



ICAO

*International Civil Aviation Organization***Eighth Meeting of the Surveillance Implementation
Coordination Group (SURICG/8)***Bangkok, Thailand, 6 – 9 June 2023***Agenda Item 4:** Review Report of SURSG/3 Meeting**REVIEW OF OUTCOME OF THE THIRD MEETING OF THE SURVEILLANCE
STUDY GROUP (SURSG/3)**

(Presented by the Secretariat)

SUMMARY

This paper presents the discussions and relevant outcomes of the Third Meeting of the Surveillance Study Group (SURSG/3).

1. INTRODUCTION

1.1 The Third Meeting of the Surveillance Study Group (SURSG/3) was held in Hong Kong, China, as a hybrid Meeting (In-Person and Virtual Participation) *from 22 to 24 March 2023*. The Meeting was attended by **102** participants (25 In-Person and 77 Virtual) from **14** States/Administrations, **2** International Organizations, and **3** industry partners. The Meeting report, working papers, information papers, and other resources can be accessed by following link:

<https://www.icao.int/APAC/Meetings/Pages/2023-SURSG-3.aspx>

1.2 This paper summarised relevant information and updates from the Meeting.

2. DISCUSSION

2.1 The summary of discussion in the Meeting is given in following paragraphs.

Review of Work Plan for Surveillance Study Group - Hong Kong China (WP/11)

2.2 The paper reviewed and shared recommendations on the Surveillance Study Group Work Plan in view of the progress and development following SURSG/2 held in March 2022. Considering the planned Joint Event for Surveillance Data Sharing in the SWIM Trial and SWIM Over CRV Demonstration (Demo) and the progress of the current Work Plan, the Meeting reviewed the changes proposed to Items 3-2, 4, 4-1 & 4.2 of the Work Plan. SURSG Chair requested Meeting to provide support and participate in the Trial.

2.3 In accordance with the proposed and agreed changes in WP/11, it was discussed and agreed that description of Task 4 (on Guidance Material) would be elaborated to include the incorporation of a section of technical and operational considerations as reference for the preparation of multilateral agreement for states/parties intending to share surveillance data and the elaborated text

is to be discussed at the next SURSG Meeting.

2.4 The approved and modified SURSG work plan by the SURSG/3 Meeting is as follows, also provided in **Appendix A** to this paper.

Group	Task	Description	Start	End	Task Owner(s)
Recommendation Stage	3	Report on the possible implementation of surveillance data sharing in SWIM	SURSG/2	SURICG/7	TBD
	3-1	Consolidation of all the outcomes of Task 2 into a report according to the contents defined in TOR for submission to SURICG	SURSG/2	SURICG/7	Hong Kong China, IATA, Singapore, Thailand, Viet Nam
	3-2	Preparation of draft multi-lateral agreement on surveillance data sharing and data consumption [absorbed into Task 4]	SURSG/2	SURICG/7 (to be reviewed at SURSG/3)	TBD
	4	Guidance materials for the sharing and access of surveillance data	SURICG/7 (after Demo)	SURICG/9 SURICG/10	TBD
	4-1	Preparation of the framework and 1 st draft of guidance material	SURICG/7 SURICG/8 (after Demo)	SURSG/3 SURSG/4 or SURSG/5 ¹	TBD
	4-2	Further development of the working draft of guidance material for endorsement by SURICG and CNS SG	SURSG/3 (after Demo)	SURICG/9 SURICG/10	TBD

Outcomes of the Kick-off Meeting of the Surveillance Sharing in SWIM (System Wide Information Management) Trial Implementation Group (S3TIG) – Sec (WP/05)

2.5 The paper summarized the outcomes of the Kick-off Meeting of Surveillance Sharing in SWIM (System Wide Information Management) Trial Implementation Group (S3TIG) held on December 6, 2022, via Video Tele Conference (VTC).

Business Models for Joining the S3TIG Trial – PCCWG (WP/12)

2.6 PCCWG presented proposals on how ANSPs can participate in the upcoming S3TIG Trial, including the CRV connectivity requirements, surveillance data sharing demonstration, and scenario-based demonstration. The SURSG/3 Meeting noted that it is beneficial to the aviation

¹ Subject to timing of Demo.

community if more ATM stakeholders participate in the SWIM Data Exchange. The Meeting was invited to share the number of Member States which will participate in the Trial and discuss the scope of the Trial for the commercial and technical arrangement.

2.7 The SURSG/3 Meeting shared the need to explore other options to join the Trial/demo by States/Administrations having no CRV connectivity. Additionally, further deliberations were required about the cost implication for States having CRV connectivity but no spare bandwidth to share for the Trial/demo. It was agreed that S3TIG will incorporate this discussion into the agenda item while preparing the Survey questionnaire.

A Joint Event for Surveillance Data Sharing in SWIM Trial and SWIM over CRV Demonstration - Hong Kong, China (WP/07)

2.8 Hong Kong China proposed combining the surveillance data sharing in the SWIM Trial under S3TIG (“the Trial”) and the SWIM Demonstration over CRV under SWIM TF as a joint event for States’ consideration. It was informed that the proposal on combining the two events would save effort in preparing similar network and system infrastructure for the Trial, demonstrate data exchange of different throughput and examine such bandwidth requirements on CRV, and enhance user experience with more types of SWIM services showcased. The SURSG/3 Meeting endorsed that *the Trial* and *SWIM over CRV Demonstration* should be conducted as a Joint Event. However, it was discussed that the proposal needs to be agreed by SWIM TF Meeting. The Seventh Meeting of System Wide Information Management Task Force (SWIM TF/7) held from 9 to 12 May 2023 in ICAO Asia and Pacific Regional Office, Bangkok, Thailand agreed to conduct both events as a Joint Event.

Trial of Surveillance Data Sharing Using SWIM - Hong Kong, China (WP/08)

2.9 The paper presented the proposal on the items to be demonstrated in the Trial of the surveillance data sharing using SWIM under S3TIG for States’ consideration. The Trial was proposed to be conducted as a demonstration event followed by an evaluation period of about three months, subject to discussion in S3TIG.

2.10 The SURSG/3 Meeting noted that with live surveillance data sharing being realized among participating States in the Trial, the practicality and technology in surveillance data sharing using SWIM could be shown to the audience. In addition, a scenario-based demonstration was proposed to visualize the benefits brought to ATFM operation during the Event. Prepared scripts and data, including surveillance data, flight information, MET information, and flow management information, will be exchanged in real-time to simulate the data flow of a complete life cycle of an ATFM operation, which cannot be easily captured in a live situation. Other SWIM capabilities proposed to be demonstrated in the Event were also shared.

Survey for Expression of Interest (EOI) in participating in Demo/Trial of S3TIG – Sec (SP/01)

2.11 The SURSG/3 Meeting deliberated the proposed questions for Expression of Interest (EOI) in participating in the Joint Event of S3TIG and reviewed the S3TIG Joint Event Tentative Timelines. The SURSG/3 Meeting agreed that the proposed questions need modifications along with the addition of more information to support States/Administrations to respond to the Survey.

2.12 The Meeting agreed that the S3TIG will amend the questionnaire and prepare supporting documents containing useful information such as definitions of various terms used in the questionnaire to clear potential doubts of Member States/Administrations responding to the survey and any other necessary modifications. The questionnaire will be a composite survey with 2 separate sets of questions respective for the Trial and SWIM over CRV Demonstration (Demo). The S3TIG will share the part of the questionnaire mainly related to the Demo and the endorsement of the proposal for the Joint Event by SURSG/3 in a joint working paper or a paper by lead of S3TIG to SWIM TF/7

planned for 9-12 May 2023 in Bangkok, Thailand for SWIM TF/7's agreement.

2.13 The SURSG/3 Meeting also agreed that the Survey will be shared with States/Administrations only, not involving any other parties. Additionally, the Survey will be shared, after SWIM TF/7 endorsement, with Member States/Administrations by ICAO Secretariat. The S3TIG will draft a formal package/agreement to participate in the Joint Event by Member States/Administrations to be shared with interested States/Administrations after the outcomes of the Survey are processed, analyzed, and interested Members to participate in the Demo/Trial are identified.

2.14 The tentative timelines to conduct the Trial and/or Demo were as follows:

Task	Responsible Parties	Tentative Timelines/Deadlines
Finalization of Survey Questionnaire	SURSG/3 and S3TIG Participants, Led by HK China, Thailand, and Singapore	28 April 2023
Sharing Survey with APAC Member States	ICAO Secretariat	19 May 2023 (4 weeks will be provided to States to respond)
Submission of response and States and possible extension of Survey	All Interested APAC States	23 June 2023
Compilation of Response to Survey	ICAO Secretariat SURSG/S3TIG Chairs/Leads	30 June 2023
Sharing formal package with agreed Parties to participate in Demo and/or Trial	Agreed Parties and Host State (Hong Kong China)	July 2023 (1 Month will be provided to States to respond)
Working-level preparatory Meetings (online/in-person)	Lead and Deputy Lead, agreed Parties	Mid-August 2023 – October 2023
Trial/Demo	Agreed Parties and Host State (Hong Kong China)	November 2023 (Worst case scenario: Q1 2024)
Report on Demo	Lead and Deputy Lead	SURSG/4

2.15 The abovementioned discussions were performed in the SWIM TF/7 held from 9 to 12 May 2023. The SWIM TF/7 Meeting noted that pseudo CRV will be used as the network infrastructure for the Demo/Trial and the ATFM scenario, based on the ASEAN Demonstration, will be refined and enriched to be used in the Demo, which is considered a suitable use case to demonstrate the operational benefits brought by SWIM. The SWIM TF/7 Meeting also noted that S3TIG is conducting a survey to gauge States' interest in participating in the joint event.

2.16 The SWIM TF/7 Meeting reviewed and modified the questionnaire, and agreed that ICAO Secretariat will share the Survey questionnaire with APAC Member States by 19 May 2023 as agreed at the SURSG/3 Meeting. Once received, Member States were requested to expedite the response to the Survey due to tight timelines to conduct the Trial/Demo by Q4 of 2023 or Q1 of 2024.

2.17 Survey questionnaire was circulated through ICAO APAC State Letter Ref.: T 8/13.1: AP071/23 (CNS) with Subject – *Survey on a Joint Event of SWIM over CRV Demonstration ("the Demo") and Surveillance Data Sharing in SWIM Trial ("the Trial")* on 16 May 2023, which expected Member States/Administrations to submit the completed Survey preferably not later than 12 June 2023. The State Letter is provided in **Appendix B** to this paper.

Data Format for Surveillance Data Sharing – Hong Kong, China (WP/06)

2.18 Hong Kong China presented the proposal on the data format to be exchanged in the Trial of the surveillance data sharing using SWIM under S3TIG for States' consideration. As a recommendation from the Study Report delivered under SURSG, the Trial to be conducted under S3TIG would adopt the ADS-B CAT 21 Version 2.1 data format to support ATFM operation.

2.19 The paper compared the pros and cons of using FIXM, JSON, and original ASTERIX data and suggested that using the original ASTERIX data format as the payload for SWIM data exchange would be a preferred option. Based on the ASEAN Demonstration, the AMQP headers were proposed for carrying the surveillance data payload.

State of SWIM implementation in Singapore and readiness to share ADS-B data – Singapore (WP/09)

2.20 Singapore presented the progress of SWIM implementation in Singapore and its impact on the sharing of surveillance information, specifically ADS-B data from the Singapore ADS-B sensor. Singapore shared its plan for upgrading the SWIM infrastructure, which includes a provision for the connection to the CRV through which data can be shared. After completing the SWIM upgrading works, Singapore shared its intention to publish the ADS-B data from the Singapore ADS-B sensor for consumption by approved parties as an ASTERIX-based JSON formatted message similar to the current ADS-B service in the Singapore SWIM is provisioned.

2.21 Considering the format for ADS-B data sharing has not yet been decided, Singapore proposed that the Meeting direct the S3TIG group to be deliberate on this matter and consider the appropriate message format to facilitate ADS-B data exchange.

2.22 The SURSG/3 Meeting discussed the pros and cons of different data formats proposed in the WP/06 and concurred that ASTERIX and JSON, both may be considered as potential data formats for conducting the trial and SWIM over CRV demonstration. Another proposal was to add a question related to the preferred data format, with ASTERIX and JSON data format as potential answers, in the Survey questionnaire to be prepared by S3TIG to better understand the readiness of interested demo/Trial parties. It was agreed that S3TIG will discuss the requirements of the proposed question to add in the survey questionnaire. S3TIG will further deliberate on this topic of interest and priority and propose data format(s) for the Trial and Demo.

Benefits of Surveillance Data Sharing for MET Information Services in SWIM - Hong Kong, China (IP/02)

2.23 Hong Kong Observatory (HKO), under Hong Kong China, presented how future MET information services could be enhanced using the surveillance data shared in SWIM. The Meeting noted that MET information to be exchanged in SWIM includes ICAO Meteorological Information Exchange Model (IWXXM) messages, gridded products, and imagery. In particular, the four dimensions (4D) MET information service can also provide users with on-demand access to polygons or images of high-impact weather phenomena derived from the gridded products, which is useful to aviation users for assessing the potential impact of weather on their flight trajectory over time. Furthermore, the benefits of surveillance data for MET information services to ANSP and airlines were elaborated.

2.24 SURSG Chair requested to explore the possibility to include the elements and proposed

applications in the IP/02 paper for demonstration in the proposed Joint Event, which was agreeable to HKO and the Meeting. The S3TIG will consider the feasibility to incorporate the demonstrations proposed in the paper in the planned Joint Event.

Lessons Learned in Sharing Surveillance Data using SWIM Information Service - Republic of Korea (WP/10)

2.25 The paper presented ROK’s lessons learned in the exchange of surveillance data through a SWIM information service, specifically through the utilization of the Advanced Message Queuing Protocol (AMQP) based messaging services. With the introduction of characteristics of surveillance data, the SURSG/3 Meeting noted ROK had implemented SWIM information services for surveillance data currently working on the SWIM testbed. Additionally, the considerations for future implementation along with lessons learned were shared with the Meeting.

2.26 In response to a question, ROK clarified that it provides both ASTERIX and JSON data formats to the Stakeholders based on Stakeholder’s needs.

Review ToR and Action Items List – Sec (WP/04)

2.27 The paper presented the current ToR of SURSG and S3TIG and the Action item list of SURSG Meetings for SURSG/3 Meeting review and update. The SURSG/3 Meeting noted that there was no need to update the ToR of both groups and the Action Items list was discussed and updated by the SURSG/3 Meeting, which is provided in Appendix B of the Report.

Date and Venue for the Next Meeting

2.28 The SURSG/3 Meeting decided that further Meetings of S3TIG would be conducted in Virtual mode until the need for In- Person Meetings arises.

2.29 The SURSG/3 Meeting discussed the date and venue of the next SURSG Meeting. It was advised that the next Meeting of SURSG should be held after the proposed Surveillance data sharing in the SWIM Trial and the SWIM Demonstration over CRV Demonstration are completed. The SURSG/3 Meeting agreed that the next Study Group Meeting would be In-Person after the successful completion of the Joint Event. The ICAO Secretariat will inform participants about the exact dates and venue in due course.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

- a) note the information in this paper; and
- b) discuss any matters as appropriate.

REVISED WORK PLAN of SURSG

Table 1						
Group	Task	Description	ToR Para.	Start	End	Task Owner(s)
Feasibility Study Stage	1	Preparation of Progress Report on the SURSG deliverables	-	-	Before every SURSG Meeting	Study Group Lead(s)
	2	Study, identification and recommendation of possible and practical models for surveillance data sharing in SWIM	2	SURSG/1	SURSG/2	Hong Kong China (TL)
	2-1	Preparation of Concept of Use/Operation	2(a) 3(c)	SURSG/1	SURSG/2	Singapore/TL, Hong Kong China, Thailand, Viet Nam
	2-2	Study, identify and recommend on Implementation Model including the consideration of system design and collaboration model on sharing of surveillance data.	2(b), (d) 3(a)	SURSG/1	SURSG/2	Hong Kong China, Republic of Korea, Singapore, Thailand, Viet Nam
	2-3	Study, identify and recommend on an Infrastructure Model based on SWIM and CRV infrastructure	2(f) 3(b)	SURSG/1	SURSG/2	China, Hong Kong China, Singapore, Thailand, Viet Nam, PCCW Global as advisor
	2-4	Study, identify and recommend on a Business Model including commitments by data sharing participants as well as incurred resource and cost	2(b), (c), (d) 3(d), (e)	SURSG/1	SURSG/2	China, Hong Kong China, Singapore, Thailand, Viet Nam
	2-5	Study, identification and recommendation of Participation Model in consideration of commitments by data consumers and multi-lateral agreement on surveillance data sharing	2(c), (d) 3(e)	SURSG/1	SURSG/2	Hong Kong China, Singapore, Thailand, China, Viet Nam, IATA

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	2-6	Preparation of implementation roadmap and time frames with consideration of approach, types of surveillance data and information exchange model	2(e) 3(a)	SURSG/1	SURSG/2	China, Hong Kong China, Singapore, Thailand, Viet Nam
Recommendation Stage	3	Report on the possible implementation of surveillance data sharing in SWIM	-	SURSG/2	SURICG/7	TBD
	3-1	Consolidation of all the outcomes of Task 2 into a report according to the contents defined in TOR for submission to SURICG	-	SURSG/2	SURICG/7	Hong Kong China, IATA, Singapore, Thailand, Viet Nam
	3-2	Preparation of draft multi-lateral agreement on surveillance data sharing and data consumption [absorbed into Task 4]	SURSG/2	SURICG/7 (to be reviewed at SURSG/3)	TBD	3-2
	4	Guidance materials for the sharing and access of surveillance data	SURICG/7 (after Demo)	SURICG/9 SURICG/10	TBD	4
	4-1	Preparation of the framework and 1 st draft of guidance material	SURICG/7 SURICG/8 (after Demo)	SURSG/3 SURSG/4 or SURSG/5 ¹	TBD	4-1
	4-2	Further development of the working draft of guidance material for endorsement by SURICG and CNS SG	SURSG/3 (after Demo)	SURICG/9 SURICG/10	TBD	4-2

¹ Subject to timing of Demo.



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Ref.: T 8/13.1: AP071/23 (CNS)

16 May 2023

Subject: Survey on a Joint Event of SWIM over CRV
Demonstration ("the Demo") and Surveillance Data
Sharing in SWIM Trial ("the Trial")

Action Required: Complete the Survey by **12 June 2023**

Dear Sir/Madam,

I wish to recall the Establishment of Surveillance Sharing in the System Wide Information Management (SWIM) Trial Implementation Group (**S3TIG**) in the Second Meeting of the Surveillance Study Group (SURSG/2) in March 2022 to support and promote the trial implementation of surveillance data sharing based on SWIM ("**the Trial**") under the SURSG. In addition, a SWIM Demonstration over CRV ("**the Demo**") was planned to be hosted in Hong Kong, China, in 2020 under SWIM TF to demonstrate the operational benefits of using CRV to carry SWIM data and the corresponding services envisaged as necessary or complementary to support the implementation of SWIM in APAC Region. However, due to the COVID-19 pandemic, the demonstration was postponed until further notice.

The Third Meeting of the Surveillance Study Group (SURSG/3), held from 22 to 24 March 2023 in Hong Kong, China, and the Seventh Meeting of System Wide Information Management Task Force (SWIM TF/7), held from 9 to 12 May 2023 in ICAO Asia and Pacific (APAC) Regional Office, Bangkok, Thailand, endorsed that "**the Trial**" and "**the Demo**" should be conducted as a **Joint Event**. The Joint Event, to be hosted by Hong Kong China with attendance in Hong Kong and participants taking part in the Joint Event, would take place tentatively for two days and is scheduled to take place in Q4 2023 or Q1 2024.

The SURSG/3 and SWIM TF/7 Meetings prepared a questionnaire to share with the Member States/Administrations to get their **Expression of Interest (EOI)** in participating in the Joint Event. It is planned that based on the response to the Survey, the S3TIG will draft a formal package/agreement to participate in the Joint Event by Member States/Administrations to be shared with interested States/Administrations after the outcomes of the Survey are processed, analyzed, and interested Members to participate in the Demo/Trial are identified.

2/...

Accordingly, the prepared questionnaire for the Survey is being shared with Member States/Administrations for their response by [this link](#). Alternatively, Member States/Administrations can share duly filled answers in the pdf file provided in **Appendix A**. The respective Air Navigation Service Providers (ANSPs) of the Member States/Administrations are requested to access the Survey using the link or pdf file and complete the required information for integrating the Survey Results. The information and data received through the Survey will be used to **gauge States' interest in participating in the Joint Event**. However, it will **not** be considered a **commitment** of Member States/Administrations to **participate** in the **Joint Event**.

Please acknowledge the **submission of the completed online Survey** or **share the duly filled Survey pdf file** provided in **Appendix A** to this Office by e-mail at apac@icao.int with cc: vmeeefuengsart@icao.int and snibhani@icao.int as early as possible, **preferably not later than 12 June 2023**.

Yours sincerely,



Tao Ma
Regional Director

Enclosure:

Appendix A: Survey on Attending and Participating
in the SWIM Demonstration over CRV cum
Surveillance Sharing in SWIM Trial Joint Event

Survey on Attending and Participating in the SWIM Demonstration over CRV cum Surveillance Sharing in SWIM Trial Joint Event

Background:

A SWIM Demonstration over CRV (“the **Demo**”) was planned to be hosted in Hong Kong China back in 2020 under SWIM TF, to demonstrate the operational benefits of using CRV to carry SWIM data, and the corresponding services envisaged as necessary or complementary to support implementation of SWIM in APAC region. Due to the COVID-19 pandemic, the demonstration had been postponed.

On the other hand, the Surveillance Sharing in SWIM Trial Implementation Group (S3TIG) was established under Surveillance Study Group (SURSG) with the objective to support and promote the trial implementation of surveillance data sharing based on SWIM (“the **Trial**”) under the SURSG.

Given substantial commonality between the two events, both events would take place as a **Joint Event** (tentatively lasting 2 days) to be hosted by Hong Kong China with attendance in Hong Kong and participants taking part in the Joint Event. The Joint Event is scheduled to take place in end 2023 or Q1 2024.

Moreover, subject to your feedbacks, the set-up would be accessed after the Joint Event for participants to appreciate the operation of the SWIM environment and potential SWIM applications (“the **Post-Event Appreciation**”) in order for further evaluation.

To gauge your organization’s interest in the Joint Event and level of participation for planning and implementation purposes, a questionnaire has been prepared for your kind response by 12 June 2023. **Kindly circle your response, cross out inapplicable entries or provide your input** depending on the structures of the questions.

We look forward to your support for the event and promoting the implementation of SWIM in the Asia Pacific region together.

Questionnaire¹

Respondent Information

State/Administration	
Organization	
Post title	
Phone	
Email	

Joint Event

- 1) Would your organization send delegates to attend the 2-day Joint Event hosted by Hong Kong China in Q4 2023 or Q1 2024?
- Yes**
- No**

Demo

- 2) Would your organization like to participate in the **Demo**?
- Yes**
- No**

If Yes:

- (i) Will your organization operate a trial or operational SWIM Enterprise Messaging Service (EMS) for exchange of SWIM data?
- Yes**
- No**
- (ii) Regardless of the reply to (i) above, would your organization participate in the exchange of flight, surveillance, MET information or ATFM information?
- Yes**
- No**
- (iii) If Yes to (ii), would your organization be willing to share its:
- a. Flight data?
- Yes (If Yes, Real-time Recorded Simulated data?)
- No
- b. Surveillance data?

¹ Any response in this questionnaire is not to be taken as commitment by the respondent or the surveyor.

- Yes (If Yes, Real-time Recorded Simulated data?)
- No

c. MET data?

- Yes (If Yes, Real-time Recorded Simulated data?)
- No

d. ATFM data?

- Yes (If Yes, Real-time Recorded Simulated data?)
- No

3) Are there SWIM services you would like demonstrated?

(select all that applies)

- Flight Information Service**
- Surveillance Information Service**
- MET Information Service**
- ATFM Information Service**
- Aeronautical Information Service**
- SWIM Registry**
- Surveillance Central Data Processor (SCDP)**
- Others, please specify:**

Trial

4) Would your organization like to participate in the **Trial**?

- Yes**
- No**

If Yes, would your organization participate in the **Trial** as

- as Contributor** of surveillance data? If Yes, **ADS-B data** **Radar?**
- as Consumer** of surveillance data? If Yes, **ADS-B data** **Radar?**
- as Contributor & Consumer** of surveillance data?
If yes, **ADS-B data** **Radar?**
- as Observer** *See Note*

Note:

- (i) *A Contributor should at least contribute ADS-B CAT 21 Version 2.1 data. It is recommended that State should have a trial or operational SWIM EMS to route surveillance information using AMQP 1.0, with payload data generated in ASTERIX or JSON format from the original surveillance data source. State without a trial or operational SWIM EMS would further*

- coordinate with PCCWG on the technical feasibility in providing network-based SWIM EMS.*
- (ii) *No specific prerequisite for a Consumer. It is recommended that State should have a trial or operational SWIM EMS to subscribe to surveillance information service using AMQP 1.0. State without a trial or operational SWIM EMS would further coordinate with PCCWG on the technical feasibility in providing network-based SWIM EMS.*
- (iii) *An Observer may interact with the HMI of the SWIM services in the Post-Event Appreciation.*

If your organization would participate as a Contributor of surveillance data at the Trial, your organization would share:

- Real-time data**
- Recorded data**
- Simulated data**

5) Other than ADS-B data, are there other types of data or SWIM features your organization would like to be included in the **Trial**?

(select all that applies)

- Radar data**
- SWIM Registry**
- SCDP**
- Others, please specify:**

6) What would be the preferred mode of access of the **Trial**?

- Pseudo CRV

Our organization **is interested/not interested** in obtaining free CRV Package D CRV connection to participate in the Joint Event and Post-Event Appreciation ^{See Note}.

- interested**
- not interested**

[Note:

- (i) *S3TIG considered that the option to use operational CRV for the **Trial** is not recommended after revisiting the nature of the operational CRV. Operational CRV is a safety critical environment that testing or trial on it was not preferred. Any testing or trial may raise potential risks to the services running within the operational environment. Therefore, S3TIG suggested to remove this option from the **Trial**.*

- (ii) *PCCWG may provide up to 5 pseudo CRV Package D connections for free (priority will be given to data contributor operated with a trial or operational SWIM EMS) for participating in the Joint Event and Post-Event Appreciation period for interested participants for the **Trial** but subject to consideration of a participant's geographical location, ease of installation (such as whether participant is an existing CRV subscriber) as well as available communication infrastructures that could support CRV Package D connections.*
- (iii) *Pseudo-CRV operates exactly the same as operational CRV as it is a dedicated and segregated CRV-network with the same hardware setup. Therefore, similar to operational CRV, dedicated Network Interface Device would be installed at participant's site.]*

- Console Connect - PCCWG may provide up to 10 free SIM cards for mobile connection (primarily for Aviation Support Service Providers (i.e. non-ANSPs) and support ANSP as Observer via mobile or desktop devices).

Our organization **is/is NOT** interested in participating in the Joint Event and Post-Event Appreciation by accessing Console Connect services provided by PCCWG

See Note

- interested**
- not interested**

*[Note: Console Connect service is PCCWG's services that allow users to gain access to the simulated SWIM environment in the Trial to publish/subscribe data services, among other SWIM services for participation in the **Trial** and in the Post-Event Appreciation.]*

- Others, please specify:

- 7) If there will be a Post-Event Appreciation² accessible for a period of time for participants and interested parties to appreciate the SWIM environment and system HMI:
 - a. If your organization is a data contributor, would your organization continue to provide the data?
 - Yes** (If Yes, for _____ weeks after the Joint Event)
 - No**
 - b. Regardless if your organization is a data Contributor, data Consumer or Observer of the Joint Event, would your organization be interested in accessing the demonstration set-up after the event?
 - Yes** (If Yes, for _____ weeks after the Joint Event)
 - No**

² Some services or data might be available after the Joint Event.

8) What types of SWIM data payload for carrying the surveillance data would you like to be included?

- ASTERIX only**
- JSON only**
- ASTERIX and JSON**
- Others, please specify:**

*[Note: ASTERIX will be the native binary format of the surveillance data. JSON will be in a tailored text-based format to be determined by S3TIG during the preparation of the **Trial**.]*