



ICAO

International Civil Aviation Organization

THE THIRTIETH MEETING OF THE COMMUNICATIONS / NAVIGATION AND SURVEILLANCE SUB-GROUP (CNS SG/30) OF APANPIRG

Bangkok, Thailand, 06 - 10 July 2026

Agenda Item 9: Cybersecurity/Information Security of CNS/ATM systems

9.1 Review outcomes of the first Meeting of the ANS Information Assurance Task Force (ANSIA TF/1)

REVIEW OUTCOMES OF ANSIA TF/1

(Presented by the Secretariat)

SUMMARY

This paper presents the discussions and relevant outcomes of the First Meeting of the ANS Information Assurance (ANSIA) Task Force (ANSIA TF/1) for information and review.

1. INTRODUCTION

1.1 The First Meeting of the ANS Information Assurance (ANSIA) Task Force (ANSIA TF/1) was held from **28 – 30 January 2026** in the ICAO APAC Regional Office, Bangkok, Thailand. The Meeting was attended by **44** participants from **12** Member States/Administrations and **2** International Organizations. The Meeting report, working papers, information papers, and other resources can be accessed by the following link:

<https://www.icao.int/APAC/meetingdocs?fid=27228>

2. DISCUSSION

2.1 The Meeting was informed that after Decision CNS SG/29/14 made by CNS SG/29 in 2025 for the creation of ANS Information Assurance Task Force (ANSIA TF), it was agreed that the ANSIA TF would prepare the draft Terms of Reference (ToR), its key deliverables, and plan in close coordination with CRV OG, ACSICG, SWIM TF, TFP Secretary and Information Management Panel Secretary.

2.2 After CNS SG/29, with the collaboration efforts of ANSIA TF experts from Australia, China, Hong Kong China, Fiji, Japan, Malaysia, New Zealand, Philippines, Singapore, Thailand, Tonga and the United States and TFP Secretary, the first draft of ToR was finalized.

2.3 On a concern of formulating this group as a Task Force (TF) but not a Working Group (WG), as a TF is made for a finite term while a WG is a permanent group, it was clarified that the TF is formed to escalate the task assigned to the ANSIA TF. The TF may be converted to a WG or an Implementation Support Group (ISG) once the TF reaches a point where one or more TFI for different use cases, as applicable for the APAC region, are ready to be shared with relevant contributor bodies under APANPIRG. It may be considered as phase 2 of ANSIA TF.

2.4 On the question of difficulties in defining the way forward for ANSIA TF in one Meeting per year and hence the need for increasing frequency of the Meeting, along with the need for knowledge sharing sessions for this topic, the SWIM TF Co-Chair shared her experiences regarding the working strategies adopted by the SWIM TF to progress its work between annual face-to-face Meetings, as well as regional SWIM knowledge sharing activities, despite limited availability of expertise and reference materials at the outset of the SWIM TF.

2.5 The Meeting agreed that ANSIA TF can leverage the experience gained by SWIM TF in supporting APAC States/Administrations in building their TFI. It was suggested that ANSIA TF hold more online Meetings before the next in-person Meeting in 2027. It was also suggested that ANSIA TF could organize a day of knowledge-sharing sessions alongside the ANSIA TF Meeting in the future.

2.6 In response to a question about the scope of the work of ANSIA TF is to cover the whole set of ANS Information Security or only PKI implementation, it was clarified that currently the ANSIA TF will focus on implementing PKI in the APAC region. It was added that, during the development of the Manual for Trust Framework Implementation, TFP is considering two aspects: identity management, which includes PKI, and information security management, which is part of cybersecurity. Once an interoperable PKI is established, the interoperable Information exchange will be implemented, and, as the next phase of the process, ANSIA TF may consider supporting the implementation of other cybersecurity measures.

2.7 On the request for a workshop or educational sessions for sharing details of various Trust Framework-related documents by TFP, the ICAO Secretary informed that she has already initiated the coordination with the TFP Secretary to organize a workshop for the APAC region. The workshop will be planned once all three documents are published by ICAO HQ. **ACTION ITEM 1-1**

2.8 The Meeting reviewed and modified the draft ToR, and the following draft Decision was endorsed by the ANSIA TF/1 Meeting for CNS SG/30 adoption. The finalised ToR is provided in **Appendix A**.

Draft Decision ANSIA TF/1/1 – Adoption of Terms of Reference (ToR) of the ANS Information Assurance Task Force (ANSIA TF)		
What: The Terms of Reference (ToR) of ANSIA TF provided in Appendix A be adopted.		Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: The ToR for the ANSIA TF outlines its scope, objectives and deliverables.	Follow-up: ☐ Required from States	
When: 30-Jan-26	Status: Draft to be adopted by Subgroup	
Who: ☒ Sub groups ☐ APAC States ☐ ICAO APAC RO ☐ ICAO HQ ☒ Other: ANSIA TF		

Table 1- Draft Decision Text

Pre-Requisites to Trust Framework Instance Participation – Singapore (WP/04)

2.9 Singapore presented an update to the Meeting on the prerequisites to the participation of any TFI and how ANSIA TF members can prepare for the eventuality of a TFI within the APAC region. The Meeting was informed that ICAO TFP is in the midst of drafting a third document, known as the Manual on Trust Framework Manual (MTF), to provide a guide in establishing, implementing and managing a TFI within the global aviation sector. The MTF also aligns with ICAO Doc 10169, ACCP, and ICAO Doc 10204, MAIS, which serve as prerequisites for using the MTF and, therefore, for forming or participating in any TFI.

2.10 It was informed that as part of the requirements of any participation in any TFI, two major pieces of information from every organisation that wants to be part of any TFI are required: an organisation's Certificate Policy (CP) and an organisation's Information Security Management System (ISMS).

2.11 It was added that the organisation's CP will be used to map against the ACCP, and the organisation's ISMS will be used to map against the MAIS. Once an organisation completes the two mappings, they serve as the basis for determining whether an organisation can participate in any TFI.

2.12 The Meeting was informed that the proposed CP and ISMS standards in the draft MTF, and noted that any future technology enhancements to security, due to future technology, such as Quantum Cryptography, will necessarily be included as enhancements to the ACCP, MAIS and the MTF in future editions. It was also highlighted that there is a need for States/Administrations to consider the status of their own organisation's CP and ISMS.

2.13 Some States/Administrations reported that their States have national policies on CP/CPS and ISMS; however, after mapping both to ACCP and MAIS, respectively, there are gaps. Nonetheless, the national policy is a high-level document applicable nationwide across all sectors, and it is not easy to amend it to meet aviation-specific recommendations.

2.14 The Meeting discussed what States should do if, after mapping the national document against the global one, gaps remain. It was shared that, at first, the best approach is to map national and global documents one-to-one with no gaps. However, in the event of a gap, one option may be to develop an additional internal document or modify existing documents, as some gaps may affect security across other sectors as well. The challenges with both options were deliberated. It was concluded that, at present, it is not possible to finalise the way forward about what States should do if they observe a gap between national and global policy. However, ANSIA TF may discuss and provide recommendations progressively once States initiate the mapping process and share outcomes with the Meeting in the future.

2.15 The Meeting discussed how the ICAO Secretariat will ensure the security of the mapping document if it is shared by any States with the Meeting in the future. Also, the question was whether a non-disclosure agreement was needed among States in the future.

2.16 The ICAO Secretariat informed that the discussion on the mechanism of security of documents shared by States containing sensitive information can be addressed in the future. It was added that Aviation Security Meetings have a mechanism to ensure the security of States' sensitive documents. In addition, ICAO also has a secure portal. The ICAO Secretariat will discuss internally possible options for protecting sensitive information shared by the States in future Meetings. **ACTION ITEM 1-3**

2.17 At this stage, it was suggested that States initiate mapping of their national CP and ISMS with ACCP and MAIS, respectively, and share outcomes in the next Meeting. **ACTION ITEM 1-4** There is no need to share the mapping table, but only high-level outcomes and recommendations can be shared.

2.18 In response to the ICAO Secretary's questions about the availability of CP and ISMS at the national level, India, Japan, Singapore, and Thailand shared that both documents are already available. Japan shared that they developed the CP and ISMS for the SWIM test system based on ACCP and MAIS; therefore, both documents can be mapped accordingly. Singapore and Thailand informed that their mapping process is in progress. It was reminded that to participate in regional TFI, it is important that States have no gaps in the mapping process for both documents.

2.19 United States shared that their CP document, which is already mapped to ACCP and identified gaps, can be accessed on the public portal at <https://idms-repository.faa.gov/>

2.20 In response to a question about a template for mapping both documents to the global one, it was noted that none is available. However, the United States can provide a sample mapping document for the States' understanding and reference. **ACTION ITEM 1-5**

Overview of MAIS, ACCP and TFP Implementation Plan- ICAO HQ (SP02)

2.21 TFP Secretary shared an overview of three documents related to the Trust Framework: the MAIS, ACCP, and the MTF. It was noted that ACCP outlines what should be done when setting up a PKI environment, but this must be adapted to individual cases and implementations. It was shared that MAIS provides guidance on information protection and a set of tiered objectives selected based on risk assessment. MTF describes what a TFI is, its fundamental components, and provides information on applying the ACCP and MAIS in specific contexts, as well as example use cases for TFI creation. It was noted that all three documents have been coordinated among multiple stakeholders to ensure consistency.

2.22 The Meeting noted that MAIS was already published by ICAO in 2024, while an advanced version of ACCP is available on [ICAO-NET](#) for States' reference. In addition, MTF is expected to be published in 2026.

2.23 It was clarified that there is no definition of the “Trust framework” specified in ICAO documents, as it is a very generic term; however, TFI is defined in ACCP, which is specific to aviation.

2.24 A question about the difference between the Trust framework defined in MTF and the Information Security Framework defined in PANS-IM was raised. It was clarified that PANS-IM focuses on guidance for individual organizations on information management to ensure they implement a security framework, while the MTF provides guidance to create interoperability across different organizations in an international or national context.

Requirements for Implementing Trust Framework Instances in the APAC Region – Japan (IP/02)

2.25 Japan detailed the required procedures for establishing and maintaining TFI across the APAC in accordance with the draft version of the MTF. The Meeting noted that MTF describes what the TFI is, and how to establish and maintain the TFI. The Meeting provided an overview of the proposed lifecycle model for establishing and maintaining a single TFI among multiple participants. This model consists of four phases: Understand and Commit, Align and Build, Verify and Assess, and Sustain and Evolve. Activities associated with each phase are described below the corresponding phase.

2.26 The Meeting was informed that Japan categorized the 23 steps described in Chapter 2 of the MTF into items requiring attention at the national, regional, and global levels, similar to the European approach. However, a two-level TFI structure (National and International) may be more appropriate in some use cases.

2.27 The Meeting noted that the MTF is still under discussion, and the MTF, including the figure and the table, may be subject to revision. APAC regional considerations for improving the procedure, as well as practical experiences to support implementation, are therefore expected. The Meeting was informed that TFP has conducted a mapping between the safety risk and the information security risk assessment for Digital Pilot Licensing (DPL), which can be referred to as an example for such an assessment.

Discussion of APAC Regional Trust Framework Implementation – Japan (WP/05)

2.28 Japan provided an analysis of a phased approach and technical models for implementing a trust framework using Public Key Infrastructure (PKI) and discussed the challenges of its implementation in the APAC region.

2.29 Based on practical experience, Japan outlined a five-phase plan to enable an interoperable PKI framework across multiple aviation stakeholders, including Phase 1: Planning and Stakeholder Engagement, Phase 2: Architecture and Design, Phase 3: Prototype and Testing, Phase 4: Deployment and Operationalization, and Phase 5: Full Integration and Compliance.

2.30 In the APAC region, to ensure interoperability among TFIs established in different member States, an appropriate technical infrastructure and governance structure are required for implementing a regional trust framework. As each member State has its own Certificate Authority (CA) and Trust Governance Authority (TGA), the following three models are being considered for implementing a regional trust framework by interconnecting national PKIs.

- Centralized Regional Root CA: A single regional root CA (or a small set under a single authority) issues or signs subordinate CAs for each member State.
- Decentralized National CAs: Each member State operates its own root CA, and participants trust national CAs directly. Interoperability is achieved through bilateral or multilateral trust agreements.
- Federated Bridge CA: National CAs remain operational, but a bridge CA acts as a trust broker that cross-certifies with national CAs or provides a metadata/trust registry, enabling relying parties to validate certificates across domains.

2.31 Japan compared the three models across trust model simplicity, political acceptability, single point of failure risk, interoperability effort for endpoints, governance complexity, revocation complexity, suitability for TFIs, and operational burden for operators as follows:

Aspect	Centralized Regional Root CA	Decentralized National CAs	Federated Bridge CA
Trust model simplicity	High	Low	Medium
Political acceptability	Low	High	High
Single point of failure risk	High	Low	Low
Interoperability effort for endpoints	Low	High	Low
Governance complexity	Low	High	Medium
Revocation complexity	Centralized	Many endpoints	Centralized metadata + distributed revocation
Suitability for TFIs	Good - simple & uniform	Challenging - many trust anchors	Best trade-off - scalability & interoperability
Operational burden for operators	High	Distributed	Distributed

Table 2- Comparison of Three Models

2.32 Given the varying levels of implementation among States, the federated bridge CA model was recommended as an appropriate approach to meet diverse requirements and ensure interoperability during the transition period. To minimize endpoint complexity while preserving national control and maintaining efficient interoperability, it was recommended to define clear federation policies and profiles for different TFIs and to require each national CA to comply with minimal assurance and security standards when implementing the federated bridge CA model.

2.33 The Meeting noted that the challenges and requirements outlined in the following Table should be addressed and clarified to achieve effective national, regional, and global integration.

Challenges	Requirements
Harmonization of regional trust framework: Since different regional implementations may have distinct trust frameworks, common procedures for establishing multiple bridge interconnections, and consistent governance for achieving end-to-end certificate validation across regional bridges are required.	• Governance for Bridge CA-based certificate validation • Technical specification for Bridge CA management
Alignment of national security policies: As States maintain varying data protection and information security policies, a unified approach for message signing and validation using digital signature should be clarified.	• Governance for Bridge CA based message exchange • Technical specification for message signing and validation
Interoperability testing: Multi-regional interoperability testing and validation across multiple bridge participants are necessary to ensure coexistence and compatibility among mixed trust models.	• Governance for Bridge CA based regional operation • Technical specification for safety and security assessments

Table 3- Challenges and Requirements

2.34 The paper initiated discussion on three trust models and agreed to further consider them while progressing on the task in the future.

Draft ANSIA TF Work Programme

2.35 The Meeting conducted detailed deliberation on the work program and plan for conducting the Meeting in the future. After extensive discussion, the Meeting agreed to divide the work into three work packages as follows:

1. Scoping the regional trust framework
2. Developing PKI and governance arrangements
3. Selecting use cases of regional interest

2.36 It was agreed that each of these work packages needs a Statement of Work (SOW) to be elaborated with a scope statement, associated tasks, expected deliverables and proposed timelines. The Meeting requested volunteer States to participate in each work package. The following Member States volunteered to contribute to each work package:

SN	Work Package	Volunteer States	Work Package Lead
1.	Scoping the regional trust framework	China, Fiji, India, Japan, Malaysia, Philippines, Singapore, Thailand, Tonga and the UNITED STATES	Singapore (Tentative, To be confirmed)
2.	Developing PKI and governance arrangements	Fiji, India, Japan, Philippines, Singapore, Thailand, Tonga and the UNITED STATES	United States
3.	Selecting use cases of regional interest	Fiji, India, Japan, Philippines, Singapore,	India

		Thailand, Tonga, and the UNITED STATES	
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2.37 It was agreed that ANSIA TF/1, along with nominated experts from all States for ANSIA TF, will continue to meet quarterly, conducting online Meetings to progress on the SOW for all three work packages. **ACTION ITEM 1-6** It was expected that by the next In-person Meeting in 2027, a mature SOW would be drafted and presented to ANSIA TF/2 for adoption. **ACTION ITEM 1-7**

2.38 It was concluded that all three work package participants should meet together in one online Meeting and share progress on the work with each other, as all three packages are interrelated. These arrangements will also be efficient and effective. It was also agreed that the first online Meeting will be conducted in mid-May 2026. **ACTION ITEM 1-8** It was suggested that all three groups initiate drafting the scope statement for their SOW as soon as possible, preferably before the end of February 2026. **ACTION ITEM 1-9** Once the scope statement is finalized, the group can discuss tasks, deliverables, and other required details via email. It was also suggested that each work package lead may hold additional online Meetings with their work package participants as needed to advance the discussion. However, during the quarterly Meeting, all three work package groups should meet together.

Any Other Business

2.39 The Meeting shared the concern regarding the absence of volunteers for the chairperson position of ANSIA TF. It was noted that most TFP participants attending the Meeting also participate in SWIM TF, in addition to TFP activities. In particular, SWIM TF/SIPG is currently heavily engaged with extensive work underway to develop the regional SWIM technical infrastructure prototype. Therefore, other members are encouraged to step forward and take responsibility for leading the Meeting. The ICAO Secretariat expressed concern that, in the event of non-volunteering by any States to chair this Task Force, the work of this Task Force will be severely affected and the main objectives of creating the group will not be achieved.

2.40 The Meeting requested that States/Administrations consider nominating the chairperson for the next In-person Meeting of the ANSIA TF. **ACTION ITEM 1-10** Election of chair/co-chairs will be put as an agenda item in the ANSIA TF/2 Meeting. **ACTION ITEM 1-11** The United States expressed its willingness to nominate a candidate for the chair/co-chair position at the ANSIA TF/2 Meeting.

Date and Venue for the Next Meeting

2.41 The Meeting discussed the next ANSIA TF Meeting date. It was agreed that the ANSIA TF/2 Meeting will be tentatively held from **20-22 January 2027** at the ICAO APAC Office, Bangkok, Thailand. The ICAO Secretariat will explore the possibility of conducting a workshop on **18-19 January 2027**.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) review and adopt the draft Decision mentioned in section 2.8; and
- c) discuss any relevant matter as appropriate

ToR of ANSIA TF

ANS INFORMATION ASSURANCE (ANSIA) TASK FORCE (TF)

Terms of Reference (ToR)

Objectives

The primary objective of the ANSIA TF is to support the Asia Pacific (APAC) Region in achieving secure, interoperable, and consistent implementation of a Trust Framework for ANS information assurance.

To this end, ANSIA TF will:

- 1) Identify and evaluate the challenges in the scoping and implementation of the Trust framework across the APAC Region, encompassing technical, operational dimensions and encourage the adoption of best practices and proven methodologies to address these challenges;
- 2) Develop and establish an appropriate governance structure to ensure that a common set of regulations and standards for digital identity management, agreed information security requirements, and harmonized processes for establishing Trust Framework Instances (TFI) can be consistently applied across the APAC Region;
- 3) Propose a Regional Trust framework and support to build TFI operational prototype for selected use cases, in coordination with relevant APANPIRG contributory bodies, that ensures secure cross-border interoperability amongst aviation stakeholders, such as international organizations, APAC States/Administrations and possibly with other regions, recommending an approach for its phased implementation, leveraging existing national PKI capabilities to the maximum extent possible;
- 4) Formulate and update, as necessary, a regional implementation plan for TFI, based on the work done by the ICAO Trust Framework Panel (TFP) and other Panels, in coordination with relevant stakeholders, ensuring support for current and future demands like SWIM Implementation;
- 5) Identify, communicate, and coordinate with relevant APANPIRG contributory bodies (e.g., ACSICG, CRV OG, SWIM TF) to achieve alignment with broader regional initiatives;
- 6) Monitor and support the development and implementation of TFI in the APAC Region, providing guidance and recommendations where required, including comprehensive training programs for technical personnel to understand and effectively manage evolving cyber threats and the implications of new communication technologies; and
- 7) Keep track of developments by the ICAO TFP and the Cybersecurity Panel (CYSECP) and other relevant expert groups, escalating regional issues as required;

Composition

ToR of ANSIA TF

- 1) Experts nominated by APAC States/Administrations and international organizations; and
- 2) Other relevant stakeholders, including representatives from the aviation systems manufacturing industry and other trusted entities, if agreed by the TF.

Conduct of the Work

- 1) The Task Force will conduct its activities through face-to-face meetings, web conferences, teleconferences, and other electronic means of communication as necessary, with at least one in-person meeting each year.
- 2) The ICAO APAC Regional Office will provide secretariat support to the Task Force.
- 3) The Task Force may establish ad-hoc working groups or sub-teams, as required, to address specific technical or policy matters related to its objectives.

Reporting

The Task Force will report its progress, findings, and recommendations to the CNS SG for consideration and further action under APANPIRG.