International Civil Aviation Organization

ICAO Asia and Pacific (APAC)
Twenty-Ninth Meeting of the Meteorology Sub-Group (MET SG/29)

Bangkok, Thailand, 18 - 22 August 2025

Agenda Item 2: Review Outcome of Relevant Meetings

OUTCOMES OF CNS SG/29

(Presented by ICAO Secretariat)

SUMMARY

This paper presents the relevant outcomes of the CNS SG/29 Meeting that may interest the MET Sub-group.

1. INTRODUCTION

1.1 The Twenty-Ninth Meeting of the Communications, Navigation and Surveillance Sub-group (CNS SG/29) of APAC Air Navigation Planning and Implementation Regional Group (APANPIRG) was held at the ICAO APAC Regional Office, Bangkok, Thailand, from **16-20 June 2025**. The Meeting was attended by **100** participants from **23** Member States/Administrations, **2** International Organizations and **3** industry partners. Key documents for the Meeting can be accessed at this link.

1.2 The Tenth Meeting of the System Wide Information Management Task Force (SWIM TF/10) was held from **20 – 23 May 2025** in the ICAO APAC Regional Office, Bangkok, Thailand. The Meeting was attended by **109** participants from **23** States/Administrations**, 2** International Organizations and one industry partner. The SWIM TF/10 Meeting report, working papers, information papers, and other resources can be accessed by this link.

1.3 This paper shares information about the relevant outcomes of interest for MET SG.

2. DISCUSSION

Election for Co-Chairs

2.1 Mr. M H Hui, Assistant Director-General of Civil Aviation, Civil Aviation Department, Hong Kong China, was unanimously elected as a Co-Chair of CNS SG of the APANPIRG.

Review Report of Tenth Meeting of System Wide Information Management Task Force (SWIM TF/10) – Sec (WP/06)

2.2 The paper presented the report of the Tenth Meeting of the System Wide Information Management Task Force (SWIM TF/10) held from 20 – 23 May 2025 in the ICAO APAC Regional Office, Bangkok, Thailand.

2.3 For the SWIM TF Co-Chair election, no nomination was received at the Meeting. As a result, the position remains vacant. It was suggested that the election be held again at a future SWIM TF Meeting.

2.4 The SWIM TF/10 Meeting reviewed SIPG's discussions on Internet connectivity options for the Asia/Pacific SWIM, which was in line with the SWIM TF's mandate to build SWIM over CRV and other IP-based networks, including the Internet. Three architecture options were considered: Option 1 was to have one or more Edge EMSs connected to the CRV as well as the Internet. The Edge EMS can then publish and consume services from both the Internet and CRV. Option 2 was to have the SWIM TI constructed over both the CRV and the Internet. Each Gateway EMS provider will need to span the Gateway EMS over both CRV and the Internet with an appropriate security mechanism to segregate between the two zones. Option 3 was to have the CRV service provider also provide the connectivity to the Internet. SWIM TF/10 agreed to further evaluate Options 1 and 2, with a preference for Option 1 as an early implementation path. SIPG was tasked with defining the functionalities and requirements for Edge and Gateway EMSs to guide States. Further discussion on Option 2's routing implications was also planned.

2.5 It was noted that SWIM TF/10 discussed and adopted the following **4 recommendations** on SWIM transition in the APAC region, which were raised by SIPG:

> **Recommendation 1:** Reach out to relevant expert groups that govern the various data types being transmitted on AMHS for their SWIM migration strategy and proposed sunset date. (e.g., AAITF, FF-ICE ad-hoc group, MET/IE, ATFM ad-hoc group, etc.)
>
> **Recommendation 2:** Work closely with the ACSICG AMHS and the SWIM Transition Group to map out a transition plan together. One topic of interest is the need for AMHS to SWIM conversion and how that should be managed.
>
> **Recommendation 3:** Consider the possible use of any other data formats, in addition to AIXM, FIXM, and IWXXM, in the Asia-Pacific SWIM. This is to enable existing data to be quickly onboarded onto SWIM. The ATM Information Reference Model should be used to maintain semantic interoperability.
>
> **Recommendation 4:** Inform the ATM Automation Systems Task Force (ATMAS TF) of the need for ATM automation systems to be SWIM compatible.

2.6 For recommendation 1, the SWIM TF/10 Meeting was informed that the ATFM SG/14 meeting endorsed the draft conclusion, which was later adopted by APANPIRG/35 as Conclusion APANPIRG/35/4, on the adoption of FIXM v4.3 as the standard format for cross-border ATFM information exchange in the SWIM environment from Q3/2026.

> *Business functionality of APAC Common SWIM Information Services – Hong Kong China (WP/11 of SWIM TF/10)*

2.7 This paper presented the updates on the work of the SWIM TF Task 6 team on Information Services to identify the business functionality to be supported by APAC Common SWIM Information Services for addressing the operational needs in APAC. The Meeting recalled the development of the list of business functionalities for APAC Common SWIM Information Services, along with a recommendation to apply a three-level prioritization scheme. It was further noted that

SWIM TF/9 agreed for SWIM TF Task 6 lead and relevant experts to present the draft list for coordination with expert groups, including AAITF, APSAR/WG, ATFM SG, FF-ICE Ad-hoc Group, MET/IE WG and SURICG.

2.8 The Meeting was informed that the MET SG/28 meeting held on 8-12 July 2024 reviewed and provided corrections to the proposed business functionalities of APAC Common Meteorological Information Services. In addition, the Second Asia/Pacific FF-ICE Ad-hoc Group Meeting and Workshop (FF-ICE/2) held from 18-20 March 2025 reviewed and updated the list of APAC Common SWIM Flight Information Services related to FF-ICE.

2.9 MET/IE WG/23 held from 25-28 March 2025 identified that subsequent updates to the list of APAC Common SWIM Meteorological Information Services would be required to reflect outcomes from the recent METP/6 Meeting and suggested that the information service priorities be revisited. MET/IE WG/23 agreed that the proposed updates be prepared for further review and consideration by the SWIM TF, including consistent use of the term “information service”.

2.10 SURICG/10 held from 21-23 April 2025, reviewed the list and recognized that SURSG’s inputs may be valuable for the finalization of the list. The list was modified and further consulted with SURSG/4 delegates by email. After incorporating all inputs, the final list of APAC Common SWIM Surveillance Information Services was prepared by the SURICG/10 meeting for consideration by the SWIM TF/10.

2.11 ATFM SG/15 held from 29 April to 2 May 2025 reviewed the portion of APAC Common SWIM Flight Information Services, specifically the “ATFM/A-CDM integrated service” and “Traffic flow status service”. The ATFM SG/15 meeting advised that the terminology used in the list be further verified against the draft PfA of future PANS-ATM (Doc 4444). The ATFM SG/15 meeting agreed to provide a revised list for the SWIM TF/10 meeting. The updates to APAC Common SWIM Flight Information Services related to ATFM and A-CDM, developed by the ATFM SG, were presented as part of WP/32.

2.12 The Meeting recalled the information shared at SWIM TF/9 that IMP is working on an Information Service Definition (ISD) template for subject-matter-expert Panels, e.g., ATMRPP, METP, to develop domain-specific ISDs. It was suggested that the progress of these works in the IMP, ATMRPP, and METP is monitored to align regional descriptions with global guidance. While considering the need to develop an APAC version of ISDs for some of the APAC Common SWIM Information Services, the Task 6 team will assess whether the necessary ISDs are covered by the templates/guidance developed at the global-level Panels and indicate this information in a new column of the table for APAC Common SWIM Information Services.

2.13. It was added that the first version of the list of APAC Common SWIM Information Services will be incorporated into the APAC SWIM Implementation Guidance Document being developed.

2.14. The Meeting reviewed the proposed initial set of APAC Common SWIM Information Services, as reviewed and updated by MET SG/28, FF-ICE/2, MET/IE WG/23, and SURICG/10. It was added that the APAC Common SWIM Aeronautical Information Services Ad-hoc Group also reviewed and provided updates to the APAC Common SWIM Aeronautical Information Services as presented by WP/12.

2.15. The publication of services with incomplete fields was discussed at length. Various suggestions were considered, including creating a separate table for such services, excluding them from the first version of the list, or including all services with a footnote explaining the presence of “TBD” or “?”. After detailed deliberation, it was agreed that the first version of the APAC Common SWIM

Information Services list will include only those services for which complete information is provided. Services containing "TBD" or "?" fields will be excluded from the first publication. However, these services will be retained as the working draft for further refinement and reviewed in the future SWIM TF meetings, following coordination with relevant expert groups. ACTION ITEM 10-4 As a result, the following services were removed:

APAC Common SWIM Aeronautical Information Services		
1.	ATIS distribution service	Provides continuous and automated broadcast of recorded aeronautical information in airport and terminal areas.
2.	Search and rescue service	Allows Rescue Coordination Centres (RCCs) to exchange information with neighbouring RCCs and ATS units for coordination during SAR operations.
APAC Common SWIM Flight Information Services		
3.	ADP Distribution Service	Supports publication and distribution of ATFM Daily Plan (ADP), based on information included in the APAC ADP Exchange Procedure[1]. The published ADP is designed to inform for stakeholders on upcoming demand/capacity constraints and possible ATFM measures.
4.	Flow-Specific ATFM Measure Service	Supports *notification* of information related to "flow-specific" ATFM measures, i.e. measures whose control mechanisms apply to a "group of flights" on a particular traffic flow. An example is the Minutes-in-Trail (MINIT) requirement applied on an eastbound traffic using A1 from VT*, VV* to RK*. Recipients of this information should take actions to comply with the ATFM measure contained herein.[2]
APAC Common SWIM Meteorological Information Services		
5.	Special Air Report (ARS) Service	Provides reports of special observations made by aircraft when they encounter special weather phenomena, such as moderate/severe turbulence or icing. (Note: Currently, there is no plan to implement this information service at the MET Panel)
6.	MET derived from Mode S DAPs Service	Provides upper air winds and temperatures derived from Mode S Downlinked Aircraft Parameters (DAPs) (e.g., true airspeed, ground speed, magnetic heading, true track angle) and

[1] The ADP template included herein is not updated. The new ADP template had been agreed by the AMNAC group and included into the AMNAC COP v6.1, Appendix D, and was proposed to the ATFM/SG/15 (Apr-May 2025). The meeting agreed that the Secretariat will update the ADP Exchange Procedure to include the new template, which has already been supplied by AMNAC core team post-meeting.

[2] Common operating procedures for this group of ATFM measures (e.g., MINIT, MIT, MDI, Re-Route, Level Capping) have not been developed for the APAC region yet, and should be developed before finalizing the information service to support the operations.

		facilitates exchange of derived winds and temperatures among MET service providers.

Table 1- List of APAC Common SWIM Information Services removed from the first adopted version

2.16. It was noted that the information exchange model identified for one of the APAC Common SWIM Surveillance Information Services is ASTERIX Cat 21+FPL (payload in JSON or RAW format. It was highlighted at the Meeting that the RAW format of FPL does not exist. The ICAO Secretariat was requested to share this observation with SURSG for further review and clarification. ACTION ITEM 10-5

2.17. Regarding the suggestion in WP/19 to include a reference for each information service as part of the Task 6 activities, the Meeting discussed the value and potential benefits of the proposal. It was also considered whether such a reference should be added in a separate column or integrated into an existing one. After detailed deliberation, the Meeting agreed to the proposal and requested Task 6 leads to include reference(s) for each information service in the brief description column, where such information is available. ACTION ITEM 10-6

2.18. The updates provided by FF-ICE/2 to add REQ/REP in some APAC Common SWIM Flight Information Services were discussed. To support harmonized service implementation, the Meeting highlighted the need for clarification on how REQ/REP should be implemented. Particularly, the distinction between synchronous REQ/REP and asynchronous REQ/REP was noted as essential for facilitating discussion within the FF-ICE Ad-Hoc Group. Accordingly, SIPG, together with China, Japan, and the Republic of Korea, was requested to develop a clear explanation and guidance for further review and discussion of the FF-ICE Ad-Hoc group. ACTION ITEM 10-7

2.19. The Meeting recommended that States/Administrations submit suggestions regarding any services to the relevant expert groups. Any subsequent modifications to services, if deemed necessary by the expert groups, could then be proposed to the SWIM TF for consideration at its future meetings.

2.20. The Meeting conducted a detailed review of each service included in the list of APAC Common SWIM Information Services. It was observed that the services were described at varying levels of granularity. For instance, some services within a particular information domain appeared to be divisible into multiple distinct services. The Meeting also noted differing levels of understanding among expert groups regarding SWIM information services and the information required to be filled in the template. However, it was agreed that the review activity undertaken by the relevant expert groups has enhanced overall understanding and supported the groups in visualizing SWIM services in their respective future aviation concepts.

2.21. The Meeting discussed a need for clear guidance to States/Administrations on the proposed first version of Common SWIM Information Services that it is considered a guidance document for States/Administrations to support their SWIM development and implementation. Additionally, it was agreed that clarification as proposed in Flimsy/04 of SWIM TF/10 should also be provided as part of the first version of the list to ensure the same understanding on the use of these APAC Common SWIM Information Services.

2.22. The Meeting discussed various proposals to improve the APAC Common SWIM Information Services list. Australia consolidated the key suggestions for enhancement into Flimsy/02 and proposed that APANPIRG subsidiary bodies regularly review the APAC Common SWIM Information Services document and notify the SWIM TF of any new or changes to existing business requirements for APAC Common SWIM information services. A draft conclusion was proposed for these proposed requirements. In addition, by Flimsy/04, Australia proposed that the SWIM TF adopt a Draft Decision to clarify that, based on the business requirements articulated by Expert Groups to date,

the SWIM TI being designed and provisioned at this time is not specified to support the provision of aircraft separation.

2.23. The Meeting suggested that Task 6 Leads consider information shared in Flimsy/02 and draft a guidance document to provide better instructions for other contributory bodies in reviewing and updating the list of APAC Common SWIM Information Services if deemed necessary. It was also suggested that other APANPIRG contributory bodies regularly review the APAC Common SWIM Information Services document and notify the SWIM TF of any new or changes to existing business requirements for APAC Common SWIM information services. These suggestions were agreed to be communicated as part of the guidance document to be developed. ACTION ITEM 10-8 ICAO Secretariat was requested to coordinate with other contributory bodies on the proposed regular review process, sharing the significance of the updated APAC Common SWIM information services. ACTION ITEM 10-9

2.24. The list of APAC Common SWIM Information Services finalized by the Meeting is provided in Appendix A. The Meeting agreed to publish the list as the first version and present the revised list for consideration by CNS SG/29 through the following Draft Decision and subsequent adoption by APANPIRG/36. The proposed decision was adopted by the CNS SG/29 Meeting. After APANPIRG/36'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. ACTION ITEM 10-10

<table>
<tr><td colspan="3">Draft Decision CNS SG/29/06 (SWIM TF/10/02) - Adoption of APAC Common SWIM Information Services, v1.0</td></tr>
<tr><td colspan="2">What: The first version of APAC Common SWIM Information Services, provided in Appendix A, is 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 are not specified to support the provision of aircraft separation.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To assist APAC States/Administrations in planning and implementing their SWIM information services.</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 20-Jun-25</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☐APAC States ☐ICAO APAC RO ☐ICAO HQ ☐Other: MET SG, ATM SG, AOP SG</td></tr>
</table>

2.25. The SWIM TF/10 Meeting noted the Roadmap for Meteorology in SWIM (MET-SWIM Roadmap) adopted by the 6th Meeting of METP. It was agreed that forming an action or task to progress this work from an APAC perspective falls outside the scope of the SWIM TF. In addition, the Meeting discussed that the SWIM TF is not in a position to comment on the possible options of the SWIM aggregator for MET information services, as the discussion is still ongoing at the global level. It was considered that such evaluations would be appropriately conducted by relevant operational experts/user groups. The SWIM TF/10 Meeting was also informed that METP has endorsed a guideline for MET-SWIM Implementation, which will be distributed to the PIRGs to support SWIM Implementation.

2.26. The SWIM TF/10 Meeting was informed about the modified version of the hierarchical architecture, with a limited number of Gateway EMSs, optimized multi-connections between Gateway EMSs and redundant connections between Gateway EMS and Edge EMS. Based on this architecture, ANSPs will be required to deploy the Gateway EMS on a separate device from their internal EMS. This

configuration was presented as an effective model as it effectively transforms the ANSP's internal EMS into an Edge EMS, thereby fundamentally altering its operational dynamics and ensuring the integrity and security of the overall system architecture.

2.27. The SWIM TF/10 Meeting noted that to achieve SWIM implementation by 2030, APAC SWIM architecture needs to consider not only the Publish/Subscribe MEP but also the Request/Reply MEP. Given the current emphasis on the regional SWIM prototype architecture using an EMS being developed by SIPG in the APAC region, the primary issue is to discuss how the Request/Reply MEP should be implemented. The SWIM TF/10 Meeting was recommended to consider that future implementation of the Request/Reply MEP in APAC SWIM architecture should be strategically planned with API GW topology that reflects and complements the architectural direction of GEMS.

Review Report of the First and Second Working Sessions of the SWIM Implementation Pioneer Ad-Hoc Group (SIPG WS/1 and SIPG WS/2) – Sec (WP/07)

2.28. The SWIM Implementation Pioneer Ad-Hoc Group (SIPG) held two in-person working sessions—WS/1 in January 2025 and WS/2 in May 2025—to advance the Asia/Pacific regional SWIM prototype. Early discussions focused on information security under ICAO Doc 10204 (MAIS) and the Trust Framework Panel's (TFP) development of PKI guidance (ACCP and Trust Framework Implementation manuals). SIPG agreed to propose responsibilities for PKI rollout across safety-critical SWIM use cases, trial self-signed certificates, and inform the CRV Operations Group of certificate needs.

2.29. In-depth architecture debates contrasted with fully meshed and hierarchical models. After reviewing proposals by Singapore (SIPG lead), China, Japan, and CANSO, SIPG endorsed a modified hierarchical architecture that addresses prior demo-trial issues. Gateway EMS requirements were specified—messaging, routing, failover, high availability (> 99% uptime), and potential AMHS/SWIM conversion services—and Edge versus Gateway roles were clarified. Performance metrics (latency, throughput) and differentiated services code points (DSCP "AF21") for CRV traffic were also defined. Internet connectivity options were narrowed to an interim Edge EMS dual-connect model while longer-term approaches are refined.

2.30. SIPG also reviewed the transition challenges between AMHS and SWIM. Four recommendations were captured and adopted with refinement: engage expert groups on migration strategies and sunset dates (e.g., FIXM v4.3 adoption by Q3 2026), develop joint AMHS–SWIM transition plans with ACSICG, onboard additional data formats beyond AIXM/FIXM/IWXXM using the ATM Information Reference Model, and notify ATMAS TF of SWIM compatibility needs. Conflicting guidance on AFTN/AMHS versus direct SWIM adoption was noted as a source of State confusion.

2.31. At WS/2, SIPG prioritized eleven tasks—ranging from defining Edge/Gateway EMS functionality (Priority 1) to integration testing, performance measurement, and operationalization conditions (Priority 2–3). Trials of message-topic versus message-property routing, self-signed certificate continuation pending ACCP publication, and governance linkages were assigned to task leads, with a target to complete Tasks 1–10 by end-2026 and Task 11 (operational test procedures) by April 2027. An updated work plan diagram and Task Leads roster were agreed upon. SIPG will reconvene in January 2026 to review progress and prepare its next report to SWIM TF.

Outcomes of the SWIM Seminar – Sec (WP/08)

2.32. The paper reviewed the outcomes of the ICAO Asia/Pacific System-Wide Information Management (SWIM) Seminar 2025, held in Bangkok on 19 May 2025. The theme of the Seminar was Establishing SWIM – A Key Enabler for FF-ICE. The Seminar emphasized the urgency of SWIM

implementation ahead of the 2034 sunset of the 2012 flight plan format, with regional efforts targeting 2032. Seven presentations were delivered by experts from JCAB, CAAS, AEROTHAI, CANSO, IATA, and Frequentis, sharing national SWIM/FF-ICE progress, use cases, technical architecture, and challenges. Key recommendations included forming multidisciplinary teams, harmonizing regional SWIM/FF-ICE mandates, and exploring centralized SWIM infrastructure. Minimum SWIM capabilities were defined for airlines (AIXM/IWXXM/FIXM processing, SWIM connectivity, dynamic NOTAM integration) and ATM providers (flight-data connectivity, CRV/Internet access, cybersecurity, governance, and SWIM TI functions).

Update on Trust Framework Activities – Sec (SP/01)

2.33. Mr. Michael Goodfellow, Technical Officer GIS, Trust Framework Panel (TFP) Secretary, presented the key initiatives advanced by the TFP. It was announced that the Aviation Common Certificate Policy (ACCP), establishing baseline PKI interoperability requirements and profiles (including SBAS authentication), is undergoing coordination and targeting the July 2025 publication. The Manual on Aviation Information Security (MAIS Doc 10204) provides risk assessment and security objective guidance; its first edition has been released, with some sections pending further coordination. Development of a Manual on Trust Frameworks has begun, outlining how to form Trust Framework Instances (TFIs) for secure aviation communications, with an editorial group formed. Technical progress includes demonstrations of connected aircraft concepts (ENRI) and drone identification work (IETF). Future meetings are scheduled for TFP-WG/3 in November 2025 and the full panel in 2026.

2.34. In response to a question about the expected publication date of Doc 10169, it was stated that intern panel coordination is ongoing and will be published in a few months.

2.35. Nothing TFP has made significant progress in the last few years, the meeting requested the TFP plan for implementing the TFP framework worldwide. Mr. Goodfellow informed that in the past, before the TFP formation, the Trust Framework Study Group (TFSG) was intended to explore the possibility of creating a large global trust framework for aviation. There were several operational and mostly political challenges to achieving that goal, which resulted in the concept “Trust Framework Instances (TFI)”. Currently, States/Administrators have multiple trust frameworks that are based upon common standards that would allow them to interoperate. Therefore, ICAO decided not to build a monolithic trust framework but to provide a standard set of principles that will enable others to develop their trust frameworks and simplify interoperability across domains as required.

Need for the Creation of an APAC Contributory Body for the Management and Implementation of ICAO ANS Cybersecurity Provisions - CRV OG and SWIM TF (WP/18)

2.36. CRV OG and SWIM TF presented recommendations for the creation of a new APAC contributory body for the joint management and implementation of cybersecurity provisions. The recommendation resulted from detailed discussion and deliberation held in first Working Session of the SWIM Implementation Pioneer Ad-Hoc Group (SIPG WS/1) held from 14 to 17 January 2025, the Thirteenth Meetings of Common aeRonautical VPN Operations Group (CRV OG/13) held from 5-8 March 2025, the Twelfth Meeting of the Aeronautical Communication Services (ACS) Implementation Coordination Group (ACSICG/12) held from 25 to 28 March 2025, the Second Working Session of the SWIM Implementation Pioneer Ad-Hoc Group (SIPG WS/2) held from 26 to 30 May 2025, and the Tenth Meeting of the System Wide Information Management Task Force (SWIM TF/10) was held from 20 – 23 May 2025.

2.37. As PKI-based approaches impact all communications in aviation, it was critical to ensure seamless integration with SWIM-enabled systems, ATC networks, and airborne systems. The

issuance and management of digital certificates for SWIM entities (ATM Service Providers, Airspace Users, Information Services, and relevant devices) were essential to securing SWIM-based operations. Additionally, the use of digital signatures for cross-border and multi-regional SWIM message exchanges strengthens data integrity and communication trust.

2.38. The Meeting noted it is necessary to establish a new working group or task force to explore the development of a regional federated PKI architecture that ensures secure interoperability across multiple states and regions. Additionally, a technical community was needed to support the implementation of Trust Framework Instances for various applications. Collaboration with the SWIM TF was also considered essential to support the implementation of a Trust Framework Instance for SWIM, enabling secure, interoperable, and resilient aviation information exchange and flight operations.

2.39. SWIM TF Co-Chair shared that APANPIRG/33 adopted its Conclusion APANPIRG/33/09 to set the Asia/Pacific SWIM implementation timeframe to be between 2024 and 2030, with 2030 being the target timeline for implementation completion and emphasized the need for the creation of the group. She highlighted that the self-signed certificate trial being taken by SWIM TF is only a temporary solution due to the absence of the appropriate digital certificate infrastructure in the APAC region. This underscored the need for this proposed group to begin its work.

2.40. Malaysia strongly supported the recommendations and added that achieving stringent performance standards necessitates some applications, such as SWIM, specialized expertise to develop and refine a common PKI standard tailored for SWIM. Malaysia recognized the critical need for a dedicated APAC contributory body, as proposed, to harmonize the implementation of cybersecurity provisions, including PKI and digital certificates, across the region. It was suggested that this body would ensure interoperability, security, and resilience in SWIM-based information exchanges, aligning with ICAO's cybersecurity frameworks, such as the Manual of the Public Key Infrastructure (PKI) Policy for Aeronautical Communications (Doc 10095) and the Aviation Common Certificate Policy (Doc 10169).

2.41. China, Fiji, Thailand, Singapore and the USA supported the proposal. Mr. Goodfellow informed that PKI is more than a set of technologies. He shared the need for discussion on many complex matters, such as who would issue certificates, how the certificates would be issued, and the assessment criteria under which they would be assessed to make sure that they follow the agreed procedures. It was advised that there are higher-level governance and procedural questions that need to be addressed, along with technical aspects.

2.42. The CNS SG/29 Meeting deliberated at length about the name of the proposed group. After deliberation, it was agreed to initially name the group "ANS Information Assurance Task Force (ANSIA TF)."

2.43. Australia, China, Japan (TBC), Malaysia, New Zealand, Singapore, Thailand and the USA volunteered to join the group. 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 Information Management Panel Secretary. ACTION ITEM 29-14. It was also agreed that the first meeting would be conducted in Q1-2026. ACTION ITEM 29-15 Other Member States/Administrations who wish to join the Task Force could liaise with the ICAO Secretariat after the meeting.

2.44. With the abovementioned, the following draft decision was proposed, which was endorsed and adopted by the CNS SG/29 Meeting.

<table>
<tr><td colspan="3">Decision CNS SG/29/14 - Creation of ANS Information Assurance Task Force (ANSIA TF).</td></tr>
<tr><td colspan="2">What:
To ensure consistent implementation of the requirements of ANS information security in the APAC region in accordance with the various manuals and guidance documents published by the ICAO and other international organizations, especially Certificates and PKI, a contributory body is proposed to be created under the CNS Sub-group to manage this using personnel experienced in the management and provisioning of ANS cybersecurity.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To provide consistent implementation of the requirements.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 20-Jun-25</td><td colspan="2">Status: Adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☒Other: ACSICG, CRV OG, SWIM TF</td></tr>
</table>

Review of ToR and action items – Sec (WP/23)

2.45. The Meeting noted that the CNS SG Terms of Reference (ToR) were first adopted under APANPIRG/22 in 2011 and became effective with the 2013 meeting cycle. The ToR established the scope, objectives and reporting lines for CNS SG and its contributory bodies in support of APANPIRG's CNS work.

2.46. The Meeting reviewed the Terms of Reference of CNS SG effective from 2013 and noted that the ToR has not been modified for more than ten years. It was agreed that several changes have been made in the last 10 years, including the role and responsibilities of CNS SG, which should be reflected in the revised ToR. In addition, the current ToR missed the detailed information about composition, chairpersonship, and other essential data usually incorporated in standard ToR. It was agreed to form an Ad-Hoc group composed of members from China, Hong Kong China, Thailand and the USA. In reviewing the ToR, the ad-hoc group was advised to refer to the CNS ToR of other regions. The revised ToR will be presented by the ad-hoc group at the next CNS SG meeting.

2.47. The Meeting reviewed and updated the Action Items List for CNS SG/28. A total of 16 action items were identified during the CNS SG/29 Meeting.

CNS Meeting Plan for 2026 – Sec (IP/08)

2.48. The paper shared the following tentative schedule for the CNS contributory bodies' Meetings to be held in 2026 for Meeting information and action. The schedule was revised by the meeting as follows. The ICAO Secretariat will inform Member States about the exact dates, mode and venue of the Meeting while issuing invitation letters at least three months before the event.

No.	Name of meeting	Dates (in 2026)	Mode of Meeting	Location
1.	SIPG WS/3	26-30 January	In-Person	Bangkok
2.	CRV OG/15	January/February	In-Person	Bangkok
3.	SRWG/10	4–6 February	In-Person	Bangkok
4.	ANSIA TF/1	Q1 2026	In-Person	Bangkok

5.	SBAS/GBAS ITF/ 8	March	In-Person	Bangkok
6.	SURSG/4	March	In-Person	Bangkok
7.	SURICG/11	23-25 March	In-Person	Bangkok
8.	ACSICG/13	20-24 April	In-Person	Fiji
9.	PBNICG/13	May	In-Person	Bangkok
10.	SWIM Activity	25 May (Tentatively)	In-Person	Bangkok
11.	SWIM TF/11	26- 29 May or 25-29 May	In-Person	Bangkok
12.	ATMAS TF /7	1-4 June	In-Person	Bangkok
13.	CNS/SG/30	06-10 July	In Person	Bangkok

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

a) note the information contained in this paper;

b) endorse the Draft Decision CNS SG/29/06 *(SWIM TF/10/02)* - Adoption of APAC Common SWIM Information Services, v1.0 for adoption by APANPIRG/36;

c) review APAC Common SWIM Aeronautical Information services having incomplete fields related to MET SG and share the final version with the SWIM TF Meeting to add in the next version of APAC Common SWIM Information Services document;

d) regularly review the APAC Common SWIM Information Services document and notify the SWIM TF of any new or changes to existing business requirements for APAC Common SWIM information services;

e) consider establishing a regional migration strategy and timeline for transitioning to the MET information exchange via SWIM; and

f) discuss any relevant matters as appropriate.

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Business Functionality of APAC Common SWIM Information Services
(Updated by MET SG/28, FF-ICE/2, MET/IE WG/23, SURICG/10, AAITF/19 and ATFM SG/15)

First Version (May 2025)

(Editorial note – changes arising from MET SG/28, FF-ICE/2, MET/IE WG/23, SURICG/10, AAITF/19 and ATFM SG/15 are indicated with ~~strikethrough~~ and highlighted text.)

Purpose.– This list of APAC Common SWIM Information Services, including associated priorities, provides States/Administrations with guidance on anticipated services to support their planning and implementation of SWIM.

Notes.– Priority of Recommended ~~s~~Services in ~~i~~Initial APAC Common SWIM Information Service (IS) ((1)/(2)/(3)):

- Priority (1): Recommended for region-wide implementation for region-wide benefits
- Priority (2): Recommended for implementation as much as practicable
- Priority (3): Additional information services without common regional requirements and not included as a part of common regional information services

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 sService in iInitial APAC Common SWIM IS~~ (1) / (2) / (3)**
APAC Common SWIM Aeronautical Information Services					
Airspace management service	Exchanges of airspace status information between ASM Support System and Air Traffic Control (ATC) System. The sharing of airspace availability and airspace structure in real-time will contribute to a more efficient execution of the flight as information impacting the trajectory will be exchanged.	~~Airspace availability,~~ Availability or activation/deactivation or temporarily change of airspace, restricted area, danger area, search and rescue regions	AIXM	Pub/Sub or Req Reply	2

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 s~~Service in ~~i~~Initial ~~APAC Common SWIM IS~~ (1) / (2) / (3)**
Airspace feature service	Provides the characteristics of the three-dimensional airspace, described as horizontal projection with vertical limits, and their relevance to air traffic.	FIR/UIR boundaries, waypoints, enroute ATS routes, SIDs and STARs, navaids, procedures, and other airspace not limited to restricted area, prohibited area, danger area, search and rescue regions (Remarks – Other data published in the AIP may be included)	AIXM	Pub/Sub or Req Reply	2
Aerodrome feature service	Provides current and/or planned airport layout features, such as aerodrome mapping data, runway, taxiway, passenger facilities.	Runways, movement areas, aerodrome services, navaids, instrument landing systems, Aerodrome location, communication facilities (frequencies)	AIXM	Pub/Sub or Req Reply	2
Runway Condition Report service	Provides runway surface conditions and contaminants (least to most slippery) that are directly correlated to aircraft take-off and landing performance.	Global Reporting Format (GRF) for runway surface conditions	AIXM	Pub/Sub or Req/Reply	2
Digital NOTAM distribution service	Provides aeronautical information in accordance with the Digital NOTAM Specification, such as runway closure.	Digital NOTAM (e.g. Special activity airspace (SAA) NOTAMs, or other types of NOTAMs)	AIXM	Pub/Sub or Req Reply	2
APAC Common SWIM Flight Information Services					
GUFI service	GUFI (Globally Unique Flight Identifier) generation and provision	GUFI	FIXM	Req/Reply	1
~~ATFM/A-CDM integrated service~~	~~Allows exchanges of flight plans and A-CDM milestone parameters among different stakeholders (such as arrival/departure ATFM units, airlines and airport operators) to connect A-CDM process to ATFM operations.~~	~~CLDT, TOBT, CTOT, CTO, TTOT, TSAT, etc.~~	~~FIXM~~	~~Pub/Sub Req/Reply~~	~~1~~

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 sService in iInitial 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.	Flight plan for registration, update or cancellation	FIXM	Req/Reply Pub/Sub	1
FF-ICE ~~data~~ publication service	Provides harmonised sharing of flight ~~plan~~ information in a global standard supporting common situation awareness.	Flight ~~plan~~ information for publication	FIXM	Pub/Sub	2
FF-ICE trial service	Allows operators to test the effect of a potential change in a flight plan prior to committing to the change.	Proposed changes in a flight plan	FIXM	Req/Reply	2
FF-ICE flight data request service	Allows an operator to request the current status of a flight plan, or an ANSP can request an operator to submit the latest version of their flight plan.	Current status of a flight plan, a copy of flight plan or supplementary plan	FIXM	Req/Reply	1
FF-ICE notification service	Provides notification of a change in flight state, such as Departure (DEP) and Arrival (ARR) Air Traffic Service (ATS) messages.	ARR, DEP messages	FIXM	Pub/Sub Req/Reply	1
FF-ICE planning service	Allows operators to submit preliminary flight plans for early Air Traffic Flow Management (ATFM) planning and to obtain feedback regarding restrictions/constraints affecting the flight.	Preliminary flight plan for early ATFM planning	FIXM	Req/Reply Pub/Sub	2
Flight-Specific ATFM Measure Service	Supports *notification* of information related to "flight-specific" ATFM measures, i.e. measures whose control mechanisms apply to a single flight. An example is the Ground Delay Program (GDP), whose control mechanism is a Calculated Take-Off Time (CTOT), or an ATFM measure for airborne flight,	CTOT, CTO, CLDT, and fields currently included in APAC	FIXM	Pub/Sub Req/Reply	1

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 sService in iInitial APAC Common SWIM IS~~ (1) / (2) / (3)
	whose control mechanism is a Calculated Time Over (CTO). Recipients of this information should take actions to comply with the ATFM measure contained herein.	AFTN/AMHS-Based ICD for ATFM[1]			
ATFM/A-CDM Integration Service	Supports exchanges of flight-specific ATFM measure information and A-CDM milestone parameters among stakeholders, including arrival/departure ATFM units, airspace users, and airport operators, to integrate A-CDM process with ATFM operations.	ATFM measure information: CTOT A-CDM departure planning information: TOBT, TTOT, TSAT	FIXM	Pub/Sub Req/Reply	1
APAC Common SWIM Meteorological Information Services					
FOR AERODROME					
METAR/SPECI ~~information~~ service	Provides ~~of~~ IWXXM-formatted METAR/SPECI product specified in ICAO Annex 3.	Provision of the existing Annex 3 product via an information service ~~in Annex 3. Information service will be enabled through Amendment 81 to Annex 3 as recommended practice with applicability from Nov 2024.~~	IWXXM	Pub/Sub Req/Reply	1
TAF ~~information~~ service	Provides ~~of~~ IWXXM-formatted TAF product specified in ICAO Annex 3.		IWXXM	Pub/Sub Req/Reply	1
Aerodrome Meteorological Observation Information Service ~~observation information service~~	Provides continuous observations of weather parameters at an aerodrome. Advanced meteorological SWIM (MET-SWIM) service being developed by MET Panel.	To be introduced as recommended practice in Annex 3 (Amd 84~~83~~) in Nov 2030~~2027~~ tentatively (Note: Level of standardisation needs to be considered, as different	IWXXM	Pub/Sub or Req/Reply	2*

[1] Based on the conclusion from ATFM/SG/15, an amendment to this ICD will be proposed in which a more structured use of REGUL and REGCAUSE fields will be introduced. This proposal is expected to be tabled at the upcoming CNS/SG meeting.
* Will become Priority (1) when it is introduced as recommended practice in Annex 3 tentatively in Nov 2030

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 s~~Service in ~~i~~Initial ~~APAC Common SWIM IS~~ (1) / (2) / (3)**
Aerodrome Meteorological Forecast Information Service ~~forecast information service~~	Provides information of the expected meteorological conditions, including probability, at an airport during a specified period. Advanced meteorological SWIM (MET-SWIM) service being developed by MET Panel.	aerodrome information services may be required for different use cases.)	IWXXM	Pub/Sub or Req/Reply	2*
FOR ENROUTE					
SIGMET ~~information~~ service	Provides ~~of~~ IWXXM-formatted SIGMET product specified in ICAO Annex 3.	SIGMETs for thunderstorm, tropical cyclone, turbulence, icing, mountain wave, duststorm, sandstorm, volcanic ash and radioactive cloud	IWXXM	Pub/Sub Req/Reply	1
AIRMET ~~information~~ service	Provides ~~of~~ IWXXM-formatted AIRMET product specified in ICAO Annex 3.	Provision of the existing Annex 3 product via an information service	IWXXM	Pub/Sub Req/Reply	~~1~~2
Tropical Cyclone Advisory ~~information~~ service	Provides ~~of~~ IWXXM-formatted Tropical Cyclone Advisory product specified in ICAO Annex 3. (Designated provider: States with Tropical Cyclone Advisory Centre)		IWXXM	Pub/Sub Req/Reply	1
Volcanic Ash Advisory ~~information~~ service	Provides ~~of~~ IWXXM-formatted Volcanic Ash Advisory product specified in ICAO Annex 3. (Designated provider: States with Volcanic Ash Advisory Centre)		IWXXM	Pub/Sub Req/Reply	1
Space Weather Advisory ~~information~~ service	Provides ~~of~~ IWXXM-formatted Space Weather Advisory product specified in ICAO Annex 3. (Designated provider: States with Space Weather Advisory Centre)		IWXXM	Pub/Sub Req/Reply	1
Volcano Observatory Notice for Aviation	Provides ~~of~~ IWXXM-formatted VONA specified in ICAO Annex 3. Provision of VONA ~~will become the~~		IWXXM	Pub/Sub Req/Reply	2

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 s~~Service in ~~i~~Initial ~~APAC Common SWIM IS~~ (1) / (2) / (3)**
(VONA) ~~information~~ service	is a recommended practice in Annex 3 (Amd 82) ~~in 2025~~. (Designated provider: States with a designated State Volcano Observatory)				
Quantitative volcanic ash ~~(QVA)~~ concentration information (QVA) service	Provides detailed information of significant volcanic ash in the atmosphere, including probabilities of ash concentration thresholds over space and time. Advanced meteorological SWIM (MET-SWIM) service being developed by MET Panel. (Designated provider: States with ~~VAAC~~ Volcanic Ash Advisory Centre (VAAC))	QVA ~~grids grid point~~ gridded forecasts including probabilities~~,~~ and IWXXM QVA objects. ~~To be introduced as~~ A recommended practice for significant ash clouds in Annex 3 (Amd 82) ~~in Nov 2025 tentatively~~ for VAACs in a position to do so from Nov 2025, and for all VAACs from Nov 2026.	Gridded data (e.g. NetCDF), IWXXM	Pub/Sub ~~or~~ Req/Reply	~~1~~2[#]
WAFC (World Area Forecast Centres) gridded ~~grid point~~ forecast service	Provides global gridded weather forecasts. (Designated provider: WAFCs (UK and US))	Global gridded forecasts of CB, icing, turbulence, upper winds, upper-air temperatures and humidity, flight level and temperature of tropopause, and direction, speed and flight level of maximum wind	Gridded data in GRIB2	Pub/Sub ~~or~~ Req/Reply	1
WAFC significant weather (SIGWX) forecast service	Provides global WAFC SIGWX data sets with coverage expressed in polygons. (Designated provider: WAFCs (UK and US))	Significant weather forecast such as tropical cyclone, ~~severe squall lines,~~ turbulence, icing, etc.	IWXXM	Pub/Sub ~~or~~ Req/Reply	1
Satellite image service	Provides satellite observational information.	Satellite derived MET information (e.g. significant convection)	Gridded format (e.g. NetCDF) and image format	Req/Reply	2

[#] Will become Priority (1) from Nov 2026

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 s~~Service in ~~i~~Initial ~~APAC Common SWIM IS~~ (1) / (2) / (3)**
Weather radar image service	Provides two- or three-dimensional radar observational information.	Weather radar reflectivity to visualise the intensity of convection	Gridded format (e.g. NetCDF) and image format	Req/Reply	2
APAC Common SWIM Surveillance Information Services					
Surveillance data **only** sharing service	Provides surveillance data of aircraft. ~~Provides three-dimensional position, time and identification of aircraft and other data as appropriate.~~	~~Position~~ latitude, longitude, ~~altitude,~~ flight level, ground speed (optional), ~~track angle,~~ magnetic heading (optional), ~~call sign, Mode S address,~~ target identification, target address, **mode 3/A code** (optional), **date**, time of message reception for position, ~~data quality~~, quality indicators, ~~Mode S DAP~~, **SAC, SIC**	ASTERIX Cat 21 (payload in JSON or RAW format)	Pub/Sub	~~2~~1
Surveillance data with flight plan information sharing service	Provides surveillance data of aircraft with flight plan information.	globally unique flight identifier, aircraft identification, departure aerodrome, destination aerodrome, aircraft type (optional), wake turbulence category **(optional)** latitude, longitude, flight level, ground speed **(optional)**, magnetic heading **(optional)**, target identification, target address, mode 3/A code **(optional)**, date, time of message reception for position,	ASTERIX Cat 21+FPL (payload in JSON or RAW format)	Pub/Sub	2

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 s~~Service in i~~Initial APAC Common SWIM IS~~ (1) / (2) / (3)**
		quality indicators, SAC, SIC			