INTERNATIONAL CIVIL AVIATION ORGANIZATION

REPORT
OF
THE EIGHTH MEETING OF THE ASIA-PACIFIC SWIM TASK FORCE
(SWIM TF/8)

Bangkok, Thailand

8 – 10 November 2023

The views expressed in this Report should be taken as those of the Meeting and not the Organization

Approved by the Meeting and published by the ICAO Asia and Pacific Office, Bangkok

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PART I – HISTORY OF THE MEETING

1. Introduction

1.1 The Eighth Meeting of the System Wide Information Management Task Force (SWIM TF/8) was held from **8 to 10 November 2023** in ICAO Asia and Pacific Regional Office, Bangkok, Thailand.

2. Attendance

2.1 The Meeting was attended by **79** participants from **15** States/Administrations, 3 International Organizations and **1** telecommunication service provider, including Australia, Cambodia, China, Hong Kong-China, India, Indonesia, Japan, Malaysia, New Zealand, the Republic of Korea, Singapore, Sri Lanka, Thailand, USA, Vietnam, CANSO, IATA, ICAO and PCCW Global. The list of participants is provided in **Attachment 1.**

3. Opening of the Meeting

3.1 Dr. Amornrat Jirattigalachote, Strategic Planning Manager (Engineering), Policy and Strategy Management Bureau of AEROTHAI, Co-Chair of the SWIM Task Force, and Ms. Kristin Cropf, SWIM Program Manager, Federal Aviation Administration (FAA), Co-Chair of the SWIM Task Force opened the Meeting. Dr. Amornrat Jirattigalachote warmly welcomed all participants and expressed her appreciation to Member States/Administrations and International Organizations for the continuous support for the work of the SWIM Task Force and ICAO regional activities. She also shared gratitude to all Task Leads for supporting the SWIM Task Force and doing tremendous work. Additionally, she briefly explained the significant discussion to be held in the Meeting and the benefits of enhancing the Task Force's leadership with regional views to better deal with the challenges and progress the implementation of Asia/Pacific regional SWIM.

3.2 Ms. Kristin Cropf, SWIM Program Manager, Federal Aviation Administration (FAA), Co-Chair of the SWIM Task Force, also extended her warm welcome to all participants and expressed appreciation to the ICAO APAC Office for organizing the Meeting in Bangkok, Thailand. She shared the significance of SWIM implementation for improving capacity and efficiency and requested contributions from experts in various tasks.

4. Officers and Secretariat

4.1 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), co-chaired the Meeting.

4.2 Ms. Soniya Nibhani, Regional Officer ANS (CNS) Implementation, acted as the Secretary of the Meeting with the support of Ms. Zhong Wenhan, Regional Officer CNS, and Ms. Varapan Meefuengsart, the Programme Assistant, from ICAO Asia and Pacific Regional Office.

5. Organization, Working Arrangements, Language and Documentation

5.1 The SWIM TF/8 met as a single body during the Meeting. The working language for the Meeting was English, inclusive of all documentation and this Report. The Meeting considered **Eight (8)** Working Papers, **five (5)** Information Papers, and **one (1)** presentation under its four agenda items. A List of Working Papers, Information Papers, and other resources is provided in **Attachment 2**.

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PART II – REPORT OF AGENDA ITEMS

Agenda Item 1: Adoption of agenda

Adoption of Agenda - Sec (WP/01)

1.1 The provisional agenda items presented in WP/01 were adopted as the agenda for the Meeting.

Agenda Item 2: Development of Asia/Pacific Regional SWIM Implementation Guidance

Proposal of Technical Memorandum of Cooperation (TMC) Document for ATM Information Exchange through SWIM – Malaysia (WP/02)

2.1 Malaysia presented the proposal to develop the SWIM Technical Memorandum of Cooperation (TMC) for ATM Information Exchange in response to Action Item SWIM/TF/SIPG/AI-05 from the SWIM Implementation Pioneer Ad-Hoc Group (SIPG) Meeting for potential inclusion in the APAC SWIM Implementation Guidance material. It was informed that, as the SWIM implementation is nearly similar to the AMHS/ATN implementation philosophy, the draft SWIM TMC clauses were drafted based on the AMHS/ATN TMC clauses. Malaysia added that as the technicality of SWIM implementation is very different compared to AMHS/ATN implementation, the test procedures specific to SWIM needed to be established to generate supporting information, which will be attached to the SWIM TMC document. It was suggested that the test procedures should be created independently from the SWIM TMC and should also become part of the ICAO APAC SWIM Implementation Guidance Document (ICAO APAC SWIM IGD).

2.2 Thailand supported the preparation of the draft TMC template. However, Thailand shared that, considering the current status of SWIM implementation within the region, it was still premature to adopt the use of TMC at this stage. It was also added that, based on Thailand's experience in implementing AMHS TMC, signing TMC is a critical and lengthy process and it should be executed once bilateral operations of information exchange over SWIM are ready. New Zealand shared that there is a need to consult with the legal experts of respective States before adopting the TMC at the Meeting. Singapore informed that the objective of Action Item SWIM/TF/SIPG/AI-05 was to provide a TMC template but not to initiate agreement on its usage for the time being. The Meeting was informed that the document is only a template presented for further revision by SWIM TF. The finalized template will be part of the ICAO APAC SWIM IGD, which will then be presented for adoption by SWIM TF and, consequently, endorsement by CNS SG in the future. States/Administrations will have an opportunity to review and provide their feedback before such adoption and endorsement.

2.3 The Meeting noted needs raised by some States/Administrations for consultation with their respective legal experts and for discussion with their relevant stakeholders on the scope of the proposed TMC template, which covers the sharing of ATM information. Considering that these consultation and discussion processes take time, the Meeting thus agreed to defer consideration of the proposed Draft Decision to the **SWIM TF/9** Meeting to be held from **13-17 May 2024**. **ACTION ITEM 8-1** To achieve this target, the Meeting requested all States/Administrations to conduct the required deliberation among their related stakeholders and provide feedback to the draft TMC template document, **Appendix A** to the Report, to the ICAO Secretariat **before 29 February 2024. ACTION ITEM 8-2**

Updates of APAC SWIM Technical Infrastructure Profiles – Japan (WP/03)

2.4 Japan, Task 2 Lead, presented the updated draft of the APAC SWIM Technical Infrastructure Profiles document incorporating comments received from SWIM TF task leads and members after the SWIM TF/7. The modifications done on the previous draft version presented at the SWIM TF/7 were highlighted and the future plans were also shared.

2.5 Singapore shared a list of comments on the draft APAC SWIM TI Profiles document. The Meeting reviewed and discussed each comment. **Appendix B** of the Report provides the outcome of discussion on each comment. For comments considered being able to be addressed by editorial changes, Task 2 Lead will take action to revise the draft document as agreed by **15 December 2023. ACTION ITEM 8-3**

2.6 For some of the comments required further deliberation among other related stakeholders and experts within States/Administrations, the Meeting agreed on the following action items to obtain feedback for additional modifications, if needed, to the draft APAC SWIM TI Profiles document.

Action Item Reference No	Reference to the draft APAC SWIM TI profile document	Action Item	Deadline
ACTION ITEM 8-4	Table 3. Profile Package of SDCM Version 3.0.0	States/Administrations to review SDCM Version 3.0.0 and inform Task 2 Lead, Japan, of: • Comments/observations on the current draft content of this Table 3; and • Requirements for additional mandatory fields, if any.	**15 December 2023**
ACTION ITEM 8-5	Table 9. Message Capabilities Table 11. TI Management Capabilities	States/Administrations to provide Task 2 Lead with: • Feedback on whether "Persistence" should be included as part of Message Capabilities (Table 9) or TI Management Capabilities (Table 11) or both (Tables 9 and 11); • Comments on the description of "Persistence."	**15 December 2023**

2.7 The Meeting requested the ICAO Secretariat to share the revised document after the Task 2 Lead finishes revision work in December 2023, with the Task 5 group and SIPG of the SWIM TF as well as CRV OG for further deliberation. **ACTION ITEM 8-6**

2.8 In response to the clarifications about the term *limited capabilities of CRV*, Task 2 lead notified that the current available CRV subscription packages come with limited bandwidth and that there is a user type restriction to join CRV. ICAO Secretariat informed that CRV OG has already modified the definition of CRV users to include also others who are not ANSPs and that the non-ANSP users can join CRV following the procedure described in the CRV OG Operations Manual. PCCWG, the current CRV provider, shared that CRV has no bandwidth limitation. CRV users subscribing to any available packages can request more bandwidth at an additional cost based on their needs. The Meeting agreed to submit the request, through the ICAO Secretariat, to CRV OG to consider deliberating the enhancement of CRV bandwidth and the cost optimization associated with supporting operational SWIM implementation over CRV. **ACTION ITEM 8-7**

Progress Update by S3TIG for the Joint Event of SWIM Demonstration over CRV and Surveillance Sharing in SWIM Trial – Hong Kong China (WP/06)

2.9 The paper presented the progress update of the joint event of SWIM Demonstration over CRV and Surveillance Data Sharing in the SWIM Trial (the Joint Event). The Meeting noted that the survey questionnaire prepared by SURSG/3 was shared with States by the ICAO APAC Office on 12 June

2023. A total of 16 questionnaire responses were received from 8 States to participate as surveillance data contributors and/or consumers, while 7 States were observers. The summary of the progress made between June-October 2023 to prepare for the Joint Event was also presented. It was highlighted that the surveillance data to be shared in the Joint Event will be mainly ADS-B data and the surveillance data payload will be in both ASTERIX and JSON formats. Additionally, the Meeting noted that to increase the appeal of the Joint Event and to promote SWIM, a self-service and purpose-built platform to support aviation community users is being explored for incorporation into the Joint Event, subject to availability and technical readiness. The Meeting was requested to provide input on future/potential SWIM services/applications for the Joint Event.

2.10 Sri Lanka and Vietnam expressed interest in joining the Joint Event as observers. In this regard, Hong Kong China, the Lead of Joint Event preparation, will share the survey questionnaire with Sri Lanka and Vietnam to collect the details of their interest in the level of participation.

Proposal of Regional Candidate Standard for Service Discovery - Governance Task (WP/07)

2.11 The paper proposed the SWIM Discovery Service (SDS) specification as a candidate standard for the APAC region. In SWIM TF/7, the SDS implementation specification document, authored by the FAA, was proposed as the regional specification to enable interoperable service discovery across the APAC region. To follow up on the suggestions from SWIM TF/7 to review and reproduce the document to accommodate the purpose and requirements of the APAC region, discussions were made in the governance task group.

2.12 The paper suggested that, as APAC SWIM is also part of the ICAO's larger initiative, the global aspect of service discovery should be considered rather than a regional scope. The Meeting was requested to request the Information Management Panel (IMP) to consider adopting the SDS as a global standard for globally interoperable service discovery, ask the FAA to confirm the license agreement of the SDS specification document, and request SWIM TF to position the SDS specification as a candidate standard of APAC SWIM for adaptation and keep in the loop for updates to the specification.

2.13 After detailed deliberation on the need for global standards on SDS, the following **Draft Decision** were adopted by SWIM TF/8 for CNS SG/28 and APANPIRG/35 consideration:

<table>
<tr><td colspan="3">Draft Decision SWIM TF/08/01 Adoption of SWIM Discovery Service as a Global Standard for Globally Interoperable Service Discovery</td></tr>
<tr><td colspan="2">What: To propose to the Information Management Panel (IMP) to consider adopting the SWIM Discovery Service (SDS) as a global standard for globally interoperable service discovery.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: Considering that Asia/Pacific regional SWIM will also be part of global SWIM and that SDS was studied and tested by the SWIM TF, the consideration of IMP on the possible adoption of SDS as a global standard is required to ensure cross-regional interoperability of SWIM service discovery,</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 10-Nov-23</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☐APAC States ☒ICAO APAC RO ☒ICAO HQ ☒Other: SWIM TF</td></tr>
</table>

2.14 Considering the current job card of the IMP regarding SWIM Service Registry Interoperability, specifying 2026 as the expected timeline for deliverable, the Meeting requested the IMP members within Asia/Pacific to consider presenting the SDS to the respective working groups under IMP, i.e., Governance Working Group and Information/Services Working Group, for further deliberation. **ACTION ITEM 8-8**

2.15 After thorough discussion and careful consideration of the need to have a candidate baseline standard for SDS to support Asia/Pacific SWIM implementation within the 2024-2030 target implementation timeframe, the following **Draft Decision** were adopted by SWIM TF/8 for CNS SG/28 consideration:

<table>
<tr><td colspan="3">Draft Decision SWIM TF/08/02 Candidate Baseline SWIM Discovery Service Standard for Asia/Pacific</td></tr>
<tr><td colspan="2">What: To position the SWIM Discovery Service (SDS) specification as a candidate baseline standard for Asia/Pacific SWIM implementation.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: A candidate baseline standard for SDS is needed to support Asia/Pacific SWIM implementation within the regionally-agreed target implementation timeframe of 2024-2030.</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 10-Nov-23</td><td colspan="2">Status: Draft to be adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☐APAC States ☐ICAO APAC RO ☐ICAO HQ ☐Other: SWIM TF</td></tr>
</table>

2.16 The Meeting noted that once IMP adopts the SDS as a global standard for globally interoperable service discovery, there will be no requirement to request the FAA to confirm the license agreement of the SDS specification document.

Proposed Business Functionality of APAC Common Swim Information Services and the Information to be Exchanged – Hong Kong China (WP/08)

2.17 The paper presented the updates on the work of the SWIM TF Task 6 group to prepare the catalog of basic data elements to be shared and exchanged via APAC SWIM and propose business functionality to be supported by APAC Common SWIM Information Services for addressing the operational needs in APAC. With suggestions on the additional potential list of information from the SWIM TF/7 meeting, the revised data catalog was shared for further consideration by the Meeting, which included information to be exchanged via APAC Common SWIM Aeronautical Information Services, Flight Information Services, Meteorological information services, and Surveillance Information Services. Furthermore, the draft list of the business functionality of APAC Common SWIM Information Services was developed and introduced. The Meeting was requested to review the proposed data catalog and the list of proposed business functionality of APAC Common SWIM Information Services and provide inputs and comments for further refinement.

2.18 The Meeting reviewed the data catalog and suggested adding *filed trajectory* and *desired trajectory* to the data catalog under Flight Information Services. Regarding business functionality, the Meeting suggested adding *GUFI Service* to the initial APAC Common SWIM Information Services list. Additionally, it was recommended to modify the **flight plan service** to **FF-ICE Filing Service** to align with FF-ICE services as identified in ICAO FF-ICE provisions. The Meeting requested States/Administrations to provide suggestions on additional information, if any, that should be exchanged through APAC Common SWIM Information Services to Task 6 before **15 December 2023** through an email to Task 6 Lead, Mr. Marco KOK, at mhkok@hko.gov.hk. **ACTION ITEM 8-9**

2.19 The Meeting also agreed to review the list of proposed business functionality of APAC Common SWIM Information Services provided in the following Table and provide inputs and comments for further refinement by filling out the online voting for proposed APAC Common SWIM Information Services accessible via this link before **15 December 2023**. **ACTION ITEM 8-10**

Domain	Business functionality of the service	Type of information/data to be exchanged	Information Exchange Model	Message exchange pattern (Pub/Sub and/or Req/Reply?)	Minimum Set (Mandatory / Optional?)
Aeronautical	Airspace management service	Restricted area, danger area, airspace availability, search and rescue area	AIXM	TBD	M / O
Aeronautical	Airspace feature service	FIR/UIR boundaries, waypoints, enroute ATS routes, SIDs and STARs, navaids, procedures, aerodrome location	AIXM	TBD	M / O
Aeronautical	Aerodrome feature service	Runways, movement areas, aerodrome services, navaids, instrument landing systems, other aerodrome facilities	AIXM	TBD	M / O
Aeronautical	Digital NOTAM distribution service	Digital NOTAM	AIXM	TBD	M / O
Aeronautical	Runway Condition Report service	Global Reporting Format (GRF) for runway surface conditions	AIXM	TBD	M / O
Aeronautical	ATIS distribution service	Terminal information	TBD	TBD	M / O
Flight	ATFM/A-CDM integrated service	CTOT, CTO, TTOT, TSAT, etc.	FIXM	TBD	M / O
Flight	Flight status change notification service	DLA, ARR, DEP, CNL messages	FIXM	TBD	M / O
Flight	Trajectory update service	Updated flight plan	FIXM	TBD	M / O
Flight	Flight plan filing service	Flight plan for registration	FIXM	TBD	M / O
Flight	Flight plan distribution service	Flight plan for publication	FIXM	TBD	M / O
Flight	Trial request service for FF-ICE	Proposed changes in a flight plan	FIXM	TBD	M / O
Flight	Flight plan status request service for FF-ICE	Current status of a flight plan	FIXM	TBD	M / O

Domain	Business functionality of the service	Type of information/data to be exchanged	Information Exchange Model	Message exchange pattern (Pub/Sub and/or Req/Reply?)	Minimum Set (Mandatory / Optional?)
Flow	Traffic flow status service	Demand and constraints, ATFM measures, ATFM daily plan	TBD	TBD	M / O
MET	Aerodrome observation	As specified in Annex 3 (METAR and SPECI)	IWXXM	TBD	M / O
MET	Aerodrome forecast	As specified in Annex 3 (TAF)	IWXXM	TBD	M / O
MET	WAFS grid point forecast	As specified in Annex 3	Gridded format (e.g. NetCDF)	TBD	M / O
MET	WAFS significant weather (SIGWX) forecast	As specified in Annex 3	IWXXM	TBD	M / O
MET	QVA grids point forecasts including probabilities	As specified in Annex 3	Gridded format (e.g. NetCDF)	TBD	M / O
MET	QVA objects	As specified in Annex 3	IWXXM	TBD	M / O
MET	Volcanic Ash Advisory	As specified in Annex 3	IWXXM	TBD	M / O
MET	Volcano Observatory Notice for Aviation (VONA)	As specified in Annex 3	IWXXM	TBD	M / O
MET	Tropical Cyclone Advisory	As specified in Annex 3	IWXXM	TBD	M / O
MET	Space Weather Advisory	As specified in Annex 3	IWXXM	TBD	M / O
MET	SIGMET information	As specified in Annex 3	IWXXM	TBD	M / O
MET	AIRMET information	As specified in Annex 3	IWXXM	TBD	M / O
MET	Special Air Report (ARS) / Pilot Report (PIREP)	As specified in Annex 3	TBD	TBD	M / O
MET	Satellite image service	Satellite derived information (e.g. convection)	Gridded format (e.g. NetCDF)	TBD	M / O
MET	Weather radar image service	Reflectivity to visualize the intensity of convection	Gridded format (e.g. NetCDF)	TBD	M / O
Surveillance	Surveillance data sharing service	Position, altitude, ground speed track angle, call sign, Mode S address, data quality, Mode S DAP	ASTERIX Cat 21 (payload in JSON or RAW format)	TBD	M / O

2.20 During the Meeting, a total of **26** responses to the online voting were received. The preliminary results of the received responses, **Appendix C** of the Report, were shared by Hong Kong

China with the Meeting. As the responses were only the initial ones, it was agreed that States/Administrations would share the link of online voting for proposed APAC Common SWIM Information Services with related experts within their States/Administrations to support the collection of a more comprehensive result to be used as an input for identifying and further refining the first version of APAC Common SWIM Information Services list. ICAO Secretariat will share a reminder before **17 November 2023** to all States/Administrations to distribute the link to related experts within their States/Administrations. **ACTION ITEM 8-11**

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

Update of the work done by the SWIM Implementation Pioneer Group – Singapore (WP/04)

3.1 The paper presented the work done by the SWIM Implementation Pioneer Ad-Hoc Group (SIPG) since the SWIM TF/7 Meeting in May 2023 to develop and deploy a prototype/initial version of the regional SWIM by June 2024. The Meeting noted that, as of 30 October 2023, the SIPG met six times via web conferences and derived a series of goals that needed to be accomplished to develop the regional SWIM prototype. A work program and timeline were prepared, considering the timeline and objectives of the joint SWIM over CRV demonstration and the S3TIG Surveillance Sharing over SWIM trial.

3.2 The Meeting noted that the work progress has not gone according to plan and urgent action is required to ensure that the goals of having a regional SWIM prototype by the SWIM TF/9 meeting as well as the SWIM infrastructure to support the joint event can be achieved. As such, it was proposed that the SIPG postpone some of the activities in the timeline to a later date and focus on the activities that directly contribute to the demonstration and trial so that the Q1/2024 target timeline of this joint event can be met. However, it also means that, to complete all the identified activities, the work of the SIPG will likely extend beyond the SWIM TF/9 meeting.

3.3 The Meeting deliberated the work programme and timeline presented in the paper and agreed to adopt a hierarchy approach for EMS architecture as presented in WP/05. The Meeting noted that, based on the received questionnaire responses as presented in WP/06, **nine States/Administrations**, including **Australia, China, Hong Kong China, Japan, India, Malaysia, the Republic of Korea, Singapore, and Thailand,** would provide EMS for the joint event.

3.4 The discussion on the selection of gateway EMS in the hierarchy approach was initiated and the following initial criteria for the selection of gateway EMS provider were formulated.

- Gateway EMS provider must already have a pseudo-CRV installed.
- Gateway EMS providers must have EMS ready for deployment.
- Gateway EMS provider must be able to configure their EMS to process message headers to be agreed upon.
- Gateway EMS providers must have the capability to support the message routing for edge EMS.

3.5 The Meeting agreed that the nine States above would assess their readiness against the criteria mentioned above and share their willingness to be gateway EMS providers to the ICAO Secretariat before **22 November 2023**. **ACTION ITEM 8-12**

3.6 Based on the responses received, the EMS-to-EMS connection strategy will be discussed at the next SIPG/S3TIG meeting to be held via video teleconference on **27 November 2023**. It was also agreed that the performance requirements for gateway EMS and edge EMS for the purpose of supporting the joint event will be deliberated at the next SIPG/S3TIG meeting. **ACTION ITEM 8-13**

3.7 The Meeting discussed and agreed on the following tasks, identified as high priority, together with the respective timelines.

Timeline	Task	Task owners
November 2023	EMS-EMS connection test over Pseudo CRV	India, Malaysia, ROK, Singapore, and Thailand
December 2023	Identify gateway EMS providers and edge EMS provider	SIPG/S3TIG
January 2024	Gateway EMS-Edge EMS connection test	All participating States/Administrations of the joint event
February 2024	Edge EMS-Edge EMS message test	All participating States/Administrations of the joint event
March 2024	Scenario test and dry run	All participating States/Administrations of the joint event

3.8 The Meeting suggested that SIPG/S3TIG may continue to work on developing message headers and metadata in parallel with conducting the November 2023-January 2024 tasks stated above. It was also agreed to review the status of the re-prioritized work on **22 December 2023** to finalize the date of the joint event to be hosted by Hong Kong China so that an invitation letter can be issued in advance to prepare the on-site joint event. **ACTION ITEM 8-14**

Proposal for detailed Enterprise Messaging Service architecture and its impact on the use of message headers – Japan, Singapore, and Thailand (WP/05)

3.9 The paper presented and described three proposals, i.e., a decentralized approach, a centralized approach, and a hierarchy approach, for a detailed EMS architecture. For each proposal, the need for the use of message headers and metadata for message routing was shared. Comparing the pros and cons of the decentralized approach, centralized approach, and hierarchy approach, the Meeting noted that the hierarchy approach avoids the issue of having a single point of failure present in the centralized approach while at the same time avoiding the case of a very complex topology in the decentralized approach.

3.10 The Meeting discussed the similarity of the hierarchy approach and the BBIS/BIS architecture being followed in ATN in the APAC region. After a detailed discussion on the pros and cons of the proposed three approaches, the Meeting adopted the hierarchy approach for the detailed EMS architecture as the approach for APAC regional SWIM implementation. Additionally, as the hierarchy approach would require message headers to route messages, SIPG was requested to undertake the task of defining the message header format and contents. **ACTION ITEM 8-15** It was also discussed that, once SIPG delivers the message headers format and contents, SWIM TF may consider proposing this message header deliverable and sharing lessons learned to the IMP for further consideration to develop global deliverable to support the inter-regional message routing. **ACTION ITEM 8-16**

3.11 The Meeting encouraged States/Administrations to join the SIPG as it will be an excellent opportunity to learn from other group members and, in turn, will contribute to the implementation of SWIM in their respective States/Administrations. Moreover, increased participation will also allow for a broader range of views within the region to be obtained and addressed early on while the group builds a regional SWIM prototype. Sri Lanka and Vietnam shared the intention of joining the SIPG.

SWIM Implementation Progress in Malaysia (IP/02)

3.12 The paper presented the progress of SWIM implementation activities in Malaysia. The Meeting was introduced about the background and history of SWIM implementation in Malaysia, its current activities, and the plan envisaged in the SWIM Malaysia Roadmap. Malaysia also highlighted

essential milestones in the implementation and its outcomes regarding regional and global objectives. The Meeting was informed that Malaysia is committed to becoming one of the pioneering states to adopt SWIM in its ATM information exchange paradigm. The Meeting complimented Malaysia on its progress in its SWIM implementation.

SWIM Implementation Plan in Japan (IP/03)

3.13 The paper presented information about the implementation plan of SWIM in Japan. The Meeting noted that the implementation plan of SWIM in Japan is based on the discussions and decisions made by the "SWIM Introduction Study Group" established in 2018 and the "Collaborative Actions for Renovation of Air Traffic Systems" (CARATS), which is a study group consisting of representatives from industry, academia, and government, and aiming for the start of operation in the first quarter of 2025. It was shared that, as part of an information sharing and management system, a new system called MASS (Messaging-system for ATM as SWIM Service) is being developed. This system is also part of the Integrated Air Traffic Control Data Processing System. Additionally, the Japan Civil Aviation Bureau (JCAB) plans to provide new information services based on the SWIM concept. The Meeting noted that currently, Japan is planning to initiate SWIM operations and proceeding with consideration of governance with related parties, including airlines, etc., at the Preparatory Meeting for SWIM, and will continue to take appropriate measures to respond to the increase in new SWIM users.

Implementation Status of Surveillance Messaging Service for S3TIG Demonstration – ROK (IP/04)

3.14 The paper presented the Republic of Korea (ROK) implementation status of the surveillance messaging service for the S3TIG demonstration. The Meeting was informed that the ROK joined the S3TIG demonstration as an information service provider and will provide real-time surveillance (scenario #1) and MET information (scenario #2) during the demonstration. The latest implementation status to support scenarios for the S3TIG demonstration was also shared.

ICAO Meteorological Information Exchange Model (IWXXM)-Based MET Scenario for S3TIG Demonstration – ROK (IP/05)

3.15 The paper presented a proposed scenario for the IWXXM-based MET information exchange using the SWIM messaging service to be conducted during the S3TIG demonstration. The topology, defined messaging headers, payload, and examples of each MET information type of this scenario were explained in detail. SWIM TF Co-Chair suggested utilizing the latest version of IWXXM, IWXXM version 2023-1, rather than IWXXM 2.0. In this regard, Hong Kong China shared that the information exchange model version to be supported by demonstration participants depends solely on the participant’s decision. It was also added that demonstrating the use of different versions may be beneficial to showcase the interoperability.

Agenda Item 4: Next Meetings and Any Other Business

Date and Venue for the Next Meeting

4.1 As agreed in the SWIM TF/7 Meeting, the Meeting agreed to conduct the full plenary (Four (4) days) of the **SWIM TF/9 Meeting** along with **another SWIM activity for one day**. The tentative agreed dates of the SWIM TF/9 and SWIM activity are **13-17 May 2024**. The Meeting suggested that if a Member State wishes to host a SWIM TF/9 Meeting, they should inform the ICAO Secretariat at least 4-6 months in advance to issue the invitation package accordingly.

4.2 In closing the Meeting, the Co-Chairs and ICAO Secretariat thanked all participants for their active participation in the Meeting and valuable contributions to the work programme of the SWIM TF and extended their invitation to the next SWIM TF Meeting.

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THE EIGHTH MEETING OF THE ASIA-PACIFIC SWIM TASK FORCE (SWIM TF/8)
Attachment 1 to the Report

LIST OF PARTICIPANTS

	STATE/NAME		TITLE/ORGANIZATION	E-MAIL	ATTENDANCE	
					BRAINSTORM SESSION	MEETING
1.	**AUSTRALIA (1)**					
	1.	Mr. Brent Flohr	Enterprise Architect Information, Airservices	brent.flohr@airservicesaustralia.com;	✓	✓
2.	**CAMBODIA (5)**					
	2.	Mr. Peou Vuthy	Chief of Standard of AIS/ANSSD, State Secretariat of Civil Aviation – Cambodia	ansops_ssca@yahoo.com;	✓	✓
	3.	Mr. Bunkong Nov	Senior Manager, Procedure Design and Airspace Development, Cambodia Air Traffic Services	bunkongn@cats.com.kh;	✓	✓
	4.	Mr. Sivarak Chutipong	Director of Technical Development, Cambodia Air Traffic Services	sivarakc@cats.com.kh;	✓	✓
	5.	Mr. Prarinya Paiboolpoonpol	Engineer, Cambodia Air Traffic Services	Prarinya.p@cats.com.kh;	✓	✓
	6.	Mr. Khorn Vannak	Senior Manager, ATM Development	vanakk@cats.com.kh;	✓	✓
3.	**CHINA (2)**					
	7.	Ms. Honglei Gao	Senior engineer, ATMB of CAAC	hlgao_atmb@foxmail.com;	✓	✓
	8.	Mr. Lisi Su	Senior Engineer, SWATMB of CAAC	slslsl13@163.com;	✓	✓
4.	**HONG KONG, CHINA (5)**					
	9.	Mr. Peter Michael Chadwick	ATC Specialist (Evaluation), Civil Aviation Department, Hong Kong China	pmchadwick@cad.gov.hk;	✓	

	STATE/NAME		TITLE/ORGANIZATION	E-MAIL	ATTENDANCE	
					BRAINSTORM SESSION	MEETING
	10.	Mr. Henry Chan	Electronics Engineer, Civil Aviation Department, Hong Kong, China	hhlchan@cad.gov.hk;	✓	✓
	11.	Mr. Vincent Wong	Acting Chief Electronics Engineer (Technical Support) Civil Aviation Department, Hong Kong, China	vplwong@cad.gov.hk;	✓	✓
	12.	Mr. Anfernee Poon	Senior Operations Officer (Strategic Planning), Hong Kong Civil Aviation Department	awhpoon@cad.gov.hk;	✓	
	13.	Mr. Marco Mang-hin KOK	Acting Senior Scientific Officer, Hong Kong Observatory	mhkok@hko.gov.hk;	✓	✓
5.	**INDIA (4)**					
	14.	Mr. Hari Kishan	Assistant General Manager, Airports Authority Of India (AAI)	harikishan@aai.aero;	✓	✓
	15.	Mr. Mukesh Aggarwal	Assistant General Manager, Airports Authority Of India (AAI)	amukesh@aai.aero;	✓	✓
	16.	Mr. Satymave Gupta	Jt. General Manager (ATM), Airports Authority Of India (AAI)	satymaveg@aai.aero;	✓	✓
	17.	Mr. Maise Naresh Kumar	Jt. General Manager (CNS), Airports Authority of India	naresh24@aai.aero;	✓	✓
6.	**INDONESIA (2)**					
	18.	Mr. Wahyu Widodo	Operation Planning and Development Specialist, AirNav Indonesia	wwidodo.airnav@gmail.com;	✓	

	STATE/NAME		TITLE/ORGANIZATION	E-MAIL	ATTENDANCE	
					BRAINSTORM SESSION	MEETING
	19.	Mr. Ferry Iriansya	Specialist ATFM, Perum LPPNPI (AirNav Indonesia)	ferry.airnavindonesia@gmail.com;	✓	✓
7.	**JAPAN (2)**					
	20.	Mr. Xiaodong Lu	Principal Researcher, Electronic Navigation Research Institute	luxd@mpat.go.jp;	✓	✓
	21.	Mr. Yasushi Iwasawa	Special Assistant to the Director, Japan Civil Aviation Bureau (JCAB)	iwasawa-y28j@mlit.go.jp;	✓	✓
8.	**MALAYSIA (5)**					
	22.	Mr. Mohd Azmadi Abdullah	Senior Software Engineer, Telekom Malaysia Berhad	azmadi@siagalabs.com;	✓	✓
	23.	Ms. Nurul Husna Mohd Saad	Technical Writer, Telekom Malaysia Berhad	husna@siagalabs.com;	✓	✓
	24.	Mr. Rafizam Ramli	Meteorological Officer, Malaysian Meteorological Department	rafizam@met.gov.my;	✓	✓
	25.	Mr. Anwar Awang Man	Senior Solution Consultant, Telekom Malaysia	anod@tm.com.my;	✓	✓
	26.	Mr. Hisham Ibrahim	Software Engineer, Advanced Air Traffic Systems (M) Sdn Bhd	hisham.ibrahim@aat.my;	✓	✓
9.	**NEW ZEALAND (2)**					
	27.	Mr. Christopher Cloughley	Software Engineer, Airways New Zealand	chris.cloughley@airways.co.nz;	✓	✓
	28.	Mr. Edmund Heng	Technical Specialist Aeronautical Services, Civil Aviation Authority of New Zealand	edmund.heng@caa.govt.nz;	✓	✓

	STATE/NAME		TITLE/ORGANIZATION	E-MAIL	ATTENDANCE	
					BRAINSTORM SESSION	MEETING
10.	**REPUBLIC OF KOREA (3)**					
	29.	Mr. Kyuok Cho	Assistant Director, Ministry of Land, Infrastructure and Transport of the Republic of Korea, Office of Civil Aviation	kyuok7237@korea.kr;	✓	✓
	30.	Mr. Hyun Bae Yang	Director, Korea Airports Corporation	yanghb@airport.co.kr;	✓	✓
	31.	Mr. Sehwan Han	Senior Research Engineer, Korea Airports Corporation	hsh91@airport.co.kr;	✓	✓
11.	**SINGAPORE (5)**					
	32.	Mr. Vevaganandam Ravichandran	AIS Officer, Civil Aviation Authority of Singapore (CAAS)	ravichandran_vevaganandam@caas.gov.sg;	✓	
	33.	Mr. David Shin Hwah Leow	Head (Air Traffic Management Software Engineering), Civil Aviation Authority of Singapore	david_leow@caas.gov.sg;	✓	✓
	34.	Mr. Huanbin Zhang	Head (ATM-Development), Civil Aviation Authority of Singapore (CAAS)	Zhang_huanbin@caas.gov.sg;	✓	
	35.	Mr. Wei Xiong Elvin Liow	Principal Engineer, Civil Aviation Authority of Singapore	elvin_liow@caas.gov.sg;	✓	✓
	36.	Mr. Jun Liang Tan	Senior Engineer, Civil Aviation Authority of Singapore	tan_jun_liang@caas.gov.sg;	✓	✓
12.	**SRI LANKA (2)**					
	37.	Ms. Mihiri Kumari	Chief Electronics Engineer, Airport and Aviation Services (Sri Lanka) Ltd.	mihi.yapa@gmail.com;	✓	✓

	STATE/NAME		TITLE/ORGANIZATION	E-MAIL	ATTENDANCE	
					BRAINSTORM SESSION	MEETING
	38.	Mr. Ellewela Kankanamalage Jeewantha Lakmini Jayatissa	Manager NOTAM office, Air Port And Aviation (Sl) Ltd	jayatissa.ais.ans@airport.lk;	✓	✓
13.	**THAILAND (23)**					
	39.	Mr. Piyanat Mentaisong	Aeronautical Information Management System Officer, The Civil Aviation Authority of Thailand	piyanat.m@caat.or.th;	✓	✓
	40.	Ms. Kittima Voravibul	Aeronautical Information Management System Officer, The Civil Aviation Authority of Thailand (CAAT)	kittima.v@caat.or.th;	✓	✓
	41.	Mr. Nathapoom Charerntaungseewilai	Aeronautical Information management System Officer, The Civil Aviation Authority of Thailand	Nathapoom.c@caat.or.th;	✓	✓
	42.	Ms. Jittima Asawachaiporn	Aeronautical Information Manager, Aeronautical Radio of Thailand Ltd. (AEROTHAI)	tima14@aerothai.co.th;	✓	✓
	43.	Ms. Sireetorn Aimsomboon	Air Navigation Services Standards Department Officer, The Civil Aviation Authority of Thailand (CAAT)	sireetorn.a@caat.or.th;	✓	✓
	44.	Mr. Boonchai Tepyose	Computer Technical Officer, Thai Meteorological Department	nattyengalt@gmail.com;	✓	✓
	45.	Mr. Wanchalearm Petsuwan	Computer Technical Officer, Thai Meteorological Department	wpetsuwan@hotmail.com;	✓	✓

	STATE/NAME		TITLE/ORGANIZATION	E-MAIL	ATTENDANCE	
					BRAINSTORM SESSION	MEETING
	46.	Mr. Paytye Junphuang	Director of Aviation Services Standard Division, Airport of Thailand PLC.	paytye.junph@airportthai.co.th;	✓	✓
	47.	Ms. Nuanpan Leelawat	Director of Obstacle Limitation Control and Aerodrome Chart Division, Aerodrome Standard and Safety Department, Airports of Thailand Public Company Limited (AOT)	nuanpan.l@airportthai.co.th;	✓	✓
	48.	Mr. Arthit Tosukolvan	Engineer, AEROTHAI, Aeronautical Radio of Thailand Ltd.	arthit.to@aerothai.co.th;	✓	✓
	49.	Mr. Thanathorn Dechasawatwong	Executive Air Traffic Systems Engineer, AEROTHAI	tanatornd@gmail.com;	✓	✓
	50.	Ms. Parichat Thongkleang	Head of Aeronautical Information Management System - AIM, The Civil Aviation Authority of Thailand	parichat.t@caat.or.th;	✓	✓
	51.	Mr. Chai Kaewkitinarong	Head of Aeronautical Information Services Oversight Division, The Civil Aviation Authority of Thailand (CAAT)	chai.k@caat.or.th;	✓	✓
	52.	Ms. Sudarat Jayakorn	Manager of Aeronautical Information Management, Civil Aviation Authority of Thailand	sudarat.j@caat.or.th;	✓	✓
	53.	Mr. Chaiwat Saekhew	Officer, The Civil Aviation Authority of Thailand	chaiwat.s@caat.or.th;	✓	✓
	54.	Mr. Sirawich Wattanananta	Officer, The Civil Aviation Authority of Thailand	sirawich.w@caat.or.th;	✓	✓

	STATE/NAME		TITLE/ORGANIZATION	E-MAIL	ATTENDANCE	
					BRAINSTORM SESSION	MEETING
	55.	Mr. Worapong Jirojkul	Senior Air Traffic Systems Engineer, AEROTHAI, Aeronautical Radio of Thailand Ltd.	worapong.ji@aerothai.co.th;	✓	✓
	56.	Ms. Suvachira Teeraphathananon	Senior Engineer, Airport of Thailand PLC.	suvachira.t@airportthai.co.th;	✓	✓
	57.	Ms. Amornrat Jirattigalachote	Strategic Planning Manager (Engineering), Aeronautical Radio of Thailand Ltd. (AEROTHAI)	amornrat.ji@aerothai.co.th;	✓	✓
	58.	Mr. Sugoon Fucharoen	Executive Air Traffic Management Network Officer, AEROTHAI, Aeronautical Radio of Thailand Ltd.	sfucharoen@gmail.com;	✓	
	59.	Ms. Wilasinee Phanngam	Transport Technical Officer, Department of Airports, Thailand	wilasinee.p@airports.go.th;		✓
	60.	Ms. Rassmee Damrongkietwattana	Director of Aeronautical Weather Monitoring Sub-division, Thai Meteorological Department	rassmee@hotmail.com;	✓	✓
	61.	Mr. Warapong Noothong	Meteorologist, Thai Meteorological Department	Pui-74@hotmail.com;	✓	✓
14.		**USA (3)**				
	62.	Ms. Diana Liang	Enterprise Portfolio Manager, Federal Aviation Administration	Diana.Liang@faa.gov;	✓	✓
	63.	Ms. Kristin Cropf	SWIM Program Manager, United States Federal Aviation Administration (FAA)	kristin.m.cropf@faa.gov;	✓	✓

	STATE/NAME		TITLE/ORGANIZATION	E-MAIL	ATTENDANCE	
					BRAINSTORM SESSION	MEETING
	64.	Mr. Shane A. Campbell	Senior Air Traffic Representative, Air Traffic Organization, FAA	Shayne.a.campbell@faa.gov;	✓	
15.	**VIET NAM (6)**					
	65.	Mr. Tran Duc Hoai Phuong	Deputy Director of Air Navigation Department/CAAV	phuongtd@caa.gov.vn;	✓	✓
	66.	Mr. Ho Sy Tung	Deputy Director General - Viet Nam Air Traffic Management Corporation (VATM)	hosytung@vatm.vn;	✓	✓
	67.	Mr. Nguyen Hong Hiep	IT Specialist, Viet Nam Air Traffic Management Corporation (VATM)	nguyenhonghiepbk@vatm.vn;	✓	✓
	68.	Mr. Nguyen Manh Tung	Deputy Director of Aviation Meteorological Center – VATM	manhtung@vatm.vn;	✓	✓
	69.	Mr. Nguyen Van Toan	Manager of CNS Operations Division - Viet Nam Aeronautical Information Center – VATM	toannguyenvan@vatm.vn;	✓	✓
	70.	Mr. Pham Van Hoi	Manager of CNS Operation Center - Air Traffic Flow Management Center – VATM	hoiatcc@gmail.com;	✓	✓
16.	**CANSO (1)**					
	71.	Mr. Wayne Osse	Chief Architect, Global Aviation and Transportation, Solace (Co-Chair of CANSO Digital Transition Workgroup)	Wayne.Osse@solace.com;	✓	✓
17.	**IATA (8)**					

	STATE/NAME		TITLE/ORGANIZATION	E-MAIL	ATTENDANCE	
					BRAINSTORM SESSION	MEETING
	72.	Ms. Anut Thueaksuban	Specialist-Aeronautical Information Management, Bangkok Airways Public Company Limited	anut@bangkokair.com;	✓	✓
	73.	Ms. Pimsa Vipamaneeroj	Supervisor-Airside Operations, Bangkok Airways Public Company Limited	pimsa.vip@bangkokair.com;	✓	✓
	74.	Ms. Kananuch Wichitnark	Senior Chief (Special List), Thai Airways International Public Company Limited	kananuch.w@thaismileair.com;	✓	✓
	75.	Ms. Nid Suranun	Chief Flight Operations Officer, Thai Airways International Public Company Limited	nid.s@thaismileair.com;	✓	✓
	76.	Mr. Aakash Bhatnagar	Vice President Flight Operations, Airlines-IndiGo	aakash.bhatnagar@goindigo.in;	✓	
	77.	Ms. Suchavalee Yimchalam	Supervisor - Airside Operations, Bangkok Airways Public Company Limited	suchavalee@bangkokair.com;	✓	✓
	78.	Mr. Jatooron Suwannarat	Senior Information Technology Specialist, Solution Delivery Department, Digital Department, Thai Airways	Jatooron.s@thaiairways.com;	✓	✓
	79.	Mr. Ravi Bajaj	Associate Director Performance Engineer, Airlines- IndiGo	Ravi.Bajaj@goindigo.in;	✓	
18.	**PCCW GLOBAL (5)**					
	80.	Mr. Bono Ng	Business Development Manager, PCCW Global Limited	bcng@pccwglobal.com;		✓

	STATE/NAME		TITLE/ORGANIZATION	E-MAIL	ATTENDANCE	
					BRAINSTORM SESSION	MEETING
	81.	Mr. David, Hao Wang	Business Development Director, PCCW Global Limited	dhwang@pccwglobal.com;		✓
	82.	Mr. Eddy Lee	Assistant Vice President, Presales, PCCW Global	elee@pccwglobal.com;		✓
	83.	Mr. Benny Cheng	Vice President, Strategic Account Management	benny.hf.cheng@pccwglobla.com;		✓
	84.	Mr. Divesh Gupta	Vice President, Presales	dgupta@pccwglobal.com;		✓
19.	**ICAO (4)**					
	85.	Ms. Soniya Nibhani	Regional Officer ANS (CNS) Implementation International Civil Aviation Organization Asia and Pacific Office	snibhani@icao.int;	✓	✓
	86.	Ms. Zhong Wenhan	Regional Officer CNS International Civil Aviation Organization Asia and Pacific Office	wzhong@icao.int;	✓	✓
	87.	Mr. Weng Kit Ying	Air Traffic Management Officer International Civil Aviation Organization Asia and Pacific Office	wying@icao.int;		✓
	88.	Ms. Varapan Meefuengsart	Program Assistant International Civil Aviation Organization Asia and Pacific Office	vmeefuengsart@icao.int;	✓	✓

THE EIGHTH MEETING OF THE ASIA-PACIFIC SWIM TASK FORCE (SWIM TF/8)
Attachment 2 to the Report

LIST OF WORKING AND INFORMATION PAPERS

WP/IP/ No.	Agenda Item	Subject	Presented by
WORKING PAPERS			
WP/01	1	Provisional Agenda	Secretariat
WP/02	2	Proposal of Technical Memorandum of Cooperation (TMC) Document for ATM Information Exchange Through SWIM	Malaysia
WP/03	2	Updates of APAC SWIM Technical Infrastructure Profiles	Japan
WP/04	3	Update of the work done by the SWIM Implementation Pioneer Group	Singapore
WP/05	3	Proposal for detailed Enterprise Messaging Service architecture and its impact on the use of message headers	Japan, Singapore, and Thailand
WP/06	2	Progress Update by S3TIG for the Joint Event of SWIM Demonstration over CRV and Surveillance Sharing in SWIM Trial	Hong Kong China
WP/07	2	Proposal of Regional Candidate Standard for Service Discovery	Governance Task
WP/08	2	Proposed Business Functionality of APAC Common SWIMSwim Information Services and the Information to Bebe Exchanged	Hong Kong China
INFORMATION PAPERS			
IP/01	1	Meeting Bulletin	Secretariat
IP/02	3	SWIM Implementation Progress in Malaysia	Malaysia
IP/03	3	SWIM Implementation plan in Japan	Japan
IP/04	3	Implementation Status of Surveillance Messaging Service for S3TIG Demonstration	Republic of Korea
IP/05	3	ICAO Meteorological Information Exchange Model (IWXXM)-Based MET Scenario for S3TIG Demonstration	Republic of Korea

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TECHNICAL MEMORANDUM OF COOPERATION

BETWEEN

<ANSP #1>

AND

<ANSP #2>

FOR AIR TRAFFIC MANAGEMENT (ATM) INFORMATION SHARING THROUGH SYSTEM WIDE INFORMATION MANAGEMENT (SWIM)

[To be filled in (Date of SWIM TMC)]

Revision History

Version	Date	Description
1.0		

Table of Contents

TECHNICAL MEMORANDUM OF COOPERATION

BETWEEN

<ANSP #1>

AND

<ANSP #2>

FOR AIR TRAFFIC MANAGEMENT (ATM) INFORMATION SHARING THROUGH SYSTEM WIDE INFORMATION MANAGEMENT (SWIM)

This Technical Memorandum of Cooperation is made between **<ANSP #1>** and **<ANSP #2>** hereinafter collectively referred to as the "Participants" and singularly as the "Participant".

WHEREAS the Participants wish to jointly establish an SWIM Technical Infrastructure ("SWIM TI") connection between <Country ANSP #1> and <Country ANSP #2> to support the Air Traffic Management (ATM) Information Exchange through the use of International Civil Aviation Organization ("ICAO") System Wide Information Management ("SWIM").

AND WHEREAS the Participants have successfully completed the SWIM Technical Infrastructure (SWIM TI) Trial in preparation for a smooth ATM Information Exchange through SWIM implementation.

THE PARTICIPANTS HAVE REACHED THE FOLLOWING UNDERSTANDINGS:

PARAGRAPH 1 – CITATION

This S W I M Technical Memorandum of Cooperation will hereinafter be referred to as the "SWIM TMC".

PARAGRAPH 2 – PURPOSE

The Participants, agree to establish and implement ATM Information Exchange through SWIM between <Country ANSP #1> and <Country ANSP #2>, subject to the terms and conditions of this SWIM TMC and the laws, rules, regulations and national policies from time to time in force in their respective States.

PARAGRAPH 3 – FINANCIAL TERMS

Each participant shall be responsible respectively for all costs and expenses arising from the connection from its SWIM Technical Infrastructure (SWIM TI) to the international connection points provided by its telecom carriers and all equipment, software and associated costs required for the ATM Information Exchange operation through SWIM.

PARAGRAPH 4 – SWIM TECHNICAL INFRASTRUCTURE DEFINITION

4.1 The SWIM TI will be based on the EUROCONTROL Specification for SWIM Technical Infrastructure (TI) Yellow Profile (EUROCONTROL-SPEC 170 Edition 1.1).

4.2 The network connectivity between Participants SWIM TI will be based on mutually agreed telecommunication provider.

PARAGRAPH 5 – CONTINGENCY ARRANGEMENTS

5.1 The Participants will ensure that fallback procedures in the event of circuit or other failure affecting the flow of network traffic between them are established and supported by their respective alternative setup.

5.2 The Participants will, through regular meetings and other appropriate means, review and exchange information on their respective procedures and the support arrangements and assist each other to strengthen these contingency arrangements.

PARAGRAPH 6 – SWIM TI TEST

6.1 To enable the establishment of the ATM Information Exchange through SWIM under this SWIM TMC, the SWIM TI trial has been conducted to evaluate the basic connectivity, interoperability, functionality, and integrity of the SWIM TI between the Participants.

6.2 The tests conducted under the SWIM TI trial are as follows:

Tests	Test Dates
Network Connectivity Bilateral Tests	*[TBD]*
SWIM EMS Interoperability Tests	*[TBD]*
SWIM Information Service Tests	*[TBD]*
SWIM Application Tests	*[TBD]*

6.4 The details of the tests and the test procedures for the test cases are set out in **Annex 1**.

6.5 The test results for each of the test cases conducted according to the test procedures in **Annex 1** are recorded and compiled in the test report provided in **Annex 2**.

6.6 The achievements, problems, and lessons learnt from the tests-related activities are also set out in **Annex 2**.

PARAGRAPH 7 – UNDERSTANDING

7.1 The Participants will use all reasonable endeavours to carry out their respective responsibilities and will cooperate to ensure the effectiveness and reliability of the SWIM TI between <Country #1> and <Country #2>.

7.2 In furtherance of this understanding, the Participants will conduct additional tests using additional test cases, if so, agreed by the Participants and subject to paragraph 8 of this SWIM TMC.

7.3 If a Participant assesses that any additional test in sub-paragraph 7.2 or any change in SWIM requirement or service detail is not affordable or not cost effective to implement, that Participant may decline to undertake that additional test or carry out that requirement or service detail but will nevertheless continue to cooperate with the other Participant to reach a mutually acceptable outcome.

PARAGRAPH 8 – REVISION, MODIFICATION AND AMENDMENTS

8.1 No revision, modification, or amendment to this SWIM TMC will be effective unless made in writing and signed by both Participants.

8.2 Such revision, modification or amendment shall come into effect on such date as may be agreed by the Participants and specified in the document made in accordance with sub-paragraph 8.1, taking into consideration all domestic procedures that have to be complied with.

8.3 Any revision, modification or amendment shall not affect the rights and obligations arising from or based on this SWIM TMC prior to the effective date of such amendment.

PARAGRAPH 9 – SWIM TI COMMENCEMENT DATE

The SWIM TI between <Country #1> and <Country #2> under this SWIM TMC will commence one (1) month from the date this SWIM TMC comes into force under paragraph 14.1.

PARAGRAPH 10 - SETTLEMENT OF DISPUTE

Any difference or dispute between the Participants concerning the interpretation and/or implementation and/or application of any of the provisions of this SWIM TMC shall be settled amicably through mutual consultation and/or negotiations between the Participants without reference to any court, international tribunal or other third party for settlement.

PARAGRAPH 11 – CONFIDENTIALITY

11.1 Each Participant undertakes to observe the confidentiality and secrecy of documents, information and other data received or supplied to the other Participant during the period of the implementation of this SWIM TMC or any other arrangements made pursuant to this SWIM TMC. Neither Participant shall disseminate such information to a third party or use this information for any purposes including administrative, editorial, prosecutorial or judicial purposes without the prior written consent of the other Participant.

11.2 Both Participants agree that sub-paragraph 11.1 shall survive the expiry or termination of this SWIM TMC.

PARAGRAPH 12 – SUSPENSION

Each Participant reserves the right for reasons of national security, national interest, public order or public health to suspend temporarily, either in whole or in part, the implementation of this SWIM TMC which suspension shall take effect immediately after written notification has been given to the other Participant.

PARAGRAPH 13 - EFFECT OF THIS COOPERATION

13.1 This SWIM TMC serves only as a record of the Participants' intentions and does not constitute or create, or is not intended to constitute or create, legally binding rights or obligations under domestic or international law and will not give rise to any legal process and will not be deemed to constitute or create any legally binding or enforceable obligations, express or implied.

13.2 Notwithstanding anything in sub-paragraph 13.1, paragraph 3 (Financial Terms), paragraph 8 (Revision, Modification and Amendment), paragraph 10 (Settlement of Disputes), paragraph 11 (Confidentiality) and paragraph 12 (Suspension) shall be binding on the Participants.

PARAGRAPH 14 - EFFECTIVE DATE, DURATION AND TERMINATION

14.1 This SWIM TMC will come into effect on the date of last signature by both Participants and will continue to have effect for a period of five (5) years.

14.2 Thereafter, this SWIM TMC may be extended by mutual agreement of the Participants made in writing in accordance with paragraph 8.

14.3 Notwithstanding anything in this paragraph, either Participant may terminate this SWIM TMC by giving no less than sixty (60) days' prior written notice to the other Participant.

14.4 Any termination of this SWIM TMC will not affect the implementation of on-going projects and/or programmes, which have been agreed upon by the Parties prior to the effective date of the termination of this SWIM TMC.

PARAGRAPH 15 - SIGNATURE IN COUNTERPARTS

To facilitate execution, this SWIM TMC and each of its annexes and addenda, if any, may be executed in counterparts, each of which will be an original, but all of which together will constitute one and the same agreement.

PARAGRAPH 16 - AUTHORITY

The Participants agree to the provisions of this SWIM TMC as indicated by the signatures of their duly authorised representatives below.

The foregoing record represents the understandings reached between the <ANSP #1> and the <ANSP #2> upon the matters referred to therein.

Signed by the Participants' duly authorised representatives on the dates set out below in two (2) original texts in the English language.

<ANSP #1> Authorised Representative	**<ANSP #2> Authorised Representative**
Name Designation	Name Designation
Date:	Date:

ANNEX 1: DETAILS OF THE TESTS AND THE TEST PROCEDURES

ANNEX 2: THE TESTS RESULT

Appendix B to the Report

Draft APAC SWIM Technical Infrastructure Profiles Review Outcomes

Section Number	Type of Comment	Comment	Review Outcome
1.3 Table 1	Technical	Should cybersecurity be a requirement in this table?	Add cybersecurity as suggested
2.1	Editorial	Flow of paragraph, talking about AMHS-SWIM Gateway, and suddenly mentioning CRV, feels a little disjointed. Also, not quite clear what the paragraph is trying to say. Is it about CRV or is it about AMHS-SWIM Gateway?	Revise for better transition between paragraph 1 and paragraph 2
2.1	Editorial	Last paragraph has no requirements, but in general, there are no clear requirements in this section	• Remove the word “limited capability” • Add footnote to explain the limitations of CRV from the perspectives of SWIM requirements
2.2	Technical	There is some work being done at IMP WG I/S with regards to Service Definition. Should there be more considerations given to what constitute service descriptions, also keeping in mind the existence of the AIRM	• Agree that scope of 2.2 is only Service Description • Agree that all the fields as presented in the draft are mandatory fields • Further action required to review SDCM Version 3.0.0 and provide additional requirements for mandatory fields, if any
2.3 Bullet Point 3	Editorial	Infrastructure binding needs more clarity, as to what it means and how it differs from Network Bindings. Whilst that clarity is presented later in the paper, we might need to include a reference here	Revise the draft for more clarity
2.4	Technical	CRV-based interoperable architecture is not required. What is required is an IP-based architecture, of which CRV is one possible implementation. The internet is another possible basis. Whilst it is agreed that APAC SWIM TF will use CRV where possible, we should not preclude using the internet as a secondary basis for our architecture.	Revise the first paragraph to reflect that • IP-based architecture is requirement • Regional SWIM architecture is to be constructed “principally” over CRV and also Internet
3.3.1.1	Technical	Should the basis for these standards be similar to Eurocontrol Yellow Profile? I note that most of it are there, but would like to check that the required standards	• Add reference to EUROCONTROL Specification for SWIM Technical Infrastructure (TI) Yellow Profile

Section Number	Type of Comment	Comment	Review Outcome
		as stated in Yellow Profile are all represented here as well.	• Add text that Table 5 also includes standard and specification in addition to EUROCONTROL Specification for SWIM Technical Infrastructure (TI) Yellow Profile
3.3.3.2	Editorial	The inclusion of SOAP here is for completion I presume, since it's supposed to align with Eurocontrol Yellow Profile? Should we include a note here that it is here for completion?	Agree to include SOAP
4.1 Table 8 – Security	Technical	Should we differentiate between Cybersecurity and Information Security here?	• Revise description of "Security" to better clarify the scope of security capability considered, i.e. information security • Add reference to ISMS Manual being developed by Trust Framework Panel
4.1.1 Table 9	Technical	How about message lifespan and validity?	Agree to not include message lifespan and validity in this table
4.1.2	Technical	Do we need to differentiate between Cyber and Information Security here? This section seems like a mixture of both.	Revise the first paragraph for more clarity
4.1.3 – Service Monitoring	Technical	Should this encompass all services? Or just SWIM-TI related services? Would there be a need to monitor all services on SWIM?	Agree to keep the scope to be only SWIM TI services
4.1.3 – Persistence and Common Time Reference	Technical	Both these services, should they be services rather than SWIM TI Services? They can be part of Common Services, especially Common Time Reference. Also will the SWIM TI services be considered part of Common Services?	• Further action required to review "Persistence" – Should it be included in Table 9 or Table 11 or both tables? – Description of "Persistence" • Agree to keep Common Time Reference as is
Appendix C	Technical	Does this mean that there will be many different headers for different data? Is there a way to have a common set of headers?	• Divide the message headers into 2 categories, i.e. domain-specific and non-domain specific • Add text regarding message header maintenance, including header naming convention

Preliminary results of an online survey for proposed APAC Common SWIM Information Services

ICAO APAC SWIM TF/8
8-10 November 2023

ICAO

26 responses

- AEROTHAI (2)
- AirNav Indonesia (2)
- Airports Authority of India (4)
- ATMB of CAAC (2)
- CAA of Viet Nam
- CATS
- Civil Aviation Authority of Singapore
- ENRI
- HKCAD (2)
- JCAB
- Thai Meteorological Department (3)
- TM/CAAM (2)
- VATM, Vietnam (3)
- PCCW Global Limited

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1. Business functionality of Common SWIM Information Services - Message exchange pattern and the minimum set for APAC SWIM

Domain	Business functionality of the service	Publish/ Subscribe	Request/ Reply	Mandatory service? (for minimum set of services in APAC SWIM)
Aeronautical	Airspace management service	73%	50%	62%
Aeronautical	Airspace feature service	62%	58%	58%
Aeronautical	Aerodrome feature service	58%	58%	62%
Aeronautical	Digital NOTAM distribution service	77%	46%	65%
Aeronautical	Runway Condition Report service	46%	65%	42%
Aeronautical	ATIS distribution service	65%	62%	35%
Flight	ATFM/A-CDM integrated service	81%	35%	46%
Flight	Flight status change notification service	85%	19%	77%
Flight	Trajectory update service	65%	42%	38%
Flight	Flight plan filing service	58%	50%	73%
Flight	Flight plan distribution service	81%	27%	73%
Flight	Trial request service for FF-ICE	46%	58%	19%
Flight	Flight plan status request service for FF-ICE	42%	62%	19%
Flow	Traffic flow status service	62%	69%	38%

Highlighted: Responses of 50% or higher

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1. Business functionality of Common SWIM Information Services - Message exchange pattern and the minimum set for APAC SWIM

Domain	Business functionality of the service	Publish/ Subscribe	Request/ Reply	Mandatory service? (for minimum set of services in APAC SWIM)
MET	Aerodrome observation	65%	58%	46%
MET	Aerodrome forecast	62%	62%	46%
MET	WAFS grid point forecast	58%	65%	35%
MET	WAFS significant weather (SIGWX) forecast	62%	62%	38%
MET	QVA grids point forecasts including probabilities	62%	65%	31%
MET	QVA objects	69%	54%	31%
MET	Volcanic Ash Advisory	88%	38%	54%
MET	Volcano Observatory Notice for Aviation (VONA)	92%	35%	54%
MET	Tropical Cyclone Advisory	92%	35%	54%
MET	Space Weather Advisory	77%	42%	35%
MET	SIGMET information	88%	46%	62%
MET	AIRMET information	65%	62%	35%
MET	Special Air Report (ARS) / Pilot Report (PIREP)	54%	62%	27%
MET	Satellite image service	42%	73%	19%
MET	Weather radar image service	46%	73%	23%
Surveillance	Surveillance data sharing service	73%	50%	19%

Highlighted: Responses of 50% or higher

2. Any comments on the naming of the business functionality of any of the above proposed APAC common SWIM information services?

- I suggest that the name of Flight related services could refer to Manual on FF_ICE(DOC 9965), or use other name instead.
- Flight-FF-ICE Planning Service, Flight-FF-ICE Filing Service, Flight-FF-ICE Trial Service, Flight-FF-ICE Flight Data Request Service, Flight-FF-ICE Notification Service
- Clear and comprehensive, fully agree.
- Nothing in particular, but simple expressions are better.
- The naming of the business functionality (MET) should follow with Annex 3.

2. Any comments on the naming of the business functionality of any of the above proposed APAC common SWIM information services? (cont'd)

- I think we need to prepare the naming convention for the service end-point (technical perspective). Take flight plan filing service as example. As end-point address it could be flight-plan-filing, or flightplanfiling or else. Naming convention will make the service more predictable, and the consistency will make easier on the app development
- APAC SWIM INFORMATION SERVICE (ASIS)
- The services will probably need to be broken down further. Currently, there is a case for a lot of the information, especially the Aeronautical Information Services, to be both pub-sub and request reply. It depends on the service functionality, whether are new users of the service going to receive a data dump on first connection, or whether it's based on request of certain features, such as aerodrome reference points etc.

3. Any suggestions on other proposed APAC common SWIM information services to be included on the list?

- The information data included in the services above and the name of APAC common SWIM information services should be coordinated and confirmed together with related ICAO APAC groups like ATM SG/ATFM SG/SURICG/MET SG, etc. Another suggestion is that the scope of the survey can be expanded through state letters.
- For this stage, the number of common SWIM information service is a little too much. It is recommended to start with the most urgent and common needs in APAC region, select a subset of each category, and create an initial version of common SWIM information services, such as Digital-NOTAM, Runway Condition, ATFM/A-CDM integration, Flight status change notification, Flight plan distribution, and so on.
- GUFI Service
- MET information service is rather completely.

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3. Any suggestions on other proposed APAC common SWIM information services to be included on the list? (cont'd)

- Aeronautical - Runway Condition Report Service. In my point of view, this allows users to report the runway condition. Suggest another service to allow users to retrieve runway condition. e.g. Aeronautical - Runway Condition Service. Please don't mind if this function has been covered by another service.
- Take off condition, AD warning, Wind shear warning and alert, MET info. from NWP to support ATM.
- maybe can study some information from: https://applications.icao.int/dataservices/default.aspx
- I think it's a good start to identify the services, but we'll need to take it back to our respective Subject Matter Experts to better establish which services are missing, and which should be mandatory in APAC, keeping in mind that not all countries might be able to furnish the required information, especially Met Related information.
- Should add flight data request

Thank You!

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