DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

27 October 2022

MEMORANDUM FOR AFLCMC/LG
                AFNWC/LG
                SSC/S4

FROM: SAF/AQD

SUBJECT: Life Cycle Sustainment Plan Outline Version 3.0 and Software Tailored Life Cycle Sustainment Plan (LCSP) Outline Version 1.0

   While the specific format and content my vary based on acquisition pathway, all programs are required to develop an LCSP. An LCSP documents the Program Manager's (PM) and Product Support Manager's (PSM) plan for forumulating, implementing, and executing the Product Support Strategy (PSS). The Assistant Secretary of Defense for Sustainment (ASD(S)) recently released a new LCSP Outline to assist PMs and PSMs in methodically planning, documenting and executing their PSSs (Attachment 1). Programs requesting LCSP approval in support of a Milestone Decision are expected to adhere to the new Outline. All other programs have discretion to determine when it may be value-added to transition to the new Outline. Additionally, all programs should be reminded that the LCSP Outline is a tool to help document the PSS, not a template to be rigidly adhered to under all circumstances.

   For acquisition programs that are approved to operate within the Software Acquistion Pathway (SWP), the Software Tailored LCSP Outline Version 1.0 (Attachment 2) provides a streamlined tool for PM's and PSM's developing a PSS in accordance with applicable policy. DAF programs operating under SWP are expected to implement the Software Tailored LCSP Outline Version 1.0 format in conjunction with decision reviews for transition into the execution phase. Version 1.0 is the DAF's Minimum Viable Product to support practitioners who enable rapid deployment and continuous improvement for the warfighter. Our goal is to incorporate best practices and feedback from the field in furtherance of evolving in an environment where software is never complete.

   My points of contact for questions are Mr. Mike Oar at michael.oar.2@us.af.mil and Lieutenant Colonel Todd Meyers at todd.meyers@us.af.mil.

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ANGIE L. TYMOFICHUK
Deputy Assistant Secretary of the Air Force
(Logistics and Product Support)

Attachments:

1. Life Cycle Sustainment Plan Outline Version 3.0
2. Software Tailored LCSP Outline Version 1.0

Software Tailored Lifecycle Sustainment Plan Outline

Table of Contents

Tailored Life Cycle Sustainment Plan Format

PROGRAM NAME – SOFTWARE ACQUISITION PATHWAY

LIFE-CYCLE SUSTAINMENT PLAN

VERSION _____

SUPPORTING MILESTONE ___

AND

[APPROPRIATE PHASE NAME]

[DATE]

****

FINAL APPROVAL

_____   _____

Approval Authority   Date

SUBMITTED BY

_____   _____
Name
Product Support Manager   **Date**

REVIEW

_____   _____   _____   _____
Name   Date   Name   Date
Program Contracting Officer   Program Financial Manager

_____   _____   _____   _____
Name   Date   Name   Date
Program Lead Engineer   Program Manager

_____   _____
Name   Date
Program Test Manager

CONCURRENCE

_____   _____   _____   _____
Name   Date   Name   Date

Program Executive Officer or   Sustainment Command
Equivalent   Representative

COMPONENT APPROVAL

_____   _____
Name   Date

Service Acquisition Executive (SAE) or designated representative (or as delegated)

Overview

The purpose of this document is to provide a tailored Life Cycle Sustainment Plan (LCSP) outline for use by programs using the Software Acquisition Pathway. As stated in DoDI 5000.87, the PM will develop a product support strategy in accordance with applicable DoDIs. In accordance with the AFI 63-101/20-101, Product Support Managers (PSM) develop and implement a comprehensive product support strategy and document the strategy in the LCSP. Per DoDI 5000.91, when the software acquisition pathway is the acquisition pathway's only pathway, the PSM will document the product support strategy within a tailored LCSP and update it throughout the software lifecycle. When an acquisition pathway combines the software acquisition pathway with the Major Capabilities Acquisition or Middle Tier Acquisition pathway, the Product Support Manager will document the product support strategy for the software within the overarching LCSP. For reference, the latest OSD LCSP outline can be found here.

Document the LCSP review process. Table 1 provides an example of an update record.

Table 1: LCSP Update Record

Revision Number	Date	Change and Rationale	Approved By
1.0		Baseline Document	
1.1		Updated from original review	
2.0		5 year review	

1. Introduction

    1.1. Define Acquisition Strategy: Provide an overview of the acquisition strategy, to include a summary of the software development strategy/approach, planned use of commercial off-the-shelf/government off-the-shelf/non-developmental item (COTS/GOTS/NDI) to support program system design, interface requirements, external system interactions, and plan for continued evolution of capabilities.

    1.2. Open Systems Architecture Approach: Provide a description of the architecture development approach that utilizes open standards. The description should provide the plan for ensuring software development includes open standards, interoperability, modularity, scalability, and portability. Identify applicable standards (name, version, and date) along with goals for system interoperability, modularity, scalability, and portability.

    1.3. Interface Requirements: Describe all interface/compatibility requirements - external system interactions and high level data sharing for existing/new technologies (include an overview of any consolidated technologies). Include an overview of the plan for integration from/to legacy technology and information sharing, and (legacy) digital engineering infrastructure.

    1.4. Provide the software's operational concept. Include the DoDAF OV-1 in this section, and where applicable, ensure high-level intelligence system connectivity and interoperability are accurately and adequately illustrated in the DoDAF OV-1.

2.   Product Support Performance: Provide an overview of product support performance requirements as derived from the Capability Needs Statement (CNS) and active user engagement substantiated in the User Agreement (UA). Include a high-level capture of mission deficiencies or enhancements to existing operational capabilities, features, interoperability needs, and legacy interfaces.

   2.1. Metrics: Identify product support metrics to include a description of how they relate to performance, progress, speed, cybersecurity, and quality of the software development, development teams, and ability to meet user needs. Metrics are important for teams and management to track the health of the delivery system. To demonstrate return on investment and effectiveness, programs should collect metrics and other data points unique for their acquisition, to include Change Fail Rate, Mean Time to Restore, and Backlog (see Table 2 for a description of these metrics). The goal is to automate software performance metrics that are appropriate to support tradeoff decisions (as required) and can be accomplished in various ways.

   2.2. Predictive Analysis and Modeling Tools: Describe use of predictive analysis and modeling tools such as Computerized Optimization Model For Predicting and Analyzing Support Structure (COMPASS) to improve availability, and reduce O&S costs.

Table 2: Product Support Metrics (example)

Metric	Value	Description
Change Fail Rate	xx.x %	The percentage of releases to the production/operational environment that requires subsequent remediation. Report in percentage.
Mean Time to Restore	xx days	The mean time to restore the system in response to a downtime event or a defect that requires subsequent remediation. Report in days.
Backlog	xx	The number of tasks/items required to support a larger strategic plan or user

3.   Product Support Strategy: Summarize the product support strategy and address how software enables continuous capability evolution.

- Describe how the program's product support strategy, rather than treating development and sustainment as separate activities, treats software acquisition as continuing evolution of capability. Discuss how the strategy supports modern software development strategies, including development, security, and operations (DevSecOps) and fosters a continuous engineering and delivery model. Include an overview of how the approach will inform the product support strategy.
- Summarize the intellectual property strategy that will be used to support the program's needs in terms of affordability, quality, flexibility and competition over the software lifecycle. Provide an overview of the Contract Data Requirement List (CDRL) that will be used to obtain data and software deliverables. Discuss the integration of the software sustainment community into the software licensing agreement process.
- Identify product support integrators (PSI) and product support providers (PSP), in accordance with product support arrangements. Include a summary of actions to continuously monitor performance of PSIs and/or PSPs.

- Include a detailed software disposal strategy; ensuring planning for migration costs. The strategy should consider activities such as drive erasure, which require adherence to compliance standards.
- Define the plan for incorporating early integration of key stakeholders and planning for supportability of the software from program inception to facilitate software maintenance upgrades and evolution in key activities throughout the development. If using the embedded software path, the product support strategy should be aligned with the overall sustainment strategy for the weapon system. The strategy should consider concurrent program activities that may span multiple funding appropriations.
    - Address how the product support manager will coordinate and track necessary inputs into program protection and cybersecurity risks based on product support implications
    - Identify methodology to coordinate with intelligence support and other applicable agencies to identify attack vectors and software attack surfaces in order to mitigate software product support risks.

- New Capability Deployments: Provide a brief description of the plan for deployment of new capabilities. This should include descriptions of use of Cloud infrastructure, application releases, maintenance and support of software, user problem reporting, etc.
- Address Depot Source of Repair status and identify the plan to transition to long-term maintenance strategy. Describe the analysis process used to determine the appropriate mix of organic and contractor resources over time in order to ensure a seamless transition.
- Transition Strategy: If the product support strategy involves working with or hand-off to another organization, discuss the strategy for:
    - Ensuring the relevant organic software organizations (whether research labs or software "depots") are part of the planning and acquisition process from program inception, in order to facilitate software evolution in key activities throughout the development, deployment, and operation.
    - Including transition planning, and the associated collaboration between organic and private development entities, into cost estimates.
    - Facilitating collaboration with organic and program software engineering subject matter experts in order to ensure software engineers are trained in the tools, techniques, and environments that suppliers and/or the prime contractor team are using.
    - Addressing how the intellectual property approach will enable seamless transition to another organization.
    - Addressing how any transitions allow for continuous testing and monitoring, and address the need to provide subject matter experts and/or ensure all software engineering staff are trained in the tools, techniques, and environments.
    - Facilitating key enabling resources such as a continuous Authorization to Operate (ATO), if applicable, automated test environments, or a selected DevSecOps environment to transition to organic or other sources of software engineering and support.
3.1. Obsolescence Management: Provide details for managing obsolete software, including COTS and Free Open Source Software (FOSS), required system hardware and associated

test/support equipment, e.g. software labs, test beds, and associated risks/risk mitigation strategies.

3.2. Property Management: Address plan to track and manage accountable property to include software licenses/code, etc.

3.3. Cybersecurity: Summarize how the program protection plan and cybersecurity strategy address product support risks.
- o Identify intelligence support requirements to help monitor for adversary threats to either the software developers, product support providers, software itself, as well as the need to monitor for potential adversary duplication, exploitation or similar efforts to attack or impact the software.
- o Include plan for coordination with cybersecurity Subject Matter Experts (SME) to understand impacts for ongoing and continuous safety (e.g., continuous authority to operate, and risk management framework) and PS elements required to meet material release/support decision requirements at minimum viable product and minimum viable capability release.
- o Supply Chain Risk Management (SCRM): Identify approach to executing Supply Chain Risk Management, to include identification, assessment, and mitigating any potential threats to the AF supply chain to include technology and cybersecurity risks.
- o Identify use of instrument software such that critical monitoring functions related to the health, security, and operational effectiveness of the software are automated to the maximum extent practicable (IAW 5000.87).

4. Integrated Product Support (IPS) Elements: Discuss consideration of impacts across each of the twelve IPS Elements, as applicable. Refer to Table 3.

Table 3: IPS Element Considerations

Product Support Element	Consideration/Impact
Product Support Management	Describe the approach and resources necessary to develop and integrate sustainment requirements into the system's design, development, testing, deployment, and sustainment phases.
Design Interface	Describe the system design parameters and integration with other IPS Elements.
Supply Support	Describe approach to managing supply as applicable. Include considerations for Supply Chain Risk Management (SCRM).
Maintenance Planning and Management	Describe the process/plan for modifying a software system after delivery to correct faults, improve performance or adapt it to a changed environment.
PHS&T	Address considerations for infrastructure requirements for software data storage.
Technical Data	Address strategy to address data rights, technical data, and software documentation Address the strategy for obtaining source code if needed for sustainment.
Support Equipment	Identify requirements and plan for delivery of Support Equipment, to include test program sets, as necessary

Product Support Element	Consideration/Impact
Training & Training Systems	Describe the plan to ensure training (to include training systems/software updates as necessary) equips program with appropriate skillsets and necessary cyberspace training and test environments to support requirements
Manpower & Personnel	Address manpower requirements (to include required numbers, skill sets, and grade levels) to identify, plan, resource and implement management actions throughout the software lifecycle.
Facilities and Infrastructure	Provide detail to identify, plan, resource, and acquire facilities to enable training, maintenance, and storage to maximize effectiveness of system operation.
IT Systems Continuous Support	Address all agreements necessary to manage technical interfaces, and to manage work performed by maintenance activities. Discuss plans for periodic test and certification activities required throughout the lifecycle. Address integration of software product support with associated hardware systems or commercial platform providers (e.g. cloud services) .
Sustaining Engineering	Address considerations for activities for managing design choices that impact supportability (e.g., interoperability, suitability, etc.)

5. Influencing Design and Sustainment: Identify and address requirements that affect system design performance, such as obsolescence and core logistics requirements.

6. Integrated Schedule: Provide an overview of the product support schedule consistent with the program's overall master schedule, which should include development events such as release dates, SCRUM dates, demonstration and acceptance dates. Include significant activities and major logistics events and interdependencies with other systems. Include at a minimum, technical manual and training/document deliveries.

7. Cost and Funding

   7.1. Cost Estimate Overview: Provide an overview of the program cost estimate and identify product support drivers. Refer to Table 4.

Table 4: Program Cost Estimate

Cost in TY $M									
	Total	Prior	FYXX	FYXX	FYXX	FYXX	FYXX	FYXX	To Complete
Total Program									
3600									
3080									
3400									

   7.2. Cost Drivers: Describe the approach to ensuring product support drivers are considered, mitigated to the extent possible, and aligned with the roadmap and cost estimating and planning process. Include considerations such as infrastructure, platform, and cloud service costs that enable DevSecOps. Describe how costs scale to a fixed state and the methodology used to ensure growth is properly accounted for.

7.3.   Affordability: Address efforts to ensure product support affordability throughout the program. Refer to figure 7.3.
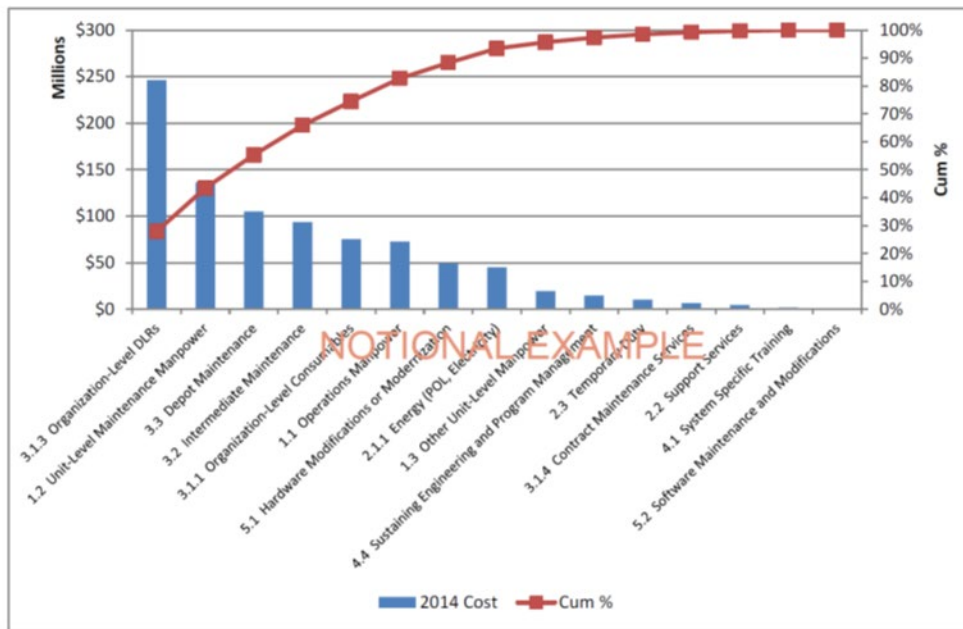

Figure 7-3: System Actual Costs, Including Initial Fielding

Include an as-of date

8.   Management Organization: Provide data on the program office organization product support function. Provide information on how product support related staff will evolve as the program matures, to include early stakeholder integration and transition planning.

9.   Supportability Assessment

9.1 Product Support Package Assessment: Provide a table of product support package assessment results for the program under review. If the program does not have a Logistics Health Assessment (LHA), an assessment may be completed by the PSM/Chief of Logistics to satisfy this section. Programs should include the plan for resolving any issues identified in the assessment resulting in a non-green rating to include identifying the individual responsible for resolving the issue   and specifying the steps and schedule for closing each unresolved issue. Refer to Table 5.

Table 5: Product Support Package Assessment (example)

Product Support Element	Assessment	Discussion Issues	Corrective Action / ECD
Product Support Management		Product Support requirements late to need	OPR: (name) / ECD: Date
Design Interface		Sub-system reliability data analysis for impact on O&S costs in work.	OPR: (name) / ECD: Date
Supply Support		Software development delayed	OPR: (name) / ECD: Date

Product Support Element	Assessment	Discussion Issues	Corrective Action / ECD
Maintenance Planning and Management	🟩	Core determination complete; LORA for software in-work; FMECA complete; on track to meet depot activation NLT 4 years after IOC	OPR: (name) / ECD: Date
PHS&T	🟩	Containerization planning complete	OPR: (name) / ECD: Date
Technical Data	🟨	Intellectual property data rights contested by OEM; contracting and legal in negotiation with OEM; no impact on operational technical data requirements; affects competition for re-procurement	OPR: (name) / ECD: Date
Support Equipment	⬜	N/A: no support equipment	OPR: (name) / ECD: Date
Training & Training Systems	🟩	Funding shortfall in PB14 for initial simulator; Plus up planned in POM 15	OPR: (name) / ECD: Date
Manpower & Personnel	🟩	Manpower Estimate Complete	OPR: (name) / ECD: Date
Facilities and Infrastructure	🟩	Software storage underway	OPR: (name) / ECD: Date
Systems Continuous Support	🟩	Product Acceptance Tests will be scheduled throughout development	OPR: (name) / ECD: Date
Sustaining Engineering	🟩	Configuration Management Board will decide on future design influences for the system	OPR: (name) / ECD: Date

10. Risk Management. Address any key risk drivers to software such as design requirements, immature development, immature development environment of processes, etc. Address potential risks to product support activities (e.g., training delivery, technical data, etc.). For any product support specific risks, identify handling plan. Identify how the product support function participates in overall risk management, and identify planned strategies to mitigate product support risks.

11. Supportability Analysis.

   11.1. Reliability: Identify the plan to improve software reliability and ensure continuous testing and improvement.

   11.2. Technical Reviews: Identify pertinent technical reviews and planned process to assess and revise product support requirements.

12. Test Strategy: Summarize how the test strategy addresses product support elements key in a continuous authority to operate (if applicable), automated test, or selected development environment. Summarize the testing approach for a given set of features and what will need to be validated (acceptance criteria).

13. Annexes:
   - Depot Source of Repair Determination (DoDI 5000.91) (DoDI 4151.24)

14. Acronyms:
- ATO- Authorization to Operate
- CFR – Change Fail Rate
- CDRL- Contract Data Requirement List
- CNS- Capability Needs Statement
- COMPASS – Computerized Optimization Model for Predicting and Analyzing Support Structure
- COTS- Commercial Off The Shelf
- DevSecOps - Development, Security, and Operations
- DoDAF – Department of Defense Architecture Framework
- DORA- DevOps Research and Assessment
- ECD – Estimated Completion Date
- FOSS – Free Open Source Software
- GOTS- Government Off The Shelf
- IPS- Integrated Product Support
- IT- Information Technology
- LCSP- Lifecycle Sustainment Plan
- LHA- Logistic Health Assessment
- MTTR – Mean Time To Restore
- NDI- Non-Development Item
- OPR – Office of Primary Responsibility
- PHS&T- Packaging Handling Storage & Transportation
- PS- Product Support
- PSI – Product Support Integrator
- PSM- Product Support Manager
- PSP – Product Support Provider
- PSS- Product Support Strategy
- SCRM- Supply Chain Risk Management
- SCRUM - Systematic Customer Resolution Unraveling Meeting
- SME- Subject Matter Expert
- UA- User Agreement