



ICAO

*International Civil Aviation Organization***Twenty Sixth Meeting of the Communications/
Navigation and Surveillance Sub-group (CNS SG/26) of
APANPIRG**

Video Tele-Conference, 05 – 09 September 2022

Agenda Item 4: Information Management (IM)

- 4.1 Review Report of the Sixth Meeting of System Wide Information Management Task Force (SWIM TF/6)

**REVIEW REPORT OF THE SIXTH MEETING OF SYSTEM WIDE INFORMATION
MANAGEMENT TASK FORCE (SWIM TF/6)**

(Presented by the Secretariat)

SUMMARY

This paper presents the report of the Sixth Meeting of System Wide Information Management Task Force (SWIM TF/6), which was held using Video Tele-Conferencing (VTC) from 17 – 20 May 2022, for review and

1. INTRODUCTION

1.1 The Sixth Meeting of the APAC SWIM Task Force (SWIM TF/6) was held from 17 – 20 May 2022 via Video Tele-Conferencing (VTC). The meeting was attended by **213** participants from **18** States/Administrations, **5** International Organizations and **1** service provider. The papers and report of SWIM TF/6 meeting are available at: <https://www.icao.int/APAC/Meetings/Pages/2022-SWIM-TF6.aspx>.

2. DISCUSSION*Review Outcomes of ACSICG/9 Meeting - Sec (WP/03)*

2.1 The paper presented the relevant outcomes on the Ninth Meeting of the Aeronautical Communication Services Implementation Coordination Group (ACSICG/9) held from 19 to 21 April 2022. The SWIM TF/6 meeting noted various topics discussed in ACSICG/9, and noted the outcomes of CRV OG/9 and CRV OG/10 meetings, which included discussions on the Upgrade/Downgrade CRV Circuits Subscribed and Contract Extension requirements, implementation issues, Inter-regional AFS connection, and AFS related cybersecurity issue.

2.2 MET Experts from Australia shared the concern of mentioning MET service providers as a non-aviation service providers or aviation support service providers. The SWIM TF/6 meeting requested CRV OG to deliberate the concern and finalize appropriate name for CRV users/subscribers other than ANSP. **ACTION ITEM 6-1**

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Implications of the Revised Terms of Reference as a result of the CNS SG/25 Decision - China, Japan, Singapore, and Thailand (WP/04)

2.3 The paper presented the impact and implications of the change in the Terms of Reference (ToR) of the SWIM Task Force as a result of the decision by the CNS SG/25 meeting. The paper summarized the revisions on the SWIM Task Force ToR agreed by CNS SG/25, and explained the reasons and impacts for these changes in detail.

2.4 The SWIM TF/6 meeting was informed that with revised ToR, the work of the APAC SWIM Task Force has been increased significantly. The SWIM TF will need to deliberate the impact of these changes on ongoing work. The SWIM TF/6 meeting was invited to review the current deliverables, how to deliver on the items stated in the new ToR, and consider how the task groups should be structured to produce the required deliverables.

Aviation Support Service Providers Joining CRV - PCCWG (WP/10)

2.5 The paper introduced PCCW Console Connect Aviation Platform for non-ANSP users to exchange SWIM data with CRV members. PCCWG informed that in order to provide an easy, managed, flexible and scalable mechanism for non-ANSP users to exchange SWIM data with CRV users, PCCW Global planned to extend its EMS node with its own developed software defined interconnection platform - Console Connect for Aviation and purposed built SWIM as Service Platform. Comparison among CRV, Console Connect Platform for Aviation, and Internet on Network Options, Information Security, Daily Support, and etc. were explained in the paper and it was added that Console Connect Platform provides web base user interface for SWIM application. Lastly, PCCWG informed that the SWIM services from ANSPs on CRV can be listed on PCCW SWIM Registry, where users can select, subscribe, and concluded that the Console Connect Platform provides an alternative path for non-ANSP users to exchange SWIM data with ANSPs who are on the CRV Network.

2.6 The SWIM TF/6 meeting discussed the certification standard and ability to support MET data of the PCCW Console Connect Aviation Platform, and was informed that the platform is in concept stage. The SWIM TF/6 meeting agreed that there is the need to deliberate in CRV OG the security impact of mixed operational environment, i.e. connecting more SWIM technical infrastructure service providers and users using internet/other network based services with CRV through a gateway.

ACTION ITEM 6-2*Consideration of SWIM Architecture for Efficient Provision of MET Information Services - MET SG nominated experts (WP/19)*

2.7 The paper discussed the concerns raised by the members of MET SG with regard to SWIM architecture for efficient and cost-effective provision of MET information services. The paper explained the concerns raised by members of the MET community on the accessibility of Meteorological Service Providers and airlines to CRV, SWIM services for less-sensitive MET data be accommodated in APAC SWIM technical infrastructure, and the cost implication of highly data intensive Meteorological SWIM services to operate over the CRV when SWIM services are limited to CRV. It also discussed the needs of efficient MET information service provision to be supported by SWIM architecture. Considering the operational needs of efficient MET information service provision mentioned above, a draft Conclusion titled *Activities to explore the use of the Internet for MET information services in Regional SWIM architecture* was proposed for SWIM TF/6 consideration.

2.8 The SWIM TF/6 meeting noted that the MET information services have already been considered as a part of SWIM TF's work and regional SWIM architecture since its establishments and a specialised group has been created by CRV OG/9 that is devising terms and conditions along with

standard operating procedures to join the CRV by other service providers than ANSPs such as MET and airlines.

2.9 According to the outcomes of discussions during SWIM TF/6 and APANPIRG procedural handbook dated 1 June 2020, the following draft decision was endorsed by the meeting for CNS SG/26’s consideration:

Draft Decision CNS SG/26/xx (SWIM TF/06/01) - The Use of the Internet for MET Information Services in Regional SWIM architecture	
What: That, the use of Internet for meteorological information services will be considered in designing the regional SWIM architecture.	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: To support cost-effective and efficient meteorological information services for exchange of less-sensitive meteorological information in SWIM.	Follow-up: <input type="checkbox"/> Required from States
When: 9-Sep-22	Status: Draft to be adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM TF	

2.10 The SWIM TF/6 meeting agreed that Task 2 group will include the use of Internet for meteorological information services in designing the regional SWIM architecture. **ACTION ITEM 6-3.** The SWIM TF/6 meeting also discussed the need of participation of MET experts in SWIM TF and requested member states to nominate MET experts to contribute and participate in various tasks of SWIM TF.

The Asia-Pacific SWIM Implementation Timeline - China, Japan, Singapore, and Thailand (WP/07)

2.11 The paper presented a proposal for a target timeframe for SWIM implementation in the Asia-Pacific Region. Considering a significant amount of work produced by SWIM TF so far, the meeting was suggested to consolidate all these works, experiences, and lessons learnt and to form an actionable implementation plan with a target timeframe for operational SWIM implementation in the Asia-Pacific region. Referencing to the timeframes of related events and publications, including the publication of the ICAO PANS-Information Management (PANS-IM), which is expected to be published in 2024, and the sunset date of the current flight plan format (FPL2012) in 2032 being considered by ICAO ATMRPP, the paper proposed that the timeframe for SWIM implementation in the Asia-Pacific region to be set at between 2024 and 2030 with a buffer of 2 years before 2032 to conduct FF-ICE related operational trials prior to the planned sunset date for the FPL2012.

2.12 With aforementioned, the meeting formulated the following Draft Conclusion for CNS SG/26 and APANPIRG/33 consideration.

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Draft Conclusion CNS SG/26/xx (SWIM TF/06/02) - The Asia-Pacific SWIM Implementation Timeframe	
What: To set the timeframe for the implementation of SWIM in the Asia-Pacific region to be between 2024 and 2030, with 2030 being the target timeline for implementation completion	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: This is to set the concrete target implementation of the Asia-Pacific regional SWIM to assist States in harmonizing their implementation plans in order to achieve the seamless information exchange across the region in time for future operations, e.g. FF-ICE.	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 9-Sep-22	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: SWIM TF	

2.13 The SWIM TF/6 meeting agreed that the scope of SWIM implementation depends on each State's strategies and the set of common information services, which States shall consider providing, needs to be agreed on by SWIM TF. The SWIM TF/6 meeting proposed that States may consider implementing SWIM technical infrastructure and participating in regional SWIM by developing their own or acquiring services provided by SWIM service provider. Moreover, States may consider implementing information service provision, information service consumption, or both, or subscribing to SWIM service provider to enable their information provision and/or consumption.

2.14 The other matter that may impact the SWIM implementation timeframe was the different schedules set out by the different ICAO Air Navigation Commission Technical Panels which were not aligned with each other was also discussed, including IWXXM dissemination date, the starting date of FF-ICE/R1 implementation, and publication date of the PANS-IM.

2.15 Considering to align all the timelines which will definitely assist States in planning their investment and transition, the meeting adopted the following Draft Decision for CNS SG/26 and APANPIRG/33 consideration.

Draft Decision CNS SG/26/xx (SWIM TF/06/03) - Harmonization of Timelines for SWIM-related Initiatives	
What: To feedback to the ICAO Air Navigation Commission Technical Panels for a need to harmonize the implementation timelines of SWIM-related initiatives.	Expected impact: <input checked="" type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: There exists different timelines for the implementation of SWIM-related initiatives identified by various ICAO ANC Technical Panels. This creates confusion within States on their corresponding implementation sequences and as to how these different timelines are to be met.	Follow-up: <input type="checkbox"/> Required from States

When: 9-Sep-22	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	

SWIM Implementation and the Asia-Pacific Seamless ANS Plan - China, Japan, Singapore, and Thailand (WP/08)

2.16 The paper examined the relationship between SWIM implementation in Asia/Pacific and the Asia/Pacific Seamless ANS Plan. In the current edition of the Asia/Pacific Seamless ANS Plan, version 3.0, published in November 2019, SWIM is only mentioned once in Appendix C Seamless ANS Principles under the Technology and Information section, Aeronautical Data sub-section stating about the cooperative development of SWIM to support interoperable operations. As SWIM is a key piece of infrastructure required to support other initiatives currently included in the Plan and the future operational concept, it was proposed that CNS SG and SWIM TF consider including SWIM implementation as part of Performance Improvement Plan in the next edition the Asia/Pacific Seamless ANS Plan aligned with SWIM implementation timeframe.

2.17 With aforementioned, the following Draft Conclusion was adopted by SWIM TF/6 for CNS SG/26 and APANPIRG/33 consideration:

Draft Conclusion CNS SG/26/XX (SWIM TF/06/04) - Inclusion of the Asia/Pacific SWIM Implementation in the Asia/Pacific Seamless ANS Plan	
What: CNS SG and SWIM TF to consider including SWIM implementation in the next edition of the Asia/Pacific Seamless ANS Plan.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To ensure that SWIM, a key building block to achieve the vision outlined in ICAO Doc 9854 Global ATM Operational Concept (GATMOC), is captured in the Asia/Pacific Seamless ANS Plan, providing an overall framework for Asia/Pacific States to plan their implementations to meet the future performance requirements.	Follow-up: <input type="checkbox"/> Required from States
When: 9-Sep-22	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: SWIM TF	

2.18 Considering that APAC SWIM Timeline is proposed to be started from 2024 and to incorporate into the Seamless ANS Plan v5.0, which will be published in 2025, the SWIM TF/6 meeting agreed to add **SWIM-B2/1-** Information Service Provision and **SWIM-B2/2-** Information Service Consumption under **Priority Two** in the Seamless ANS Plan v4.0 to be published in 2022. The content to be added in the plan was discussed, prepared, and finalized, which is provided in **Appendix A** to this paper.

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Result of Asia/Pacific SWIM Implementation Plan and Status Survey- Task 1 Leads (WP/17)

2.19 The paper presented the results of the ICAO Asia/Pacific SWIM Implementation Plan and Status survey conducted between March and April 2022. Based on the survey results obtained, recommendations are provided for the consideration of SWIM TF/6.

2.20 Following the **Conclusion CNS SG/25/03**, the ICAO Asia/Pacific SWIM Implementation Plan and Status Survey was prepared by China, Japan, Singapore, and Thailand in consultation with Task leads under SWIM TF, and later disseminated to all Asia/Pacific States/Administrations by State Letter on 1 March 2022.

2.21 Throughout March and April 2022, 49 responses in total were received from 26 States/Administrations, including Australia, Bhutan, Cambodia, China, Fiji, France, Hong Kong China, India, Indonesia, Japan, Lao PDR, Macau China, Malaysia, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, the Philippines, Papua New Guinea, Republic of Korea, Sri Lanka, Singapore, Thailand, USA, and Vietnam. The majority of the responses was from civil aviation regulators, AIS/AIM providers, ANSPs or ATM service providers, and MET service providers. Only one response was from airport operator, while none was obtained from airspace user.

2.22 The paper elaborated on the survey results received from States and based on the survey results obtained, the paper also provided some recommendations, which included

- 1) Timeframe for completion date/expected completion date of the three SWIM key components, which was identified to be between 2022 and 2030, can be in lined with the proposal stated in SWIM TF/6 WP/07.
- 2) With the list of common SWIM information services and SWIM-enabled applications indicated in the majority of the responses, it is suggested to adopt a phased approach in the Asia/Pacific SWIM implementation roadmap to be further devised, to ensure the harmonized implementation of this common list among stakeholders, in turn leading to the region-wide operational benefits.
- 3) Based on the feedback received and considering a significant amount of work done by SWIM TF so far, SWIM TF is recommended to consider consolidating (i) the Asia/Pacific SWIM Concept of Operations and (ii) the Asia/Pacific regional SWIM Implementation Guidance documents to assist States/Administration/Organizations in their SWIM planning and implementation. Moreover, in the case where the inclusion of SWIM in the new version of the Asia/Pacific Seamless ANS Plan, as proposed in SWIM TF/6 WP/08, is adopted by APANPIRG, these two documents can then be used as supplements to the Asia/Pacific Seamless ANS Plan in the future.

2.23 The SWIM TF/6 meeting noted that Recommendation-1 was already agreed by the **Draft Decision SWIM TF/06/03** of WP/07. Recommendation-2 can be added in the Task 1 once detailed SWIM Roadmap is prepared. Recommendation-3 was discussed in WP/21 of SWIM TF/6.

2.24 Task 1 will consider phased approach and a common set of SWIM information services while developing APAC SWIM Implementation Roadmap. **ACTION ITEM 6-4.**

SWIM-TI Interface Binding to Achieve Interoperability – Japan (WP/09)

2.25 Japan clarified the required indicators for IP-based network that should be considered to construct the APAC regional SWIM and the current capabilities of Common aeronautical Virtual Private Network (CRV) that can be provided to support the regional SWIM implementation at the beginning of the shift. To satisfy different requirements, the paper presented an interface binding approach for SWIM Technical Infrastructure to achieve both operational interoperability and applicational flexibility by considering the CRV based regional SWIM implementation.

2.26 Under current situation, due to the limited capabilities of CRV and different operational needs for information services, it is required for SWIM-enabled systems to support users to access information services provided not only in the same network segment but also in different network segments. There are two approaches to deal with a need to access a service in one network segment from another network segment. As the regional and global ATM is a highly federated environment, based on the number of stakeholders, new entrants and complexity of airspace services, multiple users participate multiple network segments could become unmanageable. Therefore, the user-based access should be a temporary solution during the transition period. To achieve technical interoperability, it requires solutions that can scale to support the demand of seamless information exchange between service producers and consumers. Therefore, Task 2 clarifies the interface bindings of SWIM TI, which is a possible approach for CRV based regional SWIM implementation to satisfy the information exchange between different infrastructure systems both in a same network segment and different network segments.

2.27 Task 2 presented a technical perspective for the implementation and evolution of SWIM TI interface bindings on a global scale and identified relevant approaches for achieving interoperability at the SWIM TI level as described in the ICAO SWIM Manual. The Draft Decision titled Infrastructure Bindings of SWIM TI in APAC Region was proposed for the meeting consideration. The meeting agreed to accept the proposed action as a recommendation than draft decision and requested Task 2 to further detail infrastructure bindings of SWIM TI in APAC Region and also to study the details of both user-based access and SWIM-based access options for actual use-cases, including MET use cases, to identify potential issues to be solved. **ACTION ITEM 6-5.**

APAC SWIM Service Level Agreement (SLA): Introduction - Task 5 (WP/11)

2.28 The paper introduced the general Service Level Agreement (SLA) template intended for use as the basis for negotiating SLAs between APAC SWIM service providers and consumers. Considering the growing use of integrating SWIM-enabled services and any instance in which a SWIM service fails to meet consumer expectations will pose a significant risk, SWIM users demand reliable guarantees in service provisioning and qualities of service. Common causes of a disconnection between consumer expectations and actual service offerings were listed in this paper. To provide a uniform and standardized format for an APAC SLA document, the SLA template, which was introduced in detail in WP/12, should be considered as a baseline SLA to be modified by APAC SWIM service providers and consumers. It is expected that users will extend the SLA template as required to fit their specific organizational and technological needs. The meeting was informed that it is already foreseen that the SLA template will be revised once per year following feedback from the APAC SWIM practitioners. The Basic Concepts, Purpose, Goal, and Objectives of the SLA template were shared in details. The meeting was invited to provide feedback on the proposed approach, advise on the way forward, and in particular set priorities for future developments and implementers of APAC SWIM SLA.

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APAC SWIM Service Level Agreement (SLA): Template - Task 5 (WP/12)

2.29 The paper contained the Service Level Agreement (SLA) template, which was provided in **Appendix B** to this paper, intended for use as the basis for negotiating SLAs between APAC SWIM service providers and consumers. Task 5 elaborated on the format and information needed in the Service Level Agreement (SLA) template, including its parties (service provider and service consumer), obligations (service performance and problem reporting), service maintenance, etc. The meeting was informed that it is expected that this SLA template will be modified in the future to reflect the organizational and technological constraints of the APAC SWIM - both at the regional and State levels - as well as to address emerging business requirements.

2.30 The meeting agreed that SLA template should be included in ICAO APAC SWIM Implementation Guidance Material, which is being developed, so that States can use it when they will develop their information services and provide information to their consumers. **ACTION ITEM 6-6** The SLA template will be reviewed and updated annually. **ACTION ITEM 6-7** The meeting also discussed the SLA management approach and suggested Task 5 group to prioritize and further study the details of SLA management method appropriate for APAC. **ACTION ITEM 6-8.**

SWIM Discovery Service (SDS) Update and Next Steps - USA, ROK, China, Japan (WP/13)

2.31 The paper described the status and plans of a growing collaborative effort to deploy a network of SWIM Discovery Services (SDS) in the Asia Pacific Region (APAC). The effort aims to support federated service discovery among independently developed and autonomously managed SWIM domains.

2.32 It was informed that the SDS specification was developed by FAA in 2020 to address the need for SWIM users to discover and leverage services developed by other SWIM programs by defining a standard mechanism for exchanging service description information, or metadata, between independently managed SWIM programs. The paper recalled a demonstration of a cross-registry search module to illustrate how SDS can facilitate discovery of services published in different SWIM registries by FAA and KAC at SWIM TF/5. The meeting was informed that in April 2022, ATMB (China) and ENRI (Japan) had joined the SDS development effort, and the progress, data model, and architecture of their systems which included SWIM service registry were explained in details. Additionally, following the SDS specification, KAC and FAA had both developed own SWIM Metadata Exchange Service (SMXS) that exposes service metadata from their SWIM registry.

2.33 The SWIM TF/6 meeting noted that the development of SDS will encourage the adoption of SWIM in the APAC region by allowing SWIM services to be discovered and used by aviation partners. The partners will work together to enhance service discoverability in the region by considering SDS use cases for multi-party environments and supporting for advanced data filtering in SDS.

2.34 The SWIM TF/6 meeting encouraged member states to join for the collaboration for SDS.

APAC Service Overview Specification - Optional Fields- Hong Kong China (WP/14)

2.35 Hong Kong China proposed the optional descriptive elements to be added to the initial version of the APAC Service Overview Specification. The paper recalled the proposed additional fields for initial version of APAC Service Overview Specification presented in [SWIM TF/5 – WP/14](#) and

summarized the suggestions on further addition of the fields received after SWIM TF/5 which were different from the current requirement set by IMP.

2.36 To ensure interoperability while at the same time to enhance the description of information services provided in the APAC Region, it was recommended to use the additional descriptive elements together with the SWIM Service Overview Specification approved by IMP which was provided in the Appendix. It was also informed that this APAC Service Overview Specification would be a living reference for regular review and update as necessary when new needs are identified in future. APAC service providers may make reference to these optional descriptive elements as necessary based on the users’ operational needs when designing new information services. It was added that other recommended descriptive elements may be identified through table-top exercises or demonstrations for use case of common Flight, Aeronautical and MET information services in coordination with other related SWIM TF task groups.

2.37 The SWIM TF/6 meeting agreed that for the next steps, as Task 5 has been working on exchanging service metadata for APAC SWIM using a mature service description, Task 6 will join the ongoing registries effort of Task 5 to continue the work on the APAC SWIM service metadata model, and coordinate with Task 5 to study whether the descriptive capabilities suggested by States in the previous meetings could be accommodated as optional elements in the existing implementations of service description fields

IMP and Related Panel Updates – Japan (WP/18)

2.38 The paper reviewed the report of the Second Meeting of the Information Management Panel (IMP/2) held virtually from September 27 to October 1, 2021, and the status of the Air Traffic Management Requirements and Performance Panel (ATMRPP), which is developing SARPs and Guidance Materials to implement FF-ICE operations under the SWIM environment. The meeting was informed that the IMP/2 reviewed the latest draft Procedures for Air Navigation Services –Information Management (PANS-IM) and accepted all the modifications. Furthermore, the applicability of the proposed information security framework, maintenance of the information security provisions, and the mandatory use of specific IPv6 addresses (aviation block) and domain names were also discussed in the IMP/2 meeting. The meeting also reviewed the latest version of SWIM Manual Volume II – Implementation Guidance, and the first edition of the Guidance Material - Manual on SWIM Implementation has been ready for publication. The IMP/2 meeting reviewed the ATM Information Reference Model (AIRM), endorsed the release of the AIRM v1.0.0, and supported the AIRM work/release plan.

2.39 Additionally, the meeting was informed that ATMRPP has completed most of the work on FF-ICE/R1 focusing on pre-departure phase Trajectory Negotiation with ATMRPP/4, and the focus has shifted to post-departure phase, FF-ICE Release 2 (FF-ICE/R2) and noted that plans to draft the provisions on FF-ICE/R2 by 2028 are being considered in the ATMRPP.

2.40 Considering the FF-ICE implementation is not something that can be completed by the SWIM TF alone and collaboration with other groups such as ATM and CNS is important, the meeting formulated the following Draft Decision for CNS SG/26 and APANPIRG consideration.

Draft Decision CNS SG/26/XX (SWIM TF/06/05) - Establish a Joint Work Group between the ATM SG and CNS SG to Create the FF-ICE Implementation Strategy.	
What: To establish a joint work group between the ATM SG and CNS SG to create an FF-ICE implementation strategy that is consistent with the SWIM implementation in the APAC region	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic

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		<input type="checkbox"/> Environmental
		<input checked="" type="checkbox"/> Ops/Technical
Why: FF-ICE is the first application developed to operate in the SWIM environment, and the State-letter process is expected to proceed almost simultaneously with the SWIM provisions. Therefore, it is necessary to comprehensively consider the mixed operation of FPL2012 and FF-ICE while ensuring consistency between FF-ICE and SWIM implementation in the region to support ICAO Member States decision-making.	Follow-up:	<input type="checkbox"/> Required from States
When: 9-Sep-22	Status:	Draft to be adopted by PIRG
Who: TF	<input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM	

2.41 The SWIM TF/6 meeting noted that similar activity is being carried out by the Inter-Panel task force consisting of ATMRPP, IMP, and CP members to ensure the consistency among ICAO provisions related to FF-ICE.

Update on APAC SWIM Implementation Materials – Sec (WP/21)

2.42 The Third Meeting of the APAC SWIM Task Force (SWIM TF/3) agreed that the title of the Regional Implementation documents would be “APAC SWIM Implementation Materials”. In the same meeting, one ACTION ITEM was developed as ACTION ITEM SWIM TF/3/1- *The Task Leads will address the Table of Contents at the next quarterly Task Force Lead Teleconference and provide input of the implementation materials by SWIM TF/4.* During the SWIM TF/4 meeting, Table of Contents (ToC) of APAC SWIM Implementation Guidance Document (IGD) was proposed through Working Paper (WP)/03. The SWIM TF/5 suspended the ACTION ITEM SWIM TF/3/1 and decided to reactivate it upon further updates during the future Task Lead meetings or SWIM TF/6. Additionally, the SWIM Repository has been created in the ICAO APAC-SWIM Secure Portal to keep useful materials to facilitate SWIM implementation at regional level.

2.43 The Information Management Panel (IMP) delivered to the Secretariat a draft of the Manual on SWM Implementation during its Second meeting. The goal of this Manual is to support, at a global level, the implementation of the draft provision proposed as a new Procedures for Air Navigation Services - Information Management (PANS-IM), which aims to publicize at the **beginning of 2023**. The SWIM TF/6 meeting was invited to review the draft ToC of the APAC SWIM Implementation Guidance Document and requested that SWIM TF may consider to consolidate the work, completed by SWIM TF and aligning with global guidance documents, into the APAC regional guidance material, which is provided in **Appendix C** to this paper.

2.44 The SWIM TF/6 meeting noted that one recommendation from WP/17 is aligned with this paper objectives. Additionally, ICAO APAC Member States through the survey responses are requesting to get ICAO APAC Regional SWIM Implementation Guidance Document. Therefore, the ACTION ITEM **SWIM TF/3/1** should be restarted.

2.45 The SWIM TF/6 meeting noted that while reviewing ToC in the past meetings, no feedback was received. Moreover, the way forward to work on this IGD was not clear. The SWIM TF/6 meeting requested ICAO Secretariat to compile all work done by the SWIM TF and consolidate the first draft of IGD for consideration by Task Leads prior to presenting the draft to SWIM TF. **ACTION**

ITEM 6-9 ICAO Secretariat will take the action and inform to SWIM TF in case of difficulties in completion of this task.

2.46 The SWIM TF/6 meeting agreed to add the catalogue being prepared by Task 11 as a supplement material in the first draft of IGD.

Review of SWIM TF ToR- Sec (WP/15)

2.47 The SWIM TF/5 meeting revised the ToR of SWIM TF considering the progress made since the establishment of SWIM TF, the update of ICAO global and regional air navigation plans, and the revised task groups adopted at SWIM TF/4, and endorsed Draft Decision SWIM TF/05/02- *Revised SWIM TF ToR* for adoption by CNS SG/25, which was further adopted by CNS SG/25 by **Decision CNS SG/25/04**.

2.48 Australia proposed some amendments via Flimsy/02 of CNS SG/25 to the draft ToR of SWIM TF. The USA also shared its concern about using SWIM to transport time-critical information as detailed in WP/32 in CNS SG/25. The SWIM TF Co-Chairs advised the CNS SG/25 meeting that the draft ToR had been thoroughly discussed and agreed upon during the SWIM TF/5 meeting. After some deliberations and considering CNS SG's views, the proposal on further modifying the term from "over CRV" to "principally over CRV" in the ToR was supported by China, Hong Kong China, Japan, Singapore, Thailand, USA, and IATA.

2.49 The SWIM TF/6 Meeting noted that the subject on amendment to ToR of SWIM TF was also discussed by the MET SG/25 held from 18 to 22 October 2021, which was conducted in the same period with CNS SG/25, with a relevant **Draft Conclusion MET SG/25-07** *SWIM architecture to enable the cost-effective and efficient provision and consumption of MET information services* for consideration in APANPIRG/32. As the MET SG's draft conclusion will be captured in the ongoing review of SWIM TF ToR and considering no further comments from members, the Meeting concluded that there was no need to further consider Draft Conclusion MET SG/25-07.

2.50 The MET SG/25 noted that MET service provision was not well represented in the APAC SWIM TF and, therefore, strongly recommended that the MET community increase participation in the SWIM TF meetings.

2.51 APANPIRG/32 adopted the Decision APANPIRG/32/12: *Meteorological expert contribution to SWIM/TF* based on Draft Decision MET SG/25-08. ICAO Secretariat shared the State Letter Ref.: T 4/3.2.9 - AP070/22 (MET) dated 9 May 2022 on subject: *Decision APANPIRG/32/12: Meteorological expert contribution to SWIM/TF* to encourage MET representatives of member states to participate in the SWIM TF.

2.52 As an established effective practice in progressing various tasks of the SWIM TF, online Task Leads (TLs) coordination meetings have been organized from time to time between Task Force meetings. The latest TLs coordination meeting (video teleconference) was held on 8 February 2022. The above mentioned action items were discussed in various SWIM TF Task Leads meeting after SWIM TF/5 and all concerns raised by Australia were taken into consideration. Based on the detailed deliberations, the SWIM TF ToR has been modified and all concerns raised by Flimsy 02 and MET SG have been addressed.

2.53 Considering the progress made since the SWIM TF/5 to deliberate the concerns raised in CNS SG/25 and MET SG/25, SWIM TF's Terms of Reference (ToR) amended in SWIM TF Task Leads meetings was presented to the meeting for further review.

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2.54 The meeting reviewed and updated the draft ToR and endorsed following draft decision for CNS SG/26 adoption.

Draft Decision CNS SG/26/XX (SWIM TF/06/06) – Revised SWIM TF Terms of Reference	
What: That, the revised SWIM TF Terms of Reference (ToR) as shown in Appendix D be adopted.	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: To align with the progress made since the SWIM TF/5 and outcomes of Action item 25-1 from CNS SG/25.	Follow-up: <input type="checkbox"/> Required from States
When: 09 September 2022	Status: Draft to be adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> Other: SWIM TF	

2.55 To ensure that the objectives set in the ToR can be achieved, the Statement of Work (SOW) of each Tasks was already updated in SWIM TF/5 meeting. The SOW will be reviewed in further Task Leads Meeting to be in consistent with revised SWIM TF ToR after adoption by CNS SG/26. **ACTION ITEM 6-10**

Review SWIM TF Work Plan and Action Items- Sec (WP/20)

2.56 The SWIM TF/1 meeting agreed on the Work Plan for the task force, which outlined the phased approach for SWIM implementation in the APAC region, and assigned various tasks to Task Leads and contributors. The SWIM TF/5 meeting updated the Action Items List to reflect the progress in the past year and the plan for the near future.

2.57 As an established effective practice in progressing various tasks of the SWIM TF, online Task Leads (TLs) coordination meetings have been organized from time to time between Task Force meetings. The latest TLs coordination meeting (video teleconference) was held on 8 February 2022 and resulted in the proposed modifications of Task scope naming originally agreed by SWIM TF/5.

2.58 The revised Task description adopted by the meeting is 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), Yukinobu Ryu (Japan), Henry Chan (Hong Kong, China)
	3	Security service	Mr. Jim Laymon (USA)

Groups	Task No.	Subject/Task	Task Leads
Technical Architecture	4	Development and maintenance of regional information exchange models	Amornrat Jirattigalachote (Thailand) Wen Zhu (USA)
Governance	5	Registry and Other Related Governance Policies Regional SWIM Governance Framework (New approved name)	Dongkie Park (ROK) Mark Kaplun (USA), Yukinobu Ryu (Japan), Xiaodong Lu (Japan), Honglei Gao (China)
Information Services	6	Information services	Marco Kok (Hong Kong, China) Vacant
Validation & Demonstration	7	SWIM Demonstration	David Leow (Singapore) Amornrat Jirattigalachote (Thailand)
	8	SWIM services and application validation	Yukinobu Ryu (Japan), Xiaodong Lu (Japan), Honglei Gao (China), Mr. Dongkie Park (ROK)
Coordination and Promotion	9	Monitoring of Panels' work	Yukinobu Ryu (Japan)
	10	Regional coordination and SWIM-related information sharing	Vacant
	11	SWIM implementation education and promotion (New task)	Thomas Green (USA)

2.59 To gather as much as possible the different viewpoints from Asia/Pacific Member States and international organizations facing diverse challenges, the SWIM TF/6 Meeting was requested to nominate experts from Member States and organizations to support various activities of Task 1 to 11.

2.60 The SWIM TF/6 meeting was informed that Task 3 required a co-lead from the APAC region in order to be able to better suggest and incorporate the security requirements specific to APAC region. Similar need is required for Task 6 and Task 11. The importance of Task 10, which Task Lead is currently vacant, in coordinating between SWIM TF and other contributory body under APANPIRG was highlighted, taking the example on the increased need for coordination regarding FF-ICE implementation as raised in WP/18. As the revised ToR of SWIM TF has significantly increased the work of SWIM TF, the Member States were encouraged to nominate Task Leads of Task 10, Task co-leads of Task 3, Task 6, and Task 11 on priority basis. Additionally, more contributors were requested for Task 1 to Task 11.

2.61 Australia informed that the nomination of representatives at the place of Mr. Renato Iannella is in progress and ICAO Secretariat will be informed by Australia about the nominated representative in due course.

2.62 The SWIM TF/6 meeting reviewed and updated the SWIM TF Work Plan and the revised SWIM TF Work Plan was adopted by the meeting. The revised SWIM TF Work Plan is provided in **Appendix E** to this paper.

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2.63 The SWIM TF/6 meeting updated the action item list. The updated action item list is provided in **Appendix F** to this paper.

Status of Proof-of-Concept Based SWIM Project for Exchanging Aeronautical, Flight and Weather Data – India (WP/16)

2.64 India presented the Status and accomplishments of the Proof- of- Concept (POC) based SWIM project undertaken by India. The project scope covers building SWIM technical infrastructure, generating digital datasets for Digital NOTAM, OPMET & flight related ATS messages, which help INDIA to prepare a roadmap for the implementation of ground to ground SWIM infrastructure.

2.65 The meeting was informed that the POC based SWIM project design supports Hybrid Operational Models and leverages the existing AMHS/AFTN networks to communicate with non-SWIM users, which is capable of distributing the aeronautical, flight and weather data through multiple channels subjected to operational rules and conditions. India further elaborated the design philosophy of prototype SWIM system, SWIM Infrastructure Developed for POC based SWM system, and SWIM Technical Infrastructure in India. The paper also introduced the services been included in the SWIM architecture, and shared that the project has entered into the final stage and was planned to be interfaced with AEROTHAI SWIM system for testing and validation of the project deliverables. The meeting was informed that Member States were invited to interface their SWIM system with Indian POC SWIM system.

2.66 The SWIM TF/6 meeting appreciated the work being done by India and encouraged Member States to support the POC test of India by interfacing their SWIM system with Indian POC SWIM system to validate the final outcomes.

The SWIM Service Management Center Demo Design and Implementation – China (IP/03)

2.67 The paper presented the research and implementation of the SWIM services registry in China. The meeting was informed that the research and demonstration of SWIM service registry has been started by Air Traffic Management Bureau (ATMB) in 2020 and a demonstrative platform of SWIM service registry which is named *SWIM service management center* has been designed and developed in a regional ATMB as experimental unit.

UAM Demonstration over SWIM in the Republic of Korea (IP/04)

2.68 The paper presented UAM demonstration over SWIM in the Republic of Korea (ROK) that was held at Gimpo International Airport, Seoul, in 2021. For the demonstration, SWIM Testbed Configuration was introduced that SWIM-enabled application can receive all information required from the SWIM without directly connect to any ATM systems, and display ATM/UTM information and geo-spatial information in the three-dimensional map. Furthermore, the lessons learned from the demonstration and future plan to conduct R&D projects to obtain fundamental technologies for UAM were shared in detail in this paper. The SWIM TF/6 meeting appreciated the work being done in ROK and requested ROK to share further updates about the UAM use case at the future meeting.

IATA Aircraft Equipage and Capability Survey – SWIM – IATA (IP/05)

2.69 IATA presented preliminary analysis of airline responses to the SWIM section of IATA's Aircraft Equipage and Capability Survey for Asia-Pacific and North Asia conducted in Quarter 1 of 2022. The IATA's Aircraft Equipage and Capability Survey specifically asked for aircraft fleet

capabilities and operating approvals in the domains of PBCS, PBN, GNSS Augmentations, Mode S and SWIM. The airlines were asked to provide indications on future intentions where current capabilities were planned to be enhanced by the end of the 2022 calendar year considering the impact of COVID-19.

IATA covered a preliminary analysis of the responses received from 22 airlines for SWIM, which looked at current levels of understanding and development of SWIM components as well as overall awareness and future plans to adopt SWIM concepts, and summarized that the progress of airlines to become SWIM enabled is broadly spread but more so on the lower scale of awareness. The meeting was informed that IATA will continue to collect data from the survey and produce summaries, and more specific analyses will be conducted once all data is fully filtered and collated.

2.70 The SWIM TF/6 meeting appreciated IATA sharing the preliminary survey results and requested IATA to further share the outcomes at the future meeting, once the response processing is finished and more specific analyses are produced. The SWIM TF/6 meeting also expressed that it would be useful if IATA would conduct a survey on FF-ICE, as its implementation is well connected with SWIM.

Latest Development of IWXXM - Hong Kong, China (IP/06)

2.71 The paper presented the publication of the latest version of IWXXM and the further development of IWXXM since 2021. Approved via the WMO Fast Track Process, IWXXM Version 2021-2, which supports the information and reporting requirements in Amendments 79 and 80 to ICAO Annex 3, was published on 15 November 2021 with one of the major changes to adopt a new versioning scheme where IWXXM and individual report packages no longer shared the same version number. After the publication of IWXXM Version 2021-2, WMO Task Team on Aviation Data (TT-AvData) had adopted a more proactive approach to start development of IWXXM schemas based on the requirements in proposed amendment to ICAO Annex 3 endorsed by ICAO MET Panel but yet to be approved by the ICAO ANC. Development work for changes to IWXXM in relation to the proposed Amendment 81 has already been started.

Date and Venue for the Next Meeting

2.72 The meeting agreed to tentatively schedule **SWIM TF/7** as a **Face-to-Face** meeting in **the third or the last week of May 2023**, with the assumption that by that time the business conduct will be back to normal with no travel restriction. The meeting arranged that the SWIM TF/7 would be conducted for **Four** (4) days.

2.73 The meeting agreed to follow-up the exact mode and date for SWIM TF/7 in the future while monitoring the pandemic situation. The States/Administration will be informed before 3 months of scheduled date by ICAO APAC Regional Office about exact mode and date of the meeting. The meeting suggested that if a Member State wishes to host the next meeting, they should inform ICAO Secretariat at least 3-4 months in advance in order to issue the meeting invitation package accordingly.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) adopt draft conclusions defined in **Paragraph 2.22, 2.27** and draft decisions stated in **Paragraph 2.9, 2.25, 2.50, 2.64**;

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- c) note the proposed content to add into the future Seamless ANS Plan v4.0 with SWIM ASBUs provided in **Appendix A** and the APAC SWIM Service Level Agreement (SLA) template provided in **Appendix B**;
- d) note the draft Table of Contents of the APAC SWIM Implementation Guidance Document in **Appendix C**;
- e) note and review ToR to be adopted by CNS SG/26 in **Appendix D**, SWIM TF Work Plan adopted by SWIM TF/6 in **Appendix E**, and the updated task lists in **Appendix F**; and
- f) discuss any relevant matter as appropriate.

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Seamless ANS Plan v4.0

With reference to the expected publication of the ICAO PANS-Information Management (PANS-IM) in 2024 and the expected sunset date of the current flight plan format (FPL2012) of 2032 being considered by ICAO ATMRPP, the timeframe for SWIM implementation in Asia-Pacific region was set at between 2024 and 2030. The expectation is that Asia-Pacific States will be SWIM ready by 2030 and the intervening 2 years till the expected sunset date of 2032 of the FPL2012 format can be used to conduct FF-ICE related operational trials. The timeframe **was adopted** by APANPIRG/33 by the **Conclusion APANPIRG/33/ xx** (SWIM TF/06/02) - *The Asia-Pacific SWIM Implementation Timeframe*.

APANPIRG/33 also considered including SWIM implementation as part of Performance Improvement Plan in the next edition the Asia/Pacific Seamless ANS Plan aligned with SWIM implementation timeframe which was adopted by the **Conclusion APANPIRG/33/ xx** (SWIM TF/06/04): *Inclusion of the Asia/Pacific SWIM Implementation in the Asia/Pacific Seamless ANS Plan*.

Therefore, in order to ensure that SWIM, a key building block to achieve the vision outlined in the Global ATM Operational Concept (Doc 9854), is properly captured in the Asia/Pacific Seamless ANS Plan, following SWIM ASBUs are included for the year 2024. The elements required to be added from 2025 would be added in the fifth amendments of the plan in 2025.

Functional Category	Element	Priority
Information	SWIM-B2/1- Information service provision: Requirements for an information service provider to make aviation-related information available as an information service.	2
	SWIM-B2/2- Information service consumption: Requirements for an information service consumer to discover and access aviation-related information provided via information services	2

Service Level Agreement (SLA)

for consumption of *[insert service name]*

by *[insert service consumer name]*

Document Identifier: *[insert SLA URI]*

Version: *[insert SLA version number]*

Effective Date: *[insert SLA effective date]*

1. PURPOSE

This Service Level Agreement (SLA), hereinafter referred to as Agreement, governs the specific terms and conditions in support of the provision and consumption of the *[insert service name]*. It identifies the rights and obligations of the service provider *[insert service provider name]*, hereinafter referred to as Provider, and service consumer *[insert service consumer name]*, hereinafter referred to as Consumer.

The purpose of this Agreement is to ensure that the proper parameters and obligations necessary to provide consistent service delivery to the Consumer by the Provider are unambiguously stated and agreed upon by all parties involved.

2. TERMS AND CONDITIONS

This Agreement is valid from the Effective Date outlined herein for a maximum period of *[insert time period, e.g., 5 years]*. This Agreement should be reviewed at a minimum once per year; however, in lieu of a review during any period specified, the current Agreement will remain in effect.

Changes, as necessary, will be made through subsequent agreements or amendments to this document.

3. PARTIES

The following list of organizational entities will be used as the basis of the Agreement and represents the primary stakeholders associated with it:

3.1. SERVICE PROVIDER

Name	<i>[insert the Provider's organization name]</i>
Description	<i>[insert a brief description of the Provider's organization]</i>

3.1.1. PROVIDER POINTS OF CONTACT

The following represent individuals or groups of individuals who can be contacted for the purpose of obtaining information and/or technical support from the Provider.

Name	<i>[insert the PoC's full name, e.g., "John J. Doe" or "Help Desk"]</i>
Work Functions	<i>[insert the PoC's job title or a brief description of the PoC's responsibilities, e.g., "Program Manager" or "Provides technical support to users"]</i>

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E-mail	<i>[insert the PoC's e-mail]</i>
Phone Number	<i>[insert the PoC's phone number]</i>

[Insert another table for each additional Provider Point of Contact]

3.2. SERVICE CONSUMER

Name	<i>[insert the Consumer's organization name]</i>
Description	<i>[insert a brief description of the Consumer's organization]</i>

3.1.2. CONSUMER POINTS OF CONTACT

The following represent individuals or groups of individuals who can be contacted for the purpose of obtaining information and/or technical support from the Consumer.

Name	<i>[insert the PoC's full name, e.g., "John J. Doe" or "Help Desk"]</i>
Work Functions	<i>[insert the PoC's job title or a brief description of the PoC's responsibilities, e.g., "Program Manager" or "Provides technical support to users"]</i>
E-mail	<i>[insert the PoC's e-mail]</i>
Phone Number	<i>[insert the PoC's phone number]</i>

[Insert another table for each additional Consumer Point of Contact]

4. SERVICE INFORMATION

The following service is covered by this Agreement:

ID	<i>[insert the service's identifier]</i>
Name	<i>[insert the service's full name and acronym, if any, by which it is commonly recognized]</i>
Version	<i>[insert the service's version]</i>
Description	<i>[insert a brief description of the service]</i>

The *[insert service name and/or acronym]* service referenced in this Agreement is defined by the service description document entitled *[insert service description document name or title]*. The service description document is governed by *[insert regulating standard name or title]* and is accessible at *[insert online location when the service description document can be accessed]*.

5. OBLIGATIONS

5.1. SERVICE PERFORMANCE

5.1.1. Availability

In the context of this Agreement, *availability* is understood as the probability that the service will be operational during an identified period of time.

Provider agrees to ensure service availability as follows:

- a. The service is offered [*insert value(s), e.g., 24 hours a day, 7 days a week, 365 days a year (24x7x365), etc.*].
- b. The service has a maintenance window described in section 5.3.
- c. Provider agrees to maintain an availability value [*insert the value, e.g., "0.999"*] or greater.

The Availability value is measured as follows:

Measurement Method	(24 – Total Outage Time in Hours) / 24. Measurements are taken daily and apply to the preceding 24-hour period.
Unit of Measure	Probability expressed to 3 decimal places.

5.1.2. Capacity

In the context of this Agreement, *capacity* is understood as the number of service requests that the service can accommodate within a given time period.

Provider agrees to support [*insert the value, e.g., "1200 requests per hour"*]. Beyond this capacity, all users may see degraded performance in the return of identification information.

The *capacity* value is measured as follows:

Measurement Method	Simple count.
Unit of Measure	Whole positive number, per period of time.

5.1.3. Response Time

In the context of this Agreement, *response time* is understood as the maximum time required to complete a service request.

Provider agrees not to exceed [*insert the value, e.g., "10"*] seconds to return a requested message. This response time is limited by the volume capacity described in section 5.1.2.

The *response time* value is measured as follows:

Measurement Method	Measured from the time the provider agent receives the request to the time the service provider transmits the response.
Unit of Measure	Seconds.

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5.1.3. Mean Time to Restore (MTTR)

In the context of this Agreement, *Mean Time to Restore (MTTR)* is understood as the average time required to return the service to a pre-determined (available) state after a failure.

Provider agrees to maintain MTTR value *[insert the value, e.g., “120”]* minutes or less.

The *MTTR* value is measured as follows:

Measurement Method	The sum of the times to restore service after failures divided by the number of times the service was restored.
Unit of Measure	Minutes.

5.2. PROBLEM REPORTING

In the event of a service problem or disruption:

Provider agrees to:

- a. Send an acknowledgement of receipt of the problem to the Help Desk and the Consumer within 30 minutes.
- b. Categorize the problem as *Critical* or *Noncritical*.
 - *Critical* problems are defined as disruptions of service where the Consumer no longer has access to the service.
 - *Noncritical* problems are all other problems that impede or degrade service delivery but do not result in a service disruption.
- c. Generate a problem report with corresponding problem category and resolution parameters and provide it to the Consumer.

Consumer agrees to:

- a. Report the problem to the Provider and/or Help Desk at the contact points identified in section 3.1 of this Agreement.

5.3. SERVICE MAINTENANCE

Provider agrees to:

- a. Perform planned maintenance during regularly scheduled periods of time (“maintenance windows”). During the following times, the service will be unavailable for normal interactions: *[insert UTC, e.g., “13:00:00Z” or local time, e.g., “9pm EDT” in the table below]*

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Begin time							
End time							

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- b. Notify the Consumer at least *[insert value, e.g., “48”]* hours ahead of time about all non-scheduled and emergency maintenance by using the contact information provided in section 3.2 of this Agreement.

5.4. CHANGE CONTROL

Provider agrees to:

- a. Notify the Consumer about planned changes to the service at the beginning of the planning stage or six (6) months prior to the target date on which the new version will become operational, whichever comes first.
- b. Maintain an active version of the service for at least twelve (12) months after release of the new version.

Consumer agrees to:

- a. Utilize the most recent release within twelve (12) months of general availability.

5.5. VERSIONING

Provider agrees to:

- a. Version each release of the service according to the guidance set forth in *[insert name or title of regulating standard, e.g., “SWIM-005, Artifacts Versioning for SWIM-enabled Services”]*.
- b. Maintain each version of the service description(s) in a registry and/or repository that is also accessible to the Consumer.

Consumer agrees to:

- a. Utilize the most recent release within six months of general availability.
- b. Utilize only versions of the service that are actively maintained by the Provider. Consumers using versions no longer maintained by the Provider are subject to loss of access to the service.

5.6. DOCUMENTING

Provider agrees to:

- a. Document, maintain, and publish the description of the service and service-related documentation as prescribed by *[insert name or title of regulating standard]*.

5.7. SECURITY

Consumer agrees to:

- a. Conform to the following security policies:

[Insert name and online location of one or more security policies as defined by a governing and/or security organization]

- b. If any action by the Consumer or Consumer agent takes place that adversely impacts the service's ability to operate, e.g., security policy infraction, misuse of service capacity, etc., the Provider has the right to terminate use of the service until the impacting conditions are remedied.

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6. SIGNATORIES

<Organization Name>

<Organization Name>

<Signatory Name>

<Signatory Name>

<Date>

<Date>

TERMS OF REFERENCE

SWIM Task Force

Objectives: In order to achieve the SWIM thread as specified in the Aviation System Block Upgrade (ASBU) of the Global Air Navigation Plan (GANP), the Asia/Pacific Seamless ANS Plan objectives, and the air navigation systems that are in compliance with ICAO global standards for the conceptualisation and exchange of aeronautical, flight and meteorological information, the SWIM Task Force will:

- a) Benchmark the various successful implementations of SWIM in States and regions to promote best practices;
- b) Develop and maintain the Asia/Pacific regional roadmap for SWIM implementation, including SWIM technical infrastructure, SWIM governance, SWIM information services;
- c) Propose a high-level Asia/Pacific regional SWIM architecture, the corresponding SWIM technical infrastructure requirements, and the implementation approach to construct such architecture principally over CRV and other IP based networks to ensure interoperability among regional SWIM participants, to support transition for non-SWIM capable entities;
- d) Develop the Asia/Pacific regional SWIM cyber security architecture framework and SWIM security strategy in line with ICAO International Aviation Trust Framework (IATF);
- e) Support APANPIRG WGs/TFs regarding information exchange models and examine if any extension to the existing information exchange models, i.e. AIXM, FIXM, and IWXXM, and/or the new information exchange model(s) are required to support the Asia/Pacific regional operational requirements;
- f) Establish a robust and sustainable governance model to ensure that a common set of policies, rules, and standards for identifying, designing, implementing, discovering, and operating SWIM-enabling components, including SWIM registries, is consistently applied and enforced throughout the Asia/Pacific region;
- g) Develop and define the Asia/Pacific version of the SWIM information service overview specifications and the Asia/Pacific version of data catalogue for information services based on the regional operational needs;
- h) Track and observe SWIM demonstrations and trials within the Asia/Pacific region as well as provide, if required, support for regional SWIM demonstrations;
- i) Encourage and support interested APAC Member States to construct a platform for SWIM services and applications validation and to support the implementation of SWIM services and applications;
- j) Monitor developments by the IMP and escalate the regional issues as required;
- k) Identify, communicate, and liaise with relevant APANPIRG WGs/TFs in regard to SWIM-related activities, including providing support to refine SWIM operational and communications requirements;
- l) Develop an educational and promotional materials required to support the regional SWIM implementation to ensure cohesiveness among regional SWIM participants;

- m) Assist APAC Member States to implement the Asia/Pacific regional SWIM, as appropriate;; and
- n) Undertake any other approved tasks related to SWIM implementation that may arise in the future.

Composition:

The SWIM TF will consist of experts from ATM, AIM, MET, and CNS from Asia/Pacific States and international organizations such as IATA and ICCAIA.

Conduct of the work:

The task force will conduct its work through web conferences, teleconferences, other electronic means of communications, and Face-to-Face meetings.

Reporting:

The group will report to CNS SG.

TERMS OF REFERENCE

SWIM Task Force

Objectives: In order to achieve the SWIM thread as specified in the Aviation System Block Upgrade (ASBU) of the Global Air Navigation Plan (GANP), the Asia/Pacific Seamless ANS Plan objectives, and the air navigation systems that are in compliance with ICAO global standards for the conceptualisation and exchange of aeronautical, flight and meteorological information, the SWIM Task Force will:

- a) Benchmark the various successful implementations of SWIM in States and regions to promote best practices;
- b) Develop and maintain the Asia/Pacific regional roadmap for SWIM implementation, including SWIM technical infrastructure, SWIM governance, SWIM information services;
- c) ~~Define—Propose~~ a high-level Asia/Pacific regional SWIM architecture, the corresponding SWIM technical infrastructure requirements, and the implementation approach to construct such architecture principally over CRV and other IP based networks to ensure interoperability among regional SWIM ~~participants—and~~ participants, to support transition for non-SWIM capable entities;
- d) Develop the Asia/Pacific regional SWIM cyber security architecture framework and SWIM security strategy in line with ICAO International Aviation Trust Framework (IATF);
- e) Support APANPIRG WGs/TFs regarding information exchange models and examine if any extension to the existing information exchange models, i.e. AIXM, FIXM, and IWXXM, and/or the new information exchange model(s) are required to support the Asia/Pacific regional operational requirements;
- f) Establish a robust and sustainable governance model to ensure that a common set of policies, rules, and standards for identifying, designing, implementing, discovering, and operating SWIM-enabling components, including SWIM registries, is consistently applied and enforced throughout the Asia/Pacific region;
- g) Develop and define the Asia/Pacific version of the SWIM information service overview specifications and the Asia/Pacific version of data catalogue for information services based on the regional operational needs;
- h) Track and observe SWIM demonstrations and trials within the Asia/Pacific region as well as provide, if required, support for regional SWIM demonstrations;
- i) Encourage and support interested APAC Member States to ~~C~~construct a platform for SWIM services and applications validation and to support the implementation of SWIM services and applications;
- j) Monitor developments by the IMP and escalate the regional issues as required;
- k) Identify, communicate, and liaise with relevant APANPIRG WGs/TFs in regard to SWIM-related activities, including providing support to refine SWIM operational and communications requirements-;
- l) Develop an educational and promotional materials required to support the regional SWIM implementation to ensure cohesiveness among regional SWIM participants;

- m) Assist APAC Member States to implement the Asia/Pacific regional SWIM, as appropriate; Implement the Asia/Pacific regional SWIM; and
- n) Undertake any other approved tasks related to SWIM implementation that may arise in the future.

Composition:

The SWIM TF will consist of experts from ATM, AIM, MET, and CNS from Asia/Pacific States and international organizations such as IATA and ICCAIA.

Conduct of the work:

The task force will conduct its work through web conferences, teleconferences, other electronic means of communications, and Face-to-Face meetings.

Reporting:

The group will report to CNS SG.

SWIM TF Work Plan

Project Group	Old Task number	Old Task Description	New Task No	New Task Description	Objective and scope	Task Lead(s)	Planned Start	Planned completion	Dependencies	Guidance for SOW
Implementation Planning	1-1	Benchmarking of best practices	1	Regional implementation philosophy & roadmap	Develop and maintain the Asia/Pacific regional roadmap for SWIM implementation, including SWIM technical infrastructure, SWIM governance, aeronautical information service, flight information service, and weather information service	David Leow (Singapore) Dr. Amornrat Jirattigalachote (Thailand)	2017	2018	SWIM Task Force created, resources available Panels deliver as expected Task 1.7 (common vocabulary)	benchmark existing governance models (FAA, Europe), existing catalogues, existing arrangements for quality of service/SLA (availability/reliability), existing registries if any Benchmark mediation of legacy users Benchmark available existing SWIM and industry models for service descriptions ICCAIA IP13 to be included
		Guidance To States: Interregional workshop Develop SWIM implementation Guidance for phase 1 Develop SWIM implementation Guidance for phase 2 (dual operations) Regional workshops					2017	2022		From the task 1-3 APANPIRG WG/TF planning to use or using SWIM may need guidance (ad hoc basis) Guidance to States
		Guidance for publishers/consumers;					2017 2017	2017 2018	SWIM iKit (if confirmed by IMP)	Mediation of legacy users
							2019 As needed	2020		Lessons learnt from ASEAN SWIM demonstration
	1-2	SWIM Regional roadmap					2017	2018	Task 1.1 Task 1-5 and 1-6 Task 1-4 (service descriptions)	Common vocabulary requirement on publishers and subscribers to use the common controlled vocabulary Should include developing a guide for the preparation of service descriptions (dependency = 1.4) Could include guidance for developers/publishers on a set of protocols/formats to use
							2019	2022	SWIM Manual 10039 and Technical Manual	Roadmap needs to be updated to reflect the changes and developments that have occurred in the last SWIM TF meetings. It needs to be more granular and help direct the work of the other task groups for APAC regional SWIM implementation.
						2022	2024	New implementation Roadmap	1st Set the timeframe for implementation 2nd Discuss with the TF and decide on the elements for implementation 3rd Develop new roadmap for SWIM implementation.	
	1-8	Regional SWIM Architecture	2	Regional SWIM infrastructure	<ul style="list-style-type: none"> Define the high-level APAC SWIM Architecture including policies on implementation and distribution of SWIM services Define the requirements for the APAC SWIM Infrastructure with the goal of ensuring technical interoperability Outline policy to ensure backwards compatibility with non-SWIM capable entities Develop a roadmap for the implementation of APAC SWIM Infrastructure 	Mr. Xiaodong Lu (Japan) Mr. Yukinobu Ryu (Japan) Mr. Henry Chan (Hong Kong, China)	2017 2021	2020 2023	<ul style="list-style-type: none"> Manual on SWIM, SARPS, PANS and Guidance material from IMP, CP or ATMRPP Availability and capability of CRV implementation Task 5 – Governance Task 6 – Information Services Task 8 – SWIM Service and Application Validation 	Define a CRV-based APAC SWIM Architecture to assure interoperability during the transition period Develop APAC SWIM Infrastructure requirements based on the related ICAO documents Propose an approach to implement secure APAC SWIM Infrastructure by cooperating with Task 3 Security Services

Project Group	Old Task number	Old Task Description	New Task No	New Task Description	Objective and scope	Task Lead(s)	Planned Start	Planned completion	Dependencies	Guidance for SOW
SWIM infrastructure	New	NA	3	Security service	<ul style="list-style-type: none"> • Advises TF Chair and Task Leads in the area of cybersecurity for APAC. Specific objectives include: • Determining the scope of security responsibility of SWIM, consistent with SWIM technical infrastructures envisioned by the ICAO Information Management Panel (IMP) and the APAC regional network infrastructures including the CRV. • Proposing a trust framework to ensure that the correct information is sent to the correct users, considering identity and access management initiatives (IAM) from member states. • Ensures interoperability of trust frameworks within APAC region and with other ICAO regions. • Developing SWIM Cyber Security Architecture Framework and SWIM security strategy for the Asia-Pacific Region. Analyses and capture SWIM security risks. • Provide security guidelines and best practices to be incorporated in SWIM APAC Governance activities. 	Mr. Jim Laymon (USA)	2023	2025	ICAO 2022 approval of: 1. X.509 Certificate Policy for the International Aviation Trust Framework (IATF) Certification Authority 2. IATF CP Criteria and Methodology for Cross Certification Identity Management 3. IATF CP Life Cycle Management (CPLCM) Operating Rules, 4. International Aviation Trust Framework Bylaws 5. IATF Criteria and Methodology for Global Resilient Aviation Interoperable Network (GRAIN)	<p>Objective: Proposing a trust framework to ensure that the correct information is sent to the correct users, considering identity and access management initiatives (IAM) from member states. Proposed Guidance: APAC establishment of a Regional SWIM PKI Policy Management Authority in alignment with ICAO IATF SARPS</p> <p>Objective: Ensures interoperability of trust frameworks within APAC region and with other ICAO regions. Proposed Guidance: APAC establishment of a Regional SWIM DT&E environment to conduct Interoperability testing with US FAA, EUROCONTROL and other Regional ANSPs. (MRTBO example)</p> <p>Objective: Developing SWIM Cyber Security Architecture Framework and SWIM security strategy for the Asia-Pacific Region. Analyses and capture SWIM security risks. Provide security guidelines and best practices to be incorporated in SWIM APAC Governance activities</p> <p>Proposed Guidance: FAA provide Technical interchange of SWIM IAM Phase 2 and SWIM IAM segment 3 planned investments that align with ICAO IATF requirements to include establishment of the FAA PKI Policy Management Authority to assist APAC development of SWIM Cyber Security Architecture Framework and PKI use governance.</p>
Technical Architecture	1-6	Regional SWIM models	4	Development and maintenance of regional information exchange models	Support APANPIRG WG/TF regarding information exchange models and examine if any extension to the existing information exchange models, i.e. AIXM, FIXM, and IWXXM, and/or the new information exchange model(s) are required to support the Asia/Pacific regional operational requirements	Dr. Amornrat Jirattigalachote (Thailand) Mr. Wen Zhu (USA)	2016	2017 TBD (Regional Extension will need to be maintained/updated to accommodate (i) new operational use cases and (ii) the release of new version of information exchange model(s))	Global model definitions available	From the task 1-3 models may need extension/refinements—there is already a case for ATFM Interaction with "light" approach discussed by IMP, coordination with 1-7 Relation with CCB—coordination with task 1-4 Regional Extension may need refinement - There is already a case for ATFM and ATFM/A-CDM integration; Interaction with "light" approach discussed by IMP - Coordination with Task 9 Relation with CCB - Coordination with Task 5
Governance	1-4	SWIM governance	5	Regional SWIM Governance Framework	<p>I. Establish a robust and sustainable Governance model to ensure that a common set of policies, rules, and standards for identifying, designing, implementing, discovering, and operating SWIM-enabling components is consistently applied and enforced throughout the APAC.</p> <p>II. Develop or adopt standards, policies, and procedural guidelines to support the functional requirements for implementing all aspects of service-oriented development in the context of APAC SWIM.</p> <p>III. Facilitate visibility and control for insight into all APAC SWIM-enabled services by supporting developments of flexible mechanisms for service discovery, including, but not limited to, service registries.</p>	Mr. Dongkie Park (ROK)	2016	TBD (Note: SWIM Governance will be implemented throughout the SWIM lifecycle.)	<p>I. Procedures for Air Navigation Services (PANS) Information Management (IM), Volume I System Wide Information Management</p> <p>II. Manual on System Wide Information Management (SWIM), Doc 10039, VOLUME I: SWIM Concept</p> <p>III. SWIM Discovery Service Implementation Specification Service Description Conceptual Model (SDCM)</p> <p>IV. APAC SWIM Roadmap</p>	<p>I. Effective governance will result in more consistent decision-making and reduce risk and uncertainty.</p> <p>II. Identify new areas for policy development based on collected input and present them to the APAC SWIM TF.</p> <p>III. Further update the SDS solution to reflect user experience, lessons learned, and emerging technological solutions.</p> <p>IV. Facilitate ongoing engagement with SDS implementers through regular feedback and reviews.</p> <p>V. Concentrate on what really needs to be delivered to SWIM consumers.</p> <p>VI. Ensure that consumers' and providers' needs are met by developing a comprehensive SLA-management solution that can be adapted to multiple states' SWIM deployment scenarios.</p>
	1-5	Design Regional SWIM Registry and architecture for phase 2				Mr. Mark Kaplun (USA), Mr. Yukinobu Ryu (Japan)				
	2-1-2 2-1-4	Implement SWIM registry and architecture Guidance and Requirements for Publishers and Consumers				Mr. Xiaodong Lu (Japan), Ms. Honglei Gao (China)				
Information Services	2-1-2	Promote new needs and new services and maintain database of publishers (ID/access points/services/interface/format..) pending registry implementation	6	Information services	To develop and define the APAC version of the SWIM information service overview specifications and APAC version of data catalogue for information services based on operational needs in APAC.	Mr. Marco Kok (Hong Kong, China)	2017	2023	Dependent on new use cases and operational needs identified in APAC.	<ul style="list-style-type: none"> •Develop the APAC version of the required and optional information services for ANSP to prioritize the implementation of services •Develop the APAC version of data catalogue for information services •Identify any additional optional fields required for SWIM service overviews in APAC in addition to those as defined in PANS-IM

Project Group	Old Task number	Old Task Description	New Task No	New Task Description	Objective and scope	Task Lead(s)	Planned Start	Planned completion	Dependencies	Guidance for SOW
Validation & Demonstration	1-2/2004	Promote new needs and new services and maintain database of publishers (ID/access-points/services/interface/format...) pending registry implementation	7	SWIM Demonstration	<ul style="list-style-type: none"> Report on the SWIM in ASEAN demonstration, particularly the lessons learnt Track and observe SWIM demonstrations and trials within the Asia/Pacific region and ensure that reports of those demonstrations and trails are presented to the SWIM Task Force Provide, if requested, support for regional SWIM demonstrations 	Mr. David Leow (Singapore) Dr. Amornrat Jirattigalachote (Thailand)	2017	2019		An "Excel" file? Include service descriptions etc Assume registry services can be available on CRV from 2019 onwards 70 FAA applications are available for use and should be referenced in the catalogue
	2-2-1	SWIM generalization					2021	TBD (Depening on the demonstration/trial to be conducted in APAC)	Demonstration/Trial to be conducted within APAC	
	2-1-3	Support validation and publication of SWIM based applications	8	SWIM services and application validation	<ul style="list-style-type: none"> Construct a platform for SWIM service and application validation Support the implementation of SWIM service and applications Support the demonstration of SWIM based operations 	Mr. Yakinobu Ryu (Japan) Mr. Xiaodong Lu (Japan) Ms. Honglei Gao (China) Mr. Dongkie Park (ROK)	2017 2020	2019 2023	<ul style="list-style-type: none"> Manual on SWIM, SARPS, PANS and Guidance material from IMP, CP or ATMRPP The status of SWIM TI implementation in APAC Region Task 2 – Regional SWIM Infrastructure Task 3 – Security Services Task 5 – Governance Task 6 – Information Services 	Support the validation of FF-ICE/R1 service Develop validation requirements for Regional SWIM Infrastructure Support the validation of Regional SWIM Infrastructure with Security Services via the joint demonstration Support the validation of required SWIM services and applications for different operation levels
Coordination and Promotion	1-7	Monitoring of panels work	9	Monitoring of panels work	Monitor developments by IMP and escalate issues/inputs as required	Mr. Yakinobu Ryu (Japan)	2016	2022	SWIM Manual and Technical Manual	Escalate issues to the panels Report back from panels 2 IMP meetings per year, monthly conferences A need for a Discussion paper at IMP (deliverable of the task) Focal point for common controlled vocabulary, in coordination with 1-4 Version management should be coordinated regarding backward compatibility and the content of models (FIXm, AIXM) Focal pint to trigger change requests to the models
	1-3	Regional coordination within APAC and guidance and training to APANPIRG bodies	10	Regional coordination and SWIM-related information sharing	<ul style="list-style-type: none"> Identify SWIM related activities (and their interdependencies) in planning or development within other WGs and TFs. Liaise with relevant regional TF/WG to refine operational and communications requirements (ATFM SG, MET IE, AAITF, ACSICG, CRV OG, etc). Provide guidance to APANPIRG WG/TF using SWIM. Influence outcomes from other WGs and TFs that will support successful expansion of SWIM (eg: development of SWIM compatible CRV). This involves confirming inclusion on agendas and appropriate discussions ensuing 	Vacant	2016	2022	SWIM Manual and Technical Manual Guidance on IWXXM	Use APANPIRG organizational chart Revise on an annual basis Establish simple "MOU" between concerned APANPIRG bodies
		Guidance and training to APANPIRG WG/TF : - Provide guidance to APANPIRG WG/TF using SWIM					2017 2017 2019 As needed	2022 2017 2018 2020	SWIM iKit (if confirmed by IMP)	From the task 1-3 APANPIRG WG/TF planning to use or using SWIM may need guidance (ad hoc basis) Guidance to States Mediation of legacy users Lessons learnt from ASEAN SWIM demonstration

Project Group	Old Task number	Old Task Description	New Task No	New Task Description	Objective and scope	Task Lead(s)	Planned Start	Planned completion	Dependencies	Guidance for SOW
	New	NA	11	SWIM implementation education and promotion (New task)	<ul style="list-style-type: none"> • Creation of an educational and promotional program needed to support SWIM implementation, operations, and facilitate cooperation among stakeholders within the region. • Collaboration with other APAC SWIM TF task to ensure cohesiveness between the guidance materials and educational material deliverable from the APAC SWIM TF. • Management, organization, and dissemination of all APAC SWIM educational material • Creation of an APAC SWIM education and promotional catalog 	Mr. Thomas Green (USA)	2022	TBD (See dependancies)	Completion of this task is reliant on the work completed in Task 1-10. As the task are completed and guidance is created, the catalog can be populated.	

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1-1		2.2.1 & 2.2.2	Jeri Greco (Chair), Task 1, Secretariat	Introduce the mediation principle in the design of the SWIM transition	TBD	Open	This will be assigned to the eventual lead of 2.2.1. Should be in SWIM Planning. Assigned to Task 1. (SWIM TF/6)	See attached TF-1 Paper and Mediation Paper
1-2		1.1	All	Confirm their interest in ASEAN SWIM demonstration	30-Apr-2018	Closed	The participation package for the ASEAN demo has been out since October, but have had limited responses. <ul style="list-style-type: none"> • Awaiting feedback from China, Korea, and Japan. • A new due date of 31st of March has been requested. There are several confirmed partners, and an airline is helping with the coding and messaging in the scenarios. David Leow and Amo are involved with the demo, this task is moving forward on its own, perhaps David and Amo can provide update at next coordination meeting Australia, Hong Kong, Indonesia, Japan, Laos, Malaysia, Myanmar, New Zealand, Philippines, Singapore, Thailand,	
1-3		1.7 & 2.1.1	Yukinobu Ryu-san, (David Almeida)	Confirm terms used to designate the APAC SWIM "catalogue" are in compliance per controlled vocabulary	8-May-2018	Closed		
1-4		Thomas Green	Le Thi Phuong, (David Almeida)	Contribute to Task 1-1 regarding the benchmarking of quality and verification process, Service Level Agreements (SLA)	TBD	Closed	Dependent on Task 1.1 Work Plan. David Almeida will reach out to Member of Viet Nam to establish schedule.	Suggest we close this action, based on aging of the topic. Viet Nam and all members are invited to provide working papers and information papers for future discussion.
1-5		New conversation	Jiseok Kang	Define the minimum set of information and basic function of APAC SWIM registry	30-Nov-2018	Completed	This activity must be aligned to the SARPS, PANS and guidance defined by the IMP. This activity needs a coordination with Task 2-1-1 to define service description elements for APAC SWIM services 1. While we are looking forward to getting more guidance from IMP PANS, SARPS, the IMP is also wish to get more input on SWIM implementation from regional office while they are developing these two documents. So I suggest APAC SWIM TF should work in parallel, working on researching the policy of registry, in the meantime paying attention to the progress of IMP's developing PANS and SARPS of. I think it will be helpful to IMP and APAC SWIM implementation. 2. The core editorial team of PANS-IM has invited" Yukinobu Ryu. David Leow and Han Hong (Hannah) to join the Vol II	
1-6	3;5	1.4	Mark Kaplun and David Wills Task 3 Lead (SWIM TF/6)	Embark requirements laid out in ICAO provisions and FAA best practices and other practices as available to define the SWIM security governance	30-Apr-2019	Open	There is interest in establishing a security task to discuss the crosscutting SWIM issues, perhaps this should be a separate task as ICAO moving toward global trust security networks The due date will be pushed to April 2019 for the next plenary meeting The secretariat will add an agenda item to the next plenary for "splitting out security from governance into its own task"	Security is part of new task structure. Propose to transfer to Task 3. (SWIM TF/6)

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Action ID	Task No	Reference	Who	What	Due date	Status	Comment	Additional Notes
1-7	1	1.1	David Almeida and Edward Curtis	Introduce lessons learnt from ICCAIA in the benchmark	27-May-2018	Closed	Dependent on Task 1.1 Work Plan. To be addressed after TF/3	Task 1.1 has been completed. Various documents were provided. Request ICCAIA member take action to introduce additional lessons learned as Information Papers in future plenary's.
1-8	8	2.1.3	Xiaodong Lu	Plan a large scale tabletop exercise and message exchange demonstration in the mid-term (2019 or 2020)	30-Nov-2018	Closed	There are currently two tasks – the ASEAN SWIM demo and FF-ICE/2 validation task. This task is reliant upon coordination with those 2 tasks. The due date will be pushed to November 2018 to allow time for FAA and ASEAN to make decisions Working on tabletop between Japan, Korea, and China. Will discuss this issue at TF/3	
1-9		Work Plan	Jeri Groce	Consolidate the SOW and update the work plan accordingly	22-May-2017	Closed	A residual action includes to setup webconference for the Task Leads.	
1-10		Work Plan	Frederic Lecat	Create a SWIM TF space under ICAO secure portal		Closed		
1-11		1.2	Amo, Stuart Wilson, David Almeida	Define the purpose of scope of "Outreach to Aviation Partners" deliverable	5-Oct-2017	Closed		
1-12	1	1.2 & 2.1.1	Amo, David Leow, Marco Kok	Align interdependencies between Task 1.2 and 2.1.1.	30-Apr-2018	Closed	Artifacts of 2.1.1 can support 1.2. Will discuss at the October Brussels meeting.	Recommend this item be closed due to the re-planning activity performed in 2020.
1-13		1.5	Jiseok Kang	Develop Working Paper for APAC SWIM registry approach	31-Dec-2018	Completed	This action is dependent on action item ID# 1-5 to finish before work can begin	
1-14		1.1	Ryu-San, David Leow, and David Almeida	Need to create a WP for presentation to the IMP, letting them know which artifacts the APAC TF is dependent on, and by what date we need the artifacts by.	1-Nov-2017	Closed		
1-15		Work Plan	Frederic Lecat	Send out ICAO Regional Martial out to t	1-Nov-2017	Closed		
1-16	1	1.2	Marco Kok, and John Moore	Develop plan for development of a data catalog for Aeronautical, Flight, and Weather data	30-Nov-2018	Closed	A request for assistance from subject matter experts in the domain areas of Aeronautical, Flight, and Weather data has been made by action owner Marco Kok. Work still ongoing, coordinating with Amo, referring to data catalogue prepared by Aerothai. Working on finalizing flight data catalogue	
1-17		1.1 & 1.4	Stuart Wilson, and Mark Kaplun	Need to coordinate development of SWIM Governance Framework for coordination between Task 1.1 and Task 1.4	30-Jan-2018	Closed		
1-18		Work Plan	Mark Kaplun	Coordinate with Stephan Dubet who is developing the ICAO IMP SWIM Governance document	On-Going	Closed	<ul style="list-style-type: none"> • Mark Kaplun will coordinate and prepare a paper. • Deliverable date is on-going. • Initial deliverable date will be the week of the plenary. *Next delivery date will be SWIM T/F 5 (AUG 2021)	Recommend forwarding this action to the current Governance task leads to update and resolve, as required by the TF team.
1-19		1.5	David Leow	Provide detailed Task 1.5 SOW to Stuart	10-Jan-2018	Closed		
1-20		1.4	Mark Kaplun	Provide Governance and Registry lessons learned out to Task 1.5	30-Jan-2018	Closed		

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Action ID	Task No	Reference	Who	What	Due date	Status	Comment	Additional Notes
1-21		1.6	Frederic Lecat	Send ED-133 documentation to Amo and Amo to take this into consideration for requirements development for Task 1.6	?	Closed		
1-22		1.8	Jeri Groce	Determine who will be the leader of Architecture Task (Task 1.8)	?	Closed		
1-23		Work Plan	Stuart Wilson	Coordinate possible dates for next meeting and send out a poll.		Closed		
1-24		Action Item 1-16	APAC Task Force Leadership	APAC Task Force Leadership to support Marco Kok, and John More on Action Item 1-16.	9-Apr-2018	Closed	Amo: The AeroThai group have already developed an initial data catalogue and will provide to Mr. Kok. Shane: May be able to provide input into this activity as well.	
1-25		1.8	Yunkinobu Ryu	Provide proposal on structure of Task 1.8 by the end of January.	30-Jan-2018	Closed	WP 1-8 closed this task.	
2-1		2.1.3	Yunkinobu Ryu, Xiaodong Lu, Gao Honglei, Jiseok Kang	Plan Regional message exchange demonstration	30-Nov-2018	Closed	This action is related to action 1-8 and the due date will be scheduled for November 2018. This action was included in action 1-8 and has been closed as a result	
2-3	1	1.1	David Almeida, Thomas Green	Establish contact with any SWIM-related working groups in other ICAO Regions	30-Apr-2019	Closed	The main effort in Europe working on identity access management and security. Some policies that are evolving and service lifecycle management activities.	The FAA has several international coordination projects. As has been done in previous Leadership & Plenary sessions, as relevant topics come up, FAA SWIM Program will engage those other international partners to support information needs, etc.
2-4	1	1.1	David Almeida, Thomas Green	Make recommendations on the APAC Region applicability of items in SWIM TF/2 WP/4	30-Apr-2019	Closed	XM recommendations will continue to be addressed as needed	This action should be covered under Action 3-3.
2-5	10	1.3	John Moore	Coordinate SWIM TF and MET IE/WG outcomes and activities This action is really about broader coordination of SWIM activities in APAC (not solely MET) and raising awareness of the work of the SWIM Task Force.	31-Dec-2019	Closed	WP09 SWIM in ASEAN Demonstration presented at ICAO APA-CDM TF/3	Closed because it is an ongoing activity (6/29)
2-6	10	1.3	John Moore More appropriate lead would be Amo or David Leow as the leads of the demonstration.	Coordinate minutes of SWIM in ASEAN Demonstration with SWIM TF	30-Nov-2018	Closed	David shared the minutes of ASEAN TIM #1, #2 on 18/11/2018	

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Action ID	Task No	Reference	Who	What	Due date	Status	Comment	Additional Notes
2-7	5	1.4	David Willis, Mark Kaplun; Xiaodong Lu	Examine CRV OG to determine what structure may be used to form an APAC Regional SWIM Governance Review Board	Closed in SWIM TF/5	Closed	Task will be left as is until more clarification from Wen Zhu Closed in SWIM TF/5	Propose this is included in governance task (6/29); We need help from SWIM expert to come up with proposal Regional SWIM Governance to Discuss with CRV OG; Xiaodong and Wen to follow up It has been discussed earlier. Mark will submit clarifications to close in SWIM TF/5 3 September 2021: The action item has been reexamined. Considering the ongoing actions taken by several task groups, it has been determined that it is still immature to clearly derive the appropriate structure of APAC regional SWIM governance body.
2-8	5	1.4	David Willis, Mark Kaplun	SWIM in ASEAN Demonstration participant Administrations to share any lessons learned or other insights relating to SWIM governance	30-Nov-2019	Closed	This task's due date will be scheduled for a few months after the ASEAN SWIM demo to obtain their lessons learned, demo date 27/6/19.	
2-9		1.4	David Willis, Mark Kaplun	Develop a draft APAC Governance Framework		Closed	Group decided this was a duplicate of task 1.4 and closed the action as it will be addressed by that task	
2-10		1.6	Amornrat Jirattigalochote	Coordinate SWIM in ASEAN Demonstration findings on A-CDM data attributes with APA-CDM/TF		Closed	WP09 SWIM in ASEAN Demonstration presented at ICAO APA-CDM TF/3	
2-11	2	1.8	Yunkinobu Ryu, Xiaodong Lu	Investigate the role of CRV in APAC SWIM and make recommendations on how APAC SWIM will interconnect with the CRV	30-Apr-2019	Closed	There are two options to establish SWIM platform on CRV. Confirms details of CRV and IMP to consider how to implement this method of the regional CRV. Xiaodong Lu will give a report about this in next SWIM TF meeting in 2019	Japan presented a paper on topic in SWIM T/F 4. Will be included in the Task 2 Deliverables (6/29)
2-12		2.1.1	Marco Mang Hin Kok	Re-Draft SWIM survey, together with educational material to also inform survey participants on SWIM	30-Apr-2019	Closed	Survey results presented at SWIM TF/3	
2-14	1	1.1	David Almeida , Thomas Green,	Develop an APAC SWIM education implementation plan and high level education materials	SWIM TF/6 SWIM TF/7	Open	<ul style="list-style-type: none"> _The SWIM education video for those with technical background has been finished which will be published on APAC website in March. (DONE) _The SWIM brochure has been in the final stage for design and will be completed in April. (will review comments) _The SWIM education implementation plan draft was presented at TF/3 wil continue to be developed 	Need to start from scratch due to unavailability of SWIM Brochure.(SWIM TF/5)

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Action ID	Task No	Reference	Who	What	Due date	Status	Comment	Additional Notes
2-15			All	Commence drafting an APAC Regional SWIM Implementation guidance document		Closed	a repository of output of the TF. oShane Sumner took an action to discuss the due date for the APAC Regional SWIM Implementation guidance document and report back to the group oThe Secretariat and David Almeida took an action to create a skeleton structure of this document Discuss the due date for the APAC Regional SWIM Implementation Guidance document and report back to the group This action was merged with 3-1	
2-16		Action Item 2-8	John Moore	Confirm the dates of the ASEAN SWIM Demo with David Leow and Amo		Closed	Demo June 27, 2019	
2-17		Action Item 2-15	Shane Sumner	Discuss the due date for the APAC Regional SWIM Implementation Guidance document and report back to the group		Closed	Action merged with 2-15	
2-18		Action Item 2-15	Secretariat and David Almeida	Create a skeleton structure of APAC Regional SWIM Implementation guidance document		Closed	Action merged with 2-15	
2-19		Action Item 2-14	All	All states are encouraged to provide more SWIM education materials		Closed		
2-20	5	1.4	Wen Zhu, Mark Kaplun, David Leow, and David Almeida	Discuss and draft a proposal to the chair and try to get clarification on deliverables 1.4		Closed		Close. Overcome by events with modification of the task plan into new tasking.
2-21	2	1.8	David Leow and Amornrat Jirattigalochote	Provide all ASEAN SWIM Demo lessons learned and each subtask can absorb the lessons applicable to that group.	30-Nov-2019	Closed	To be addressed after demonstration	
2-22	5	2.1.4	Xiaodong Lu	Send an email to Jiseok Kang and Shane Sumner to resolve the discussion if task 2.1.4 should be included in the SWIM Registry/Architecture task		Closed		Included in task 5 (Governance)
2-23			Jay Zimmer	follow up with Shane Sumner to coordinate how APAC TF can interface with the CRV during Plenary 3. Need CRV points of contact to get on the agenda and brief out as well as attend this meeting		Closed	Shane Sumner: We'll coordinate any necessary changes to the provisional agendas internally within the Secretariat, in consultation with the Chairs. Our current plan has SWIM TF/3 scheduled for 06 to 10 May 2019, and CRV OG/6 for 08 to 10 May. FYI the CRV OG/5 meeting will be held in early January.	
3-1			Task leads	The Task Leads will address the APAC SWIM Implementation Materials Table of Contents of the at the next quarterly Task Force Lead Teleconference and provide input of supplementary materials by SWIM TF/4	30-Apr-2020	Closed		
3-2	2;3	1.3	Wen Zhu	Set up dedicated working group to covers other areas of cybersecurity	30-Apr-2020	Closed		Believe this on is complete, with establishment of Security efforts within Technical Infrastructure Services.

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Action ID	Task No	Reference	Who	What	Due date	Status	Comment	Additional Notes	
3-3	4	1.6	Amornrat Jirattigalochote	The APAC SWIM FIXM Extension be forwarded to the FIXM Change Control Board (CCB) for validation and publication on the FIXM official website	30-Apr-2020	Closed			
3-4	9	1.7	Task Force members	SWIMTF members to submit comments to Japanese IMP member, Yukinobu Ryu	20-May-2019	Closed			
			Tasf Force members	SWIMTF to review Table of Contents for APAC SWIM Education programme (Appendix F to the SWIMTF/3 meeting report)	30-Jun-2019	Closed			
4-1	1,10	Task 1&10	Secretariat	Enhance communication with ICAO EUR/NAT Office on SWIM PT activities	On-Going	Closed		Routine task for the secretariat (6/29)	
4-2	7		Task Leads	Further exploit and deliberate the outcomes of SWIM in ASEAN Demonstration to benefit States/Administration	SWIM TF/6 SWIM TF/7	On-going	Longer time action.	task leads to provide WP or IP on how ASEAN Demo can be leveraged in task areas	
4-4			Task Leads of Task 2, Task 5 and Task 6	To join the study group proposed by SURICG to explore the initiative on surveillance data sharing over SWIM	SWIM TF/5	Closed		A number of members have joined this SG (6/29)	
4-5			TF chair and Task Leads	Review the ToR and consolidate the action items in this list	SWIM TF/5	Closed	To align with GANP edition 6, APAC Seamless ANS Plan 3.0 and aim to enhance the interaction with other relevant contributory bodies of APANPIRG	More feedback from TL on TOR for TF/5 needed (6/29) Closed after CNS SG/25	
4-6			Amornrat Jirattigalochote, Secretariat	Plan another SWIM workshop	1st TL meeting in 2021	Closed			
4-7			TF chair and Task Leads	Follow up the Task 3 and Task 11	1st TL meeting in 2021	Closed			
4-8	9	Task 9	Yukinobu Ryu, Secretariat	List of SWIM relevant ICAO Panels and representatives from APAC		Need to provide list before removing from Action Items	On-going	To better monitor the Panels Work relevant to SWIM on the available resources and representation in APAC As ongoing, need to remove from Action List and will manage by Secretariat	Open till list then closed. Added AI into next task lead meeting- SWIM TF/5 SWIM TF TL meeting on 28 Oct 2021 reviewed list and changed status to on-going To be removed from the list after SWIM TF/6
4-9	10	Task 10	John Moore, Secretariat	List of SWIM relevant meetings in APAC	SWIM TF/6	On-going	To better support the regional coordination and SWIM related information sharing	Same as 4-8, Need list before closing. Secretariat will provide in next TL. SWIM TF TL meeting on 28 Oct 2021 reviewed list and changed status to on-going	
4-10	11	Task 11	Task Leads, Secretariat	Seek information on SWIM education and promotion for consolidation by Task 10.	On-Going	Closed		To be completed as a part of Task 11 activities	
4-11	11	Task 11	Task Leads, Secretariat	Share SWIM related material for future compilation of the APAC SWIM Implementation Materials	SWIM TF/6 SWIM TF/7	Open	ICAO Secretariat will revise IGD ToC Consolidate the first draft of IGD	SWIM TF/5- Premature to develop SWIM Implementation material as global doc is not ready.	

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Action ID	Task No	Reference	Who	What	Due date	Status	Comment	Additional Notes
4-13	2	Task 2	Task 2 Group	Develop APAC SWIM T1 Profile	SWIM TF/6 SWIM TF/7	Open	Proposed by Australia, needs further consideration Australia presented WP/19 in SWIM TF/5 Next action from Task group-2 Infrastrure binding can be considered as a part of T1 profile. Each country has different T1 profile. Australia can provide some mateiral? Australia is in process to hire a person. Note taken by Jeff	Renato to provide a roadmap to develop the T1 Profile SWIM TF/5- Progress may be slow because APAC SWIM Implementation is initial stage
5-1	Task 2, Task 5, 4,6 and Task 7	NA	Task Leads of Task 2, Task 5, Task 4 and Task 6, SURSG	Start study of surveillance data being carried via SWIM on CRV; Study to include exploration of updated exchange model	SWIM TF/6 SWIM TF/7	On-going	Action resulted from TL meeting Approved by the plenary	Ongoing work in SWIM TF/6 If S3TIG estab, trial will go on longer time.
5-2	Task 7	NA	Task 7 TLs, Secretariat	Conduct SWIM over CRV demo; Present lesson learned and findings to the group	SWIM TF/6 SWIM TF/7	Open	Action resulted from TL meeting Approved by the plenary S3TIG demo may embed the demo. (SURSG chair) Demo required more types of data e.g. ATFM...	Demo delayed due to COVID-19. Report may not be possible in SWIM TF/6
5-3	Task 1	NA	Task 1 TLs, Secretariat	Survey on SWIM implementation plan and status of Asia/Pacific Member States for Draft Conclusion SWIM TF/5/01 – Asia/Pacific SWIM Implementation Plan and Status Survey	SWIM TF/6	Closed	Ref.: T 8/13.1: AP042/22 (CNS) 01 March 2022 Subject: ICAO Asia/Pacific SWIM Implementation Plan and Status Survey sent. Reply by 1 April 2022 Propose to close Presented as WP/17 in SWIM TF/6	Draft questionnaire will be prepared by Task-1 members with the consultation of other Task leads along with the support of other core TF members. Draft questionnaire should be supported by an attachment, which explained the technical terms used in the survey for easy reference of Member States Add an introduction into the survey, mentioning that the Member States should respond to the survey in consultation with MET, ATM, and other service providers, who may be potential users of the SWIM
5-4	Task 2,3,5,6	NA	TLs, Secretariat	Share and further delibrate the information contained in the WP21 of SWIM TF/5 to Task-2, Task-3, Task-5 and Task-6 groups of SWIM TF along with Common Aeronautical Virtual Private Network Operations Group (CRV OG) and Aeronautical Communication Services Implementation Coordination Group (ACSICG)	SWIM TF/6	Closed		Share to ACSICG and CRV Email sent to Task leads as specified in task and CRV OG/ACSICG Chairs on 12 November 2021. Propose to close
5-5	Task 5	NA	TLs, Secretariat	Propose a way forward on SLA in the context of APAC SWIM	SWIM TF/6	Closed	SLA Template provided by WP/11 and 12 in SWIM TF/6. Template will be part of supplement to IGD to be developed. SLA approach will be continued to study.	To be discussed in next TLs meeting Inputs may be shared with Chairs and Secretariat Discussed in speciased meeting on 24 Jan 2022. Further discussed in TL meeting on 08 Feb 2022

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Action ID	Task No	Reference	Who	What	Due date	Status	Comment	Additional Notes
5-6	Task 5	NA	Task 5 Leads, Secretariat	Task-5 group may provide a common SLA template, proposal on SLA management approach, and their validation methodologies	SWIM TF/6	Closed	SLA Template provided by WP/11 and 12 in SWIM TF/6. Template will be part of supplement to IGD to be developed. SLA approach will be continued to study.	To be discussed in next TLs meeting Inputs may be shared with Chairs and Secretariat Discussed in speciated meeting on 24 Jan 2022. Further discussed in TL meeting on 08 Feb 2022
5-7	NA	NA	Secretariat	Share the IP/05 with SURSG for further deliberations	SURSG/2	Closed		Email sent on 12 November 2021. Propose to close
6-1	NA	NA	CRV OG, Secretariat	MET Experts from Australia shared the concern of mentioning MET service providers as a non-aviation service providers or aviation support service providers. The meeting requested CRV OG to deliberate the concern and finalize appropriate name for CRV users/subscribers other than ANSP	SWIM TF/7	Open		
6-2	NA	NA	CRV OG, Secretariat	There is the need to deliberate in CRV OG the security impact of mixed operational environment, i.e. connecting more SWIM technical infrastructure service providers and users using internet/other network based services with CRV through a gateway	SWIM TF/7	Open		
6-3	2		Task 2 Group	Task 2 group will include the use of Internet for meteorological information services in designing the regional SWIM architecture	SWIM TF/7	Open	For Draft Decision SWIM TF/06/01 - The Use of the Internet for MET Information Services in Regional SWIM architecture	
6-4	1		Task 1 Group	Task 1 will consider phased approach and a common set of SWIM information services while developing APAC SWIM Implementation Roadmap	SWIM TF/7	Open	Result of Asia/Pacific SWIM Implementation Plan and Status Survey- Task 1 Leads (WP/17)	
6-5	2		Task 2 Group	The Draft Decision titled Infrastructure Bindings of SWIM TI in APAC Region was proposed for the meeting consideration. The meeting agreed to accept the proposed action as a recommendation than draft decision and requested Task 2 to further detail infrastructure bindings of SWIM TI in APAC Region and also to study the details of both user-based access and SWIM-based access options for actual use-cases, including MET use cases, to identify potential issues to be solved.	SWIM TF/7	Open		

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Action ID	Task No	Reference	Who	What	Due date	Status	Comment	Additional Notes
6-6	5		ICAO Secretariat	SLA template to be included in ICAO APAC SWIM Implementation Guidance Material, which is being developed, so that States can use it when they will develop their information services and provide information to their consumers.	SWIM TF/7	Open		
6-7	5		Task 5 Group	The SLA template will be reviewed and updated annually	SWIM TF/7	On-going		
6-8	5		Task 5 Group	The meeting also discussed the SLA management approach and suggested Task 5 group to prioritize and further study the details of SLA management method appropriate for APAC	SWIM TF/7	Open		
6-9	NA	NA	ICAO Secretariat	The meeting requested ICAO Secretariat to compile all work done by the SWIM TF and consolidate the first draft of IGD for consideration by Task Leads	SWIM TF/7	Open		
6-10	All Task Leads	NA	ICAO Secretariat, Task Leads	The SOW will be reviewed in further Task Leads Meeting to be in consistent with revised SWIM TF ToR after adoption by CNS SG/26	SWIM TF/7	Open	To be discussed in TL Meeting September 2022	