

APPENDIX I

10. CONFIGURATION MANAGEMENT PLAN

10.1 Purpose. This appendix describes the requirements for the development of a configuration management plan for the implementation of configuration management requirements invoked by FAA. This appendix is applicable to CM requirements for the subsystem and HWCIs including HWCIs containing software. For CSCIs, the criteria in the Software Development Plan shall be included in the software section of the Configuration Management Plan. The contractor, dependent on contractual obligations requirements, may address hardware and software configuration management requirements in separate volumes of the single plan. This should allow, if necessary, specific development of software CM requirements while ensuring continuity of the configuration management system.

10.2 Scope. Depending on the terms and conditions of the request for proposal or the contract, the requirements that prescribe what is to be done to implement configuration management shall be planned and documented in a configuration management plan prepared by the contractor, unless otherwise specified by the procuring activity. The plan may be limited to defining the contractor's implementation of configuration management as it relates to the configuration identification, configuration control, configuration status accounting and configuration audits. When required to be furnished to the procuring activity, the plan is intended primarily as an exchange of information between the procuring activity and the contractor on the configuration management policy and methods of the contractor, as he intends implementation on a given contract effort, and this increases the probability of clear understanding of the intent of both parties. For the most part, the document should be written in simple positive statements that implement the precise configuration management requirements to be met by the contractor.

10.3 Organization and content.

10.3.1 Section 1, Organization. The contractor shall describe the program or project management relationship to configuration management. An organization chart with narrative description of the key organizational elements affected by contractual requirements for configuration management shall be presented. The contractor shall identify the organization level of engineering control group(s) as well as their authority and responsibility influencing the program. A discussion of the contractor's policy and procedures determining the formal establishment of configuration, and control of changes to established configuration, as these relate to specification preparation, drawing preparation, engineering release, ECP preparation, configuration management audits, configuration indexing and accounting, and quality control procedures (only to the extent they assure delivery of approved configuration) shall be included herein, to the level of detailed necessary to determine the integrity of configuration management practices.

10.3.2 Section 2. Configuration identification.

10.3.2.1 Specifications. The plan shall identify the specifications to be contractor prepared, the existing specifications for inventory items, and the use of these specifications to establish and control configuration identification. The division of authority and responsibility between the contractor and Government for the establishment of configuration identifications, changes to existing specifications and cost and schedule impacts, shall be clearly delineated. The plan shall identify the intended point in the program when the above specifications shall be presented for delivery (or otherwise made available) to the procuring activity. The plan shall identify the applicability of FAA-STD-005, Preparation of Specification Documents and its appendixes, and this standard, to the project (contract).

10.3.2.2 Drawings. This section shall define the drawing practices for application to this program, and the application of FAA-STD-002, Engineering Drawings, DOD-STD-100, Engineering Drawing Practices, DOD-D-1000, Drawings, Engineering and Associated Lists, and appendixes of this standard.

10.3.3 Section 3. Configuration control. The contractor shall define the policies and procedures used within his organization for control in establishing configuration identifications, and for processing changes to established configuration identifications. This section shall be specific on the control of technical interfaces, both between the contractor and the Government, and the contractor and other contractors. Plans for implementation of the appendixes of this standard to the project (contract) shall be stated.

10.3.4 Section 4. Configuration status accounting. The contractor shall state his plans for application of configuration index and status accounting records, his status accounting reporting intentions, and the report formats to be used.

10.3.5 Section 5. Subcontractor/vendor control. The contractor shall indicate his proposed methods for control over subcontractors and vendors, insofar as it impacts on his configuration management commitments to the FAA. The methods used to determine their capability and monitor their ability to support the requirements of configuration management shall be explained.

10.3.6 Section 6. Program milestones. The major milestones shall include but not be limited to:

- a. Establishment of configuration control board
- b. Phasing for specification program implementation, including specification maintenance

- c. Establishment of each of the configuration identifications
- d. Establishment of interface control agreements with other contractors
- e. Establishment of configuration index and status accounting procedures.

10.3.7 Section 7. Management integration of configuration management. The contractor shall describe the integration of configuration management activities with other project and program/management activities. He shall be specific in defining the relationship between configuration management at the configuration item level, and its relationship to the work breakdown structure for control of work authorization and cost control in his facilities). He shall be specific in defining the relationship between events critical to configuration management and schedule control of the program project, e.g., sequencing of design reviews, release of engineering, production, test, logistic support events, audits, etc.

10.3.8 Section 8. Configuration audits. The contractor shall describe his plans for conducting/supporting the following configuration audits including a description of the audits: .

- a. Functional configuration audit (FCA)
- b. Physical configuration audit (PCA).

10.3.9 Section 9. Software specific configuration management.

10.3.9.1 Developmental configuration. This paragraph shall identify the contractor's internal Developmental Configuration(s) to be used in the development of the CSCI(s). For each Developmental Configuration identified, the method of establishing it shall be described and the contents shall be listed. For example, the engineering release of the first draft of the Software Top Level Design Document (STLDD), prior to submitting it at the Preliminary Design Review, shall establish the internal Developmental Configuration.

10.3.9.2 Report for software problems and changes. This paragraph shall identify and describe the format used to document software problems and changes detected during software development. This report shall include:

- a. Subsystem or Project Name - The name of the subsystem or development project to which this report applies.
- b. Originator - The name, telephone number, and designation of the organization submitting the report.

- c. Problem Number - The assigned problem number (once a problem number has been assigned in accordance with established project configuration control procedures).
- d. Problem Name - A brief phrase descriptive of the problem and descriptive of similar problems, if applicable.
- e. Software Element of Document Affected - The specific software element(s), document(s) paragraph(s), or both to which the report applies, including appropriate configuration identification and version number, if applicable. Include all established baselines for developmental configurations affected.
- f. Origination Date - The date the report is first submitted.
- g. Need Date or Priority - The date the fix is needed in order to maintain established schedules or priority in accordance with established standards.
- h. Description of Problem - A description of the problem and the conditions, inputs, and equipment configuration under which the problem arises. A description of the activities leading up to the problem occurrence. Sufficient problem information to permit duplication and analysis. Include relationship to other reported problems and modifications.
- i. Analyst - The name, telephone number, and organization of the individual assigned to analyze the problem.
- j. Date Assigned - The date the analyst was assigned.
- k. Date Complete - The date the analysis was completed.
- l. Analysis Time - The time required to analyze the problem report.
- m. Recommended Solution - After analysis of the problem, the recommended solution and alternative solutions, if available. The nature of the recommended solution by a short descriptive phrase. When applicable, supporting rationale and test results.
- n. Impacts - The cost, schedule, and interface impacts if the solution is approved. Also, performance impacts if the solution is not approved. As applicable, include the impact on the other systems, configuration items, other contractors, system employment, integrated logistics support, system resources, training, etc.
- o. Problem Status - The problem status designated by the configuration control procedures.

- p. Approval of Solution - To be designated by the cognizant configuration control authority.
- q. Follow-up Action - Actions following resolution of the problem.
- r. Corrector - The name, telephone number, and organization of the individual correcting the problem.
- s. Correction Date - The date the problem was corrected.
- t. Version Number - The version in which the problem will be corrected.
- u. Correction Time - The time required to correct the problem.
- v. Implementation Solution - A brief description of the implemented solution to the problem.

10.3.9.3 Review procedures. This paragraph shall describe the purpose of and the procedures to be employed by any review boards (e.g., Software Configuration Control Board) associated with the flow of configuration control. This paragraph shall also described how the procedures used by any Review Boards, in conjunction with the configuration identification scheme, provide historical traceability.

10.3.9.4 Storage, handling and release of project media. This paragraph shall describe the methods to formally control the storage, handling, and release of software and documentation (including master copies) during the development process.

10.3.9.5 Source code control. This paragraph shall describe the restrictions applied in order to assure the integrity of a data base and its elements. It is essential that data (either initial input or changes) be restricted to authorized individuals. The controls described in the configuration management plan must be multi-level such as access to a terminal for input, a file, and to a specific data element or elements.

10.3.10 Relationship to quality plan. The contractor shall describe the interrelationship in each of the elements of configuration management with the quality program functions and indicate those relationships in the quality program plan.

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