



ICAO

International Civil Aviation Organization

The Second Meeting of the Asia/Pacific Air Traffic Management Automation System Task Force (APAC ATMAS TF/2)

Video Tele-Conference, 14 - 16 September 2021

Agenda Item 7: Review of the Terms of Reference (ToR) and Update Subject/Tasks List of ATMAS

REVIEW OF THE TERMS OF REFERENCE (TOR) AND UPDATE SUBJECT/TASKS LIST OF ATMAS/TF WITH INTEGRATION OF APA/TF

(Presented by the Secretariat)

SUMMARY

This paper presents the Terms of Reference (ToR) of ATMAS/TF and Action Items arising from ATMAS TF/1 and in consideration of integrating the ToR and the outstanding Action Items arising from the dissolved APA Task force for discussion and further updating by this meeting.

1. INTRODUCTION

1.1 The Twenty Third Meeting of CNS Sub-Group (CNS SG/23) of APANPIRG in September 2019 made the Decision CNS SG/23/13 for Establishment of ATM Automation System Task Force (ATMAS/TF).

Decision CNS SG/23/13 (SURICG/4/5) - Establishment of ATM Automation System Task Force (ATMAS/TF)

That, the ATM Automation System Task Force (ATMAS/TF) with TOR provided in **Appendix L** to the Report be established.

1.2 This paper presents the Terms of Reference (ToR) and updates Action Items of ATMAS/TF with consideration to integrate ToR of APA TF as per its dissolution.

2. DISCUSSION

2.1 The CNS Subgroup of APANPIRG emphasized the need for proactive efforts for this region in organizing forums on subject of ATM automation system in order to share operational and technical experience, and shaping the future development roadmap and performance-based guidance for the ATM automation system. The ICAO Asia Pacific Regional ATM Automation System Symposium (APAC RATMS) was held in Nanjing, China, from 22 to 23 November 2018.

2.2 The objectives of ATMAS/TF are to take forward all matters arising in the APAC RATMS and to address the regional needs, such as developing regional guidance to facilitate the implementation, enhancements, operation and maintenance of ATM automation systems and services in the Region.

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2.3 The ATMAS/TF Terms of Reference (ToR) adopted by the CNS SG is provided in **Appendix A** to this paper.

2.4 The APA TF/7 meeting agreed that most of the tasks outlined in the ToR have been achieved and the completion of residual part of action items will be performed by ATMAS/TF. Following the **Draft Decision APA TF/7/1 - Dissolution of APA/TF**, the ICAO secretariat proposed to take appropriate action on the ToR and tasks/action items of ATMAS/TF to integrate the APA/TF ToR and tasks/action items.

2.5 The ToR of APA/TF is provided in **Appendix B** to this paper. After dissolution of the APA/TF, the ongoing APAC regional AIDC work will be conducted by ATMAS/TF. In order to integrate APA/TF ToR into ATMAS/TF ToR, a proposed ToR is provided in the **Appendix C** of this paper for discussion by ATMAS TF/2 and consider the following Draft Conclusion:

Draft Conclusion ATMAS TF/2/ XX – Revised ATMAS/TF Terms of Reference	
What: That, the revised ATMAS/TF Terms of Reference (ToR) provided in Appendix C of this paper is adopted.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: After dissolution of the APA/TF, the ongoing APAC regional AIDC work will be conducted by ATMAS/TF.	Follow-up: <input type="checkbox"/> Required from States
When: 22-Oct-21	Status: Draft to be adopted by Sub-Group
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input checked="" type="checkbox"/> APANPIRG <input checked="" type="checkbox"/> Other: ATMAS/TF	

2.6 During the ATMAS TF/1, the meeting discussed various Action Items proposed by brainstorming with alignment to AI 2.2 and AI 2.3, based on a proposed draft by China, Hong Kong China and Singapore, the List of Action Items for ATMAS/TF is provided as **Appendix D** to this working paper for further review and update.

2.7 The meeting is also invited to review the Action Items arising from APA Task Force in **Appendix E** of this paper, and consider including these items into the Action Items list under ATMAS/TF in order to consolidate APA/TF work within ATMAS/TF.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) review the ToR of ATMAS/TF provided in **Appendix A**, the ToR of APA/TF provided in **Appendix B** and proposed revised ATMAS/TF ToR in **Appendix C**, and endorse the **Draft Conclusion** in paragraph 2.5;

- c) review and consider including Action Items from APA/TF in **Appendix E** into the Action Items list under ATMAS/TF; and
- d) discuss any relevant matter as appropriate.

**TERMS OF REFERENCE OF
ASIA AND PACIFIC
ATM AUTOMATION SYSTEM TASK FORCE (ATMAS/TF)**

Consists of objectives and deliverables as follows:

The Objectives of the APAC ATMAS/TF are to:

- 1) Keep abreast of the latest developments in ATM automation systems and associated technologies to cope with forthcoming development and implementation of ICAO SARPs, the Global Air Navigation Plan (GANP), the Global Aviation Safety Plan (GASP) and Asia/Pacific Seamless Air Navigation Service (ANS) Plan (APSAP);*
- 2) Facilitate the implementation, enhancements, operation and maintenance of ATM automation systems and services identified in the Aviation System Block Upgrades (ASBU) elements and APSAP elements using the project management principles where appropriate;*
- 3) Ensure continuous and coherent development of the ATM automation systems that is harmonized with adjacent regions to enhance systems robustness, resilience, interoperability and cybersecurity; and*
- 4) Review, identify and address major issues in technical, operational, safety and regulatory aspects to facilitate the implementation or provision of safe, efficient and orderly ATM services.*
- 5) Encourage collaboration among ANSPs in implementing ATM automation systems so as to reduce operating costs and enable quick implementation of new requirements to cope with new challenges.*

Deliverables to meet the Objectives:

- 1) To submit progress report to the ICAO CNS Sub-group while keeping ATM Sub-group informed of addressing the APAC ATMAS/TF deliverables (listed in 2 to 7 below);*
- 2) To support the ICAO in making specific recommendations and developing guidance materials, such as minimum functional/performance requirements and additional/local requirements, which aim at facilitating the implementation or provision of robust, safe, efficient and orderly ATM services by the use of existing and/or new procedures, facilities and technologies in relation to ATM automation systems;*
- 3) To review outcome of the AN-Conf., DGCA Conference, APANPIRG, CNS Sub-group, ATM Sub-group, RASMAG, and SURICG related to ATM automation systems, revise and update a tasks list and action items for the ATMAS/WG;*
- 4) To study and identify applicable applications, share experience, and recommend the best industry practice in the Asia and Pacific Regions considering:*
 - Systems planning and design*
 - Open / Service Oriented Architecture*
 - HMI adaptation, data synchronization and operational enhancements*
 - Safety nets*
 - ICAO roadmap in the GANP / ASBU*
 - Systems interoperability*
 - Standardization of information exchange*

- *Operation and maintenance practice*
- *Acceptance and certification*
- *Flight inspection*
- *Cybersecurity*
- *Safety assessment*
- *Training*
- *Transition*

5) *To encourage research and development, trials and demonstrations of applications and technologies, and, as necessary, steer for the sharing of this information and expertise between States/Administrations through organizing educational seminars and symposia to educate States/Administrations and airspace users;*

6) *To formulate draft Conclusions and Decisions relating to matters in the field of ATM automation systems that come within the scope of the APANPIRG, CNS Sub-group, ATM Sub-group, and RASMAG work plan; and*

7) *To collaborate with relevant international organization (such as EuroControl) for harmonisation of ATM system requirements.*

Timeframe for Deliverables:

For deliverable item 2 on guidance materials, it is anticipated that a first draft could be made available in 3 years after establishment of the Task Force for seeking endorsement by CNS Sub-group, after which the guidance materials would be updated/enhanced on an on-going basis. For other deliverable items 3-7, they will be made available as appropriate subject to review by the Task Force. The life time of the Task Force would be subject to review after endorsement of the first edition of the guidance materials.

Meeting:

The APAC ATMAS/TF shall convene annually with at least one face-to-face meeting per year, which is supplemented by teleconference meetings (e.g. WebEx) as appropriate.

Membership:

All APAC member States/Administrations providing air navigation services in the Asia and Pacific Regions. APAC members should nominate Subject Matter Experts from Civil Aviation Authorities, ANSPs, and other organizations with strong background in engineering and operation in relation to ATM automation systems to participate into the Task Force. The Task Force would also invite representatives of International Organizations recognized by the ICAO Council as representing important civil aviation interests to participate in its work in a consultative capacity.

ASIA/PACIFIC
ATS INTER-FACILITY DATA-LINK COORDINATION (AIDC)
TASK FORCE (APA/TF)
TERMS OF REFERENCE

APA/TF Objective and Scope

The Asia/Pacific ATS Inter-Facility Data-Link Coordination Task Force (APA/TF) shall be responsible for overseeing the expedition of AIDC implementation in accordance with the Asia/Pacific Seamless ATM Plan within the Asian Region, with a particular focus on the Bay of Bengal (BOB) and South China Sea (SCS) areas.

Tasks

The APA/TF shall support the implementation of AIDC within the Asia/Pacific Region by:

- a) identifying problems and barriers for implementation of AIDC, with a particular focus on the BOB and SCS areas and establish an **action plan** committing the stakeholders to agreed and realistic* milestones. The action plan should prioritize the actions according to the potential safety impacts of the considered issues and **use the most efficient mechanisms** including Small Working Groups (SWGs), aviation industry teams and/or Go-teams (subject to funding) where required, to directly assist Asia/Pacific administrations within the BOB and SCS areas;
- b) **solving the problems** according to the action plan; and
- c) taking any appropriate action **to meet the AIDC regional targets (phase 1 for 2015 and prepare phase 2018)** as far as practicable, including the development of Asia/Pacific AIDC implementation guidance material** to complement ICAO Standards and Recommended Practices and the deliverables of the ICAO Inter-Regional AIDC Task Force (IRAIDC TF).

* This means that the milestones will take into account the delays induced by funding and implementation of ATM systems upgrades and associated procedures if needed.

** Such guidance material should take into account the density and complexity of air traffic (including the prevalence of ATC coordination errors), the requirements for User Preferred Routing (UPR) and Dynamic Airborne Re-route Planning (DARP), the Flight Information Region Boundary (FIRB) proximity to departure and arrival aerodromes or other FIRBs and ancillary AIDC functions (including automated transfer of Controller-Pilot Data-link Communications (CPDLC) data authority).

Frequency

The APA/TF shall meet approximately twice a year and will use webconferences.

Schedule

The TF should complete its work in accordance with the planning. An indication could be 1 to 2 years for tasks a) and b) and 2 to 3 years for task c).

Reporting

The TF should report to APANPIRG through CNS SG.

Composition of APA/TF

The APA/TF will consist of ATM and CNS representatives from Asia/Pacific States (ANS Providers), IATA, CANSO, IFALPA and IFATCA. Experts on AIDC from outside the Asia/Pacific may attend if their technical input would be beneficial to the APA/TF.

Trans-regional States to the Asia/Pacific concerned by the action plan or having an interest in AIDC may also be invited.

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 |

**Proposed Revision on TERMS OF REFERENCE OF
ASIA AND PACIFIC
ATM AUTOMATION SYSTEM TASK FORCE (ATMAS/TF)**

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- 4) *Review, identify and address major issues in technical, operational, safety and regulatory aspects to facilitate the implementation or provision of safe, efficient and orderly ATM services.*
- 5) *Encourage collaboration among ANSPs in implementing ATM automation systems so as to reduce operating costs and enable quick implementation of new requirements to cope with new challenges.*
- 6) *Follow up, oversee and share experiences of the AIDC implementation and provide a coordination framework among States for wider and effective implementation of AIDC across the APAC region.*

Deliverables to meet the Objectives:

- 1) *To submit progress report to the ICAO CNS Sub-group while keeping ATM Sub-group informed of addressing the APAC ATMAS/TF deliverables (listed in 2 to 7 below);*

2) To support the ICAO in making specific recommendations and developing guidance materials, such as minimum functional/performance requirements and additional/local requirements, which aim at facilitating the implementation or provision of robust, safe, efficient and orderly ATM services by the use of existing and/or new procedures, facilities and technologies in relation to ATM automation systems;

3) To review outcome of the AN-Conf., DGCA Conference, APANPIRG, CNS Sub-group, ATM Sub-group, RASMAG, and SURICG related to ATM automation systems, revise and update a tasks list and action items for the ATMAS/WG;

4) To study and identify applicable applications, share experience, and recommend the best industry practice in the Asia and Pacific Regions considering:

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- Systems interoperability
- Standardization of information exchange
- AIDC Implementation
- Operation and maintenance practice
- Acceptance and certification
- Flight inspection
- Cybersecurity
- Safety assessment
- Training
- Transition

5) To encourage research and development, trials and demonstrations of applications and technologies, and, as necessary, steer for the sharing of this information and expertise between States/Administrations through organizing educational seminars and symposia to educate States/Administrations and airspace users;

6) To formulate draft Conclusions and Decisions relating to matters in the field of ATM automation systems that come within the scope of the APANPIRG, CNS Sub-group, ATM Sub-group, and RASMAG work plan; and

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Timeframe for Deliverables:

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LIST OF ACTION ITEMS FOR ATMAS TF

No.	Subject	Forum Raised	Status / Target Date	Remarks / follow-up	Action Party	Status
1	Develop APAC Office ATMAS IGD	ATMAS TF/1	edition 0.0/edition 0.1 TF/2	collaborative work through focal point: task sharing, online discussion and progress tracking	Ad hoc group led by China. Members: Hong Kong China, India, Indonesia, Japan, Malaysia, Myanmar, Nepal, Singapore, Thailand and Vietnam	kick off on TF/1
2	Develop check list for ATMAS project management from the scratch of planning, requirement definition, bidding, implementation to operational transition.	ATMAS TF/1	ATMAS TF/2	This check list will be one of the appendix to APAC ATMAS IGD	States, APAC Office	
3	Develop a table to list the current ATMAS status of all states	ATMAS TF/1	ATMAS TF/2	table design by Indonesia / SL by ICAO RO	States, APAC Office	indicate the backup capacity same to main?
4	Propose states to share the current interoperation technology or protocol applied between ATMAS of all states. (e.g. AIDC, OLDI, other protocol, etc.)	ATMAS TF/1	ATMAS TF/2		States, APAC Office	
5	Propose states to share the current redundancy mechanism at ATMAS level in the same location, such as main, backup, and emergency system.	ATMAS TF/1	ATMAS TF/2		States, APAC Office	
6	Propose states to elaborate the backup or contingency strategy of ATMAS in different location.	ATMAS TF/1	ATMAS TF/2		States, APAC Office	
7	Study the feasibility to expand APRD function to cover ATM AS issues	ATMAS TF/1	ATMAS TF/2		Hong kong China	