailed documentation to support P/p compliance matrix. Any P/p that is working on broad group tailoring through the PPMB per 7120.5F Appendix C.2 section e, may not need to produce the additional documentation as described below.

If the project is seeking a tailoring of the SIB designated requirements in NPR 7120.5, it should identify the requirement for which relief is requested, provide a description of the scope and nature of request, and provide justification for acceptance and reference to all material used to support acceptance. These items should be then sent to the appropriate SIB POC for that requirement and will serve as the basis for documented Memorandum of Understanding (MOU). For EVM related requirements, this would be Mr. Jon Fleming (Jon.Fleming@nasa.gov). For all other requirements and/or for one SIB POC to coordinate requirements, Mr. Charles Hunt (Charles.d.Hunt@nasa.gov) is SIB POC. An alternative for all requirements would be Mr. James Johnson (James.k.Johnson@nasa.gov). The SIB POC, if requested, can help with the P/p in the initial development of the MOU. The SIB POC will work with the P/p, SIB and OCFO management, as well as other organizations (e.g. OCE) that may have substantive interest to determine the appropriate wording for the tailoring of the Compliance Matrix or waiver documentation as well as the wording for the MOU. Once wording is agreed upon for the MOU, the MOU will be sent to the OCFO Senior Technical Leader for Programmatic Analysis, Mr. Charles Hunt for his signature. Depending on the nature of the tailoring, there may be additional signatories required. The identification of these additional signatories falls on the SIB. The purpose of the signed MOU is to fulfill the “Waivers or Deviations Log” requirement as defined in NPR7120.5F Appendix G, Section 4; hence the signed MOU will reside in Part 4.0 of the Program Plan and a copy of the signed MOU will reside with the SIB.

# Legitimate Rationale for Tailoring/Waiving SIB Specific Requirements

The following section will briefly describe some scenarios where a tailoring or waiver for CADRe, Range Estimate, and JCL requirements may be warranted. This section is only to serve as an example of some legitimate rationale for the tailoring of these requirements and should not be considered all inclusive.

## CADRe

The CADRe is a means to collect and track a project’s historical programmatic, technical, and cost information.

CADRe serves as key source document for the Agency’s programmatic community. The implementation of the CADRe is funded and implemented by the SIB and ultimately signed off by the project manager. The leeway to completely waiving the CADRe requirement all together is very small. The only typical rationale considered for not completing a CADRe is if the project is very small (e.g. below $50M).

Tailoring the CADRe requirement may be warranted for projects with unique acquisition strategies. If the project does not anticipate producing the typical products captured in a CADRe, then they should tailor the NPR 7120.5 CADRe requirement to “meet the intent of CADRe”. Essentially, by “meeting the intent”, the project is signing up to still perform a CADRe, but setting expectations that the typical products captured in the CADRe may not be feasible.

## Range Estimates and JCL

Both Range Estimate and JCL requirements are required for any project over $250 million. Range Estimate and JCL requirements are two agency tools to help ensure P/p programmatic success. The latitude for completely waiving either type of requirement is small. Since the implementation of the policy, no project (unless they were grandfathered through) was completely waived from performing Range Estimates or JCL analysis.

However, there are two primary reasons why the Range Estimate or JCL requirements may need tailored:

* **Scope:** The scope of the Range Estimate and JCL analysis includes content only through Phase D. This, by definition, is not the total lifecycle cost (as defined by NPR 7120.5F) or operational life of a project. Depending on the nature of the P/p, it may be desired to seek tailoring of the Range Estimate and JCL requirements to identify and clarify exactly what will be captured in the requirement.
* **Acquisition Strategy:** To calculate a JCL, the project uses a process that combines its cost, schedule and risk into a single model that can generate a probabilistic assessment of the level of confidence of achieving a specific cost-schedule goal. NASA is actively implementing a technique called Probabilistic Cost Loaded Schedule (PCLS) to link NASA’s commitment probabilistically to the project’s specific plan. If the acquisition strategy of the P/p precludes it from having the necessary data to conduct a JCL using a traditional PCLS approach, a tailoring of the requirement may be warranted. In all likelihood, the tailoring will read as a “meets the intent” waiver and SIB will work with the P/p on the specifics of implementation. The specifics of the implementation will be captured in a MOU between SIB and the P/p.
1. NPR 7120.5F, Appendix C. Compliance Matrix [↑](#footnote-ref-1)
2. NPR 7120.5F, Section 3.5 and Appendix C [↑](#footnote-ref-2)
3. NPR 7120.5F, Appendix C. Compliance Matrix [↑](#footnote-ref-3)