

DATA ITEM DESCRIPTION

Title: Aircraft Structural Integrity Program (ASIP) Master Plan

Number: DI-SESS-81956

Approved Date: 20131219

AMSC Number: F9443

Limitation: N/A

DTIC Applicable: No

GIDEP Applicable: No

Office of Primary Responsibility: 11 (AFLCMC/EZFS)

Applicable Forms: DD Form 1423

Use/Relationship: This Aircraft Structural Integrity Program (ASIP) Master Plan is essential to document the tasks and elements of MIL-STD-1530 that are planned or accomplished in the development (design, analysis, test, and force management development) and sustainment (force management execution) of the aircraft system.

In applying the ASIP Master Plan Data Item Description (DID) contractually, the DD Form 1423 should include a requirement to update the schedule, as appropriate, by the contractor on a continuing basis during the acquisition phase of the program.

(Copies of the DID and MIL-STD-1530 are available online at <https://assist.dla.mil/quicksearch/> or from the Standardization Document Order Desk, 700 Robbins Ave., Bldg 4D, Philadelphia PA 19111-5094. Copies of the DD Form 1423 are available online at <http://www.dtic.mil/whs/directives/infomgt/forms/index.htm>)

Requirements:

1. Reference documents. The applicable issue of the documents cited herein, including their approval dates and dates of any applicable amendments, notices and revisions, shall be as specified in the solicitation or contract.
2. Format. The format for the ASIP Master Plan shall be as specified.
3. Content. The ASIP Master Plan shall depict the Aircraft Structural Integrity Program (ASIP) elements planned or accomplished in the development, certification, and sustainment of the aircraft structure. The required elements of the ASIP are defined in MIL-STD-1530. Discussion shall be provided showing how the plan was developed, its unique features, exceptions to the requirements of the standard, and any structural problems anticipated or special maintenance actions required to meet the service life. The development of the schedule shall consider all interfaces, the impact of schedule delays (e.g., delays due to test failure), mechanisms for recovery programming, and any other problem areas. The plan and schedules shall be updated annually during development, when significant changes occur, or as determined by the procuring agency. Each section of the ASIP Master Plan shall include the information outlined below. Each section of the ASIP Master Plan will also contain an appendix with more detailed information, if necessary.

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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TABLE OF CONTENTS. This section of the ASIP Master Plan shall include: Table of Contents, Frontispiece and Table of Changes.

- 1.0 INTRODUCTION. This section of the plan shall contain an overview of the aircraft program, background of the aircraft development program, background on the sustainment strategy, description of the aircraft, various configurations, three-view drawings, pertinent performance information to include design load factors, flight envelopes, weights, etc., data and other general information. Report detailed information in Appendix A.
- 2.0 SUMMARY. The plan shall contain a summary section that briefly presents the important aspects of the particular structural integrity program. This section of the plan will address such items as deviations identified as Not Programmed (see Table I below, Checklist of ASIP Elements) and approved deviations from the general requirements; possible, past, or current problems; schedule slippages, etc. Report detailed information in Appendix B.
- 3.0 DISCUSSION OF ASIP BY TASK. This section of the plan will discuss the program application of each element contained within the five major ASIP tasks as specified in MIL-STD-1530, Table 1. The discussions will be in summary form with supporting detailed information placed in Appendix C. Further details concerning the content of section 3.0 are contained in the following subparagraphs.
 - 3.1 TASK I, DESIGN INFORMATION. This section will contain individual subparagraphs for the elements of Design Service Life and Design Usage, Structural Design Criteria, Durability and Damage Tolerance Control Plans, Corrosion Prevention and Control Program (CPCP), Nondestructive Inspection (NDI) Program, and Selection of Materials, Processes, Joining Methods and Structural Concepts (see MIL-STD-1530, section 5.1). The information to be provided in each element should concern the scope and application, deviations, problem areas, status (indicating amount completed) and schedule slippage.
 - 3.2 TASK II, DESIGN ANALYSES AND DEVELOPMENT TESTING. This section will contain individual subparagraphs for the elements of Materials and Joint Allowables, Loads Analysis, Design Service Loads Spectra, Design Chemical/Thermal Environment Spectra, Stress Analysis, Damage Tolerance Analysis, Durability Analysis, Corrosion Assessment, Sonic Fatigue Analysis, Vibration Analysis, Aeroelastic and Aeroservoelastic Analysis, Mass Properties Analysis, Survivability Analysis, Design Development Tests, Production NDI Capability Assessment, and Initial Risk Analysis (see MIL-STD-1530, section 5.2). The information to be provided in each element should concern the scope and application, deviations, analyses and testing problems, status (indicating amount completed) and schedule slippage.
 - 3.3 TASK III, FULL SCALE TESTING. This section will contain individual subparagraphs for the elements of Static Tests, First Flight Verification Ground Tests, Flight Tests, Durability Tests, Damage Tolerance Tests, Climatic Tests, and Interpretation and Evaluation of Test Results (see MIL-STD-1530, section 5.3). The information to be provided in each element should concern scope and application, deviations, significant

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testing problems, test results and evaluation, status (indicating amount completed) and schedule slippage.

- 3.4 TASK IV, CERTIFICATION AND FORCE MANAGEMENT DEVELOPMENT. This section will contain individual subparagraphs for the elements of Certification Analyses, Strength Summary and Operating Restrictions (SSOR), Force Structural Maintenance Plan (FSMP), Loads/Environment Spectra Survey (L/ESS) Development, Individual Aircraft Tracking (IAT) Program Development, and Rotorcraft Dynamic Component Tracking (RDCT) Program Development (see MIL-STD-1530, section 5.4). The information to be provided in each element should concern scope and application, deviations, restrictions imposed, actions needed to remove any restrictions, Aircraft Structural Integrity Management Information System (ASIMIS) interface, data acquisition systems, economic/sensitivity studies, status (indicating amount completed) and schedule slippage.
- 3.5 TASK V, FORCE MANAGEMENT EXECUTION. This section will contain individual subparagraphs for the elements of IAT Program, RDCT Program, L/ESS, ASIP Manual, Aircraft Structural Records, Force Management Updates, and Recertification (see MIL-STD-1530, section 5.5). The information to be provided in each element should concern scope and application, deviation, economic analyses, status (indicating amount completed) and schedule slippage. The critical areas and inspection periods to be cited should be restricted to those identified in Task IV and applicable structural deficiencies identified during service.
- 4.0 SCHEDULES, RESPONSIBILITIES, AND FLOW DIAGRAMS. The plan shall contain specific schedules, responsibilities, flow diagrams, and other information needed to define the scope and execution of the ASIP. The plan shall depict the time-phased scheduling and integration of all required ASIP tasks for design, development, certification and force management of the aircraft structure. Report detailed information in Appendix D. This information will include but not be limited to:
- (a) Check list of ASIP Elements (see Table I below).
 - (b) ASIP Flow Diagram showing the particular system program status (see Figures 2 and 3 of MIL-STD-1530).
 - (c) ASIP Master Schedule.
 - (d) Delineation of ASIP responsibilities (AFMC, AFLCMC, and using command) together with milestones.
 - (e) Detailed schedules and flow diagrams for the actual operational usage program (to include: flight data recorder procurement and installation, data collection, Aircraft Structural Integrity Management Information System (ASIMIS) or contractor provided software interface, storage, dissemination, and analysis) for fleet tracking.
 - (f) Modification programs resulting from the findings of any aspect of the ASIP with a discussion of requirements and schedule for the modification.

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- 5.0 FUNDING. The plan shall include the costs for the ASIP. Subparagraph 5.1 will contain cost data supplied by the contractor. Subparagraph 5.2 will contain organic cost data supplied by the internal Air Force activity. These costs shall include initial estimates together with updated cost information and when possible will be provided separately for each element of ASIP. The costs shall be presented both for actual expenditures and projected requirements as a function of fiscal year for the next five years. Additional cost information must be provided as necessary and available. Report detailed information in Appendix E.
- 6.0 APPENDICES. The appendices shall include the supporting data, rationale, decisions, engineering detail, etc., necessary to complement the summary of write-ups presented in sections 1.0 through 5.0 of the plan. The individual appendices will include the following detailed information as outlined below:
- 6.1 Appendix A – Section 1.0 supporting data shall include:
- (a) Brief history of development.
 - (b) Principal aircraft dimensions.
 - (c) Illustration of major structural components and associated coordinates (numbered wing stations, etc.).
 - (d) Distribution of aircraft by command by Mission Design Series (MDS).
 - (e) Flight hour distribution by MDS, identify high time aircraft and force average.
- 6.2 Appendix B - Section 2.0 supporting data shall include:
- (a) Rationale, discussion of background, impact on the force and copies of official HQ USAF documentation for all approved deviations. For each ASIP element designated "Not Programmed," discuss rationale, background, impact on the force and ASIP objectives and provide copies of any official documentation.
 - (b) Brief discussion of in-service problems, fixes, important inspections and findings.
 - (c) Tabular summary of safety and economic life limits by structural detail. The details to be reported should be restricted to those identified in Task IV and appropriate service revealed structural deficiencies.
- 6.3 Appendix C - Shall contain the detailed supporting data for all ASIP elements segregated by Task I through Task V as discussed in Section.3.0.
- 6.4 Appendix D - Shall contain the detailed supporting data for Section 4.0.
- 6.5 Appendix E - Shall contain the detailed supporting data for Section 5.0.

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- 6.6 Appendix F - Validation Report. This appendix shall contain a copy of the annual validation report if applicable and the coordination sheet for the initial plan and each revision thereto.
- 6.7 Appendix G - ASIP Master Plan Distribution. This appendix shall contain the Distribution List of the initial Master Plan and each revision thereto.
- 6.8 Appendix H - As Required.
- 7.0 BIBLIOGRAPHY - Master list of all documents referenced herein, listed by section and ASIP task (see Appendix C).

TABLE I. Checklist of ASIP elements.

ELEMENT	STATUS	
	P=Programmed	NP=Not Programmed
	A=Active	C=Effort Completed
TASK I		
Design Service Life and Design Use		
Structural Design Criteria		
Durability and Damage Tolerance Control Program		
Corrosion Prevention and Control Plans		
Nondestructive Inspection Plans		
Selection of Materials, Processes and Joining Methods		

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TABLE I. Checklist of ASIP elements – Continued.

ELEMENT	STATUS	
	P=Programmed	NP=Not Programmed
	A=Active	C=Effort Completed
TASK II		
Materials and Joint Allowables		
Loads Analysis		
Design Service Loads Spectra		
Design Chemical/Thermal Environment Spectra		
Stress Analysis		
Damage Tolerance Analysis		
Durability Analysis		
Corrosion Assessment		
Sonic Fatigue Analysis		
Vibration Analysis		
Aeroelastic and Aeroservoelastic Analysis		
Mass Properties Analysis		
Survivability Analysis		
Design Development Tests		
Production NDI Capability Assessment		
Initial Risk Analysis		
TASK III		
Static Test		
First Flight Verification Ground Tests		
Flight Tests		
Durability Tests		
Damage Tolerance Tests		
Climatic Tests		
Interpretation and Evaluation of Test Results		

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TABLE I. Checklist of ASIP elements – Continued.

ELEMENT	STATUS	
	P=Programmed	NP=Not Programmed
	A=Active	C=Effort Completed
TASK IV		
Certification Analyses		
Strength Summary and Operating Restrictions (SSOR)		
Force Structural Maintenance Plan (FSMP)		
Loads/Environment Spectra Survey (L/ESS) Development		
Individual Aircraft Tracking (IAT) Program Development		
Rotocraft Dynamic Component Tracking Program Development (RDCT)		
TASK V		
Individual Aircraft Tracking (IAT) Program		
Rotocraft Dynamic Component Tracking (RCDT) Program		
Loads/Environment Spectra Survey (L/ESS)		
ASIP Manual		
Aircraft Structural Records		
Force Management Updates		
Recertification		

For all elements listed as NP and all elements for which a deviation has been granted, cite the appropriate paragraph of Appendix B. For example, (1), if the stress analysis is programmed but not initiated, the status would be P; (2), if not programmed or a deviation granted, the status would be NP; and (3), if initiated the status would be active (see below).

ELEMENT	STATUS
(1) Stress Analysis	P
(2) Stress Analysis (Paragraph x.x)	NP
(3) Stress Analysis	A

4. End of DI-SESS-81956.