



ICAO

The Fourth Meeting of System Wide Information Management Task Force (SWIM TF/4)

Web-conference, 3 – 6 November 2020

Agenda Item 5: Updates on the assigned tasks by task leads/contributors including progress Report and issues

d) Governance

- Registry - implementation guidance for Interoperable Registry Model
 - Task 5 (Contains previous Task 1-4, Task 1-5, Task 2-1-2, Task 2-1-4)

IMPLEMENTATION STATUS OF SWIM DISCOVERY SERVICE (SDS)

(Presented by Federal Aviation Administration (FAA), USA, and Korea Airports Corporation (KAC), Republic of Korea)

SUMMARY

USA FAA SWIM and ROK Korea Airport Corporation (KAC) have been working together on developing a virtual environment for conducting transparent and replicable development of discovery services for future deployment by APAC SWIM initiatives.

This information paper describes the motivations for this collaborative effort, essential milestones, and work items' statuses.

1. INTRODUCTION

1.1 Service discovery is an integral and indispensable part of the development of any service-centric system. It enables SWIM components to share a common understanding of offered services and their deployment.

1.2 In recent years, as SWIM interest and international community adoption have accelerated rapidly, the concept of service discovery exchanging information across state and regional boundaries has attracted significant attention from SWIM practitioners. Among the most notable works in this area are:

- Registry Integration Module (RIM) 1.0.0 Implementation Specification; FAA/SESAR; October 2017 [RIM]
- SWIM TF/2 – WP/16, APAC SWIM Registry Approach, APAC SWIM TF3, Task 1-5, 07-10/05/19
- AN-Conf/13-WP/242 IP "Review on System-Wide Information Management (SWIM) Inter-Registry Models in Asia-Pacific Region," Thirteenth Air Navigation Conference,

Presented by the Republic of Korea, Montréal, Canada, October 9-19 2018 [WP242-ROK]

- Concept of Operations for the SWIM Inter-Registry Framework (SIRF), Version 1.0.0, USA FAA SWIM; October 11, 2018 [SIRF-CONOPS]
- WP-16, APAC SWIM Registry Approach; The Third Meeting of System Wide Information Management Task Force (SWIM TF/3), Task 1-5; Bangkok, Thailand, May 2019 [WP16-ROK]

1.3 The FAA SWIM Governance team and ROK Korea Airport Corporation (KAC) team met in Washington, DC on October 15-16, 2019 to discuss potential solutions for establishing information exchange among independently developed registries.

1.4 At the meeting, participants concluded that the approach offered by the FAA in [SIRF-CONOPS] (and previously prototyped in [RIM]) represents the most viable solution for acknowledged objectives.

1.5 At the meeting, the participants agreed on a plan and schedule.

1.6 Due to the project's unique and innovative nature, the plan has been adjusted through subsequent virtual meetings and email exchanges.

2. DISCUSSION

2.1 The following table list work items together with their current statuses:

<i>Task</i>	<i>Responsible party</i>	<i>Status</i>
Kick-off meeting for FAA SWIM and ROK KAC collaborative effort	FAA/KAC	Completed 2019/10/15-16
Develop a service registry for ROK SWIM	KAC	Completed 2020/02/07
Develop SDS specification v.1.0.0 [SDS-Spec]	FAA	Completed 2020/07/31
Develop SDM-J 1.0.0 [SDM-J]	FAA	Completed 2020/08/03
Socialize the SDS specification	FAA/KAC	Completed 2020/09/14 Note: is open-ended throughout development
Implement the operations “GetDiscoveryService”, “GetPeers”, “GetServices”	FAA/KAC	Completed on 2020/09/04 by KAC, and on 2020/10/22 by FAA SWIM.
Make SDS Specification and SDM-J available on line	FAA	Completed 2020/10/20 The artifacts are available at: discovery.swim.aero/sds and discovery.swim.aero/sdm-j
Bi-directional testing of available operations	FAA/KAC	Open
Report the result of the collaborative effort at SWIM APAC TF/4	FAA	Open

Implement the operation “GetService”	FAA/KAC	Open
Bi-directional testing of available operations	FAA/KAC	Open

2.1 Conclusion

- 2.1.1 The joint effort currently being undertaken by FAA SWIM and ROK KAC promotes a technological means for service discovery across state and regional boundaries.
- 2.1.2 The effort offers SWIM integrators valuable experience in implementing a coordinated development by independently managed SWIM initiatives.
- 2.1.3 The effort assists APAC SWIM in advancing the notion of service composition.

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to:
 - a) note the information contained in this paper;
 - b) discuss any relevant matter as appropriate; and
 - c) encourage APAC participants to join ongoing SDS effort.

4. REFERENCES

[RIM] Implementation Specification Registry Integration Module (RIM) 1.0.0; FAA/SESAR; October 2017
<http://swim.aero/rim/1.0.0/rim-spec-1.0.0.html>

[WP242-ROK] AN-Conf/13-WP/242 IP "Review on System-Wide Information Management (SWIM) Inter-Registry Models in Asia-Pacific Region," Thirteenth Air Navigation Conference, Presented by the Republic of Korea, Montréal, Canada, October 9-19 2018
https://www.icao.int/Meetings/anconf13/Documents/WP/wp_242_en.pdf

[SIRF-CONOPS] Concept of Operations for the SWIM Inter-Registry Framework (SIRF), Version 1.0.0; U.S. FAA SWIM, October 11, 2018
https://www.faa.gov/air_traffic/technology/swim/governance/international_collaboration/media/conops-sirf-1.0.0.pdf

[WP16-ROK] WP-16, APAC SWIM Registry Approach; The Third Meeting of System Wide Information Management Task Force (SWIM TF/3), Task 1-5; Bangkok, Thailand, May 2019
https://www.icao.int/APAC/Meetings/2019SWIMTF3/WP16_ROK%20AI3%20-%20SWIM%20Registry%20Approach%20Revised.pdf

[SDS-Spec] SWIM Discovery Service (SDS) Implementation Specification, Version 1.0.0;
USA FAA SWIM; July 2020
<https://discovery.swim.aero/sds/1.0.0/SDS%20Specification%20v.1.0.0.pdf>

[SDM-J] Service Description Model for JSON, FAA SWIM, August 2020
<https://discovery.swim.aero/sdm-j/1.0.0/>
