



ICAO

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The Eighth Meeting of System Wide Information Management Task Force (SWIM TF/8)

Bangkok, Thailand, 08 – 10 November 2023

Agenda Item 3: Progress of SWIM Implementation Pioneer Ad-Hoc Group

IMPLEMENTATION STATUS OF SURVEILLANCE MESSAGING SERVICE FOR S3TIG DEMONSTRATION

(Presented by Korea Airports Corporation, Republic of Korea)

SUMMARY

This paper presents ROK's implementation status of surveillance messaging service for S3TIG demonstration.

1. INTRODUCTION

1.1 Republic of Korea participates in the S3TIG demonstration as information provider. As the part of the service provider roles, ROK will provide real-time surveillance (scenario #1) and MET information (scenario #2) during the demonstration.

1.2 This paper provides ROK's implementation status of surveillance messaging service for S3TIG demonstration.

2. DISCUSSION

2.1 Multi Sensor Data Processor (MSDP), Surveillance Data Processing System (SDPS) of Air Traffic Control and Airports System (ARTS) deployed in Jeju international airport sends ADS-B (Cat.21) data to KAC SWIM in legacy method.

2.2 Mediation service for ASTERIX formatted surveillance data in KAC SWIM conducts interfacing and conversion processing. Processed surveillance data is published to other participants through AMQP-based messaging service as shown in Figure 1.

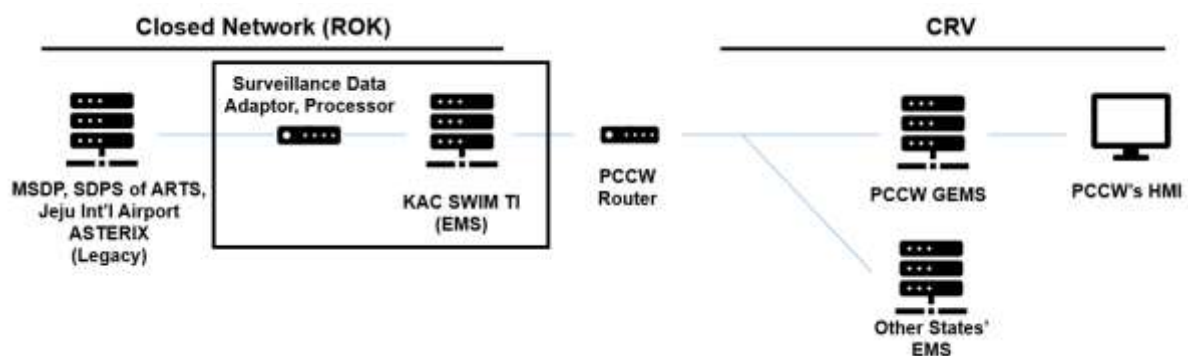


Figure 1. Surveillance Scenario Topology

2.3 Geographical boundary of surveillance data published for demonstration is limited to within 20NM from Jeju international airport. And ground handling vehicles are also excluded.

2.4 Implementation statues to support scenarios for S3TIG demonstration are as follows:

JSON Structure for Surveillance Data with Flight Plan Information

Properties	headers:
	ACID: EDK213
	AIRLINE: NDL
	ARR_AIRPORT: RUPC
	CATEGORY: ACTEREX
	CATEGORY_VERSION: ACTEREX_CAT03
	DEP_AIRPORT: RWS
	EOBT: 2023-10-10 02:40:00Z
	OUTI: a6297008-6258-4e74-8a28-6e4de1480f3
	MESSAGE_TYPE: TRACK_IGN
	RECIPIENT_LIST: RI_141_VT_AEROTHAI
	SOURCE: KAC_KAC
	SYSTEM: KAC
	TIMESTAMP: KAC_OUT:1696918321524
Payload	["ACID":"EDK213","FLY":"Y.N","ID":"140.2","IS":"SAC/14","ACST":"RUPC","DT":"2023-10-10 00:12:11.0","ADDP":"RWS","BUTI":"a6297008-6258-4e74-8a28-6e4de1480f3","READ1HB":"RWS","ACARRR":"FLIGHT","DIRCODE":"ACST"]

Figure 2 Surveillance Data with FPL (JSON)

JSON Structure for Surveillance Data Only

Properties	headers:
	CATEGORY: ASTERIX
	CATEGORY_VERSION: ASTERIX_CAT021
	MESSAGE_TYPE: TRACK_BON
	RECIPIENT_LIST: RJ_JAL_VT_AEROTHAI
	SOURCE: RK_KAC
	SYSTEM: KAC
	TIMESTAMP: KAC_OUT/1899918406136
Payload	
370 bytes	
Encoding: string	<pre>{ "DT": "2020-10-10 06:14:14.0", "ARCADDR": "714507", "ACID": "109213", "DORADDR": "7037", "FL": "1-1-0", "DTTYPE": "NACP", "CI": "NACP", "LAT": "35.50000", "DO": "DAG/DIC", "LONG": "126.40000" }</pre>

Figure 3 Surveillance Data Only (JSON)

ASTERIX Structure for Surveillance Data

Properties	headers:
	CATEGORY: ASTERIX
	CATEGORY_VERSION: ASTERIX_CAT021
	MESSAGE_TYPE: TRACK_RAW
	RECIPIENT_LIST: RJ_JAL_VT_AEROTHAI
	SOURCE: RK_KAC
	SYSTEM: KAC
	TIMESTAMP: KAC_OUT:1696918647737
Payload 30 bytes Encoding: hex	F04y5lttrac0H0030y07225v010Hw0c0e0b4FL000W0ac0e0y0e0c0RW+

Figure 4 Surveillance Data Only (ASTERIX)

2.5 Graphical representations of surveillance data published are shown in Figure 5.



Figure 5 Graphical Representation of Surveillance Data

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
