

AF/A5R REQUIREMENTS DEVELOPMENT GUIDEBOOK



Volume 6 Requirements Activities to Support “Section 800” Software Acquisition Pathway (NDAA FY 2020, Section 800) 24 June 2020, version 1.02

Requirements Integration Division

AF/A5RP, Pentagon 5C858

PREFACE

This Guidebook is one in a series of AF/A5R developed guides describing the Air Force process for validation of *operational capability requirements* in support of overarching Capability Development efforts. **This guidebook describes the specific requirements actions that support rapid software development efforts.**

There are no restrictions on release or distribution of this guidebook.

This Guidebook is a “how to” guide for use by all stakeholders participating in the AF requirements process, and in some cases it includes the answer to the questions “why do we have to do it that way,” “where is that written” and “where do we find additional information.”

NOTE: Although the AF/A5R Requirements Development Guidebooks are generally non-directive in nature, they represent official guidance and procedures developed to ensure compliance with, and implementation of, overarching Requirements and Acquisition policies. Per AF/A5R direction and authority under HAF Mission Directive 1-7, to the maximum extent practical, AF Sponsors are expected to follow the guidance described in the A5R Guidebooks, or coordinate with AF/A5RP for tailoring.

If you have questions regarding specific information in the guidebook(s), or if you have suggestions for improvements, please contact the OPR:

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AF/A5RP Portal Page. Additional guidance and information to supplement this Guidebook is located on the AF Portal:

- To access the AF/A5RP Requirements Portal Page go to <https://www.my.af.mil>
- Navigate to “Organizations A-Z”, then enter keyword “A5RP”

CHANGE SUMMARY

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SECTION 1. INTRODUCTION

1.1. Overview and Background

This section provides a brief overview of the “Section 800” Software Acquisition Pathway. This pathway is a simplified acquisition model pursuant to the authorities outlined in Section 800 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA FY 20). Interim policy and procedures are provided in the memo signed by the USD (A&S), dated 3 Jan 2020.

Per USD (A&S) policy memo, the “Section 800” Software Acquisition Pathway is the preferred path for acquisition and development of software-intensive systems, some examples are provided in the table below.

Table 1.1. “Section 800” Software Pathway Overview

“Section 800” Software Acquisition Pathway	
Applicability	Acquisition, development, operations and sustainment of software-intensive systems that are <i>approved by SAF/AQ and/or USD(A&S) to use this pathway</i> . Examples→ Software Development,, where the software is the system... - Systems in which <i>software represents the largest segment</i> in one or more of the following: development cost/time/risk or system functionality - <i>Dedicated mission or functional software embedded in platform</i> (Note: Does not include software dedicated to platform control) - <i>Custom-developed software</i> (Note: Not for COTS business systems)
Objective	Demonstrate the viability and effectiveness of software capabilities for operational use by the warfighter/end user within ONE YEAR...
Requirements Documentation	Capability Needs Statement (CNS) and User Agreement (UA) - NOTE: the CNS is the only document that requires “Component Validation” (i.e. HAF-level)

1.2. Description of “Section 800” Authority

Section 800 of the NDAA FY 20, provides authority to develop and field software system capabilities under a new pathway, distinct from the traditional acquisition system.

Under the “Section 800” Software Pathway, programs are not subject to the Joint Capability Integration and Development System, JCIDS Manual and DoD Directive 5000.01, "The Defense Acquisition System," except to the extent specifically provided in the implementing guidance.

The “Section 800” Software Acquisition Pathway is defined as an acquisition approach that focuses on delivering capability to the warfighter/end user within one year.

Air Force Guidelines for “Section 800” Software Acquisition Pathway are pending, and policies and procedures are established per the interim implementation guidance memorandum, issued by the USD (A&S) and dated 3 Jan 2020.

SECTION 2. AF REQUIREMENTS PROCESS for “SECTION 800” SOFTWARE PATHWAY

2.1. Requirements Process Overview

The process to establish requirements in support of “Section 800” Software Pathway is streamlined to support a rapid, agile and iterative capability development and fielding process based on early engagement between the Sponsor, the Program Manager or Program Office and the Warfighter/End User. The Requirements Sponsor acts on behalf of the interests of the Warfighter/End User.

- *Note: This Guidebook is not intended to replace or substitute for the acquisition policies and procedures as described in the USD (A&S) policy memo or the DoD Instruction for the “Section 800” Software Acquisition Pathway (when published). Sponsors must read and understand the Defense Acquisition policy guidance to get a full understanding of this pathway. This Guidebook is only intended to spell out the AF/A5R Requirements Process to support utilization of this pathway.*

2.2. Key Tenets of Agile Requirements Development

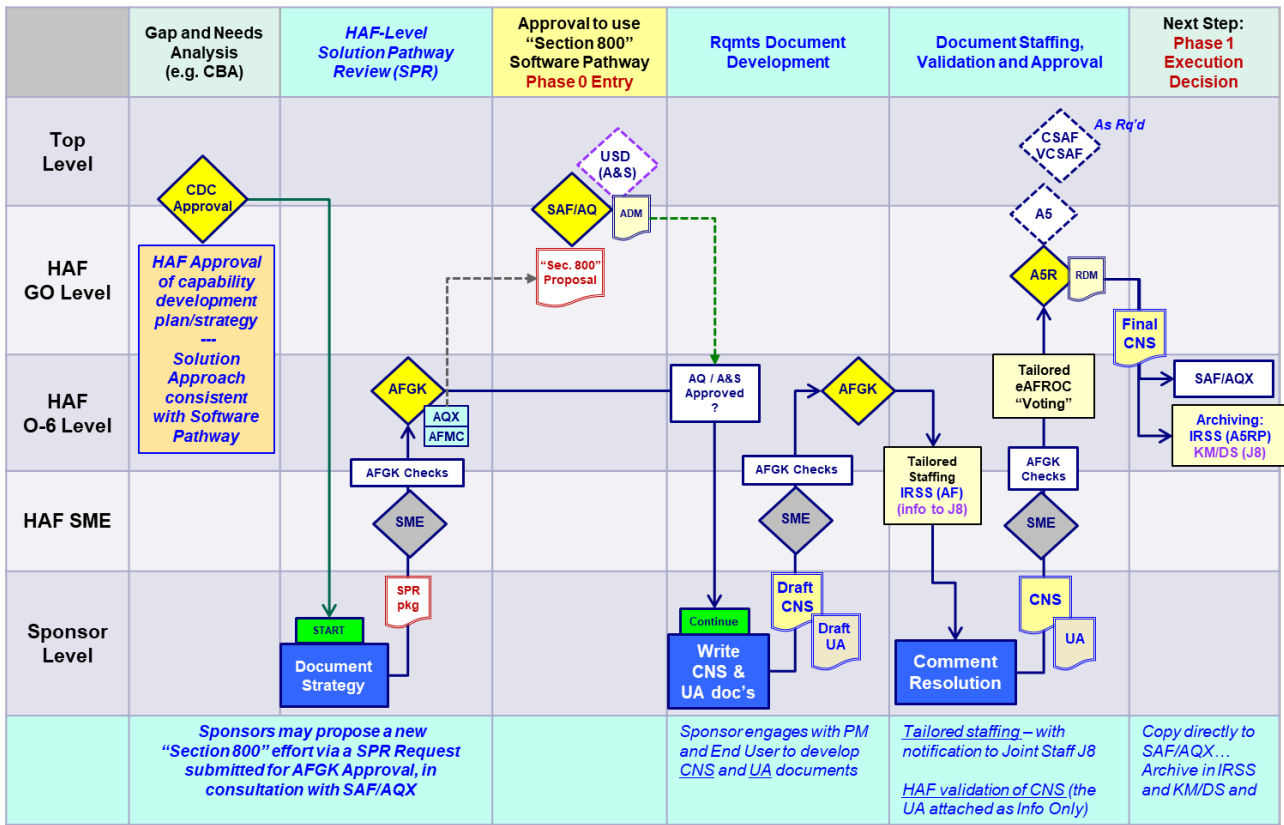
The key to agile development is to form a collaborative cross-functional team with focus on involvement from the customer/end-user of the system. This pathway also involves a unique paradigm that is drastically different from traditional materiel solution development for hardware systems – hardware development requires “hard requirements” up front to guide the system design and development. Software on the other hand, does not – in fact, agile development necessitates “soft requirements” up front, without the rigid specificity and documentation we are used to in the requirements process.

The focus of the agile pathway is on solution development with early delivery of capability, followed by iterative and evolutionary updates for continual improvement to the product based on user needs. The primary metric is working useable solutions.

- *Agile Development should focus on:*
 - *THE PEOPLE (especially end users) over “The Process” (eliminate non-value added steps)*
 - *SOLUTIONS (i.e. working products) over “Documentation” (just barely enough...)*
 - *RESPONSIVENESS (adapting to change) over “Plans and Milestones” (be flexible and fluid)*
 - *Early delivery of useful product(s) and frequent updates and improvements*
 - *Welcoming, even encouraging changing requirements – to avoid obsolescence*

This pathway requires a self-forming team of competent participants and stakeholders. The main point is to develop software, not spend a bunch of time developing documentation. The User Agreement (UA) is a significant part of expectation management, but sponsor and program managers should avoid strict adherence to traditional “roles and responsibilities” discussions – the answer to “whose job is it”... is everyone, the entire team needs to work as one. A project plan or roadmap is useful, but it must not be seen as a rigid set of milestones – the metric is not simply to lay out a plan and then “stay on track” the metric is to produce value to the warfighter. Traditional approaches to program plans and roadmaps cannot replace the need for flexibility and adaptability to get things done (over sticking to the plan). This type of approach requires close coordination and trust relationships between the team members.

Figure 2.1. Process Map for **SPR Approval and Requirements Document Development**



2.3. CDC Approval of Capability Development Plan/Strategy

The purpose of obtaining CDC approval is to 1) ensure the proposed effort aligns with overarching AF strategy, capability development guidance and resourcing plans and 2) determine what capability analysis and/or documentation exists (or needs to be developed) in order to support proceeding to a "sec. 800" Software Acquisition effort.

- The MAJCOM/Agency Sponsor working through their AF/A5R SME, coordinates with AF/A5RP, AF/A5RA-OAS and AF/A5A to assess the sufficiency of existing analyses that might be used to support the CDC approval of the effort.
- The Sponsor also assesses available resources in coordination with the Acquisition Program Office, SAF/AQX, SAF/FMB, AF/A8P, and AF/A8X (as appropriate) to determine the amount and timing of funding and other resources available for the effort.
- The Sponsor proposes a presentation to the CDWG and/or CDC that describes how the effort will be integrated within an overall Capability Development Plan (CDP) or Capability Development Strategy (CDS). Contact the CDWG for additional detail.

2.4. Solution Pathway Review (SPR)

[Decision by the AFGK, in consultation with SAF/AQX and AFMC/A5R].

Following CDC review and approval, and collaboration with key stakeholders to develop the document development strategy, the Sponsor (working through their AF/A5R SME) submits an SPR Worksheet via IRSS for AFGK review and approval prior to convening a document writing team for document development.

Formal HAF-level approval (via the Solution Pathway Review) is required prior to a Sponsor convening the document writing team or conducting any substantive document development activity. Specifically, Sponsors should not begin development of any requirements document until the SPR Worksheet (and associated document strategy) has been reviewed and approved by the AFGK, in consultation with SAF/AQX and HQ AFMC/A5R.

- *Note: Written approval (via formal Acquisition Decision Memorandum) from SAF/AQ (or the designated acquisition decision authority, if delegated) is required in order to utilize the “section 800” Software Pathway and associated acquisition authorities. For more detail regarding Defense Acquisition policy and procedures for the “Section 800” Software Pathway, refer to the USD (A&S) memo dated 3 Jan 2020, and contact SAF/AQX.*

During the review of the SPR Worksheet, Sponsors need to be prepared to discuss the document preparation and document writing team to include the following:

- Ensure entry criteria (pre-requisites) are met as described above
- Proposed nomenclature; document title should reflect the particular solution/system approach
- Specific gaps and mission needs which are to be addressed by the effort
- Timeframe when the solution needs to be fielded – is this within the 1-year time limit
- Cost estimates (as applicable) and funding strategy with respect to available funding sources
- Potential interdependencies with other AF or joint systems/solutions or other enablers
- Key stakeholders -- including end user/warfighter and reps who will be involved with this effort
- Proposed document writing team membership (names and organization represented), location, dates and format (live or virtual), including any issues/concerns with support, security, etc.
- Training and experience level of Team Leaders and Acquisition POC(s)
- Proposed Plan of Action & Milestone (POAM) with a timeline for completion of the document
- Expected timeframe/date when the Sponsor expects to submit the document for initial staffing
- Projected follow-on requirements oversight/reviews and interaction with stakeholders from the Joint Staff, other Services and OSD (if required)
- Specific recommendations for proposed Joint or CCMD interest or involvement (as a minimum, AF/A5RP is required to info copy the Joint Staff Gatekeeper)

2.5. Document Development, Staffing and Validation

Following AFGK approval of the SPR [Worksheet](#) (and [following formal](#) approval by [the acquisition decision authority or USD\(A&S\)](#) to use the “Sec. 800” Software Pathway), the MAJCOM/Agency Sponsor, convenes the document writing team to develop the Capability Need Statement (CNS) and User Agreement (UA) as described in the USD(A&S) policy and procedures memo.

- *Note: Refer to [Section 3](#) of this Guidebook for detail on format and content of the Capability Need Statement (CNS) and a suggested outline for the User Agreement (UA).*

Following development of the draft version of the CNS and UA, and upon approval by the MAJCOM/Agency Director of Requirements (or higher), the sponsor submits the documents to AF/A5RP via IRSS for entry into staffing.

- AF/A5RP in consultation with the AF/A5R SME conducts initial AFGK checks to determine if the CNS is ready to enter into staffing.
- A tailored staffing period will be conducted utilizing IRSS tasking procedures on SIPRNET.
- AF/A5RP will also forward the CNS and UA to the J8 Gatekeeper for Joint Staff awareness. Should Joint Staff determine that Joint equity exists, the Sponsor may continue to proceed with “Sec. 800” Pathway activities while Joint equities are being outlined and a Joint approach is developed (if required).

[Comment Resolution.](#) Following the tailored staffing period, the Sponsor completes comment adjudication and any internal MAJCOM/Agency review process, then submits a final version of the document via IRSS for HAF review and validation staffing.

[Validation and Approval.](#) Working with the AF/A5R SME, AF/A5RP prepares the staff package for review by the designated Requirements Decision Authority. Following validation and approval of the CNS by the appropriate Requirements Decision Authority, AF/A5RP uploads the final version of the approved document along with the decision memo to IRSS and forwards a copy directly to SAF/AQX.

2.6. Annual Value Assessments

For “Section 800” Software efforts, and per USD (A&S) policy, the sponsor in coordination with the program office, performs an Annual Value Assessment. In order to comply with the intent of this policy, the Sponsor submits a summary of the assessment results and recommendations to AF/A5R, AF/A5A and SAF/AQX and attaches it to the original document record in IRSS. The summary should contain the following information:

- Summary of original capability fielding goals/objectives.
- Summary of capability fielded to the end user, including assessment of the ability to address the validated gaps and any findings not directly related to original gap(s).
- Analysis of Value to the Warfighter

CDWG and/or CDC review the Value Assessment results and, in coordination with AF/A5R and SAF/AQX, make an assessment for continuation of capability development efforts consistent with the Capability Development Strategy and Capability Need Statement (CNS).

SECTION 3. “Section 800” REQUIREMENTS DOCUMENT FORMAT

3.1. Capability Needs Statement (CNS)

Purpose: Per Defense Acquisition policy, the purpose of the CNS is to identify mission deficiencies, required enhancements to existing operational capabilities (systems), features, interoperability needs, legacy interfaces, and other attributes required for new software-intensive systems or sub-systems or upgrades to existing systems or sub-systems.

The CNS is a high-level capture of need that provides enough information to define the software solution space, considering the threat environment.

The CNS is meant to be a flexible product, periodically updated to reflect the actual baseline as necessary. The approval authority for changes and updates to the CNS is determined by the HAF-level requirements decision authority, as described in the validation memo for the CNS.

Below is the recommended format for the CNS.

Cover Page:

[Classification]

Capability Need Statement

To Support Software Acquisition Pathway Activity

for

[Program Title]

Document revision number: [version xx]

As of: [Date]

Acquisition Decision Authority: [Office/Title]

Requirements Decision Authority: [Office/Title]

Primary and secondary POCs for the document sponsor. [Include name, title/rank, phone and both NIPRNET and SIPRNET email addresses.]

Primary and secondary POCs for the acquisition program office. [Include name, title/rank, phone and both NIPRNET and SIPRNET email addresses.]

- **Validation Page: placeholder for decision memo**

While in draft, a placeholder page will be included, with a statement of: “This document (include revision numbering) has not yet been validated and shall not be considered an authoritative source for the content herein. This document may be considered authoritative only when this page is replaced by a signed validation memorandum from the appropriate validation authority.”

Once validated by the validation authority, the placeholder page will be replaced by the signed memorandum indicating validation of the document.

- **Executive Summary:**

Sponsor’s explanation of why this effort is a candidate for the “Section 800” Software Pathway.

Briefly discuss the schedule to achieve an operational capability and a description and definition of what the successful demonstration of this new software solution will look like.

- **Stakeholders and Goal(s) for the System:**

Identify the key stakeholders and end users of the system, and their roles/authorities regarding key decisions, systems fielding, operations, support and sustainment, etc.

Summarize the high level goals and scope or focus of the development effort (what are the expected or necessary outcomes for this effort?)

- **Document Body:**

Section 1: Operational Context, Scope and Anticipated Threats.

Provide a summary of the operational context and scope of the effort or challenge to be addressed, explaining how the capability solution will contribute to the missions and activities of the Air Force or meet an identified operational challenge within the context of the anticipated threat environment.

Describe the timeframe under consideration and the overall operational risk and priority.

Cite the latest DIA or Service-approved threat products used.

Section 2: Capability Requirements and Gaps/Opportunities.

The purpose of this section is to identify and explain the high-level mission needs/capability requirements and associated gaps, challenges or opportunities to be addressed by the proposed solution(s) and to outline the results of related analyses or studies conducted to determine the mission needs/required capabilities and gaps or opportunities and derive the required system-level performance attributes.

Section 3: Required Features/Functions and Constraints.

The purpose of this section is to outline the high-level features, mission tasks, or goals for the project that are necessary to address the capability requirements, gaps or opportunities or which are otherwise critical or essential to achieve mission goals and objectives.

Avoid over specification or inclusion of system level technical specifications.

Highlight any legal, regulatory or other constraints or compliance items.

Section 4: Interoperability & Supportability

The purpose of this section is to specify how the individual system will operate within the Joint environment, including any physical or net-ready interoperability effects on joint or allied operations. Include factors that impact both the Air Force internally as well as outside agencies and programs.

Identify any necessary interoperability or interfaces with legacy systems

Include any requirements for intelligence supportability.

Include information or attributes for modular open system architecture (MOSA) or exportability that may impact future decisions about development, fielding, follow-on production, joint training, etc.

Outline non-materiel (DOTMLPF-P) changes that need to be made in order to successfully implement fielding of the residual capability in an operational environment. Address both a) changes that enable implementation, operations and support of the system and b) changes that must be made to support integration of the system with other fielded capabilities.

Section 5: Resourcing and Schedule.

The purpose of this section is to identify the overall resourcing plan and schedule of activities to provide the capability solution and highlight any challenges or risks to the planned timelines.

Highlight any challenges that may impact the feasibility of meeting the timelines or providing a usable capability within the timeline.

- **Glossary – Terms and Definitions**

Highlight any unique terms, definitions, acronyms or other references.

3.2. User Agreement (UA).

Purpose: Per Defense Acquisition policy, the purpose of the UA is to capture a commitment between the PM office, the Sponsor and the end user(s) of the system.

The UA is an agreement between the operational and acquisition communities to gain commitment to continuous user involvement and assign decision-making authority in the development and delivery of software capability releases, as well as operational tradeoffs among software features, cadence (of deliveries), and management of the requirements backlog. The UA will ensure proper resourcing of operational user involvement, which should occur as frequently as necessary to support the development process.

The UA is meant to be a flexible product, periodically updated. UA approval authority is shared between the Program Manager and the Sponsor (as the user rep).

Below is the recommended outline for the UA:

- **Cover Page:**

[Classification]

User Agreement (UA)

for

[Program Title]

Document revision number: [version xx]

As of: [Date]

Program Manager: [Program Office Signatory and Office Symbol]

Requirements Sponsor: [User Rep Signatory and Office Symbol]

Primary and secondary POCs for the document sponsor. [Include name, title/rank, phone and both NIPRNET and SIPRNET email addresses.]

Primary and secondary POCs for the acquisition program office. [Include name, title/rank, phone and both NIPRNET and SIPRNET email addresses.]

- **Document Body:**

- **Section 1 – User Involvement:**

- agreement between the operational and acquisition communities to gain commitment to continuous user involvement
- explain the plan to ensure proper resourcing of operational user involvement, which should occur as frequently as necessary to support the development process.

- **Section 2 – Decision Making Authority:**

- assign decision-making authority in:
 - development and delivery of software capability releases,
 - operational tradeoffs among software features,
 - cadence (of deliveries),
 - management of the requirements backlog.

APPENDIX 1 - GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

HAF MD 1-7, *Deputy Chief of Staff for Strategy, Integration and Requirements (AF/A5)*

USD (A&S) memo, 3 Jan 2020 – Software Acquisition Pathway Interim Policy and Procedures

AF/A5RP Requirements Page on the AF Portal (*requires AF Portal sign-on to gain access*):
<https://www.my.af.mil>; navigate to “Organizations A-Z”, then enter the keyword “A5RP”.

Requirements Process Abbreviations and Acronyms

ADM—Acquisition Decision Memorandum

MVCR – Minimum Viable Capability Release

AFGK—AF Gatekeeper

MVP – Minimum Viable Product

CDC—Capability Development Council

OAS—AF/A5RA Office of Aerospace Studies

CDWG—Capability Development Working Group

PM—Program Manager

CNS – Capability Needs Statement

RDM – Requirments Decision Memo

DA—(Acquisition) Decision Authority

“Sec. 800” is a reference to NDAA FY20, sec. 800

FOC—Full Operational Capability

SME—Subject Matter Expert

IOC—Initial Operational Capability

UA – User Agreement

IRSS—Information & Resource Support System