



Final Project Report

Document information

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Abstract

Project 08.01.01 developed the governance arrangements that are needed to realize the common Information Management functions enabling System Wide Information Management (SWIM). The project documented the governance arrangements that are needed to realize the common Information Management functions enabling System Wide Information Management (SWIM). The Information Management Functions and the proposed governance structure deliverables concentrate on the SWIM governance needs during the first deployment of SWIM, the establishment of iSWIM via the PCP (Pilot Common Project) regulated by the IR 716/2014. The main deliverables were the SWIM Concept, SWIM Foundation, IM Functions and Governance Structure, the Compliance Framework with its criteria, the Registry Concept and the Registry requirements.

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This deliverable consists of SJU foreground.

Acronyms

Acronym	Definition
ATM	Air Traffic Management
AIRM	ATM Information Reference Model
AIXM	Aeronautical Information Exchange Model
ANSP	Air Navigation Service Provider
ATM	Air Traffic Management
EUROCAE	European Organisation for Civil Aviation Equipment
EASCG	European ATM Standardisation Coordination Group
FAA	Federal Aviation Administration
ICAO	International Civil Aviation Organization
IER	Information Exchange Requirements
IM	Information Management
ISRM	Information Service Reference Model
iSWIM	Initial SWIM
NEXTGEN	Next Generation Air Transportation System
OFA	Operational Focus Area
OSD	Operational Services and Environment Description
PCP	Pilot Common Project
SCG	Services Coordination Group
SDCM	Service Description Conceptual Model
SES	Single European Sky
SEMG	SWIM Evolution Management Group
SESAR	Single European Sky Air Traffic Management Research
SJU	SESAR Joint Undertaken
SPR	Safety and Performance Requirements
SWIM	System Wide Information Management

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1 Project Overview

Project 08.01.01 developed the governance arrangements that are needed to realize the common Information Management functions enabling System Wide Information Management (SWIM). The Information Management Functions and the proposed governance structure deliverables concentrate on the SWIM governance needs during the first deployment of SWIM, the establishment of iSWIM via the PCP (Pilot Common Project) regulated by the IR 716/2014.

The main deliverables were the SWIM Concept, SWIM Foundation, IM Functions and Governance Structure, the Compliance Framework with its criteria, the Registry Concept and the Registry requirements

1.1 Project progress and contribution to the Master Plan

P08.01.01 established a set of working arrangements to ensure that its objectives were achieved.

SWIM Governance is about establishing policies and continuous monitoring their proper implementation to ensure a stable operation and controlled evolution of SWIM.

SWIM Governance means all the processes that coordinate and control all resources and actions of a pan-European SWIM implementation. It is established to align the SWIM strategy with the ATM strategy and implementing good ways to measure its performance. It makes sure that all stakeholders' interests are taken into account and that processes provide measurable results.

To validate the governance structure and principles within SESAR 1, it was decided to implement one IM function (SWIM Evolution Management) within a group called the SWIM Evolution Management Group (SEMG), which would work as a decision and coordination board in cooperation with the existing teams and bodies of SESAR 1.

The main goal for the establishment of the SEMG was to implement and gain experience with the SWIM Evolution Management IM function and to update the 'IM Functions' deliverable. Furthermore, the group was also set to ensure that the various initiatives, carried out by specialist groups, pertaining to the evolution of SWIM artefacts elements are heading to the same direction and are carried out in a consistent way. The SEMG was also used to discuss and review the main P08.01.01 deliverables:

SWIM governance structure

SWIM foundation, essential requirements, standards and guidance material

SWIM standardization roadmap, processes and priorities, list of applicable standards

SWIM registry

SWIM compliance

In addition to the SEMG, the existing working arrangements of the SESAR/SWIM thread implemented were used by the project.

P08.01.01 made a significant impact to the OI steps of SESAR Programme. This involved e.g.

Contributing to the SWIM Foundation;

Ensuring the SWIM compliance for the SWIM validation exercises of the Programme;

Providing an initial governance group (SEMG)

Providing a SWIM Registry for the programme

Contributing to the SWIM Masterclass

The Technical enablers which WP8 deliverables can be related to are detailed for those two OFA in the tables below (grouped by Operational Improvement steps).

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Code	Name	Project contribution	Maturity at project start	Maturity at project end
SWIM-GOV-05a	Regulatory Provisions for SWIM roles and responsibilities (organisational requirements)	Development of SWIM Governance Structure	TRL - 1	TRL - 6
SWIM-SUPT-01a	SWIM Supporting Registry Provisions	Development of SWIM Registry (Design Time) Requirements	TRL - 1	TRL - 6

1.2 Project achievements

The main achievements of the project are:

- The SWIM Foundation, describing the essential requirements and the surrounding landscape and further relates it to SWIM evolution management.
 - The Registry Design-Time Requirements, i.e. a detailed technical view of the SWIM Registry.
 - The Registry Concept op Operation, describing the concepts behind the registry and its functionality.
 - The SWIM Governance Structure and the IM Functions, proposing the governance arrangements for SWIM in operation and the functions required to operate SWIM governance.
 - The SWIM Compliance Framework, the compliance concept and the criteria is to enable objective compliance assessments.
 - The SWIM ConOps, i.e. the SWIM Concept of Operations which provides the definition of SWIM and related aspects such as the vision, principles, needs and benefits, and governance.
- . Additionally, the SEMG meetings showed a clear benefit to be able to tackle some transverse topics (e.g. the service description model thread) together with all affected stakeholders and to be able to converge to common positions and consensual propositions (e.g. SDCM). Another positive feedback is the establishment of key SWIM elements supporting the whole notion of SWIM governance: foundation, essential requirements, controlled vocabulary, list of standards and guidance material. Sharing information on international developments is also deemed as beneficial so that all stakeholders get the right level of awareness about ongoing discussions related to SWIM governance at various levels (regulation, standardization, ICAO).

The envisaged partitioning of SWIM governance into the three pillars, decision making, expert judgement and implementation management was demonstrated to be a realistic approach as almost naturally after establishing the SEMG the work breakdown was structured in a similar way.

Additionally the assistance to the validation exercises to achieve a level of SWIM compliance showed evidence that the validation exercises have built their prototype services in compliance with the logical service designs derived from the SESAR IER (from OSED or SPR) requirements.

1.3 Project Deliverables

The following table presents the relevant deliverables that have been produced by the project.

Reference	Title	Description
D52	SWIM Foundation	This document describes the SWIM Foundation, its surrounding landscape and further relates it to SWIM evolution management. It does so by

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		defining the SWIM Foundation components, i.e. the SWIM Controlled Vocabulary and the SWIM Essential Requirements and by introducing the standardisation context for SWIM
D55	Registry Requirements v2 Design-Time	This document describes the design-time requirements of the SWIM Registry. This document provides a detailed technical view of the SWIM Registry. It describes the registry in terms of capabilities, user roles, operational scenarios, functionality, interfaces and the full set of requirements associated to these. It also provides a reference registry data model (i.e. how to structure the storage of information in the registry), a set of user interface wireframes (i.e. how to present the information to the user), and a set of taxonomies (i.e. a common method of classifying information in the registry). The scope of this document is limited to the so called “design time registry”. Hence its primary focus is to support 1) the implementation of services by providing service design guidance (standards and policies), 2) the discovery of planned/implemented services and 3) the implementation of consuming systems providing information on how to interface with a registered service. The registry contains design information that is rather static and target those persons involved in the implementation of services/interfaces.
D58	Consolidated DEL 14.04 (T047) Validation Report – Design-Time Registry v2	This document covers the Verification and Validation of the SWIM Registry according to P08.01.01-D55 - SWIM Registry - Operational Requirements and Demands concerning ATM information Catalogue and Registry Services.
D53	Registry Concept of Operations v2	This document provides a detailed view of the SWIM Registry. It describes what it is (i.e. what kind of data is stored and which services are provided), who is involved (i.e. roles and responsibilities), why it should be implemented (i.e. benefits and implications), the business processes it supports including use cases and other additional considerations important for its implementation (i.e. security, safety, supervision and topology).
D47	SWIM Governance Structure and IM functions V2	<p>This document will propose the governance arrangements for SWIM in operation. The document concentrates on the SWIM governance needs during the first deployment of SWIM; the establishment of iSWIM via the PCP (Pilot Common Project) regulated by the IR 716/2014.</p> <p>The deliverable D47 is divided into two parts. Part A (this document) aims in describing the organisational aspects of SWIM governance (groups and processes), whereas part B (IM Functions) is focusing on the activities to be</p>

		undertaken to keep the SWIM operation and evolution into in a controlled state.
D49	SWIM Compliance Framework	<p>This document details the SWIM Compliance Criteria and the SWIM Compliance Framework. The aim of the criteria is to enable objective compliance assessments.</p> <p>The definition of this Framework has been split in two documents: one defining the Compliance Principles and another one defining the Compliance Criteria for the covered scope.</p> <p>This version of the SWIM Compliance Framework Criteria targets the “Service Technical Design Description” (STDD).</p>
D50	Compliance Status Report	This document provides a complete summary of the SWIM Compliance results for Release 4 and Release 5 Validation Exercises.

All of the deliverables and supporting documents are available on the 08.01.01 extranet site

1.4 Contribution to Standardisation

P08.01.01 contributed to the standardisation of SWIM with the following deliverables:

- D52: SWIM Foundation
- D49: SWIM Compliance Framework

1.5 Project Conclusion and Recommendations

P08.01.01 has progressed in line with the objectives set out in the Project Initiation Report. It has developed a proposal for the SWIM governance structure and provides a list of IM functions that are required to govern SWIM. The SWIM Concept was used at the global level as input to the ICAO SWIM Concept manual (DOC10039). The SWIM Foundation and the SWIM Compliance Framework documents will be used as input to the SWIM Standardisation process following the directions given by the ATM Standards Coordination Group (EASCG). Moreover, SWIM validation exercises validated the use of the SWIM Compliance Framework.

Additionally, the deployment of the SWIM Governance started and builds upon the deliverables of P08.01.01. In relation thereto, the SESAR partners took the initiative to propose a project in the context of the INEA CEF 2015 call. Consequently P08.01.01 has significantly contributed to one of the major cornerstones of SWIM, and it is recommended to ensure that the outputs of P08.01.01 continue to form a baseline for the discussions and elaboration of SWIM Governance at the European level, and beyond at the global level.

2 References

- [1] SESAR Programme Management Plan, Edition 03.00.01
- [2] [European ATM Master Plan](#)
- [3] Multilateral Framework Agreement (“MFA”) signed between the SJU, EUROCONTROL and its 15 selected members on August 11, 2009, amended on 14 June 2010, 19 October 2010 and 2 July 2012
- [4] SESAR Programme Management Plan, Edition 03.00.01
- [5] European ATM Master Plan
- [6] Multilateral Framework Agreement (“MFA”) signed between the SJU, EUROCONTROL and its 15 selected members on August 11, 2009, amended on 14 June 2010, 19 October 2010 and 2 July 2012
- [7] ICAO: DOC10039: Manual on SWIM Concept

-END OF DOCUMENT-

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