

Software Acquisition Go Bag Tactical Guide

01

SWP: Ready, Set, Go!



See our [User's Guide](#) to learn more about roles.

Who should use this guide?

You! This guide is for everyone in a **Program Management Office** involved in software acquisition using or considering using the DoW's SWP. Whether you are a member of leadership, software development, engineering, program management, contracts, costing, logistics, or testing, this is for you!

In projects that are not yet an official program, this Tactical Guide along with *Cracking the CNS Code* can help Sponsors and users create a draft CNS prior to official program stand-up.

What will I learn from this guide?

This guide helps you understand and apply criteria to determine whether your program is ready to adopt the SWP, and it provides your team the resources it needs to get started.

If you (or your team) need more details on the SWP, Agile, or DevSecOps, start with our Supplement *What Is the Software Acquisition Pathway?*

Why should I care?

You may already know this, but if you don't, the SWP allows for rapid acquisition and delivery of software that provides warfighters/users with innovative capabilities they need to outpace our adversaries and win the next fight. Sounds like just what's needed, right? But it's true that the details of the SWP can get confusing. Since not all programs are a good fit for following the SWP, this guide helps you determine if your program fits with the SWP and if it is ready. Let's get started!

Acronyms

AAF	Adaptive Acquisition Framework
ADM	Acquisition Decision Memo
CDD	Capability Development Document
CNS	Capability Needs Statement
DA	Decision Authority
DoW	Department of War
DT	Developmental Testing
OT	Operational Testing
PM	Program Manager
PMO	Program Management Office
POC	Point of Contact
SW-ICD	Software Initial Capabilities Document
SWE	Software Engineering
SWP	Software Acquisition Pathway
UA	User Agreement
WAU	Warfighting Acquisition University

Am I ready?

What must my PMO have to adopt or transition to the SWP?

You already heard how the SWP is different in *What Is the Software Acquisition Pathway*. With that in mind, we developed some questions you can answer about your program to determine if it is ready to adopt the SWP. These might be new to you. Let's walk through them together.

Table 1. How to Determine if Your PMO Meets Expectations to Adopt the SWP

Question	Qualifying Answers	
<i>Have you instilled an Agile culture throughout the program office that includes users?</i>	<p>You make decisions at lowest level.</p> <p>You learn as you go—that means you don't need all the information to get started on work such as a task, software capability, or project.</p> <p>You make risk-based decisions.</p>	<p>You have a rapid learning and fast feedback mindset.</p> <p>You collaborate with requirements owners and users as a default.</p> <p>An Agile culture is critical for success. If you can't instill it in your PMO, consider adopting another AAF pathway.</p>
<i>What is your plan to use Agile methods in a DevSecOps environment?</i>	<p>You will use existing enterprise services or contracts to stand up your DevSecOps environment when possible.</p> <p>You will use a repeatable cadence of short increments and sprints that produce working software.</p>	<p>You will use continuous improvement.</p> <p>You will integrate and automate security throughout the DevSecOps environment.</p>
<i>What is your plan to involve users every step of the way and adapt as needed?</i>	<p>You ensure that users understand what they are assessing for the value assessment.</p> <p>You solicit user feedback every chance you get, using demos, backlog prioritization meetings, and value assessments.</p>	<p>You implement ideas from user feedback whenever possible and communicate these implementations to the users.</p> <p>Involved, knowledgeable users can be your program's superpower.</p>
<i>What is your plan to integrate testing (i.e., government developmental testing [DT] and operational testing [OT]) including early testing?</i>	<p>You collaborate with the testing community as a default.</p> <p>You can provide funding for early tester involvement.</p>	<p>You have DT & OT personnel attend demos.</p> <p>You try to ensure automated testing can help with building evidence for DT and OT needs.</p>
<i>What is your plan to involve the cybersecurity team early and continuously?</i>	<p>You believe that automating security is an important part of the success of Agile development. Security is the "sec" in DevSecOps.</p>	<p>You involve your cybersecurity team in selecting your DevSecOps environment.</p> <p>You involve your cybersecurity team in developing the Acquisition Strategy. The earlier the better!</p>
<i>What is your plan to involve other certification authorities (safety of flight, nuclear, etc.) early and continuously?</i>	<p>During the planning phase, you find your designated POCs for all the certifications you will need. You believe these interactions should be incremental and continuous throughout the SWP phases.</p>	<p>Just like security, you believe these certification authorities are an important piece in successfully performing incremental certification reviews within the DevSecOps environment.</p> <p>You take a modular approach to software architecture, especially for areas of the code that require certifications.</p>
<i>Will you be able to provide users with new functionality at least annually if not more often?</i>	<p>For non-embedded systems, you can provide a new operational capability for users at least annually.</p>	<p>For embedded systems, you can provide a new demonstrated capability in an operationally representative environment (e.g., a hardware-in-the-loop lab) annually.</p>

Am I set?

Whew that was a lot! You may be wondering if this is even doable. Don't worry; we are here to support you getting started. Stick with us!

Can you meet the expectations that we outlined in Table 1?

- If yes, let's proceed.
- If *no*, you must at least instill an Agile culture before proceeding to the SWP planning phase. The rest of the expectations must be completed in the planning phase. You can spend more time in that phase to fulfill the remaining expectations.

Let's Get Set

Here are a few ways you might be "entering" the SWP:

I'm a new acquisition program entering the SWP planning phase. What do I need?

You'll need to create a CNS—a high-level description of warfighter/user needs. Programs with joint equities should use a SW-ICD instead of a CNS. To create the CNS or SW-ICD, the user/Sponsor and the PM collaborate. A CNS is NOT "your father's requirements document!" The SWP requires your CNS to be written at a high level; you should describe desired mission outcomes instead of specific technical designs. Look for our upcoming Tactical Guide called *Cracking the CNS Code*, which specifically focuses on creating a CNS!

We know that some acquisition and administrative processes are changing, and we're tracking that carefully. We'll update this guide when new processes, like [a replacement for JCIDS](#), are released since they will impact things like the SW-ICD.

You'll need to meet with the DA for your program to discuss your plan to adopt the SWP. Once the DA approves your plan, they will document that decision in an ADM.

I'm an existing acquisition program planning to transition to the SWP. What do I need?

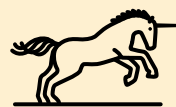
Programs entering the SWP planning phase:

- You'll typically need either an existing, current, requirements document (typically a CDD) or a new CNS. Programs with joint equities should use a SW-ICD instead of a CNS. Collaborate with your program's Sponsor to create the CNS or SW-ICD, especially because it must be signed by the Sponsor.
- You'll need to meet with the DA for your existing pathway to discuss your plan to adopt the SWP.

Once the DA approves your plan, they will document decisions related to the current pathway and transition to the SWP in an ADM.

Programs going straight to the SWP execution phase:

- You should spend time planning your transition from another pathway into the SWP. (See our discussion of *The Myth*.)
- Your program teams should review their requirements document to determine if they should move to a CNS. You might need to revise your requirements document if it no longer describes the capabilities needed or it is too detailed to be used with incremental, iterative Agile development. You should also check your acquisition strategy to see if it needs updates for areas such as cybersecurity in your DevSecOps environment or your contracting strategy. You'll also need to collaborate with your user community to develop a user agreement and think about how the value assessments will be conducted.
- You'll need to meet with the DA for your existing pathway to discuss your plan to adopt the SWP, including your readiness to move straight into the SWP execution phase. Once the DA approves your plan, they will document decisions related to the current pathway and transition to the SWP in an ADM.



The Myth

"Existing acquisition programs in execution must go straight into the SWP execution phase"

Keep in mind that there may be benefits for your program to enter the SWP planning phase (formally or informally by using SWP practices) while you transition from another pathway. Beginning in the planning phase can provide your program with more time to assess your strategy and requirements documents, consider and align with the best ways to involve your users, determine how you will collect SWP metrics, etc. The planning phase can also provide your program more time to transition to a DevSecOps environment or to look at your software architecture and determine if changes are needed moving forward.

There is no minimum time required to be in the SWP planning phase, and your program can continue to execute on its current pathway while you plan for a transition to the SWP. While the SWP was developed to allow a short planning phase, some programs have extended that phase to include the development of prototypes to ensure they were ready to deploy a

How does a new program get started on the SWP?

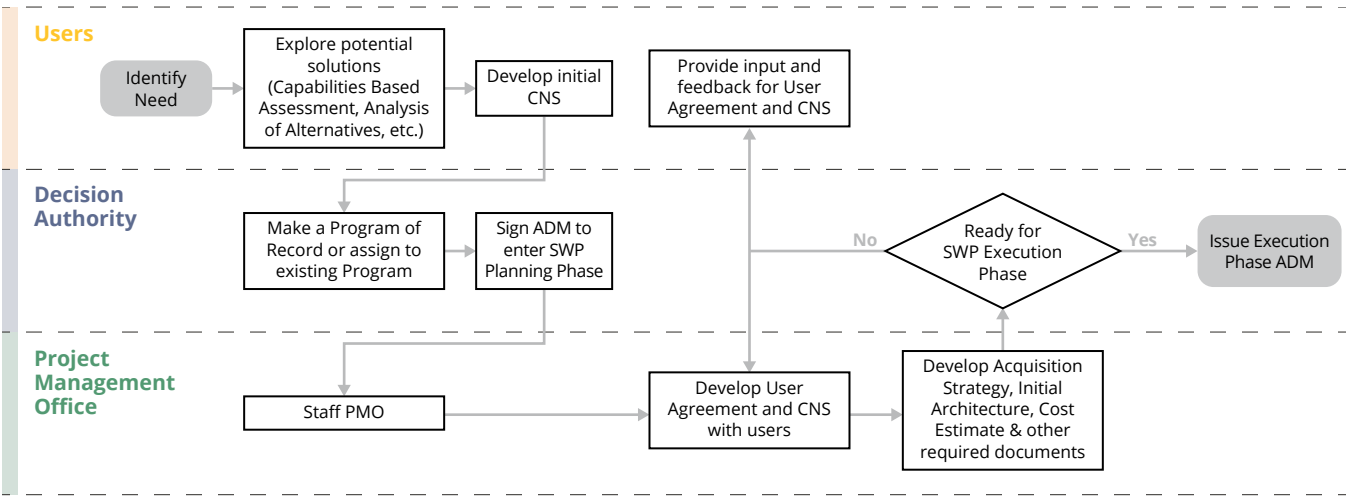


Figure 1. How Does a New Program Get Started on the SWP

new capability annually once they transitioned to the execution phase. Other programs have used the planning phase to explain the software pathway to their users, testers, and certification authorities to get them on board before entering execution. This flexibility allows you to decide what is best for your program and get agreement from your DA about your path forward.

I have a new program that is not yet a program of record. How do I get started?

You may be a sponsor or user involved with a new program that hasn't been established as a program of record yet. Figure 1 (above) explains how to get started without a PMO and then how to work with that PMO once it is established.

Quick summary of what you'll need to get started with the SWP

Table 2. What You Need to Get Started with the SWP Based on Program Type

Program Type	SWP Artifact Requirements
New acquisition program	Draft CNS signed by the Sponsor or user
Existing acquisition program—planning phase	ADM signed by the DA
Existing acquisition program—execution phase	Existing documents that were reviewed to determine whether updates are needed to requirements documents, strategy documents, etc. ADM signed by the DA

Program Type	SWP Artifact Requirements
New program of record (See Figure 1 for more details)	Draft CNS signed by the Sponsor or user ADM signed by the DA

Do I need separate SWP programs for each application or system in my program?

In general, no, you do not need separate SWP programs if you have a system of systems or several applications in your program. Of course, some exceptions exist. It's always a good idea to discuss this with your DA to determine if there is a benefit to having multiple SWP programs.

SWP programs with a system of systems might consider establishing a portfolio approach to the SWP. This approach considers that capability needs and users might be different for different applications. Future Tactical Guides on CNS and UA will discuss considerations in establishing a portfolio approach.

Let's Go!

Do you have everything ready? Congratulations! Let's Go!

Email osd.mc-alex.ousd-a-s.mbx.osd-sw-pathway to request a SWP registration form. The form asks for fairly basic information, so fill it out and send it back to the same email address to register your program for the SWP.

Then, move out. You don't need to wait for a reply.

What's next?

Our Tactical Guide called *Cracking the CNS Code* will be published soon. Stay tuned!

How do I learn more?

On the AAF's SWP [website](#),

- learn more [about the SWP](#)
- read about [entering the SWP planning phase](#)
- [download templates](#) for a CNS, SW-ICD, and ADM

Visit our Go Bag website at sei.cmu.edu/projects/gobag

- Unclear about all the groups and roles involved in the SWP? Grab our *Software Acquisition Go Bag User's Guide* from the [Pack Your Go Bag link](#).
- Confused about some of the terms that we use in this guide? Download *What Is the Software Acquisition Pathway?* from the [Pack Your Go Bag link](#).

We recommend the following resources to help you instill an Agile culture in your PMO:

- The [Leadership on a Submarine video](#) about a Navy submarine captain
- Agile Alliance [video on the Culture of Agility](#)
- WAU [course SWE 0099](#)
- [Agile 101: An Agile Primer](#) at the WAU site

If this isn't feasible in your program environment, consider adopting another AAF pathway

What if I have questions or want to provide feedback?

We hope you do because your Feedback will help us support your journey! Send us questions or feedback at our [Contact Us link](#).

What if I need more help?

Reach out to us at our [Contact Us link](#) so that we can discuss how the SEI might assist with your specific challenges.

How can I stay engaged with Software Acquisition Go Bag?

We don't want you to miss out on anything! [Subscribe to our mailing list](#) to participate in future Go Bag webinars and be notified about Tactical Guide and Supplement launches.

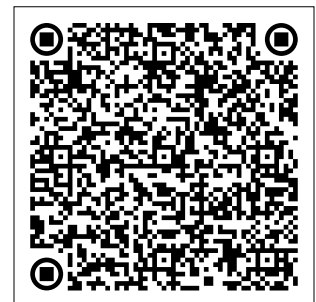
Don't take the journey alone! Invite your program office co-workers, leadership, and stakeholders to join you on this journey by recommending that they also [subscribe](#).



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Software Acquisition *Go Bag*

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Always focused on the future, the Software Engineering Institute (SEI) advances software as a strategic advantage for national security. We lead research and direct transition of software engineering, cybersecurity, and artificial intelligence technologies at the intersection of academia, industry, and government. We serve the nation as a federally funded research and development center (FFRDC) sponsored by the U.S. Department of Defense (DoD) and are based at Carnegie Mellon University, a global research university annually rated among the best for its programs in computer science and engineering.

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