



ICAO

International Civil Aviation Organization

The Seventh Meeting of System Wide Information Management Task Force (SWIM TF/7)

Bangkok, Thailand, 09 – 12 May 2023

Agenda Item 2: Outcomes of relevant Meetings on SWIM related matters

OUTCOMES OF SWIM TF Task Leads (TLs) MEETINGS AND JOINT CRV OG Ad-hoc EXPERT GROUP AND SWIM TF TLs MEETINGS AFTER SWIM TF/6

(Presented by the Secretariat)

SUMMARY

The paper presents outcomes of SWIM TF TLs Meetings and Joint CRV OG Ad hoc Expert Group and SWIM TF TLs Meetings after SWIM TF/6.

1. INTRODUCTION

1.1 The Sixth Meeting of the APAC SWIM Task Force (SWIM TF/6) was held from 17 – 20 May 2022 via Video Tele-Conferencing (VTC). The Meeting was attended by **213** participants from **18** States/Administrations, **5** International Organizations and **1** service provider. The papers and report of the SWIM TF/6 Meeting are available at:

<https://www.icao.int/APAC/Meetings/Pages/2022-SWIM-TF6.aspx>.

1.2 As an established effective practice in progressing various tasks of the SWIM TF, online Task Leads (TLs) coordination Meetings have been organized from time to time between Task Force Meetings to follow up on the progress of each task more effectively and better understand the regional information exchange requirements to be supported by APAC SWIM as well as the feasible and appropriate approach to establish SWIM over the regional network.

1.3 Additionally, the CRV OG Ad-hoc group Meeting held on 2 June 2022 discussed the need for combined Meetings of CRV OG and SWIM TF to discuss the expectation of SWIM TF from the CRV network. To follow up the ACTION ITEM-2 of the Meeting, ICAO Secretariat agreed to coordinate and organize the joint Meeting in September 2022 last week or October 2022 first week.

1.4 This paper summarizes the outcomes of the SWIM TF TLs Meetings and Joint CRV OG Ad hoc Expert Group and SWIM TF TLs Meetings after SWIM TF/6.

2. DISCUSSION

SWIM TF Task Leads coordination Meetings after SWIM TF/6

2.1 A total of three (3) SWIM TF Task Leads coordination Meetings have been held after SWIM TF/6 to review the outstanding SWIM TF/6 Action Items, which included relevant SWIM

updates such as APAC SWIM Implementation Roadmap, SWIM TI-related specifications, SLA management approach with SLA manager, APAC SWIM Implementation Guidance materials share, etc. The Minutes of the Meetings (MoMs) of the three Meetings on 01 September 2022, 02 December 2022, and 14 March 2023 were shared with SWIM TF TLs. The reports are also provided in **Appendix A**, **Appendix B**, and **Appendix C** of this paper, respectively.

Joint CRV OG Ad hoc Expert Group and SWIM TF TLs Meetings

2.2 To follow up on the action item from the CRV OG Ad-hoc group Meeting held on 2 June 2022 about the need for combined Meetings of CRV OG and SWIM TF to discuss the expectation of SWIM TF from the CRV network, two Joint Meetings of CRV OG expert Ad-hoc group and SWIM TF TLs were conducted on 28 October 2022 and 22 February 2023. The MoMs of both joint Meetings are provided in **Appendix D** and **Appendix E** of this paper.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

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

Minutes of the meeting of SWIM TL meeting: 01 September 2022 08:00 AM-10:00 AM BKK time

Meeting Date: 09/01/2022 08:00 AM

Location: Microsoft Teams Meeting

Participants:

1.	Ms. Kristin Cropf	USA	Co-Chair
2.	Mr. David Leow	Singapore	Task 1, 7 Lead
3.	Mr. Xiaodong Lu	Japan	Task 2, 8 Lead
4.	Mr. Yukinobu Ryu	Japan	Task 2, 8, 9 Lead
5.	Mr. Henry Chan	Hong Kong, China	Task 2 Lead
6.	Mr. Jim Laymon	USA	Task 3 Lead
7.	Mr. Wen Zhu	USA	Task 4 Lead
8.	Mr. Dongkie Park	ROK	Task 5, 8 Lead
9.	Mr. Sehwan Han	ROK	
10.	Ms. Honglei Gao	China	Task 8 Lead
11.	Mr. Marco Kok	Hong Kong, China	Task 6 Lead
12.	Mr. Thomas Green	USA	Task 11 Lead
13.	Mr. Ram Sunthar	Australia	New member
14.	Ms. Soniya Nibhani	ICAO	SWIM TF Secretary
15.	Ms. Zhong, Wenhan	ICAO	

Notes:

The meeting was chaired by Ms. Kristin Cropf, SWIM Program Manager, Federal Aviation Administration (FAA). Ms. Soniya Nibhani, Regional Officer ANS (CNS) Implementation, ICAO Asia and Pacific Regional Office, acted as the secretary of the meeting.

Adoption of agenda:

The attached provisional agenda was adopted by the meeting.



Tentative Provisional
Agenda SWIM_Leader

Agenda Item 1: Welcome & Opening remarks

Ms. Kristin Cropf welcomed all delegates and shared special welcome to Mr. Ram Sunthar, Enterprise Architect – Information, who was nominated recently as the Australian representative to SWIM TF at the place of Mr. Renato Lannella.


The presentation used to moderate the meeting is attached herewith for detailed information:



SWIM TL meeting 1
Sep 2022.pptx

SWIM TF/7
Appendix A to WP/05

Agenda Item 2: Outstanding SWIM TF/6 Action Items Review

- Update on APAC SWIM Implementation Roadmap
 - The meeting invited Mr. Ram Sunthar to join the task to prepare layout for APAC SWIM Implementation roadmap. Mr. Ram Sunthar shared willingness to join Task 1 for preparing APAC SWIM Implementation roadmap. David will conduct a meeting by the **end of September 2022** to discuss about this task in detailed. **ACTION ITEM TL-1-1**
- SWIM TI-related specifications, including
 - Infrastructure bindings
 - User-based access and SWIM-based access models study
 - According to SWIM TF/6 discussion, specifications and profile for infrastructure binding between AMHS and SWIM TI is being clarified. Some use cases about user-based and SWIM-based access model are being prepared. Airservices Australia was invited to cooperate and provide some documentation for this task.
- SLA management approach with SLA manager
 - No updates.
- Update on APAC SWIM Implementation Guidance materials
 - The following outline for the topics to covered in the brochure was provided. Support from task leads to provide regional perspective was requested by the Task 11 task lead.

APAC SWIM Regional Brochure (Draft Outlir
 - David informed that CANSO is about to release a **SWIM toolkit**. Therefore, it would be better if the brochure also contained link of other available resources. Additionally, SWIM TF Co-Chair suggested to **add contact information of some SWIM experts** into the brochure so that readers can reach to provide their comments/suggestions/questions Thomas will incorporate the suggestions in brochure content. **ACTION ITEM TL-1-2**
 - All Task leads and contributors will share link/reference to relevant materials to add into the brochure. **ACTION ITEM TL-1-3**
 - ICAO Secretariat informed that preparation of IGD has not yet started. ICAO Secretariat will initiate an action for IGD preparation after CNS SG/26 to be held from 5-9 September 2022.

Agenda Item 3: Updates on the assigned tasks by task leads/contributors, including progress report and issues

- **Task 1:** Regional Implementation Philosophy & Roadmap
 - Same updates as provided in Agenda Item 2 ‘Update on APAC SWIM Implementation Roadmap.’
- **Task 2:** Regional SWIM Infrastructure
 - Updates are provided in following slides:

SWIM TF/7
Appendix A to WP/05




Task-2-Report22090
1.pptx


- **Task 3: Security Services**
 - Task lead informed that the need of co-task lead from APAC region is required. David suggested that CAAS cybersecurity lead or her team members may help SWIM TF for this task. David will contact her and request her contribution.
 - Ram shared interest to join this task. Task 3 lead will share details of the task to be done to elect the area where Ram can provide support. **ACTION ITEM TL-1-4**

- **Task 4: Development and Maintenance of Regional Information Exchange Models**
 - No updates.

- **Task 5: Regional SWIM Governance Framework**
 - Regional SWIM Governance Framework name is adopted. New member from China and Japan joined. Discussion for registry and demonstration with China, Japan, ROK, and USA is going on.

- **Task 6: Information Services**
 - Following updates was provided:
 - 
SWIM_TF_Task6_info
rmation_service_2022
 - Ram shared an interest to discuss about current data catalog.

- **Task 7: SWIM Demonstration**
 - A plan for HK China, Thailand, and Singapore effects for ATFM over SWIM trail is in process.
 - David suggested that S3TIG objectives can be considered as a SWIM demonstration.

- **Task 8: SWIM Services and Application Validation**
 - Following updates was provided
 - 
Task-8-Report22090
1.pptx

- **Task 9: Monitoring of Panels' Work**
 - No updates

- **Task 10: Regional Coordination and SWIM Related Information Sharing**
 - No Task leads, hence no updates.

- **Task 11: SWIM Implementation Education and Promotion**
 - Task Lead 11 requested all task Leads to share any training, educational, promotional or guidance material.

SWIM TF/7
Appendix A to WP/05

Agenda Item 4: Next Meeting and Any other business

- Meeting agreed to have the next task lead meeting any day in the **last week of November 2022** i.e. from 28 November-02 December 2022. ICAO Secretariat will share doodle to finalize the final date with contributors and task leads. **ACTION ITEM TL-1-5**

Minutes of the meeting of SWIM TL meeting: 02 December 2022 08:00 AM-10:00 AM BKK time

Meeting Date: 12/02/2022 08:00 AM

Location: Microsoft Teams Meeting

Participants:

1.	Dr. Amornrat Jirattigalachote	Thailand	Co-Chair
2.	Mr. David Leow	Singapore	Task 1, 7 Lead
3.	Mr. Xiaodong Lu	Japan	Task 2, 8 Lead
4.	Mr. Yukinobu Ryu	Japan	Task 2, 8, 9 Lead
5.	Mr. Henry Chan	Hong Kong, China	Task 2 Lead
6.	Mr. Jim Laymon	USA	Task 3 Lead
7.	Mr. Wen Zhu	USA	Task 4 Lead
8.	Mr. Dongkie Park	ROK	Task 5, 8 Lead
9.	Mr. Sehwan Han	ROK	
10.	Ms. Honglei Gao	China	Task 8 Lead
11.	Mr. Marco Kok	Hong Kong, China	Task 6 Lead
12.	Mr. Thomas Green	USA	Task 11 Lead
13.	Ms. Soniya Nibhani	ICAO	SWIM TF Secretary
14.	Ms. Zhong, Wenhan	ICAO	

Notes:

The meeting was chaired by Dr. Amornrat Jirattigalachote, Strategic Planning Manager (Engineering), Policy and Strategy Management Bureau of AEROTHAI. Ms. Soniya Nibhani, Regional Officer ANS (CNS) Implementation, ICAO Asia and Pacific Regional Office, acted as the secretary of the meeting.

Adoption of agenda:

The attached provisional agenda was adopted by the meeting.



Tentative Provisional
Agenda SWIM_Leader

Agenda Item 1: Welcome & Opening remarks

- Dr. Amornrat Jirattigalachote welcomed all delegates to the SWIM TF TL meeting and shared opening remarks with delegates.
- The presentation used to moderate the meeting is attached herewith for detailed information:



SWIM TL meeting 2
Dec 2022_final.pptx

SWIM TF/7
Appendix B to WP/05

- The meeting noted APANPIRG/33 **Conclusion 33/9 – The Asia-Pacific SWIM Implementation Timeframe and inclusion of the Asia/Pacific SWIM Implementation in the Asia/Pacific Seamless ANS Plan.**
 1. *To set the timeframe for the implementation of SWIM in the Asia-Pacific region to be between 2024 and 2030, with 2030 being the target timeline for implementation completion.*
 2. *To include SWIM implementation in the next edition of the Asia/Pacific Seamless ANS Plan.*
- The meeting also noted that (i) the next version of the Asia/Pacific Seamless ANS Plan will be published in 2023 and (ii) this APANPIRG Conclusion 33/9 has implications for SWIM TF work.
- The work plan, in agreement with the implementation timeline, was proposed for the meeting consideration.
- The meeting agreed that APAC regional documents, including implementation roadmap and regional guidance material, should be ready for adoption by SWIM TF/8 in 2024 to assist States in their SWIM implementation according to the endorsed implementation timeline.
- Dr. Amo kindly requested all task leads to prepare the first draft of their corresponding works to be combined as the regional documents for review by SWIM TF/7 in May 2023.
- The task leads were requested to review and **update the deliverables and the work plan by mid-January 2023. ACTION ITEM TL-2-1**

Agenda Item 2: Outstanding SWIM TF/6 Action Items Review

- Update on APAC SWIM Implementation Roadmap
 - SWIM TI-related specifications, including
 - Infrastructure bindings
 - User-based access and SWIM-based access models study
 - SLA management approach with SLA manager
 - Update on APAC SWIM Implementation Guidance materials
- Outstanding action items were discussed under agenda item 3.

Agenda Item 3: Updates on the assigned tasks by task leads/contributors, including progress reports and issues

- **Task 1:** Regional Implementation Philosophy & Roadmap



Task 1 TG Lead
meeting 20221202.ppt

- The meeting was informed of the need to confirm/clarify the details of regional SWIM components to support the drafting of regional SWIM roadmap between Task 1 group and other task groups. Specifically, Task 1 group proposed to organize a separate meeting with the related task groups to further discuss the details of SWIM architecture, registry model, governance, security, etc.
- The meeting was also informed that, based on the updated deliverables and their expected completion timelines to be received from all task groups by mid-January 2023, it is believed that some dependencies among tasks can be identified. After that, an one-on-one

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meeting between Task 1 group and other task groups will be organized, if needed, to clarify the details of deliverables to help Task 1 group in identifying the possible harmonized implementation timelines across different tasks. **ACTION ITEM TL-2-2**

○ **Task 2: Regional SWIM Infrastructure**



Task

2-Report221202.pptx

- The meeting was updated with the discussion results between Task 2 group and CRV OG at the joint meeting in October 2022 on the possible approaches to operate SWIM over CRV, including the open option for internet connection. The joint meeting planned for February 2023 will discuss further SWIM infrastructure binding as well as user-based access and SWIM-based access use cases.
- The meeting was informed of the need for close coordination with CRV OG and ACSICG in conducting a feasibility test of implementation in accordance with SWIM infrastructure binding and interface binding to be developed by Task 2 group. The meeting also noted that coordination with the European counterpart working on AMHS/SWIM gateway should be included.

○ **Task 3: Security Services**

- No updates

○ **Task 4: Development and Maintenance of Regional Information Exchange Models**



Task 4 Update_SWIM

TL Meeting 2 Dec 202

- The meeting noted the update of Task 4 group as per the presentation file embedded above.

○ **Task 5: Regional SWIM Governance Framework**

- The meeting noted the significant progress made by Task 5 group, comprising China, Japan, ROK, and USA, on SDS development and implementation. Particularly, Japan (ENRI) has completed the SDS implementation on their test bed and can successfully provide an access to discover services registered on FAA's registry through SDS. A significant impact on the APAC SWIM architecture with the increased number of interconnected registries was also raised as a crucial issue required to be further discussed.
- A working paper regarding the service level management framework being drafted by USA (FAA) is planned to be presented at SWIM TF/7 in May 2023. **ACTION ITEM TL-2-3**
- More details on SDS can be found on:

- **Specification**
 - <https://discovery.swim.aero/sds/1.0.0/SDS%20Specification%20v1.0.0.pdf>
- **Publications and Related Work**
 - <https://discovery.swim.aero/>
- **GitHub**
 - <https://github.com/faa-swim/swim-discovery-service/>
- **Current Implementations**
 - FAA: <https://nsrr.faa.gov/services/smxs>
 - KAC: <http://swim-registry.kr:8001/smxs>
 - ENRI: <http://18.224.226.206:8082/smxs>

○ **Task 6: Information Services**



SWIM_TF_Task6_info
rmation_service_2022

- The meeting noted the update of Task 6 group as per the presentation file embedded above.

○ **Task 7: SWIM Demonstration**

- No updates

○ **Task 8: SWIM Services and Application Validation**



Task
8-Report221202.pptx

- The meeting noted the update of Task 8 group as per the presentation file embedded above.

○ **Task 9: Monitoring of Panels' Work**

- The meeting was informed that ANC has finished the review of the SWIM-related provisions, including PANS-IM and other guidance documents, and requested for only minor changes. It is expected that all the materials will be circulated through SL for State's review shortly.
- The meeting was also informed that the security section was removed from the provisions before the submission for ANC's review, considering that the content might still be immature at this stage.
- The security provision will be taken care by the Trust Framework Panel.

○ **Task 10: Regional Coordination and SWIM-Related Information Sharing**

- No Task leads, hence no updates.

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- **Task 11: SWIM Implementation Education and Promotion**
 - Task Lead 11 shared updates on the educational package. The regional brochure is under preparation, and the draft is expected to be delivered at the SWIM TF/7 meeting.
 - Consolidation of all papers presented in previous SWIM TF meetings is done in a document by the ICAO Secretary. However, many modifications are required to prepare the document with the latest development. Due to the unavailability of resources, the ICAO Secretary shares the inability to edit chapters further.
 - All task leads were requested to update chapters relevant to their expertise area. **ACTION ITEM TL-2-4**

Agenda Item 4: Next Meeting and Any other business

- The meeting noted that the SWIM TF/7 is to be held on **9-12 May 2023** as an in-person meeting only.
- The meeting agreed to host a **one-day seminar on 8 May 2023** to increase the level of understanding about SWIM among regional stakeholders and to gather the inputs to support the development of regional materials.
- Meeting agreed to have the next task lead meeting any day from **13-17 March 2023**. ICAO Secretariat will share the doodle to finalize the final date with contributors and task leads. **ACTION ITEM TL-2-5**

Minutes of the Meeting of SWIM TL Meeting: 14 March 2023 08:00 AM-10:00 AM BKK time

Meeting Date: 03/14/2023 08:00 AM

Location: Microsoft Teams Meeting

Participants:

✓	Dr. Amornrat Jirattigalachote	Thailand	Co-Chair, Task 1,4, 7 Lead
✓	Ms. Kristin Cropf	USA	Co-Chair
✓	Mr. David Leow	Singapore	Task 1, 7 Lead
✓	Mr. Yukinobu Ryu	Japan	Task 2, 8, 9 Lead
✓	Mr. Yasushi Iwasawa	Japan	
✓	Mr. Henry Chan	Hong Kong, China	Task 2 Lead
✓	Mr. Wen Zhu	USA	Task 4 Lead
✓	Mr. Mark Kaplun	USA	Task 5 Lead
✓	Mr. Sehwan Han	ROK	
✓	Ms. Honglei Gao	China	Task 8 Lead
✓	Mr. Marco Kok	Hong Kong, China	Task 6 Lead
✓	Mr. Thomas Green	USA	Task 11 Lead
✓	Ms. Soniya Nibhani	ICAO	SWIM TF Secretary
✓	Ms. Zhong, Wenhan	ICAO	

Notes:

The Meeting was chaired by Dr. Amornrat Jirattigalachote, Strategic Planning Manager (Engineering), Policy and Strategy Management Bureau of AEROTHAI and Ms. Kristin Cropf, SWIM Program Manager, Federal Aviation Administration (FAA). Ms. Soniya Nibhani, Regional Officer ANS (CNS) Implementation, ICAO Asia and Pacific Regional Office, acted as the secretary of the Meeting.

Adoption of agenda:

The attached provisional agenda was adopted by the Meeting.



Tentative Provisional
Agenda SWIM_Leader

Agenda Item 1: Welcome & Opening remarks

- Dr. Amornrat Jirattigalachote welcomed all delegates to the SWIM TF TL Meeting and shared opening remarks to delegates. Ms. Kristin Cropf also addressed the Meeting and appreciated the task leads for their contribution.
- The presentation used to moderate the Meeting is attached herewith for detailed information:



SWIM TF TL Meeting
14 March 2023_final.p

Agenda Item 2:

Outstanding SWIM TF/6 Action Items Review

- Update on APAC SWIM Implementation Roadmap
- SWIM TI-related specifications, including
 - Infrastructure bindings
 - User-based access and SWIM-based access models study
- SLA management approach with SLA manager
- Update on APAC SWIM Implementation Guidance materials

- The Meeting was reminded about APANPIRG/33 **Conclusion 33/9 – The Asia-Pacific SWIM Implementation Timeframe and inclusion of the Asia/Pacific SWIM Implementation in the Asia/Pacific Seamless ANS Plan.**
 - ✓ *To set the timeframe for the implementation of SWIM in the Asia-Pacific region to be between 2024 and 2030, with 2030 being the target timeline for implementation completion.*
 - ✓ *To include SWIM implementation in the next edition of the Asia/Pacific Seamless ANS Plan.*
- The Meeting also reminded to work to meet on following timelines:



Proposed Work Plan

Asia/Pacific Regional Document(s)	
<ul style="list-style-type: none">• Implementation roadmap• Guidance<ul style="list-style-type: none">▪ SWIM TI specifications▪ Security framework▪ Information exchange models▪ Governance framework	<ul style="list-style-type: none">▪ Registry model▪ Service specificationsetc.

For each task

- Updated deliverables
- Updated workplan

Draft for Plenary's Review

**V1.0 for Plenary's
Adoption/Endorsement**



- Dr. Amornrat requested all task leads to prepare the first draft of their corresponding works to be combined as the regional documents for review by SWIM TF/7 in May 2023.
- Another request was to update IGD relevant chapters by each task lead.

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- Other related discussions were held under Agenda Item 5.

Agenda Item 3: Update on the Regional Coordination Meeting

- SWIM TF/CRV OG Coordination Meeting

- Dr. Amornrat shared the need to conduct, more regularly, the coordination meetings with other APANPIRG contributory bodies such as AAITF, CRV OG, etc., to better understand the regional information exchange requirements to be supported by APAC SWIM as well as the feasible and appropriate approach to establish SWIM over the regional network.
- Outcomes of discussion of joint Meeting of CRV OG Ad-hoc Expert Group and SWIM TF TLs held on 22 Feb 2023 and follow up actions for SWIM TF were shared.

Agenda Item 4: Updates on the assigned tasks by task leads/contributors, including progress report and issues

- **Task 1:** Regional Implementation Philosophy & Roadmap

✓ All Task Leads were requested to update deliverables in the following table to be used as an input for drafting the regional roadmap to be presented at the SWIM TF/7 on 9-12 May 2023.

ACTION ITEM TL-3-1



Task Group
deliverables_Task 6.xl

✓ The Meeting shared the need to establish **Implementation Pioneer Group** under SWIM TF to escalate SWIM implementation/rollout in APAC region with a focus on implementing a set of regionally-agreed common information services. The proposal will be presented at the SWIM TF/7 in May 2023 in the form of WP by Task 1. **ACTION ITEM TL-3-2**

- **Task 2:** Regional SWIM Infrastructure

✓ Drafting of the regional SWIM TI Specifications is in progress. The draft specifications will be presented at the SWIM TF/7.

- **Task 3:** Security Services

✓ The Meeting noted that it is important to get SWIM security expert from Asia region to work alongside the current Task Lead from FAA. Dr. Amornrat requested TLs to suggest and/or nominate security expert(s) from their respective organizations, if possible.

- **Task 4:** Development and Maintenance of Regional Information Exchange Models

✓ The Meeting was informed that a WP on the update of FIXM version 4.2 Extension development was presented to ATFM/SG/12 in November 2022 with a request to ATFM/SG to provide additional operational requirements, if any, to support the Extension development by December 2022. Until the time of the Meeting, no additional requirements had been received.

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✓ Task 4 will thus submit a WP to SWIM TF/7 to propose, through Draft Conclusion, for an adoption of the FIXM version 4.2 Extension to be the APAC extension by APANPIRG/34.
ACTION ITEM TL-3-3

- **Task 5: Task 5: Regional SWIM Governance Framework**

✓ The Meeting was informed of the progress made by Task 5 as detailed in the following presentation.



APAC SWIM TL
meeting Task 5.pptx

- **Task 6: Information Services**

✓ The Meeting noted the update from Task 6 as shown in the following presentation.



SWIM_TF_Task6_info
rmation_service_2023

- **Task 7: SWIM Demonstration**

✓ The Meeting was informed that the S3TIG work, which is related to the trial on surveillance data sharing in SWIM environment, was scheduled to be discussed during the SURSG/3 meeting next week in Hong Kong China. Task Leads will follow up with the S3TIG and SURSG/3 outcomes and share updates with SWIM TF accordingly.

- **Task 8: SWIM Services and Application Validation**

✓ No updates

- **Task 9: Monitoring of Panels' Work**

✓ The Meeting was informed that SLs on the first publication of PANS-IM and the amendments of Annexes/Documents in regard to FF-ICE/R1 have been distributed to States for a review. Another SL regarding MET, particularly regarding the transition of MET information and services from product-centric environment to data-centric environment under SWIM, has been issued. The Meeting was encouraged to provide feedback to these SLs.

✓ The Meeting noted that the First Meeting of Trust Framework Panel will be held in the end of this month.

- **Task 10: Regional Coordination and SWIM Related Information Sharing**

✓ This Task still has not had any Task Lead after John Moore (IATA) left the position. The Meeting was encouraged to suggest/nominate the new Lead as it would be beneficial for the SWIM TF's work, especially in understanding the requirements for regional SWIM and communicating the development done under the TF.

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- ✓ The Meeting was informed that John will attend SWIM TF/7 and IATA may consider taking this role again.
- **Task 11: SWIM Implementation Education and Promotion**
 - ✓ The Meeting was requested to share the relevant contents, if any, to support the development of regional SWIM implementation education and promotion catalogue being carried out.

Agenda Item 6: Next Meeting and Any other business

- ✓ 1:30h will be allocated to SWAMWAY SG to virtually present, through MS Teams, the AMHS/SWIM technical specifications during the SWIM TF/7 to be held from 9-12 May 2023. The proposed agenda for this presentation is Agenda Item 3 Task 2 or Agenda Item 6. The final agenda item and the exact presentation date/time will be shared after the finalization of the SWIM TF/7 Order of Business around the first week of May 2023. To accommodate time difference between Asia/Pacific and Europe, the request to schedule the presentation time from 1500-1630 Bangkok time was well noted.
- ✓ A short phone call to discuss the SWAMWAY SG's presentation contents expected to be covered at SWIM TF/7, i.e. any day from **3- 5 April 2023 at 0700 PM Bangkok time**, will be held, based on availability of all members. ICAO Secretariat will share a Doodle poll after coordination with SWAMWAY about their availability. **ACTION ITEM TL-3-4**
- ✓ Dr. Amornrat will **moderate the workshop** to be organised on 8 May 2023 and coordinate with all speakers for presentation as well as the preparation of workshop agenda. **ACTION ITEM TL-3-5**
- ✓ The Meeting agreed to hold the next task lead Meeting in June 2023 if SWIM TF/7 felt the need to do so. Otherwise, the next Meeting will be organised in September 2023. ICAO Secretariat will share a Doodle poll to finalize the final date with contributors and task leads after SWIM TF/7. **ACTION ITEM TL-3-6**
- ✓ The Meeting was informed that a two-day **SWIM Business Requirement brainstorming In-Person Working Session** followed by a **two-day SWIM TF Interim In-Person Meeting** to progress the drafting of APAC SWIM documents before SWIM TF/8 in 2024 are planned to be organised in **November 2023**. **ACTION ITEM TL-3-7**

Minutes of the meeting of Joint CRV OG Experts and SWIM TF TLs meeting: 28 October 2022 08:00 AM-10:00 AM BKK time

Meeting Date: 09/28/2022 08:00 AM

Location: Microsoft Teams Meeting

Notes:

The meeting was moderated by Dr. Amornrat Jirattigalachote, Strategic Planning Manager (Engineering), Policy and Strategy Management Bureau of AEROTHAI. Mr. Vaughan Hickford, Team Leader Network Design, Airways New Zealand, Co-Chair (Asia) represented CRV OG expert group team. Ms. Soniya Nibhani, Regional Officer ANS (CNS) Implementation, ICAO Asia and Pacific Regional Office, acted as the secretary of the meeting.

Agenda Item 1: Welcome & Opening remarks

1. Dr. Amornrat Jirattigalachote, SWIM TF Co-Chair, Ms. Kristin Cropf, SWIM TF Co-Chair, Mr. Vaughan Hickford, CRV OG Co-Chair (Asia), and Mr. Kelepi Dainaki, CRV OG Co-Chair (Pacific) welcomed all delegates and shared opening remarks.
2. The presentation used to moderate the meeting is attached herewith for detailed information:



SWIM and CRV Joint
Meeting_28 October_

Agenda Item 2: SWIM principally over CRV

- SWIM Infrastructure
 - SWIM TI Interface Binding
 - The Use of the Internet for MET Information Services in Regional SWIM architecture
3. Task 2 lead shared the detailed about SWIM Infrastructure and SWIM TI Interface binding. He shared global, regional, and local requirements and challenge for SWIM Infrastructure and what should we do as the next step. Additionally, he informed about the efficient collaborative way to promote regional SWIM implementation.
 5. He informed about International Aviation Trust Framework (IATF) and the Trust System Panel recently implemented to promote trust framework. He added that JCAB, Aero Thai, and FAA had joint demonstration for PKI-based security service last year in ICAO APAC SWIM workshop held from 6-7 July 2021.

Agenda Item 3 SWIM TF/6 Action Items related to CRV OG
Agenda Item 4 PCCW Console Connect Aviation Platform

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MOM of Joint Meeting of CRV OG Ad-hoc Expert and SWIM TF Task Leads
28 October 2022, Video Tele-Conference (VTC)

6. Various action items resulted from the past SWIM TF meetings related to CRV OG and PCCWG Console connect aviation platform including PKI management were discussed.
7. It was deliberated that PCCWG can connect to any of other entities but while it come to CRV, it should come through GRE tunnel.
8. Mr. Vaughan explained that use of firewall is recommended but not mandated in CRV. If we mandate the use of firewall by any users joining CRV, we need to specify types of firewall, specification, quality, level of firewall, etc., which are complicated. Currently security is built on trust that States are using good security protocols. However, how can we prove that security measure are appropriate is a question. Security audit may be an option but entering external entities into State security environment may be an issues. Consequently, without trust framework it may be difficult. ICAO Secretariat will include **the mandate of firewall discussion** agenda in the next agenda items of CRV OG ad-hoc expert group. **ACTION ITEM 1-1.**
9. Meeting agreed to have the next joint group meeting any day in the **third week of February 2023** to discuss in more detailed about network binding and how SWIM TF and CRV OG will collaborate **from 20 February- 24 February 2023**. ICAO Secretariat will share doodle to finalize the final date with contributors and task leads. **ACTION ITEM 1-2**
10. Mr. Hoang Tran requested SWIM TF to consider governance of the SWIM considering future traffic conditions which was noted by SWIM TF.

Minutes of the Meeting of Joint CRV OG Experts and SWIM TF TLs Meeting: 22 February 2023 08:00 AM-10:00 AM BKK time

Meeting Date: 02/22/2022 08:00 AM

Location: Microsoft Teams Meeting

Notes:

Dr. Amornrat Jirattigalachote, SWIM TF Co-Chair, moderated the Meeting.

Agenda Item 1: Welcome & Opening remarks

1. Dr. Amornrat Jirattigalachote, SWIM TF Co-Chair, Ms. Kristin Cropf, SWIM TF Co-Chair, Mr. Vaughan Hickford, CRV OG Co-Chair (Asia), and Mr. Kelepi Dainaki, CRV OG Co-Chair (Pacific) welcomed all delegates and shared opening remarks.
2. The presentation used to moderate the Meeting is attached herewith for detailed information:



SWIM and CRV Joint
Meeting_ENRI230222

Agenda Item 2: SWIM principally over CRV

- SWIM Infrastructure
- SWIM TI Interface Binding
- The Use of the Internet for MET Information Services in Regional SWIM architecture

Agenda Item 3 SWIM TF/6 Action Items related to CRV OG

Agenda Item 4 PCCWG Console Connect Aviation Platform

3. The Meeting further discussed options to ensure interoperability in regional SWIM infrastructure through the use of interface binding. Task 2 lead shared more details about the user-based and SWIM-based access and a proposal on technical specifications for different layers of SWIM TI interface bindings, i.e. service binding, network binding, and infrastructure binding.
4. PCCWG provides two alternatives for stakeholders to be on board regional SWIM: (i) to connect ANSP's own SWIM TI to CRV, and (ii) for non-ANSP Users to connect through PCCWG Console Connect platform. A list of questions the Task 2 Lead raised related to the PCCWG Console Connect platform was shared with PCCWG, for which replies were received. PCCWG informed by email that AMHS over CRV and SWIM over CRV would use the same CRV physical network. The Meeting noted that SWIM doesn't divide ANSP users or Non-ANSP users.
5. Task 2 lead shared a concern about the limited capability of CRV having only 2 Mbps bandwidth package options available. He informed that SWIM may impose a higher bandwidth requirement. CRV OG Co-Chairs shared that 2 Mbps packages were based on use cases of AMHS, AIDC, and G/G voice communication. The discussion with PCCWG can be done to increase the bandwidth in the future. The meeting also noted that multiple CRV service packages with different service level requirements, e.g. availability, are currently available.

SWIM TF/7
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6. The Meeting noted that the separation between the PCCWG Console Connect platform and the CRV network is **logical**. CRV OG Co-Chair (Asia) shared that the Console Connect platform, which is implemented on the PCCW's network, is connected to the CRV, i.e. part of PCCWG backbone network. With such architecture, SWIM traffic would be able to be transmitted/consumed regardless of where it comes from, either through the Internet or the point-to-point circuit on CRV. ICAO Secretariat will share the following questions with PCCWG, and the answers will be discussed in the following joint Meeting: **ACTION ITEM 2-1**
 - PCCWG to provide more details about the technical specifications of infrastructure to support the interconnection between CRV users and the PCCWG Console Connect platform users.
 - Will there be a different GRE tunnel for AMHS data and SWIM data?
 - Are there two access points, i.e. one access point for AMHS and one access point for SWIM?
 - If an ANSP have the capability to support both AMHS and SWIM, can a single access point be provided?
 - Assuming that an ANSP has already connected to CRV - If an ANSP wishes to use their own EMS rather than connecting through the Console Connect platform, how will they be able to connect their EMS to CRV and share the data? Will there be additional cost, apart from the cost for CRV connection already paid, for such ANSP to do so?
 - As per the discussion at SWIM TF/6, it was understood that PCCWG Console Connect platform does not impose any bandwidth limitations. In such case, how will the CRV network, a physical layer where the Console Connect platform will connect to CRV users, handle the data in a 2 Mbps package?
 - Will AHMS/SWIM gateway be provided by CRV service provider (PCCWG)?
 - If AMHS service provider and/or other service provider provide AHMS/SWIM gateway, can it be integrated into CRV?
 - Can an ANSP use their own AMHS/SWIM gateway together with their own SWIM TI services and connect to CRV for their SWIM implementation?
 - Does the State/Administration need to sign another agreement if they are CRV users and wish to use AHMS/SWIM gateway if PCCWG is going to provide one?
5. Additionally, the Task 2 lead will share follow-up questions to the answers to the questions shared by PCCWG. **ACTION ITEM 2-2**
6. APAC SWIM TI architecture will consider cost and be open to low-cost options such as the internet.
7. The Meeting discussed potential bandwidth requirements of SWIM traffic. It was shared that estimating the required bandwidth is difficult at this stage while committing to low-cost, high-performance SWIM services. Task 2 lead will consider evaluating bandwidth requirements to communicate with CRV OG. **ACTION ITEM 2-3**
8. To assist in assessing bandwidth requirements, ICAO Secretariat will help coordinate with AAITF to understand their plan to disseminate aeronautical information in SWIM environment. **ACTION ITEM 2-4**

SWIM TF/7

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9. The Meeting noted that PKI is not being discussed in CRV OG. However, CRV is deliberating different security-related matters such as the mandate of firewall per user, its specification, ToR for audit of CRV network security and documentation, guidance on security, etc. At this time, security is the responsibility of individual States based on the respective ANSP's security framework.
10. ICAO Secretariat will invite the SWAMWAY study group to present AMHS/SWIM Technical Specification to SWIM TF/7. **ACTION ITEM 2-5**
11. The Meeting agreed to have the next joint group Meeting any day on **22-23 June 2023**. The ICAO Secretariat will share doodle to finalize the date with CRV OG experts, SWIM TF contributors, and task leads. **ACTION ITEM 2-6**