



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok

11-12/3/2025

Outcomes of the WS1



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok

11-12/3/2025



CONTENTS



1

Review

2

Ongoing

3

Upcoming

4

NextWave APAC Workshop



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok

11-12/3/2025

1

Review

A brief review of
the main achievements in 2023 and 2024.



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok

11-12/3/2025

Members'
growth

WS1



Objectives: Step up investments in ANS capacity and capabilities and share requirements and best practices in the procurement of ANS systems

Leads : China, Thailand

Members: Hong Kong China, New Zealand, Singapore, CANSO , India, Macau China, Vietnam, Australia, Mongolia, Philippines



Proposed tasks

Focusing on the areas of WS1, **9 tasks** were selected and led by China, Thailand, Hong Kong China and Singapore.



The tasks are being carried out accordingly to the plan, thanks to all members' **active involvements, and contributions**, thanks to the **overwhelming supports** of AAC, RSO Beijing APAC Office, and APAC Regional Office.



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok

11-12/3/2025



Main outcomes

4 out of 9 Tasks have been completed

Task 1: China and Singapore took the lead and worked closely to complete drafting of the collaboration plan. This plan will provide guidance in collaborative activities among ANSPs in APAC region.

Task 5: Singapore took the lead and drafted the survey, which was a combined survey that was undertaken with WS2. A detailed analysis of the survey and the results had been shared at the online meeting on March 14th 2024.

Task 6: CAAC, CADHK, and HKIAA successfully co-organized APICS 2023. The symposium provided an important platform for strengthening exchange and cooperation in civil aviation technology innovation.

Task 8: China and Singapore completed the draft of “The ANS System Procurement Guidance Outline”, which was presented during the WS meeting in Chengdu.



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok

11-12/3/2025



Main outcomes

**Task 2: Successfully kicked –off, and 2 workshops
had been accomplished in 2024.**

- ATMB and Industry of China have successfully co-hosted a CNS/ATM training program in May 2024, in Nanjing, China. 28 participants from 6 States/Administration participated in the program.
- ATMB and CAUC (Civil Aviation University of China) have successfully co-hosted **the Future-oriented Air Traffic Controller Capacity-building workshop** in October 2024, in Tianjin, China. The workshop included a two-day workshop and observation of the 4th National ATCOs Skills Competition of CAAC.



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok

11-12/3/2025



Main outcomes

Task 4: China, Singapore, and Thailand reached an agreement to start the cross-border trials with ATFM on SWIM, and a tentative Timeline of trials had been made in Oct 2024.

Task 9: Hong Kong China had developed a template for “Library of Guidance Material for Planning, Procurement and Implementation of ANS Systems”.



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok

11-12/3/2025

2

Ongoing

Job progress in 2025



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok

11-12/3/2025

Job progress

Task 4: China, Hong Kong China, Singapore and Thailand have completed the CRV connection test, for ATFM cross-border trials through SWIM in Feb 2025.

Besides, China, Hong Kong China, Singapore and Thailand have successfully completed the FIXM 4.1 message exchange on SWIM in March 2025.



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok

11-12/3/2025

Job progress

Task 8: China and Singapore have modified and improved “The ANS System Procurement Guidance Outline”.

Task 9: Hong Kong China have passed the document list together with attachments to ICAO APAC, for posting at its web site.



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok
11-12/3/2025

Job progress

Task 3 & 7: AEROTHAI has successfully held the “Next Wave APAC Aviation Technologies through Synergy” Workshop on 17-21 Feb 2025, which aimed to explore new technology for regional ANS modernization and share experiences and best practices ANS procurement and whole-life management.

Details and outcomes of the Workshop will be included in the Video and IP/ WP paper prepared by AEROTHAI.



3 Upcoming

Task 2: ATMB plans to hold another CNS training and workshop in Sept. or Oct. this year, in Chengdu, China.

Training contents will be adjusted according to the feedbacks of the first training program.

If you are interested to the CNS training and workshop, please send email to hlgao_atmb@foxmail.com before 11 April. Details and invitation letter will be sent to the inclined ANSP in June.

In order to guarantee the quality of the CNS training and workshop, a maximum of 5 attendees per ANSP is appreciated.



3 Upcoming

Task 4: China, Hong Kong China, Singapore and Thailand will work together to continuously facilitate the ATFM cross border trials.

Task 7: Thailand prepared the "Asia Pacific ANS Life-Cycle Management Survey" to gather experiences and best practices, scheduled for distribution after the AAC/4 meeting, with responses expected by the end of May 2025.



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok

11-12/3/2025

4

NextWave APAC Aviation Technologies through Synergy

Task 3 Outcomes & Next Step

Output (Deliverables after workshop):

- Summary table of recommended courses of action for new technologies.

Output

Next Step:

- Regional roadmap and regional architecture.

Next Step

Task 3 Outcomes & Next Step

Category*

- **Category A:** Ready for Implementation (Fully Implemented)
- **Category B:** Required Time to Implement (Building Block and Verification Needed)
- **Category C:** New Emerging Technology (Developing Technology)

Recommended Courses of Action **

- **Conduct Implementation Activities:** The technology is ready to be implemented regionally.
- **Conduct Pilot Testing & Validation Activities:** Conduct testing and validation activities on the technology.
- **Knowledge Sharing:** Conduct Knowledge Sharing activities (test results, simulation results, general knowledge, data analysis results etc.) only.
- **Pending Action:** The technology is not suitable or not appropriate for any actions at this moment.

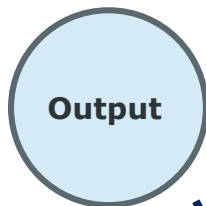
Technologies	Category*			Recommended Courses of Action**	Current Status
	A	B	C		
Information					
SWIM	✓			Conduct Implementation Activities	China, Hong Kong China, Singapore, and Thailand are conducting cross-border trial
Hyperconnected ATM			✓	Knowledge Sharing	
Operation					
Cloud-Based UTM/ATM Service			✓	Knowledge Sharing	
ATFM Service Evolution	✓			Conduct Implementation Activities	China, Hong Kong China, Singapore, and Thailand are conducting cross-border trial
Airborne Surveillance (Interval Management, CAVS, CAS-A)		✓		Conduct Pilot Testing & Validation Activities	
Technology					
Trust Framework			✓	Knowledge Sharing	
Space-Based VHF			✓	Knowledge Sharing	
Space-Based ADS-B	✓			Conduct Implementation Activities	Singapore, India implemented
Next Generation (5G) AEROMACS			✓	Knowledge Sharing	China is conducting POC
DFMC GBAS			✓	Knowledge Sharing	China and Japan are conducting POC
DFMC SBAS			✓	Knowledge Sharing	
ATN/IPS			✓	Knowledge Sharing	
LDACS			✓	Knowledge Sharing	China and Japan are conducting POC
Next-gen A-PNT			✓	Knowledge Sharing	
Mode-N			✓	Knowledge Sharing	
Post Quantum Cryptography (PQC)			✓	Knowledge Sharing	



Task 7 Outcomes & Next Step

Output (Deliverables after workshop):

- Four AAC members: ATMB, AEROTHAI, CAAS, and HKCAD have contributed by sharing their insights and best practices during the NextWave APAC Workshop.



Next Step:

- The "Asia Pacific ANS Life-Cycle Management Survey" to gather experiences and best practices



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok

11-12/3/2025

Task 7 Outcomes & Next Step

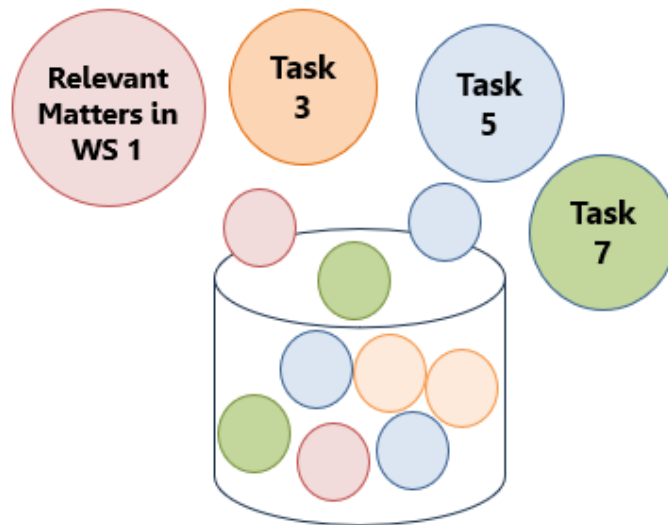
ANS Life-Cycle Management Survey



Distributed by ICAO APAC after AAC/4

Expected responses by May 2025

Next Step



On-demand meetings for sharing experiences and best practices in ANS systems.

THAILAND INNOVATOR AND INNOVATION DEVELOPMENT COLLABORATION INITIATIVE ALIGNING WITH ICAO NGAP



Why we initiate this Program & What we do

Why

Rapid Aviation Evolution leading to two key issues

- Professionals must adapt to new technologies & industry changes.
- Aviation requires continuous innovation to grow and stay competitive.

What we do

Establish NGAP-Digital Transformation (NGAP-DT) Program by

- Expands ICAO's NGAP framework **shifts from traditional training-based models to an innovation-driven approach.**
- Identify innovation needs, develop skills for innovators, and foster innovation.
- Engaging people in innovation and equipping them with essential skills.

Our Partners

AEROTHAI & 5 Thai universities integrating academia, industry & technology.

Purpose of this proposal

- Outlines AEROTHAI and universities' concepts and structured approach to support NGAP-DT.

4 KEY STRATEGIES



INNOVATION ECOSYSTEM DEVELOPMENT



ENABLING PLATFORMS FOR EXPERIMENTATION AND CO-CREATION



SKILLS AND COMPETENCY ALIGNMENT



POLICY SUPPORT FOR DIGITAL TRANSFORMATION IN AVIATION

	University	Specializes
1	Kasetsart University (KU)	Airworthiness
2	King Mongkut's Institute of Technology Ladkrabang (KMUTL)	Satellite Communication
3	Chiang Mai University (CMU)	AI and Machine Learning
4	Suranaree University of Technology (SUT)	Unmanned Aircraft System and Traffic Management (UAS/UTM)
5	Rajamangala University of Technology Krungthep (RMUTK)	Maintenance, Repair, and Overhaul (MRO)

All Specializes link to 12 critical knowledge areas for air traffic management

Area 1: Digital Communication Systems

Area 2: Satellite Navigation Systems

Area 3: Surveillance Systems

Area 4: Performance-Based Navigation (PBN)

Area 5: Trajectory-Based Operations (TBO)

Area 6: Computer Networks and Internet Protocol in Aviation Telecommunication

Area 7: Information Management Systems

Area 8: Cybersecurity for Aviation

Area 9: Automation and Avionics Systems

Area 10: Safety Management Systems (SMS)

Area 11: Human Factors for CNS/ATM

Area 12: Project Management for Continuous Improvement and Performance Outcomes

NEXT STEP

- Integrating NGAP-DT into Asia-Pacific aviation innovation ecosystem
- Identifying test projects and collaboration for NGAP-DT implementation.



ICAO

RECONNECTING THE WORLD

AAC/4 Bangkok
11-12/3/2025





NextWave APAC

Aviation Technologies through Synergy

17 - 21 February 2025

Bangkok Thailand



Thank You

