



ICAO

**DRAFT REPORT OF  
THE ELEVENTH MEETING OF  
SYSTEM WIDE INFORMATION MANAGEMENT TASK FORCE  
(SWIM TF/11)**

*Bangkok, Thailand  
25 – 29 May 2026*

The views expressed in this Report should be taken as those of  
SWIM TF/11 Meeting and not of the Organization.

Approved by the Meeting  
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## **MEETING OVERVIEW**

### **1. Introduction**

1.1 The Eleventh Meeting of the System Wide Information Management Task Force (SWIM TF/11) was held from **25 – 29 May 2026** in the ICAO APAC Regional Office, Bangkok, Thailand.

### **2. Attendance**

2.1 The Meeting was attended by **100** participants from **16** Member States/Administrations and **3** International Organisations, namely Australia, China, Hong Kong China, Indonesia, Japan, Lao PDR, Maldives, New Zealand, Pakistan, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, United States, Viet Nam, CANSO, IATA and ICAO. The List of participants is provided in **Attachment 1**.

### **3. Opening of the Meeting**

3.1 Dr Amornrat Jirattigalachote, Expert (Director Level), Strategy and Sustainability Office of Aeronautical Radio of Thailand Ltd. (AEROTHAI), Co-Chair of the SWIM TF, opened the Meeting. Dr Amornrat Jirattigalachote outlined the key agenda items, expected discussions and key deliverables for the Meeting. She expressed her appreciation to the participants for their significant contributions to advancing SWIM TF's work.

3.2 Dr Soniya Nibhani, Regional Officer, ANS (CNS) Implementation, warmly welcomed all participants and appreciated the support of Member States/Administrations for the ongoing works of the SWIM TF and ICAO regional activities. She also shared gratitude to all Task Leads for supporting SWIM TF.

### **4. Officers and Secretariat**

4.1 Dr Amornrat Jirattigalachote, Expert (Director Level), Corporate Strategy and Sustainability Office of Aeronautical Radio of Thailand Ltd. (AEROTHAI), chaired the Meeting.

4.2 Dr Soniya Nibhani, Regional Officer ANS (CNS) Implementation, acted as the Secretary of the Meeting with the support of Ms Xu Jian, Associate Programme Officer (CNS) Implementation, and Ms Varapan Meefuengart, the Programme Assistant from ICAO Asia and Pacific Regional Office.

### **5. Organisation, working arrangement, language and documentation**

5.1 The SWIM TF/11 met as a single body. The working language for the Meeting was English, inclusive of all documentation and this report. A total of **Twenty-nine (29) Working Papers, Nine (9) Information Papers, Two (2) Flimsy**, and **Five (5) Presentations** were considered by the Meeting. The List of Papers is provided in **Attachment 2** to this Report.

### **6. Draft Conclusions, Draft Decisions and Decisions of SWIM – Definition**

6.1 SWIM recorded its actions in the form of Draft Conclusions, Draft Decisions and Decisions within the following definitions:

**Draft Conclusions** deal with matters that, according to APANPIRG's terms of reference, require the attention of States or action by the ICAO in accordance with established procedures;

**Draft Decisions** deal with the matters of concern only to APANPIRG and its contributory bodies; and

**Decisions** of the SWIM TF that relate solely to matters dealing with the internal working arrangements of the SWIM TF.

7. **List of Conclusions/Decisions from SWIM TF/11**

<b>Reference Number</b>	<b>Title of (Draft) Conclusions/Decisions</b>
1. <b>Draft Decision SWIM TF/11/01</b>	- Need for Alignment of Information Service Definitions across Regions
2. <b>Draft Conclusion SWIM TF/11/02</b>	- Adoption of ATFM FIXM Message Data Attributes and Associated Message Templates Based on FIXM Version 4.3 as Asia/Pacific Regional Standard
3. <b>Draft Conclusion SWIM TF/11/03</b>	- Adoption of SWIM Discovery Service baseline standardised version for the APAC Region- SDS v2.0
4. <b>Draft Decision SWIM TF/11/04</b>	- Adoption of APAC Common SWIM Information Services, v2.0

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**REPORT ON AGENDA ITEMS****Agenda Item 1: Adoption of the Agenda***Adoption of Agenda – Sec (WP/01)*

1.1 The provisional agenda presented in **WP/01** was adopted as the agenda for the Meeting.

**Agenda Item 2: Election of Co-Chair**

2.1 The ICAO Secretariat requested the Meeting for the nomination of the second Co-Chair position. However, no nomination was received at the Meeting. As a result, the position remains vacant. It was suggested that the election be held again at the future SWIM TF Meeting.

**Agenda Item 3: Outcomes of relevant Meetings on SWIM-related matters**

- ICAO APAC CNS/other relevant Meetings
- SWIM Implementation Pioneer Ad-hoc Group

*Review of Relevant CNS Meetings – Sec (WP/02)*

3.1 The paper summarised relevant information and updates, highlighting the outcomes of the Thirty-Sixth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/36), the Twenty-Ninth Meeting of Communications, Navigation, and Surveillance Sub Group (CNS SG/29) and the Tenth Meeting of the SWIM Task Force (SWIM TF/10).

3.2 It was noted that the CNS SG/29 adopted five (5) conclusions and six (6) decisions. In addition, based on the outcome of discussions on various agenda items, the CNS SG/29 developed three (3) Draft Conclusions and one (1) draft Decision for consideration by the APANPIRG/36, which were adopted by the APANPIRG/36. The Meeting noted the Conclusions/Decisions adopted by the CNS SG/29 and the APANPIRG/36 and discussed the follow-up.

3.3 The Meeting acknowledged the need for interconnection among different regional IP networks to support global SWIM implementation and requested additional information on CRV updates as well as the establishment and upgrade plans of other regional networks, particularly with regard to ensuring interoperability and interconnection among these networks. ICAO Secretary provided detailed updated information as per the details shared in [WP/19 of ACSICG/13 Meeting](#).

3.4 The SWIM Task Force Co-Chair provided an update on the funding support available for the SWIM implementation support initiative under the Information Management (IM) Section at ICAO Headquarters. The ICAO Secretariat informed that, as part of this new initiative, a range of activities is being planned to facilitate the implementation of seamless information management, including SWIM, AIS/AIM, IP network interconnection, and related educational programmes. It was further noted that, subject to budget availability and necessary approvals, a workshop on the interconnection of CRV and REDDIG III is tentatively planned for the fourth quarter of 2026.

*Summary of SWIM-Related Outcomes from Relevant APAC MET Meetings – Sec (WP/03)*

3.5 This paper provided a consolidated update on SWIM-related outcomes from recent APAC MET Meetings (MET SG/29, MET/R WG/15, and MET/IE WG/24). It highlighted progress in MET-SWIM guidance, development of SWIM-based MET information services and use cases, and key implementation challenges affecting regional SWIM readiness. It also outlined implications of IWXXM implementation gaps for SWIM interoperability and service readiness to support SWIM TF/11 in refining APAC Common SWIM Information Services and enhancing cross-domain coordination.

3.6 The Meeting discussed the use of SWIM-based MET use cases to support the refinement and alignment of MET-related SWIM information services, including service definitions and exchange models, and to promote consistent development and coordination across relevant domain groups. The Meeting also discussed the use of service interaction models (in particular publish/subscribe and request/reply) for MET information services within the SWIM environment.

3.7 In response to the request to review and support the continued refinement of MET-related entries in the APAC Common SWIM Information Services, in line with ongoing MET/IE WG work, the Meeting noted that the MET-related APAC Common SWIM MET Information Services had been reviewed by the MET/IE WG/24 and would be further reviewed and considered by SWIM TF under WP/16.

3.8 In response to the request to consider the use of SWIM-based MET use cases to support the refinement and alignment of MET-related SWIM information services, including service definitions and exchange models, and to promote consistent development and coordination across relevant domain groups, it was recalled that the Information Management Panel (IMP), at its 4th Meeting, had reviewed the Information Service Definition (ISD) template, which could be used by all aviation-related information domains to ensure consistency in the development of information services.

3.9 It was informed that the work undertaken by the APAC region on the APAC Common SWIM Information Services was presented to the **IMP – Working Group Information/Services** at its 3rd Meeting in June 2025. It was further added that the fields included in the APAC Common SWIM Information Service list are aligned with, and constitute a subset of, the fields contained in the ISD template defined by the IMP.

3.10 It was added that the MET Panel (METP) is expected to undertake work on defining future MET information services. However, no work is currently planned within the METP to define MET information services for traditional MET products.

3.11 The Meeting discussed in detail the need to define MET information services for traditional MET products, and the contributory bodies responsible for defining information services and maintaining the APAC Common SWIM Information Services list as a whole. The Meeting agreed that the approach similar to that adopted by the Panels should be applied. Specifically, the IMP would be responsible for developing the ISD template, while the domain expert groups would be responsible for providing the detailed ISD content for services within their areas of expertise. Accordingly, for the APAC region, the MET/IE WG could consider providing details of MET information services and the FF-ICE Ad-hoc Group could consider providing details of FF-ICE related flight information services, while the consolidation and publication of the APAC Common SWIM Information Services would remain under the responsibility of the SWIM TF.

3.12 It was recalled that the request for the regular review and update of the APAC Common SWIM Information Services by the relevant expert groups had already been conveyed by SWIM TF to all relevant groups under CNS SG, ATM SG, and MET SG. Therefore, the Meeting agreed that there was no need to formulate an additional action item for this task.

**3.13** The Meeting discussed the need to ensure alignment among ISDs for similar information services developed by different regions, in addition to the ISDs for information services to be developed by the Panels. It was considered that the need for interregional coordination on this matter should be raised and addressed at the global level, particularly for the ISD of information services related to existing services or products, such as MET products. The Meeting agreed on a two-pronged approach to address this issue, i.e. (i) for APAC members of the IMP and APAC members of other related Panels (e.g. METP) to share this concern with the IMP and their respective Panels, **ACTION ITEM 11-1** and (ii) formulating the following draft Decision for CNS SG/29 considerations.

<b>Draft Decision SWIM TF/11/01</b> Need for Alignment of Information Service Definitions across Regions	
What: To propose to the Information Management Panel (IMP) and relevant Panels to consider the need for alignment of Information Service Definitions for similar information services developed by different regions.	Expected impact: <input type="checkbox"/> Political / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: Considering that the Asia/Pacific regional SWIM will form part of the global SWIM, that ISD template was agreed at IMP/4, and that ISDs for similar information services have been developed by various regions, the consideration of IMP and relevant Panels to ensure alignment of ISDs and cross-regional interoperability of information services is required.	Follow-up: <input type="checkbox"/> Required from States
When: 29-May-26	Status: Draft to be adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input checked="" type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM TF	

3.14 Considering that SWIM serves as a foundation for ANS modernisation, and noting the example discussed regarding the challenge in achieving alignment in the implementation of similar information services across regions, the Meeting further agreed to prepare a presentation for the APANPIRG/37 Meeting, apart from regular updates of SWIM TF through the CNS SG Meeting report. This presentation aims to highlight the challenges related to SWIM implementation and seek consideration for further actions to be taken by ICAO HQ and the relevant Panels. **ACTION ITEM 11-2**

3.15 In response to the request to provide advice and guidance, as appropriate, on the use of service interaction models (in particular publish/subscribe and request/reply) for MET information services within the SWIM environment, it was shared that guidance material on the request/reply Message Exchange Pattern (MEP) would be discussed under WP/28. Further discussion is recorded under WP/28.

3.16 Regarding the request to support alignment between MET and SWIM activities, taking into account ongoing regional coordination and related work, the Meeting discussed options such as conducting joint Meetings of MET and SWIM experts, or holding SWIM TF and MET/IE WG Meetings in parallel with one designated joint Meeting day. It was recalled that SWIM TF Task Leads usually meet quarterly and also conduct quarterly joint Meetings with CRV OG experts. In such situations, conducting an additional quarterly Meeting with MET/IE WG experts would create a significant workload for SWIM TF experts. Regarding the option of holding MET/IE WG and SWIM TF Meetings in parallel, it was shared that many MET experts would miss the SWIM TF Meeting. Therefore, this option was not recommended.

3.17 It was decided that the SWIM TF Co-Chair and MET/IE WG Chair/Vice Chair will discuss together topics of common interest and plan for further Meetings as required. **ACTION ITEM 11-3**

*Outcomes of ANSIA TF/1 – Sec (WP/04)*

3.18 ICAO Secretariat presented the discussions and relevant outcomes of the First Meeting of the ANS Information Assurance Task Force (ANSIA TF/1), which was held from **28 to 30 January**

**2026** in the ICAO APAC Regional Office, Bangkok, Thailand. The Meeting report, working papers, information papers, and other resources can be accessed by [this link](#).

3.19 It was noted that after Decision CNS SG/29/14 made by CNS SG/29 in 2025 for the creation of ANS Information Assurance Task Force (ANSIA TF), it was agreed that the ANSIA TF would prepare the draft Terms of Reference (ToR), its key deliverables, and plan in close coordination with CRV OG, ACSICG, SWIM TF, TFP Secretary and IMP Secretary. After CNS SG/29, with the collaborative efforts of ANSIA TF experts, the first draft of the ToR was finalised. The ANSIA TF/1 reviewed and modified the draft ToR, and the *Draft Decision ANSIA TF/1/1 – Adoption of Terms of Reference (ToR) of the ANS Information Assurance Task Force (ANSIA TF)* was endorsed by the ANSIA TF/1 for CNS SG/30 adoption.

3.20 The Meeting noted the following three work packages formulated by ANSIA TF/1 and their plan for the way forward:

1. Scoping the regional trust framework
2. Developing PKI and governance arrangements
3. Selecting use cases of regional interest

3.21 It was informed that each of these work packages needs a Statement of Work (SOW) to be elaborated with a scope statement, associated tasks, deliverables and proposed timelines. The Meeting noted the following volunteer States to participate in each work package of the ANSIA TF.

SN	Work Package (WP)	Volunteer States	Work Package Lead
1.	<b>WP01-</b> Scoping the regional trust framework	China, Fiji, India, Japan, Malaysia, Philippines, Singapore, Thailand, Tonga and the United States	Singapore
2.	<b>WP02-</b> Developing PKI and governance arrangements	Fiji, India, Japan, Philippines, Singapore, Thailand, Tonga and the United States	United States
3.	<b>WP03-</b> Selecting use cases of regional interest	Fiji, India, Japan, Philippines, Singapore, Thailand, Tonga, and the United States	India

*Table 1- The Work Package of ANSIA TF*

3.22 It was added that good progress has been made by **WP01, WP/02 and WP03, leading** to the drafting of the SOW for their work packages. All leads have shared the draft SOW with their work package contributors for review and feedback. The online Meeting of these experts was held on **14 May 2026**. The online Meeting reviewed and finalised the SOW, as well as outlined the next steps to advance the assigned WP.

3.23 The Meeting noted that, with the establishment of ANSIA TF, Task 3 Security Service under SWIM TF would be more appropriately undertaken by the ANSIA TF. Further discussion on this matter was conducted under the SWIM TF Tasks restructuring.

*Outcomes of SURICG/11 Meeting – Sec (WP/05)*

3.24 The Eleventh Meeting of the Surveillance Implementation Coordination Group (SURICG/10) was held at the ICAO APAC Regional Office, Bangkok, Thailand, from 25 – 27 March 2026. In addition, the Fifth Meeting of the Surveillance Study Group (SURSG/5) was held from 23 – 24 March 2026 at the ICAO APAC Regional Office in Bangkok, Thailand.

3.25 It was noted that SURSG/SURICG had recommended the use of ASTERIX and JSON for surveillance information sharing over SWIM in the APAC region. In addition, it was suggested that the Surveillance Panel (SP) be informed of these regional developments through an information paper for their consideration and feedback. The Meeting was informed that the SURICG Co-Chairs and SWIM TF Chair are preparing a paper to share this information with the Aeronautical Surveillance Working Group under the SP at its 24th Meeting in September 2026. Further updates will be shared with the SWIM TF/12 Meeting. **ACTION ITEM 11-4**

3.26 The SURICG/11 reviewed the revised list of APAC Common SWIM Surveillance Information Services, and further discussed whether the term “FPL” should be replaced with “flight information”, as well as how to better reflect both surveillance data and flight plan information in the “Type of Information” field for the Surveillance Data with Flight Plan Information Sharing Service. Thailand volunteered to lead a study on the terminology of “FPL”, with participation from Singapore, while China volunteered to study the inclusion of a footnote in the “Type of Information” field. Both tasks will report back to the next SURICG Meeting.

3.27 It was recalled that the SURSG/5 recommended that Guidance Material for the sharing of surveillance data in SWIM should be added as a reference document for APAC Common SWIM Surveillance Information Services to support service implementers. This information was shared with Task 6 of the SWIM TF.

3.28 The SURSG/5 reviewed and finalised *the Guidance Materials for the sharing of surveillance data in SWIM*. The finalised Guidance Material was endorsed by **Draft Conclusion SURICG/11/01** (SURSG/5/01) – *Guidance Materials for the sharing of surveillance data in SWIM* for CNS SG/30 adoption. The draft Guidance Material for the sharing of surveillance data in SWIM is provided in **Appendix 1** to this report. As SWIM development in the region is ongoing, it was anticipated that future updates on the Guidance Material would be necessary, especially on any further required details of the surveillance information services. The Meeting was informed that SURICG has assumed this responsibility and will respond appropriately.

3.29 The Meeting was informed that SURICG/11 reviewed the Work Plan of SURSG in view of the progress and development following SURSG/1 to SURSG/4. As all the tasks under the ToR allocated to SURSG had been completed, the dissolution of the SURSG was endorsed through **Draft Decision SURICG/11/02** (SURSG/5/02) – *Proposing dissolution of SURSG*.

3.30 The Meeting appreciated the SURSG for the successful completion of the tasks assigned to it and its contribution to SWIM development in the APAC region.

*Outcomes of ACSICG/13 Meeting – Sec (WP/06)*

3.31 The paper summarised relevant information and updates on the outcomes of the ATN Workshop and the Thirteenth Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/13) held at Nadi, Fiji, from 20 to 24 April 2026. The Meeting report, working papers, information papers, and other resources can be accessed by the following link: <https://www.icao.int/APAC/Meetingdocs?fid=42491>

3.32 It was noted ATSCG Chair presented the outcomes of recent ATSCG discussions on the AMHS to SWIM transition in the APAC region. He summarised observed risks and issues associated with prolonged mixed AMHS–SWIM operations, key conclusions reached by ATSCG, and proposed recommendations and follow-up tasks, as well as the minimum safeguards intended to support regional coordination, service continuity, and interoperability during the transition period, while recognising that States retain responsibility for national implementation and safety assessments. The ACSICG/13 Meeting discussed the significance of the information shared in minimum safeguards and added that these safeguards are essential to keep business continuity while migrating from AMHS to

SWIM. Accordingly, the ACSICG/13 Meeting endorsed the **Draft Conclusion ACSICG/13/01 - Adoption of Minimum Safeguards for AMHS–SWIM Transition** for adoption at APANPIRG/37 through CNS SG/30.

3.33 The MET/IE WG Chair shared the concern about the implications of the content of the Minimum Safeguards for AMHS–SWIM Transition document. The Meeting discussed the motivation for developing the document and agreed to recommend that the leadership of contributory bodies related to the use of AMHS and/or SWIM, namely the FF-ICE Ad-Hoc Group, AAITF, and MET/IE WG, review the document and provide their feedback to the ICAO Secretariat for further sharing with the ATSCG Meeting planned on 19 August 2026. **ACTION ITEM 11-5**

*Outcomes of SWIM TF Task Leads Meetings and Joint Meetings of SWIM TF Task Leads and CRV OG Experts in 2025-26 – Sec (WP/07)*

3.34 The paper presented outcomes of SWIM TF Task Leads (TLs) Meetings and Joint CRV OG experts and SWIM TF TLs Meetings, after the SWIM TF/10 Meeting, held in 2025-2026. The Meeting noted that a total of **three (3)** SWIM TF TLs coordination Meetings were held after SWIM TF/10 to review the outstanding SWIM TF/10 action. The Minutes of the Meetings (MoM) of the three Meetings on **21 August 2025**, **17 November 2025** and **3 February 2026** were shared with the Meeting.

3.35 In addition, a total of three (3) Joint Meetings of the CRV OG experts and SWIM TF TLs were conducted on 1-5 September 2025, 20 November 2025 and 5 February 2026. Out of three Meetings, the 1-5 September 2025 Meeting was an in-person Meeting, which was named the *ICAO APAC CRV-SWIM Experts Workshop: Reviewing of CRV II Specifications and ICAO APAC SWIM Architecture*.

*SWIM Implementation Pioneer Ad-hoc Group Progress Report – Singapore (WP/08)*

3.36 Singapore presented the work done by the SWIM Implementation Pioneer ad-hoc Group (SIPG) since the last SWIM TF Meeting (SWIM TF/10) held from 20 to 23 May 2025. It was recalled that the SIPG Terms of Reference (ToR) were revised through [SWIM TF/10 -Flimsy/01](#). Resulting from the SIPG WS/2 held following the SWIM TF/10 from 26 to 30 May, the SIPG laid out its work program in the form of 11 Tasks and assigned priorities to them, as well as agreed on the initial planned timeline as follows:

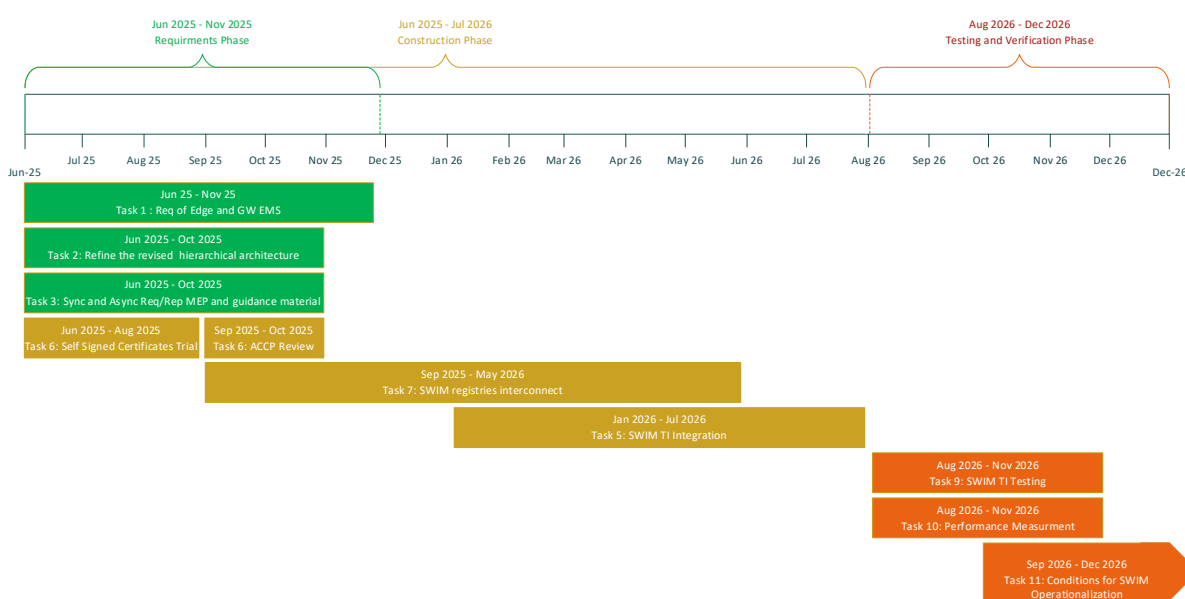


Figure 1- Initial SIPG Work Program Timeline

3.37 It was noted that SIPG conducted 10 online Meetings since SWIM TF/10 to make progress on the work plan as presented above. However, due to administrative hurdles and unexpected technical challenges faced by some of the task members, the timeline has been revised as follows:

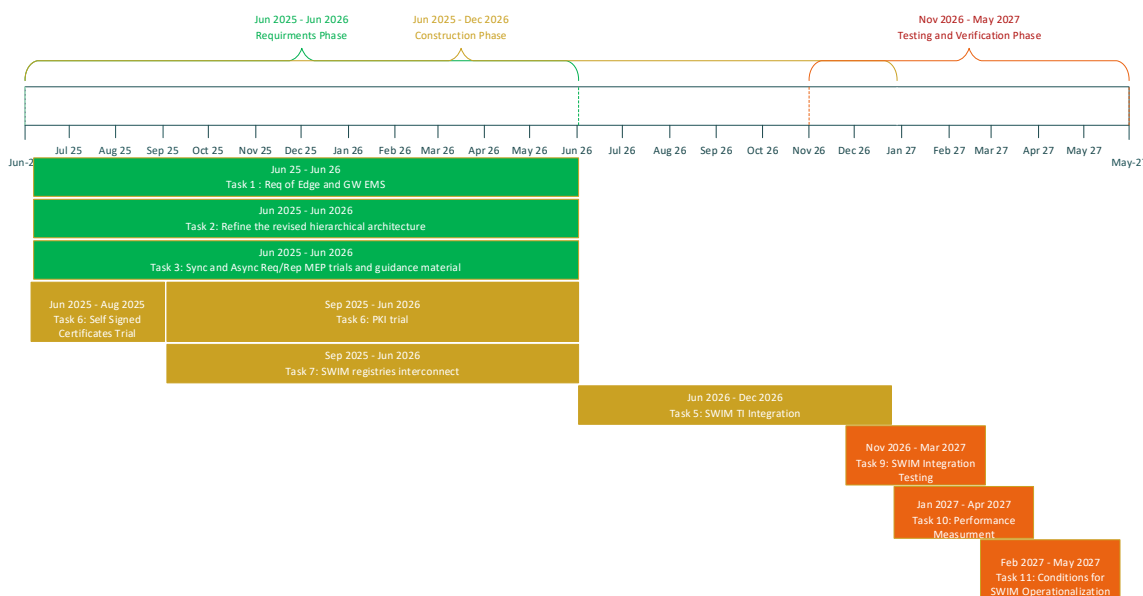


Figure 2: Revised SIPG Work Program Timeline

3.38 The Meeting was informed of the SIPG achievements under Task 2, Task 3, Task 6 and Task 7. It was noted that further details on the progress of the respective tasks were presented in the separate working papers. The Meeting was also informed that SIPG will continue to advance the work according to the revised work plan. Additionally, it was highlighted that the need for closer coordination with the ANS Information Security Task Force had been raised during the SIPG monthly discussions, especially regarding their deliverables and timelines, to ensure proper sequencing with the SWIM Task Force timeline.

3.39 The Meeting was informed that the 3<sup>rd</sup> working session will be conducted immediately after the SWIM TF/11 Meeting, from 1 to 5 June 2026. The SIPG will be developing a more detailed work programme for Tasks 5, 9, 10 and 11. The target is for SIPG to complete the work by Q1 2028 in order to be able to present the outcomes at the SWIM TF Meeting that year.

3.40 SWIM TF Co-Chair expressed her appreciation to SIPG for the tremendous amount of work being undertaken by the group.

3.41 In response to a question regarding the SIPG work plan for the period from Q2 2027, when the regional SWIM TI prototype is expected to become available, to Q1 2028, when SIPG expects to complete its work, it was clarified that testing of selected information services on the APAC SWIM TI prototype is anticipated during that period.

3.42 In response to a query regarding cybersecurity, the Meeting was informed that the focus will be placed on SWIM TI security rather than information security.

3.43 The Meeting emphasised the importance of participation by Telecom Malaysia, which is leading Task 6 of SIPG, in all key discussions, including in-person Meetings, to enhance the overall efficiency of SIPG. It was noted that the absence of key members from significant Meetings would lead to delays in the work assigned to the group, thereby affecting multiple States. The Meeting requested the support of the ICAO Secretariat to coordinate with the Civil Aviation Authority of Malaysia (CAAM)

to encourage the active participation of Telecom Malaysia in both in-person and online SIPG Meetings.

**ACTION ITEM 11-6**

3.44 In response to a request for suggestions regarding the involvement required by SIPG Task 6 in the work of ANSIA TF, it was suggested that SIPG Task 6 participate in all three work packages of ANSIA TF. To enhance the effectiveness of Task 6 activities, the Meeting requested the ICAO Secretariat to coordinate with CAAM to consider nominating a member to Work Package 2 of ANSIA TF. **ACTION ITEM 11-7**

3.45 In response to the need for more than one SWIM TF Meeting per year due to the ongoing critical phase of APAC SWIM implementation, the Meeting agreed that additional Meetings can be conducted, if necessary. However, given the current political situation impacting on the economy, it was suggested that the need and feasibility of holding multiple Meetings be evaluated in the future.

*Asia/Pacific Regional Flight and Flow Information for a Collaborative Environment (FF-ICE) Release 1 Implementation Plan – FF-ICE Ad Hoc Group (WP/09)*

3.46 Singapore and Thailand, on behalf of the ICAO APAC FF-ICE Ad-Hoc Group, presented the draft APAC Regional FF-ICE Release 1 Implementation Plan.

3.47 The Meeting noted that the APAC FF-ICE/R1 Plan provides regional guidance for implementing FF-ICE/R1 services, covering operational and technical requirements, and recommends areas of harmonisation for the APAC region (e.g., FF-ICE flight plan (eFPL) validation checks, the interpretation of Filing Status, the Filing Status responses for identified ATFM scenarios). The APAC FF-ICE/R1 Plan highlights that the implementation of SWIM, a key enabler for FF-ICE, within the APAC region, should follow the regionally agreed-upon guidelines, including APAC SWIM Technical Infrastructure Profiles Version 1.0, and the APAC Common SWIM Information Services, to ensure interoperability and harmonised implementation. The Plan also identifies that interactions between the FF-ICE capable ATM Service Providers (eASPs) and the FF-ICE capable Airspace Users (eAUs) through FF-ICE services are conducted via SWIM-based message exchanges.

3.48 It was also noted that the APAC FF-ICE/R1 Plan specifies the use of Flight Information Exchange Model (FIXM) and the regional Extension to support the digital flight information exchange in a SWIM environment. As agreed by APANPIRG/35 through its Conclusion APANPIRG/35/4, the APAC FF-ICE/R1 Plan identifies that FIXM version 4.3 shall be used as the standard format for the implementation of FF-ICE/R1 services in the APAC region starting from Q3/2026. Additionally, the APAC regional FIXM version 4.3.0 Extension shall be used for cross-border ATFM operations, A-CDM, ATFM/A-CDM integration, and traffic synchronization within the region, as agreed by APANPIRG/36 through its Conclusion APANPIRG/36/12. The change process for the cross-border FIXM operating version used to support system-to-system information exchange via SWIM shall follow the procedure agreed by ATM/SG/13 through its Conclusion ATM/SG/13-5. It was shared that, in FF-ICE operations, eFPL evaluations require checks against restrictions/constraints managed by existing ATM systems; if available, SWIM information services should be used to provide more details of applicable restrictions and constraints.

3.49 The Meeting was informed that the APAC FF-ICE/R1 Plan recommended implementation timeline for APAC as follows:

- a) 2030: commencement of technical tests and trials involving eAUs and cross-border eASP interactions;
- b) 2031: begin operational tests to identify and resolve any issues; and
- c) 2032: full operationalisation of three FF-ICE/R1 services (Filing Service, Flight Data Request Service and Notification Service).

3.50 It was also informed that the draft APAC FF-ICE/R1 Plan, as agreed by the ICAO APAC FF-ICE Ad-Hoc Group in March 2026 was reviewed by the ATFM & A-CDM SG/16 in April 2026. The ATFM & A-CDM SG/16 provided two suggestions: to review paragraph 6.3.6.2.4, in particular the example related to the “ACCEPTABLE” Filing Status, and to consider the inclusion of ATFM Daily Plan (ADP) in the scenarios in the table stipulated in the Appendix C of the Plan.

3.51 The Meeting reviewed the draft APAC FF-ICE/R1 Plan provided in **Appendix 2**, particularly the implementation timeline. It was informed that the draft APAC FF-ICE/R1 Plan, including all feedback from ATFM & A-CDM SG/16 and SWIM TF/11, will be submitted to CNS SG/30 (6-10 July 2026) and ATM SG/14 (3-7 August 2026) for approval. Subject to approval by both groups and the availability of Doc 9965 Manual on FF-ICE Vol. II – Implementation Guidance, the draft APAC FF-ICE/R1 Plan will be submitted to APANPIRG/37 (tentatively in November 2026) for endorsement.

3.52 Additionally, the Meeting was informed that the dissolution of the FF-ICE Ad-Hoc group and the establishment of the APAC FF-ICE Implementation Task Force will be proposed to ATM SG. The Implementation Task Force would, *inter alia*, address the transition from FPL2012 to FF-ICE, operations in a mixed-mode environment, and FF-ICE/R1 implementation issues in the APAC region.

3.53 The Meeting shared the concern about the proposed implementation timeline. It was discussed that, if the timeline proposed by the FF-ICE Ad-Hoc Group is based on the assumption that fully operational SWIM would be available by 2030, the proposed three-year period from the commencement of technical tests and trials to the full operationalisation of three FF-ICE/R1 services is highly challenging. It was suggested that the FF-ICE Ad-Hoc group consider testing the FF-ICE R/1 services over the SWIM TI prototype being developed by SIPG, which is expected to be ready by Q2 2027. **ACTION ITEM 11-8** By doing so, it would allow ample time for services testing, while ensuring that the regional SWIM TI would be able to support the requirements of FF-ICE/R1. For further discussion on the possibility of conducting tests and trials on the regional SWIM TI prototype starting from Q2 2027, it was suggested that the FF-ICE Ad-Hoc group and SIPG first discuss the feasibility of such tests and trials. **ACTION ITEM 11-9**

3.54 In response to a question regarding the appropriate timeframe for the FF-ICE Ad-hoc Group to initiate coordination with SIPG for testing activities, it was suggested that coordination commence from March 2027, given that the regional SWIM TI prototype is expected to be ready by Q2 2027. **ACTION ITEM 11-10**

3.55 MET/IE WG Chair suggested considering the meteorological information services proposed for introduction from 2030 in the APAC FF-ICE Implementation Plan. It was clarified that the current draft of the APAC FF-ICE Implementation Plan refers to restrictions and constraints arising from environmental conditions (e.g. SIGMETs, WAFs, TAFs, and volcanic ash) that impact airspace availability (line 728 of the draft Plan). While SIGMETs and TAFs reflect traditional meteorological products, the METP is presently finalising requirements for new aeronautical meteorological information services — namely Aerodrome Meteorological Observation Information Services (AMOIS), Aerodrome Meteorological Forecast Information Services (AMFIS), and the Hazardous Weather Information Service (HWIS) — which are expected to be introduced as a Recommended Practice from 2030. It was suggested that the meteorological terminology used in the APAC FF-ICE Implementation Plan be generalised to ensure compatibility with both current and future services. For example, the text could refer more broadly to “aerodrome and en-route meteorological forecasts and hazards”, or similar. The following modifications were proposed for the FF-ICE Ad-Hoc Group consideration:

*“environmental conditions such as SIGMETs, WAFs, TAFs, and volcanic ash areas aerodrome and enroute meteorological forecasts and hazards, affecting airspace availability or constraints;”*

*Update on MET-SWIM Documentation – Australia (WP/10)*

3.56 This paper provided updates on guidance documents to support the implementation of meteorological aspects of SWIM. This included an updated MET-SWIM Roadmap, a new Guidelines for MET-SWIM Implementation and the deprecation of the MET-SWIM Plan.

3.57 It was informed that Version 2.3 of the MET-SWIM Roadmap was finalised and published following the Fifth Meeting of the METP (METP/5) in 2021. Since this time, the development of MET information services has greatly progressed, requiring a substantial update to the MET-SWIM Roadmap. As such, the WG-MIE prepared Version 3 of the MET-SWIM Roadmap to reflect the latest advancements and the updated predictions for the future environment. The key changes in version 3 of the MET-SWIM Roadmap include:

- Alignment of Figures 1-4 with updated expected capabilities within each Global Air Navigation Plan (GANP) Aviation System Block Upgrade (ASBU)
  - Block 1 (2019-2024): Exchange of TAC and IWXXM formats over the Aeronautical Fixed System (AFS)
  - Block 2 (2025-2030): Implementation of information services as Recommended Practice
  - Block 3 (2031-2036): Cessation of international TAC exchange
  - Block 4 (2036+): Information services as the primary exchange mechanism for MET information
  - Updated roadmap for modernization of MET exchange (Table 1): SWIM-enabled capabilities optional in Block 2, expected in Block 3.
- Updated plan for removal of TAC as a Standard format: Proposed to be included in Amendment 83 to ICAO Annex 3 (expected applicability of November 2027) with embedded applicability of November 2030
- Updated guidance on issuing single location messages instead of bulletins
- General editorial revisions.

3.58 It was noted that the METP/6 agreed to the proposed Version 3 of the MET-SWIM Roadmap and formulated the **Decision 5/6 — MET-SWIM Roadmap**.

3.59 The Meeting was informed that the First Edition of the Guidelines for MET-SWIM Implementation, Version 3 of the MET-SWIM Roadmap, and the current version (v5) of the IWXXM Guidelines are available at [ICAO APAC e-doc portal](#) -> MET.

3.60 The Meeting noted that the METP WG-MIE is preparing further updates to the MET-SWIM Guidelines and MET-SWIM Roadmap and welcomes suggestions for additional content or changes to the current editions. New editions of MET-SWIM Guidelines and IWXXM Guidelines are expected within the 2026 calendar year.

3.61 The Meeting was encouraged to review the MET-SWIM and IWXXM guidance documents and provide any suggested changes. It was agreed that feedback on both documents can be provided by SWIM TF experts at any time; however, to facilitate incorporation of proposed changes into the next editions, it was suggested that comments be submitted before **July 2026**. It was also

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suggested that States/Administrations review both documents and provide any proposed amendments to the ICAO Secretary before July 2026 as well. **ACTION ITEM 11-11**

*Work Progress of SIPG Task 2: Refine the Revised Hierarchical Architecture – China (WP/24)*

3.62 China presented the progress of SIPG Task 2: Refine the revised hierarchical architecture. The Meeting was informed that SIPG Task 2 is led by China, with participants including Australia, Hong Kong China, India, Japan, Fiji, Singapore, Thailand, Malaysia, USA, Republic of Korea, New Zealand, and CANSO. It was informed that a hierarchical architecture scheme has been proposed, with participants currently conducting joint testing and verification based on consensus. It was also noted that SIPG Task 2 collaborates with Tasks 1 and 3 to establish a unified test environment to provide stable, interoperable architectural support for the implementation of APAC SWIM.

3.63 China shared that the SIPG Task 2 research currently focuses on routing mechanisms under different business scenarios, naming and configuration specifications of multiple queues and the specification of message priority, data model and other features through message metadata. It was further explained that the SIPG Task 2 test plan adopts a layered approach that progresses from simple to complex and supports continuous expansion in order to ensure effective support for the research work. The detailed task, technical solutions and test plan were shared with the Meeting.

3.64 The Meeting was informed that SWIM TI Interoperability Routing Mechanism integrates on-demand routing strategies, relying on message brokers and routing services to meet the Message Exchange Patterns (MEPs) and Quality of Service (QoS) requirements of SWIM information services. Proposals for Business Scenario Routing, Transmission Path Routing, and Granularity-Adapted Routing were shared with the Meeting.

3.65 For APAC SWIM Address Naming Pattern, scope and environment identification, routing-oriented address architecture, and information domain classification were explained.

3.66 It was noted that based on the APAC SWIM hierarchical architecture, SIPG Task 2 has formulated a seven-level test plan for heterogeneous EMSs interconnected over the CRV network. The test plan follows the principles of progressive correlation and full-scenario coverage:

- a) Level 1 and Level 2 focus on basic connectivity to verify inter-node reachability;
- b) The middle three levels (Level 3 - 5) focus on message transmission and routing to ensure reliable and accurate message delivery;
- c) The upper two levels (Level 6 and Level 7) focus on stability and adaptability to guarantee service availability under anomalies and adaptation to topology adjustments.

3.67 The Meeting noted that to date, some participants of SIPG Task 2 have constructed their physical SWIM TIs based on hierarchical architecture, enabling participants to conduct testing on the SWIM TI. Six participants have indicated their intention to deploy EMS nodes and join the testing activities. Five participants have successfully passed the Level 1 (Basic Network Connectivity) and Level 2 (Direct EMS Interconnection) tests, with all inter-node communication links verified as fully qualified, as shown in Figure 1.

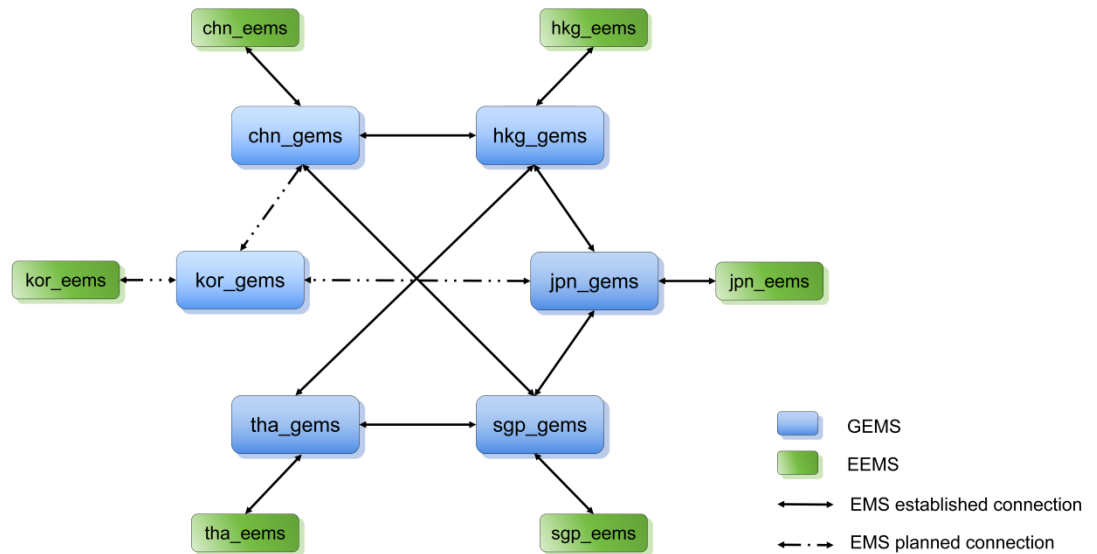


Figure 3: Participants' connection status

3.68 The Meeting noted that the Level 3 (Basic Message Transmission) testing is progressing as scheduled, laying a solid foundation for subsequent advanced testing phases, including multi-node routing and exception fault tolerance. Additionally, it was shared that verification is planned to be completed in 2026. As the testing activities move forward, test levels and EMS participants will be expanded as required by actual operational and testing needs.

3.69 The Meeting was presented with “APAC SWIM Hierarchical Architecture Test Plan”, provided in [Appendix 3](#), drafted by SIPG Task 2. The Meeting encouraged more States/Administrations to consider participating in the SIPG Task 2 activities and to provide feedback on the Test Plan.

3.70 In response to a query regarding performance testing, such as latency and failover tests, it was clarified that these tests will be conducted in coordination with SIPG Task 1. Regarding a question on the plan to conduct testing over the internet, it was shared that currently, there is only a plan to conduct tests using CRV.

3.71 It was queried whether SIPG Task 2 will conduct testing using other types of routing, e.g. topic-based routing, in addition to message-header based routing, and whether a comparison of message header-based routing and topic-based routing will be assessed. Task 2 Lead shared that other types of routing are being considered for future testing, including evaluation of the outcomes of tests using different routing methods under various scenarios. The Meeting was informed that the results of such testing will be shared in the future.

3.72 The Meeting noted that, based on the SIPG plan presented in WP/08, Task 2 is expected to be completed by June 2026. However, according to the plan shared by China in this working paper, all levels of testing are scheduled for completion by the end of 2026. It was clarified that the timeline provided in WP/08 is based on the completion of Level 4 testing, whereas the timeline shared by China is based on the completion of Level 6 testing. The Meeting requested SIPG to further discuss and establish clear criteria and indicators for determining the completion of Task 2 and reconciling the timelines at the next SIPG Meeting. **ACTION ITEM 11-12**

*Outcomes of ATFM & A-CDM Steering Group 16 Meeting – ATFM & A-CDM SG Chair (WP/29)*

3.73 This paper presented the discussions and relevant outcomes of the Sixteenth Meeting of Air Traffic Flow Management and Airport Collaborative Decision-Making Steering Group (ATFM & A-CDM SG/16), which was held in Bangkok, Thailand, from 6 to 10 April 2026. The Meeting report, working papers, information papers, and other resources can be accessed by the following link: [APAC Meetings | International Civil Aviation Organisation](#).

3.74 It was noted under ATFM & A-CDM SG/16 - *Agenda Item 6b: ATFM, A-CDM systems communication – ATFN/AMHS, FIXM, SWIM*, two WPs were discussed:

- i. Guidance Material to Assist APANPIRG Subsidiary Groups in Reviewing and Updating the List of APAC Common SWIM Information Services (WP-6b-01)
- ii. ATFM FIXM Message Data Attributes and Associated Message Templates Based on FIXM Version 4.3 as Asia/Pacific Regional Standard (WP-6b-02)

3.75 Guidance material provided in ATFM & A-CDM/SG/16 WP-6b-01 Appendix A illustrated the type and level of detail required, including business functionality of the information service, a brief description of the service, type of information to be exchanged, information exchange model/message type, message exchange pattern, and priority. A worked example was included for reference.

3.76 The ATFM & A-CDM SG/16 was informed that APANPIRG subsidiary groups were invited to assess whether existing entries combine multiple business functions and, if so, consider splitting them into more detailed and focused information services. Additionally, the ATFM & A-CDM SG/16 noted that a working draft of the Second Version had been developed, and APANPIRG subsidiary groups were requested to submit updates using “track changes” for consolidation at the SWIM TF/11 (26–29 May 2026).

3.77 The ATFM & A-CDM SG/16 noted the feedback from the APAC FF-ICE Ad-Hoc Group, which emphasised that domain-specific groups should focus on defining business rules and business process completion criteria, while the SWIM TF should determine MEP. The APAC FF-ICE Ad-Hoc Group also recommended inclusion of comprehensive operational scenarios as appendices to the Business Functionality for APAC Common SWIM Information Services document.

3.78 During the discussions at the ATFM & A-CDM SG/16, Singapore and Thailand presented a joint response that aligned with the recommendations of the APAC FF-ICE Ad hoc Group discussion. The response proposed updates to the APAC Common SWIM Information Services related to ATFM, focusing on improving clarity and usability. Key proposals included replacing the existing “Priority” column with two new columns - “Applicability” and “Desired Implementation Timeframe” – to better reflect operational relevance and implementation planning considerations. It was also noted by the ATFM & A-CDM SG/16 that the current MEP column had created ambiguity between business and technical aspects; therefore, it was proposed that MEP be addressed by the SWIM TF.

3.79 In addition, the ATFM & A-CDM SG/16 agreed with the recommendation by the APAC FF-ICE Ad-Hoc Group to enhance the “Brief description of the service” column by incorporating a reference to a dedicated appendix, to provide detailed use cases and required MEPs. Derived from the existing work of the Asia-Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC), **five ATFM information exchange scenarios** related to Flight-Specific ATFM Measure Service and ATFM/A-CDM Integration Service were developed. The finalised scenarios, provided in **Appendix 4**, were submitted to SWIM TF/11 for identification of the appropriate MEP. The Meeting reviewed the document and agreed that the proposed content is sufficient for SWIM TF to initiate the identification of MEP.

3.80 The Meeting discussed whether the receipt confirmation for ATFM messages identified in the five scenarios is required, as this would affect the selection of the MEP. It was clarified that, apart

from ATFM units, airspace users, and airport operators, confirmation is not required. Furthermore, the Meeting discussed whether all possible MEPs for all types of users of ATFM-related SWIM information services should be included in the breakdown scenario tables. The Meeting agreed that only the MEP required to fulfil the operational requirements identified by the domain expert groups should be included, in order to avoid confusion and to provide a minimum implementation requirement for information service implementers.

3.81 The Meeting was informed of the work on identification, mapping, and development of ATFM FIXM message data attributes and associated message templates based on FIXM version 4.3, to support cross-border ATFM operations, A-CDM, ATFM/A-CDM integration, and traffic synchronisation in a SWIM environment in the APAC region.

3.82 The Meeting noted *Conclusion APANPIRG/36/12* on the adoption of APAC Regional FIXM 4.3 Extension, which includes data attributes required to support regional operational requirements that are not included in the FIXM 4.3 Core. Based on this identification and mapping, the Technical Sub-Group (TSG) of AMNAC developed ATFM FIXM message templates (*ATFM & A-CDM/SG/16 WP-6b-02 Appendix C*). These templates defined the structure and rules for automated validation of ATFM-related FIXM messages, covering CTOT/CTO allocation/cancellation and TTOT allocation. The templates also integrated the use of FIXM 4.3 Core and APAC Extension within the template schema to ensure harmonised and interoperable message construction for cross-border ATFM system-to-system exchanges via SWIM. It was noted that Appendix A of ATFM & A-CDM SG/16 – WP-6b-02 provides the list of data attributes for the five identified ATFM FIXM messages. Appendix B provides a mapping of data attributes to the FIXM version 4.3 Core and the APAC Extension. Appendix C provides the associated ATFM FIXM message templates to support harmonised and automated message validation.

3.83 It was added that, following the ATFM & A-CDM SG/16, additional feedback on the ATFM FIXM message templates was received, and the message template schema was updated accordingly. The validation of the updated message template scheme was successfully conducted by Singapore and Thailand in May 2026, as presented in SWIM TF/11 – WP/12.

3.84 The Meeting was shared that the associated ATFM FIXM message templates developed to support harmonised and automated message validation fall under the responsibility of the SWIM TF. Therefore, the ATFM FIXM message templates schema required review by the SWIM TF. Discussion on this matter was recorded under WP/12.

#### **Agenda Item 4: Updates on progress and issues under the SWIM TF Task groups structure**

##### **a) Implementation planning**

- Task 1: Regional Implementation Philosophy & Roadmap

##### **b) SWIM infrastructure**

- Task 2: Regional SWIM Infrastructure
- Task 3: Security Services

*Hierarchical SWIM Architecture to Achieve Message Exchange Patterns in the APAC Region – Japan (WP/21)*

4.1 The Meeting noted that in accordance with the decision of the SWIM TF, a hierarchical architecture has been adopted for the APAC SWIM implementation. Therefore, the approaches to achieving the different message exchange patterns defined in ICAO Doc 10203 Manual on SWIM Implementation based on this architecture need to be discussed and clarified. This working paper clarified the application requirements for these message exchange patterns and discussed technical approaches for achieving them through coordination among Edge and Gateway Enterprise Messaging

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Services (EMSs).

4.2 It was informed that to ensure the utilisation of various information services, the Manual on SWIM Implementation (ICAO Doc 10203) defines several Message Exchange Patterns (MEPs), including synchronous and asynchronous request/reply, publish/subscribe and one-way. These MEPs are expected to be supported by SWIM TI. However, the practical implementation of these patterns within the APAC SWIM hierarchical architecture requires further discussion and clarification. In particular, the coordination between Edge and Gateway EMSs introduces specific technical and operational considerations that need to be addressed to ensure interoperability and consistency across States.

4.3 Processes and constraints of Synchronous Request/Reply MEP, Asynchronous Request/Reply MEP, Publish/Subscribe MEP and one-way MEP were shared with the Meeting.

4.4 It was shared that, within the APAC SWIM TI, AMQP 1.0 is mandated as the communication protocol for the Asynchronous Request/Reply MEP. The AMQP header properties, which are included in messages to improve reliability and efficiency in a multi-hop delivery environment, were recommended at the Meeting. The message headers supporting message routing across Edge and Gateway EMSs (EEMS and GEMS) in the APAC region, as well as the naming convention and source, recipient, and system identifier format for the Asynchronous Request/Reply MEP were explained.

4.5 The Meeting noted that, within the APAC SWIM TI, AMQP 1.0 is also used to support the publish/subscribe MEP. Topics are modelled as AMQP node addresses, whereby publishers establish a sender link to a topic node and consumers establish receiver links. The EMS is responsible for the fan-out of messages received on a topic link to all attached receiver links. As Topics are structured as hierarchical address strings using a defined delimiter convention, a consistent topic naming convention was recommended to enable topic relay and filtering among Edge and Gateway EMSs. The topic naming convention was recommended for the publish/subscribe MEP for use in the APAC SWIM environment.

4.6 The Meeting was informed that, within the APAC SWIM TI, HTTP/HTTPS is the designated protocol for synchronous exchange, aligning with the RESTful, resource-oriented information service interface. HTTPS shall be used for all inter-EMS and cross-domain traffic. Mutual TLS (mTLS) should be applied for machine-to-machine service invocations across EMS domains. Unlike AMQP-based patterns, HTTP/HTTPS does not support brokered intermediary routing. It was informed that implementation approaches have been discussed by SIPG Task 3. A hybrid approach via the coordination between Edge EMS and Gateway EMS is recommended. An API Gateway deployed at the Edge EMS level provides centralised management for local service requests. The following key functions should be considered:

- Service registry and endpoint resolution: Maps logical SWIM information service to physical backend URIs.
- Authentication and authorisation enforcement: Validates OAuth 2.0 tokens, mTLS and client certificates before forwarding requests.
- Rate limiting and throttling: Protects downstream services from overload.
- Request/response transformation: Adapts message formats where necessary for legacy or heterogeneous services.
- Load balancing: Distributes traffic across multiple instances of a service

4.7 It was proposed the following coordination principles apply across all three MEPs and should be adopted in APAC SWIM TI implementations.

- Federation links: AMQP federation links between Edge and Gateway EMSs should use persistent, durable connections with automatic reconnect logic to handle network interruptions.
- Naming convention governance: A shared, registry-maintained topic/URI naming convention must be established and governed by the SWIM Task Force to prevent conflicts and ensure interoperability in the APAC region.
- Failover and redundancy: Gateway EMS nodes should be deployed in active-active or active-standby pairs; Edge EMS nodes should support automatic failover to alternate Gateway EMS connections.

4.8 The Meeting noted that the practical validation and evaluation have been conducted through SIPG activities and agreed to provide this working paper to the relevant SIPG Tasks and SWIM TF Task group, particularly SIPG Tasks 1, 2, and 3, and SWIM TF Task 6, for further deliberation.

4.9 The Meeting discussed in detail all recommendations provided in this Working Paper and agreed that there remains a need for more detailed deliberation on each recommendation to ensure alignment with other work being conducted under SIPG, such as the development of Guidance Material on Request/Reply MEP. It was suggested that these recommendations be further discussed at the SIPG Meeting. **ACTION ITEM 11-13**

**c) Technical architecture**

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

*ATFM FIXM Message and Associated Message Templates based on FIXM Version 4.3 – ATFM SG (WP/12)*

4.10 This paper presented the work on the development of ATFM FIXM message and associated message templates based on FIXM version 4.3 to support cross-border ATFM operations, A-CDM, ATFM/A-CDM integration, and traffic synchronisation in the SWIM environment in Asia/Pacific region. The Meeting noted that FIXM version 4.3 was formalised as the regionally agreed information exchange model for information exchange between operational ATFM systems. In support of cross-border ATFM operations and ATFM/A-CDM integration, successive regional FIXM extensions were developed collaboratively by the ATFM SG and the SWIM TF. In line with *Conclusion APANPIRG/35/4* and to ensure readiness of the implementation of ATFM FIXM information exchange, the Technical Sub-Group (TSG) of the Asia-Pacific Cross-Border Multi-Nodal ATFM Collaboration (AMNAC), in collaboration with members of the SWIM TF, identified the ATFM FIXM message data attributes, mapped them to the FIXM version 4.3 Core and Extension, and developed the associated message templates.

4.11 It was informed that this work was presented to the ATFM & A-CDM SG/16 through WP-6b-02 in April 2026. Consequently, the ATFM & A-CDM SG/16 agreed, through its *Draft Conclusion ATFM & A-CDM/SG/16-6*, to the adoption of the identified ATFM FIXM message data attributes, mapping, and the associated message templates, based on FIXM version 4.3, as regional standard templates effective Q1/2027.

4.12 The Meeting noted that additional feedback was received after ATFM & A-CDM SG/16, and the templates were subsequently updated. Singapore and Thailand successfully validated the updated message templates in May 2026. It was highlighted that with the updated message template schema, the identified ATFM message data attributes and their mapping to the FIXM version 4.3 Core and the APAC Extension, as agreed by ATFM & A-CDM SG/16, remain unchanged.

4.13 With the abovementioned, the following draft conclusion was proposed, which was endorsed by the SWIM TF/11 Meeting for APANPIRG/37 adoption through CNS SG/30 endorsement.

<b>Draft Conclusion SWIM TF/11/02 – Adoption of ATFM FIXM Message Data Attributes and Associated Message Templates Based on FIXM Version 4.3 as Asia/Pacific Regional Standard</b>	
<p>What: The ATFM FIXM version 4.3 message templates described in <b>Appendix 5</b> be:</p> <p>a) adopt the ATFM FIXM message data attributes and associated message templates, based on FIXM Version 4.3, as Asia/Pacific regional standard templates effective Q1/2027 to support cross-border ATFM information exchange via SWIM</p> <p>b) uploaded to the ICAO Asia/Pacific Regional Office website for use by Asia/Pacific Administrations, to support cross-border ATFM operation, A-CDM, ATFM/A-CDM integration, and traffic synchronisation.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Ops/Technical</p>
<p>Why: To support harmonised and automated message validation for cross-border ATFM system-to-system data exchanges, in alignment with Conclusion APANPIRG/35/4 and Draft Conclusion ATFM &amp; A-CDM/SG/16-6.</p>	<p>Follow-up: <input type="checkbox"/> Required from States</p>
<p>When: 29-May-26</p>	<p>Status: Draft to be adopted by PIRG</p>
<p>Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: ATM/SG</p>	

4.14 In response to a query regarding whether the ATFM FIXM message template schema is required to be published on the official FIXM website ([www.fixm.aero](http://www.fixm.aero)), it was clarified that such publication may not be necessary, as the ATFM FIXM message template scheme is intended for regional use within APAC. It was further noted that publication on the ICAO Asia/Pacific Regional Office website should sufficiently serve the purpose.

**d) Governance**

– Task 5: Regional SWIM Governance Framework

*APAC SWIM Implementation Framework – Japan (WP/20)*

4.15 This paper re-examined key outstanding issues related to the APAC SWIM implementation framework within the scope of the SWIM TF and sought further guidance from the Meeting to facilitate the finalisation of associated agreements and technical specifications. It was noted that there is a need to establish a common understanding of what constitutes APAC SWIM and to accelerate the development of consensus-based documentation and technical specifications, SWIM implementation framework, including the roles, responsibilities and accountabilities of stakeholders, governance structure, standards and specifications, policies and processes were clarified and proposed in the Meeting.

4.16 The Meeting was informed about the concern that several elements of the implementation framework for SWIM remain insufficiently defined, particularly in terms of governance structure, role allocation, and policy alignment at the regional level, which may impact the consistency and interoperability of SWIM implementation across the APAC region.

4.17 Roles, responsibilities and accountabilities of different SWIM stakeholders were shared. Given that APAC SWIM is a federated system involving multiple States and stakeholders, a governance structure is essential to ensure coordination, consistency, and transparency, and the following structure was proposed:

- **Regional SWIM Board (working title)**

The highest decision-making body responsible for regional policy direction, approval of standards, and resolution of cross-border coordination issues.

- **Technical Steering Group (working title)**

Responsible for the development, maintenance, and harmonisation of technical specifications. This function may evolve from the current SWIM Task Force.

- **Operations Committee (working title)**

Responsible for operational coordination, including service deployment, monitoring, and usage management.

4.18 It was noted that, while the draft APAC SWIM implementation framework identifies a governance structure comprising a Regional SWIM Board, a Technical Steering Group, and an Operations Committee, further clarification may be beneficial with regard to the institutional positioning and decision-making arrangements of such governance bodies at the regional level.

4.19 The Meeting was also informed that, taking into account the federated and multi-State nature of APAC SWIM, as well as different possible approaches to regional coordination, the following two governance options were identified for further consideration. It was added that these options are not mutually exclusive and may evolve over time depending on regional consensus and implementation maturity.

<b><i>Option 1:</i></b> Governance Based on ICAO APAC Institutional Framework	<b><i>Option 2:</i></b> State-Led Governance Independent of ICAO Structures
1. Under this option, APAC SWIM governance would be established by leveraging existing ICAO APAC institutional arrangements, in particular within the framework of APANPIRG.	1. Under this option, APAC SWIM governance would be established through a multilateral, State-led arrangement outside the formal ICAO institutional structure, while remaining aligned with ICAO standards and guidance.
2. A dedicated <b>APAC SWIM Board</b> could be established as a subordinate body under APANPIRG, with participation from States of the Asia/Pacific Region and support from the ICAO APAC Office. This Board would serve as the highest regional decision-making body for APAC SWIM, providing strategic direction, endorsing governance arrangements, and approving key policies and specifications related to SWIM implementation.	2. A <b>APAC SWIM Board</b> could be established based on a governance agreement or memorandum of understanding among participating States. The Council would be composed of officially designated State representatives and would be responsible for approving regional SWIM policies, technical specifications, and participation arrangements.
3. The existing SWIM Task Force could evolve into, or form the basis of, a <b>Technical Steering Group</b> , operating under the oversight of the APAC SWIM Board. This group would be responsible for the development, maintenance, and harmonization of technical specifications, including APAC-specific extensions to ICAO information exchange models, as	3. A supporting <b>Technical Steering Group</b> would be responsible for developing and maintaining technical and architectural specifications, informed by practical implementation experience, trials, and demonstrations. While ICAO information exchange models and guidance would be used as the baseline, this group could manage regional adaptations and

<p>well as supporting implementation activities across the region.</p> <p>4. An <b>Operations Committee</b> could be established to support coordination of operational deployment, service monitoring, and operational issue resolution among participating stakeholders, reporting to the APAC SWIM Board as appropriate.</p> <p>5. This option would ensure strong alignment with ICAO global provisions, including PANS-Information Management (Doc 10199), and would benefit from established ICAO governance processes and regional recognition, while recognising that decision-making processes may be subject to existing ICAO procedural timelines.</p>	<p>implementation-driven refinements in a flexible manner.</p> <p>4. An <b>Operations Committee</b> could be established to address practical aspects of federated operations, including service availability coordination, trust frameworks, security arrangements, and information-sharing practices among participating stakeholders.</p> <p>5. Under this model, the ICAO APAC Office could participate as an observer or advisor, facilitating information exchange with ICAO activities and supporting consistency with global SWIM developments. This option may offer increased flexibility and implementation agility, while requiring careful consideration of how outcomes are coordinated with ICAO regional and global processes.</p>
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4.20 It was noted that both governance options provide viable pathways for establishing effective regional SWIM governance in the APAC region. The choice of approach, or a phased combination of both, may be informed by regional consensus, implementation priorities, and the desired balance between institutional alignment and operational flexibility.

4.21 The Meeting noted that SWIM TF has developed, or is developing, a range of standards and specifications. Key deliverables include:

- APAC SWIM Service Overview Extensions (draft)
- SWIM Discovery Service (SDS) Implementation Specification (v1.0.0)
- SWIM Metadata Exchange Service (SMXS)
- FIXM v4.3 APAC Extension
- APAC SWIM Technical Infrastructure Profiles (TI Profiles) v1.0
- APAC SWIM Implementation Guidance (IGD)

4.22 Additional specifications, including those related to information security, are expected to be developed. The Meeting recommended that the APAC SWIM implementation framework be formalised by consolidating governance arrangements, roles, standards, and procedures into a single agreed framework document, subject to endorsement by relevant stakeholders. A draft agreement, provided in **Appendix 6** to this report, was shared with the Meeting.

4.23 By [Flimsy/01](#), Japan proposed a separate online survey on the Draft APAC SWIM Governance Agreement at: <https://forms.cloud.microsoft/r/sauqDAGtrY>. States/Administrations were encouraged to complete the survey before 30 June 2026.

4.24 The Meeting agreed that Option 1 is the preferred approach, as it ensures harmonisation of SWIM implementation in line with ICAO provisions, supports SWIM interoperability, and promotes adherence to United Nations policies and ethical principles. The Meeting requested Japan to continue exploring further details of Option 1 together with the SWIM TF Task 5 group and to share the outcomes with SWIM TF at a future Meeting. **ACTION ITEM 11-14**

4.25 The Meeting discussed that, in the future, the SWIM TF may evolve into a new Subgroup, as the SWIM concept extends beyond CNS. The ICAO Secretary shared that each section

within the ICAO APAC Regional Office is responsible for one Subgroup, and that the establishment of additional Subgroups would require additional resources, which are not currently available. The Meeting was recalled that SWIM TF has been retained under the CNS Subgroup as its current work is highly technical in nature. For the time being and in the near future, the SWIM TF will continue to ensure appropriate coordination with other relevant domain expert groups. Once the regional SWIM technical foundation has been established, should the SWIM TF consider it appropriate, it may request APANPIRG to establish a new Subgroup or consider other alternatives, such as reassignment to another existing Subgroup.

4.26 The Meeting agreed to request all possible stakeholders from States/Administrations participating in SWIM TF/11 to respond to [the survey](#) before the deadline of **30 June 2026**. **ACTION ITEM 11-15** It was also agreed that there is currently no need to share the survey with States/Administrations that did not participate in the SWIM TF/11 Meeting.

**e) Information services**

- Task 6: Information Services

**f) Validation and demonstration**

- Task 7: SWIM Demonstration
- Task 8: SWIM Services and Application Validation

*Establishment of a SWIM Test Environment for APAC SWIM – Japan (WP/22)*

4.27 Japan presented potential options for the establishment of an evaluation environment within APAC SWIM, including an analysis of their respective advantages and disadvantages, in order to support decision-making by States concerning regional implementation.

4.28 It was recalled that the APAC SWIM infrastructure is envisaged to comprise Gateway Enterprise Messaging Services (GEMS) provided by several States, as well as Edge EMS (EEMS) implemented by individual APAC States. SWIM operations depend on user systems (applications), such as those operated by airlines, which consume information services primarily provided by national ANSPs via the platform. In this context, it is essential that both service providers and service consumers undertake appropriate validation and evaluation activities.

4.29 Relevant requirements and guidance from ICAO Doc 10199 PANS-IM, a part of the Information Service Overview requirements and existing practices, such as a case study of FAA, Eurocontrol, and JCAB, were shared with the Meeting.

4.30 A proposal to build a Testing Environment for APAC SWIM, along with its advantages and disadvantages, was shared.

Option 1: Continuation of the SIPG Test Environment (CRV-based)	Option 2: Internet-Based SWIM Sandbox Environment
<p><b>Advantages</b></p> <ul style="list-style-type: none"> <li>• Closely replicates the operational (live) environment</li> </ul> <p><b>Disadvantages</b></p> <ul style="list-style-type: none"> <li>• Participation may be limited due to resource constraints</li> <li>• Connectivity challenges may arise for certain States</li> </ul>	<p><b>Advantages</b></p> <ul style="list-style-type: none"> <li>• Facilitates simpler, faster, and more cost-effective connectivity</li> <li>• Supports accelerated implementation, testing, and capacity-building</li> <li>• Enables flexible bandwidth testing</li> <li>• May function as an interim Edge EMS</li> <li>• Particularly suitable for MET information services</li> </ul> <p><b>Disadvantages</b></p>

<ul style="list-style-type: none"> <li>• Bandwidth testing requires CRV provisioning, incurring additional costs</li> <li>• No established framework for connectivity via the Internet</li> </ul>	<ul style="list-style-type: none"> <li>• Does not fully replicate the operational CRV environment</li> <li>• Potential concerns regarding data sensitivity</li> </ul>
<p><b>Risks</b></p>	<p><b>Risks</b></p>
<p>None</p>	<ul style="list-style-type: none"> <li>• May require policy adjustments in certain States</li> <li>• Potential implications in terms of operational costs</li> </ul>

4.31 The Meeting noted that Option 1, the regional SWIM testing environment over CRV, is aligned with the current SIPG test setting. Maintaining this approach during the initial phase of APAC SWIM implementation may therefore be advantageous. However, as APAC SWIM evolves with operational SWIM traffic carried over CRV and the demand for service validation increases, constraints on CRV capacity may arise. On the other hand, a regional SWIM testing environment over the Internet may accommodate a wider group of information consumers and support testing of bandwidth-intensive information services (e.g. MET) in a regional environment. Accordingly, it was recognised that there may be a future need to transition from the regional SWIM testing environment from CRV to the Internet. The Meeting therefore requested Japan to further explore feasible approaches for transitioning the testing environment from CRV-based connectivity to Internet-based connectivity **ACTION ITEM 11-16** It was further suggested that the study considers the associated technical work and costs required for such transition and the long-term maintenance of the environment. In this regard, the CRV network model, which is based on cost-sharing among APAC member States, may serve as a useful reference.

**g) Coordination and promotion**

- Task 9: Monitoring of Panels' Work
- Task 10: Regional Coordination and SWIM-related Information Sharing
- Task 11: SWIM Implementation Education and Promotion

*IMP Updates – Japan (IP/04)*

4.32 Japan provided an overview of the fourth Meeting of the Information Management Panel (IMP/4), held at ICAO Headquarters in Montréal from 20 to 24 April 2026. Proposed amendments to the *Procedures for Air Navigation Services – Information Management (PANS-IM, Doc 10199)* and the *Manual on SWIM Implementation (Doc 10203)* were discussed with a view to enhancing SWIM interoperability. In addition, an action plan to improve global interoperability was developed, and the Panel's work programme (Job Card) was reviewed in the IMP/4 Meeting.

4.33 The Meeting was informed that progress related to the ATM Information Reference Model (AIRM), including the planned release of version 1.3.0 in 2026 (current approved version: 1.2.0), was reported to the IMP/4. It was added that submission of AIRM 1.3.0 to the IMP for approval is planned for autumn 2026.

4.34 The Meeting noted that the Services Working Group introduced the Global SWIM Registry Interoperability Concept, which proposed a method to improve interoperability among SWIM registries. It was also reported that no major revisions to existing SWIM guidance are currently envisaged. In addition, updates were provided on the SWIM Discovery Service (SDS) Specification under development within the APAC SWIM TF. IMP/4 also shared that APAC and the FAA plan to conduct operational scenario development and testing in 2026. Future work at the IMP level will continue in coordination between the Services and Architecture Working Groups.

4.35 It was noted that several working and information papers were submitted addressing topics related to the Global SWIM environment. Given the complexity of issues related to the Global

SWIM environment, including the need to consider operational aspects across multiple domains and coexistence with existing systems such as AFTN/AMHS, the IMP agreed to request the Air Navigation Commission (ANC) to establish a dedicated task force involving relevant panels, recognising that the work would require border coordination across multiple domains and stakeholders.

*Raising Airlines' Awareness of SWIM, FF-ICE and TBO – IATA (IP/07)*

4.36 IATA presented an update on current and planned activities by IATA to raise awareness in all levels of member airlines in the fields of SWIM, FF-ICE and TBO. The Meeting was informed that three webinars are planned: Two 2-hour webinars for airline operational and technical SMES, including technical/management and pilots, and one 45-minute webinar with high-level content for executive-level attendees. Feedback from airlines during and after the webinars will be used to update the APAC Pathfinder TBO education material published in 2025. IATA encouraged all ANSPs that do not yet have strong points of contact with their home-based airlines for SWIM and other concepts to liaise with IATA to establish appropriate connections with airlines in order to align development and implementation roadmaps.

**Agenda Item 5: SWIM requirements for the regional physical network**

*Review of outcomes and action items from the ICAO APAC CRV-SWIM Experts Workshop: Reviewing of CRV II Specifications and ICAO APAC SWIM Architecture in September 2025 – Sec (WP/14)*

5.1 The paper presented the key outcomes of the ICAO APAC CRV-SWIM experts Workshop: Reviewing of CRV II Specifications and ICAO APAC SWIM Architecture, held in Bangkok, Thailand, from 01-05 September 2025. Detailed information on the Meeting proceedings is available in the [Report of the Meeting](#).

5.2 The Meeting noted that day 1 and the first half of day 2 of the workshop were dedicated to outstanding topics from SWIM TF; the second half of day 2, day 3 and day 4 were dedicated to outstanding topics from CRV OG experts that required clarification and/or suggestions from SWIM TF experts. The Meeting reviewed all pending action items from the workshop and agreed to incorporate them into the Action Item list arising from SWIM TF/11. It was noted that, following the incorporation of all action items for which SWIM TF is the responsible action party, those action items can be closed in the workshop action item list, as the monitoring of the action items would thereafter be transferred to SWIM TF. It was also agreed to review these action items during the review of other action items under agenda item 7.

**Agenda Item 6: State, regional and global SWIM updates**

*Progress of TBO Pathfinder Development in the Asia/Pacific Region – Hong Kong, China, Indonesia, Japan, New Zealand, Philippines, Republic of Korea, Singapore, Thailand, Viet Nam, USA and IATA (WP/11)*

6.1 This paper presented progress by the Asia-Pacific (APAC) Trajectory-Based Operations (TBO) Pathfinder project (Pathfinder). It was recalled that Pathfinder was initiated under the APAC Air Navigation Service Provider (ANSP) Committee (AAC) to develop pathways for implementing the ICAO global TBO concept in the region.

6.2 It was informed that throughout 2025, Pathfinder efforts were focused primarily on the FF-ICE/R1 application. A summative report of the efforts to support the implementation planning efforts among ANSPs was presented to ATM/SG/13. With the focus for 2026 being FF-ICE Release 2 (FF-ICE/R2), Airspace Users (AUs) will be involved as key stakeholders. Activities in 2026 include updating TBO communication materials, conducting stakeholder engagement in the Philippines, and

organising regional webinars led by IATA to raise AU awareness. It was added that technical preparations for the FF-ICE/R2 lab demo (scheduled for March 2027) are underway through technical interchange Meetings and table-top exercises, with AUs input being organised to enhance operational realism and initial meetings have taken place to support two of the airlines to participate as FF-ICE enabled AUs.

6.3 It was added that Pathfinder will also develop trajectory analysis methodologies to quantify TBO benefits for city pairs and ANSPs, documented in a TBO benefits report. It was emphasised that FF-ICE/R2 will extend trajectory negotiation beyond current flight dispatch and tactical airborne changes to negotiation, including pilots, flight operations units and ATM systems, altering the roles and responsibilities of all. States/Administrations were encouraged to support ANSPs and national airlines in raising TBO awareness, work towards SWIM deployment by 2030 and FF-ICE/R1 implementation by 2032 and participate in IATA's regional webinars.

*Update on MET Information Exchange Via AMQP in Europe – Australia (WP/13)*

6.4 Australia provided an update on the implementation of AMQP brokers in Europe for meteorological information exchange, which describes the current state of the standardisation of AMQP headers and message structure as defined by the European MET3SG and key lessons learned during implementation. Australia highlighted the need for detailed, globally agreed technical specifications for AMQP message and application properties, and the practical differences encountered between different AMQP implementations. Aggregation data being performed across the Northern Europe Aviation Meteorology Consortium (NAMCON) states was also highlighted.

6.5 The Meeting was requested to consider adopting the same approach and guidance for meteorological information exchange aspects of APAC SWIM, as well as to consider if there is a need to align the metadata used across different information domains.

6.6 Singapore informed the Meeting that it has been working with its MET service provider on migrating certain weather services towards AMQP adoption. Singapore further queried, with respect to non-IWXXM products (e.g., other data models, imagery, etc.), whether there are any ongoing initiatives within the METP to support their migration to SWIM-compliant frameworks, for example, via HTTP, in order to align them with the AMQP environment alongside IWXXM-based message exchanges. Another query was raised regarding whether there is a requirement to standardise the topic address delimiters for MET services.

6.7 Australia informed the Meeting that discussions are ongoing under the updating work of the MET-SWIM Roadmap and Guidelines for MET-SWIM Implementation regarding different data types and the associated exchange mechanisms. It was noted that many MET services are likely to adopt AMQP as a notification service, carrying IWXXM messages together with associated payloads, similar to the approach implemented in Europe. Australia also provided an example of standardised notifications between Volcanic Ash Advisory Centres (VAACs), which may include IWXXM data and polygon information representing ash extents. User systems could then utilise request/reply services to retrieve higher-volume gridded data, concentration levels, or imagery products as needed.

6.8 Regarding the requirement to standardise topic address delimiters for MET services, METP is currently looking to adopt the European approach. The Meeting was invited to share recommendations, if any. Japan suggested considering the implementation of metadata for the AMQP-based PUB/SUB.

6.9 With respect to the request to consider adopting the same approach and guidance for meteorological information exchange aspects within APAC SWIM, it was agreed that this can be further assessed and considered by SIPG Task 2, as the group is currently working on routing mechanisms for the APAC region. It was acknowledged that the SIPG Task 2 work is mainly based on the message property-based routing; however, the topic-based routing can be discussed within Task 2. **ACTION**

**ITEM 11-17**

6.10 Regarding the request to consider whether there is a need to align metadata used across different information domains, it was shared that it would depend on the type of metadata involved. As the naming convention and structure are currently under discussion within SIPG Task 2, it was suggested that this request also be considered under that work. **ACTION ITEM 11-18** Australia requested that, should SIPG develop any recommendations arising from both requests, these be shared with the MET/IE WG / MET SG Secretary. **ACTION ITEM 11-19**

*Latest Status of IWXXM – Hong Kong China (WP/23)*

6.11 Hong Kong China highlighted the latest status of the ICAO Meteorological Information Exchange Model (IWXXM) and related outcomes of the 13<sup>th</sup> and 14<sup>th</sup> Meetings of the ICAO Meteorological Panel (METP) Working Group of Meteorological Information Exchange (WG-MIE) being held in September 2025 and May 2026, respectively.

6.12 The Meeting was informed that the WMO Task Team on Aviation Data (TT-AvData) had published a new version of IWXXM in November 2025 – IWXXM 2025-2 – to meet the changes involved in Amendment 82 to ICAO Annex 3 and PANS-MET (Doc 10157). It was noted that **Decision MIE/13-03: Managing IWXXM Version** was made at the 13th Meeting of ICAO Meteorological Panel Working Group on Meteorological Information Exchange (METP WG-MIE/13) regarding the deprecation of older IWXXM versions and ceasing their use in operational exchange of meteorological information. Subsequent to METP WG-MIE/13, ways to make IWXXM better fit the publish-subscribe and request-reply exchange patterns in SWIM were further discussed at WG-MIE/14.

6.13 The paper recapped the major changes involved in IWXXM 2025-2 with respect to IWXXM 2023-1. Details regarding IWXXM 2025-2, including the schemas, examples, UML model, and release notes, are available at <https://schemas.wmo.int/iwxxm/2025-2/>

6.14 It was noted that to address the issues concerning IWXXM version recommendations and compatibility, the MET/IE WG/24 Meeting held in April 2026 formulated the **Draft Conclusion MET/IE WG/24-01 – IWXXM Version Compatibility** for further consideration by MET SG.

6.15 The Meeting was informed that, in response to Decision MIE/13-03 b), future IWXXM versions should be managed as independent packages. In particular, TT-AvData has started to work on a solution that allows packages to be separately managed and used. It was added that this new organisation will be implemented in the next release of IWXXM. A discussion of the current state of standardisation of AMQP headers and message structure as defined by the European MET SWIM Services Sub-Group (MET3SG) community of interest, with regard to the implementation of SWIM information services according to the European CP1 regulation, was made. It was shared that further investigation would be taken by WG-MIE and TT-AvData to identify further operational metadata needs, consider cross-exchange pattern interoperability and introduce necessary operational metadata into IWXXM schemas. Lastly, it was added that learning from other information domains on their requirements and the application of such metadata in information service features would also be carried out.

6.16 The Meeting reminded States/Administrations to ensure that systems being developed or procured will work with current and upcoming versions of IWXXM.

*Data Volume of Digital NOTAM Messages Handled on SWIM – Japan (IP/05)*

6.17 Japan informed that, in accordance with Action Item 10-22 agreed at the SWIM TF/10 Meeting, the JCAB shared the results of a survey conducted in 2016 with the SWIM Implementation Planning Group (SIPG) members via email on 30 June 2025.

6.18 The Meeting was informed that, in the 2016 analysis conducted by JCAB, the data volume resulting from the conversion of conventional NOTAM text messages circulated over AFTN/AMHS into AIXM format was estimated to be approximately 50 KB at maximum. Based on the results of this 2016 survey, JCAB designed and developed a system with a maximum data size limit of 100 KB per digital NOTAM message and evaluated the overall processing performance and service quality of the SWIM Technical Infrastructure (SWIM TI). However, during system evaluations using actual NOTAM issuance scenarios, several cases were identified in which the total data volume of a digital NOTAM exceeded the predefined limit of 100 KB.

6.19 Japan provided an example of NOTAM concerning taxiway closures at Tokyo Haneda Airport. It was shared that digital NOTAM data consists of two main parts: Area 1, which contains the message header and content encoded in AIXM and Area 2, which contains location and geometry-related information encoded in GML. It was observed that the data size of Area 1 increased considerably due to the large number of closure locations described in the NOTAM. This confirmed that the complexity and quantity of operational elements directly affect the data volume of AIXM-based digital NOTAM messages. It was added that JCAB has expanded the maximum allowable size of Area 1 to 300 KB and conducted a reevaluation to verify that no adverse effects on system performance or network behaviour would arise. It was noted that JCAB launched the digital NOTAM information service on 4 March 2026.

6.20 The Meeting noted that the total volume of digital NOTAM data exchanged over the APAC SWIM network may exceed current estimates shared in this paper. Furthermore, various approaches exist for reducing the size of AIXM messages. To prevent excessive load on the CRV network, it was important to appropriately manage the size of digital NOTAM data. Where necessary, an upper limit on data size should be established using appropriate technical or operational methods.

6.21 In response to a question regarding whether there is plan to study the accumulated bandwidth requirements for the estimated number of digital NOTAM messages based on historical data in Japan, it was clarified that, as the digital NOTAM service has only recently been launched, further study will be conducted in the future.

*Progress Update on SWIM Implementation in Japan (IP/06)*

6.22 Japan presented a progress update on the implementation of SWIM in Japan. It outlined Japan's strategic approach, the development of SWIM technical infrastructure, and the commencement of operational information services in March 2026. It also highlighted Japan's alignment with ICAO Global Air Navigation Plan (GANP) and the APAC SWIM Implementation Roadmap, as well as future steps toward full SWIM-enabled operations.

6.23 The Meeting was informed that Japan's SWIM implementation has been guided by a phased and operationally focused approach. Rather than a single system replacement, Japan has pursued the gradual integration of SWIM concepts into existing ATM environments, ensuring continuity of operations while enabling future scalability. It was added that the key principles of Japan's SWIM roadmap include:

- Coexistence with legacy systems during transition,
- Early operational use of various types of digital information
- Provision of standardised information services via a centralised SWIM platform

6.24 It was added that Japan has established a national SWIM technical infrastructure as a digital information platform for aviation-related data. The infrastructure enables centralised collection, management, and dissemination of aeronautical, meteorological, and operational information through standardised interfaces. Key characteristics of Japan's SWIM Technical Infrastructure include:

- Internet-based access with appropriate security controls,
- Service-oriented architecture supporting multiple information services,
- Capability to provide information in internationally standardised digital formats

6.25 It was noted that the launched SWIM services are provided through a SWIM portal, allowing authenticated and authorised users to access information via web-based interfaces and system-to-system connections. Japan emphasised early operational benefits through practical information services such as Digital Aeronautical Information Services, Integrated Airport and Airspace Information Services, and Flight Plan and ATS Information Services. It was noted that these services are designed to coexist with existing AMHS/AFTN-based processes while offering a pathway toward future ICAO concepts such as FF-ICE. It was added that Japan's SWIM implementation is fully aligned with the ICAO APAC SWIM Implementation Roadmap, including the dual operation strategy where legacy systems and SWIM services coexist during the transition period.

6.26 Japan shared its plans to further expand SWIM capabilities and its willingness to continue to refine governance, cybersecurity, and service management frameworks to ensure sustainable SWIM operations.

6.27 In response to a question on difficulties faced in coordinating with different stakeholders, Japan informed the Meeting that most users currently use browser-based services, while efforts are ongoing to promote the use of Web API and PUB/SUB services.

6.28 In response to a question about the SWIM governance framework implemented in Japan, it was informed that a SWIM steering committee consisting of multiple aviation stakeholders has been established. It was further added that SWIM usage and enhancement are promoted through the SWIM Education and Enhancement Committee (SWIMEE). To accelerated SWIM implementation and encourage wider SWIM adoption, Japan emphasised the importance of providing SWIM education to users.

*Verification of ATFM Information Exchange Based on SWIM Test Platform – China (IP/08)*

6.29 China presented its verification of ATFM information exchange under the SWIM test platform, based on the existing NTFM-IXP protocol. The Meeting noted that eight standardised information services were derived from operational needs. A bidirectional adapter in this verification environment system is deployed to enable legacy systems to interact with the SWIM test platform. In addition, XSD specifications and end-to-end automated data validation were implemented. It was added that collaborative verification involved ANSPs, airlines and airports across the main business scenarios.

6.30 China informed that after multiple rounds of joint testing, the validation has achieved its expected objectives and obtained the following core outcomes:

- a) Completed integration with China's SWIM test platform, realised unified publication and reception of ATFM information through the SWIM test platform, and verified the technical feasibility of the lightweight access path for legacy systems to the SWIM environment.
- b) Established end-to-end data exchange format and validity validation capabilities. Through unified XSD specifications and dual-end automated validation mechanisms, the validation has effectively resolved the issues of scattered data validation and inconsistent standards in the original system, and improved data quality and exchange reliability.

6.31 Building on these outcomes, China added that it will continue to improve service standardisation and explore compatibility with internationally accepted models such as FIXM, while participating in APAC SWIM implementation exchanges to promote regional SWIM collaborative development.

6.32 The Meeting was informed that the ATM Requirements and Performance Panel (ATMRPP) and ATM Operations Panel (ATMOPSP) are studying how to integrate ATFM with FF-ICE, and that one of the subjects under discussion is the information exchange model to support the exchange of ATFM (flow) information in a SWIM environment. It was shared that China's effort could contribute to the work of this ATMRPP-ATMOPSP Joint Task Force.

*Application of the SWIM concept for MET information provision in the low-altitude economy- Hong Kong China (IP/09)*

6.33 Hong Kong China presented extending the SWIM concept to weather support for low-altitude economy (LAE) development in Hong Kong China, providing guiding principles for meteorological information provision for safer and more efficient operations in low-altitude airspace, although LAE possesses characteristics distinct from the traditional aviation industry.

6.34 The Meeting noted that since 2024, Hong Kong has been developing LAE enabled by Advanced Air Mobility (AAM), with low-altitude infrastructure and flying application scenarios as key priorities. The vision aligns with the SWIM concept, providing standards, infrastructure, and governance for secure information exchange via interoperable services. The ICAO AAM Study Group's discussions on UTM Guidance were identified as valuable references for LAE development in Hong Kong's urban environment.

6.35 The Meeting also noted that Hong Kong launched the Low-altitude Economy Regulatory Sandbox in March 2025 and Sandbox X in November 2025 to foster innovation and test application scenarios. Through engagement with LAE operators, valuable insights on weather support use cases, user requirements, and data specifications were gathered. However, data exchange processes remain time-consuming and lack agility, with standardised data formats and repositories still in early development. The Meeting recognised that LAE operators span diverse applications with varying drone types and requirements, unlike traditional aviation, necessitating an interoperable environment to address thousands of unique demands from the LAE sector.

6.36 It was stated that ATM/UTM integration is a critical issue that will become increasingly necessary with LAE development. It was shared that the Hong Kong Observatory intends to apply SWIM principles as guiding frameworks for developing standards, infrastructure, and governance for LAE meteorological information. Although standardisation may not be achievable immediately, SWIM progress will drive LAE development and reduce fragmented efforts. It was added that similar challenges regarding the lack of a common meteorological information 'language' for LAE were raised at ICAO APAC MET/R WG/15, attracting considerable attention from participants. Given LAE's distributed and diversified nature, adopting SWIM principles will likely spur local development and contribute to regional progress.

6.37 The Meeting was informed that the global AAM Study Group has recently conducted the coordination process with the technical panels regarding its global and holistic vision of the AAM ecosystem. In the vision paper, SWIM is identified as one of the foundational elements supporting future AAM operations. Therefore, the work of SWIM TF is significant not only for traditional ATM operations and future concepts such as FF-ICE and TBO, but also for other advanced future operations.

**Agenda Item 7: SWIM Task Force ToR, Programme, Work Plan, and Action Items review**

- SDS schema update
- APAC Common SWIM Information Services
  - APAC Common SWIM Information Services updates
  - Guidance Material for Business Functionality of APAC Common SWIM Information Services
- Development of an explanation for synchronous REQ/REP and asynchronous REQ/REP

- APAC SWIM Implementation Guidance (IGD) materials
- APAC SWIM implementation progress indicators
- SWIM TF Tasks restructuring

*SWIM Discovery Service (SDS) Update: Schema release, testing, and global adoption for Registry Interconnection – United States (WP/15)*

7.1 The paper discussed updates to the SWIM Discovery Service (SDS) development, a standardised approach to support registry interoperability and federated information service discovery across independently managed SWIM registry environments. It was informed that recent SDS developments (post APAC SWIM TF/10) include alignment with the latest PANS-IM data model and standardisation of protocols for registry metadata exchange and preparation for demonstration, testing, and implementation.

7.2 The Meeting was informed that originally developed as a collaboration between the FAA and Korea Airports Corporation (KAC), SDS has been further matured and adopted in the APAC region and the FAA, both regionally and as members of the IMP, through collaborative initiatives. The recent schema release and updated service description artefacts now enable ICAO States implementing SWIM registries with harmonised metadata exchange and service discovery across individual registries.

7.3 The paper highlighted how SDS aligns with the regional frameworks and ICAO IMP objectives under the SWIM Registry Interoperability Job Card, and upcoming initiatives to develop operational scenarios, test cases, and an implementation plan for registry interconnection and adoption at both regional and global ICAO levels. The Meeting noted the importance of SDS implementation to achieve the global SWIM registry interoperability concept and enable SDS as a candidate global technical solution.

7.4 It was stated that regional test cases and test plans should be developed for SDS testing and continued maturity, implementation plans and schedules should also be socialised for SDS development and service roll-out. Additionally, it was noted that cross-regional SDS demonstrations should be conducted for global adoption. States/Administrations were encouraged to continue socialisation and adoption efforts among both SWIM TF and IMP stakeholders to support the implementation of the SDS concept and associated data exchange mechanisms across SWIM registries for global interoperability.

7.5 Regarding the proposal to develop regional test cases and test plans for SDS testing and continued maturity, it was noted that this task is already within the scope of SIPG activities.

7.6 Regarding the proposal to conduct cross-regional SDS demonstrations for global adoption, it was recalled that SDS demonstrations have previously been conducted between Europe and the United States, as well as within the APAC region. It was added that SWIM TF, through members common to both SWIM TF and IMP, continues to share updates on SDS developments at IMP Meetings. To continue demonstrations with other regions, it was highlighted that there is currently no information about the availability of SWIM registry in regions other than those mentioned above. Therefore, further SDS demonstrations cannot be planned at this time.

7.7 Regarding the proposal to conduct SDS demonstrations over CRV in addition to the Internet, it was agreed that, as most APAC States currently plan to implement SWIM registries over the Internet, demonstrations over CRV may be reconsidered in the future.

7.8 The Meeting discussed the need for a baseline standardised version of SDS for the APAC region. It was recalled that all APAC States/Administrations intending to implement SWIM registries would need to implement SDS in accordance with the agreements reached at SWIM TF/3 and SWIM TF/8. In this context, the Meeting agreed that it would be prudent to adopt SDS v2.0 as the

baseline SDS version for the APAC region. Following detailed deliberation, the Meeting drafted the following draft Conclusion for APANPIRG/37 adoption through CNS SG/30.

<b>Draft Conclusion SWIM TF/11/03</b> Adoption of SWIM Discovery Service Baseline Standardised Version for APAC Region – SDS v2.0	
What: To adopt the SWIM Discovery Service version 2.0 (SDS v2.0) as a regional baseline standard for Asia/Pacific SWIM implementation.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: Considering that the target completion of the Asia/Pacific regional SWIM implementation is 2030, and that many APAC States/Administrations intend to implement SWIM registries, the provision of a baseline SDS version is essential to support harmonised SWIM implementation within the APAC region. SDS v2.0 has been studied and tested by the SWIM TF and that it is aligned with Doc 10199 PANS IM, to support its adoption as the regional baseline standard for SDS.	Follow-up: <input type="checkbox"/> Required from States
When: 29-May-26	Status: Draft to be adopted by PIRG
Who: <input checked="" type="checkbox"/> Sub groups <input checked="" type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: CNS SG	

7.9 To ensure accessibility to the SDS Implementation Specification, Version 2.0, the Meeting requested the United States to upload the latest edition of the document to the SWIM Service Discovery website (discovery.swim.aero). **ACTION ITEM 11-20**

7.10 The Meeting discussed the need for a minor update to SDS v2.0 to include additional information service overview fields, i.e. “Information service definition reference” and “Use limitation”, which were recently agreed at IMP/4. The United States agreed to undertake the task of updating SDS v2.0 accordingly. **ACTION ITEM 11-21**

*SWIM Discovery Service Jump Starter Kit v2.0 - Republic of Korea (WP/26)*

7.11 The Meeting recalled that, at the APAC SWIM TF/9, the SWIM TF requested to verify whether differences between SDS implementation specifications v1.0 and v2.0 would result in the update required for the developed SDS Jump Starter Kit and suggested sharing findings with the future SWIM TF Meeting (ACTION ITEM 9-13). At the SWIM TF/10, ROK presented [a Comparison of SWIM Discovery Service \(SDS\) Implementation Specification between v1.0 and v2.0 \(WP/21\)](#), which compared the differences between SDS implementation specifications v1.0 and v2.0 and provided mapping between service overview and SDM-J v1.0.1/SCDM v3.0.

7.12 To implement ACTION ITEM 9-13 of SWIM TF/9, ROK developed the SDS Jump Starter Kit v2.0 in alignment with the SDS specification v2.0.0 as of April 2026 to contribute to a better understanding and the global implementation of the SDS. ROK introduced the SDS Jump Starter Kit v2.0, specifically intellectual property, system requirements, installation, and usage.

7.13 The Meeting noted that the SDS Jump Starter Kit v2.0 is available on GitHub (<https://github.com/Korea-Airports-Corporation/SWIM-Discovery-Service-Jump-Starter-Kit-v2>) and there will be continuous updates and maintenance of the SDS Jump Starter Kit v2.0 as schema cleaning

is in progress, and there will be a test based on a selected operational test scenario (e.g., caching or federation).

*Development of Updated Version of Business Functionality of APAC Common SWIM Information Service and Associated Guidance Material – Task 6 Leads (WP/16)*

7.14 The Meeting was recalled that, Decision 36/11 from APANPIRG/36 in November 2025, adopted the [First Version of the Business Functionality for APAC Common SWIM Information Services](#). At SWIM TF/10 in May 2025, it was noted that the level of detail differed across different information domains (e.g. aeronautical information, flight information, surveillance data, meteorological information, etc.), potentially caused by different levels of understanding as to what detail was needed by SWIM TF to facilitate the development of SWIM information services within the APAC region. Two actions were raised at SWIM TF/10 to improve the utility and information in the listing of APAC Common SWIM Information Services.

7.15 The paper proposed the initial draft, second working version of the Business Functionality of APAC Common SWIM Information Services, taking into account inputs from the relevant APANPIRG Subsidiary Groups, including FF-ICE Ad-Hoc Group, SURSG, SURICG, ATFM & A-CDM/SG, MET/IE WG and AAITF and also incorporated additional suggested improvements that were identified through the consultation with those Subsidiary Groups.

7.16 The suggested improvements to the Business Functionality for Common APAC SWIM Information Services were proposed as follows:

- a) Replace “Priority” with two independent columns (not yet incorporated into the table):
  - i. “Applicability” (“region-wide” in order to achieve the anticipated benefits, vs. “as needed” to meet local needs); and
  - ii. “Desired implementation timeframe” (Immediate (before 2030), Medium-term (2030-2035), Long-term (beyond 2035)).
- b) Inclusion of a “maturity” attribute only in the working version of the table (i.e. not in the published version) to highlight the state of development of the associated Information Service (e.g. mature, under development, ideation). This will provide easy insight by all relevant stakeholders, for example when deciding which Information Services to include when recommending the publishing of subsequent versions of the Business Functionality of APAC Common SWIM Information Services at ICAO APAC e-doc website, i.e. only “mature” and “under development” Information Services would be published.
- c) Identification of the relevant Subsidiary Group responsible for the associated entry(ies) in the document, by relevant Information Service domains (e.g. Flight Information Services, Aeronautical Information Services). Note that this has resulted in creating a new separate Information Service domain grouping, “Flow Information Services”, which had been grouped with the Flight Information Services in the published First Version.

7.17 The specific suggestions from Subsidiary Groups regarding the usability, clarity, and structure of the information in the list of APAC Common SWIM Information Services were shared at the Meeting.

7.18 It was noted that, at the [Fourth Asia/Pacific FF-ICE Ad-Hoc Group Meeting](#) and Workshop, held from 16 to 18 March 2026, the Ad-hoc Group reviewed the Business Functionality of

APAC Common SWIM Information Services, Version 1.0, and agreed on the following recommendations for consideration by the SWIM TF.

- a) Recognising the limited technical expertise within domain-specific groups such as the FF-ICE Ad-Hoc Group, it was agreed that the group should **focus on defining business rules and business process completion criteria** for information services. The determination of appropriate Message Exchange Patterns (MEPs) for each business process should be undertaken by SWIM TF, which possesses the relevant technical expertise.
- b) To support the determination of MEPs, it was agreed that **comprehensive operational scenarios**, including operational requirements and business process completion criteria, are essential. Accordingly, such scenarios, where required, should be provided as an appendix to the Business Functionality of APAC Common SWIM Information Services document. A reference to the appendix should also be included in the ‘Brief description of the service’ column. Figure 1 illustrates an example of how these comprehensive scenarios may be incorporated:

Business functionality of the information service	Brief description of the service	Type of information to be exchanged	Information exchange model / Message type	Message exchange pattern	Priority of Recommended Service in Initial APAC-Common SWIM-IS (1) / (2) / (3)
FF-ICE filing service	Provides a means to submit, update or cancel flight plans through a SWIM-based interface using FIXM. <b>Appendix A: Filing Scenario</b>	Flight plan for registration, update or cancellation	FIXM	<b>Appendix A</b>	1

SWIM TF to fill in

↓

Appendix A: Filing Scenario

	Message	Details	Timeout	Comments	Message Exchange Pattern
1	eAU send eFPL (FFP) to eASP	Mandatory	N/A	-	
2	eASP returns Submission Response (SR) #1 to eAU	Mandatory (after eFPL received)	1 minute	eASPs validate message format and basic rules. SR ACK: Validation passed SR REJ: Validation failed SR MAN: Manual Processing needed	
3	eASP returns Submission Response (SR) #2 to eAU	Conditional (only if SR#1 = MAN)	Variable (manual processing time)	Any subsequent SR is provided after manual intervention of eFPL (after SR MAN)	
4	eASP returns Filing Status (FS) #1 to eAU	Mandatory (if final SR = ACK)	1 minute after SR “ACK”	eASPs evaluate flight plan against operational constraints and ATM configuration	
5	eASP returns Filing Status (FS) #2 to eAU	Conditional (if FS #1 = PENDING, or due to re-evaluation)	Variable (2 <sup>nd</sup> evaluation)	eASP sends updated FS when flight is ready to be evaluated (for PENDING) or when operational changes affect flight status	

Figure 4: An example of how the comprehensive scenarios may be incorporated in the Business Functionality of APAC Common SWIM Information Services.

7.19 The SURSG/5 and SURICG/11 Meetings deliberated at length on the initial set of APAC Common SWIM Surveillance Information Services and provided input and comments. The SURSG/5 and SURICG/11 Meetings recommended that *Guidance Materials for the sharing of surveillance data in SWIM* should be added as a reference document for APAC Common SWIM Surveillance Information Services to support service implementers. This has been incorporated into the draft second working version of the document.

7.20 At the [ATFM & A-CDM/SG/16](#) Meeting, Singapore and Thailand presented a joint response (SP/14) that aligned with the outcomes of the FF-ICE Ad-Hoc Group discussion. The response proposed updates to the APAC Common SWIM Information Services related to ATFM, focusing on improving clarity and usability. It was also noted that the current “Message Exchange Pattern (MEP)”

column had created ambiguity between business and technical aspects; therefore, it was proposed that MEP determination be separated and addressed by the SWIM TF. In addition, Singapore and Thailand recommended enhancing the table by incorporating a clearer “Brief description of the service” through referenced filing scenarios example developed by the FF-ICE Ad-Hoc Group. The proposed next steps included finalising these scenarios and submitting them to the SWIM TF within agreed timelines in 2026 to support the identification of MEP. The finalised scenarios are attached in [Appendix 7](#) and submitted to SWIM TF/11 to undertake the identification of MEP.

7.21 The ATFM & A-CDM SG/16 Meeting noted that [Appendix B of the working paper](#) identified four ATFM-related SWIM Information Services; however, **only two services—namely the Flight-Specific ATFM Measure Service and the ATFM/A-CDM Integration Service**—had been included in the first published edition. The ATFM & A-CDM SG/16 encouraged further review of the remaining two services, i.e. the ADP Distribution Service and the Flow-Specific ATFM Measure Service, considering any progress since the SWIM TF/10 discussions, and invited feedback on their potential inclusion in the next revision.

7.22 It was clarified that the proposed ATFM messages in the five ATFM information exchange scenarios were associated with two APAC Common SWIM Information Services, with the first message exchanged under the ATFM/A-CDM Integration Service and the remaining four messages under the Flight-Specific ATFM Measure Service; additional administrative clarity might be provided through supporting appendices. The Meeting noted that, while a reference document for the ADP Distribution Service was made available following the elevation of the Asia-Pacific ADP exchange procedure, the digital data format for ADP remained under development and the exchange model was yet to be defined. The Flow-Specific ATFM Measure Service was similarly recognised as less mature, given the absence of a harmonised, region-wide operational application and potential network impacts. It was agreed that further operational and technical development was required before detailed SWIM messaging could be specified, and that relative maturity or priority could be reflected in the information services table, with coordinated input from the ATFM & A-CDM/SG to be provided to the SWIM/TF Meeting in May 2026.

7.23 The ATFM & A-CDM/SG/16 Meeting proposed no changes in the provided list of [ATFM-related information services](#). In addition, the message types proposed to the information services table will be mapped to relevant information services for SWIM TF reference to identify the Message Exchange Pattern.

7.24 The MET/IE WG/24 Meeting noted the information presented in WP/27 and reviewed the guidance material provided by SWIM TF. During the discussion, the Meeting suggested that **the SWIM TF may wish to consider addressing possible options for push “pub-sub” services and on-demand “request/reply” services as part of future refinement of the document**. The MET/IE WG/24 Meeting reviewed the list of APAC Common SWIM Information Services related to MET and agreed that no amendments or modifications were needed at this Meeting.

7.25 The ICAO Aeronautical Information Services – Aeronautical Information Management Implementation Task Force ([AAITF/21](#)) Meeting does not propose any new amendments to the APAC Common SWIM Aeronautical Information Services already published in version 1 of the document in 2025.

7.26 In response to a suggestion to develop, at the global level rather than the regional level, a list of Common SWIM Information Services, in addition to those being defined by the technical panels, it was informed that, due to differences in current SWIM implementation maturity across regions, the IMP has different priorities. However, considering the APAC SWIM implementation timelines of 2024-2030, it was essential for the SWIM TF to define a prioritised list of Common SWIM Information Services to support APAC States/Administrations in identifying required information services that should be implemented on SWIM as a priority within the APAC region. It was further added that, as

several key IMP members and other relevant panels are also part of the SWIM TF, efforts are being made to ensure that APAC Common SWIM Information services remain aligned with the global format and other relevant global recommendations.

7.27 The Meeting reviewed the draft Second Version of the APAC Common SWIM Information Services document and agreed that SWIM TF is best placed to determine the most appropriate Message Exchange Pattern for each defined Information Service proposed in the table of Business Functionalities for APAC Common SWIM Information Services.

7.28 It was agreed that the revised version template will incorporate all suggestions provided by different expert groups. In addition, all services containing some fields marked with “TBD” or “?” and not incorporated into the first version will be included in version 2.0 to avoid confusion within expert groups regarding the exclusion of information services for which the groups had previously provided inputs. It was added that new columns for which information is currently unavailable will be left blank, with all possible options available for further selection by relevant expert groups. These measures were intended to ensure that the APAC Common SWIM Information Services v2.0 document will be used by the relevant expert groups for regular review during their upcoming Meetings.

7.29 It was suggested to upload “Guidance Material for Business Functionality of APAC Common SWIM Information Services”, provided in **Appendix 8**, to ICAO APAC e-Document webpage as a supporting document to the second version of APAC Common SWIM Information Services, to support other domain expert groups in updating the second version of APAC Common SWIM Information Services. **ACTION ITEM 11-22**

7.30 To align with the Second Version of the document, Task 6 was requested to update the Guidance Material to cover the new columns and the methodology to define complex services through detailed scenario breakdowns. **ACTION ITEM 11-23**

7.31 The Meeting agreed to publish the document as the second version and present the revised document for consideration by CNS SG/30 through the following Draft Decision and subsequent adoption by APANPIRG/37. Following APANPIRG/37’s adoption of the proposed Draft Decision, the list of APAC Common SWIM Information Services will be uploaded to the ICAO APAC e-document portal.

<b>Draft Decision SWIM TF/11/02 - Adoption of APAC Common SWIM Information Services, v2.0</b>	
<p>What: The second version of APAC Common SWIM Information Services, provided in <b>Appendix 9</b>, be adopted for immediate use by APAC States/Administrations. The set of APAC Common SWIM Information Services, and the associated performance of SWIM Technical Infrastructure underpinning these services, is not specified to support the provision of aircraft separation.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Ops/Technical</p>
<p>Why: To assist APAC States/Administrations in planning and implementing their SWIM information services.</p>	<p>Follow-up: <input type="checkbox"/> Required from States</p>
<p>When: 29-May-26</p>	<p>Status: Draft to be adopted by PIRG</p>
<p>Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: MET SG, ATM SG, AOP SG</p>	

7.32 The Meeting discussed at length the definition and categorisation of “Maturity”. Regarding the definition of “Maturity”, two concepts were deliberated, i.e. (i) the maturity of details of

table elements for a specific information service included in the APAC Common SWIM Information Services list, and (ii) the maturity level representing readiness of the information service itself for implementation. Regarding the categorisation of “Maturity”, one proposal was to adopt the Maturity Levels applied to ASBU elements under the ASBU framework in the Global Air Navigation Plan. After detailed deliberation, it was agreed that further discussion under Task 6 is required to develop the definition and categories of “Maturity”. **ACTION ITEM 11-24**

*Feedback on Business Functionality Requirements for APAC Common SWIM Information Services – Flight Information Services – FF-ICE Ad Hoc Group (WP/17)*

7.33 This paper presented feedback from the ICAO APAC FF-ICE Ad-Hoc Group on the approach for defining business functionality requirements for APAC Common SWIM Information Services. The FF-ICE Ad-Hoc Group proposed breaking down FF-ICE services into detailed operational scenarios with business completion criteria, in order to enable the SWIM TF in determining appropriate Message Exchange Patterns (MEPs) at the scenario step level rather than at the service level. This approach aimed to provide clearer business requirements to enable the SWIM TF to identify more accurate technical specifications.

7.34 The Meeting was presented with the process to define complex services by domain expert groups as follows:

- a. **Service-Level Definition** – Domain expert groups continue to provide broad-level information service definitions by populating the existing service definition table in the "Business Functionality for APAC Common SWIM Information Services" document, as per current practice.
- b. **Scenario Identification** – Domain expert groups identify which services are complex that require scenario-level analysis, and then identify all operational scenarios associated with each of those services.
- c. **Scenario-Level Analysis** – Domain expert groups expand on the ‘Brief Description of Service’ column by conducting detailed analysis for each identified scenario and documenting it in appendices, including:
  - i. **Business completion criteria:** Define when actors can consider their business operation complete and proceed with subsequent operations for that specific scenario
  - ii. **Detailed workflow analysis** – Define each message exchange step using the Scenario Steps Table

7.35 The Meeting discussed and agreed with the proposed enhanced methodology for analysing complex information services through detailed scenario breakdowns, including the specification of business completion criteria and the Scenario Steps Table. It was agreed that the proposed methodology can be applied to the analysis of any complex service. However, it was clarified that not all information services included in the *Business Functionality of APAC Common SWIM Information Services* would necessarily require the level of detail developed following this methodology. The contributory bodies responsible for updating relevant information services, at their discretion, may consider adopting this methodology. It was suggested to incorporate this information in the “**Guidance Material for Business Functionality of APAC Common SWIM Information Services**”. **ACTION ITEM 11-25**

7.36 Based on the business requirements and completion criteria defined by domain expert groups, it was proposed that the SWIM TF take the responsibility to determine the appropriate MEPs for each step in the Scenario Steps Table. A summary of the fields in the Scenario Step Table and the respective responsible bodies is as follows.

Fields	Description	Responsibility
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<b>Step</b>	Sequential identifier for each message exchange within the scenario	Domain Expert Group
<b>Message</b>	Specific message type, e.g. FF-ICE message type, with sender and recipient identification (e.g., "eAU sends Filed Flight Plan to eASP", "eASP returns Submission Response to eAU")	Domain Expert Group
<b>Message Requirements</b>	<p>Message requirement classification and prerequisite conditions that must be satisfied prior to message transmission</p> <ul style="list-style-type: none"> <li>• Mandatory - Message must be sent/received in all instances of the scenario without exception</li> <li>• Conditional - Message must be sent/received when specific triggering conditions are met, but is not required when those conditions do not occur</li> </ul>	Domain Expert Group
<b>Business Timeout</b>	Maximum acceptable time duration for message response from an operational perspective. The message originator is expected to contact the recipient if no response is received within the timeout period.	Domain Expert Group
<b>Comments</b>	Additional operational context, processing requirements, or business rule specifications that inform technical implementation	Domain Expert Group
<b>Message Exchange Pattern</b>	A template or pattern that defines the sequence and structure of messages exchanged between interacting components to accomplish a single complete information exchange. The Message Exchange Pattern helps the information service provider understand how the information service should behave, and the information service consumer understand how to interact with the information service.	SWIM TF

*Table 2: Scenario Step Table Fields*

7.37 The Meeting was requested to review the proposed definition of “Message Exchange Pattern” field in Table 2 for which the SWIM TF is responsible for determining. The definition of Message Exchange Pattern was deliberated at length. It was agreed that the Message Exchange Pattern definition provided in ICAO Doc 10203 Manual on the SWIM Implementation can be used instead of creating a new definition. With this agreement, the revised definition of Message Exchange Pattern was amended as follows:

*Message exchange pattern. A template that describes relationships of multiple messages exchanged between interacting components to accomplish a single complete information exchange*

7.38 This new definition was incorporated into the revised Appendix A to APAC Common SWIM Information Service v2.0.

7.39 It was agreed that SWIM TF will undertake the determination of appropriate MEPs for each scenario step based on the business requirements defined by domain expert groups and consider applying this approach to other complex SWIM Information Services that contain multiple operational scenarios with varying business requirements.

7.40 Task 6 was assigned to identify the appropriate MEP for FF-ICE related Flight Information Services in Appendix A to APAC Common SWIM Information Service v2.0, with the support of China, Japan, the Republic of Korea, Singapore and Thailand, which are involved in the FF-ICE Ad-Hoc group. **ACTION ITEM 11-26**

*API Management and Gateway Introduction, Framework, and Best Practices for Harmonised SWIM Request/Reply Messaging – United States (WP/18)*

7.41 The Meeting noted that the FAA and APAC region are considering Application Programming Interface Management and Gateway solutions to implement web services with Request-Reply message exchange patterns for SWIM data exchange. It was informed that Application Programming Interfaces (API) enable software systems to securely communicate and share data across government agencies and international partners. API gateways serve as a centralised entry point, managing routing, security, and system performance. API management provides governance through monitoring, access control, and lifecycle oversight. Together, they support the development of scalable, secure, and reliable digital services. Organisations benefit from faster system integration; users gain greater control and consistency with improved user experience.

7.42 The Meeting was informed that FAA is modernising its SWIM messaging infrastructure with API Gateways for synchronous messaging and event-brokers for asynchronous messaging. FAA provided an overview of the latest FAA-APAC developments on API Gateways for SWIM messaging, benefits of an API Management and Gateway solution, and best practices to develop a framework for API governance and harmonised cross-regional SWIM data exchange. Operational use cases and examples of SDS implementation leveraging API Gateway were noted by the Meeting.

7.43 The Meeting was requested to include API Governance Framework and guidance materials development in the Governance Working Group and offered to collaborate in SIPG and related APAC Task Force regarding API Gateway strategy discussions and demonstrations.

7.44 The Meeting shared concerns about schema validation requirements as part of the API Gateway governance, as in some States/Administrations' SWIM implementations, information service providers and the information service consumers are responsible for conducting schema validation, while the API Gateway is considered part of SWIM TI. However, in the FAA framework, schema validation is treated as a security requirement for all data entering the system. Due to these differing considerations, it may be difficult to reach an agreement on the proposed API governance framework, as different States/Administrations may impose varying national security regulations and measures.

7.45 Regarding the request to include the development of an API Governance Framework and related guidance materials under the Governance Working Group, it was noted that additional detailed discussions on the features and functionalities of API Gateway are still required. It was therefore recommended to first establish and agree on the **minimum required features and functionalities of the API Gateway** before considering its adoption at the APAC regional level. Once these foundational elements are defined, development of the API Governance Framework can be revisited at a later stage. Considering that the current stage of work is to focus on agreeing upon the minimum features and functionalities of the API Gateway, it was agreed to assign this activity SIPG Task 3, rather than Task 5 under the SWIM TF. **ACTION ITEM 11-27** As the work of SIPG Task 2 is closely related to the API Gateway concept, it was further suggested that SIPG Task 3 work closely with Task 2, as the minimum features and functionality to be agreed upon may affect the implementation topology, namely a centralised or distributed API Gateway. **ACTION ITEM 11-28**

7.46 In response to concerns regarding the incorporation of this new activity under the limited SIPG timelines, the SWIM TF Co-Chair informed the Meeting that the finalisation of various MEP mechanisms and guidance materials related to the Request and Reply MEP should be given the highest priority for SIPG. If the proposed API Gateway study cannot be completed before Q2 2027, it can

instead be considered under a future SIPG task. **ACTION ITEM 11-29**

*Progress on Development of R-R MEP Guidance Material – SIPG (WP/27)*

7.47 This paper presented the progress on development and main contents of R/R MEP Guidance Material drafted by SIPG Task 3 and outlined implementation approaches for the APAC SWIM TI prototype. The Meeting noted that this guidance material is not the final version but rather serves as the initial baseline for implementing R/R MEP within the APAC region. It was recalled that, since SWIM TF/10, extensive discussions have been held at the SIPG level regarding the implementation of R/R MEP in the APAC region. While consensus has been reached on certain topics, such as the adoption of HTTP for synchronous R/R MEP, others, including the choice between full mesh and hierarchical architectures, remain subject to ongoing debate. These unresolved issues will be further discussed under SIPG Task 3. It was added that under the SIPG, R/R MEP will be implemented, tested and validated in the APAC SWIM TI prototype based on the current version of guidance material and, through a continuous feedback loop, any deficiencies or areas for improvement identified during the prototyping phase will be iteratively reflected in the guidance material to improve its maturity.

7.48 The Meeting discussed the significance of this document. It was noted that this document serves as guidance material providing a regional baseline for the major MEPs to be used in the future. It was recommended that all States/Administrations review the document and provide their feedback to SIPG Task 3 for further improvement. **ACTION ITEM 11-30**

7.49 MET/IE WG Chair informed that the proposed description of synchronous and asynchronous R/R MEP for FF-ICE scenarios may not align with many MET scenarios. It was agreed that the MET/IE WG will provide feedback to ensure the guidance document covers most use cases in the region. **ACTION ITEM 11-31**

7.50 The Meeting reviewed the guidance material and no immediate feedback was provided. The draft version of the guidance material reviewed by the Meeting is provided in **Appendix 10**.

*Progress on Development of REST API URI Structuring and Naming Guidance Material – SIPG (WP/28)*

7.51 ROK, on behalf of the SWIM Pioneering Group (SIPG), provided the progress on development of REST API URI Structuring & Naming Guidance Material, a subsequent deliverable of the R/R MEP Guidance Material within the SIPG Task 3.

7.52 The Meeting noted that the R/R MEP Guidance Material provides a high-level approach to implement the R/R MEP in the APAC region, and as of April 2026, at the SIPG level, there is a tentative consensus on how to implement synchronous R/R MEP. The consensus focuses on four key technical pillars:

- Protocol: HyperText Transfer Protocol(HTTP)/HTTP(Secure)S v1.1
- Architecture: Representational State Transfer(REST) as an architectural style
- Implementation: Application Programming Interface(API) Gateways(GW) (or Proxies)
- Routing: Path-based Routing (PBR)

7.53 It was informed that if future implementation proceeds based on these technical pillars, service instances using RESTful API are expected to be exposed through API GWs deployed at regional and local levels, common conventions and standardised URI structures ought to be defined and applied across the region.

7.54 The Meeting was informed that the REST API URI Structuring & Naming Guidance Material outlines how to design and apply RESTful API URI structuring and naming conventions for implementing synchronous R/R MEP in the APAC region, which includes the definition of REST and

RESTful APIs, the rationale for URI structuring and naming conventions, path element definitions, and data flow diagrams illustrating how requests are routed when the conventions defined in this guidance material are applied. The paper summarised the key concept of REST API URI structuring and naming for regional SWIM. The main contents of the REST API URI Structuring & Naming Guidance Material were shared in the Meeting, and the guidance material is provided in [Appendix 11](#).

7.55 The Meeting noted that the URI naming related recommendations provided by [WP/21 of SWIM TF/11](#) and the discrepancies between those recommendations and the considerations presented in this document. SIPG Task 3 was requested to further study recommendations contained in WP/21 and amend the guidance material, if deemed necessary. **ACTION ITEM 11-32**

*Comments on Technical Memorandum of Cooperation (TMC) Document for ATM Information Exchange through SWIM – New Zealand (WP/25)*

7.56 This paper presented New Zealand's comments on the draft Technical Memorandum of Cooperation (TMC) document for ATM Information Exchange through SWIM, following Actions 10-11 and 10-12 from SWIM TF/10.

7.57 As part of the collaboration outlined in Action 10-12, Australia advised Malaysia and New Zealand that they understood the original intent of the SWIM TMC, based on the SWIM TF/8 working paper, to: 1) To have States formally "establish SWIM", 2) To clarify boundaries of responsibility (in terms of SWIM TI), and 3) Establish operational capability. New Zealand agreed with this core of this understanding and with the intent expressed, with the following additional views/proposals:

- a) Creation of a unilateral agreement issued at the ICAO APAC-level rather than bilateral or multilateral agreements. In this, New Zealand agrees with Australia's feedback from their SWIM TF/10 Information Paper, section 2.3.2, which suggested a non-binding head agreement at the regional level. New Zealand agrees that a memorandum of cooperation is needed (as outlined in section 2.3 of the SWIM TF/8 Working Paper) but bilateral agreements between contracting states would result in too many agreements to be workable, while multilateral agreements could be hard to reach consensus on.
- b) Creation of a suite of documents that includes but is broader than the TMC to allow the appropriate level of detail to be developed at the right time and by the relevant parties. In this, New Zealand largely endorses Australia's feedback from their SWIM TF/10 Information Paper, section 2.3.3, which suggested a subordinate set of documents to the head agreement to address any specific, detailed procedural and administrative matters.
- c) Revision of the approach to the TMC (or equivalent artefact) within this suite of implementation and operational documents, such that it becomes a document that describes intent and practical arrangements rather than technical implementation. This allows it to be agreed between interconnecting parties without constraining technical implementation or requiring the documentation of successful transition to operations. This revised TMC should address Thailand's feedback from SWIM TF/8 Final Report, section 2.2, that it would be premature to adopt the draft TMC given the status of SWIM implementation within the region. New Zealand agrees with this feedback and notes that, with the changes proposed, New Zealand expects that an earlier agreement of a revised TMC would be possible and beneficial. The revised TMC would also still be aligned with the intent behind the TMC, to ensure participants within APAC are aligned on SWIM, as outlined by Malaysia in their working paper to SWIM TF/8 (section 2.3, which noted that the first Meeting of

SIPG identified the need for a TMC.

7.58 New Zealand's proposal for this suite of documents is to adapt the CRV suite of documents to SWIM, based on learnings from CRV, as outlined in the table below:

SWIM Artefact	Purpose (SWIM)	Approvers (SWIM)	Developed by:
<b>ICAO letter, from APAC</b> statement at the regional level	Outlines the cooperative intent and outcome of SWIM	Signatories not required – issued by ICAO to APAC members	Drafted by the Task Force, endorsed by the Chair and the majority on behalf of the Task Force, issued by ICAO for APAC members, and added to the Implementation Guidance
<b>Technical Memorandum of Cooperation (TMC)</b> aligned to the ICAO Letter	Establishes high-level technical/procedural arrangements and obligations between APAC participants	Potentially design/system owners or operational management within the participant organisation	Drafted by the Task Force, template added to the Implementation Guidance
<b>Implementation Manual</b>	Sits next to the TMC – outlines the detailed technical and other requirements to establish a messaging system and connections	Design authorities and/or their representatives (e.g., SIPG members)	Drafted by SIPG, evolved by the Task Force, and added to the Implementation Guidance
<b>Operations Manual</b>	Sits next to the TMC - outlines the operational details for SWIM, i.e., who is who, who has what connections, etc.	Design / operational authorities and/or their representatives (e.g., SIPG members)	Drafted by SIPG, evolved by the Task Force, and added to the Implementation Guidance

*Table 3: Suite of documents for SWIM*

7.59 New Zealand proposed a revised TMC, provided in **Appendix 12** to this report, that reflects the above structure, as well as the following approach and addresses feedback to date in the following way:

- a) The scope should be for the long-term relationship between APAC members, and not just for the Pioneer Group/trial and initial implementation of SWIM. The revised TMC incorporates implementation and operations.
- b) By focusing on Message Systems, it allows non-ANSP / non-Country Message System participants to be included as well as ANSPs.
- c) The proposed revised TMC removes the ANSP/country aspect but suggests a common type of agreement among integrating Message Systems without imposing agreements on Information Service Providers (ISPs) and Information Service Consumers (ISCs), which are able to be devolved to Edge Message System providers independently. The country aspect would be tackled by the head agreement (i.e., ICAO APAC letter) level instead, which addresses Australia's feedback.

- d) Agreements for connection of ISPs and ISCs to Edge Message Systems (assuming Gateway Message Systems do not connect directly to ISPs and ISCs, only through Edge Message Systems) would be down to the terms and conditions established by each Edge Message Systems' provider for connection to their services. These are, therefore, not considered part of the SWIM TMC.
- e) There is a need for participants to cooperate on SWIM for operational, and non-operational (i.e., testing/development systems), systems. However, a participant may decide to vary from a specific SWIM specification (especially for non-operational systems). In this instance, the assumption is that the participant would establish their own agreement with all other affected participants for its non-operational systems, outside of the SWIM TMC.
- f) The Need for SWIM Operations Group was reflected in the 'Governance' section of the revised TMC, New Zealand agrees in principle with Australia's feedback from their SWIM TF/10 Information Paper that they would support a dedicated group (such as SWIM OG), however New Zealand sees the Task Force performing this function until such time as such a body exists and the Task Force relinquishes its role to that group.
- g) New Zealand proposes that Australia's feedback from their SWIM TF/10 Information Paper, which was related to wording in the draft TMC, could be covered in the subordinate agreements instead of the TMC.
- h) The revised TMC has been reviewed by Airways' Legal team, who agree that it includes relevant required feedback from the previous working paper, noting one change to earlier feedback, specifically reversing the original 'settlement of dispute' feedback back to the original, simpler text. This is due to the proposal that there should be a head of agreement ICAO APAC-wide and the resulting non-technical / specific nature of the revised TMC lessens the concerns about disputes.

7.60 The Meeting expressed its appreciation to New Zealand for providing a comprehensive paper and a revised TMC document. The Meeting agreed to adopt a revised multilayer approach; however, it was noted that the roles and details of each SWIM Artefact require further review and discussion. It was suggested that WP/20 from SWIM TF/11 and the proposals contained in this paper be considered jointly within Task 5 of the SWIM TF. **ACTION ITEM 11-33** Australia, Malaysia, and New Zealand were invited to participate in Task 5 to support further discussions on TMC. Australia and New Zealand confirmed their willingness to join Task 5. The ICAO Secretariat will coordinate with Malaysia on this matter. **ACTION ITEM 11-34**

*Updates from Editorial Ad-hoc Group - Editorial Ad-Hoc Group (SP/03)*

7.61 The Editorial Task Ad-hoc Group recalled the topics discussed and agreed at SWIM TF/9 to be addressed in the APAC Regional SWIM Implementation Guidance Document (IGD), including:

- SWIM TI specifications;
- Information exchange models;
- Registry model; and
- Service specifications.

7.62 The Meeting was informed that major challenges in drafting the first version of IGD are stability and maturity of the content required for the drafting process. It was noted that, prior to SWIM TF/11, only details of the APAC SWIM TI specifications and FIXM version 4.3, including the regional Extension, were considered sufficiently mature for inclusion in the IGD. It was further noted that the

updated version of the APAC Common SWIM Information Services list, which will form part of the Service Specifications chapter of the IGD, would be reviewed during SWIM TF/11, while agreement on a specific SDS version, the regional baseline would also be discussed at the SWIM TF/11.

7.63 A request was received to compile all key documents related to the APAC SWIM implementation that have been developed or are being developed under the SWIM TF. SWIM TF Co-Chair agreed to prepare a document titled “ **Existing References for ICAO APAC SWIM Documents** ”, which will be uploaded on the ICAO APAC e-documents webpage to provide consolidated reference information for APAC States/Administrations in support of their SWIM implementation activities. **ACTION ITEM 11-35**

*APAC SWIM Implementation Progress Indicators - SWIM TF Co-Chair (SP/04)*

7.64 The Meeting recalled that, under the ANS commitments in the Delhi Declaration, there is a commitment related to SWIM: *Expediting the implementation of ICAO provisions related to SWIM*. It was informed that the ICAO Secretariat provides progress updates on all Delhi Declaration Commitments in every Subgroup, APANPIRG, DGCA Conference, and Ministerial Conference Meetings. However, difficulties were encountered in measuring SWIM implementation progress within the APAC region due to the absence of established indicators.

7.65 The Meeting was informed that, in response to Action Item 10-31, the ICAO Secretariat informed the **DGCA/60 Conference** that indicators to measure SWIM implementation progress in the APAC region were under development, and the latest status of APAC States/Administrations' readiness for SWIM implementation will be shared with the **DGCA/61 Conference**. At the same time, Action Item 10-32 was assigned to the ICAO Secretariat and the SWIM TF Co-Chair to draft indicators for finalisation at the SWIM TF/11 Meeting.

7.66 Following the Action Item 10-32 of SWIM TF/10, three SWIM implementation progress stages – “In Preparation/Planning”, “Under Development/Implementation”, and “In Operation” – were agreed upon during SWIM TF Task Leads held Meetings held in August 2025, November 2025, and February 2026. For each stage, further refinements were presented to the Meeting, taking into account feedback received from Japan and Singapore.

7.67 The proposed SWIM indicators were reviewed by the Meeting. The finalised indicators are provided in **Appendix 13** to the report.

7.68 The Meeting noted that, for the scoring, a status of “Not implemented” will be assigned a score of 0, “Partially implemented” will be assigned a score of 0.5, and “Fully Implemented” will be assigned a score of 1. It was further agreed that the score of each stage will be represented by the average score of the relevant criteria.

7.69 It was also agreed that all key criteria of each stage will be assessed using the same methodology and weighed equally. It was also agreed that the consolidated SWIM implementation progress survey results will be processed and presented, including details of the implementation levels for each stage. **ACTION ITEM 11-36**

7.70 For the way forward, it was agreed that all SWIM TF/11 participants will provide feedback to the finalised ICAO APAC SWIM Indicators **before 12 June 2026** for any proposed changes; however, major changes will not be considered. **ACTION ITEM 11-37**

7.71 Furthermore, it was agreed that the ICAO Secretariat will develop an online platform for reporting of SWIM implementation progress in accordance with the finalised indicators. The access to platform will be shared through a State letter and by email **on 3 July 2026** for States/Administrations' reporting. **ACTION ITEM 11-38** It was added that all States/Administrations are required to respond to the SWIM implementation progress reporting request, **ACTION ITEM 11-39**, as this information

and detailed analysis of results will be presented to **the DGCA/61 conference**, as requested by the **DGCA/60 Meeting. ACTION ITEM 11-40**

7.72 It was also added that **only one response** from each State/Administration will be accepted. Therefore, States/Administrations were advised to conduct broader consultation, primarily with AIS providers, ANSPs, MET service providers, and airport operators, when reporting their SWIM implementation status. States/Administrations are expected to submit their response through the online reporting platform **by 14 August 2026**, so that results can be processed and presented to the DGCA/61 Conference, planned for the first week of September 2026. **ACTION ITEM 11-41**

*SWIM TF Tasks restructuring- SWIM TF Co-Chair (SP/05)*

7.73 The Meeting was informed of the current SWIM TF task structure, and leads are as follows:

Groups	Task No.	Subject/Task	Task Leads
Implementation Planning	1	Regional implementation philosophy & roadmap	David Leow (Singapore) Amornrat Jirattigalachote (Thailand)
SWIM infrastructure	2	Regional SWIM infrastructure	Xiaodong Lu (Japan), Yosuke MORO (Japan) Henry Chan (Hong Kong, China)
	3	Security service	Jim Laymon (USA)
Technical Architecture	4	Development and maintenance of regional information exchange models	Amornrat Jirattigalachote (Thailand) Wen Zhu (USA)
Governance	5	Regional SWIM Governance Framework	Young Jin Ha (ROK) Mark Kaplun (USA), Yosuke MORO (Japan) Xiaodong Lu (Japan), Honglei Gao (China)
Information Services	6	Information services	Marco Kok (Hong Kong, China) Jeremy Bienkowski (Australia)
Validation & Demonstration	7	SWIM Demonstration	David Leow (Singapore) Amornrat Jirattigalachote (Thailand)
	8	SWIM services and application validation	Yosuke MORO (Japan) Xiaodong Lu (Japan), Honglei Gao (China), Young Jin Ha (ROK)
Coordination and Promotion	9	Monitoring of Panels' work	Yosuke MORO (Japan)
	10	Regional coordination and SWIM-related information sharing	John Moore (IATA)
	11	SWIM implementation education and promotion (New task)	Vacant

*Table 4- The Existing Task Structure leads*

7.74 It was noted that, during the SWIM TF Task Leads Meetings conducted after the SWIM TF/10 Meeting, there were discussions on the need for restructuring of tasks under SWIM TF. The proposal presented by the SWIM TF Co-Chair included the removal of **Task 3 – Security Service**, as the ANSIA TF is currently working on the ANS information security aspects. It was clarified that the SWIM TF will continue collaborating and coordinating with the ANSIA TF to ensure SWIM security requirements are incorporated into their relevant deliverables. The second proposal was to remove **Task 7 – SWIM Demonstration**, as the APAC region is currently in the SWIM implementation phase rather than the validation stage. The third proposal was to rename **Task 8 – SWIM Services and Application Validation** to **Task X – SWIM Services Validation**, as SWIM applications are beyond the scope of SWIM as defined in Doc 10039 Manual on the SWIM Concept. Lastly, it was suggested to merge three tasks: **Task 9 – Monitoring of Panels’ Work**, **Task 10 – Regional Coordination and SWIM-related Information Sharing**, and **Task 11 – SWIM Implementation Education and Promotion** into a single task entitled “Coordination and Promotion”, considering that regional coordination is currently conducted through the well-established coordination process between the ICAO Secretariat of SWIM TF and relevant expert groups.

7.75 The Meeting discussed the proposed restructuring of tasks and their respective leads. After detailed deliberations, the agreed task structure and corresponding task leads are as follows:

Groups	Task No.	Subject/Task	Task Leads
Implementation Planning	1	Regional implementation philosophy & roadmap	David Leow (Singapore) Amornrat Jirattigalachote (Thailand)
SWIM infrastructure	2	Regional SWIM infrastructure	Xiaodong Lu (Japan), Yosuke MORO (Japan) Henry Chan (Hong Kong, China)
Technical Architecture	3	Development and maintenance of regional information exchange models	Amornrat Jirattigalachote (Thailand) Vacant
Governance	4	Regional SWIM Governance Framework	Young Jin Ha (ROK) <del>Mark Kaplan (USA) (retired)</del> Justin Prasai (U.S.)  Yosuke MORO (Japan) Xiaodong Lu (Japan), Honglei Gao (China)
Information Services	5	Information services	Marco Kok (Hong Kong, China) vacant
Validation & Demonstration	6	SWIM services and application validation	Yosuke MORO (Japan) Xiaodong Lu (Japan), Honglei Gao (China), Young Jin Ha (ROK)
Coordination and Promotion	7	Coordination and Promotion	Yosuke MORO (Japan) Elvin Liow (Singapore)

*Table 5- New Task Structure and leads*

7.76 To ensure that the objectives set in the ToR can be achieved in alignment with the newly proposed task structure, the Task Leads were requested to update the Statement of Work (SOW) for each task. **ACTION ITEM 11-42** The current version of SOWs is provided in **Appendix 14** to this report.

7.77 As the workload of the SWIM TF Task Leads has significantly increased, and recognising the importance of effectively communicating SWIM-related developments and understanding among SWIM TF members, as well as the benefits that members would gain through participation in the development work of each task, the Meeting encouraged States/Administrations to nominate participants for each task. **ACTION ITEM 11-43**

*Review of SWIM TF ToR, SOW, Work Plan, and Outstanding Action Items – Sec (WP/19)*

7.78 The paper presented the current SWIM TF's ToR, the revised SWIM TF's work plan, and the Action List to reflect the latest work status achieved. The Meeting reviewed the latest ToR of SWIM TF, which was adopted by CNS SG/26 through **Decision CNS SG/26/07 (SWIM TF/06/05) – Revised SWIM TF Terms of Reference**, and agreed that no revision to the ToR is required. The latest ToR of SWIM TF is provided in **Appendix 15** to the Report

7.79 **Appendix 16** of the Report provides the latest version of the SWIM TF Work Plan, which will be further updated by Task Leads, if required, following the new task restructuring. **ACTION ITEM 11-44**

7.80 The Meeting also updated the action item list. The updated action item list is provided in **Appendix 17** of the Report.

#### **Agenda Item 8: Next Meetings and Any Other Business**

*Organisation of SWIM Training cum Workshop in August 2026 – Sec (IP/02)*

8.1 The Meeting was informed that the ICAO APAC Office is organising the ICAO Asia/Pacific SWIM Training cum Workshop from 25-27 August 2026 in Hanoi, Viet Nam, generously hosted by the Viet Nam Air Traffic Management Corporation (VATM) in response to DGCA/60 Conference Action Item 60/20, requesting that ICAO organise SWIM-related seminars and workshops to support States in this area. The Meeting was informed that State Letter Ref.: T 8/5.3 – AP064/26 (CNS) dated 12 May 2026 has been issued. More information about this event will be published on the event website at: <https://www.icao.int/APAC/Meetingdocs?fid=94781>

8.2 The Meeting was requested to take this opportunity and consider planning a delegation composed of regulators and service providers' personnel involved in SWIM implementation to attend the event.

8.3 Australia noted that the workshop did not currently cover all information domains and suggested the program be extended to support other information domains such as MET. Australia offered to coordinate with our MET leaders to identify if we have someone available to present at the workshop. The Meeting requested formal confirmation of the speaker's in-person attendance at the workshop, along with the proposed presentation topic. Upon receipt of this information, the workshop program will be modified accordingly. **ACTION ITEM 11-45**

*First ICAO global Communications, Navigation, Surveillance, and Spectrum Symposium (CNSS 2026), Kotor, Montenegro, from 12 to 15 October 2026 – Sec (IP/03)*

8.4 The Meeting was informed that ICAO will convene the First ICAO Global Communications, Navigation, Surveillance, and Spectrum Symposium (CNSS 2026) in Kotor, Montenegro, from 12 to 15 October 2026. It was noted that ICAO HQ has issued State Letter Ref.: TC12/46.3 – 26/42 dated 30 April 2026, sharing information about this event. More information about this event will be published on the event website at: [First ICAO Communications, Navigation,](#)

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[Surveillance, and Spectrum Symposium, an Air Navigation World Event \(ANW/CNSS 2026\)](#). The Meeting was requested to attend the symposium.

*SWIM harmonization*

8.5 The Meeting discussed the need for a harmonised level of implementation among all significant APAC States/Administrations in order to realise the full benefits of SWIM across the region. The Meeting expressed concern regarding the absence of India from SWIM TF meetings in recent years, which has resulted in an incomplete understanding of the SWIM implementation status in the State. It was recalled that, in the past, India had been highly active in sharing progress on SWIM implementation, as well as participating in regional trials and demonstrations.

8.6 The Meeting requested the ICAO APAC Office to kindly encourage India to re-engage in SWIM TF meetings and to share its implementation status, with a view to ensuring the benefits of harmonised and timely SWIM implementation across the APAC region. **ACTION ITEM 11-46**

*Date and Venue for the Next Meeting*

8.7 The Meeting discussed the next SWIM TF Meeting dates. The SWIM TF/12 is tentatively planned to be held from **7 to 11 June 2027**. Interested member states that were to host the Meeting were requested to inform the ICAO Secretariat at least six months before.

8.8 In closing the Meeting, the Co-Chair and ICAO Secretariat thanked all participants for their active participation in the Meeting and valuable contributions to the work programme of the SWIM TF.

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