



ICAO

International Civil Aviation Organization

The Sixth Meeting of System Wide Information Management Task Force (SWIM TF/6)

Video Teleconference (VTC), 17 – 20 May 2022

Agenda Item 6: Review SWIM Task Force ToR, Programme, and Outstanding Action Items

REVIEW OF SWIM TF TOR

(Presented by Secretariat)

SUMMARY

The paper presents the current SWIM TF's ToR, deliberations held in various SWIM TF Task leads meeting for its amendments, and the proposed draft decision to adopt revised SWIM TF's ToR.

1. INTRODUCTION

1.1 The 20th Meeting of the Communications, Navigation and Surveillance Sub-Group of APANPIRG (CNS SG/20) was held in Bangkok, Thailand, from 11 to 15 July 2016. In the same meeting through **Decision CNS SG/20 – D3: Establishment of SWIM Task Force**, the SWIM Task Force was established.

1.2 The Fifth Meeting of the APAC SWIM Task Force (SWIM TF/5) was held via Video Tele-Conferencing from 09 to 11 August 2021. The meeting resources can be accessed by the link: <https://www.icao.int/APAC/Meetings/Pages/2021-SWIM-TF-5.aspx>

2. DISCUSSION

2.1 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. The Meeting was provided Draft Decision SWIM TF/05/02- *Revised SWIM TF ToR* for adoption by the CNS SG/25.

2.2 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.

2.3 The Meeting 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**. The adopted ToR of SWIM TF is provided in **Appendix A** of the paper

2.4 The CNS SG/25 meeting also remarked that ToR is a living document that needs to be reviewed regularly and timely. The SWIM TF was also reminded to consider other IP-based network technologies in their forthcoming review on ToR. The Meeting also advised SWIM TF to consider other modifications proposed by Australia in Flimsy/02 in coming task lead meetings and SWIM TF/6 and to present revised ToR, if any, as the outcomes of the discussion, in CNS SG/26. **ACTION ITEM 25-1**. Australia agreed to nominate SWIM experts to participate in SWIM task leads and task force meetings.

2.5 The 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.

2.6 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.

2.7 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. The State Letter is provided in **Appendix B**.

2.8 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**.

2.9 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.

2.10 The detailed information about concerns raised by Flimsy02 in CNS SG/25 and relevant modifications proposed in draft SWIM TF ToR is provided in the following table.

2.11 Additionally, WP/04 and WP/09 of this meeting also shared proposal for resolution of concerns raised by flimsy02 and MET SG.

Change Reference	Change	Rationale	SWIM TF TLs Meeting Decision
c)	Delete 'Define' and replace by 'Propose' Delete 'over CRV'.	'Define' is a level of decision above the scope of the TF. Change to 'Propose' to indicated decision will be taken at a level of APANPIRG that allows States to express opinion. CRV architecture requirements: Does not constrain the TF to only considering architecture that uses the CRV	Define will be replaced by “ Develop and propose ” Considerations for CRV-based architecture requirements presented by Task 2 Lead: <ol style="list-style-type: none"> 1. The meeting agreed that SWIM is not just for information sharing. For information sharing, internet is enough and there is no need for SWIM. 2. Final objective of SWIM is to support and improve the current and future operations. 3. CRV is considered as a solution to support the connection between legacy system and future SWIM system. Being a regional network, CRV is thus a must for a regional platform construction. At present stage CRV may have bandwidth limitation and is high cost but in the future, it can be updated to support SWIM architecture. 4. In order to manage intensive MET data, the use of SWIM-enabled application supported by user based access or system-based access can be an option, aligning with Doc 10039 SWIM Manual. This option can be considered as a part of regional SWIM infrastructure and that SWIM interface binding needs to be developed to fulfill this goal. 5. Therefore, the term 'principally over CRV' is acceptable at this stage. However, for the APAC SWIM architecture, a required interface binding for other SWIM players to connect on their preferred IP network will be considered as an option. 6. The Task leads will think through all the considerations stated above and provide feedback, if any. The Task 2 lead will draft a phrase to reflect these considerations in

			<p>section c) of the current ToR. ACTION ITEM TL-2-1 by 15 March 2022.</p> <p>7. A paper on this subject will also be presented by Task 2 lead at the SWIM TF/6 and further deliberation will be done in same meeting.</p>
f)	Delete ‘Establish’ and replace by ‘Propose’.	Governance model should be established at a level of APANPIRG that allows States to express opinion.	The meeting decided to keep the current wording, considering that this task is mandatory.
i)	Delete item. Consequential renumbering of following items.	The development and operation of a validation platform is out of scope for the TF. The task force could promote interested States to develop such a platform on behalf of the Region.	<p>As per task leads of Task 7 and 8, the item is very important and necessary because any implementation requiring validation. In order to support APAC States to implement SWIM along with creating understand and promoting SWIM concept, SWIM service/application validation platform is a must. It was also added that Australia probably has its own platform but for other Member States that may not be the case. Therefore, SWIM TF may be an appropriate body to provide support to construct a (regional) common validation platform and any national platform as requested. Additionally, the meeting discussed that in the next stage more national platforms can be added to extend this common platform as well.</p> <p>Therefore, renamed as “Provide support to...”</p>
m)	Delete Item.	The implementation of the regional SWIM will be by collaboration between States. The TF does not have the standing to implement the regional SWIM.	Replaced by “assist States to implement the Asia/Pacific Regional SWIM, as appropriate”
n)	Delete ‘any’ and insert ‘as approved’	The TF can identify and propose additional task to the CNS SG for approval. Approval by the CNS SG maintains focus and allows approved work to be completed within the allocated time.	Accepted

2.12 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) has been amended as shown in **Appendix C** and is being presented to the Meeting as Draft decision for meeting endorsement.

Draft Decision SWIMTF/06/xx – Revised SWIM TF Terms of Reference	
What: That, the revised SWIM TF Terms of Reference (ToR) as shown in Appendix C 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: 20 May 2022	Status: Draft to be adopted by Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> CAO APAC RO <input type="checkbox"/> CAO HQ <input type="checkbox"/> Other: XXXX	

2.13 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 which is provided in **Appendix D** to the paper. 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.

3. ACTION BY THE MEETING

3.1 The Meeting is invited to:

- a) note the information contained in this Paper;
- b) adopt the Draft Decision as shown in paragraph 2.12;
- c) provide proposal for amendment, if deemed necessary, to the SOWs; and
- d) discuss any relevant matter as appropriate.

Presentation of the initial proposal:

1. The *Background* and *Comments* are provided in *italic text*.

2. The text of the proposed amendment is arranged to show deleted text with a line through it and new text highlighted with grey shading, as shown below:

- | | |
|---|-----------------------------------|
| a) Text to be deleted is shown with a line through it. | text to be deleted |
| b) New text to be inserted is highlighted with grey shading. | new text to be inserted |
| c) Text to be deleted is shown with a line through it followed by the replacement text which is highlighted with grey shading. | new text to replace existing text |

TERMS OF REFERENCE

SWIM Task Force

Objectives: In order to achieve ~~B1-SWIM~~ the SWIM thread as specified in the Aviation System Block Upgrade (ASBU) of the Global Air Navigation Plan (GANP) ~~and, the Asia/Pacific Seamless ATM ANS Plan objectives, and the ATM and AIM air navigation systems –that are in compliance with ICAO global standards for the conceptualisation and exchange of aeronautical, flight and meteorological information– should be implemented in the high density FIRs and high density international aerodromes by November 2022 (PASL Phase III) and in all FIRs and international aerodromes by November 2025 (PASL Phase IV).~~ ~~To that end,~~ the SWIM Task Force will:

- a) Benchmark the various successful implementations of SWIM in States and regions to ~~adopt~~ promote best practices;
- b) Develop and maintain ~~a the Asia/Pacific regional roadmap for SWIM services (ATM, AIM, MET, other), dependencies and enablers~~ implementation, including SWIM technical infrastructure, SWIM governance, SWIM information services;
- c) ~~Liaise with relevant regional contributory bodies to refine operational and communications requirements (example: ATFM/SG, AATF, MET IE/WG, ACSICG, CRV/OG, etc.)~~ Define 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 to ensure interoperability among regional SWIM participants and to support transition for non-SWIM capable entities;
- d) ~~Complement global SWIM governance with regional procedures as needed and define how it can be implemented in APAC, with a particular focus on version management of concept and exchange models, architecture models, cyber security, data quality management and maintenance of a trusted environment~~ Develop the Asia/Pacific regional SWIM cyber security architecture framework and SWIM security strategy in line with ICAO International Aviation Trust Framework (IATF);

- e) ~~Provide guidance and training to APAC member States and APANPIRG contributory bodies involved in SWIM related work~~ 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) ~~Develop guidance/requirements for publishers/service providers and subscribers/service consumers~~ 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) ~~Promote enablement of ATM services as SWIM Application Services (SAS)~~ 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) ~~Define how SWIM Registry/Registries and services will be implemented in the APAC region and what the minimum level of information a service needs to provide to the Registry/Registries~~ Track and observe SWIM demonstrations and trials within the Asia/Pacific region as well as provide, if required, support for regional SWIM demonstrations;
- i) ~~Support APANPIRG WG/TF regarding data exchange models of AIXM, FIXM, and IWXXM and examine if any extension is required for the operational use in APAC~~ Construct a platform for SWIM services and applications validation and support the implementation of SWIM services and applications;
- j) Monitor developments by the IMP and escalate the regional issues as required;
- k) ~~Implement the APAC Regional SWIM~~ 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; ~~and~~
- l) ~~Undertake any other tasks related to SWIM implementation that may arise in the future~~ Develop an educational and promotional materials required to support the regional SWIM implementation to ensure cohesiveness among regional SWIM participants;
- m) Implement the Asia/Pacific regional SWIM; and
- n) Undertake any other tasks related to SWIM implementation that may arise in the future.

~~Considering the cross-disciplinary nature of SWIM, the Task Force will ensure proper coordination with relevant regional contributory bodies under APANPIRG.~~

Composition:

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

Conduct of the work:

The task force will conduct its work through ~~Web-Conferences~~ 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 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 to ensure interoperability among regional SWIM participants and 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) Construct a platform for SWIM services and applications validation and 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) Implement the Asia/Pacific regional SWIM; and
- n) Undertake any other 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.



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авиации

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المدني الدولي

国际民用
航空组织

Ref.: T 4/3.2.9 - AP070/22 (MET)

9 May 2022

Subject: Decision APANPIRG/32/12: Meteorological expert contribution to SWIM/TF

Action required: As indicated below

Dear Sir/Madam,

I wish to refer to the following Decision of the Thirty-second Meeting of the Asia/Pacific (APAC) Air Navigation Planning and Implementation Regional Group (APANPIRG/32), held online from 1 to 3 December 2021:

Decision APANPIRG/32/12: Meteorological expert contribution to SWIM/TF
That, States consider identifying meteorological experts to contribute to the APAC SWIM/TF to ensure meteorological aspects are fully considered.

In adopting the above Decision, APANPIRG/32 acknowledged the need for enhanced contributions to the ICAO APAC System-Wide Information Management Task Force (SWIM TF) by experts with a sound understanding of the information management related requirements (current and future) of meteorological service providers and their users.

Concerning Decision APANPIRG/32/12, I wish to remind you that the upcoming **SWIM TF/6 meeting, online from 17 to 20 May 2022**, will deliberate on the various requirements to ensure interoperability of the SWIM implementation for all stakeholders in the APAC Region.

Given the above, I urge you to follow Decision APANPIRG/32/12 and identify experts from your administration to contribute to the APAC SWIM TF to ensure meteorological aspects are fully considered.

The Final Report of APANPIRG/32 and the documentation for SWIM TF/6 are available on the following ICAO APAC Office webpages:

<https://www.icao.int/APAC/Meetings/Pages/2021-APANPIRG32.aspx>

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

Yours sincerely,

for 

Tao Ma
Regional Director

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) Develop and 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 to ensure interoperability among regional SWIM participants and 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) Provide support to construct a platform for SWIM services and applications validation and 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 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. _____



Statement of Work

Task 1 Implementation Planning

Task Manager: David Leow and Amornrat Jirattigalachote

Project: SWIM Task Force	
Revision number: 03	Approved: Click here to enter a date.

Objective and scope of the project

- 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

Deliverables

- List of required activities for SWIM implementation in Asia/Pacific
- Roadmap, including milestones along with corresponding activities and timelines
- Maintenance of the Asia/Pacific regional roadmap until the complete implementation of the Task objective

Milestones

- SWIM TF/5
 - List of required activities, e.g. regarding ATFM, A-CDM, ATFM/A-CDM integration operational requirements
 - Dependency with other tasks under SWIM TF; to assess the impact on related milestones and timelines to be developed
 - Inter-task-group communication; to figure out the appropriate sequence of the required activities
 - The first draft of Asia/Pacific regional roadmap focusing on ATFM, A-CDM, and ATFM/A-CDM integrated operation
- Before SWIM TF/6
 - Inter-task-group communication; to figure out the appropriate sequence of the required activities
- SWIM TF/6
 - The first version of Asia/Pacific regional roadmap
- SWIM TF/6 – Completion of Task Objective
 - Maintenance of Asia/Pacific regional roadmap

Dependencies

- Dependencies with projects supervised by different SG (will be controlled by APANPIRG):
 - AAITF
 - MET/IE WG
 - ATFM SG
 - APA-CDM TF
- Dependencies with projects supervised by the SG (will be controlled by SG):
 - CRV OG
 - SURICG
- Dependencies between tasks in the project (will be controlled by the Task Force):
 - All



- Other dependencies
 - IMP
 - TFSG

Task participants

State/Organization	Name	Role/Responsibility	Email	Phone
Thailand	Amornrat Jirattigalachote	Lead	amornrat.ji@aerothai.co.th	+66 2 287 8262
Singapore	David Leow	Lead	david_leow@caas.gov.sg	+65 812 6 9724
Sri Lanka/Airport & Aviation Services Limited	Asanga Senarath Bandara	Contributor	asanga.eane@airport.lk asangasenarath@gmail.com	+94768242 654 +94112263 619
Indonesia/ Directorate General of Civil Aviation	Maruli Tua Edison Saragih	Contributor	edisonsaragih@yahoo.com edisonsaragih.es@gmail.com m_t@dephub.go.id	+62812978 5067 +628124656 9
Australia/ Airservices Australia	George Kerlin	Contributor	george.kerlin@airservicesaustralia.com	+61738663 263
ICCAIA/ Frequentis	Harald Milchrahm	Contributor / Observer	harald.milchrahm@frequentis.com	+43 664 60850 3223
Thailand/ CAAT	Jakrin Kutantham	Contributor	jakrin.k@caat.or.th	+66 92 295 6174
Thailand/ CAAT	Papasarin Jirawiwatkul	Contributor	Papasarin.j@caat.or.th	
Thailand/ CAAT	Renuka Kunsakda	Contributor	renuka.k@caat.or.th	+66 0 86 550 5987
Thailand/Airport of Thailand PLC	Boosapa Tavichai	Contributor	boosapa@airportthai.co.th	66 95 952 8423
Thailand/ Airport of Thailand PLC	Paytye Junphuang	Contributor	paytye.j@airportthai.co.th	66 25352431
Fiji/ Fiji Met Service	Adil Ali	Contributor/Observer	adil.ali@met.gov.fj	+67967248 88
Thailand/TMD	Rassmee Damrongkietwattana	Contributor	rassmee@hotmail.com	+66 21340011 Ext 213
Thailand/TMD	Rungtiwa Ruechai	Contributor	rungtiwa_ruechai@yahoo.com	+66 21340007
Thailand/TMD	Aphinya Chitchaeng	Contributor	aphinya.tmd@gmail.com	+66213400 07
China	Gao Honglei	Contributor	gaohonglei@atmb.net.cn	+86108778 6917
China	Lu Songtao	Contributor	lusongtao@atmb.net.cn	+86108424 7277
China	Xin Quan	Contributor	xinquan@ait.cn	+86108273 5133

Working arrangements



- Face-to-face meetings
 - Web conferences
 - Needs an ICAO secured portal, name: [Click here to enter text.](#)
 - Other: E-mail
-



Statement of Work

Task 2 Regional SWIM Infrastructure

Task Leader: Yukinobu Ryu, Xiaodong Lu, Henry Chan

Project: APAC SWIM Task Force	
Revision number: 02	Approved: Click here to enter a date.

Objective and scope of the project

- 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

Deliverables

- Develop APAC SWIM Architecture requirements and policy
 - Regional interoperability and connectivity
 - Common aeronautical VPN (CRV) integration
 - Supporting Regional SWIM information services
 - SWIM mediation and backwards compatibility
 - APAC SWIM Architecture roadmap
- Develop APAC SWIM Infrastructure requirements
 - Messaging requirements
 - Security requirements
 - Technical Infrastructure Management requirements

Milestones

Indicate here the main milestones of the task or give a reference to a planning (Gantt chart etc)

- Milestone 1: ~2020.11 Define a CRV-based APAC SWIM Architecture to assure interoperability during the transition period
- Milestone 2: ~2021.12 Develop APAC SWIM Infrastructure requirements based on the related ICAO documents
- Milestone 3: ~2022.12 Propose an approach to implement secure APAC SWIM Infrastructure by cooperating with Task 3 Security Services
- Milestone 4: ~2023.6 Validate the APAC SWIM Infrastructure implementation via the joint demonstration with other task teams

Dependencies

Dependencies with projects supervised by different SG (will be controlled by APANPIRG):



- Manual on SWIM, SARPS, PANS and Guidance material from IMP, CP or ATMRPP

Dependencies with projects supervised by the SG (will be controlled by SG):

- Availability and capability of CRV implementation

Dependencies between tasks in the project (will be controlled by the Task Force):

- Task 5 – Governance
 - Integrate SWIM Governance requirements and policy
- Task 6 – Information Services
 - Support the implementation of SWIM Information Services
- Task 8 – SWIM Service and Application Validation
 - Get feedback for interoperability from SWIM Service and Application Validation

Task participants

State/Organization	Name	Role/Responsibility	Email	Phone
Japan	Yukinobu Ryu	Co-Leader	ryuu-y2ea@mlit.go.jp	+81-3-5253-8751
Hongkong, China	Henry Chan	Co-Leader	hhlchan@cad.gov.hk	+852-2910-6574
Japan	Xiaodong Lu	Co-Leader	luxd@mpat.go.jp	+81-422-41-3528
Japan	Takuya Kanehira	Member	t-kanehira@nec.com	
Thailand	Amornrat Jirattigalachote	Member	amornrat.ji@aerothai.co.th	+66-2-287-8262
Thailand	Pipat Leawroongroj	Member	pipat.le@aerothai.co.th	+66-2-286-9252
China	Baojiang Zhang	Member	zhangbaojiang@atmb.net.cn	+86-10-8424-7276

Working arrangements

- Face to face meetings
- Web conferences
- Needs an ICAO secured portal, name: [Click here to enter text.](#)
- Other: Email



Statement of Work
Task – 3 Security Services
Task Manager: Jim Laymon, (FAA); TBD

Project: APAC SWIM Task Force	
Revision number: 01	Approved: Click here to enter a date.

Objective and scope of the project

- 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.

Deliverables

- APAC SWIM Security Scope and Context (Working Paper)
- APAC SWIM PKI Trust Framework (Working Paper)
- Cyber Security Architecture Framework for SWIM in ICAO Asia-Pacific Region (Final, working Paper)

Milestones

- Draft Cyber Security Architecture Framework for SWIM in ICAO Asia-Pacific Region by (TBD)
- Working paper on APAC SWIM Security Scope, due TBD
- Working paper on the trust framework for APAC SWIM, due TBD
 - Survey of IAM Initiatives relevant to APAC SWIM, due TBD
 - Development of framework, due TBD
- APAC Trust Interoperability Demonstration - Complete
- Cyber Security Architecture Framework for SWIM in ICAO Asia-Pacific Region (Final Version), TBD

Dependencies

Dependencies with projects supervised by different SG (will be controlled by APANPIRG):



- SARPS, PANS & Guidance material from the IMP & other relevant panels (ie, ATMRPP)
- Coordination with CRV OG

Dependencies with projects supervised by the SG (will be controlled by SG):

Dependencies between tasks in the project (will be controlled by the Task Force):

- SWIM Manual Vol. II- Implementation Guidelines provides requirements on SWIM Security Capability and Security Non-Functional Qualities in 5.3 under Chapter 5-SWIM Technical Infrastructure (TI).
- Annex 17 – Security (tenth edition, April 2017), Doc 8973 Aviation Security Manual (9th edition, Oct.2014) and Doc 9985 ATM Security Manual (first edition, restricted, 2013) provide guidance for Cyber Security Architecture Framework of SWIM.
- Task 2 - Regional SWIM infrastructure
- Task 5 – Governance
- Task 6 – Information Services

Dependencies with projects at member states:

- SWIM Identity and Access Control projects

Task participants

State/Org- anization	Name	Role/Respon- sibility	Email	Phone
FAA	Jim Laymon	Task Lead	Jim.Laymon@faa.gov	(609) 485-6930
TBD	TBD	Task Lead	TBD	TBD
		Team Member		
...				

Working arrangements

- Face to face meetings
- Needs an ICAO secured portal, name: SWIM Cyber Security
- Teleconference
- Other: Internet Cooperative Work



Statement of Work

Task 4 Technical Architecture

(Development and Maintenance of Regional Information Exchange Models)

Task Manager: Amornrat Jirattigalachote and Wen Zhu

Project: SWIM Task Force	
Revision number: 03	Approved: Click here to enter a date.

Objective and scope of the project

- 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

Deliverables

- Support APANPIRG WG/TF regarding information exchange models
- Information exchange model gap identification, i.e. to 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 for the Asia/Pacific operational use
- Strategy to maintain the artifacts required to support the regional development and maintenance of information exchange model(s) and the extensions
- Approaches for information exchange model interoperability within the region and with other aviation partners

Milestones

- Now – SWIM TF Dissolution
 - Review of operational requirements on data required to be exchanged to support the Asia/Pacific regional operations
 - Examine if the required data attribute(s) are currently available in the existing information exchange models
 - Develop and test the extension(s) and/or new information exchange model(s), if needed
- SWIM TF/5
 - The first version of strategy to maintain the artifacts required to support the regional development and maintenance of information exchange model(s) and the extensions

Dependencies

- Dependencies with projects supervised by different SG (will be controlled by APANPIRG):
 - ATFM SG
 - APA-CDM TF
 - MET/IE WG
- Dependencies with projects supervised by the SG (will be controlled by SG):
 - None
- Dependencies between tasks in the project (will be controlled by the Task Force):
 - Task 1 Implementation Planning
 - Task 2 SWIM Infrastructure
 - Task 5 Governance



- Task 8 SWIM Services and Application Validation
- Task 10 Regional Coordination and SWIM-related Information Sharing
- Other dependencies:
 - Information exchange model change control boards, e.g. FIXM Change Control Board (FIXM CCB)

Task participants *To be updated after SWIM TF/4!!!*

State/Organization	Name	Role/Responsibility	Email	Phone
Thailand	Amornrat Jirattigalachote	Lead	amornrat.ji@aerothai.co.th	+66 2 287 8262
USA	Wen Zhu	Lead	wzhu@nira-inc.com	+1 (301) 452-8338
Thailand	Pipat Leawroongroj	Contributor	pipat.le@aerothai.co.th	+66 2 285 9252
Indonesia/ Directorate General of Civil Aviation	Maruli Tua Edison Saragih	Contributor	edisonsaragih@yahoo.com edisonsaragih.es@gmail.com m_t@dephub.go.id	+628129785067 +6281246569
Fiji/Fiji Met Service	Adil Ali	Contributor/Observer	adil.ali@met.gov.fj	+6796724888
Australia – Airservices Australia	George Kerlin	Contributor	george.kerlin@airservicesaustralia.com	+61738663263
Sri Lanka/Airport & Aviation Services Limited	Asanga Senarath Bandara	Contributor	asanga.eane@airport.lk asangasenarath@gmail.com	+94768242654 +94112263619
Thailand/TMD	Rassmee Damrongkietwattana	Contributor	rassmee@hotmail.com	+66 21340011 Ext 213
Hong Kong, China	Macro Mang Hin Kok	Contributor	mhkok@hko.gov.hk	+852 2926 8702

Working arrangements

- Face-to-face meetings
- Web conferences
- Needs an ICAO secured portal, name: [Click here to enter text.](#)
- Other: E-mail



Statement of Work

Task 5, SWIM Governance

Task Manager: Mark Kaplun (USA), TBD (ROK)

Project: SWIM Task Force	
Revision number: 02	Approved: Click here to enter a date.

Objectives

- 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.
- 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.
- 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.

Deliverables

- I. WP: APAC SWIM Service Discovery and Registry Interoperability Approach
- II. WP: APAC SWIM Governance Policies: Status and Plans
- III. WP: APAC SWIM Service Level Agreement (SLA): Template
- IV. WP: SWIM Interoperability Assessment Matrix (SIAM): Template
- V. IP: SWIM Metadata standards and taxonomies

Milestones

- I. Operational deployment of SWIM Discovery Services (SDSs) produced by the FAA and KAC (March 2022)
- II. Analysis and subsequent updates of SDS/registries network in APAC SWIM (August 2022)
- III. APAC SWIM Governance Policies: Status and Plans (TBD)
- IV. Release of SLA Template (June 2022)
- V. Release of SIAM Template (July 2022)

Dependencies

Dependencies between tasks in the project (will be controlled by the Task Force):

- Task 2 – Technological solutions and architectural views to be utilized in support of APAC SWIM infrastructure
- Task 3 - Information and analysis about security solutions deployed in APAC regions



- Task 6 - Identified standards and technological approaches to be utilized for service validations

Task participants

State/Organization	Name	Role/Responsibility	Email
USA	Mark Kaplun	Task Lead	mark.kaplun@faa.gov
ROK	Choi Kyungsik	Contributor	kschoi76@airport.co.kr
ROK	Han Sehwan	Contributor	hsh91@airport.co.kr
USA	Wen Zhu	Contributor	wzhu@nira-inc.com
Japan	Yunkinoby Rye	Member	ryuu-y2ea@mlit.go.jp
China	Gai Honglei	Member	gaohonglei@atmb.net.cn
Japan	Xiaodong Lu	Member	luxd@mpat.go.jp

Working arrangements

- Face to face meetings
- Webconferences
- Needs an ICAO secured portal, name: [Click here to enter text.](#)
- Other: [Click here to enter text.](#)



Statement of Work

Task 6: Information Services

Task Manager: Renato Iannella and Marco Kok

Project: SWIM Task Force	
Revision number: 02	Approved: Click here to enter a date.

Objective and scope of the project

- 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.

Deliverables

- 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 fields required for SWIM service overviews in APAC
 - in addition to the elements in describing the Information Service Overview as defined in PANS-IM
- Recommend low-level technical implementation details in APAC to meet the high-level implementation guidance in PANS-IM, including
 - exchange schemas in JSON and/or XML Schema
 - standardised set of terms and categories for compatible information services to facilitate the categorization of service overview
 - handling of the null fields
- Document the above deliverables related to Information Services in “APAC SWIM Implementation Materials”

Milestones

- Milestone 1: Identify all the current known “service overview” specifications and implementations and compare them with PANS-IM version (Aug 2021)
- Milestone 2: Present the propose APAC version of service overview specification for consideration by SWIM TF (Aug 2021)
- Milestone 3: Identify optional fields and low-level technical implementation details of information services based on operational needs in APAC (Aug 2022)
- Milestone 4: Identify and compare current existing data catalog (e.g. FAA, EUROCONTROL, etc.) of different categories of information services (Aeronautical, Flight, MET, Surveillance, etc) (Dec 2021)
- Milestone 5: Present the propose APAC version of data catalog for identifying opportunities of new services, for consideration by SWIM TF (Aug 2022)

Dependencies



- Task Group #5 (Governance) - work on interoperability of service discovery
- ICAO IMP – new work items on SWIM Registries interoperability

Task participants

State/Organization	Name	Role/Responsibility	Email	Phone
Australia / Airservices Australia	Dr. Renato Iannella	Co-Lead	renato.iannella@AirservicesAustralia.com	+61 4 1313 2206
Hong Kong China / Hong Kong Observatory	Mr. Marco Kok	Co-Lead	mhkok@hko.gov.hk	+852 6226 7907

Working arrangements

- Face to face meetings
- Webconferences
- Needs an ICAO secured portal, name: [Click here to enter text.](#)
- Other: emails



Statement of Work

Task 7 SWIM Demonstrations

Task Manager: David Leow (Singapore) and Amornrat Jirattigalachote (Thailand)

Project: SWIM Task Force	
Revision number: 1	Approved: Click here to enter a date.

Objective and scope of the project

- 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

Deliverables

- SWIM in ASEAN Demonstration Report
- Reports from other SWIM demonstrations within the Asia/Pacific region

Milestones

- SWIM TF/4: SWIM in ASEAN Demonstration Report
- TBD: Reports from other SWIM demonstrations

Dependencies

- Dependencies between tasks in the project (will be controlled by the Task Force):
 - All

Task participants

State/Organization	Name	Role/Responsibility	Email	Phone
Singapore	David Leow	Lead	david_leow@caas.gov.sg	+65 6595 6771
Thailand	Amornrat Jirattigalachote	Lead	amornrat.ji@aerothai.co.th	+66 2 287 8262
Hong Kong, China	Henry Chan	Co-Leader	hhlchan@cad.gov.hk	+852-2910-6574

Working arrangements

- Face to face meetings
- Web conferences
- Needs an ICAO secured portal, name: [Click here to enter text.](#)
- Other: [Click here to enter text.](#)



Statement of Work

Task 8 SWIM Service and Application Validation

Task Leader: Yunkinobu Ryu, Xiaodong Lu, Honglei Gao, Dongkie Park

Project: APAC SWIM Task Force	
Revision number: 02	Approved: Click here to enter a date.

Objective and scope of the project

- Construct a platform for SWIM service and application validation
- Support the implementation of SWIM service and applications
- Support the demonstration of SWIM based operations

Deliverables

- Develop validation requirements for APAC SWIM Infrastructure services
 - Messaging
 - Security
 - Technical Infrastructure Management
- Define and validate the required SWIM services and applications for supporting different operation levels by considering mixed-mode environment
 - SWIM based information sharing (ATFM, A-CDM and etc.)
 - FF-ICE/R1 operation
 - FF-ICE/R2 operation
 - Trajectory Based Operation
- Develop a common platform for SWIM service and application validation
 - Test system for FIXM, AIXM, and IWXXM message exchange
 - Technical support for regional validation and demonstration

Milestones

Indicate here the main milestones of the task or give a reference to a planning (Gantt chart etc)

- Milestone 1: ~2019.12 Construct a platform for SWIM service and application validation
- Milestone 2: ~2020.11 Conduct a demonstration for FF-ICE/R1 service validation
- Milestone 3: ~2021.12 Develop validation requirements for Regional SWIM Infrastructure
- Milestone 4: ~2022.12 Validate the Regional SWIM Infrastructure with Security Services via the joint demonstration
- Milestone 5: 2022.12~ Validate the required SWIM services and applications for different operation levels



Dependencies

Dependencies with projects supervised by different SG (will be controlled by APANPIRG):

- Manual on SWIM, SARPS, PANS and Guidance material from IMP, CP or ATMRPP

Dependencies with projects supervised by the SG (will be controlled by SG):

- The status of SWIM TI implementation in APAC Region

Dependencies between tasks in the project (will be controlled by the Task Force):

- Task 2 – Regional SWIM Infrastructure, Task 3 – Security Services
 - Develop based on the Regional SWIM Infrastructure with Security Services
- Task 4 – Development and maintenance of regional information exchange models
 - Support the validation of regional information exchange models
- Task 5 – Governance
 - Integrate SWIM Governance requirements and policy
- Task 6 – Information Services
 - Support the validation of SWIM Information Services
- Task 7 – SWIM Demonstration
 - Cooperate for SWIM service and application validation through demonstrations

Task participants

State/Organization	Name	Role/Responsibility	Email	Phone
Japan	Yukinobu Ryu	Manager	ryuu-y2ea@mlit.go.jp	+81-3-5253-8111
Japan	Xiaodong Lu	Leader	luxd@mpat.go.jp	+81-422-41-3528
China	Honglei Gao	Leader	gaohonglei@atmb.net.cn	+86-010-87786917
China	Baojiang Zhang	Member	zhangbaojiang@atmb.net.cn	+86-010-84247276
China	Hongming Ren	Member	renhongming@atmb.net.cn	+86-010-84247276
ROK	Dongkie Park	Leader	pdkie@airport.co.kr	+82-2-2660-4383
ROK	Sehwan Han	Member	hsh91@airport.co.kr	+82-2-2660-4383
ROK	Younghoon Kim	Member	yh89@airport.co.kr	+82-2-2660-2878
PCCW Global	Bono Ng	Member	bcng@pccwglobal.com	+85-2-3419-2103



Working arrangements

- Face to face meetings
- Web conferences
- Needs an ICAO secured portal, name: [Click here to enter text.](#)
- Other: Email



<p>Statement of Work</p> <p>Task 9 Monitoring of Panel work</p> <p>Task Manager: Yukinobu Ryu</p>
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Project: SWIM Task Force	
Revision number: 02	Approved: Click here to enter a date.

Objective and scope of the project

- Monitor developments by IMP and escalate issues/inputs as required

Deliverables

- Monitor developments by the IMP and escalate issues as required
- Periodic updates to IMP from SWIM Task Force work plan

Milestones

Indicate here the main milestones of the task or give a reference to a planning (Gantt chart etc)

- Milestone 1: IMP/2, 27 August-1 September 2021, Virtual Meeting
- Milestone 2: IMP/WG/11, September 2022, TBD

Dependencies

- ATM SG
- ATFM SG
- CNS SG
- MET SG

Task participants

State/Org- anization	Name	Role/Respon- sibility	Email	Phone
Japan	Yukinobu Ryu	Task manager	ryuu-y2ea@mlit.go.jp	+81-3-5253-8751

Working arrangements

- Face to face meetings
- Needs an ICAO secured portal, name: [Click here to enter text.](#)
- Other: [Click here to enter text.](#)



Statement of Work
Task Click here to enter text.
Task Manager: Thomas Green

Project: SWIM Task Force	
Revision number: Click here to enter text.	Approved: Click here to enter a date.

Objective and scope of the project

- 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

Deliverables

- Updates on SWIM initiatives and objectives in APAC:
 - SWIM in ASEAN Demonstration
 - Meteorology
 - Common Regional VPN:
 - Other developments:
- Actions in WP or presentations to provide updates from SWIM TF to APANPIRG WG/TF (e.g.: ATFM/SG, ACSICG, MET/SG, APSAR/WG, CNS/SG) on SWIM-related operational and communications activities

Milestones

Indicate here the main milestones of the task or give a reference to a planning (Gantt chart etc)

- Updates (WP/IP) to APANPIRG WG/TF as needed

Dependencies

Dependencies with projects supervised by different SG (will be controlled by APANPIRG):

- SWIM Manual and Technical Guidance Material

Dependencies with projects supervised by the SG (will be controlled by SG):



- SMEs to identify relevant projects within their domains
- Guidance on IWXXM
- Guidance on ATFM
- Updates on CRV and AMHS
- Web-based hosting tools (eg: SkyFusion)
- Multi-nodal developing an ICD

Dependencies between tasks in the project (will be controlled by the Task Force):

- Collation of all facets of subject matter expert (SME) input and identification of relationships and interdependencies

Task participants

State/Organization	Name	Role/Responsibility	Email	Phone

Working arrangements

- Face to face meetings
- Needs an ICAO secured portal, name: [Click here to enter text.](#)
- Other: Web meetings and Phone Calls



Statement of Work
Task 11 - SWIM Implementation Education and Promotion
Task Manager: Thomas Green

Project: APAC SWIM Task Force	
Revision number: V1	Approved: Click here to enter a date.

Objective and scope of the project

- 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

Deliverables

- APAC Region SWIM Educational and Promotional Roadmap
- APAC Regional SWIM Brochure
- APAC Regional SWIM Symposium
- APAC SWIM Regional Outreach Plan
- APAC SWIM Education and Promotional Catalog

Milestones

Task Number	Activity	Estimated Date of Completion
1	Creation of Draft APAC SWIM Brochure	TBD
2	Draft 3 year SWIM Education and Promotional roadmap	September 10, 2021
3	Confirm date for APAC SWIM Regional Symposium	TBD
4	Complete Draft APAC SWIM Regional Outreach Plan	TBD
5	Complete Draft of APAC SWIM Education and Promotional Catalog	TBD

Dependencies

- ICAO Doc 10039 - Manual on SWIM Concept
- SWIM Manual and Technical Guidance Material



- Guidance Materials issued via the various APAC SWIM TF Task

Task Participants

State/Organization	Name	Role/Responsibility	Email	Phone
LST	Thomas Green	Task Lead	Thomas.green@lstechllc.com	
AEROTHAI	Jittima Asawachaiporn	Participant	jittima214@gmail.com	

Working arrangements

- Face to face meetings
- Needs an ICAO secured portal, name: Click here to enter text.
- Other: Click here to enter text.
