



ICAO

**The First Meeting of Air Traffic Management
Automation System Task Force of APANPIRG
(ATMASTF/1)**

Web-conference, 28 – 30 October 2020

Agenda Item 3: Global and regional ATM Automation System updates

3.1 Outcomes of relevant meetings

OUTCOME OF RELEVANT MEETINGS

(Presented by the Secretariat)

SUMMARY

This Working Paper presents the related outcome of global and regional meetings, and a highlight on ICAO technical provisions as reference for review and action by the ATMASTF.

1. INTRODUCTION

1.1 It was widely discussed and recognized that the need to continuously enhance the robustness of ATM systems infrastructure and services to meet operational requirements in air traffic in APAC region, as well as to adopt a harmonized and coordinated approach to tackle the interoperability issues.

1.2 A number of global and regional meetings identified the use of automation systems as high priority to improve the air navigation service in terms of flight safety, efficiency and capacity.

1.3 This paper summarized related outcome of various meetings, and indicated ICAO technical provisions and regional requirements for reference in the implementation of ATM automation systems.

2. DISCUSSION

Outcome of AN Conf./12

2.1 The Twelfth Air Navigation Conference was held in Montréal, from 19 to 30 November 2012, attended by 1 032 participants from 120 Contracting States and 30 Observer Delegations. The conference documentation is available at: <https://www.icao.int/Meetings/anconf12/Pages/default.aspx>

2.2 Under its *Agenda Item 1*: Strategic issues that address the challenge of integration, interoperability and harmonization of systems in support of the concept of “One Sky” for international civil aviation and *Agenda Item 6*: Future direction, automation and automation systems were discussed through various papers by States and International Organizations.

2.3 The conference was organized as one Committee and the Committee agreed that there was a need to ensure that the minimum set of global CNS systems required to meet aviation’s safety and capacity requirements was clearly identified; that where necessary duplication exists, reasoned

Agenda Item 3

28 – 30/10/20

justification is provided; and that, when new systems and technologies are introduced, implementation strategies clearly define sunset clauses to phase out older systems where this is feasible. On this basis, the Committee accepted the following recommendations:

Recommendation 1/8 – 1/10 *refer the report of AN Conf./12.*

Recommendation 1/11 – Automation roadmap

That ICAO:

- a) develop a global roadmap for the evolution of ground air traffic management automation systems in line with aviation system block upgrade implementation; and
- b) develop performance-based system requirements for air traffic management automation systems so that:
 - 1) where necessary these systems are interoperable across States and regions; and
 - 2) the function and operation of these systems will result in consistent and predictable air traffic management system performance across States and regions.

Outcome of APACMC

2.4 The Asia/Pacific Ministerial Conference on Civil Aviation (APACMC) was held in Beijing, China from 31 January to 1 February 2018 in Beijing, China. More than 250 participants from 32 Members States of Asia/Pacific Region, 4 Member States (France, Russia, United Kingdom and USA) of other Regions and representatives of 6 International Organizations participated in the Conference.

2.5 The Declaration on Asia/Pacific Ministerial Conference on Civil Aviation was unanimously agreed by all Delegations and endorsed by the Conference. The Declaration was named as Beijing Declaration.

2.6 With respect to Air Navigation Services, the Conference, considering the need to support the timely implementation of the Asia/Pacific Seamless Air Traffic Management (ATM) Plan and its elements to enhance safety and efficiency of air navigation services to cater for the projected air traffic growth in the Region and the ministers commit to implementation by 2022 of the Asia/Pacific Seamless Air Traffic Management (ATM) Plan to enhance ATM capacity and harmonization in the Region.

Outcome of APAC RATMS

2.7 The ICAO Asia Pacific Regional ATM Automation System Symposium (APAC RATMS) was held in Nanjing, China, from 22 to 23 November 2018. The Symposium was hosted by the Air Traffic Management Bureau (ATMB) of Civil Aviation Administration of China (CAAC), with 96 participants from 13 States/Administrations and 2 International Organizations. A number of technology/solution providers also attended the Symposium. The report on the outcome of the symposium with a summary of presentations, programme, and the presentations in PDF are given on the following ICAO webpage: <https://www.icao.int/APAC/Meetings/Pages/2018-ATM-ASS.aspx>

2.8 The symposium successfully addressed the Action Item 54/13 of 54th DGCA Conference on ATM system:

Noting the need for a risk-based approach throughout system development, testing/acceptance, system and operations transition, handling of teething issues of its safety-critical ATM SYSTEM with good lessons learned, the Conference supported the initiative of States towards formation of an international Users' Group for ATM SYSTEM to share operational and technical experience, and map out the future system development roadmap, which could be beneficial for the APAC Region in respect of development of the global roadmap and performance-based requirements of the ATM SYSTEM.

2.9 The symposium also addressed the action items arising from 21st meeting of the CNS Sub-group of APANPIRG, which called on organising workshops/symposia with experts from ANSPs, airports and regulators, etc., with the objectives to discuss and address issues on ATM automation system on the following aspects:

- systems planning and design;
- HMI adaptation, data synchronization and operational enhancements;
- ICAO roadmap in GANP / ASBU;
- systems interoperability;
- acceptance and certification;
- cybersecurity

2.10 Given the fruitful outcomes from the symposium, it is recommended that further workshops/symposia would be organized in regular or irregular basis to benefit the ATM automation system development and implementation. The symposium also suggested States/Administrations to consider establishment of a regional working group/task force under the ICAO CNS Sub-group of APANPIRG to deal with matters covered in paragraph 2.9 above and arisen from this symposium in regard to ATM automation systems. The symposium agreed to formulate an action item for the 23rd meeting of CNS Sub-group in 2019 to review and consider whether such regional working group/task force is needed. A draft Terms of Reference is proposed to support establishment of an ATM Automation System Working Group (ATMAS/WG) reporting to the CNS Subgroup, in light of the required impetus on ATM automation systems in the region and in supporting the implementation ASBU in the ICAO GANP (version 2019) and APAC regional priorities.

Outcome of SURICG/4

2.11 The SURICG/4 was held in Nanjing, China from 9 to 12 April 2019. The meeting documents are available at: <https://www.icao.int/APAC/Meetings/Pages/2019-SURICG4.aspx>

2.12 The meeting reviewed and further discussed the outcome of the ICAO APAC Regional ATM Automation System Symposium (APAC RATMS) and other SURICG/4 papers relevant to ATM automation systems, then endorsed the following draft Decision for consideration by CNS SG.

Draft Decision SURICG/4/5 - Establishment of ATM Automation System Working Group (ATMAS/WG)
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Agenda Item 3

28 – 30/10/20

What: That, the ATM Automation System Working Group (ATMAS/WG) with ToR provided in Appendix H to the Report be established.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To take forward all matters arising the ATM Automaton System Symposium 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	Follow-up: <input type="checkbox"/> Required from States
When: 6-Sep-19	Status: to be adopted by CNS-Subgroup
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:	

Outcome of CNS SG/23

2.13 The Twenty Third Meeting of the Communications, Navigation and Surveillance Subgroup (CNS SG/23) of Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG), was held at the ICAO Regional Office, Bangkok, Thailand, from 2 to 6 September 2019. The meeting documentation is available at: <https://www.icao.int/APAC/Meetings/Pages/2019-CNS-SG23.aspx>

2.14 The meeting considered the report of SURICG/4 with some other CNS SG/23 working papers, and noted that a briefing on the proposal on establishing a working group to deal with ATM automation system issue was also provided to ATM SG/7 meeting. A number of States/Administration expressed their willingness to support the work of the Task Force including: China, Hong Kong-China, India, Indonesia, Nepal, Singapore, Thailand and USA. Hence, the meeting adopted the following Decision.

Decision CNS SG/23/13 (SURICG/4/5) - Establishment of ATM Automation System Task Force (ATMAS/TF)	
What: That, the ATM Automation System Task Force (ATMAS/TF) with TOR provided in Appendix L to the Report be established.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: To take forward all matters arising the ATM Automaton System Symposium 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	Follow-up: <input checked="" type="checkbox"/> Required from States
When: 6-Sep-19	Status: adopted by SG
Who: <input checked="" type="checkbox"/> Sub groups <input type="checkbox"/> APAC States <input type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other:	

Outcome of APANPIRG/30

2.15 APANPIRG/30 meeting was held from 4-6 November 2019 at ICAO APAC Office, Bangkok, Thailand. the Report of APANPIRG/30 Meeting which is posted at: <https://www.icao.int/APAC/Meetings/Pages/2019-APANPIRG30.aspx>

2.16 The APANPIRG/30 meeting noted with appreciation the work done and achievements by the CNS SG and the contributory bodies reporting to APANPIRG through the SG. The meeting discussed CNS related matters and took following actions on the report of CNS SG/23 meeting and other papers presented under Agenda Item 3.4.

2.17 The meeting noted that CNS SG/23 meeting had adopted 9 Conclusions and 4 Decisions on technical and operational matters, including **Decision CNS SG/23/13 (SURICG/4/5)** Establishment of the Asia/Pacific ATM Automation System Task Force (ATMAS/TF).

Outcome of ICAO 40th Assembly

2.18 The 40th Assembly was held at ICAO Headquarters in Montréal, Canada, from September 24 to October 4, 2019, to establish the worldwide policy of the Organization for the upcoming triennium. During Assembly sessions, ICAO's complete work programme in the technical, economic, and legal cooperation fields was reviewed in detail. Assembly outcomes provided to the other bodies of ICAO and its Members to guide their continuing and future work. Documentation about this Assembly is available at: <https://www.icao.int/Meetings/A40/Pages/documentation.aspx>

2.19 There was no outstanding issue on ATM automation systems in Assembly 40, however, some of the Assembly Resolutions were relevant to CNS area with reference to *Resolutions adopted by the Assembly* (Provisional Edition October 2019), including:

A40-4: Consolidated statement of continuing ICAO policies and associated practices related specifically to air navigation;

A40-7: New entrants

A40-27: Innovation in aviation;

A40-28: Consolidated statement of continuing ICAO policies in the legal field (Appendix F).

2.20 Under Agenda Item 30: *Other issues to be considered by the Technical Commission*, various topics were discussed, and the Technical Commission Report of 40th Assembly (Doc10137) incorporated some paragraphs relevant to CNS, including 30.14, 30.15, 30.16, 30.62, 30.68, and the Resolve 3 of Appendix G.

DOC 9750 - Global Air Navigation Plan

2.21 In the ICAO DOC 9750 edition 5, published in 2016, there was an Appendix 5. Technology Roadmaps to cover Communications, Navigation, Surveillance, Information Management, Avionics and Automation.

2.22 Under the Automation section of Appendix 5, there was a paragraph:

The Twelfth Air Navigation Conference requested ICAO to develop a roadmap for ground air traffic automation systems. This work could not be achieved during the past triennium but will be included in the 2019 edition. The purpose of this roadmap will be to:

1.Ensure interoperability between States;

Agenda Item 3

28 – 30/10/20

2. Function and operate these systems resulting in consistent and predictable air traffic management across States and regions.

2.23 The Global Air Navigation Plan edition 6 was published in 2019 as a web based portal, which is at: <https://www4.icao.int/ganpportal/>

2.24 Technology Roadmaps in this edition covered only four CNS technology and services elements, i.e. ASUR (Surveillance systems), COMI (Communication infrastructure), COMS (ATS Communication service), and NAVS (Navigation systems).

ICAO Technical Provisions

2.25 During the APAC RATMS held in 2019, the secretariat outlined the ICAO provisions in one page through SPI01, it provided a basic reference for future work, which covered Annex 2, 4, 10, 11, 15, 19, PANS ATM/OPS (Doc 4444, Doc 8168), GANP Suite (Doc 9750, Doc 9854, Doc 9882, Doc 9883), Doc 7030, Doc 9985, etc., as well as APAC regional requirements mainly resided in APAC Air Navigation Plan and APAC Seamless ANS Plan.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper;
- b) consider ICAO provisions and regional requirements highlighted in this paper during the implementation of ATM automation systems, as well as in the development of regional implementation guidance document; and
- c) discuss any relevant matter as appropriate.
