



ICAO

International Civil Aviation Organization

The Eighth Meeting of System Wide Information Management Task Force (SWIM TF/8)

Bangkok, Thailand, 08 – 10 November 2023

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

Update of the work done by the SWIM Implementation Pioneer Group

(Presented by Singapore)

SUMMARY

This paper presents the work done by the SWIM Implementation Pioneer Group since the Task Force 7 meeting in May 2023.

1. INTRODUCTION

- 1.1 The SWIM Implementation Pioneer Group (SIPG) was proposed during the SWIM TF/7 meeting in working paper SWIM TF/7 – WP/12.
- 1.2 The stated purpose of the SIPG is to develop and deploy a prototype / initial version of the regional SWIM by June 2024.

2. DISCUSSION

- 2.1 As of 30 October 2023, the SIPG has met six times via web conference to try and advance their work. The notes of the meetings are capture in Appendix A.
- 2.2 Through these meeting, the SIPG derived a series of goals that need to be accomplished in order to develop the prototype SWIM. They are as follows;
 - i. Installation of the equipment necessary to connect to the pseudo CRV
 - ii. Connecting the EMS to each other to form the Global EMS network
 - iii. Develop and deploy SWIM services
 - iv. Onboard data consumers
 - v. Prepare lessons learnt paper for SWIM TF/9 meeting

- 2.3 With the above stated goals, the SIPG developed a work program and timeline shown in the table below. This timeline is combined with the timeline and objectives of the SWIM over CRV demonstration and the S3TIG Surveillance Sharing over SWIM trial.

Work Programme and Timeline	
July 2023	
a)	PCCW to deliver the plan for Pseudo CRV / Console Connect provision.
b)	States to confirm on any additional scenario-based demonstrations.
c)	Information exchange for finalizing the message header and JSON structure for surveillance data.
August 2023	
a)	Scenario planning discussions
b)	Discussions on the SWIM services to provide and which to make a compulsory target for this group
c)	JSON Format discussions
d)	Metadata discussions - ASEAN SWIM demo metadata file as basis for discussion
e)	Start installation for access into the Pseudo CRV
f)	Status report from PCCW on Pseudo CRV implementation
September 2023	
a)	Confirm Metadata
b)	Develop SWIM services for the scenario based demonstrations
c)	Develop surveillance data sharing SWIM services according to the finalized message header and JSON structure
d)	PCCW to complete work started in August
October 2023	
a)	Confirm scenario discussions
b)	Test on simple message exchange (follow SIPG timeline)
c)	Start scenario preparations
November 2023	
a)	Test on various types of message exchange (FIXM, IWXXM, ASTERIX and JSON)
b)	Test on consolidated data exchange with PCCW's HMI
c)	Start scenario walkthroughs and testing
December 2023	
a)	Test on complete flow of scenario based demonstrations
b)	Continue PCCW HMI testing if needed
January 2024	
a)	Prepare test scripts and presentations for the Demo day(s)
b)	Prepare rundown for the Demo day(s)
February 2024	
a)	Conduct remote dry run(s) for the Demo day(s)
March 2024	
a)	On-site rehearsal for the Demo day(s)

April 2024
a) Documenting lessons learnt b) Documenting proposed processes c) Prepare working paper(s)
May 2024
a) SWIM TF 9 presentation of paper(s)

2.4 As of October 2023, the SIPG's progress is as follows:

Work Program and Timeline	Status
July 2023	
a) PCCW to deliver the plan for Pseudo CRV / Console Connect provision.	Complete
b) States to confirm on any additional scenario-based demonstrations.	Complete
c) Information exchange for finalizing the message header and JSON structure for surveillance data.	Incomplete
August 2023	
a) Scenario planning discussions	Incomplete
b) Discussions on the SWIM services to provide and which to make a compulsory target for this group	Not Started
c) JSON Format discussions	Not Started
d) Metadata discussions - ASEAN SWIM demo metadata file as basis for discussion	Incomplete
e) Start installation for access into the Pseudo CRV	Started
f) Status report from PCCW on Pseudo CRV implementation	Not Started
September 2023	
a) Confirm Metadata	Incomplete
b) Develop SWIM services for the scenario based demonstrations	Not Started
c) Develop surveillance data sharing SWIM services according to the finalized message header and JSON structure	Not Started
d) PCCW to complete work started in August	Incomplete
October 2023	
a) Confirm scenario discussions	Not Started
b) Test on simple message exchange (follow SIPG timeline)	Not Started
c) Start scenario preparations	Not Started

2.5 As can be seen from the table the progress of work has not gone according to plan and there are many activities that have not been completed or even started. There is a risk that the SIPG may not meet its goal of having a prototype SWIM by the next task force meeting. This will impact the viability of having the SWIM over CRV demonstration and the S3TIG Surveillance Sharing over SWIM trial.

2.6 Urgent action is required to ensure that the SWIM infrastructure can be built and deployed in time to support the 2 activities.

- 2.7 As such it is proposed that the SIPG postpone some of the activities in the timeline to a later date and focus on the activities that directly contribute to the demonstration and trial.
- 2.8 That way the SWIM over CRV trial and the Surveillance Sharing trial can meet their target timeline of 1st quarter 2024.
- 2.9 However, it also means that the work of the SIPG will likely extend beyond the SWIM Task Force 9 meeting in order to complete all the identified activities.

3. ACTION BY THE MEETING

- 3.1 The meeting is invited to:
- a) note the information contained in this paper; and
 - b) Consider the proposal put forth by the paper;
 - c) discuss any relevant matter as appropriate

SWIM TF/8
Appendix A to WP/04

29 May 2023

Ad-hoc Meeting of the SWIM Implementation Pioneer Group (SWIM IPG)

S/No.	Discussion	Action
	Agenda <ol style="list-style-type: none">1. Review of the objectives of the group and the details of the 4 steps2. Proposed Draft of Timeline and expected outcomes.3. Discussion	
1	<p>Agenda Item 1 Review of the objectives of the SWIM IPG</p> <p>David presented the objectives of the SWIM IPG as agreed at the SWIM TF/7 meeting. He outlined the expected outcomes of the group and proposed that the work of this group be synchronized with the SWIM over CRV demonstration and the Surveillance Sharing Ops Trial.</p> <p>The work of the SWIM IPGF is broken down into four steps as presented during the SWIM TF/7 meeting. David presented each step expanded with discreet work items.</p> <p>Step 1 is to determine how many EMS will be available in this implementation and how PCCW can support this architecture.</p> <p>Step 2 is to build the inter-EMS connections based on the agreed architecture in the SWIM TF. We would try to leverage on the SWIM on CRV demo and Surveillance Sharing ops trial to do this work.</p> <p>Step 3 is to stand up several SWIM registries and interconnect these registries using the SWIM Discovery Services and SWIM Metadata Exchange Services. The decision on the metadata to be used needs to be made.</p> <p>Step 4 is to decide on which information services to implement and exchange over this infrastructure.</p> <p>The outcome of this work is to generate lessons learnt on the following.</p> <ol style="list-style-type: none">1) Construction of the SWIM TI and its associated limitations and constraints2) EMS provision and the processes involved in provisioning a new EMS in the SWIM and onboarding new clients to the EMS.3) Provisioning of the SWIM registries and interconnection of registries4) Provisioning of information services. <p>If time and resources permit this group would also seek to implement Quality of Service validation processes.</p>	

2	<p>Agenda Item 2: Proposed draft of the timeline.</p> <p>To achieve the above steps, David presented a proposed timeline detailing the work that needs to be complete each month from now till Jun 2024. (See attachment for the proposed timeline.)</p> <p>PCCW raised concerns on the deliverables proposed for August 2023. They highlighted that the pseudo CRV will not be ready by August 2023 to support the IP connectivity between EMS. The supportable time frame for IP connectivity testing will be in October 2023. PCCW also indicated that they will require the results of the S3TIG questionnaire in order to determine accurately the effort required to construct the pseudo CRV.</p> <p>It was highlighted that the SWIM TF/9 meeting is planned for early May 2024, therefore the Timeline needs to be adjusted to take this into account.</p> <p>Action: HK-CAD to collate the results of the questionnaire responses and present at next meeting.</p> <p>Action: CAAS will revise the timeline and circulate for comments</p>	<p>HK-CAD</p> <p>CAAS</p>
3	<p>Agenda Item 3: Discussions.</p> <p>During the presentation of the implementation steps there were discussions and points raised with regard to implementation of the APAC SWIM.</p> <p>Critical to this project is determining how many EMS will be provisioned, the protocol(s) that will be used for intercommunication and the metadata that will be used as part of the message header. These questions will need to be answered in coming meetings. It is expected that the S3TIG questionnaire will be able to provide the answer to the question on the number of EMS.</p> <p>Action: CAAS to include the above discussions in agenda of subsequent meetings</p> <p>Japan indicated that NEC is able to offer EMS service should anyone wish to join in this work.</p> <p>Japan also indicated that there is currently a North-Asia SWIM in place and queried how such a network is to be incorporated. However, this is not really within the scope of the SWIM IPG as the SWIM IPG is more focused on regional implementation. HK-CAD agreed that this group should focus on building the APAC SWIM TI over the CRV.</p> <p>HK-CAD proposed to do a post event review which may include the proposal to setup a technical community.</p> <p>Action: HK-CAD to table a working paper at SWIM TF/8 meeting to provide a review of the joint event.</p>	<p>CAAS</p> <p>HK-CAD</p>

	<p>CAA Malaysia raised a question on the use of the pseudo CRV versus the actual CRV and whether the construction of the SWIM Technical Infrastructure on the pseudo CRV will be an accurate reflection of the actual CRV. PCCW assured the meeting that the backend networks of the actual CRV and pseudo CRV are the same and the performance will not be different. Current bandwidth limits are set at 2Mbps for the pseudo CRV but can easily be increased to 4Mbps. For the purpose of this group's work, it is not foreseen that traffic will exceed the 4Mbps limit.</p> <p>CAA Malaysia further queried if there was a need to establish an MOA or MOU for this prototype / seed SWIM. The meeting agreed that there was no need for such agreements since this prototype / seed SWIM is a technical exercise to discover lessons in the construction of the SWIM TI and will not have operational impact. However, there may be a need for a template of an MOA/MOU or a group agreement on data sharing for the actual SWIM implementation.</p> <p>Action: CAA Malaysia to prepare a paper for SWIM TF/8 meeting proposing the template MOA/MOU for inclusion in the guidance material.</p>	CAAM
5	<p>Next Meeting Date</p> <p>Subsequent meetings will be held on the fourth Monday of every month at 0930H – 1015H (UTC+8). This will be followed on by the S3TIG Surveillance Sharing meeting from 1015H – 1130H (UTC+8)</p>	
6	<p>AOB</p> <p>No other business was raised.</p>	

ACTION ITEMS LIST			
No.	Action Item	Action Party	Status
SWIM/TF/SIPG/AI-01	HK-CAD to collate the results of the questionnaire responses and present at next meeting.	HK-CAD	Open
SWIM/TF/SIPG/AI-02	CAAS will revise the timeline and circulate for comments	CAAS	Open
SWIM/TF/SIPG/AI-03	CAAS to include the above discussions in agenda of subsequent meetings	CAAS	Open
SWIM/TF/SIPG/AI-04	HK-CAD to table a working paper at SWIM TF/8 meeting to provide a review of the joint event.	HK-CAD	Open
SWIM/TF/SIPG/AI-05	CAA Malaysia to prepare a paper for SWIM TF/8 meeting proposing the template MOA/MOU for inclusion in the guidance material.	CAAM	Open

Original Proposed Timeline

- Steps 1 and 2
 - July 2023
 - Determine the number of EMS that will be interconnected
 - Determine if PCCW can support this configuration
 - August 2023
 - Establish the underlying IP infrastructure necessary for EMS connection
 - September 2023
 - Start work on interconnecting participating EMS
 - Able to ping each other
 - October 2023
 - Complete all EMS onboarding
 - Able to ping
 - Able to have simple message exchange.
 - Attempt to implement SWIM Discovery Service
 - November 2023
 - Report to SWIM TF 8 on progress of the group
- Steps 3 and 4
 - December 2023
 - Continue working on Inter-registry communications
 - Discussions on the SWIM services to provide and which to make a compulsory target for this group
 - January / February 2024
 - Provisioning of the agreed compulsory services
 - March 2024
 - Services onboarding and testing
 - April – June 2024
 - Documenting lessons learnt
 - Documenting proposed processes
 - Prepare working paper(s)

29 June 2023

2nd Meeting of the SWIM Implementation Pioneer Group (SIPG)

S/No.	Discussion	Action
	Agenda <ol style="list-style-type: none"> 1. Review of the revised timelines 2. Review of survey results 3. Discussion on EMS support and configuration. 	
1	<p>Agenda Item 1 Review of the objectives of the SWIM IPG</p> <p>David presented a revised timeline and workplan for the SIPG based on the inputs from the first meeting. The revised timeline takes into account the response to the S3TIG questionnaire and the timeline for PCCW to provide access to the pseudo CRV.</p> <p>New Zealand queried on the types of services that will be offered in this SWIM implementation. David clarified that it will be based on an earlier survey conducted by the SWIM task force on the list of common services that respondents want to see made available and it will be part of the discussions for the SIPG.</p> <p>New Zealand also asked what the bandwidth will be on the pseudo CRV. PCCW replied that since the pseudo CRV is provided on a best effort, cost free basis, it will be limited to 2Mbit/s. PCCW is open to further discussions if this limit needs to be raised.</p> <p>There was a query on using the pseudo CRV to build the SWIM technical infrastructure. This implies that we would need to migrate the whole infrastructure to the operational CRV at a later date. David clarified that this is indeed the case. The rationale behind using the pseudo CRV rather than the operational CRV is to avoid trial and prototype traffic from interfering with the operational environment of the operational CRV. PCCW added that in terms of networking equipment and infrastructure, the pseudo CRV is no different from the operational CRV and migration should be simple to do. This however does indicate that there may be migration activity once this group is satisfied with the SWIM infrastructure that has been built.</p> <p>Republic of Korea, queried on the support of PCCW for the pseudo CRV. PCCW reiterated that they will be providing access to the pseudo CRV under package D of the CRV contract and free of charge up till the end of the SIPG timeframe.</p> <p>The People's Republic of China indicated that they would like to participate in the SIPG work and will participate in the surveillance sharing ops trial as an observer. However, the recent survey is largely geared towards the</p>	

	<p>surveillance sharing ops trial and there is no avenue for China to indicate their intention. It was suggested that SIPG could come up with their own quick survey for the group.</p> <p>Action: Singapore to send out a questionnaire related to the SIPG to members of the group.</p> <p>Thailand noted that following this timeline, the SWIM infrastructure will only be complete in May 2024. However, in order to support the SWIM over CRV demonstration and the S3TIG surveillance sharing ops trial, SWIM needs to be ready to support these 2 activities, at least for those participating. David, agreed and opined that this timeline is more to cater for the overall community. It is expected that those who are participating in the SWIM over CRV and surveillance sharing ops trial will be implementing the SWIM infrastructure at a quicker pace. Thailand then suggested that the timeline should be split to show both paths of development. One path for those who are participating in the demonstrations and ops trial and need to have the SWIM infrastructure in time for these events. The second path is for those who aren't participant in the events and can work with a longer timeframe.</p> <p>Action: Singapore to revise the timeline and create 2 parallel paths as indicated in the para above.</p>	<p>CAAS</p> <p>CAAS</p>
2	<p>Agenda Item 2: Review of the S3TIG</p> <p>This agenda item was skipped over as the same topic will be covered by Hong Kong – China during the 1st S3TIG Joint Event meeting</p>	
3	<p>Next Meeting Date</p> <p>As agreed previously the next meeting will be on 24 July 2023, the 4th Monday of the month of July 2023.</p>	
4	<p>AOB</p> <p>No other business was raised.</p>	

ACTION ITEMS LIST

No.	Action Item	Action Party	Status
SWIM/TF/SIPG/AI-01	HK CAD to collate the results of the questionnaire responses and present at next meeting.	HK CAD	Closed
SWIM/TF/SIPG/AI-02	CAAS will revise the timeline and circulate for comments	CAAS	Closed
SWIM/TF/SIPG/AI-03	CAAS to include the above discussions in agenda of subsequent meetings	CAAS	Closed

Appendix A

No.	Action Item	Action Party	Status
SWIM/TF/SIPG/AI-04	HK-CAD to table a working paper at SWIM TF/9 meeting to provide a review of the joint event.	HK-CAD	Open
SWIM/TF/SIPG/AI-05	CAA Malaysia to prepare a paper for SWIM TF/8 meeting proposing the template MOA/MOU for inclusion in the guidance material.	CAAM	Open
SWIM/TF/SIPG/AI-06	Singapore to send out a questionnaire related to the SIPG to members of the group.	CAAS	Open
SWIM/TF/SIPG/AI-07	Singapore to revise the timeline and create 2 parallel paths as indicated in the para above.	CAAS	Open

V2 Proposed Timeline

- Steps 1 and 2
 - July 2023
 - Determine the number of EMS that will be interconnected
 - Report from S3TIG Questionnaire.
 - Determine if PCCW can support this configuration
 - August 2023
 - PCCW to start sending out routers to participants.
 - Start installation for access into the Pseudo CRV
 - Status report from PCCW on Pseudo CRV implementation
 - Discussions on the SWIM services to provide and which to make a compulsory target for this group
 - September 2023
 - Meta data discussions – What meta data to include? ASEAN SWIM demo metadata file as basis for discussion.
 - October 2023
 - Establish the underlying IP infrastructure necessary for EMS connection
 - Able to ping
 - Start EMS onboarding
- Steps 3 and 4
 - November 2023
 - Report to SWIM TF 8 on progress of the group
 - Able to have simple message exchange.
 - Attempt to implement SWIM Discovery Service
 - December 2023
 - Continue working on Inter-registry communications
 - January / February 2024
 - Provisioning of the agreed compulsory services
 - March 2024
 - Services onboarding and testing
 - April – June 2024
 - Documenting lessons learnt
 - Documenting proposed processes
 - Prepare working paper(s)

24 July 2023

3rd Meeting of the SWIM Implementation Pioneer Group (SIPG)

S/No.	Discussion	Action
	Agenda <ol style="list-style-type: none"> 1. Review of the 3rd version of timelines 2. Discussion and clarifications on the Pseudo CRV 3. Proposal for Metadata 	
1	<p>Agenda Item 1 Review of revised timelines and NOM of last meeting</p> <p>David presented the notes of meeting of the 2nd SIPG meeting for consideration and adoption. The People's Republic of China pointed out that there is one correction to make in the notes. The People's Republic of China will participate in the SIPG work and in the surveillance sharing ops trial as an observer. Corrections will be made to the notes and redistributed. The notes were accepted with the correction.</p> <p>David then presented the 3 parallel timelines, accelerated, original and S3TIG timelines for the meeting's consideration. As part of the discussions on the timeline, it was confirmed by PCCW that everyone participating will need to on board to the Pseudo CRV and for states provisioning and EMS to reply to PCCW's email to quickly roll out the necessary equipment and installation. The target is to have everything installed by September 2023.</p> <p>Thailand queried that if installation is to be completed by September 2023, does this mean that testing can begin in October 2023. PCCW confirmed this to be the plan.</p> <p>Japan queried if the pseudo CRV can support a cloud implementation of the EMS. Japan's EMS is implemented on AWS cloud. PCCW replied that they will need to investigate and will take this up separately with Japan. David asked for the conclusion to be updated to the meeting as it would be an interesting lesson on whether a cloud-based EMS can be supported on the CRV.</p> <p>Action: Japan and PCCW to determine if the pseudo CRV can support cloud-based EMS and report back to the meeting.</p> <p>Malaysia queried on the need for a local IP and whether the pseudo CRV can be accessed from behind a NAT. PCCW replied that there may be a solution but would prefer to have a local static IP.</p> <p>Thailand commented that the S3TIG timeline does not include activities to discuss service provision, meta data discussion and scenario planning. These activities need to be included in order for the SWIM over CRV demo to proceed. David proposed to add these activities into the S3TIG timeline for</p>	<p>Japan, PCCW</p>

	<p>adoption by the SIPG. These discussions should be taken apart from the SIPG main meeting.</p> <p>Action: David to add in activities for service provision discussion, meta data discussion and scenario planning into the S3TIG timeline.</p> <p>Thailand also commented that the last 3 activities in the original timeline should also be moved to the S3TIG timeline and the paper preparation should be moved to April 2024 as the SWIM/TF/9 meeting is scheduled to occur in early May.</p> <p>Action: David to make the changes to the timeline to include “Documenting Lessons Learnt”, “Documenting Processes” and “Prepare Working Papers”.</p> <p>Afternote: See Attachment 2 for the proposed merged timeline</p>	<p>CAAS</p> <p>CAAS</p>
2	<p>Discussion and clarifications on the Pseudo CRV</p> <p>This agenda item was skipped as it was discussed and clarified in the previous item</p>	
3	<p>Proposal for Metadata</p> <p>David proposed for a separate meeting to discuss metadata for the SIPG and to use the metadata as proposed for the S3TIG as a basis for the discussion. The results of the meeting to be reported back to the SIPG.</p> <p>Thailand supported the proposal and suggested that a different lead take on the organization of these meetings.</p>	
4	<p>Next Meeting Date</p> <p>As agreed previously the next meeting will be on 28th August 2023, the 4th Monday of the month of August 2023.</p>	
	<p>AOB</p> <p>No other business was raised.</p>	

ACTION ITEMS LIST

No.	Action Item	Action Party	Status
SWIM/TF/SIPG/AI-04	HK-CAD to table a working paper at SWIM TF/9 meeting to provide a review of the joint event.	HK-CAD	Open
SWIM/TF/SIPG/AI-05	CAA Malaysia to prepare a paper for SWIM TF/8 meeting proposing the template MOA/MOU for inclusion in the guidance material.	CAAM	Open
SWIM/TF/SIPG/AI-06	Singapore to send out a questionnaire related to the SIPG to members of the group.	CAAS	Open
SWIM/TF/SIPG/AI-07	Singapore to revise the timeline and create 2 parallel paths as indicated in the para above.	CAAS	Closed

Appendix A

No.	Action Item	Action Party	Status
SWIM/TF/SIPG/AI-08	Japan and PCCW to determine if the pseudo CRV can support cloud-based EMS and report back to the meeting.	Japan, PCCW	Open
SWIM/TG/SIPG/AI-09	David to add in activities for service provision discussion, meta data discussion and scenario planning into the S3TIG timeline.	CAAS	Open
SWIM/TG/SIPG/AI-10	David to make the changes to the timeline to include “Documenting Lessons Learnt”, “Documenting Processes” and “Prepare Working Papers”.	CAAS	Open

Accelerated timeline	Original Regular Timeline	S3TIG Timeline
July 2023		
Establish EMS to EMS connections <ul style="list-style-type: none">Testing of inter-EMS connections	Determine the number of EMS that will be interconnected <ul style="list-style-type: none">Report from S3TIG Questionnaire.	a) PCCW to deliver the plan for Pseudo CRV / Console Connect provision.
	Determine if PCCW can support this configuration	b) States to confirm on any additional scenario-based demonstrations. c) Information exchange for finalizing the message header and JSON structure for surveillance data.
August 2023		
Metadata discussions - ASEAN SWIM demo metadata file as basis for discussion	PCCW to start sending out routers to participants.	a) Develop SWIM services for the scenario based demonstrations b) Develop surveillance data sharing SWIM services according to the finalized message header and JSON structure
	Start installation for access into the Pseudo CRV	
	Status report from PCCW on Pseudo CRV implementation	
	Discussions on the SWIM services to provide and which to make a compulsory target for this group	
September 2023		
Confirm Metadata	Meta data discussions – What meta data to include? ASEAN SWIM demo metadata file as basis for discussion.	a) Complete work started in August
Start service provisioning and service testing		
October 2023		
Confirm scenario discussions	Establish the underlying IP infrastructure necessary for EMS connection	a) Test on simple message exchange (follow SIPG timeline)
Start scenario preparations	Able to ping	
	Start EMS onboarding	
November 2023		
Start scenario walkthroughs and testing	Report to SWIM TF 8 on progress of the group	

Appendix A

	Able to have simple message exchange.	a) Test on various types of message exchange (FIXM, IWXXM, ASTERIX and JSON) b) Test on consolidated data exchange with PCCW's HMI
	Attempt to implement SWIM Discovery Service	
December 2023		
Complete scenario walkthroughs and final testing	Continue working on Inter-registry communications	a) Test on complete flow of scenario based demonstrations b) Continue PCCW HMI testing if needed
January 2024		
Ready to Conduct SWIM over CRV demo (Subject to HK-CAD logistic arrangements)	Provisioning of the agreed compulsory services	a) Prepare test scripts and presentations for the Demo day(s) b) Prepare rundown for the Demo day(s)
February 2024		
		a) Conduct remote dry run(s) for the Demo day(s)
March 2024		
	Services onboarding and testing	a) On-site rehearsal for the Demo day(s)
April 2024		
	Documenting lessons learnt	
	Documenting proposed processes	
May 2024		
	Prepare working paper(s)	

Merged timeline	
July 2023	
	<ul style="list-style-type: none"> a) PCCW to deliver the plan for Pseudo CRV / Console Connect provision. b) States to confirm on any additional scenario-based demonstrations. c) Information exchange for finalizing the message header and JSON structure for surveillance data.
August 2023	
	<ul style="list-style-type: none"> a) Scenario planning discussions b) Discussions on the SWIM services to provide and which to make a compulsory target for this group c) JSON Format discussions d) Metadata discussions - ASEAN SWIM demo metadata file as basis for discussion e) Start installation for access into the Pseudo CRV f) Status report from PCCW on Pseudo CRV implementation
September 2023	
	<ul style="list-style-type: none"> a) Confirm Metadata b) Develop SWIM services for the scenario based demonstrations c) Develop surveillance data sharing SWIM services according to the finalized message header and JSON structure d) PCCW to complete work started in August
October 2023	
	<ul style="list-style-type: none"> a) Confirm scenario discussions b) Test on simple message exchange (follow SIPG timeline) c) Start scenario preparations
November 2023	
	<ul style="list-style-type: none"> a) Test on various types of message exchange (FIXM, IWXXM, ASTERIX and JSON) b) Test on consolidated data exchange with PCCW's HMI c) Start scenario walkthroughs and testing
December 2023	
	<ul style="list-style-type: none"> a) Test on complete flow of scenario based demonstrations b) Continue PCCW HMI testing if needed

Appendix A

January 2024
a) Prepare test scripts and presentations for the Demo day(s) b) Prepare rundown for the Demo day(s)
February 2024
a) Conduct remote dry run(s) for the Demo day(s)
March 2024
a) On-site rehearsal for the Demo day(s)
April 2024
a) Documenting lessons learnt b) Documenting proposed processes c) Prepare working paper(s)
May 2024
a) SWIM TF 9 presentation of paper(s)

28 August 2023

4th Meeting of the SWIM Implementation Pioneer Group (SIPG)

S/No.	Discussion	Action
	Agenda <ol style="list-style-type: none"> 1. Review the notes of previous meeting and action items. 2. Discussion on the need for message headers and meta data for message routing 	
1	<p>Agenda Item 1 Review of revised timelines and NOM of last meeting</p> <p>David presented the notes of meeting of the 3rd SIPG meeting for consideration and adoption. The notes of meeting were adopted without further changes.</p> <p>Open action items were also reviewed, and the following action items are proposed to be deleted or closed.</p> <ol style="list-style-type: none"> 1) "SWIM/TF/SIPG/AI-06: Singapore to send out a questionnaire related to the SIPG to members of the group." :- This action is deleted as the necessity for the questionnaire no longer exists. 2) " SWIM/TF/SIPG/AI-08: Japan and PCCW to determine if the pseudo CRV can support cloud-based EMS and report back to the meeting." :- This action is closed as PCCW has confirmed that the pseudo CRV is able to support cloud-based EMS 3) " SWIM/TG/SIPG/AI-09: David to add in activities for service provision discussion, metadata discussion and scenario planning into the S3TIG timeline." :- This action is closed as the new timeline has the new items inserted. 4) "SWIM/TG/SIPG/AI-10: David to make the changes to the timeline to include "Documenting Lessons Learnt", "Documenting Processes" and "Prepare Working Papers"." :- This action is closed as the new timeline has been adjusted. 	
2	<p>Discussion on the need of Metadata</p> <p>David shared that metadata was used in the header of the messages during the SWIM in ASEAN demonstration. The purpose of the metadata was to aid the routing of messages in the Global EMS (GEMS) layer.</p> <p>The metadata was needed to differentiate between messages to determine the intended destination, source and type of message. This was because all messages from each participating ANSP was published to only one corresponding queue. This may not be the most efficient way of setting up an EMS.</p> <p>For example, if each service in the EMS could have 1 queue, there should be no need for message headers and metadata as the message type, originator and destination of the messages are all determined by the queue and subscribers.</p>	

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	<p>The meeting agreed that a small group with knowledge on these matters should be formed to discuss this issue and report back. The group will comprise of members from Australia, China, Hong Kong, Japan, Malaysia, New Zealand, Singapore and Thailand.</p> <p>Action: David will organize the above meeting.</p>	CAAS
3	<p>Next Meeting Date</p> <p>As agreed previously the next meeting will be on 25th September 2023, the 4th Monday of the month of September 2023.</p>	
	<p>AOB</p> <p>No other business was raised.</p>	

ACTION ITEMS LIST

No.	Action Item	Action Party	Status
SWIM/TF/SIPG/AI-04	HK-CAD to table a working paper at SWIM TF/9 meeting to provide a review of the joint event.	HK-CAD	Open
SWIM/TF/SIPG/AI-05	CAA Malaysia to prepare a paper for SWIM TF/8 meeting proposing the template MOA/MOU for inclusion in the guidance material.	CAAM	Open
SWIM/TG/SIPG/AI-11	David to arrange for a message header / metadata discussion	CAAS	Open

25 September 2023

5th Meeting of the SWIM Implementation Pioneer Group (SIPG)

S/No.	Discussion	Action
	Agenda <ol style="list-style-type: none"> 1. Review the notes of previous meeting and action items. 2. Report on the small group meeting on Message Header and Metadata 3. Review of SIPG progress vs planned timeline. 	
1	Agenda Item 1 Review of revised timelines and NOM of last meeting David presented the notes of meeting of the 4 th SIPG meeting for consideration and adoption. The notes of meeting were adopted without further changes.	
2	Report on the small group meeting on Message Header and Metadata David informed the meeting of the above and the results of the discussions. The small group discussed the different ways of setting up the EMSs in the Global EMS layer. It came down to three proposals: <ol style="list-style-type: none"> 1) EMS to be setup with a single queue; 2) EMS to be setup with multiple queues, one per info service; 3) Two tier EMS setup with the internal facing EMS setup as multi queue and the GEMS facing EMS setup as a single queue. The choice of setup affects whether message headers need to be used and the metadata to be used. The small group tried to list the pros and cons of each of the 3 proposals but ended up with more questions than answers. Henry indicated that the S3TIG is waiting for the outcome of this discussion to have a confirmed way to setup the EMS and message headers together with the necessary metadata for message routing. Already, the S3TIG is making some assumptions about the setup and have started discussing how to standardize the message headers and metadata. The suggestion is for the S3TIG to continue its work but keep the message header fields empty. The S3TIG will wait till November 2023 for the SWIM Task Force to make a decision on the EMS setup and the use of message headers. David asked for time during the SWIM TF/8 meeting to discuss this topic in order to arrive at a conclusion of which proposal to adopt. However, Amo would prefer if the small group could come to the SWIM TF/8 with a paper that details the work as well as have a single proposal for the SWIM TF/8 meeting to debate and adopt. She suggested another meeting of the small group to discuss this and put the paper together.	

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	Action: David will organize the above meeting.	CAAS
3	<p>Review of current progress vs planned timeline. David presented a status update of the current work vs the agreed timeline and only 2 items in the July timeframe can be considered complete. All other planned activities from July to September are either incomplete or not started.</p> <p>The plan moving forward is to quickly try and determine the services to implement out of the list of mandatory services identified in SWIM TF/6 meeting, the proposal would be to choose 2 out of the 4 listed. This is to be done in parallel with the EMS discussion and decision.</p> <p>Action: David to extract the list of services from the original working paper and propose to the SIPG, 2 services for implementation.</p> <p>Amo suggested that we can remove the item on JSON Format discussion in the August 2023 timeframe as most of the services are based on the standard ICAO SWIM formats and S3TIG is already working on a representation for surveillance data. For any other services, the data representation discussion can be taken offline. She also suggested that for flow type data in ATFM such as Ground Delay Program information should use FLXM even though this standard has not been published yet.</p>	CAAS
4	<p>Next Meeting Date As agreed previously the next meeting will be on 25th September 2023, the 4th Monday of the month of September 2023.</p>	
	<p>AOB No other business was raised.</p>	

ACTION ITEMS LIST

No.	Action Item	Action Party	Status
SWIM/TF/SIPG/AI-04	HK-CAD to table a working paper at SWIM TF/9 meeting to provide a review of the joint event.	HK-CAD	Open
SWIM/TF/SIPG/AI-05	CAA Malaysia to prepare a paper for SWIM TF/8 meeting proposing the template MOA/MOU for inclusion in the guidance material.	CAAM	Open
SWIM/TG/SIPG/AI-11	David to arrange for a message header / metadata discussion	CAAS	Completed
SWIM/TG/SIPG/AI-12	David to arrange for 2 nd meeting of the message header metadata small group	CAAS	Open
SWIM/TG/SIPG/AI-13	David to extract the list of mandatory services from the original working paper and propose 2 services for implementation to the SIPG.	CAAS	Open

23 October 2023

6th Meeting of the SWIM Implementation Pioneer Group (SIPG)

S/No.	Discussion	Action
	Agenda <ol style="list-style-type: none"> 1. Review the notes of previous meeting and action items. 2. Report on the 2nd small group meeting on Message Header and Metadata 3. Proposal for adjusting the milestones in the timeline. 4. Papers for SWIM TF 8 	
1	<p>Agenda Item 1 Review of revised timelines and NOM of last meeting</p> <p>David presented the notes of meeting of the 5th SIPG meeting for consideration and adoption. The notes of meeting were adopted without further changes.</p> <p>Malaysia confirmed that action item SWIM/TF/SIPG/AI-05 is being acted upon and Malaysia will submit a paper to complete the action item.</p> <p>David updated that action item SWIM/TF/SIPG/AI-12 has been completed. The meeting was held on the 19th of September 2023</p>	
2	<p>Report on the 2nd small group meeting on Message Header and Metadata</p> <p>David informed the meeting of the above and the results of the discussions. 3 proposals for the setup of the interconnectivity between EMSs were proposed during the meeting. They are, the decentralized approach, the centralized approach, and the hierarchical approach. David explained the pros and cons of each approach and that the choice of approach will affect the configuration of the EMS. It was proposed that the hierarchical approach be adopted and presented to the SWIM TF 8 meeting for discussion and adoption.</p> <p>Xiaodong further elaborated that a technical community should be formed to administer and govern the architecture.</p> <p>Action: A working paper to table the proposal for the interconnectivity of EMS and the configuration of the EMS is to be prepared for submission to the SWIM TF 8 meeting.</p>	CAAS
3	<p>Proposal to update SIPG work programme</p> <p>David recapped the presentation about the progress of SIPG's work from the previous meeting. It is proposed that it would be better if the SIPG's work focuses on setting up the infrastructure necessary to support the S3TIG's SWIM over CRV demonstration and the Surveillance Sharing trial. Therefore the work programme should be modified to postpone those work items that</p>	

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	do not directly contribute to the 2 events to a later date and to extend the SIPG timeline to 2025. Action: David will prepare a working paper to table the proposal to modify the SIPG work programme to better support the S3TIG SWIM over CRV demonstration and Surveillance Sharing trial to the SWIM TF 8 meeting.	CAAS
4	Next Meeting Date As agreed previously the next meeting will be on 27 th November 2023, the 4 th Monday of the month of November 2023.	
	AOB No other business was raised.	

ACTION ITEMS LIST

No.	Action Item	Action Party	Status
SWIM/TF/SIPG/AI-04	HK-CAD to table a working paper at SWIM TF/9 meeting to provide a review of the joint event.	HK-CAD	Open
SWIM/TF/SIPG/AI-05	CAA Malaysia to prepare a paper for SWIM TF/8 meeting proposing the template MOA/MOU for inclusion in the guidance material.	CAAM	In progress
SWIM/TG/SIPG/AI-12	David to arrange for 2nd meeting of the message header metadata small group	CAAS	Completed
SWIM/TG/SIPG/AI-13	David to extract the list of mandatory services from the original working paper and propose 2 services for implementation to the SIPG.	CAAS	Open
SWIM/TG/SIPG/AI-14	A working paper to table the proposal for the interconnectivity of EMS and the configuration of the EMS is to be prepared for submission to the SWIM TF 8 meeting.	CAAS	Open
SWIM/TG/SIPG/AI-15	David will prepare a working paper to table the proposal to modify the SIPG work programme to better support the S3TIG SWIM over CRV demonstration and Surveillance Sharing trial to the SWIM TF 8 meeting.	CAAS	Open
SWIM/TG/SIPG/AI-16			