



ICAO

International Civil Aviation Organization

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

Bangkok, Thailand, 25 – 29 May 2026

- Agenda Item 3: Outcomes of relevant meetings on SWIM-related matters
- ICAO APAC CNS and other relevant Meetings
 - SWIM Implementation Pioneer Ad-hoc Group

SWIM IMPLEMENTATION PIONEER AD-HOC GROUP PROGRESS REPORT

(Presented by Singapore)

SUMMARY

This paper presents the progress of the SWIM Implementation Pioneer ad-hoc Group (SIPG) since SWIM Task Force 10 meeting in May 2025.

It gives an overview of the activities and achievements of the group. The revised timeline and future plan will also be discussed in this paper.

1. INTRODUCTION

1.1 This paper presents the work done by the SIPG since SWIM Task Force 10 (SWIM TF/10) meeting held on 20 – 23 May 2025.

1.2 Following the SWIM TF/10 meeting, the SIPG Terms of Reference (ToR) was revised through flimsy 01. The new deliverables in the revised ToR are as follows.

- 1) A regional SWIM Technical Infrastructure (TI) prototype built on the architecture that utilizes the CRV and the Internet. The architecture has been agreed by the SWIM Task Force;
- 2) Evaluation of the capability of the prototype SWIM TI using a selection of representative SWIM Information Services; and
- 3) Provide recommendations to the SWIM Task Force on the viability and performance of the SWIM TI.

2. DISCUSSION

2.1 Following the SWIM TF/10 meeting, the SIPG conducted its 2nd working session meeting (SIPG WS/2). This meeting was held on 26 – 30 May at the ICAO APAC regional office, Bangkok.

2.2 Resulting from the SIPG WS/2 meeting, the SIPG laid out its work program in the form of 11 Tasks and assigned priorities to them. The tasks are listed in the table below together with the assigned task leads and colour-coded by priority.

Task ID	Task	Task Lead	
Task 1	Define Functionality and requirements for Edge and Gateway	Thailand	Priority 1
Task 2	Refine the revised hierarchical architecture	China	
Task 3	SWIM Architecture – Req/Rep MEP and guidance for Async and Sync	Republic of Korea	
Task 6	SWIM Security Implementation – Self signed certs	Malaysia	
Task 7	SWIM Registry Interconnection	USA	
			Priority 2
Task 5	SWIM Technical Infrastructure Integration	Singapore	
Task 9	APAC SWIM Integration Testing	TBD	Priority 3
Task 10	Measurement of performance metrics	TBD	
Task 11	Conditions for SWIM Operationalization	TBD	

2.3 The initial planned timeline for the above list of tasks is shown in the diagram below in Figure 1.

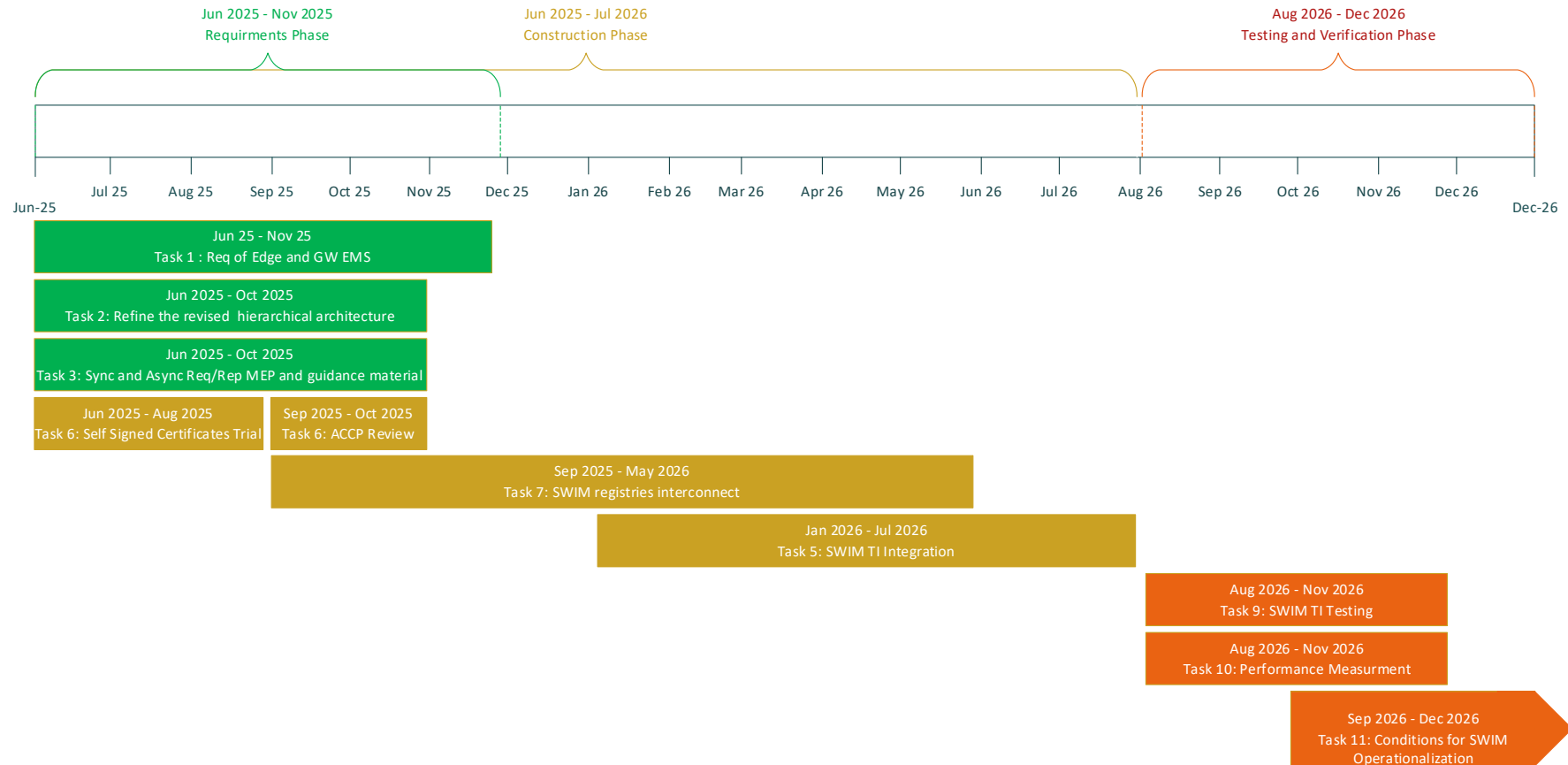


Figure 1: Initial SIPG Work Program Timeline

The plan was to have Task 2 construct the physical SWIM TI based on the hierarchical architecture decided by the SWIM TF and then all the other tasks can use the TI to conduct their trials and tests.

2.4 The SIPG conducted 10 online meetings since SWIM TF/10 to make progress on the work plan as presented above. However, due to administrative hurdles and unexpected technical challenges faced by some of the task members the timeline has slipped.

2.5 The new revised timeline is as shown below in Figure 2.

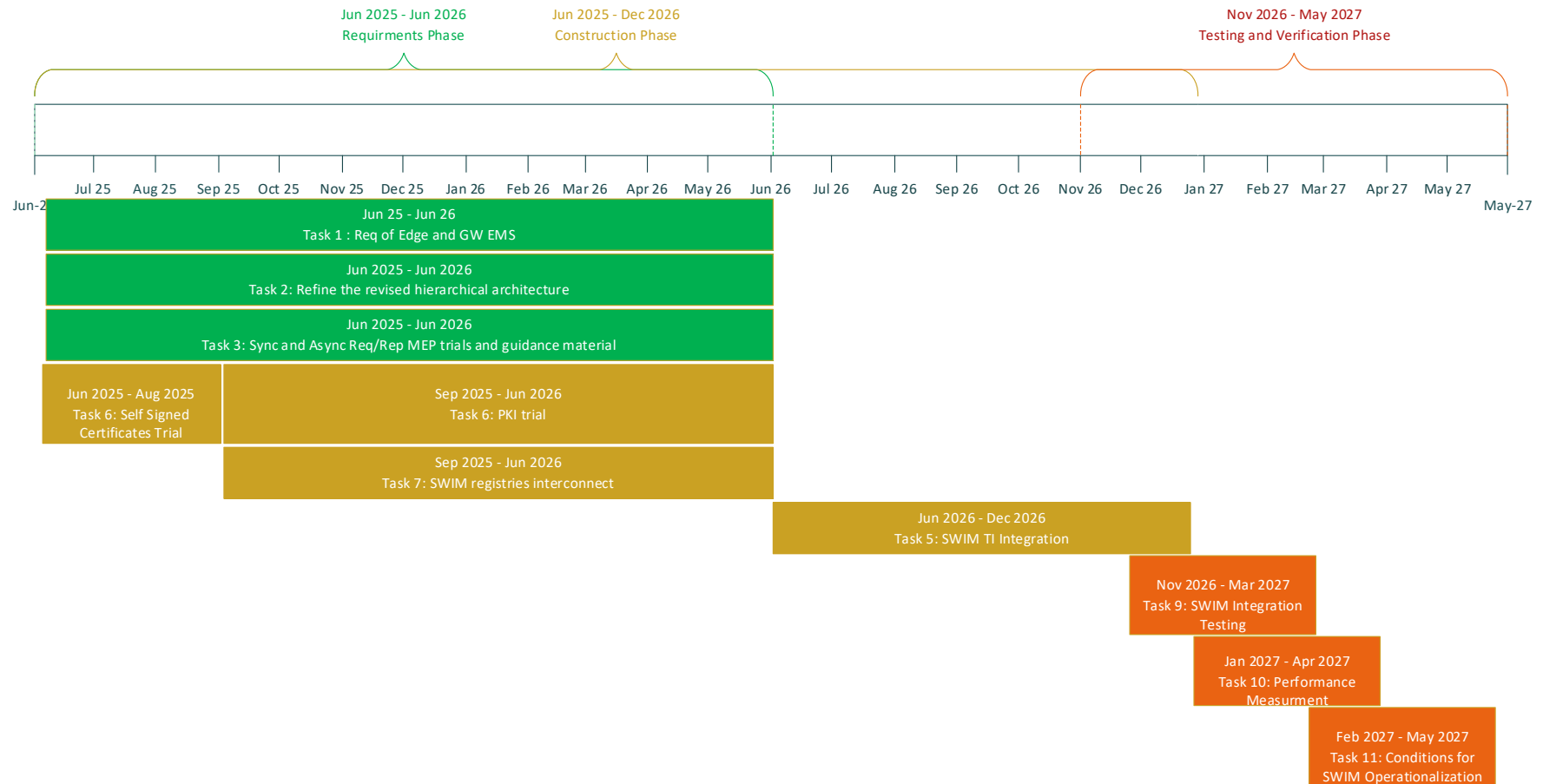


Figure 2: Revised SIPG Work Program Timeline

2.6 SIPG Achievements

2.6.1 **Task 2** divided the APAC SWIM hierarchical architecture test into 7 levels of testing so as to better track the progress of their work, and test levels will be expanded as required by actual operational and testing needs. The first 3 levels of testing are Network Connectivity testing, AMQP connectivity testing, and Single Transport Mode Message Send/Receive testing.

2.6.2 As of 27 April 2026, 5 of the 6 identified Gateway EMS (GEMS) nodes have completed Level 1 and 2 testing. Level 3 testing for the 5 GEMS nodes were in progress. Task 2 will present more details about their progress in a separate working paper.

2.6.3 **Task 3** is responsible for developing the Request/Reply Message Exchange Pattern architecture and guidance material. They have completed a draft of the guidance document for REST API URI Structuring and Naming and is working on guidance material for REST API Gateways. As with Task 2, Task 3 will also present their progress in more detail in a separate working paper.

2.6.4 **Task 6** is responsible for exploring SWIM Security using certificates. Although they were not able to use the CRV-based SWIM infrastructure they have succeeded in setting up a Bridging Certificate Authority (CA) server and 2 separate State CA servers.

2.6.5 They were able to prove the feasibility of using a bridging CA to manage the certificates issued by the State CAs and establish secure communications between the 2 states.

2.6.6 As of 27 April 2026, Task 6 managed to use the certificates to establish mutual Transport Layer Security (mTLS) between EMS servers in Malaysia and Singapore. Their next milestones would be to conduct message exchange testing using signed and encrypted messages.

2.6.7 **Task 7** is responsible for Registry Interconnection in the APAC SWIM prototype. To date the team has developed version 2.0 of the SWIM Discovery Standard (SDS), which is the registry interconnection standard adopted by the SWIM Task Force. This version is fully aligned with the SDCM and with the ICAO SWIM Implementation Manual (Doc 10203) and Procedures for Air Navigation Services – Information Management (Doc 10199).

2.6.8 Task 7 will present a separate working paper to elaborate on their progress.

2.7 Future Plan

2.7.1 The SIPG will continue to advance the work according to the work plan above.

2.7.2 It was highlighted during the SIPG monthly discussions that closer coordination with the ANS Information Security Task Force is needed, especially regarding their deliverables and timelines to ensure that they are properly sequenced with respect to the SWIM Task Force timeline.

2.7.3 The 3rd working session will be conducted immediately after SWIM TF/11 meeting, from 1 to 5 June 2026. The SIPG will be developing a more detailed work program for Tasks 5, 9, 10 and 11.

2.7.4 The target is for the SIPG to complete the work by 1st quarter 2028 so that we can present the findings in the task force meeting that year.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) discuss any relevant matter as appropriate
