



ICAO

International Civil Aviation Organization**The Sixth Meeting of System Wide Information Management Task Force (SWIM TF/6)**

Video Teleconference (VTC), 17 – 20 May 2022

**Agenda Item 7:** State, Regional and Global SWIM Updates**THE SWIM SERVICE MANAGEMENT CENTER DEMO DESIGN AND IMPLEMENTATION**

(Presented by China)

**SUMMARY**

This paper presents the research and implementation of the SWIM service registry in China. The *SWIM service management center* is designed by a regional Air Traffic Management Bureau(ATMB) as experimental unit. At present, it has the basic functions of SWIM service registry. Detailed information is as follows.

**1. INTRODUCTION**

1.1 According to the latest version of *SWIM Manual Volume II – Implementation Guidance*, SWIM service registry is an important part of SWIM information services. The Objective of SWIM service registry is to publicize available information services and discover their corresponding service overviews.

1.2 In order to implement the integrated registration and unified management of SWIM information services, the research and demonstration of SWIM service registry has been started by ATMB in 2020. A demonstrative platform of SWIM service registry which is named *SWIM service management center* has been designed and developed in a regional ATMB as experimental unit.

**2. DISCUSSION**

2.1 According to *SWIM Manual Volume II – Implementation Guidance*, the functions of SWIM service registry are service registration, search, filtering and notification. At present, basic functions such as service registration, approval, publication and display can be realized by *SWIM service management center*, and the next step will focus on realization of service search, filtering and notification. The comparison of basic functions is as follows.

Table 1 The comparison of basic functions

SWIM Manual Volume II	SWIM service management center
Service Registration	Service Registration
	Service Approval
	Service Publication
	Service Display
Service Search	Only Service Query by service name is supported currently
Service Filtering	Not available
Service Notification	Not available

**2.1.1 Service Registration function:** According to the definition of Service Overview in *SWIM Manual*, the service registration metadata has been defined in *SWIM service management center*, and information service provider must submit service overview information with uniform format by the platform.

home / Create Service - Service Summary

\* Service Name: CHENGDU TargetOffBlockTimeSetting Service 0/50 \* Service Version: 1.0.0 0/50 \* Provider Organization: CHENGDU Airport Operator 0/50 \* Provider Point of Contact: To request access to the service: www.adc.secsa.cn/airnet/ 0/200

\* Service Type: \* Lifecycle Information: \* Geographical Extent of Information: CHENGDU Airport (ZUKU) 0/200

\* Description: The TargetOffBlockTimeSetting service supports the Airport CDM concept and its implementation by allowing A-CDM Partners, typically aircraft operators and ground handlers, with the capability to set the Target Off-Block Time (TOBT) that indicates the target time for the aircraft to be ready for OFF-Block. 0/2000

service quality index: \* Capacity: per second per minute per hour \* Availability: Normal operation rate 100 Service duration: day hour \* Time Behaviour: ms \* Recoverability: Recoverability time: hour \* Confidentiality: Daily errors: item

\* Access Restrictions: The service is targeting aircraft operators and ground handlers for their flights at Zoulu Airport. The access to the service is subject to the signature of a Service Level Agreement with the Zoulu Airport Operator. The access to the service is based on user id and password. The service may, as well, be used by the Zoulu Tower Controllers in specific circumstances, such as under adverse conditions or other special circumstances. 0/2000

\* Service Validation: \* Message Exchange Model: \* Information Exchange Model: 1.0.0

\* Additional Service Information: Description of the location at which more information, potentially including more detailed technical information, on an information service may be found. 0/2000

\* Service Functions: allows service consumers to subscribe or unsubscribe to the distribution of a series of information areas. The following information areas can be subscribed to: \* flightplan-data \* sector-specific-data \* safety-net \* flightplan-monitoring. 0/2000

Filtering Available: Support flight number/destination airport/arrival airport filtering 0/2000 \* Source of Information: CAAC SOUTHWEST REGIONAL ADMINISTRATION 0/2000

\* Support Availability: For incidents on services in operation, contact the Service desk (24/7) +863 555 01 service-desk@zoulu-airport.com 0/2000

Next

Figure 1. The Service Registration function

**2.1.2 Service Approval function:** When the information service provider completes the service registration, the administrator of the *SWIM service management center* will receive a reminder about the approval of the information service. After confirming that the information service meets the specified format, it will be publicized.

III Service List

Please enter the service name   ☒ All ☐ Pass ☐ Refuse

Service Name	Summary Description	Service Type	Provider Organization	Provider Point of Contact	Service Version	Audit state	Reason	Operation
西南地区融合指挥航迹服务	西南地区融合指挥航迹信息、西南地区融合自动化指挥航迹融合后数据。	监视信息	西南空管局	028-8570-2138	0.0.5	Pass		<a href="#">detail</a> <a href="#">Delete</a>
西南外区流控信息服务	无	流量管理信息	西南空管流量管理中心	www.adc.swcns.cn	1.1.0	Pass		<a href="#">detail</a> <a href="#">Delete</a>
天府机场航班执行动态服务	天府机场航班执行动态实时统计分析。	航班信息	西南空管局	028-85003322	0.0.1	Pass		<a href="#">detail</a> <a href="#">Delete</a>
双流机场航班动态服务	双流机场航班动态服务	航班信息	西南空管局	https://172.22.104.155:8090/	1.0.0	Pass		<a href="#">detail</a> <a href="#">Delete</a>
00	2	航班信息	1	1	1.0.0	Pass		<a href="#">detail</a> <a href="#">Delete</a>
77	7	流量管理信息	7	7	1.0.0	Pass		<a href="#">detail</a> <a href="#">Delete</a>
tt2	23	流量管理信息	12	1	1.0.1	Pass		<a href="#">detail</a> <a href="#">Delete</a>
SLS	水电话	航班信息	西南空管	SSS	1.0.1	Pass		<a href="#">detail</a> <a href="#">Delete</a>
fplg	dafdsfdgdbhlo/Kl/Kl/L/O7 gregergergergergerger	机场信息	XNKG	dadasdas	1.0.0	Pass		<a href="#">detail</a> <a href="#">Delete</a>
天府航班动态	天府航班信息	航班信息	西南空管局	http://172.22.104.132:8712/sw agger-ui.html#/flight-info- controller/getFlightInfoByDep ArrUsingGET	1.0.0	Pass		<a href="#">detail</a> <a href="#">Delete</a>

total [25] items [previous](#) [1](#) [2](#) [3](#) [next](#)

Figure 2. Service Approval function

**2.1.3 Service Publication function:** It will be transferred to the "publication" status after an information service has been approved. The service description, service identification, service status, service quality, access restrictions, service provider and other information can be displayed in the *SWIM service management center*. Therefore, the service consumers can view the key information of the service from the *SWIM service management center*.

天府机场航班执行动态服务

<b>Thumbnail</b>	<b>Picture</b>	<b>Introduction</b>
		天府机场航班执行动态实时统计分析。

<b>Service Name</b> 天府机场航班执行动态服务  <b>Service Version</b> 0.0.1  <b>Provider Organization</b> 西南空管局  <b>Service Type</b> 航班信息  <b>Message Exchange Model</b> 请求响应	<b>Provider Point of Contact</b> 028-85003322  <b>Lifecycle Information</b> 运行中  <b>Service Validation</b> 协作验证	<b>Capacity</b> Support [分钟] items service requests per [分钟]  <b>Time Behaviour</b> Service delay [S]  <b>Confidentiality</b> Daily errors [2]  <b>Geographical Extent of Information</b> ZUITF	<b>Availability</b> Service duration [7*24]  <b>Recoverability</b> Service recovery time [0.5]  <b>Information Exchange Model</b> FDX/MV4.1, IV4.1, IV4.1, IV4.1, IV4.1, IV4.1, IV4.1 <b>Access Restrictions</b> 无	<b>Filtering Available</b> No data  <b>Support Availability</b> 028-85702138  <b>Additional Service Information</b> 无	<b>Source of Information</b> 西南空管流量管理中心  <b>Service Functions</b> 无
---	--	---	---	--	---

API Interface [Code](#) [Document](#)

Figure 3. The Service Publication function

**2.1.4 Service Display function:** At now, the *SWIM service management center* provides 5 types of information service, including flight information, flow-control information, surveillance information, aeronautical information and meteorological information.

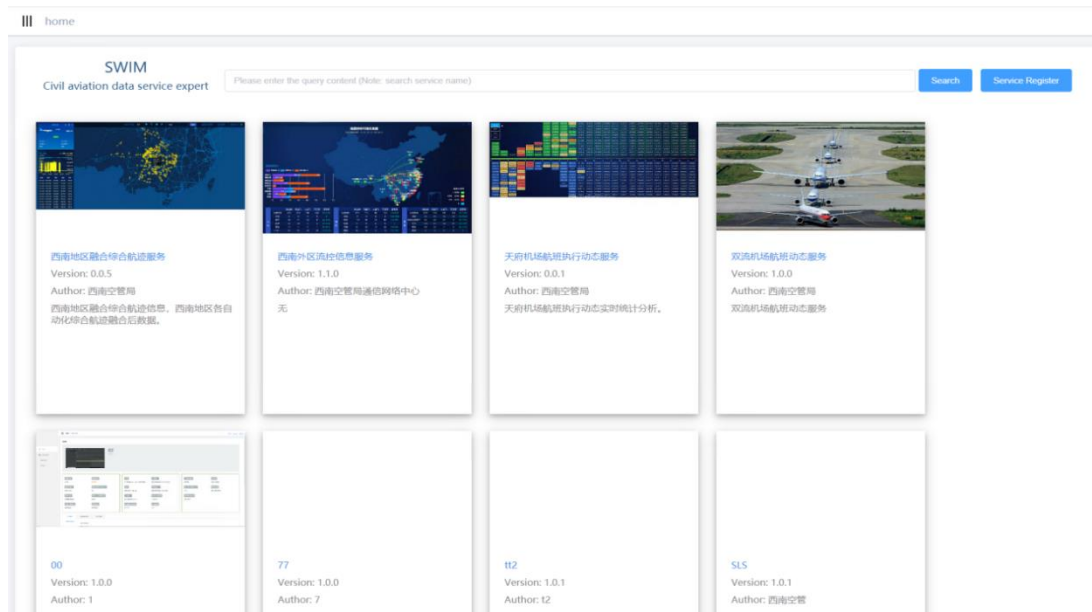


Figure 4. The Service Display function

## 2.2 Service overview metadata of *SWIM service management center*

2.2.1 The service overview metadata of *SWIM service management center* has been designed by the *SWIM Manual Volume II – Implementation Guidance*. Compared with 21 service overview metadata from the latest version of the *SWIM manual*, there are three cases as shown in Table 2.

Table 2 The comparison of service overview metadata

No.	Information Service Overview Metadata according to SWIM Implementation Guidance	Data formats	
		SWIM Implementation Guidance	SWIM Service Management Center
1	Information service name	Free text	
2	Information service version	n.n.[n]	
3	Information service lifecycle status	Prospective Operational Retired	
4	Information service lifecycle date	YYYY-MM-DD	No definition
5	Information service functions	Free text	
6	Information category	Flight information Aeronautical information Environment information Capacity demand & flow information Surveillance information Airport information (Added by ATMB)	
7	Brief description of the information service	Free text	Description Flight Information

8	Additional information on the information service	Free text	
9	Quality of the service	Capacity Time behaviour Availability Recoverability Integrity Confidentiality	
10	Information service validation type	Independent validation Collaborative validation User validation Self validation	
11	Information service validation description	Free text	No definition
12	Filtering Available	Free text	Flight Id Departure airport Arrival airport
13	Access restrictions	Free text	Name Description Type
14	Message exchange patterns	Request/Reply Publish/Subscribe One way	
15	Information exchange models	Free text	Types of exchange models n.n.[n]
16	Geographical extent of information	Free text	
17	Sources of information	Free text	Name Description
18	Information security category	None Basic Intermediate Advanced	No definition
19	Provider organization	Free text	
20	Support availability	Free text	Name Telephone Email
21	Provider Point of Contact	Free text	Name Telephone Email

- In this table, the service overview metadata with white background are same with *SWIM Manual*.
- According to the operational situation, the service overview metadata with green

background is refined by *SWIM service management center*, such as information category and filtering available.

- The service overview metadata with blue background, including Information service lifecycle date, Information service validation description and Information security category will be supplemented by *SWIM service management center* in the future.

### 2.3 The next step of the *SWIM service management center*

2.3.1 The next step of the *SWIM service management center* is to develop the functions of service such as service search, filtering and notification. Regional ATMB, airports, airlines and industry patterns will be jointly as experimental units to carry out the trial of *SWIM service management center*, to validate and demonstrate the whole process of SWIM information service registration, approval, publication, search and access.

## 3. ACTION BY THE MEETING

### 3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matter as appropriate

-----