International Civil Aviation Organization

The Ninth Meeting of System Wide Information Management Task Force (SWIM TF/9)

Bangkok, Thailand, 14 – 17 May 2024

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

SWIM Discovery Service (SDS) Jump Starter Kit
(Presented by Republic of Korea)

SUMMARY

This paper introduces the SDS Jump Starter Kit developed by the ROK which is in align with the SDS specification v1.0 to contribute the better understanding and the global implementation of the SDS in the APAC region.

1.   INTRODUCTION

1.1   The SWIM Discovery Service (SDS) is a web service that enables the exchange of metadata for a SWIM information service between independently managed SWIM programs.

1.2   The SDS implementation specification v1.0.0 developed by FAA addresses this need by defining a standard mechanism for exchanging service description information, or metadata, between independently managed SWIM programs. It specifies a web services interface, key interaction patterns, schemas, and message exchange formats required to exchange service metadata.

1.3   At the SWIM TF/8 in November 2023, Proposal of Regional Candidate Standard for Service Discovery (WP/07) was presented, and the meeting adopted the SDS as a Global Standard for Globally Interoperable Service Discovery (Draft Decision SWIM TF/08/01).

1.4   SWIM Implementation Pioneering Group (SIPG) has been working the initial implementation of regional SWIM. The SIPG established network connection via CRV, implemented a hierarchical topology, and developed the message header and messaging services to support SWIM over CRV demonstration and surveillance data over SWIM trial to be held in May 2024. And, to make a further progress of initial implementation of regional SWIM, as well as, to enable the exchange of metadata in globally interoperable manner, the SIPG is trying to further explore the SDS specification and try to implement the SDS by member states.

1.5   ROK developed the SDS Jump Starter Kit in align with the SDS specification v1.0 to contribute the better understanding and the global implementation of the SDS. This paper introduces the SDS Jump Starter Kit, specifically intellectual property, system requirements, installation, and usage.

2.   DISCUSSION

2.1   The SDS Jump Starter Kit follows Massachusetts Institute of Technology (MIT) license that is a permissive opensource software license. Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so.

2.2   The SDS Jump Starter Kit is the implementation of the SDS specification v1.0, and it is written in Typescript and operates in NodeJS environment (above v14.x or higher). And the SDS Jump Starter Kit adopts the NestJS framework, that is one of the popular framework in the NodeJS environment that is a progressive, extensible, and versatile framework for building efficient, scalable, and enterprise-grade Node.js applications.

2.3   The SDS Jump Starter Kit includes sample data in JSON format, and a user could modify sample data located in [/src/smxs/sample] directory. But for a user who wish to use own database, a user could uncomment sample codes which bind and query to database using the GraphQL. Database is not included in the SDS Jump Starter Kit, and a user needs to build own database and configures GraphQL server.

2.4   Users could explore resources defined in the SDS specification as follows:

    2.4.1   Discovery Service Resource (/smxs/discovery-service) : A resource that allows a requestor to retrieve a description of a discovery;

    2.4.2   Peers Resource (/smxs/peers) : A resource that allows a requestor to retrieve a collection of references;

    2.4.3   Services Resource (/smxs/services) : A resource that allows a requestor to retrieve a collection of references;

    2.4.4   Service Resource (/smxs/services/{service-id}) : A resource that allows a requestor to retrieve information about a specific service.

2.5   The SDS Jump Starter Kit is available in the GitHub (https://github.com/Korea-Airports-Corporation/SWIM-Discovery-Service-Jump-Starter-Kit). Please find an README.md to explore more.

3.   ACTION BY THE MEETING

3.1   The meeting is invited to:

        a)   note the information contained in this paper;

        b)   discuss and suggest further improvement; and

        c)   discuss any relevant matter as appropriate

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