

System Wide Information Management (SWIM)

Service Lifecycle Management Processes Guide



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SIGNATURE PAGE



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DOCUMENT CHANGE HISTORY

Version	Date	Description of Changes
1.0	06/23/2010	Addressed comments from numerous stakeholders to drafts
2.0	06/04/2012	Incorporate lessons learned from NSRR operation
2.1	07/01/2014	Incorporate EES processes

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1 Introduction

This document describes the set of controlled and well-defined activities performed at each stage of a service's lifecycle for [SOA-based](#) services. The Services Lifecycle Management Process (SLMP) processes apply to all current and prospective Service Providers, which could be represented by a [SWIM-enabled](#) program or other government or commercial organizations that provide an information service via the [NAS Enterprise Messaging Service](#) (NEMS).

1.1. Background

The FAA is currently undergoing transformation via the Next Generation Air Transportation System (NextGen) [[VISION-100](#)]. At the heart of the NextGen concept is the information-sharing component known as net-centric infrastructure services or net-centricity [[NEXTGEN-CONOPS](#)]. The net-centric paradigm aims to change the way information technologies are provided and managed in the FAA by making available a wide range of information and capabilities through the use of a common infrastructure of reusable and shared services on an enterprise network.

The envisioned net-centric infrastructure is based upon the concept of [Service-Oriented Architecture \(SOA\)](#). SOA is a paradigm for organizing and utilizing distributed capabilities that may be under the control of different ownership domains. It provides a uniform means to offer, discover, interact with, and use capabilities to produce desired effects consistent with measurable preconditions and expectations.

To facilitate delivery of shared and reusable services as part of the National Airspace System (NAS) infrastructure, the FAA established the System Wide Information Management (SWIM) program. The goal of the SWIM program is to support information sharing in the NAS environment by providing governance, as well as architectural and technical solutions for identifying, developing, provisioning, and operating a framework of shareable and reusable services.

One of the most challenging aspects of establishing a mature [SOA-based](#) enterprise framework of reusable business services is an effective governance model. SOA governance provides the ability to ensure that all of the independent [SOA-based](#) efforts (whether in the design, development, deployment, or operations of a service) come together to meet enterprise requirements. SWIM Governance is the effort established and implemented by SWIM program, with the goal to enable a set of enforceable policies for governing of lifecycle of services, procedures, processes, service information models, service components and registries, and organizational activities that together ensure a consistent alignment between FAA/NAS business objectives and SOA best practices, methodologies, and technological solutions. This document describes SOA governance processes for managing the lifecycle of NAS [SOA-based](#) services, service acquisitions, service components, [service providers](#), and [service consumers](#).

2 APPLICABLE DOCUMENTS

2.1. Government Documents

- [VISION-100] VISION 100 - Century of Aviation Reauthorization Act: PUBLIC LAW 108–176: DEC. 12, 2003
<http://www.gpo.gov/fdsys/pkg/PLAW-108publ176/pdf/PLAW-108publ176.pdf>
- [NEXTGEN-
CONOPS] Concept of Operations for NextGen: Version 2.0 June 2007
http://www.jpdo.gov/library/nextgen_v2.0.pdf
- [SWIM-GP] Governance Policies, SWIM, March 12, 2014
http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/atc_comms_services/swim/governance/standards/media/Governance-Policies-v20.html
- [SWIM-CV] SWIM Controlled Vocabulary, March 2013.
<http://www.faa.gov/go/swimvocabulary>
- [STD065] FAA-STD-065A, Web Service Description Document, 1 July 2013.
http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/atc_comms_services/swim/governance/standards/
- [STD070] FAA-STD-070, Preparation of Web Service Requirements Documents, 12 July 2012.
http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/atc_comms_services/swim/governance/standards/
- [STD073] FAA-STD-073, Preparation of JAVA Message Service Description Documents, 30 September 2013.
http://www.faa.gov/about/office_org/headquarters_offices/ato/service_units/techops/atc_comms_services/swim/governance/standards/

2.2. Non-Government Documents

[WSDLV2] Web Services Description Language (WSDL) Version 2.0 Part 1: Core Language, W3C Recommendation, 26 June 2007.
<http://www.w3.org/TR/wsdl20/>

3 TERMS AND DEFINITIONS

3.1 Terms and Definitions

Note: this section contains only the terms that are not included in SWIM Controlled Vocabulary. [\[SWIM-CV\]](#)

SOA-Based Something that is designed, developed, or operated according to principles of [Service-Oriented Architecture](#).

SWIM-Enabled Program A program that provides or consumes, or intends to provide or consume, NAS [SOA-based](#) services and which uses SWIM common computing and infrastructure assets.

3.2 Acronyms and Abbreviations

AIM	Aeronautical Information Management
AIS	Aeronautical Information Services
AMS	Acquisition Management System
API	Application Programming Interface
BCD	Baseline Change Decision
CONOPS	Concept of Operations
ESB	Enterprise Service Bus
EES	Enterprise Engineering Services
FAA	Federal Aviation Administration
FID	Final Investment Decision
FNTB	FTI National Test Bed
FPRD	Final Program Requirements Document
FTI	FAA Telecommunications Infrastructure
HTTP	Hypertext Transfer Protocol
IARD	Investment Analysis Readiness Decision

<i>IID</i>	Initial Investment Decision
<i>IPR</i>	Initial Program Requirements
<i>ISD</i>	In Service Decision
<i>ISPD</i>	Implementation Strategy and Planning Document
<i>JMS</i>	Java Message Service
<i>JRC</i>	Joint Resources Council
<i>JMSDD</i>	Java Messaging Service Description Document
<i>MOA</i>	Memorandum of Agreement
<i>NAS</i>	National Airspace System
<i>NEMS</i>	NAS Enterprise Messaging Service
<i>NSRR</i>	NAS Service Registry/Repository
<i>OGC</i>	Open Geospatial Consortium
<i>PO</i>	Program Office
<i>PRD</i>	Program Requirements Document
<i>SLMP</i>	Service Lifecycle Management Process
<i>SOA</i>	Service-Oriented Architecture
<i>SOAP</i>	Originally “Simple Object Access Protocol”; the full spelling is no longer used
<i>URI</i>	Uniform Resource Identifier
<i>WSDD</i>	Web Service Description Document
<i>WSDL</i>	Web Service Description Language
<i>WSRD</i>	Web Service Requirements Document
<i>W3C</i>	World Wide Web Consortium
<i>XML</i>	eXtensible Markup Language
<i>XSD</i>	XML Schema Definition

4 SOA Governance Activities

SOA governance includes (but is not limited to) three major components: a registry, to make all [SOA-based](#) services discoverable and understandable; SOA suitability assessment, to reduce development risk and minimize needless duplication of IT resources; and lifecycle management processes, to provide management and monitoring through all stages of service development and operation, including

planning, requirements gathering, design, development, testing, deployment, operations, and retirement.

The following sections describe all of the three components of NAS SOA Governance.

4.1 Service Registration

The NAS Service Registry/Repository (NSRR) is a SWIM-supported capability for making services visible, accessible, and understandable across the NAS. The NSRR supports a flexible mechanism for service discovery, an automated policies-based way to manage services throughout the services lifecycle, and a catalog for relevant artifacts [[SWIM CV](#)]. The SWIM Governance Policy [[SWIM-GP](#)] requires that all [SWIM-enabled](#) services be registered in the NSRR. Registration and subsequent updating of service information takes place throughout all SLMP stages. [SWIM Governance Policies document Appendix A](#) provides a complete listing of the required NSRR-related activities for the various lifecycle stages.

4.2 SOA Suitability Assessment

Purpose

SOA Governance begins in the early stages of the FAA Acquisition Management System (AMS) process with a goal to facilitate data sharing requirements for NextGen and improve the way the NAS creates and leverages new and existing systems.

When a NAS Program enters the Acquisition Management Process at the Mission Analysis phase, the need for a program service and high level requirements have been identified on the NAS EA Roadmaps. However, SOA services have not yet been identified and therefore cannot be governed by the SLMP. Non-NAS Service Providers also require the same assistance with service identification. To ensure that all Service Providers' are scoped properly and investment analysis incorporate SOA principles, the SWIM Governance team conducts a SOA Suitability Assessment for each NAS and non-NAS program in the AMS process.

The SOA Suitability Assessment identifies high level program functionality and data and sharing requirements using the SOA Suitability scorecard. The result of the assessment defines if the program architecture includes SOA services as a part of the solution architecture. Early discovery of a program's SOA suitability is critical for the program's architecture and requirements development and ensures appropriate integration of SWIM infrastructure in the program solution architecture.

The SOA Suitability assessment is performed before each of the following AMS milestones:

- Investment Analysis Readiness Decision (IARD)
- Initial Investment Decision (IID)
- Final Investment Decision (FID)
- Baseline Change Decision (BCD)

The assessment results are required for the Enterprise Infrastructure Services (EIS) check list in the AMS.

It is important to understand that the SOA Suitability Assessment is the first step in the SOA Suitability Analysis. If the assessment concludes that the scope of investment is applicable for a SOA service implementation, the analysis proceeds to the service identification stage where the service is entered in the proposed stage in the NSRR and will follow all SLMP steps. If the assessment concludes that the investment is not SOA suitable, the only action is to report results to the ARB for inclusion in the EES response to JRC.

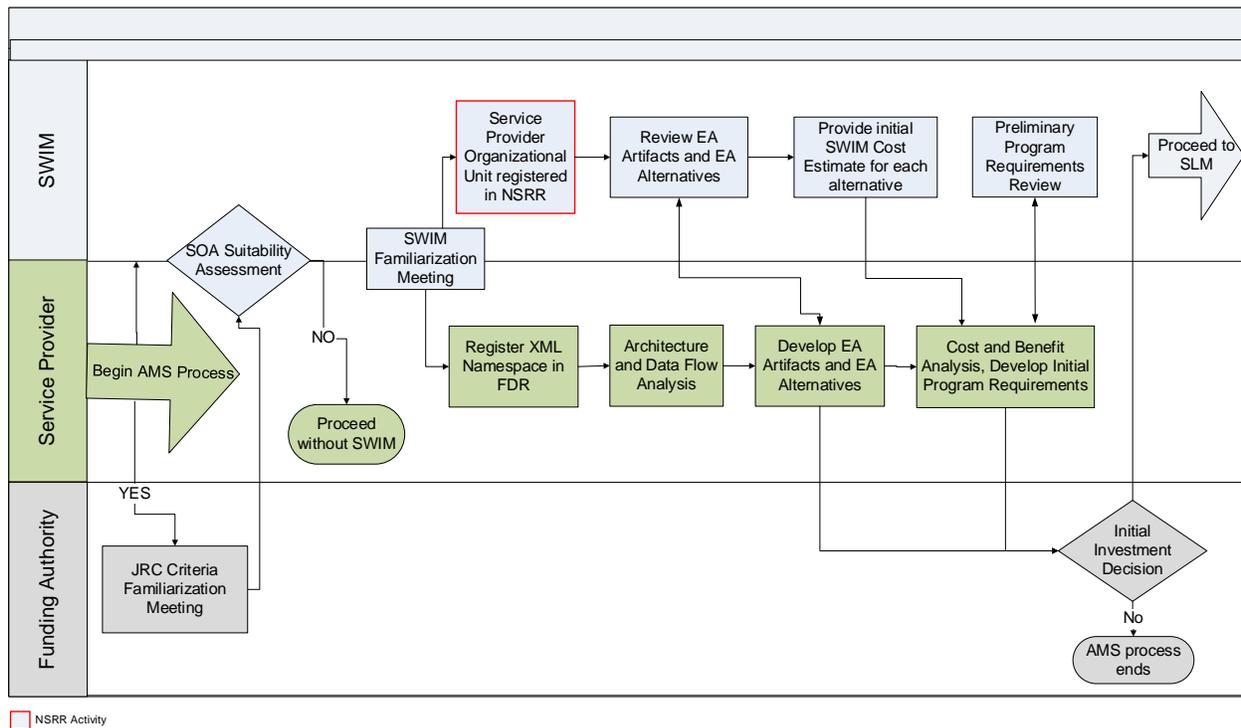


Figure 1 - Pre Lifecycle Activities

Process

1. NAS Programs enter the Acquisition Management System (AMS) with a JRC Criteria Familiarization meeting arranged by the JRC Secretariat. The JRC extends a meeting invitation to responsible organizations in the AMS including the CINP/EES organization.
2. EES schedules and conducts a joint EIS Familiarization meeting during which the Program presents AMS deliverables including the CONOPS and Requirements document. The SOA Suitability Assessment is presented and conducted during this meeting. If the program is found to be unsuitable, it is reported to ARB and no further action is taken.

3. If a Program is found to be SOA-suitable, further meetings are organized by the SOA Governance team and the EES Project Lead. The Service Provider may be requested to present more detailed documentation of its interfaces and data flows. The SOA Governance team presents the SWIM/NEMS Familiarization package and provides the Service Provider with relevant documentation and sets the terms of collaboration.
4. The SOA Governance team assists the Service Provider in accessing the NSRR, registering the Service Provider as an Organizational Unit and providing information about available and upcoming SOA Services.
5. NAS Programs develop a range of alternatives featuring SOA in its data-flows and Enterprise Architecture artifacts for the Investment Analysis Readiness Decision (IARD) for the JRC.
6. NAS Programs proceed to the JRC for the IID.

Additional information on SOA suitability assessment is available at the [SWIM Governance Website](#).

5 Service Lifecycle Stages

The ability to effectively manage all stages of the [service](#) lifecycle is fundamental to the success of governing SOA services.

The SWIM Governance Policy document [SWIM GP] defines seven consecutive service lifecycle stages, as shown in Table 1. This section provides a detailed description of all activities that take place at every stage.

Table 1 Service Provider Lifecycle Stages

<i>Lifecycle Stage</i>	<i>Description</i>
Proposed	The stage during which the business needs for the proposed service are identified and assessed as to whether needs can be met through the use of SOA.
Definition	The stage during which the service's business requirements are gathered and the service design is produced based on these requirements.
Development	The stage during which the service specifications are developed and the service is built.
Verification	The stage during which the service is being inspected and/or tested to confirm that the service is of sufficient quality, complies with the prescribed set of standards and regulations, and is approved for use.
Production	The stage during which the service is available for use by its intended consumers.
Deprecated	The stage during which the service can no longer be used by new consumers.

Retired	The stage during which the service is disposed of and is no longer used.
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5.1 SLMP Stage 1: Service Proposed

Purpose

The main purpose of this stage is to identify what services are provided by the Service Provider via SWIM and to register their services in the NSRR. A SWIM Point of Contact (POC) is assigned by the SWIM Program Office during this stage. The SWIM POC is a SOA SME that provides service design and guidance for SWIM governance required artifacts to service providers as they progress through the stages of the lifecycle. The purpose of registering the service at this stage is to provide visibility to other programs as early as possible and avoid duplication of effort. Early registration also provides potential consumers insight into future capabilities that they may not be aware of otherwise. It gives them an opportunity to participate in requirements development and shape services in development to best serve the needs of the NAS.

Definition

The Proposed stage starts when the proposed service has been identified as SOA suitable based on the SOA Suitability Assessment. This is synced with the AMS process with this stage occurring prior to the Investment Analysis Readiness Decision. The service concept may be very broadly defined during this stage.

Certain AMS artifacts, required for the program to advance in AMS, are essential for service identification. This includes the Preliminary Program Requirement Document (pPRD) and architectural alternatives and views. These artifacts help to refine a service's business objectives, concepts of operations, data flows and data exchange patterns.

The SWIM Governance team and the SWIM POC are involved in these processes in order to achieve the following objectives:

1. Identify requirements to be allocated to SWIM/NEMS
2. Coordinate with on-going and existing SOA Service provisioning efforts to avoid duplication and direct functional allocations
3. Guide the Program through the service identification process
4. Familiarize the Program with governance processes and NEMS capabilities
5. Provide an initial cost estimate for provisioning SOA services
6. Develop an initial schedule for SOA service planning and provisioning

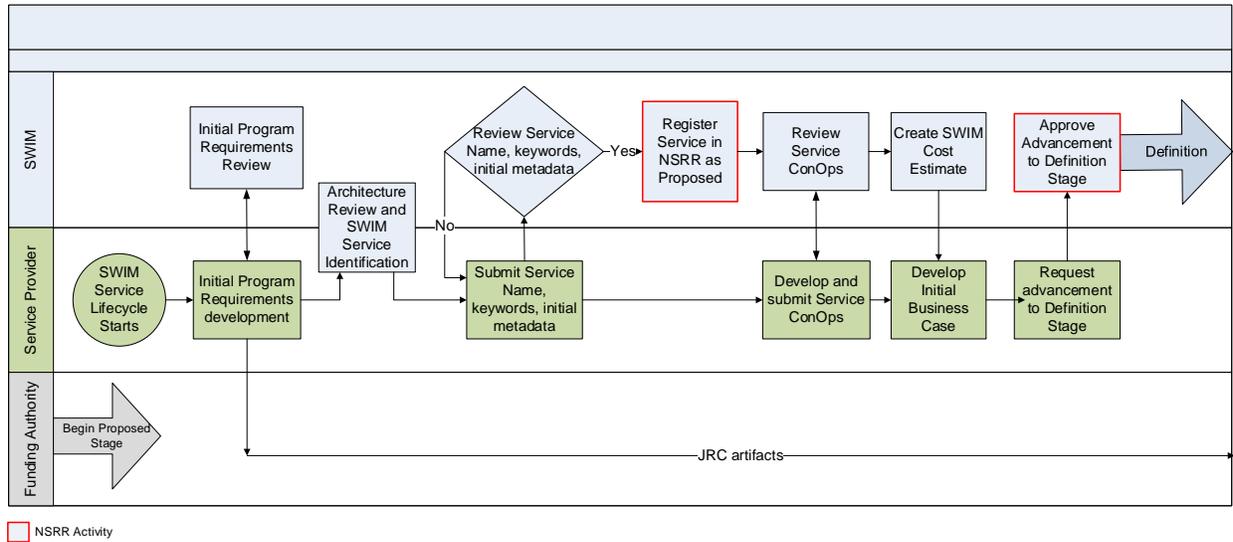


Figure 2 - Service Proposed Stage

Processes

1. The Service Provider provides required AMS deliverables, including the Preliminary Program Requirements Document (pPRD), to the SWIM Governance POC for review.
2. To satisfy AMS requirements, NAS programs develop three architectural alternatives prior to IARD. The SWIM Governance team reviews all EA artifacts and architectural alternatives and present them for familiarization to the ARB to ensure:
 - a) The Program does not create new point-to-point data exchange patterns (“stove pipes”);
 - b) The Program is compatible with the NEMS infrastructure to implement data exchanges; and
 - c) The Program uses available SOA services where appropriate.
3. The Service Provider collaborates with the SWIM Governance team to identify SOA services
4. The Service Provider registers the service in the NSRR.
5. The Service Provider registers an organization URI in the Federal Data Registry (FDR).
6. The Service Provider uploads the program Concept of Operations (CONOPS) in the NSRR. The Service CONOPS is then reviewed by the SOA Governance team.
7. The SWIM Governance team, in conjunction with the cost estimation team, provides a cost estimate for the SOA services to be included in the Enterprise Infrastructure Services (EIS) Assessment for JRC.

- The Service Provider requests lifecycle advancement through the NSRR interface to the Service Definition stage.

5.2 SLMP Stage 2: Service Definition

Purpose

The purpose of the Service Definition stage is to define, register, and approve the service. This stage is executed after the Service Proposed stage is approved and an Initial Investment Decision (IID) has been achieved.

Definition

SWIM endorses an approach for service development in which service specifications are developed prior to code implementation, unlike “Code First”, where the service artifacts are auto-generated from the developed code. This approach is aligned with current AMS practice of defining an Interface Requirements Document (IRD)/Web Service Requirements Document (WSRD) prior to code implementation. This approach requires a final, approved WSRD, while the WSDD/JMSDD should be far enough along in their development to minimize subsequent updates to the service due to changes.

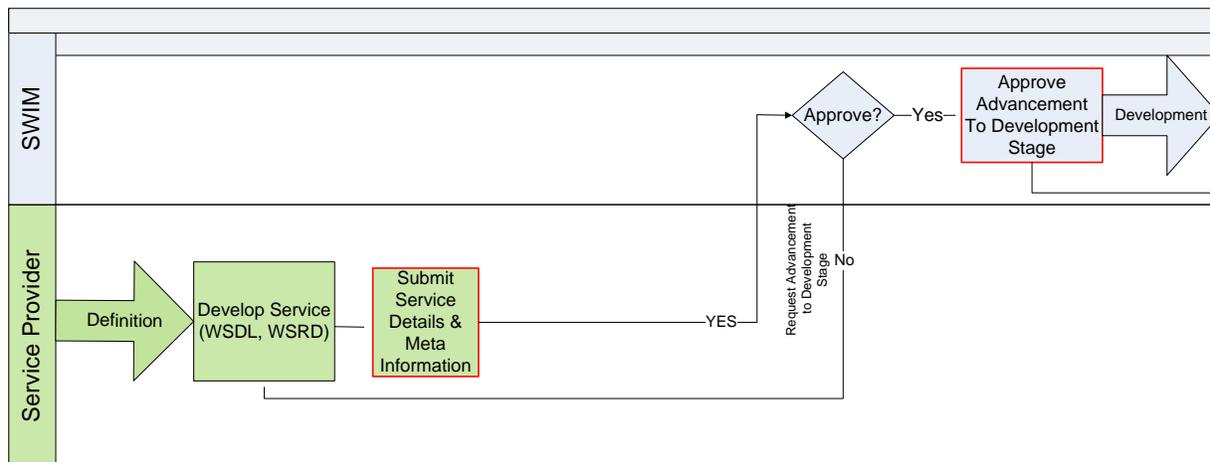


Figure 3 - Service Definition Stage

Processes

- The Service Provider provides required AMS deliverables, including the Final Program Requirements Document (fPRD), and Implementation and Strategy Planning Document (ISPD) to the SWIM Governance team for review.
- Service Provider develops the Web Service Requirement Document (WSRD), according to FAA-STD-070 [STD070]

3. The Service Provider submits the WSRD for SWIM POC review and supports comments resolution efforts.
4. The Service Provider uploads the WSRD to the NSRR after acceptance by SOA Governance team.
5. The Service Provider updates its service definition within the NSRR as necessary, including but not limited to the Solution CONOPS.
6. The SOA Governance and Cost Estimation teams provide updates to the cost estimate for the SOA services to be included in the EIS Assessment and are reviewed by the ARB. The Service Provider updates its Final Program Requirements documents as necessary.
7. The Service Provider requests advancement to the Development Stage through the NSRR interface.
8. The SOA Governance team reviews request, verify required meta-information and contact Service Provider with updates and any required corrections.

5.3 SLMP Stage 3: Service Development

Purpose

The purpose of the Service Development stage is to develop the software to fulfill the Service requirements and implement the service. This stage is conducted after the Service Definition stage has been concluded.

Definition

After the Service has been approved, the Service Provider begins implementation. This section describes the activities that occur after approval of the service and prior to Service Verification in the SLMP. This approach aligns with current AMS practice of developing an Interface Control Document (ICD)/ Web Service Description Document (WSDD) [STD065]/JMS Description Document (JMSDD) [STD073] prior to code implementation.

The majority of activities in the service development stage are conducted by the program in accordance with established and adopted software development and testing practices. The SWIM Test and Evaluation (T&E) Team may observe integration testing during this lifecycle stage.

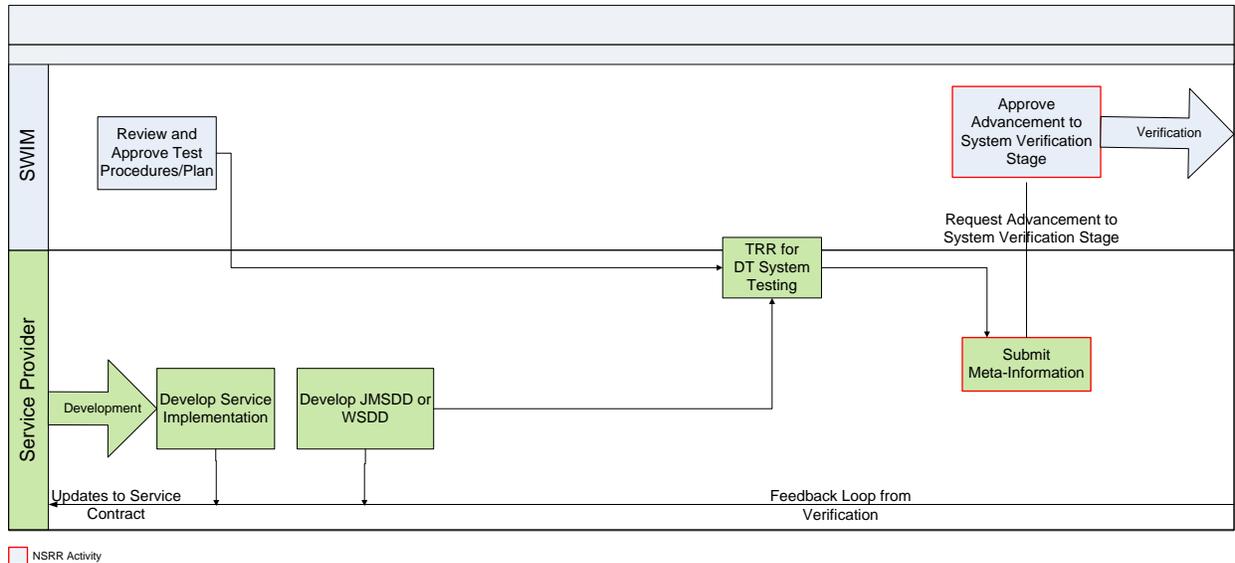


Figure 4 - Service Development Stage

Processes

1. The Service Provider works to develop the service implementation.
2. The Service Provider provides the WSDD or JMSDD for comments to the SWIM POC and supports comments resolution efforts.
3. The Service Provider submits artifacts (i.e., Web Services Description Language (WSDL) [WSDLV2], associated XML Schemas, and policy assertions) to the NSRR. The Service Provider submits the required service documentation and meta-data to the NSRR. Artifacts should include the WSDD or JMSDD.
4. The Service Provider executes the NSRR compliance checks (i.e. Repository test assertions) for the Service Definition Lifecycle Stage. The Service Provider resolves any non-compliance issues identified and re-submits the affected meta-information.
5. The Service Provider conducts software level testing in accordance with the Service Provider's established test practices and processes. The Service Provider integrates the SWIM provided test profiles, requirements and checklists into their software level testing processes. At this stage in the SLMP, Service Providers conduct interoperability testing at the WSDL and message level. Upon resolution of any identified issues, the final test report output from the test tool is submitted to the NSRR prior to requesting advancement to the next service lifecycle stage.
6. The Service Provider conducts unit and integration testing in accordance with the Service Provider's established test processes. The SWIM T&E Team reviews and approves test plans and procedures specifically related to SWIM requirements.
7. The Service Provider submits/updates all required meta-information in the NSRR.

8. The Service Provider executes the NSRR policy assertions for the Service Development Stage to verify readiness to proceed to the next service lifecycle stage. The Service Provider resolves any issues identified by the Repository assertions and re-submits the affected meta-information.
9. The Service Provider requests service lifecycle advancement to the “Service Verification” stage through the NSRR interface.
10. The SOA Governance team reviews requests, verifies required meta-information and contacts Service Provider with updates and required correction.

Note: The IRD/WSRD and WSDD may be used for reference in the review process; however, they are approved through the NAS change management processes of the controlling CCB.

5.4 SLMP Stage 4: Service Verification

Purpose

The purpose of the Service Verification Stage is to ensure that the design solution has met the system requirements and that the system is ready for use in the operational environment.

Definition

The Verification Stage is designed to ensure the service is ready for operations. Activities in Verification Stage use artifacts produced during the prior lifecycle stages. The Service Provider manages and performs their own verification of system-level requirements in accordance with established FAA and program test and evaluation (T&E) processes. The SWIM T&E Team reviews Service Provider artifacts relevant to SWIM service requirements. The SWIM T&E Team also monitors and assists (if needed) in selected T&E activities conducted by the Service Provider at the FTI National Test Bed (FNTB) at the William J. Hughes Technical Center (WJHTC). On-site support for Operational Testing and Key Sites testing is provided by the SWIM T&E Team upon request from the Service Provider.

At the conclusion of Operational Testing, the Service Provider verifies that all SOA Governance required service information has been provided. [Appendix A of the SWIM Governance Policies document](#) lists the information required for SOA services. Services are not to be promoted to the Production stage in the NSRR until the designated In-Service Definition (ISD) authority has approved the service for deployment in the operational environment and compliance with SOA Governance policies and processes has been demonstrated.

Processes

1. The SWIM T&E Team reviews all documentation in the NSRR including the WSDD/JMSDD prior to the Technical Interchange Meeting (TIM).

2. The SWIM T&E team conducts the TIM with the Service Provider and seeks appropriate FTI/NEMS input. During this process, the required artifacts are agreed upon. A signed copy of relevant agreement and any corresponding artifacts are uploaded to the NSRR.
3. FTI/NEMS conducts the HSV Test TIM, using the functional requirements document developed during the Requirements TIM.
4. The FTI/NEMS engineering team conducts Harris Service Verification (HSV) integration testing in accordance with the test processes. The SWIM T&E Team reviews and iteratively approves test plans and procedures specifically related to SWIM requirements.
5. The Service Provider conducts the Operational Testing at the WJHTC FNTB in accordance with the Operational Test Plan. The SWIM T&E Team monitors the Operational Testing and provides on-site support as needed. If no OT is planned, or the Service Provider's OT is deemed insufficient, then the SWIM T&E team creates the Operational Test Plan and confirms that the system is ready for testing, all test tools are certified and calibrated as required, and all procedures are completed and approved.
6. The Service Provider provides the OT report to SWIM T&E for review. If a report is not generated by the service provider, then the SWIM T&E team generates a SWIM Verification report and works with the program iteratively to resolve any and all issues arising from operational testing.
7. The SWIM T&E team forwards the final Service Provider OT report or SWIM Verification report to the SOA Governance team with all the test data, results and analysis required to verify SOA Governance related requirements have been successfully tested.
8. The Service Provider submits the Operational Test Plan and the SWIM Interoperability Test Report and Results for the Verification Stage to the NSRR.
9. The Service Provider executes the NSRR assertions for the Service Verification Stage to verify readiness to proceed to the Production Lifecycle Stage. The Service Provider resolves any issues identified by the NSRR assertions and re-submits affected meta-information.
10. The Service Provider proceeds to the ISD. The ISD Authority, in coordination with the Service Provider, issues the ISD. The ISD authorizes deployment of the service into the operational environment. The following are required for the ISD by the AMS Process
 - a. Operational test report(s);
 - b. T&E report for designated programs;
 - c. Safety risk management document or system safety assessment report approved;
 - d. Information security certification and authorization;

11. ISD briefing and action plan.

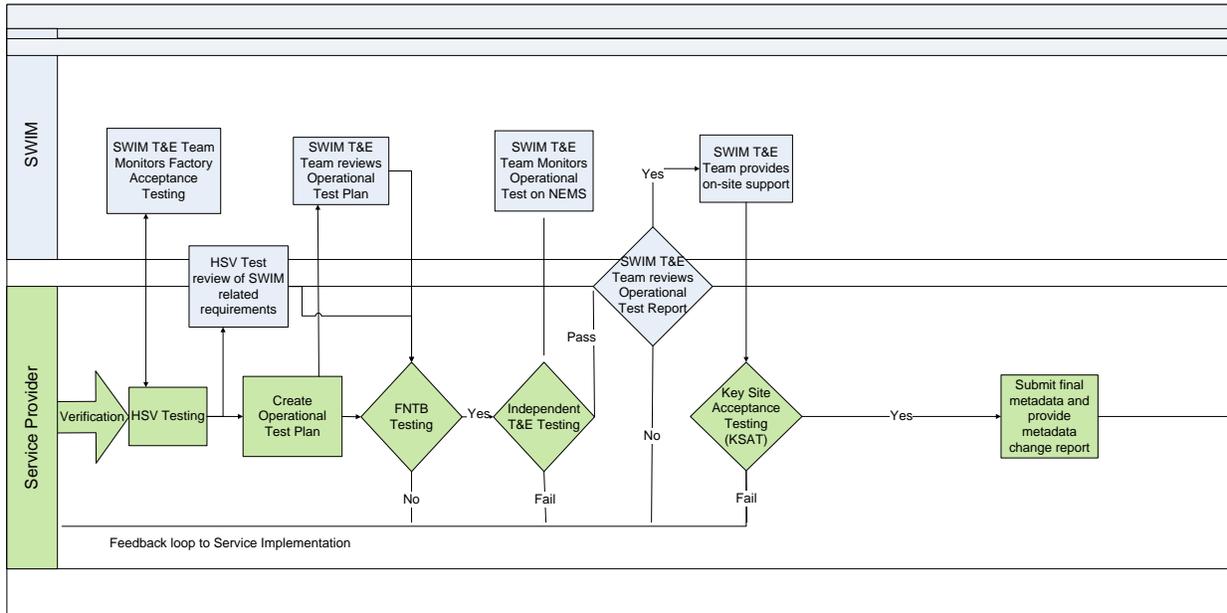


Figure 5 - Service Verification Stage

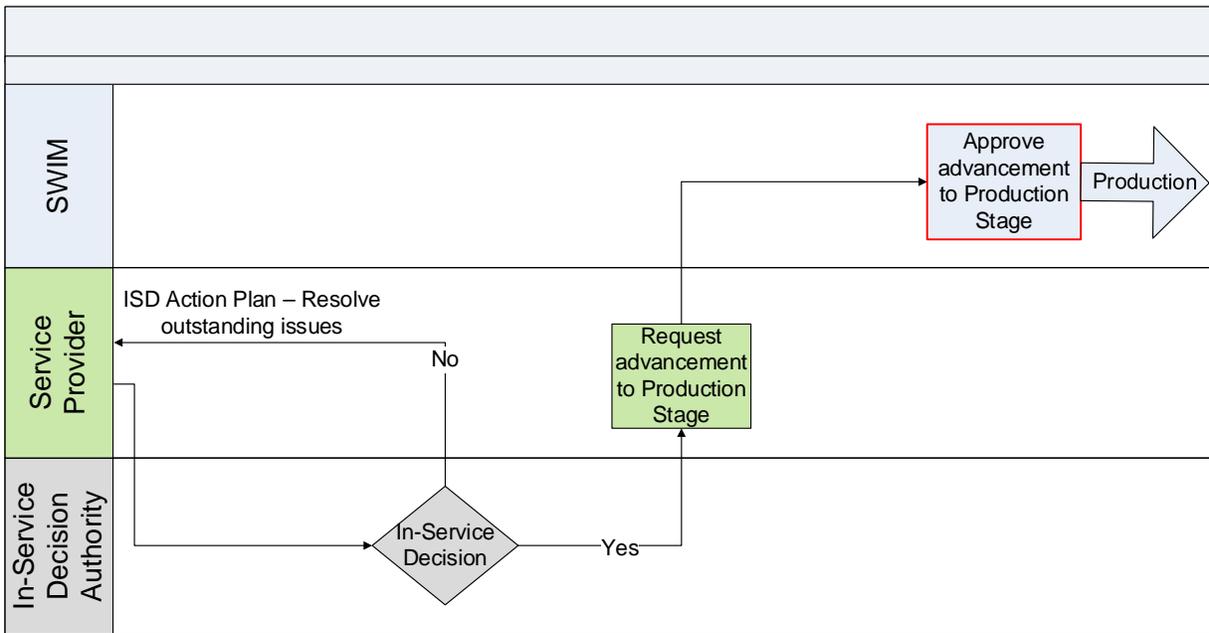


Figure 6 - Service Verification Stage (Continued)

12. SOA Governance provides concurrence on readiness for the ISD based on the outcome of the SWIM T&E Team’s reviews the OT reports and a final compliance review.

13. The designated ISD authority approves the service for deployment.

14. The Service Provider provides the ISD record of decision and action plan to the SOA Governance team.
15. Following the approval for deployment by the designated ISD authority, the Service Provider requests lifecycle advancement to the Production stage through the NSRR interface.¹
16. SOA Governance confirms that the ISD authority has approved the service for deployment.
17. SOA Governance either approves or denies lifecycle advancement based on a review of the NSRR artifacts and the outcome of the SWIM T&E review. If lifecycle advancement is not approved, SOA Governance provides to the Service Provider a list of deficiencies which must be addressed. The Service Provider should address the noted deficiencies, re-submit any affected meta-information, and resume this process at Step 11.
18. The Service Provider is notified of the lifecycle advancement via the NSRR notification mechanism.

Note: Testing activities during the Development or Verification stages may identify issues that require modifications. Changes to the service that occur prior to the Production stage are not considered a service update; however, the modified service must be re-approved following the process described in this section. Changes to the technical service after the service has been placed into Production are considered a service update and the SLMP for service updates are followed.

5.5 SLMP Stage 5: Service Production

Purpose

During this stage during the service is available for use according to the quality of service parameters.

Definition

Service Providers may update service metadata in the NSRR during the Production stage, however, changes to the service are considered a service update and the governance lifecycle defined for service updates in section 6 must be followed. The Service Provider determines whether a service update is needed, as depicted in Figure 10. This may happen based on monitoring data or prompted by tech refresh or other AMS related activities. If this is the case, the SLMP is followed for the major, minor or revision updates with the modifications noted for service updates.

¹ Advancement to Production in the NSRR is tied to the AMS ISD. As soon as deployment has been approved through the AMS ISD process, the Service Owner should request lifecycle advancement to the Production Stage.

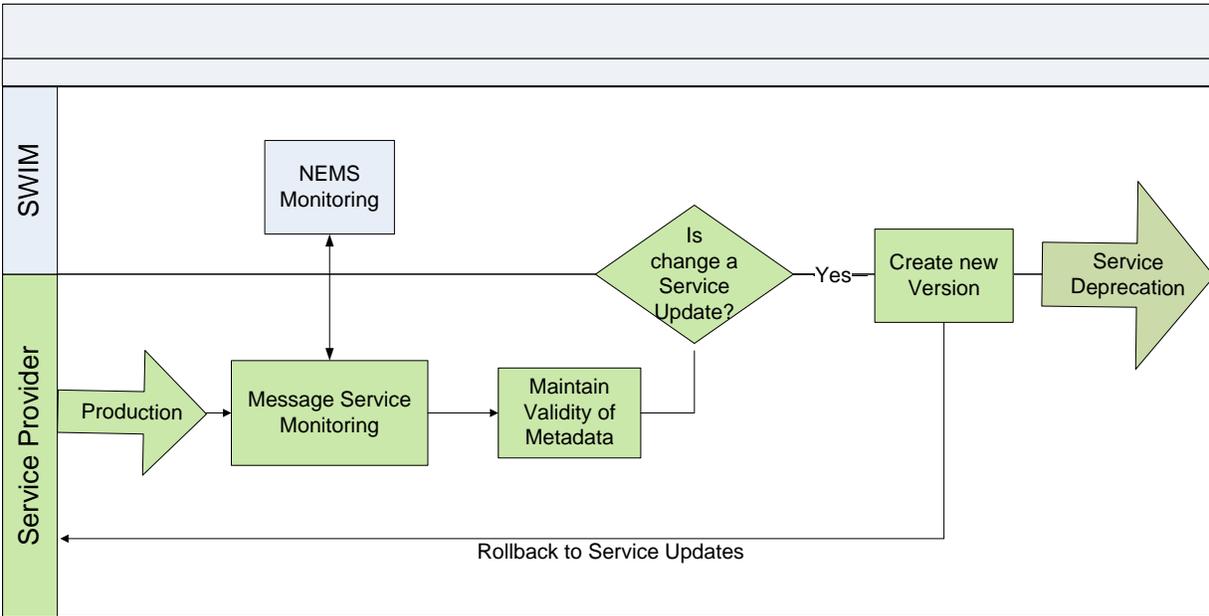


Figure 7 - Service Production Stage

Processes

1. The Service Provider maintains up-to-date service meta-information in the NSRR.
2. The Service Provider determines if desired modifications to the service meta-information requires a Service Update as defined by the [SWIM GPo].
3. If required, the Service Provider initiates creation of a Service Update as described in section 6.

5.6 SLMP Stage 6: Service Deprecation

Purpose

The purpose of the Deprecation stage is for operational services to be incrementally removed, either due to the development of new versions, or services that are no longer needed. A Deprecated service is an operational service that is scheduled to be retired based on the set retirement date. The service is advanced to the Deprecation stage in the NSRR to caution current consumers of the intent to discontinue that service, and no new consumers are allowed to consume the service.

Definition

Deprecation constitutes Stage 6 of the SLMP. Figure 8 depicts the governance processes required for a service to be deprecated. A service may be deprecated if it no longer serves a useful purpose, or is replaced by a new service either with different or enhanced functionality, performance, or implementation. Service Providers who want to deprecate a service that is not being replaced by a Minor Update or a Revision Update must first provide a Deprecation Impact Analysis to service consumers, the NAS approval authority and the SWIM PO. Services that are being replaced by a Minor

Update or a Revision Update are automatically advanced to the Deprecation stage. Upon approval for deprecation, a retirement date for the service is established in the NSRR.

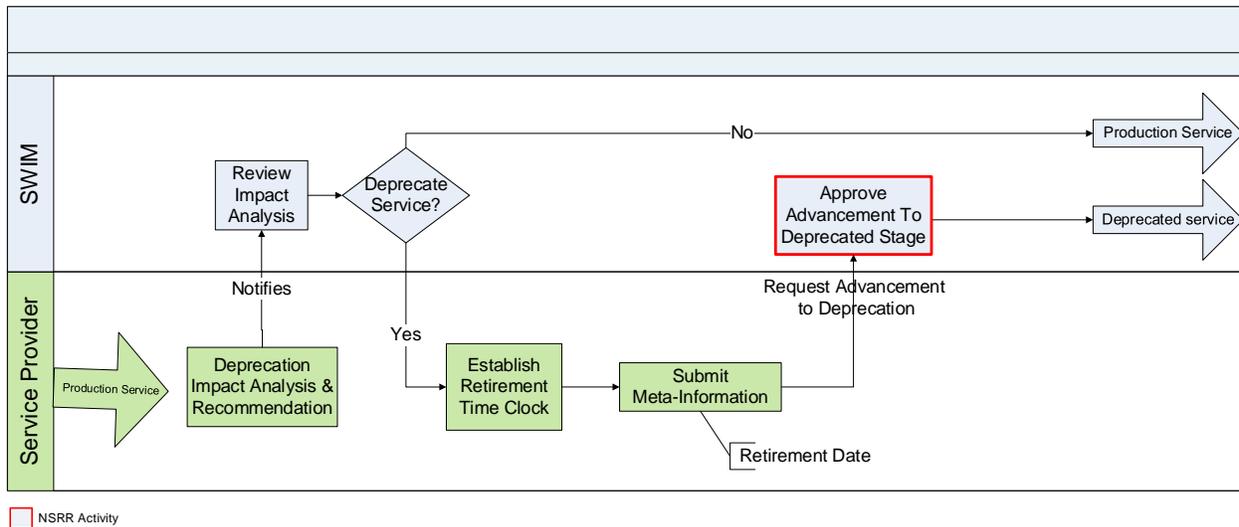


Figure 8 - Service Deprecation Stage

Processes

This process defines the steps involved when a service advances from the Production to the Deprecated stage. Once a service has been designated to be deprecated, all consumers of the service must cease consumption or migrate to a replacement service prior to its retirement date. New consumers are not permitted to consume Deprecated services.

1. If the advancement to Deprecation is not the result of replacement by a Minor Update or a Revision Update, a Deprecation Impact Analysis is conducted by the Service provider, and approved by the SWIM PO.
2. The SOA Governance team confirms that the submitted meta-information and supported artifacts are indeed approved and correct.
3. Once deprecation is approved, an expected retirement date must be set in the NSRR and communicated to all current consumers.

5.7 SLMP Stage 7: Service Retired

Purpose

The purpose of Service Retirement stage is to define the governance process for managing the removal of a service, shown in Figure 9.

Definition

During the Service Deprecation process, a retirement date is set for the service. Prior to reaching that retirement date, a reassessment of impact is conducted. The impact assessment verifies that the consumers of the service have been able to successfully migrate to the new service version or to an alternative solution. NAS approval authorities either approve the retirement or extend the Service Production stage based on the impact analysis and recommendation of the program, in conjunction with the SWIM PO.

Once the service has been promoted to the Retired stage, service consumption is not allowed and the Service Provider removes the service from the NAS. The service meta-data describing the retired service remains in the NSRR as a reference for a specified time period. If service retirement is not approved, a new retirement date is determined and the Service Provider updates the retirement date for the service in the NSRR. Figure 9 depicts the Service Retirement process.

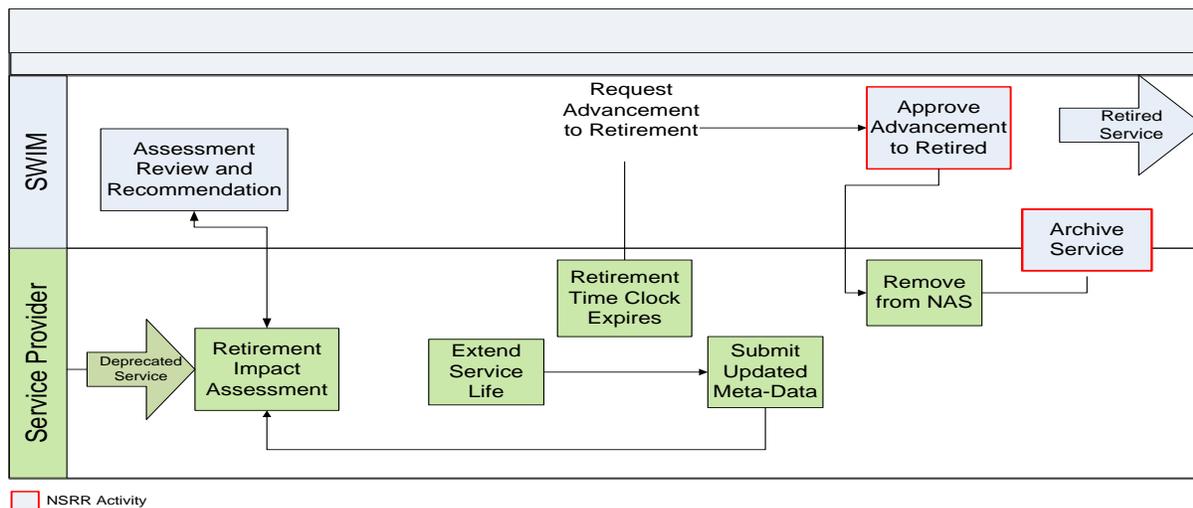


Figure 9 - Service Retirement Stage

Processes

1. Service consumers and the Service Provider work collaboratively to create the retirement impact assessment. This process confirms that all consumers of the service have migrated to the new version of the service or an alternative solution.

2. The appropriate CCB approves removal of the Service from the NAS.
3. If the retirement of the service is not approved, a new retirement date is established and the service continues to operate in a Deprecated state. The Service Provider submits the updated service meta-information.
4. The Service Provider requests lifecycle advancement to the Retired Stage through the NSRR interface.
5. The SOA Governance team is notified of the request for lifecycle advancement via a NSRR notification mechanism.
6. The SOA Governance team confirms that all meta-information required for the Retirement Stage is been provided through the appropriate delivery mechanism.
7. The SOA Governance team approves lifecycle advancement to the Retired Stage through the NSRR interface. Upon a negative outcome, the SOA Governance team provides to the Service Owner a list of deficiencies, which must be addressed. The Service Provider re-submits any impacted meta-information and the process resumes at Stage 4.
8. The program removes the service from the NAS.

6 Service Updates

6.1 Background

Modifications made to SWIM-based services during AMS In-Service Management are categorized as major, minor, or revision updates.

- Service updates that require a change to the Service as well as changes by the consumer for consuming (i.e. not backward compatible) the service are Major revisions.
- Service updates that require a change to the Service but do not require changes by consumers (i.e. are backward compatible) are Minor revisions
- Service updates that do not require any change to the Service (i.e. bug fixes) are Revision updates.

Service updates traverse the same seven governance lifecycle stages as new services. The governance processes for service updates differ from that for new services in the Service Proposal Stage, Service Development Stage, and the Service Verification Stage.

6.2 Service Updates – Proposed

A Service Update begins at the proposed stage. To enter the stage, the Service must have completed pre-screening of the NAS Change Proposal (NCP) or Case File describing the change.

6.3 Service Updates - Development

After the Service modifications have been approved, the Service Provider begins implementation of the service update.

6.4 Service Updates – Verification

Figure 10 reflects the variation in the Service Verification stage for Services Updates. In this variation, the Configuration Control Decision (CCD) replaces the In-Service Decision as depicted below.

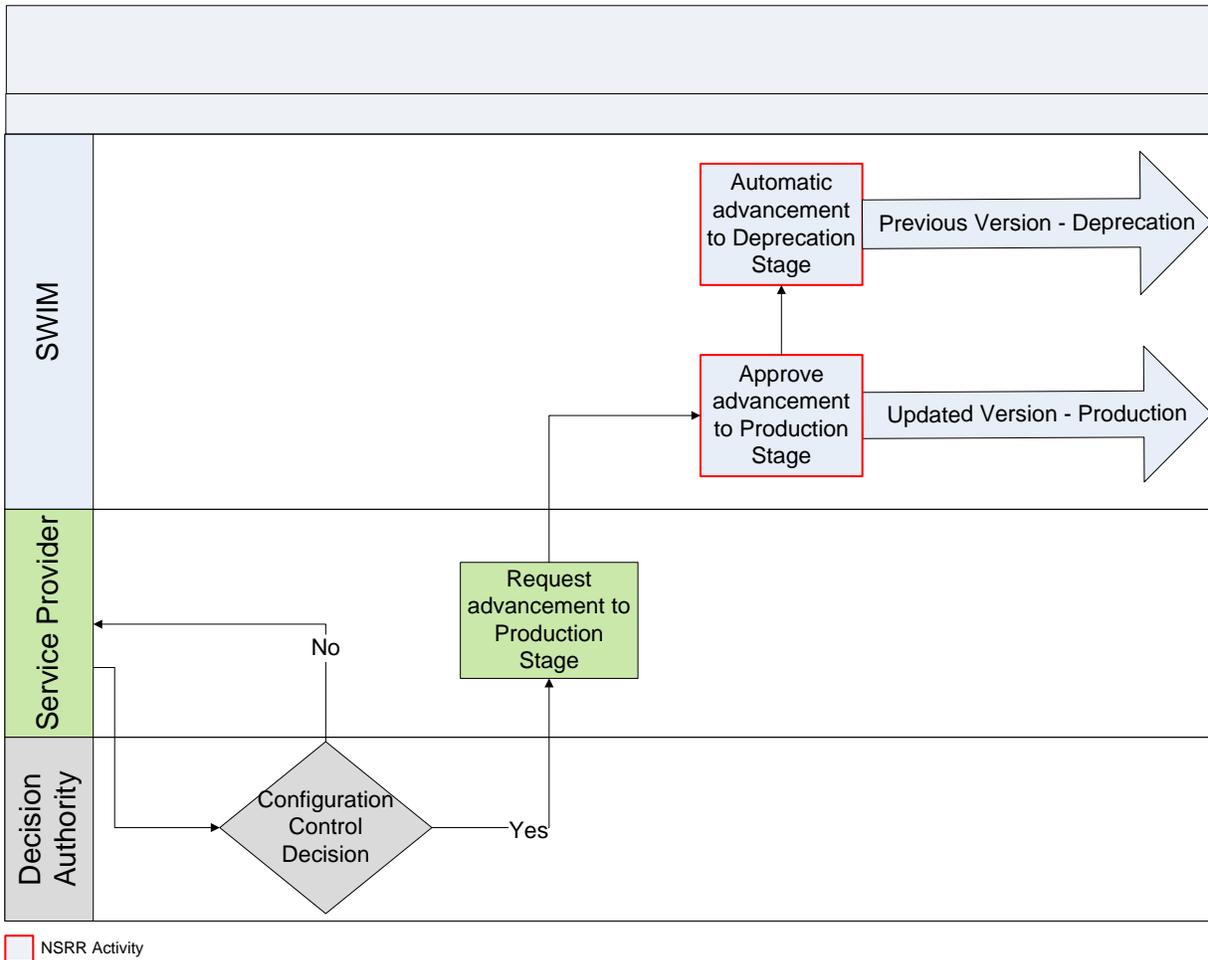


Figure 10 - Decision for a Service Update

Figure 10 - Decision for a Service Update

Following the CCD, the Service Provider requests lifecycle advancement to the Production stage for the service update. On approval, the previous version of the service is advanced to the Deprecated stage without a specific request from the Service Provider. SWIM Governance Policy prohibits multiple versions of a service to exist in the NSRR with a lifecycle stage of “Production”.

7 Waiver Process

7.1 Purpose

During service development, there may be instances in which waivers to SWIM policies and/or requirements are necessary. A Request for Waiver (RFW) is a formal request to deviate from a specific SWIM policy or requirement for a configurable item (i.e. Government-baselined configuration documentation). RFWs may be submitted formally directly to the SOA Governance Lead.

RFWs formally request:

1. Development or submission of a hardware, firmware, software, or documentation product that does not conform to its configuration identification but is considered suitable as is; and/or
2. Deviation from established SWIM Governance policies (i.e. a required step in the SLMP will not be performed).

RFWs are meant to be temporary and are evaluated on a case-by-case basis. The SOA Governance team must approve all RFWs to SWIM-baselined policies or requirements. When special requirements of waivers are applicable to the design and development of future items, a permanent design change (PDC) is processed for the item(s) including modified specifications resulting from the waiver

7.2 Process

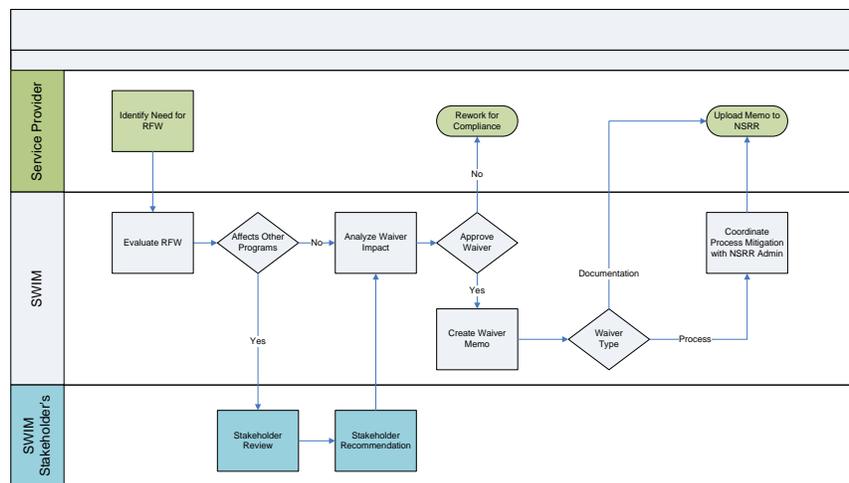


Figure 11- Request for Waiver Process

1. The SOA Governance team evaluates the RFW per the policies outlined in the [SWIM GPO].
2. If the Waiver is not approved, the Service Provider must rework the service for compliance. If the Waiver is approved, a Waiver Memo is created.
3. Both process and documentation waiver memos are submitted to the NSRR for control and transparency.
 - a. In cases where specific policies required by this document cannot be implemented, [SWIM-enabled](#) program requests a waiver from SWIM Governance. [Example of a waiver request](#) can be found in SWIM Governance Policies document.
 - b. When requesting a waiver for exemption from specific policies, the [SWIM-enabled](#) program provides the reasons why those policies cannot be implemented and/or why another course should be chosen (e.g., to use non-mandated standards).

- c.** When requesting a waiver, the [SWIM-enabled program](#) provides the date or condition upon which the waiver should expire.
- d.** When a waiver is granted for not uploading a required artifact to the NSRR, the Service Provider uploads the signed waiver in lieu of the required artifact.