International Civil Aviation Organization

The Twenty-Ninth Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/29)

Bangkok, Thailand, 03 – 05 September 2018

Agenda Item 3: Performance Framework for Regional Air Navigation Planning and Implementation

3.2 ATM

ATM/SG/6 OUTCOMES

(Presented by the Secretariat)

SUMMARY

This paper presents outcomes relevant to the APANPIRG from the Twenty-Third Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/23).

1. INTRODUCTION

1.1 The Sixth Meeting of the Air Traffic Management Sub-Group (ATM/SG/6) of the Asia Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) was held at the Hong Kong Civil Aviation Department (CAD) Headquarters, Hong Kong, China from 30 July to 03 August 2018.

1.2 The meeting was attended by 107 participants from 27 States, two Special Administrative Regions of China and six International Organizations, including Afghanistan, Australia, Bangladesh, Cambodia, China, Hong Kong China, Macao China, Fiji, India, Indonesia, Japan, Kiribati, Lao People's Democratic Republic (PDR), Malaysia, Maldives, Mongolia, Myanmar, Nepal, New Zealand, Pakistan, Philippines, Republic of Korea (ROK), Singapore, Sri Lanka, Thailand, Tonga, United Arab Emirates (UAE), United States of America (USA), Viet Nam, IATA, ICCAIA, IFALPA, IFATCA, SITA, and ICAO.

2. DISCUSSION

RASG and APRAST Meeting Outcomes (WP03)

2.1 The meeting was briefed on relevant outcomes from the Seventh Meeting of the Regional Aviation Safety Group – Asia and Pacific Regions (RASG-APAC/7, Bangkok, Thailand, 03 – 05 July 2017), the Eleventh Meeting of the Eleventh and Twelfth Meetings of the Asia Pacific Regional Aviation Safety Team (APRAST/11 and APRAST/12, Bangkok, Thailand, 20 – 24 November 2017 and 28 May – 01 June 2018 respectively).

2.2 A total of 21 States and Administrations had responded to the airspace safety reporting survey. **Table 1** provided a summary of the airspace safety reporting survey results.

Safety Reporting Issue	**Result**
1. Protection for Personnel Reporting Safety Incidents or Concerns	79.4%
2. Punitive Action for Personnel Not Reporting Safety Incidents or Concerns	76.2%
3. Written policies and rules to ensure managers are not rewarded specifically for the level of reported incidents	9.5%

Table 1: Airspace Safety Reporting Survey Summary

2.3 APRAST/11 had suggested the need for development of a performance-based manual for safety oversight of ANSPs. The meeting noted that the intention was to consult APANPIRG, as APRAST may not have the necessary expertise to develop such a manual.

FIT-Asia and RASMAG Outcomes (WP05)

2.4 The ATM/SG/5 meeting reviewed relevant major outcomes from the Seventh and Eighth Meetings of the Future Air Navigation Services (FANS) Interoperability Team – Asia (FIT-Asia/7 and FIT-Asia/8, Bangkok, 11 – 13 December 2017 and 26 to 29 June 2018 respectively) and the Twenty-Third Meeting of the Regional Airspace Safety Monitoring Advisory Group (RASMAG/23, Bangkok, 02 – 06 July 2018).

2.5 In response to a query relating to a Performance-Based Communications and Surveillance (PBCS) mandate, ICAO reiterated the Regionally agreed policy that no Asia/Pacific State would implement PBCS-exclusionary airspace. ANSPs would manage the mixed mode environment (PBCS-authorized versus non-authorized aircraft) to ensure, as far as possible, there were no restrictions on flight operations applied to those aircraft that were awaiting State authorization or Statements of Compliance for PBCS. The ATM/SG/6 noted:

- the need for performance-based separations to be enabled by a Doc. 7030 (*Regional Supplementary Procedures*) authorisation within high seas airspace; and
- that while the reporting of datalink performance data had improved, the actions taken by States to determine causes of performance not meeting the criteria, or of actions taken to rectify performance deficiencies were not clear.

2.6 IFATCA stated that the South China Sea (SCS) Modified Single Alternate Flight Level Orientation Scheme (FLOS) mentioned in WP05 must be normalised to a standard FLOS, as the current airspace arrangement had significant safety risks with controllers having to transition aircraft, and the added workload. IFATCA noted that the SCS Traffic Flow Review Group (SCSTFRG) needed to work on this aspect as a matter of safety priority.

Seamless ATM Reporting and Monitoring Update (WP06)

2.7 WP06 presented the status of the Seamless ATM reporting, reflecting the implementation progress of air navigation improvements in the Asia/Pacific (APAC) Region against the objectives set out in the *Asia/Pacific Seamless ATM Plan V2.0*.

2.8 The 16 administrations that had failed to submit any reports (*or Points of Contact) were:

Afghanistan*, Brunei Darussalam, Cook Islands*, Kiribati, Marshall Islands*, Micronesia* (Federated State of), Myanmar, Nauru*, Palau*, Papua New Guinea, Samoa*, Solomon Islands, Timor-Leste, Tonga, Tuvalu* and Vanuatu*.

2.9 WP06 noted that States had been urged by APANPIRG/27 to give higher priority at Civil Aviation Authority (CAA) and ANSP levels, and to mobilize human and financial resources to complete implementation of Phase I objectives. Notwithstanding this, Phase I was far from being implemented, even three years after the initial target. Hong Kong, China commented that the low implementation rate of some items such as Optimised Wake Turbulence Separations could be due to lack of guidance.

2.10 Moreover, the meeting noted that in 2019, States were expected to start implementing Phase II elements, which were aligned with the Global Air Navigation Plan (GANP) Aviation System Block Upgrade (ASBU) Block 1.

2.11 **Figure 1** indicates Seamless ATM implementation (July 2018).

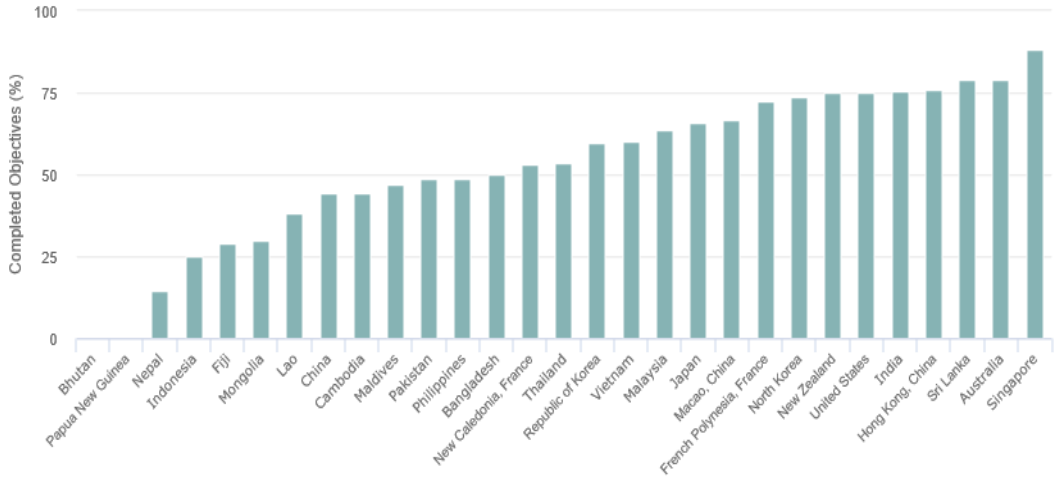

Figure 1: Percentage of Completed Applicable Phase I Seamless ATM Elements

Performance Measurement (WP07 and WP08)

2.12 EUROCONTROL, Japan, Singapore and the USA briefed the Subgroup on progress by the Performance Benchmarking Work Group (PBWG), which described the benefits of performance measurement and benchmarking. Noting the Regional ATM Performance Measurement Framework Small Working Group (RAPMF/SWG) led by China had been created to develop a common regional framework, the ATM/SG/6 suggested the RAPMF/SWG collaborate with the PBWG to develop the final draft of the *Asia/Pacific Air Traffic Management Performance Indicator Framework and Implementation Plan* to improve the ATM performance in the region by 2019.

ASEAN ATM Master Plan (IP03)

2.13 An overview of the Association of Southeast Asian Nations (ASEAN) *ATM Master Plan* was provided by Singapore, on behalf of the ASEAN Secretariat. The Plan was a collaborative effort by ASEAN in support of the *Asia/Pacific Seamless ATM Plan*, providing the technical roadmap to support ASEAN Member States' efforts to achieve a Seamless ASEAN Sky.

Pearl River Delta Region ATM and Airspace Reform (IP04)

2.14 IP04 provided an overview of developments in the Pearl River Delta (PRD) region. With five large airports (Guangzhou, Shenzhen, Zhuhai, Hong Kong, and Macau) and military aerodromes within 100 kilometres, China detailed airspace reform, integration of ATM system data (including civil and military flight plans, flight information, surveillance data, etc.), and civil/military cooperation as strategies to improve capacity. Hong Kong, China commented that they welcomed the initiative and looked forward seeing to the benefits to all airports in the PRD Region.

2.15 The meeting congratulated China in this effort, noting that the *Asia/Pacific Seamless ATM Plan* had urged China to implement 'metroplex' planning of this nature. In particular, ICAO expressed appreciation to China for its emphasis on plans to enhance civil/military cooperation. IATA also congratulated China for this initiative, but stressed that more engagement with the international airline community would be appreciated, as the airlines were ready to assist China.

Application of ATC Separation Standards (WP10)

2.16 ICAO presented information on a Seamless ATM survey conducted to determine which ATC separation standards were being applied within the Asia/Pacific Region.

2.17 **Figure 2** indicated the efficiency of ATC separations, as theoretically applied.

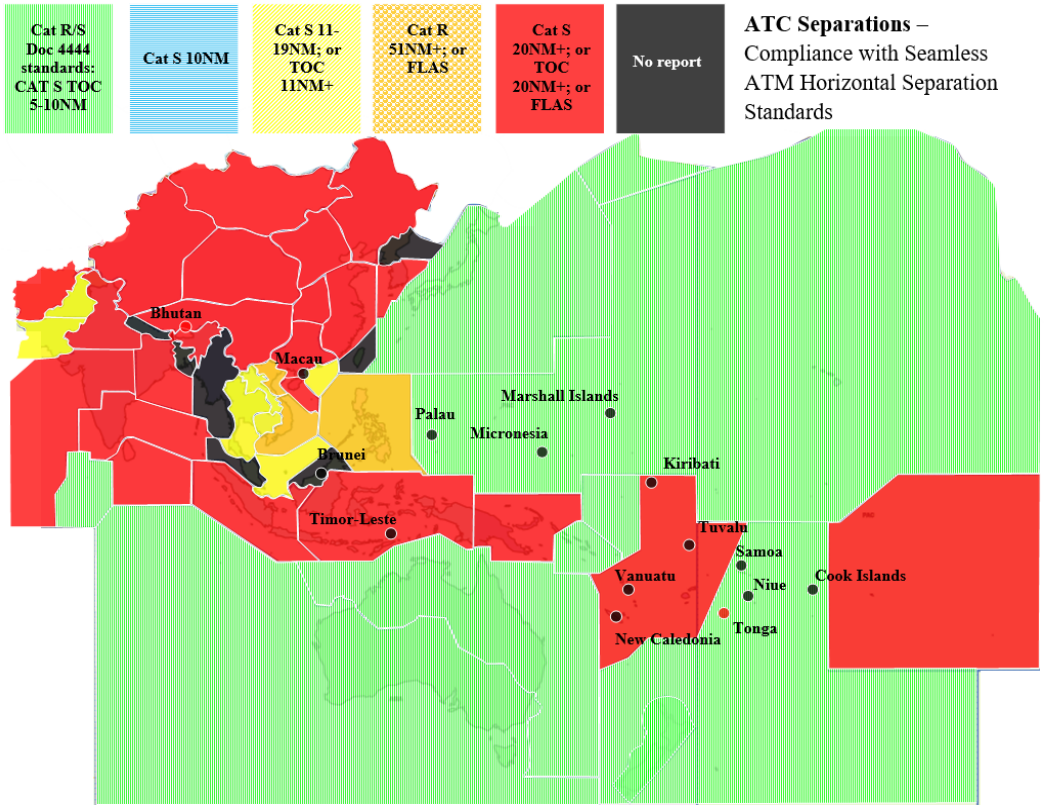

Figure 2: Seamless ATM Horizontal Separation Standards Compliance (as at July 2018)

2.18 ICAO commented that in general, several States were not applying ATC standards correctly, preferring to use larger, less efficient separations, which also affected safety due to the increased ATC workload managing larger spacing, and more conflicts. In this case, ATC had not optimised service levels that new systems were capable of under the *Asia/Pacific Seamless ATM Plan.*

2.19 The Combined Eighth Meeting of the South Asia – Indian Ocean ATM Coordination Group and Twenty-Fifth Meeting South East Asia ATS Coordination Group (SAIOACG/8 and SEACG/25, Siem Reap, Cambodia, 26 – 30 March 2018) noted that only 45% of administrations had responded to the survey related to ATC separations. The following Conclusion that had originated from the SAIOACG/8/SEACG/25 was agreed by the ATM/SG/6:

<table>
<tr><td colspan="3">Conclusion ATM/SG/6-1: ATC Separations Standards Survey</td></tr>
<tr><td colspan="2">What: That, States are urged to study and respond to the ATC Separation Standards Survey, to be re-circulated by the ICAO APAC Regional Office State Letter.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To enhance the level of reporting in order to improve the implementation of the Asia/Pacific Seamless ATM Plan's element on the application of appropriate ATC separation standards.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 3-Aug-18</td><td colspan="2">Status: Adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:</td></tr>
</table>

Enhanced Separation Standards (IP06 and IP07)

2.20 New Zealand and China provided information on planning for the implementation of more efficient separation standards.

2.21 Within the Auckland Oceanic Flight Information Region (FIR), software was being developed to enable the application of Automatic Dependent Surveillance – Contract Climb Descent Procedure (ADS-C CDP) to facilitate longitudinal separation of 15 NM under certain conditions. New 20 NM and 12 NM lateral separations, a 20 NM longitudinal standard (under development by the Separation and Standards Panel) and future use of Automatic Dependent Surveillance-Contract (ADS-B) In-Trail Procedure for 15 NM longitudinal separation were being planned or considered.

2.22 China announced that most ATC units in China strictly complied with separation minima in Doc4444 and ATC separation in the remaining ATC units between aircraft under ATC surveillance would be further improved to 10 km (5 NM) en-route and 6 km (3 NM) in terminal airspace. Moreover, the transfer spacing between Chinese Area Control Centres (ACCs) would reduce from 30 km (15NM) to 20 km (10NM) by 30 September 2018.

2.23 ICAO congratulated China for this step, and urged other States in the Asia/Pacific Region to follow China's example. ICAO also noted China's expectation to strengthen bilateral coordination in order to increase capacity by reducing transfer spacing. Hong Kong, China advised that they would work closely with China on enhancing efficiency of spacing, and would like to share the safety assessment China conducted in this regard to facilitate its work.

Air Traffic Flow Management Steering Group Outcomes (WP11)

2.24 The meeting was informed of the outcomes of the Eighth Meeting of the ATFM Steering Group (ATFM/SG/8, New Delhi, India, 14 – 18 May 2018).

2.25 The ATFM/SG/8 meeting was informed by Indonesia that flow control restrictions on ATS routes in the SCS area had been delaying flights from Jakarta FIR by up to five hours.

2.26 The meeting was updated on India's implementation of the Central ATFM system, the integration of the Central ATFM with Airport CDM/Airport Operations Command Centre (A-CDM/AOCC), C-ATFM post-operations analysis, and the establishment of Airspace Management Cells. The timing of implementation of Phase III of cross-border ATFM had not yet been determined. India was monitoring the progress of other cross-border ATFM implementation activities in the Region.

2.27 China, Japan and the ROK together presented to ATFM/SG/8 the outcomes of the Sixth meeting of the Northeast Asia Regional ATFM Harmonization Group (NARAHG/6, Seoul, ROK, 12 – 14 March 2018), and on the progress of the Cross Region ATFM Collaborative Platform (CRACP), tentatively planned for completion in 2020.

2.28 ATFM/SG/8 observed that ICAO Doc 9971 *Manual on Collaborative ATFM* stated that Calculated Time Over (CTO), which used the aircraft Required Time of Arrival (RTA) function, was a gradual process that required education and collaboration to ensure that requirements were understood and met, and that such techniques were advanced, requiring substantial experience for implementation.

2.29 An update on the Distributed Multi-Nodal ATFM Project focused on recent achievements in implementation of ATFM measures (GDPs), and the work plan for the development of ATFM measures for airspace congestion. The Multi-Nodal ATFM Project Core Team and its Technical Sub-Group had agreed to use the EUROCONTROL Slot Allocation Message (SAM) for the exchange of ATFM data until the establishment of a System-Wide Information-Management (SWIM)-based ATFM information exchange using the Flight Information Exchange Model (FIXM).

2.30 ATFM/SG/8 had reviewed the results of an analysis of missing Flight Plan (FPL) and Departure (DEP) messages requiring corrective action to be taken by States and/or airspace users. The data-gathering and analysis activities were conducted in response to ***Conclusion APANPIRG/27/12: Origination and Distribution of Departure (DEP) Messages***, and the discussion outcomes of ATM/SG/5 which requested the scope of the analysis of missing DEP messages be broadened to include missing FPL messages.

2.31 The five APAC States participating in the data gathering activity reported non-receipt of 58 FPL and 582 Departure during the 24-hour analysis period. Of these, 50 FPL and 337 DEP messages were for flights departing from APAC aerodromes.

2.32 Actions undertaken by the ICAO Asia/Pacific Regional Office since ATFM/SG/8 included the issuance of a State Letter on the subject to all Asia/Pacific States, and to relevant non-APAC States through their respective ICAO Regional Offices, individual letters to APAC States where the analysis indicted systemic failure to originate DEP messages, and coordination with ICAO Headquarters (HQ). APANPIRG ANS Deficiencies had also been proposed.

2.33 In accordance with ***Conclusion ATM/SG/5-3: Asia/Pacific Regional Framework for Collaborative ATFM Amendment***, the ATFM Implementation Status Report form had been appended to the Framework document and made available on the ICAO APAC Regional Office website. Only one report had been received before the due date (end of April each year). States were reminded that the reporting form provided evidence of implementation of ATFM, which States had for some time been obliged to implement in accordance with the standards of Annex 11, and non-reporting would be treated in the same way as non-implementation.

2.34 Regarding the development of an APAC ATFM post-operations analysis framework, it was noted that no regionally-recommended compliance measurement had been established. The ATM/SG/6 agreed to the following Conclusion that had been developed by the ATFM/SG/8:

<table>
<tr><td colspan="3">Conclusion ATM/SG/6-2: Recommended CTOT Compliance Window</td></tr>
<tr><td colspan="2">What: That:
1. Asia/Pacific Administrations implementing Ground Delay Programs (GDP) for flights to capacity-constrained destination airports use a recommended compliance window of -5 to +10 minutes to measure compliance with Calculated Take-Off Times (CTOT);
2. CTOT compliance windows for individual departure airports be subsequently refined on the basis of post-operations analysis, taking into account the requirements at constrained destination airports and subject to the agreement of the Administration responsible for the departure airport; and
3. CTOT compliance windows other than the recommended compliance window be reported to the Air Traffic Flow Management Steering Group.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To establish an initial metric for the analysis of compliance with ATFM measures (Ground Delay Programs - GDPs), to be further refined based on post-ops analysis results</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 3-Aug-18</td><td colspan="2">Status: Adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:</td></tr>
</table>

Proposed NOTAM Format for Flexible Use of Airspace (WP14)

2.35 India, Japan and Thailand jointly proposed a NOTAM format for Flexible Use Airspace (FUA) operations for uniform use in the Asia/Pacific Region. This work was undertaken in response to the outcomes of discussion of ATM/SG/5/IP19.

2.36 Australia stated that the proposed format needed further work, and that Australia needed time to trial their system. Thailand also noted that the terminology needed to align with the new ICAO Doc. 10088. Hong Kong, China mentioned that the terms Temporary Reserved Areas (TRAs) and Temporary Segregated Areas (TSAs) could cause a problem for pilots if these were not universally understood.

2.37 In summary, the meeting agreed that the proposed Conclusion R*ecommended NOTAM Format for FUA Operations* be presented to the ATM/SG/7 in 2019, following further research and development of the format.

Information Management for Activation of FUA Structures (WP15)

2.38 India proposed a format for Airspace Use Plans (AUP) or Updated Airspace Use Plans (UUP) utilised the pre-tactical phase (within 24 hours of operation), for activation of FUA structures and also proposed measures intended to mitigate the reduced advance notification time risks.

2.39 India observed that Annex 15 *Aeronautical Information Services* paragraph 5.1.1.4 stipulated that at least seven days' advance notice was required for the activation of established danger, restricted or prohibited areas and of activities requiring temporary airspace restrictions (including the non-ICAO TRAs and TSAs), other than for emergency operations.

2.40 ICAO noted that this standard had been discussed at HQ and would not be amended in the short-term. ICAO also stated that as had been previously informed, if a State was imposing a temporary airspace restriction in non-compliance with Annex 15's notice requirements by using a TRA or TSA without a network manager or equivalent function as part of a centralised ATFM system to mitigate the risks or disruption, then this would be submitted for consideration as an APANPIRG Deficiency.

BOBCAT ATFM Operations (WP16 and WP17)

2.41 Thailand presented an operational analysis and overview of westbound flights through the Kabul FIR associated with the Bay of Bengal Cooperative Air Traffic Flow Management (BOBCAT) system. India presented issues related to ATFM operations through the BOBCAT system within the Delhi FIR, including details of issues affecting, or affected by, BOBCAT slot and entry level allocations, and proposed mitigation strategies, and suggestions for improvement. Delhi ACC was experiencing problems during peak periods for westbound traffic that would transit via Afghanistan.

2.42 While noting the issues reported by India, the meeting also recognised the need for a discussion on whether the ongoing capacity constraint in the Kabul FIR was necessary, given the improvement in surveillance coverage, and on future provision of ATFM by India's C-ATFM system.

2.43 Afghanistan informed the meeting that a current surveillance project, together with existing radar coverage, would lead to an improvement in longitudinal separation from 50 NM to 30 NM in coming months, with further improvements expected after further proving activities. IATA agreed with the need to prioritise the enhancement of Afghanistan with a transition plan from BOBCAT, but recalled that previous implementations such as 50 NM longitudinal had not been properly implemented.

2.44 The Chairman stated that Pakistan and India should work together to establish more tactical capability. Given the development of Afghanistan's ATS surveillance capability (Flimsy 09), the meeting agreed to the States concerned and ICAO developing a transition plan as priority matter.

Efforts to Improve Shanghai Pudong Airport Flight Punctuality (IP09)

2.45 China provided information on efforts to improve the punctuality of flights at Shanghai/Pudong International Airport, and related achievements, noting that the CDM mechanism with participation by all stakeholders was the key to improving punctuality. Information was provided on on-time performance, flight delay times, Flow Management Positions (FMPs), ATC area control and approach control separation minima, and collaborative information exchange.

2.46 Hong Kong, China congratulated the achievements of these two major airports and, noting the paper focused on departures, requested China to share similar data on for the arrivals in these two airport, to which China agreed.

Mode S Conspicuity Code – Amendment to eANP Vol II (WP18)

2.47 Australia and the Co-Chairs of the Surveillance Implementation Coordination Group (SURICG) provided information identifying future requirements for a regional Mode Select (Mode S) Secondary Surveillance Radar (SSR) conspicuity code. The information provided noted the typical allocation processes for discrete Mode A SSR codes, and the assignment of blocks of codes to Asia/Pacific Administrations in the APAC Air Navigation Plan (ANP).

2.48 As traffic volumes increased, the finite number of discrete Mode A SSR codes would increase the likelihood of the same code assigned to multiple aircraft, increasing the risk of mis-identification. An alternative was the use of the Mode S Aircraft Identification and/or ICAO Aircraft Address for identification and flight plan coupling, provided States used Mode S radar systems and suitable ATM system capability.

2.49 Noting the relevant sections of the *Asia/Pacific Seamless ATM Plan*, the *Surveillance Strategy for the Asia/Pacific Region*, the *European SSR Code Management Plan 2010*, and India's trial non-discrete Mode A SSR conspicuity code implementation, the ATM/SG/6 meeting agreed to the following Conclusion:

<table>
<tr><td colspan="3">Conclusion ATM/SG/6-3: Proposed Air Navigation Plan Volume II Amendment</td></tr>
<tr><td colspan="2">What: That, a Proposal for Amendment (PfA) to the APAC Air Navigation Plan Volume II at Appendix C to the Report be submitted, withdrawing Mode A SSR Code A1000 from Table ATM II-APAC-2 and identifying it as the Mode S conspicuity code for the APAC Regions.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: Reserve this SSR code for future use as the non-discrete Mode S conspicuity code.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 3-Aug-18</td><td colspan="2">Status: Adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:</td></tr>
</table>

SLOP Survey (WP19)

2.50 In response to inconsistent application previously noted in the Asia/Pacific Region, ICAO presented the principles and guidelines of Strategic Lateral Offset Procedures (SLOP), as defined in Annex 2 - *Rules of the Air* and ICAO Doc. 4444.

2.51 WP19 also highlighted the results from a survey regarding the current and planned implementation of SLOP. Only nine administrations responded, indicating a low awareness of this important safety technique.

2.52 Of these, six had enabled in their Aeronautical Information Publications (AIPs) a maximum offset of 2 NM where the lateral separation minimum applied was 23 NM or more, but none had enabled a maximum offset of 0.5 NM where the [non-surveillance] lateral separation minimum applied was 6 NM or more, and less than 23 NM. ICAO urged all States applying such applications to implement SLOP, and would recirculate the survey before 2019.

SID/STAR Phraseology Implementation (WP20 and WP21)

2.53 Australia presented progress of the implementation of ICAO Standard Instrument Departure/Standard Arrival Route (SID/STAR) phraseology, informing about the issues realized following implementation. The procedures were implemented in Australia on 09 November 2017.

2.54 Information was provided on the safety assessment and safety work, ATC workload increases, the use of level restrictions in published SID/STAR for strategic separation, and discussion of what constitutes an aircraft being 'on SID/STAR'. Australia requested feedback from other States on the issue of the use and implications of the term 'VIA' (which meant the procedure's restrictions remained in force) and additional examples to clarify the intent of various operational scenarios. IFALPA also stressed the need for examples that contained intermediate level or speed restrictions, to reduce interpretation issues.

2.55 New Zealand noted that some intermediate restrictions were for ATC and some were part of the procedure design and cannot be cancelled for safety reasons (for example, due to terrain), so had specifically labelled the ATC purpose of the restriction on the SID/STAR, so pilots and controllers could identify the ATC-related steps (as being the only procedures that could be cancelled or amended).

2.56 Australia, IFATCA and IATA noted the continuing operational issues in applying the new SID/STAR standard, and supported a harmonised transition strategy. IFATCA suggested that there may be a need for a re-think of the standardised approach for SIDs and STARs as the current generation of procedures did not have a constant climb/descent component. Hong Kong, China commented that considering safety net features in ATM system relied on input of cleared flight level into the system, the system handling of multiple level steps in a single clearance would need to be addressed.

2.57 IATA was concerned that a number of global changes recently such as PBCS, SID/STAR and Global Aeronautical Distress and Safety System (GADSS) that had not been managed well in terms of implementation, so ICAO HQ needed to reconsider the way in which these global changes were being developed to take into account the impact on actual operations, and effective implementation.

2.58 The meeting noted the establishment of the *ICAO SID STAR Implementation Support Team* (ISSIST), and a range of suggestions received by ISSIST from industry to improve implementation. Information was also provided on the ISSIST Work Program, which was expected to be completed by March 2019.

2.59 A proposed Regional implementation strategy was provided. While not exhaustive, it included a checklist of actions and requirements that should be considered by all Asia/Pacific Administrations that have published, or plan to publish, SIDs and/or STARs in their AIP. The strategy included a proposed Regional implementation date of not later than 07 November 2019. IATA suggested appending 'lessons learnt' from States to the Regional Strategy.

2.60 IFALPA stated that the variations in implementation between States was the most concerning matter, and urged States to implement at a regionally-agreed date. Furthermore, the meeting noted that if States had not implemented the changes, a Difference would need to be filed under Article 38 of the Convention. The ATM/SG/6 meeting agreed to the following Conclusion:

<table>
<tr><td colspan="3">Conclusion ATM/SG/6-4: Asia/Pacific Regional SID/STAR Phraseology Implementation Strategy</td></tr>
<tr><td colspan="2">What: That,
1. The Asia/Pacific Regional SID/STAR Phraseology Implementation Strategy at Appendix D to the Report be adopted, and uploaded to the ICAO Asia/Pacific Regional Office Website, together with an Appendix of information on lessons learned, updated on receipt of new information; and
2. All Asia/Pacific Administrations respond to a survey on the implementation status of the SID/STAR phraseology, and report final implementation of the phraseology to the ICAO Asia/Pacific Regional Office.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: The current non-harmonized implementation of Amendment 7 to PANS-ATM for new SID/STAR phraseologies gives rise to potential safety concerns in terms of confusion and misinterpretation of instructions.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 3-Aug-18</td><td colspan="2">Status: Adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☒APAC States ☒ICAO APAC RO ☒ICAO HQ ☐Other:</td></tr>
</table>

Alphanumeric Call Sign Project Update (IP14)

2.61 IATA updated the meeting on progress in the Asia/Pacific Alphanumeric Call Sign project, focusing on airport readiness to support the project. The ability of airport and ATC systems to receive and process alphanumeric formats and the difference between an alphanumeric call sign for ATC systems and a commercial flight number were identified as the main challenges.

2.62 The UAE shared its experience in implementation of Alphanumeric Call Signs, which had reportedly reduced air safety reports from Emirates Airlines by 45%. The UAE recommended that States establish national task forces, agree to harmonised procedures for tactical changes of call signs, and work with ATC system vendors to support the implementation. ICCAIA stated that vendors were working on system improvements to support this initiative.

Review of ADS-B Specific Phraseologies (IP15)

2.63 New Zealand presented a review of PANS-ATM 12.4.3 phraseologies pertaining to ADS-B operations. The information provided highlighted the confusion that current phraseologies could generate for both pilots and ATC, and proposed that, where the functionality for MODE S and ADS-B is derived from the same source, the phraseology should be the same for both. IATA noted that some airlines had ADS-B capability as part of their Minimum Equipment List (MEL), so this was also a potential issue for the airlines.

Recent CNS-Related Developments in APAC (WP22)

2.64 ICAO updated the meeting on recent developments in the Communications, Navigation and Surveillance (CNS) fields. The ATM/SG/6 meeting reviewed the discussion outcomes, Conclusions and Draft Conclusions arising from the Twenty-Second Meeting of the CNS Subgroup (CNS/SG/22, Bangkok, 16 – 20 July 2018).

2.65 The meeting noted the following Draft Conclusions from CNS SG/22, which had been referred to APANPIRG for endorsement and to ATM/SG for information:

- *Draft Conclusion CNS SG/22/8* - Revised Strategy for Implementation of Communication systems to support Air Navigation Service;
- *Draft Conclusion CNS SG/22/9* – Support allocation of radio spectrum for space based VHF communications;
- *Draft Conclusion CNS SG/22/10* - PBN-IN-A-PAGE (Version 2.0); and
- *Conclusion CNS SG/22/17* – Amendment of *Asia/Pacific Seamless ATM Plan* V2.

2.66 Regarding *Draft Conclusion CNS SG/22/12 – Ground-Based GNSS Status Monitoring*, the USA commented that while they understood the importance of States determining the essential radio navigation services for GNSS based operations, the need for a Conclusion as a whole was not understood. After discussion and input from Australia, the meeting agreed that there was insufficient basis to support the Draft Conclusion, and it was referred back to the CNS/SG for further consideration.

2.67 Regarding *Draft Conclusion CNS SG/22/17 – Amendment of Asia/Pacific Seamless ATM Plan*, ICAO stated that proposals for amendment to the *Asia/Pacific Seamless ATM Plan* did not require an APANPIRG Conclusion; however, the specific matter was important to highlight to State planners, so the Conclusion was considered to have merit on that basis, and was subsequently endorsed by the meeting.

2.68 The meeting agreed to changes to *Draft Conclusions CNS SG/22/13* and *22/16*, resulting in the following ATM/SG Draft Conclusions being endorsed, for APANPIRG/29's consideration:

<table>
<tr><td colspan="3">Draft Conclusion ATM/SG/6-5: Transition Planning for RNP APCH CHART Identification from RNAV to RNP</td></tr>
<tr><td colspan="2">What: Recognizing ICAO Circular 353, Transition Planning for Change to Instrument Flight Procedure Approach Chart Identification from RNAV to RNP will be finalized to provide guidance on the development of global, regional and State transition plans, and ICAO Regional Office is requested to develop a draft transition plan within twelve months of the final publication of the Circular, that:
a) States begin internal coordination on the State transition plan and provide the number of RNP APCH procedures published and planned, and the time required to transition from RNAV (GNSS)/RNAV (RNP) to RNP chart identification;
b) ICAO Regional Office drafts a regional transition plan on RNP APCH chart identification in coordination with relevant regional contributory bodes of APANPIRG, sub-regional ATM coordination groups and regional stakeholders; and
c) ICAO Regional Office conducts a meeting or workshop to discuss the regional transition plan, after a regional transition plan template has been provided by the ICAO PBN Programme Office.</td><td>Expected impact:
☒ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To commence preparation for the global regional and State planning for transition of approach chart identification from RNAV to RNP.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 5-Sep-18</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☒Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☒Other: RSO</td></tr>
</table>

<table>
<tr><td colspan="3">Draft Conclusion ATM/SG/6-7: Proposal for amendment to PANS-ATM (Doc4444) on ADS-B related Phraseology</td></tr>
<tr><td colspan="2">What: Recognizing that:
1. where system functionality is derived from the same source for both MODE S SSR and ADS-B the phraseology used between ATC and pilots should be the same;
2. in almost all cases, the pilot interfaces with the ADS-B system through the SSR transponder interface; and
3. the use of ADS-B-specific phrases may cause confusion between pilots and ATC;
ICAO be invited to amend PANS-ATM to remove the following phrases:
12.4.3.5 “RE-ENTER ADS-B AIRCRAFT IDENTIFICATION’
12.4.3.7 “TRANSMIT ADS-B IDENT”
12.4.3.10 “STOP SQUAWK TRANSMIT ADS-B ONLY” or “STOP ADS- B TRANSMISSION, SQUAWK (CODE) ONLY”
12.4.3.11 “TRANSMIT ADS-B ALTITUDE”
12.4.3.13 “STOP ADS-B ALTITUDE TRANSMISSION [(WRONG INDICATION, or reason)]”</td><td>Expected impact:
☒ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To remove phrases from PANS-ATM that cause confusion to pilots and ATC, recognizing that the greater majority of ADS-B installations in aircraft use the same pilot interfaces as the Mode S SSR transponder.</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 5-Sep-18</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☐APAC States ☒ICAO APAC RO ☒ICAO HQ ☐Other:</td></tr>
</table>

eANP FIR SRR Update (WP24)

2.69 WP24 provided an update on the electronic Air Navigation Plan (eANP) FIR and Search and Rescue Region (SRR) data analysis that had been on-going since 2014.

2.70 *APANPIRG Conclusion 28/5 FIR/SRR Air Navigation Plan Review* had urged Asia/Pacific States and Administrations having responsibility for the provision of services within a FIR or Aeronautical SRR to conduct a review of the ICAO data related to the FIR or SRR, and provide a verification to the Regional Office as early as possible, but not later than 31 December 2017. Although three State Letters had been issued on this matter, there had still been a poor engagement from States on a matter of this importance.

2.71 Therefore, ICAO’s intention was to signal to APANPIRG/29 that the FIR/SRR data review from States was expected to be completed by 01 July 2019. ICAO then planned to propose to APANPIRG/30 that the data in **ATM/SG/6/WP24 Attachment B and C** (as amended by 01 July 2019) be published in the eANP after circulation by PfA. The meeting noted that once published, States would need to file a PfA for any subsequent change.

Civil/Military Cooperation (WP25 WP26, WP27, Flimsy 06)

2.72 IATA presented an update on ballistic launch/re-entry event issues and proposed regional procedures to improve the management of such events, particularly involving multiple FIRs. IATA noted that although the *Asia/Pacific Seamless ATM Plan* (paragraphs 5.68 and 7.60) contained specific expectations for ballistic launch/re-entry events, they were still experiencing less than optimal management of ballistic events when affecting large airspace areas, and provided specific examples.

2.73 China stated that this issue was not a matter that the CAAC could manage, so it needed to seek the opinions of the relevant rocket launching agency and formally reply to ICAO. At the same time, the Chinese representative informed that it may not be feasible to utilise the procedures proposed by IATA due to technical reasons such as weather and other technical conditions, according to the conditions. ICAO stated that the relevant procedures were only guidance for States. China also noted that the rocket launch issue was a global problem. China proposed that ICAO report the matter to ICAO HQ and formulate globally unified standards and procedures.

2.74 The ATM/SG/6 meeting agreed to the establishment of a 'State Planning Checklist' to supplement the *Asia/Pacific Seamless ATM Plan's* expectation. Noting that the Checklist and guidance would be further refined by ICAO in coordination with IATA, the following Draft Conclusion was agreed by the meeting, for APANPIRG/29's consideration:

<table>
<tr><th colspan="3">Draft Conclusion ATM/SG/6-8: Procedures for Ballistic Launch/Space Re-entry Management</th></tr>
<tr><td colspan="2">What: That, States are urged to:
(1) ensure adoption and sensitisation of the ballistic launch/space re-entry expectations contained with the Asia/Pacific Seamless ATM Plan; and
(2) institutionalise the related guidance and State Planning Checklist provided at Appendix E (Attachment A) to the Report.</td><td>Expected impact:
☒ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To improve State planning and preparation for ballistic launch and space re-entry activities, in order to reduce adverse effects on airspace users and Air Navigation Service Providers.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When:</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:</td></tr>
</table>

2.75 ICAO recalled that civil/military cooperation remained one of the highest regional priorities in the *Asia/Pacific Seamless ATM Plan*. WP26 provided examples of military operations or activity affected or controlled by military agencies which were of concern.

2.76 The examples included issues related to an Air Defence Identification Zones (ADIZ), Air Defence Codes (ADCs), operation of Special Use Airspace (SUA), ballistic launch and space re-entry activity, and significant delays and disruptions to civil air traffic in East Asia.

2.77 The meeting noted that, given that supporting the vital air navigation infrastructure of any State was consistent with the military mission to defend the nation's economy (which in turn supported the military), States were invited to study the examples provided as a matter of positive development for civil and military systems.

2.78 In this regard, the ATM/SG/6 endorsed the following Draft Conclusion that had been developed by the SAIOACG/8/SEACG/25, for APANPIRG/29's consideration:

<table>
<tr><td colspan="3">Draft Conclusion ATM/SG/6-9: Minimizing the Impact of Non-ICAO Procedures and Requirements for Military Activities Affecting Civil Aviation</td></tr>
<tr><td colspan="2">What: That, where the imposition of non-ICAO military requirements and procedures affecting international civil aviation is either planned or likely, States are urged to ensure that civil aviation interests are taken into account by:
1. ensuring military authorities are fully informed of the obligations of all States that are signatory to the Convention on International Civil Aviation;
2. conducting full and timely consultation with airspace users, adjacent States and ICAO;
3. implementing the capability to tactically share FPL and ATS messages, civil ATC surveillance data and other relevant information between the ANSP and military authorities;
4. implementing direct communications facilities between military organizations and the ANSP to permit the coordination of requests for information on any unknown aircraft;
5. establishing civil-military coordination functions within civil air traffic control centres;
6. promulgating timely, clear and unambiguous information on the requirements and procedures, and accurate, detailed charts in accordance with the requirements of ICAO Annex 4 and Annex 15; and
7. where pre-authorizations for individual civil flights in affected areas are necessary, States are urged to either consider:
i) issuing authorizations with the seasonal schedule approval; or
ii) developing and rigorously test clear and, ideally, automated procedures for compliance such as the use of flight plan data.</td><td>Expected impact:
☒ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To avoid confusion increased workload and increased risk of military intervention for civil flights operating in airspace where non-ICAO military requirements and procedures are imposed.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 7-Sep-18</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:</td></tr>
</table>

2.79 During an extensive discussion, the meeting noted that while there had been continuing instances of poor civil/military cooperation, there had also been an improvement evident in some systems. In particular, the meeting observed that China had taken a number of steps to enhance capacity and safety, and ICAO noted that a continued effort in this regard should lead to a decrease in the major delays that had been reported in the area. China also informed about a civil/military cooperation workshop held in Hangzhou, and stated that it would continue to strengthen cooperation between civil and military aviation.

2.80 The meeting noted with interest information provided by ICAO in **ATM/SG/6/Flimsy 06** on relevant high seas requirements (**Attachment B**). States discussed key points such as the right of unobstructed transit by State aircraft in the high seas, the lack of recognition in international law of ADIZ, and the lack of a need for ADCs if civil FPL data was available.

2.81 Regarding ADCs, India stated that further consultation with other stakeholders within India was required, and the status would be reviewed. India also discussed concerns related to the frequent sighting of unknown aircraft – presumed to be military – within controlled airspace over the high seas.

Regional ATM Contingency Planning and Status Reporting (WP28)

2.82 ICAO presented information on the Asia/Pacific Regional Contingency Plan's status reporting strategy, based on *Conclusion ATM/SG/5-8: Asia/Pacific Regional ATM Contingency Plan Amendment*. The Regional ATM Contingency Plan Monitoring and Reporting Form had been uploaded to the ICAO Asia/Pacific Regional Office website, and Asia/Pacific Administrations were expected to report their ATM Contingency Plan implementation status at least once annually.

2.83 Noting that Annex 11 section 2.31 required ATS authorities to develop and promulgate contingency plans, the meeting was informed that, commencing in 2019, the ICAO Regional Office would report annually the receipt, or non-receipt, of completed Contingency Plan Monitoring and Reporting Forms, for consideration for addition to the APANPIRG ANS Deficiencies List.

2.84 The meeting was also reminded that the ATM contingency plans of all Administrations must include contingency responses for volcanic ash cloud, as these could, and did, affect airspace and aerodromes in States that had no volcanoes.

2.85 Information was also provided on the appropriate use of the least disruptive separation minimum available, in the event of outage of facilities necessary for the application of the separations normally applied and the African contingency planning experience.

2.86 Referring to the Inter-Regional Afghanistan ATM Contingency Arrangements, Afghanistan informed the meeting that the ANSP did not foresee any decline in ATS provision in the Kabul FIR, and that the ANSP was progressively training national staff to fill ATS roles.

SAIOACG and SEACG Meeting Outcomes (WP29)

2.87 The meeting was provided with an overview of a number of outcomes related to ATM coordination from the SAIOACG/8 and SEACG/25 (Siem Reap, Cambodia, 26 – 30 March 2018).

2.88 The SCSTFRG had identified three priority areas, with action plans for each. With regard to Priority Area 3 (ATS routes A461/A583/L625/N892), Philippines intended to progressively reduce longitudinal separation and specify RNP 10, then RNP 4 and RNP 2 in the fourth quarter of 2019.

2.89 A side meeting was held during SAIOACG/8/SEACG/25 to discuss and agree the way forward for Priority Areas 1 (A1/A202) and 2 (L642/M771). A further side meeting was held to discuss planning for the First Meeting of the Bay of Bengal Traffic Flow Review Group (BOBTFRG, established under SAIOACG). Summaries of discussions of the side meetings was provided in **ATM/SG/6 WP/29 Attachments A and B**).

2.90 As part of efforts to reduce the safety risk in the South Asia/Indian Ocean airspace, India had finalized and signed new coordination agreements with Indonesia, developed a draft agreement with Malaysia, and agreed with Oman to initiate various steps to reduce the occurrence of Large Height Deviations (LHDs) due to coordination error.

Trans-Regional ATS Coordination (WP30)

2.91 ICAO presented information on trans-regional Air Traffic Services (ATS) coordination, focusing on the interfaces between the ICAO Middle East (MID) Region and the Asia/Pacific Region (APAC), and between the European Region (EUR) and APAC. The Second and Third Meetings of the AIRARD/TF (AIRARD/TF/2, Astana, Kazakhstan, 26 – 27 October 2017 and AIRARD/TF/3, Amman, Jordan, 01 – 02 May 2018) had discussed a number of key improvement areas:

- Trans-regional routes and associated waypoints;
- ATS route designation;
- duplicated waypoint and route designators;
- The PBN Highway concept, based on the *Asia/Pacific Seamless ATM Plan;*
- Surveillance-based longitudinal separation and spacing;
- contingency planning; and
- Free Route Airspace (FRA) implementation.

2.92 The UAE delegate, as Vice Chair of the MIDANPIRG, urged States to support the AIRARD/TF not just by attending but also with active participation, as this was considered to be an important body to manage the critical interface between regions. India also urged a greater focus on the African Region as the Mumbai FIR managed an increasing traffic volume serving Africa.

2.93 There had been no other trans-regional meetings since 2016, except for the Advanced Inter-Regional Air Traffic Services Route Development Task Force (AIRARD/TF). The provisional AIRARD/TF agenda had been adopted by the MID's MIDANPIRG, but needed to be endorsed by the other regions. The meeting agreed to the following Draft Decision, for APANPIRG/29's consideration:

<table>
<tr><td colspan="3">Draft Decision ATM/SG/6-10: AIRARD/TF Terms of Reference</td></tr>
<tr><td colspan="2">What: That, the Advanced Inter-Regional Air Traffic Services Route Development Task Force (AIRARD/TF) Terms of Reference at Appendix X to the Report (Attachment C) be approved by the Asia/Pacific (APAC) Region.</td><td>Expected impact:
☐ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To endorse the AIRARD/TF Terms of Reference, as already approved by the MIDANPIRG.</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 5-Sep-18</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☐APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other: MIDANPIRG, EANPG</td></tr>
</table>

ATS Route Catalogue (WP31 and WP32)

2.94 ICAO presented the *Asia and Pacific Region ATS Route Catalogue* Version 16.1 for review and update as Version 17.0. States were urged to review and categorise route proposals.

2.95 IATA had conducted a review of the *Asia and Pacific Region ATS Route Catalogue* using a focus group of IATA airlines, except for the Russian trans-regional routes. ICAO proposed to take into account the comments from IATA then work with States on the proposals, then prepare Version 17.0 which will be shared on the ICAO website.

AKARA Corridor (WP33)

2.96 IATA presented a proposal to address the issues associated with the management of the airspace known as the 'AKARA Corridor', with the aim of normalising service delivery in the area in accordance with Annex 11 requirements (i.e.: a single ATC unit operating within a single volume of airspace). IATA noted that aircraft operators had long held safety concerns, prompting the issuance of an 'Operational Notice' on the area, with the most recent version being issued in November 2017.

2.97 Given the original arrangement had been established in 1983 between the three States and ICAO by Memorandum of Understanding (MOU), IATA suggested that these States urgently discuss how to plan and implement a structure to increase safety levels and comply with international standards, and that International Organisations would support this effort if required.

2.98 The ROK thanked IATA for the presentation, and noted the safety concerns that had been evident for several years, commenting specifically on the increasing traffic. Moreover, the ROK stated that they would like to urge the States concerned to discuss the AKARA Corridor and looked forward to a closer cooperation with the States.

2.99 China recalled the need for improved efficiency within the Corridor by improving longitudinal transfer spacing from 20NM to 15NM before the Olympics.

2.100 China observed that there was no ATS LOA between Shanghai and Incheon. However, China advised that Shanghai would assist with any contingency procedures for emergency descent, the implementation of SLOP, and direct tracks where possible. China also advised that the ANSPs concerned should discuss and resolve the issues under the framework of the existing MOU.

2.101 IATA thanked China and the ROK for their encouraging and positive responses. China stated that they fully supported the ATM operation normalisation. Japan stated that they were working with both ROK and China to improve safety, with satisfactory changes in the near future.

2.102 As reported by RASMAG and the ATM/SG previously, the airspace of major concern was only that portion east of position SADLI, which was currently serviced by both the Fukuoka ACC (west-east flights), and the Incheon ACC (north-south flights). In conclusion, ICAO thanked the States concerned and expressed the desire for bilateral agreement on the principles of transition to a safer arrangement would lead to a wider agreement by all the stakeholders to the MOU.

2.103 IATA had proposed a Draft Conclusion as follows:

Draft Conclusion ATM/SG/6-X: AKARA Corridor ATM Normalisation

That, considering the elevated safety risks and efficiency issues associated with the portion of the Incheon Flight Information Region (FIR) known as the AKARA Corridor that had been reported by RASMAG in recent years, China, Japan and the Republic of Korea were urged to normalize ATM procedures within this airspace as a matter of urgency.

2.104 During the meeting, China requested a modification to reflect the fact that the main safety focus was on the portion of the AKARA Corridor east of SADLI as follows:

Draft Conclusion ATM/SG/6-X: AKARA-FUKUE Air Corridor ATM Operation Normalisation

That, considering the elevated safety risks and efficiency issues associated with the portion of the AKARA-FUKUE Air Corridor east the of position SADLI ~~of the Incheon Flight Information Region (FIR) known as the AKARA Corridor~~ that had been reported by RASMAG in recent years, China, Japan and the Republic of Korea were urged to normalize ATM operational procedures within this airspace as a matter of urgency.

2.105 However, in discussion during the reading of the report, the ROK delegation did not agree with the Draft Conclusion. Therefore, in the absence of consensus the ATM/SG/6 could not agree to the Draft Conclusion, so the matter may be further considered by APANPIRG/29.

ATS Routes A461 and A583 PBN Specification Implementation (IP22, Flimsy 07)

2.106 Hong Kong, China proposed to implement a PBN specification (RNAV 10) on ATS routes A461 and A583, to accommodate an increase in air traffic through the application of improved longitudinal spacing. IP22 recalled that the Philippines had previously agreed to RNAV 10 and Australia had already implemented 50NM longitudinal spacing on these routes since 04 September 2017.

2.107 Referring to Flimsy 07, ICAO noted that the *Asia/Pacific Seamless ATM Plan* expected implementation of RNAV 2 or RNP 2 within airspace with ATS surveillance ('Category S airspace'), and that RNAV 10 should only be used for remote airspace ('Category R airspace'). Moreover, as IP19 had indicated that the airspace concerned was almost all Category S, with a small surveillance gap near the FIR boundary, ICAO noted that 20NM spacing monitored by surveillance was entirely possible, with the gap being covered with GNSS procedural-based separation (PANS-ATM 5.4.2.3.3.1 refers).

2.108 In this regard, ICAO clarified noted that it was not necessary to re-designate a conventional ATS route to allow a PBN-capable aircraft to use that route – as long as the route WGS-84 waypoints were published and aircraft operating on these routes are required to be suitably equipped. Hong Kong, China stated that, based on the information supplemented by ICAO on the requirement for PBN route designation, they did not see the need, hence had no intention to change the designation of A461/A583.

EATMCG Meeting Outcomes (IP23)

2.109 IFATCA provided a brief overview of the Eleventh Meeting of the East Asia ATM Coordination Group's (EATMCG/11) outcomes.

2.110 The uncontained growth of overflight traffic in every FIR was a common theme at the meeting as it directly impacted airspace capacity and overall ATM operational efficiency. It was noted that some FIRs adjacent to the EATMCG area were regularly implementing short notice restrictive measures for traffic transiting their airspace at certain times and this inevitably affected upstream units.

2.111 The SCSTFRG was requested to consider a new parallel route within the Manila FIR to alleviate major congestion within flows in the northern part of the SCS between the Taibei FIR and the Hanoi FIR. EATMCG also discussed the timeline for the implementation of changes regarding PBN-based procedures, AIDC and ATC procedures.

Asia/Pacific Unmanned Aircraft Systems Task Force Outcomes (WP34)

2.112 The meeting was informed of the outcomes from the Second Meeting of the Asia/Pacific Unmanned Aircraft Systems Task Force (APUAS/TF/2 Bangkok, Thailand 05 to 08 February 2018).

2.113 The Remotely Piloted Aircraft Systems (RPAS)/3 and DRONE ENABLE/2 symposiums that would be held in Chengdu, China from 10 to 14 September 2018. ATM/SG/6 participants were requested to ensure their State was represented at the symposiums, particularly DRONE ENABLE/2, in order to share knowledge on global developments in the management of UAS.

2.114 The meeting noted that the International Organization for Standardization (ISO) had commenced work on *ISO 21384-1 Aerospace – Unmanned Aircraft Systems* and a draft development plan for UTM. ICAO did not have a clear understanding of the role of ISO with regard to the new area of 'operational standards'. There was a concern that ISO standards might impose extra costs [that might reduce the likelihood of public compliance] and impose extra requirements for parts of aviation that were already regulated, such as ANSPs. ICAO HQ was following up to clarify the role of ISO in UAS.

2.115 APUAS/TF had commenced work on draft regulatory guidance for the operation of small UAS, initially guided by a Table of Contents for State Regulations for UAS, which was being developed by the Joint Authorities for Rulemaking on Unmanned Systems (JARUS).

2.116 Noting that the outcomes of HLCS 2015, the 39th Session of the Assembly of ICAO, and the RPAS/2 and DRONE ENABLE symposiums had led to the commencement of a global effort to be conducted under the UAS Advisory Group (UAS-AG) in three streams of UAS Traffic Management, the meeting agreed that the scope of work of APUAS/TF should be amended.

2.117 The meeting agreed to the following Draft Decision for consideration by APANPIRG/29:

<table>
<tr><td colspan="3">Draft Decision ATM/SG/6-11: Revised APUAS/TF Terms of Reference</td></tr>
<tr><td colspan="2">What: That, recognizing the scope of work on Unmanned Aircraft Systems (UAS), and particularly UAS Traffic Management (UTM) Systems being undertaken at the global level by the UAS Advisory Group, the revised APUAS/TF Terms of Reference at Appendix G (Attachment D) to the Report.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To revise the scope of work of APUAS/TF, recognizing the work now being undertaken at the global level</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 5-Sep-18</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☐APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:</td></tr>
</table>

Afghanistan, Pakistan, India, Thailand, and ICAO Side Meeting

2.118 Delegates from Afghanistan, Pakistan, India, Thailand, and ICAO had a side meeting to discuss the future increased capabilities of the Kabul FIR ANS system and its effects on adjacent FIR's and the BOBCAT system. All parties agreed to continue a dialog in the near future to agree how to improve the overall system and begin work on a transition plan to enhance major traffic flow capacity through this airspace.

2.119 Pakistan noted the barriers to enhancement of services within the Karachi and Lahore FIRs were largely connected with the need for sufficient competent controllers to allow more ATC sectors, and the workstations for those sectors. However, Pakistan stressed that its ATS surveillance had already been improved, with extensive coverage and multiple sensors.

2.120 Separately, Afghanistan and Pakistan discussed some pending Air Navigation Services (ANS) issues between the two States. Pakistan provided updated information on the status of the review of an ATS route proposal that had been submitted by Afghanistan (increased flight level of A453 from TAPIS-GADER) and a second proposal that had been submitted by both Afghanistan and Tajikistan with input from IATA (a new route connecting SURVI-IMTEL or new route connecting RAMAN-new fix on Afghanistan-Pakistan border).

Multiple Line-Ups on the Same Runway (WP36)

2.121 India presented a proposal to include Multiple Line-ups on the Same Runway procedures within the Asia/Pacific portion of ICAO Doc 7030, as these had already been adopted as European (EUR) *Regional Supplementary Procedures.* The meeting discussed the proposal, noting that several States had allowed this procedure for decades.

2.122 The meeting also noted that it was not necessary for States to have a Doc. 7030 procedure established to enable a State to approve such procedures within sovereign airspace, and that it was also unnecessary to develop a Conclusion. Notwithstanding this, to ensure visibility of the issue, the meeting agreed to the following Conclusion:

<table>
<tr><td colspan="3">Conclusion ATM/SG/6-12: Multiple Line-Ups on the Same Runway</td></tr>
<tr><td colspan="2">What: That, considering the efficiency and environmental benefits, Asia/Pacific States are urged to support a proposal to include Multiple line-ups on same Runway within ICAO Doc. 7030 Regional Supplementary Procedures for the Asia and Pacific Regions, in accordance with Appendix H (Attachment E) to the Report.</td><td>Expected impact:
☐ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To highlight the potential for this standard to be applied, as is currently the case in Europe under Doc. 7030.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 5-Sep-18</td><td colspan="2">Status: Adopted by Subgroup</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☒APAC States ☒ICAO APAC RO ☒ICAO HQ ☐Other:</td></tr>
</table>

ICARD Status in Pakistan (WP37)

2.123 The meeting was informed of the status of the ICAO International Codes and Route Designators (ICARD) application in Pakistan. WP37 discussed the procedures related to retaining 5-Letter Name Codes (5LNCs) for re-use under the provisions of Annex 11 Appendix 2.

2.124 Pakistan proposed that a change to the ICARD application be considered, to permit States to retain the allocation of codes that had been made unavailable for use for six months after deletion. China proposed that ICARD references to 'coordinating country' be changed to 'coordinating country/administration' to facilitate the Special Administration Regions of China.

AIS – AIM Implementation Task Force Outcomes (WP38)

2.125 The outcomes of the Thirteenth Meeting of the Aeronautical Information Services (AIS) – Aeronautical Information Management (AIM) Implementation Task Force (AAITF/13, Bangkok, Thailand, 04 to 08 June 2018) were provided to the meeting.

2.126 Three AIS-AIM-related ANS Deficiencies had been identified by the AAITF: WGS-84 not implemented (12 States), AIP Format (two States) and Quality Management System not implemented (23 States). There had been ongoing and increasing concern about poor quality management of aeronautical information in the APAC Region, and the apparent lack of organizational priority for this safety-critical requirement.

2.127 The meeting was informed of AIM transition progress in the APAC Region. Progress was measured against the transition steps outlined in outlined in the ICAO Roadmap for Transition from AIS to AIM, and was recorded in the AIM Transition Table available on the ICAO Asia/Pacific Regional Office website at http://www.icao.int/APAC/Pages/edocs.aspx.

2.128 States that had provided no information at any time were Brunei Darussalam, Marshall Islands, Micronesia, Nauru and Palau. A total of 13 Administrations had provided information since AAITF12, which compared poorly with the AAITF/12 report (22 Administrations updated progress).

2.129 **Figure 3** and **Figure 4** illustrated the overall Regional Implementation of Phase 1 of the Roadmap for Transition from AIS to AIM (approximately 73%, compared to 71% at AAITF/12) and Phase 2 of the Roadmap (approximately 37%, compared to 34% at AAITF/12). This indicated that there has been, in general region-wide terms, little further progress in the last year.

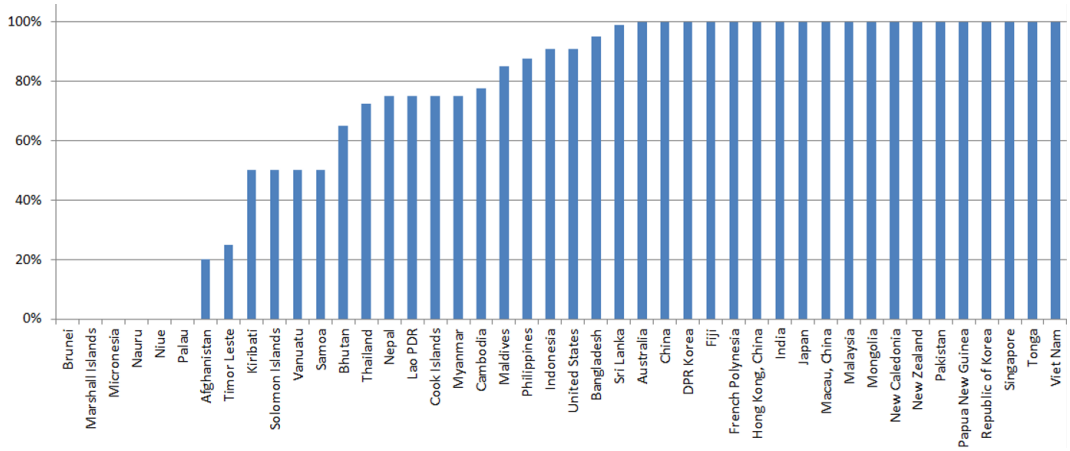

Figure 3: Regional Phase 1 Implementation Progress

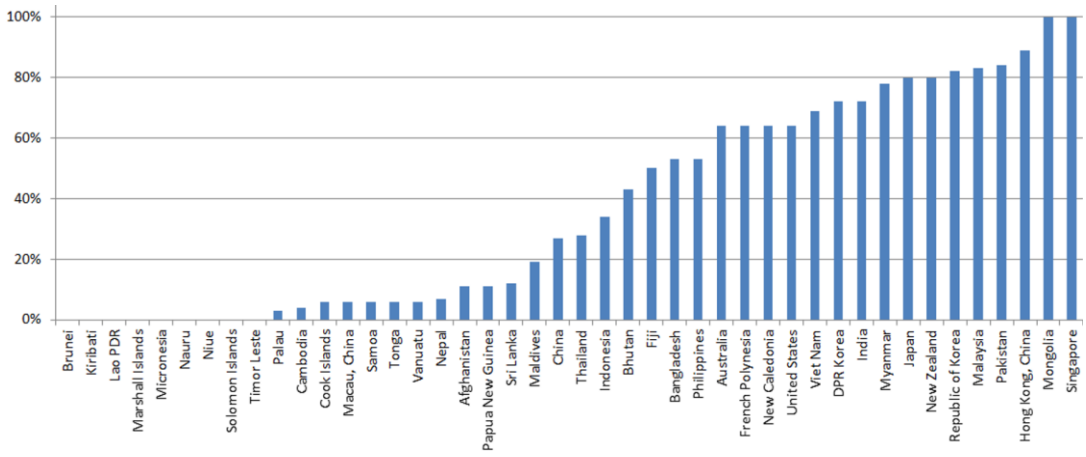

Figure 4: Regional Phase 2 Implementation Progress.

2.130 Overall Regional implementation of Phases 1 and 2 of the Roadmap was approximately 48%, compared to approximately 44% at AAITF/12.

2.131 The meeting was again reminded that the implementation steps of Phase 1 of the Roadmap were consolidation steps, i.e. the SARPS for these four steps had been published in Annex 15 many years before the need for transition to AIM arose. The failure of many States to implement these fundamental requirements for the correct functioning of an AIS was a particular concern.

2.132 Hong Kong, China had updated AAITF/13 on the progress of AIS to AIM transition, and highlighted three areas where challenges had been identified. These included ICARD and the resolution of duplicated 5LNC, the production of electronic AIP (eAIP), and issues relating to Phase 3 of the ICAO Roadmap for Transition from AIS to AIM – *Information Management*.

2.133 The meeting agreed to the following Draft Conclusion for consideration by APANPIRG/29 and referral to ICAO HQ:

<table>
<tr><td colspan="3">Draft Conclusion ATM/SG/6-13: ICAO Action to Provide Support and Guidance Material to Facilitate AIS – AIM Transition</td></tr>
<tr><td colspan="2">What: That, ICAO is urged to:
1. provide guidance on the best practice on the establishment of a support team, training and handling of data inconsistencies to facilitate digital eAIP implementation; and
2. provide guidance on best practices for implementing AIM Roadmap Phase 3 Steps P-19, P-20 and P-21.</td><td>Expected impact:
☒ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: To respond to State concerns on the lack of guidance material for aeronautical information exchange and the need for advice on best practices in implementing AIM Roadmap Phase 3 transition steps.</td><td colspan="2">Follow-up: ☐Required from States</td></tr>
<tr><td>When: 3-Aug-18</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☐APAC States ☒ICAO APAC RO ☒ICAO HQ ☐Other:</td></tr>
</table>

2.134 The initial priority for resolution of duplicated 5LNC was applied to those that were separated by less than 1,000 NM due to the increased risks involved. A list of these duplicates was provided in **ATM/SG/6 WP/38 Attachment A**.

2.135 Noting that, while AIS had a critical interest in the matter of 5LNCs due to the need for AIP amendment, the AIS was not always responsible for their allocation. ATM/SG/6 participants were requested to ensure that their organizations were fully aware of the work that must be undertaken to ensure the global uniqueness of 5LNC, and the impact upon ATC, AIS and other relevant parties.

2.136 The meeting was informed of the adoption by the Council of ICAO of Amendment 40 to Annex 15, effective 16 July 2018 and applicable on 08 November 2018. The new *PANS-AIM* was expected to be approved in the near future, as was the amended ICAO Doc 8126 – AIS Manual, both of which would be applicable from 08 November 2018.

2.137 Information was provided on ICAO's new strategy for the transition of RNP APCH chart identification from RNAV to RNP, issued in Electronic Bulletin (EB) 2018/11 and Circular 353 *Transition Planning for Change to Instrument Flight Procedure Approach Chart Identification from RNAV to RNP*, and arising from Amendment 6 to PANS-OPS Volume II.

2.138 ATM/SG/6 was invited to note the demands that the RNP APCH chart transition will place on stakeholders, such as re-issue of charts (closely coordinated between the State's AIS and charting house), possible changes to automation, software adaptation, training, amendment of aircraft flight manuals, and changes to on-board the multi-function control and display unit (MCDU.

2.139 Viet Nam had provided AAITF/13 with information on the continuing existence of NOTAM containing information of permanent validity that had not been transferred to AIP or AIP Supplement (AIP SUP) in a timely manner, overloading pilots with lengthy Pre-flight Information Bulletin (PIB). The relevant SARPS in Annex 15 and guidance provided in Doc 8126 *AIS Manual* were highlighted, as was the guidance provided in the *Guidance Manual for AIS in the Asia/Pacific Region*.

2.140 Therefore, the meeting agreed to the following Conclusion:

Conclusion ATM/SG/6-14: Management of NOTAMs	
What: That, States are urged to take immediate action to reduce the large numbers of permanent, long duration NOTAMs by: *1. conducting a full review of all NOTAMs issued by the State;* *2. expediting the transfer of valid permanent NOTAM information into AIP;* *3. expediting the transfer of valid temporary NOTAM information of long duration into AIP SUP; and* *4. cancelling the NOTAMs accordingly.*	*Expected impact:* *☐ Political / Global* *☐ Inter-regional* *☐ Economic* *☐ Environmental* *☒ Ops/Technical*
Why: To reduce the risks associated with the proliferation of PERM NOTAM and temporary NOTAM of long duration that have not yet been migrated into AIP.	*Follow-up: ☒Required from States*
When: 3-Aug-18	*Status: Adopted by Subgroup*
Who: ☐Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:	

2.141 AAITF would undertake periodic sampling of NOTAMs, with a view to direct engagement with States responsible for permanent, long duration NOTAM and subsequent reporting to APANPIRG through the Air Navigation Deficiencies list. IATA requested that this issue be escalated to reflect that it was a global problem.

2.142 AAITF/13 had agreed that that Version 1.0 of the *Asia/Pacific Regional Plan for Collaborative AIM* be finalized, noting that the information included in the document had been rationalized to take account of the recently increased effort to finalize global guidance, and to avoid any inadvertent divergence. The *Asia/Pacific Regional Plan for Collaborative AIM* included performance expectations aligned with and supporting the performance objectives of the Asia/Pacific Seamless ATM Plan. The meeting agreed to the following Conclusion.

Conclusion ATM/SG/6-15: Asia/Pacific Regional Plan for Collaborative AIM	
What: That, *1. the Asia/Pacific Regional Plan for Collaborative AIM Version 1.0 at* ***Appendix I to the Report*** *(****Attachment F****), be adopted and uploaded to the ICAO Asia/Pacific Regional Office eDocuments web-page;* *2. the Regional AIM Implementation Status Reporting Form, provided at Appendix D to the AIM Plan, be separately uploaded to the Regional Office eDocuments web-page; and* *3. Asia/Pacific Administrations utilize the Regional AIM Implementation Status Reporting Form to report their AIM implementation status at least once annually, by not later than 30 April each year.*	*Expected impact:* *☐ Political / Global* *☐ Inter-regional* *☐ Economic* *☐ Environmental* *☒ Ops/Technical*
Why: To provide a Regional AIM implementation plan together with guidance on priority aspects of AIM implementation, and information on processes for the management of Regional aeronautical data.	*Follow-up: ☐Required from States*
When: 3-Aug-18	*Status: Adopted by Subgroup*
Who: ☐Sub groups ☒APAC States ☒ICAO APAC RO ☐ICAO HQ ☐Other:	

2.143 Hong Kong, China noted there was similarity, as well as potential duplication and inconsistency, of the performance expectations of the *Asia/Pacific Regional Plan for Collaborative AIM* and their associated status reporting elements and the Seamless ATM Plan reporting regime, and in some cases the ICAO Roadmap for Transition from AIS to AIM. The meeting agreed that AAITF should further examine the performance objectives and status reporting elements with a view to future rationalization in this regard of the *Asia/Pacific Regional Plan for Collaborative AIM* and *Seamless ATM Plan*. AAITF should also re-consider the necessity for two levels of implementation reporting.

2.144 The meeting urged ICAO to provide the resources for a harmonized, single portal for reporting implementation of the performance expectations of the Seamless ATM Plan and its supporting, subsidiary plans (Regional Framework for Collaborative ATFM, Regional ATM Contingency Plan, Regional SAR Plan and Regional Plan for Collaborative AIM).

Updating ICARD and Resolution of Duplicated 5LNCs (WP39)

2.145 India reminded the meeting of State Letter AN 11/45.5-17/101, dated 11 August 201. India had provided a report to the Asia/Pacific Regional Office, listing 5LNCs published in AIP India and registered in ICARD, published in AIP and not registered in ICARD, registered in ICARD but not published in AIP, and those for which the data recorded in ICARD did not match the AIP data.

2.146 Information was provided on other activities undertaken by India to comply with the requirements of the State Letter, including an action plan which gave priority to addressing harmonization issues with waypoints on the FIR boundaries with neighbouring States. India provided a list of FIR boundary waypoints yet to be resolved in ATM/SG/6 WP39 Annexure-2. Subject to similar action by neighbouring States, India expected to complete all action by the end of December 2018. India requested action by Bhutan, Myanmar, Nepal, Somalia, Sri Lanka and Yemen to resolve anomalies in FIR boundary waypoints with India. ICAO thanked and congratulated India for the level of attention they had paid to this challenging issue.

2.147 Hong Kong, China noted that with the rapid development of civil aviation, more and more ATS routes and procedures would be produced, so although 5LNC might meet the today's needs, a solution for the longer term should be explored in advance.

Meteorology Issues Relevant to ATM (WP40)

2.148 ICAO provided an overview of Aeronautical Meteorology (MET) issues relevant to ATM arising from the Twenty-Second Meeting of the Meteorology Subgroup of APANPIRG (MET SG/22, Bangkok, Thailand, 18 – 21 June 2018), and its contributory bodies.

Asia/Pacific Search and Rescue Update (WP41)

2.149 ICAO provided an update on Search and Rescue (SAR) for the Asia/Pacific, from the Third Meeting of the Asia/Pacific SAR Workgroup (APSAR/WG/3, Bangkok, 21 – 23 May 2018).

2.150 APSAR/WG/3 had discussed Circular 347 *Aircraft Tracking Implementation Guidelines* related to the GADSS, as provisions contained in Annex 6, Part I paragraph 3.5 would become applicable on 08 November 2018. IATA stressed that GADSS (and in particular the new tracking requirements) had implementation issues, largely due to the lack of complete guidance material and implementation data.

2.151 The APSAR/WG/3 had agreed to the following Draft Conclusion, which the ATM/SG/6 endorsed, for consideration by APANPIRG/29:

<table>
<tr><td colspan="3">Draft Conclusion ATM/SG/6-16: GADSS Aircraft Tracking Requirement</td></tr>
<tr><td colspan="2">What: To support compliance with the Global Aeronautical Distress and Safety System (GADSS) aircraft tracking requirements applicable 08 November 2018 that:
a) States should provide information to the ICAO APAC Regional Office where actual Air Traffic Control tracking capability does not meet the GADSS requirements in their area of responsibility, together with a timeline for promulgation of regulatory requirements for airlines to submit requests for variations and exemptions; and
b) ICAO HQ be requested to ensure that other ICAO regions affected take action in accordance with a), and consolidate the information to make it available to all aircraft operators and States.</td><td>Expected impact:
☒ Political / Global
☒ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: The action requested is critical to support the GADSS aircraft tracking requirement to ensure airlines (and regulators) have a clear understanding of areas of responsibility, to enable compliance with the requirements applicable from 08 November 2018.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 5-Sep-18</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☒APAC States ☐ICAO APAC RO ☒ICAO HQ ☐Other:</td></tr>
</table>

2.152 ICAO's Job Card *Implementation of the Global Aeronautical Distress and Safety System (GADSS)* to develop workshop materials for States and aircraft operators and a high-level rollout plan and regional plans by 2020 had been approved by the Air Navigation Commission.

2.153 The USA had stated that ICAO HQ would need assistance to conduct Job Card Tasks G14 and G15, and that HQ recognized the ICAO APAC Regional Office as a leader in advancing SAR development.

2.154 There were no unresponsive SAR Points of Contact (SPOCs) in the Asia/Pacific Region.

2.155 Asia/Pacific States that had already installed the new Cospas-Sarsat Medium Earth Orbit SAR (MEOSAR) system were Australia, Japan, Malaysia, New Zealand and the USA. India, Pakistan, Thailand and Viet Nam were planning MEOSAR implementation, and Singapore was in the process of installing the MEOSAR System, with expected completion at the end of 2018.

2.156 APSAR/TF/3 had discussed the lack of progress in the registration of detected beacons, which had been steady at about 72% for several years. It was considered necessary to closely monitor this issue, and if necessary in future urge States to take stronger action, such as legislation requiring registration, and appropriate enforcement policies.

2.157 Implementation of the *Asia/Pacific SAR Plan* was being monitored by an annual survey (**Figure 5**). A total of 11 States had not yet responded to the survey – Bhutan, Cook Islands, Marshall Islands, Micronesia, Nauru, Palau, Papua New Guinea, Solomon Islands, Timor-Leste, Tuvalu and Vanuatu.

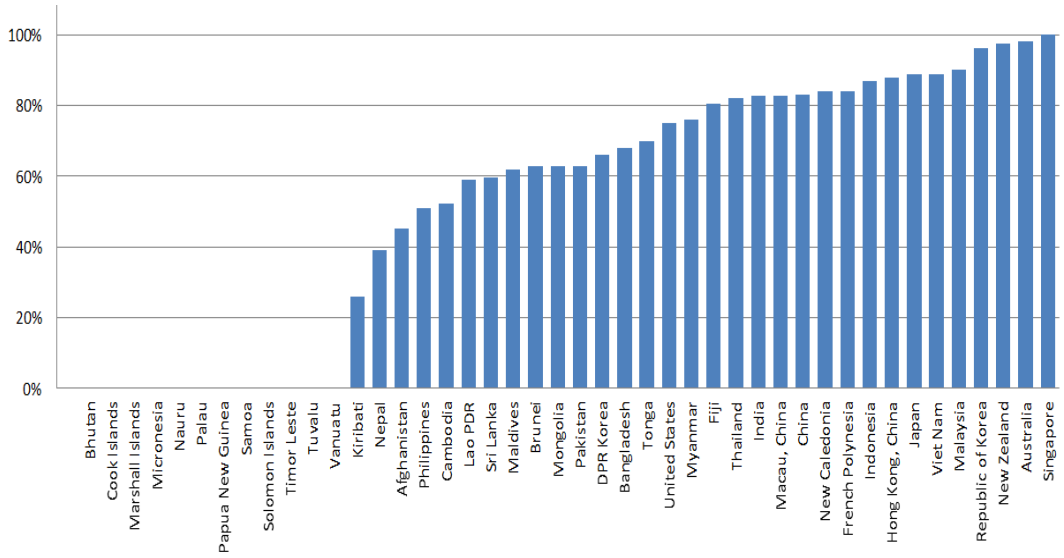

Figure 5: Asia/Pacific SAR Plan Implementation Status (as at 8 May 2018)

2.158 ICAO recalled that APSAR/WG/2 had agreed that States below 90% implementation by 2019 would be considered to have a SAR APANPIRG deficiency at that time.

2.159 ICAO had sent a survey on one of the 41 *Asia/Pacific SAR Plan* elements causing concern as a result of monitoring – Rescue Coordination Centre (RCC) contingency planning. Administrations were urged to respond to this survey so the region had a clearer understanding of implementation issues.

2.160 APSAR/TF/3 supported the inclusion of SAR in the Global Air Navigation Plan (GANP) as a Basic Building Block (BBB) element. The USA urged States to submit papers on SAR to the Thirteenth Air Navigation Conference (AN-Conf/13, Montreal, Canada, 9 – 19 October 2018), and for Asia/Pacific States to send SAR experts to the Conference. The APSAR/WG/3 agreed to the following Draft Conclusion, which was endorsed by the ATM/SG/6, for consideration by APANPIRG/29:

<table>
<tr><td colspan="3">Draft Conclusion ATM/SG/6-17: SAR and GADSS in the GANP</td></tr>
<tr><td colspan="2">What: That, Asia/Pacific States are urged to advocate for:
a) inclusion of Search and Rescue (SAR) as a Basic Building Block (BBB) and the Global Aeronautical Distress and Safety System (GADSS) functions within the Sixth edition of the Global Air Navigation Plan (GANP) by -
i) sending SAR experts; and
ii) presenting SAR-related papers to the Thirteenth Air Navigation Conference (AN-Conf/13, Montreal, Canada, 9 – 19 October 2018); and
b) greater resources within ICAO HQ to ensure an effective oversight of SAR.</td><td>Expected impact:
☒ Political / Global
☐ Inter-regional
☐ Economic
☐ Environmental
☒ Ops/Technical</td></tr>
<tr><td>Why: APSAR/WG has noted systemic weaknesses in vital SAR focus areas and believes GADSS implementation will take much time and effort to be as beneficial as it should become.</td><td colspan="2">Follow-up: ☒Required from States</td></tr>
<tr><td>When: 5-Sep-18</td><td colspan="2">Status: Draft to be adopted by PIRG</td></tr>
<tr><td colspan="3">Who: ☐Sub groups ☒APAC States ☐ICAO APAC RO ☒ICAO HQ ☐Other:</td></tr>
</table>

2.161 The meeting noted that the *European SAR Plan*, which had been largely based on the *Asia/Pacific SAR Plan*, was published as EUR Doc 039 in November 2017.

2.162 Given the large number of potential changes to the *Asia/Pacific Seamless ATM Plan* in 2019, the meeting agreed to form a Small Working Group (SWG) to review potential amendments with the following ***Decision APSARWG/3-3: SAR Plan Amendment Review Small Working Group***.

GADSS Aircraft Tracking Requirements (WP42)

2.163 The USA observed that national SAR services would need to adapt current practices and procedures to manage these new capabilities for GADSS flight tracking and the benefit for SAR, if the data is rapidly available to the aircraft operator, the appropriate ATS unit, and the RCC.

2.164 WP42 also noted that the new Autonomous Distress Tracking (ADT) capability would become applicable for certain aircraft on 01 January 2021. The meeting noted that as this would generate alerts to ATS from different sources, training for controllers in this regard was necessary.

2.165 IATA expressed its concern that States were not ready for the initial GADSS tracking requirements and that awareness would need to be raised at APANPIRG and the DGCA Conference.

Search and Rescue Agreements and Letters of Agreements (WP43)

2.166 The USA discussed the lack of SAR agreements across the Asia/Pacific Region, and recalled several, less formal mechanisms that could be used in lieu of a SAR agreement if format was an issue.

Air Navigation Service Deficiencies List (WP44)

2.167 The current confirmed ANS Deficiencies as at APANPIRG/28 are shown in **Figure 6**:

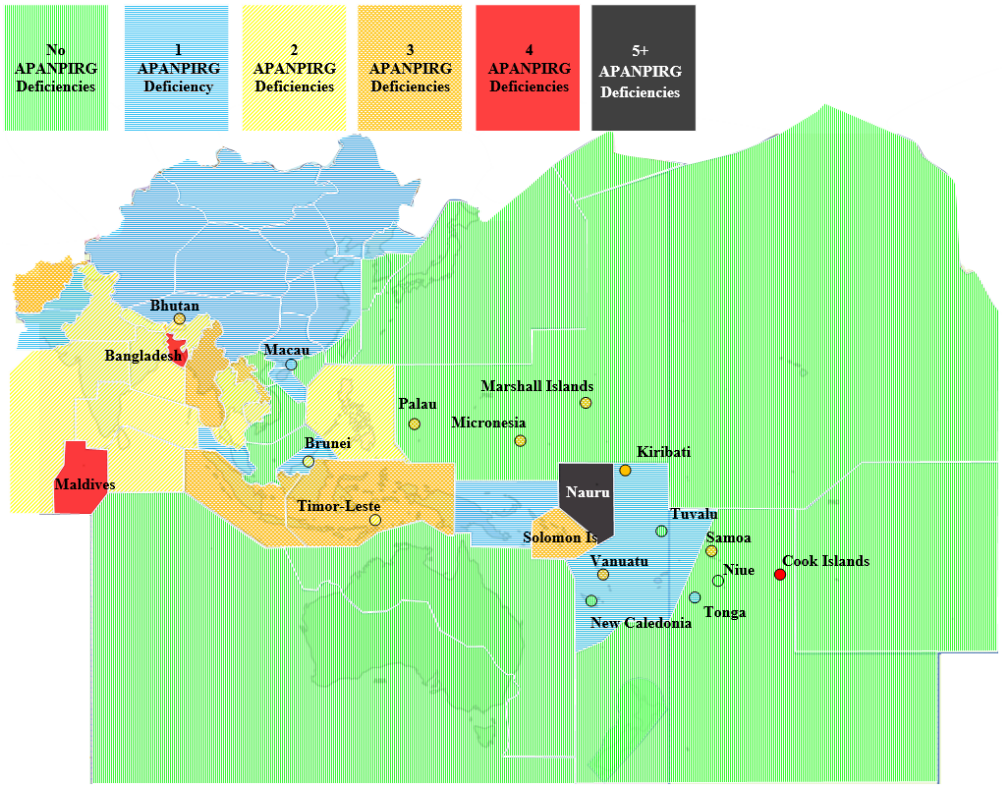

Figure 6: APANPIRG/28 ANS Deficiencies

2.168

2.169 The meeting reviewed and discussed the ATM/AIS/SAR Deficiency List included as **Attachment G** and agreed to forward the list for consolidation and presentation by APANPIRG/29.

2.170 The meeting acknowledged the deficiency concerns related to the IFALPA Deficiencies, and invited IFALPA to present these as part of an IFALPA WP at future ICAO meetings, instead of being appendixes to an ICAO paper. Hong Kong, China also recommended that States and IFALPA should engage in dialogue related to the IFALPA-identified deficiencies to verify the information provided.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) note the information contained in this paper;

b) note the following Conclusions:

i) *Conclusion ATM/SG/6-1: ATC Separations Standards Survey;*

ii) *Conclusion ATM/SG/6-2: Recommended CTOT Compliance Window;*

iii) *Conclusion ATM/SG/6-3: Proposed Air Navigation Plan Volume II Amendment;*

iv) *Conclusion ATM/SG/6-4: Asia/Pacific Regional SID/STAR Phraseology Implementation Strategy;*

v) *Conclusion ATM/SG/6-12: Multiple Line-Ups on the Same Runway;*

vi) *Conclusion ATM/SG/6-14: Management of NOTAMs;*

vii) *Conclusion ATM/SG/6-15: Asia/Pacific Regional Plan for Collaborative AIM;*

c) discuss the following Draft Conclusions and Draft Decisions:

i) *Draft Conclusion ATM/SG/6-5: Transition Planning for RNP APCH CHART Identification from RNAV to RNP;*

ii) *Draft Conclusion ATM/SG/6-7: Proposal for amendment to PANS-ATM (Doc4444) on ADS-B related Phraseology;*

iii) *Draft Conclusion ATM/SG/6-8: Procedures for Ballistic Launch/Space Re-entry Management;*

iv) *Draft Conclusion ATM/SG/6-9: Minimizing the Impact of Non-ICAO Procedures and Requirements for Military Activities Affecting Civil Aviation;*

v) *Draft Decision ATM/SG/6-10: AIRARD/TF Terms of Reference;*

vi) *Draft Decision ATM/SG/6-11: Revised APUAS/TF Terms of Reference;*

vii) *Draft Conclusion ATM/SG/6-13: ICAO Action to Provide Support and Guidance Material to Facilitate AIS – AIM Transition;*

viii) *Draft Conclusion ATM/SG/6-16: GADSS Aircraft Tracking Requirement;*

ix) Draft Conclusion ATM/SG/6-17: SAR and GADSS in the GANP; and

d) discuss any other relevant matters as appropriate.

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ASIA/PACIFIC PLANNING CHECKLIST FOR BALLISTIC LAUNCH AND SPACE RE-ENTRY

A.1 Launch Facilities:

- Generally ballistic launches take place from pre-defined locations. This should enable analysis and pre planning of contingency options that can be activated when a launch is notified
- Launch locations (whether mobile or static) should be positioned to away from busy air traffic areas.

A.2 Pre Launch Planning:

- Launch details should be published at least **two working weeks'** notice; if possible, and include
    - Extent and coordinates of proposed danger Zone
    - Ensure planning and notification is in place for any re-entry/debris possibility
    - Tentative launch window (timing and dates)

To all affected FIRs and respective ICAO regional office.

- Ideally the Launch State should have at least one conference call with affected FIR operational management to:
    - discuss impact and options for alternative dates/times that minimise operational impact
    - identify contingency routing if possible
    - coordinate NOTAM action
    - Discuss any possible re-entry issues and impact
    - Liaison with affected airspace Users
    - Notify and agree process for actual activation and cancellation of any restrictions

A.3 Tactical Launch Co-ordination process:

- Actual Launch "Window" published with ideally **three days' notice;** but not less than 24hrs
- Launch State to ensure ongoing collaborative information sharing with points of contact in affected FIRs:
    - Real Activation Time Window: As the countdown begins / at least four hours prior;
    - Facilitating launch with minimal impact on civil air traffic: Launch authorities to clearly convey estimated normalcy time e.g. flights beyond XX:XX (time in UTC) can expect normal routings, but can be advised to carry fuel for the alternate routings (to be on safer side),
    - Notify Lift off: As soon as the Rocket gets airborne and
    - Notify End of activity through NOTAMC: coordinate and ensure immediate withdrawal of NOTAMs by all affected FIRs

A.4 Launch Cancellations:

- Cancellations of launch at any point of time needs to be disseminated as soon as possible to all affected FIRs.

- Ongoing information sharing should take place until the 'all clear' is given.

ROCKET LAUNCH/SPACE RE-ENTRY ACTIVITY MANAGEMENT

PLANNING CHECK LIST

- Launch required by:
- Proposed Temporary Danger Area:
- Proposed launch Reservation window:
- Date: DD/MM/YYYY to DD/MM/YYYY Time: XX:XX to YY:YY UTC
- Proposed Definitive launch window:
- Date: DD/MM/YYYY to DD/MM/YYYY Time: XX:XX to YY:YY UTC
- Expected exact date of launch: DD/MM/YYYY

Affected FIR	*Affected AWYs*	*Affected Flights in requested Time window*	*Option 1: Suggested revised time and date*	*Option 1: Affected flights in revised time and date*	*Option 2: Suggested revised time and date*	*Option 2: Affected flights in revised time and date*

Pre-Launch Conference Call agenda:

- Notify latest Launch details and logistics
- Identify contingency routing:
- Identify SUA, FUA options to improve ATM during launch:
- Coordinate NOTAM action among all affected FIRs:
- Discuss any possible re-entry issues and impact:
- Notify process for actual activation and cancellation of any restrictions: (AFTN/NOTAM/NOTAMC/email, Telephone Call),
- Any other business

Identify Points of Contact (POC) for airspace reservation co-ordination,

Affected FIR	POC (Name, Designation)	Tel , Mob, AFTN	Email

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International Airspace and Civil/Military Cooperation

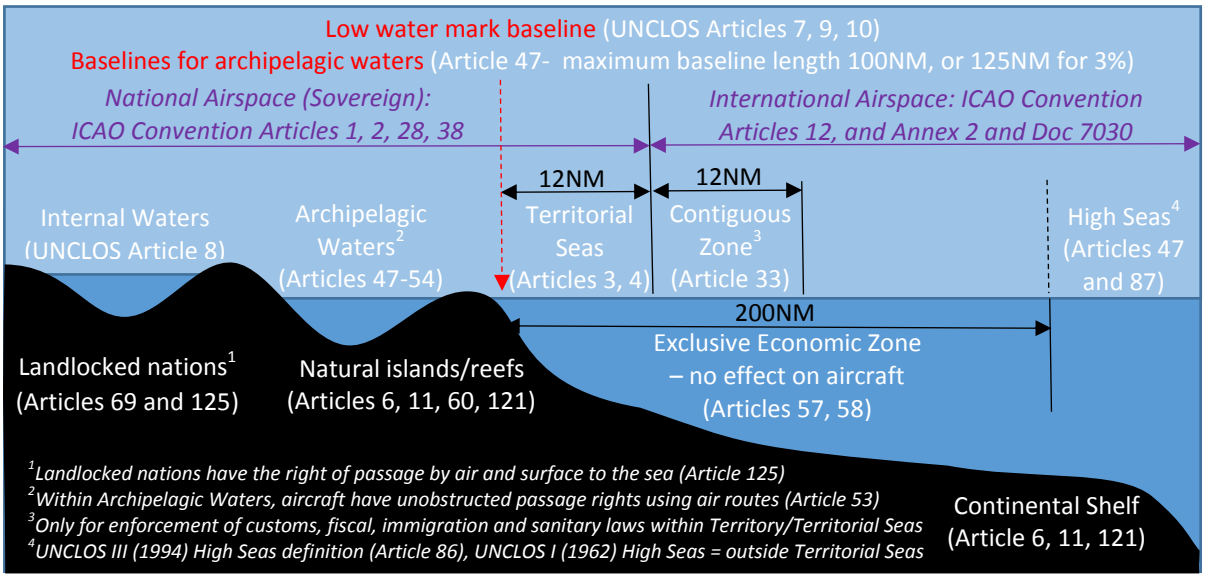

Figure 1: Maritime and Airspace Volumes as Defined by UNCLOS (white/red = UNCLOS, purple = CC)

Key aspects about the *United Nations Convention on the Law of the Sea* (UNCLOS) and the *Convention on International Civil Aviation* ('Chicago Convention' or 'CC') are as follows.

- Although UNCLOS is titled as a 'Law of the Sea', its provisions also affect airspace and the operation of aircraft!

- In particular, UNCLOS defines volumes of airspace that are sovereign and international (where States may make laws and where States may <u>not</u> make universal laws* respectively, **Figure 1**). It should be noted that the terms 'national airspace' and 'international airspace' are descriptive in nature, but do not appear in UNCLOS or the CC.

  **Note: notwithstanding this, States may enact laws for their own citizens and aircraft registered in those States for operations within international airspace.*

- The volumes of airspace are dependent on the definition of 'baselines' in UNCLOS, which are generally based on the maritime shoreline, whether the shore is continental in nature or the outermost part of a chain of islands (an archipelago). However, not all island groups are archipelagos, as the islands must be no more than 100NM apart to meet the definition of being an archipelago (except for 3%, 125NM apart).

- Archipelagic Waters and the airspace above them are sovereign and part of the territory of the State concerned, which is relevant for Article 28 of the CC (provision of air navigation services). However, the sovereignty of archipelagic airspace is <u>not</u> the same as other territorial airspace, as aircraft have the right of 'continuous and expeditious' passage, so cannot be denied transit through this area (UNCLOS Article 53).

- Exclusive Economic Zones (EEZs) only have material effect on maritime resources, including the sea bed, and do <u>not</u> have any legal consequences for aviation (UNCLOS Articles 57 and 58).

- The CC and Annex 2 is not considered to use the same definition of 'High Seas' as the 1994 iteration of UNCLOS, deferring to the earlier version (1962)*. Article 2 of the CC is clear that 'National Airspace' only composes the land and territorial waters; therefore, the non-sovereign portion of airspace is beyond this, as far as aviation is concerned (i.e.: beyond 12NM). In addition, not all States have ratified the latest version of the UNCLOS.

  Article 2: For the purposes of this Convention the territory of a State shall be deemed to be the land areas and territorial waters thereto under the sovereignty, suzerainty, protection or mandate of such State.

- While the CC and its Annexes, including Annex 2, are <u>not</u> applicable to State aircraft (military, police or customs) in general, the Convention does place requirements upon States regarding the <u>interaction between military and civil aircraft</u>. For example, State aircraft may not overfly the territory of another State without permission, and regulations must be enacted to require State aircraft to have 'due regard' for the safety of navigation of civil aircraft (Article 3 of the Convention).

- In addition, Article 3 *bis* of the CC requires States to ensure that military aircraft do not endanger civil aircraft, but <u>these are only for two specific situations – use of weapons and interception</u>.

- There are <u>no</u> requirements for State aircraft to comply with civil requirements in international airspace (thus a State aircraft operating on a flight plan in such airspace is complying with civil requirements voluntarily, including an ATC clearance to enter controlled airspace, and may <u>not</u> legally be denied an ATC clearance to transit).

- It is possible that States may determine that, in the interests of safe interaction between military and civil aircraft, Article 3 *bis* of the CC needed to be amended to include reference to the specific requirement for an ATC clearance into controlled airspace (to ensure entry at a safe level, position and time, <u>not</u> for denial of transit), but ICAO had no current plans to amend the Convention in this regard, *or to further clarify what 'international airspace' is.

…….

TERMS OF REFERENCE (TOR) of the

Advanced Inter-Regional ATS Route Development Task Force (AIRARD/TF)

1. TERMS OF REFERENCE

1.1 The terms of reference of the AIRARD Task Force are to:

a) identify requirements and improvements for achieving and maintaining an efficient route network across the ICAO APAC, EUR/NAT and MID Regions based on the airspace user needs and in coordination with stakeholders (States, International Organizations, user representative organizations and other ICAO Regions);

b) ensure harmonized planning and implementation of ATS routes and airspace improvement projects at the interfaces between the three ICAO Regions;

c) monitor the status of implementation of the agreed ATS routes and airspace improvement projects;

d) in case of implementation problems, identify the associated difficulties and propose/agree to solutions to further progress with the implementation;

e) review and amend the components of the ATS route structure and airspace description in order to ensure their compliance with ICAO provisions (e.g. five-letter name-code (5LNC) uniqueness, ATS route designators, WGS-84 coordinates, flexible use of airspace (FUA) implementation);

f) discuss and support the implementation of new concept;

g) determine the CNS requirements, interoperable entry/exit points or areas, connections into the TMAs, weather related issues, terrain aspects, airspace organisation which would be needed in order to support the implementation of the new concepts;

h) achieve common understanding and support from all stakeholders involved in or affected by the ATM developments/activities in the three ICAO Regions; and

i) use the AIRARD/TF meetings as a forum for bilateral and multilateral discussions (such as review of ANS Letters of Agreements.

1.2 In order to meet the Terms of Reference, the AIRARD Task Force shall:

a) Discuss and review the ATS route network and airspace improvement projects which involve States (including the Military) and all aviation stakeholders (airspace users, international organisations and Computer Flight Plan Software/Service Providers (CFSPs)) across the three Regions;

b) propose a strategy and prioritized plan for development of improvements to the route network and/or airspace structure to facilitate harmonized and synchronized trans-regional planning, highlighting:

- areas that require immediate attention (solution of safety, capacity or complexity constraints);
- interface issues with adjacent ICAO Regions;

c) monitor and report on the implementation status of the prioritized plan;

d) develop a roadmap for the implementation of new concepts such as the PBN highways;

e) develop a working depository for route proposals that will be used as a dynamic reference document for ongoing discussions on routes under development/ modification. In this respect, the Task Force should explore the utility that can be realized from the route catalogue concept/ATS routes database; and

f) address CNS and ATM interface issues with other regions and make specific recommendations to achieve a harmonized and interoperable environment in the interface areas between the regions.

2. In order to effectively perform its tasks and responsibilities:

a) The AIRARD TF shall elect Co-Chairpersons (one from a State and one from the airspace users) for a cycle of three meetings, unless otherwise re-elected.

b) The TF shall meet at least once a year and/or when deemed necessary.

c) The TF meetings should be hosted by its members on rotation basis.

d) The TF shall report to the relevant ATM Groups in the APAC and MID Regions under the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG), the European Air Navigation Planning Group (EANPG), North Atlantic Systems Planning Group (NAT SPG) and the Middle East Air Navigation Planning and Implementation Regional Group (MIDANPIRG).

3. COMPOSITION

The AIRARD Task Force is composed of:

a) States from APAC, EUR/NAT and MID Regions, or States providing services in the APAC, EUR/NAT and MID Regions;

b) concerned International and Regional Organizations; and

c) other representatives from provider States and Industry may be invited on ad hoc basis, as observers, when required.

Draft – to be endorsed by APANPIRG and EANPG
Endorsed by MIDANPIRG

Terms of Reference

Asia/Pacific Unmanned Aircraft Systems Task Force (APUAS/TF)

Objectives: the objective of the APUAS/TF will be to develop guidance material that supports an Asia/Pacific Seamless ATM Plan element: B1-UAS. This element is expected to incorporate Aviation System Block Upgrade (ASBU) BI-RPAS (Remotely Piloted Aircraft Systems) but in addition, to include regional expectations for the regulation and safe operation of UAS (other than RPAS that fall within the scope of the ICAO RPAS Panel[1]) within non-segregated airspace from an ATM perspective by November 2019, for consideration by the ATM/SG and APANPIRG. The guidance material for ~~small~~ UAS ~~(generally 25kg or less)~~ may include, *inter alia*:

- ~~reference to systems designed to ensure a commensurate safety against obstacles, protected airspace, aircraft and non-involved people;~~
- ~~communication and surveillance systems for Air Traffic Services (ATS) that allow the effective management of safety risks in controlled and uncontrolled airspace; and~~
- guidance on elements to be considered for inclusion in ~~model~~ regulations ~~that manage the manufacturing, sale and~~ for the:
  - operation of UAS; and
  - technical or performance requirements of UAS; and that
  - may be applied at the point ~~of manufacture or~~ sale of UAS;
- ~~education~~ processes to ~~provide~~ educate all UAS ~~users~~ operators or potential ~~users~~ operators, ~~regulators and~~ air navigation service providers and other stakeholders ~~with information~~ on ~~appropriate~~ UAS ~~operations~~ regulations and their application;
- ~~recommended methods of safety data collection and analysis for UAS incidents;~~
- recommended methods of safety data collection and analysis for UAS accidents and incidents, developed in coordination with the Asia/Pacific Regional Aviation Safety Group (RASG-APAC);
- ~~integration~~ alignment of regulations for ~~small~~ UAS with existing regulations for model aircraft;

[1] The ICAO RPAS Panel is developing Standards and Recommended Practices for RPAS that generally operate within the National Airspace Systems in the same way as manned aircraft, for inclusion in Annexes to the Convention on International Civil Aviation.

(Approved by APANPIRG/XX, XXXXXX, 20XX)

- Consideration of regulations relating to ~~small~~ UAS operation both within and beyond visual line of sight;

- Safety assessments for ~~small~~ UAS operations; and

- Coordination with the UAS-AG, ~~and~~ JARUS~~,~~ or other appropriate specialist ~~body~~ bodies.

To facilitate global harmonization the regulatory guidance developed by APUAS/TF should be shared with similar bodies in other ICAO Regions, and with UAS-AG through the ICAO Secretariat.

The APUAS/TF should report its progress with an interim update at the ~~ATM/SG/5 (2017~~) ~~and~~ ATM/SG/6 (2018) and ATM/SG/7 (2019).

Meetings: the APUAS/TF will normally meet at least once a year, but twice a year when agreed by the APUAS/TF if required.

Membership:

The APUAS/TF membership will be formed by Asia/Pacific States/Administrations and International Organizations. Other non-Asia/Pacific States, and organizations involved in UAS manufacturing, regulation and operations may join the APUAS/TF at the invitation of the ICAO Regional Office.

Reporting: the APUAS/TF reports to the ATM/SG. The ATM/SG will coordinate with the RASMAG, CNS/SG, and the APRAST/RASG as appropriate before consideration by APANPIRG.

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(Approved by APANPIRG/XX, XXXXXX, 20XX)

Multiple Line-Ups on Same Runway Proposed Amendment to the Doc 7030 MID/ASIA and PAC Regions (Asia/Pacific FIRs), Section 6.5.4

Line-up instructions may be issued to more than one aircraft at different points on the same runway, taking into account that intersection take-off criteria shall be complied with, provided that:

a) minimum visibility is established by the appropriate authority (those minima shall permit the controller and the pilot to continuously observe the position of the relevant aircraft on the manoeuvring area by visual reference;

b) local considerations, such as the airport layout, available radar equipment and local weather phenomena, are defined. The effect of jet blast/prop wash shall be taken into consideration;

c) air traffic service for aircraft involved in multiple line-ups on the same runway is provided on the same radio frequency;

d) pilots are advised of the position of any traffic on the same runway;

e) the slope of the runway does not render preceding aircraft in the departure sequence invisible to succeeding aircraft on the same runway;

f) pilot read-back of line-up instructions is required and contains the runway designator, the name of the intersection (if applicable) and the number in the departure sequence;

g) wake turbulence separation is applied; and

h) ATC shall employ appropriate methods of ensuring an aircraft's position when conducting multiple line ups during night conditions.

INTERNATIONAL CIVIL AVIATION ORGANIZATION

ASIA/PACIFIC REGIONAL PLAN

FOR

COLLABORATIVE AERONAUTICAL INFORMATION MANAGEMENT

Version 1.0 August, 2018

This Plan was developed by the Asia/Pacific AIS-AIM Implementation Task Force (AAITF)

Approved by the ATM Sub-Group of APANPIRG (ATM/SG/6) and published by the ICAO Asia and Pacific Office, Bangkok

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SCOPE OF THE PLAN

Asia/Pacific Regional AIM Planning and Guidance

1.1 Asia/Pacific (APAC) Regional requirements and existing guidance material for aeronautical information management (AIM) are found in the following documents:

- *Asia/Pacific Air Navigation Plan*, (APAC ANP) providing agreed regional requirements considered to be the minimum necessary for effective planning and implementation of Aeronautical Information Services (AIS) and AIM.

- *Asia/Pacific Seamless ATM Plan*, providing background information, analyses and performance objectives to facilitate seamless ATM operations in the APAC Region; and

- *Guidance Manual for Aeronautical Information Services (AIS) in the Asia/Pacific Region*, providing guidance on AIS quality management systems, AIS Training and Competency, guidance for priority AIM transition steps, and the Asia/Pacific Region Operating Procedures for Aeronautical Dynamic Data (OPADD).

  Note: The APAC ANP, Seamless ATM Plan and Guidance Manual for AIS in the Asia/Pacific Region are available on the ICAO APAC Regional Office eDocuments web-page.

Asia/Pacific Air Navigation Plan

1.2 The Asia/Pacific Air Navigation Plan (APAC ANP) provides for the planning and implementation of air navigation systems, in accordance with the agreed global and regional planning framework. They are developed to meet those needs of specific areas not covered in the worldwide provisions. The development and maintenance of the ANP is undertaken by the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG) with the assistance of the ICAO Secretariat.

1.3 The ANPs are used as a repository Document for the assignment of responsibilities to States for the provision of air navigation facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300), and contain requirements related to the facilities and services to be implemented by States in accordance with regional air navigation agreements.

1.4 The APAC ANP Volume 1 includes general regional requirements for States relating to the provision of aeronautical data and aeronautical information within their territory and those areas over the high seas for which it is responsible for the provision of air traffic services.

1.5 APAC ANP Volume II includes dynamic plan elements related to the assignment of responsibilities to States for the provision of aerodrome and air navigation facilities and services, and mandatory requirements related to aerodrome and air navigation facilities and services to be implemented by States in accordance with regional air navigation agreements.

1.6 APAC ANP Volume II Part VII assigns responsibility for the provision of AIS/AIM facilities and services in the Asia/Pacific Region, and for the production of sheets of the World Aeronautical Chart or Aeronautical Chart. It also includes the following specific regional requirements, proposed by AAITF, agreed by APANPIRG and formalized by regional air navigation agreement:

Volume II Part VII Section 3.

3.1 The priority regional requirements for AIM implementation are:

a) Establishment of AIS either as a separate entity within or, ideally, separated from the civil aviation administration in accordance with the guidance provided in ICAO Doc 8126 – AIS Manual Chapter 3.

b) Implementation of Quality Management Systems for aeronautical information;

c) Establishment of formal agreements between AIS providers and aeronautical data originators specifying the content, quality, maintenance and timing of provision of aeronautical data that is required to be promulgated in AIP, and the quality management process that shall be applied.

d) Implementation of internet-accessible electronic AIP generated from a digital database of aeronautical information.

Note: some existing aeronautical information products may not be suitable for migration into digital datasets.

e) The taking of all necessary measures to develop and implement AIM training programs for AIS personnel, including training in digital data management, and end-to-end quality management processes.

f) Provision of full access to the relevant ICAO Annexes and Documents to all personnel having responsibility for the origination, reception, management and/or distribution of aeronautical information and aeronautical data.

1.7 The APAC ANP is available on the ICAO Asia/Pacific Regional Office eDocuments web-page.

Asia/Pacific Plan for Collaborative AIM

1.8 The 11th Meeting of the Asia/Pacific Region AIS-AIM Implementation Task Force (AAITF/11, Bangkok, Thailand 05 to 09 June 2017), identified a near term objective to review and update the quality management guidance and sample quality manual provided in the *Guidance Manual for AIS in the Asia/Pacific Region*. It was noted that while the current information provided in the Guidance Manual remained relevant and valuable to the region, there was a need for the information to be updated to take into account the transition to AIM.

1.9 Following AAITF/11, ICAO established the Aeronautical Information Management Steering Group (AIM SG), to support global implementation of AIM and to accelerate the development and finalization of guidance material including *inter alia* the new quality management manual and AIM training manual.

1.10 This document, the Asia/Pacific Plan for Collaborative AIM (the AIM Plan), is intended to provide information, guidance and regional performance objectives supporting improvement of AIS and the transition to AIM. The document is not intended to duplicate or pre-empt guidance that will become available in documents developed by AIM SG.

AIM Plan Structure

1.11 The AIM Plan forms part of a suite of part of a suite of global and regional air navigation planning documents relevant to the Asia/Pacific Region.

1.12 Global vision and strategy perspectives are provided by the *Global ATM Operational Concept* (Doc 9854), *Global Air Navigation Plan* (GANP, Doc 9750), and *Global Aviation Safety Plan* (GASP, Doc 10004). The GANP includes the Aviation System Block Upgrade (ASBU) framework, its Modules and its associated technology Roadmaps.

1.13 Beneath this level is regional planning primarily provided by the *Asia/Pacific Basic Air Navigation Plan* and the *Asia/Pacific Seamless ATM Plan* which, together with its contributory documents, including this Plan, define goals and the means of meeting State planning objectives.

1.14 The AIM Plan includes background information and general guidance, analysis of the current status of AIS and AIM implementation in the Asia/Pacific Region, and a performance improvement plan. The plan also provides a central repository for information and procedures relating to items of aeronautical information coordinated between States and ICAO, including Proposals for Amendment (PfAs) to the Regional Air Navigation Plan, allocation and implementation of ATS routes that form part of the regional network of ATS routes, registration of 5-letter name codes identifying significant points, ICAO location indicators, and 3-letter and radiotelephony designators for aircraft operating agencies.

Performance Improvement Plan

1.15 The performance objectives of the Plan are expected to be implemented in phases aligned, where practicable, with those of the Seamless ATM Plan. Having considered a range of performance expectations including those relating ICAO Standards and Recommended Practices (SARPS) that have been applicable for many years, Regional AIM Capability is expected to be implemented in the following phases:

- Phase I, expected to be implemented immediately;
- Phase II, expected to be implemented by 7 November 2019, and
- Phase III, expected to be implemented by 1 December 2022.

1.16 Except where required under State obligations to implement SARPS and relevant regional requirements communicated in the ANP, the phases and performance expectations are not binding any State, but should be considered as a planning framework. The Plan itself is therefore guidance material.

1.17 It is important to note that the AIM Plan’s commencement dates are planning targets, and should not be treated as ‘hard’ implementation dates. However, States should consider the impact of not achieving target implementation dates on the required improvement in the safety and efficiency of international aviation in the region.

Review

1.18 AAITF noted the adoption by the Council of ICAO of Amendment 40 to Annex 15 – Aeronautical Information Services, the approval of Doc 10066 – PANS-AIM and the expected approval of the revised Doc 8126 AIS Manual, all applicable from 08 November 2018, and the work plan of the AIM SG for development and updating of global guidance material. It was determined that in this fluid environment the Plan would require regular updating to keep current with aviation system changes.

1.19 It is therefore intended that AAITF conducts a complete review of the Plan in 2019, and thence every three years, in alignment with the update cycle of the Seamless ATM Plan. Reviews should examination of relevant new or amended ICAO Annexes, PANS and guidance material to ensure the minimization of duplication, and alignment with global direction.

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PLAN OBJECTIVES

Objective of the Plan

2.1 The objective of the Plan is to facilitate the improvement and harmonization of AIS in the APAC Region, and the harmonized implementation of interoperable AIM systems.

2.2 The Plan provides a framework for a transition to a collaborative regional AIM environment, in order to meet current and future global and regional performance requirements.

Guidance for the Plan

2.3 The Plan is neither isolated from, nor conflicts with, other global and regional plans or strategies. It takes the availability of the following into account:

Global and Regional Framework

- Doc 9750 - Global Air Navigation Plan
- Doc 10004 - Global Aviation Safety Plan
- Asia/Pacific Regional Air Navigation Plan
- Asia/Pacific Seamless ATM Plan (Version 2.0, September 2016)
- Guidance Manual for Aeronautical Information Services (AIS) in the Asia/Pacific Region (endorsed by APANPIRG, First Edition - 2002)

Air Navigation Services

- Annex 10 Aeronautical Telecommunications
- Annex 11 *Air Traffic Services* (particularly Chapter 2 [2.1 and 2.30], and Attachment C)
- Annex 15 *Aeronautical Information Services*
- Doc 4444 Procedures for Air Navigation Services Air Traffic Management **(**PANS ATM)
- Doc 10066 – Procedures for Air Navigation Services – Aeronautical Information Management (PANS-AIM)

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EXECUTIVE SUMMARY

3.1 The Asia and Pacific Region has become the world's largest aviation market in terms of available seat-kilometres (30% of ASK in 2015) and generates the world's second largest share of international revenue passenger-kilometres (28% of international RPK as of 2015).

3.2 Underpinning safe, efficient air transport is the Aeronautical Information Service (AIS) of each State, which collates, maintains and publishes aeronautical information of lasting character essential to air navigation, including details of regulations, procedures and other information pertinent to the operation of aircraft within the area of responsibility of the State.

The Need for a Regional Collaborative Plan for AIM

3.3 The AIS of each State, and its transition to the AIM environment, is a key enabler of all current and future air navigation activities. To satisfy new requirements for air navigation in a collaborative decision-making (CDM) environment the transition to AIM will provide aeronautical data and information in a digital format that facilitates graphical display, complies with international standards and agreed, common exchange formats and is accessible system-wide by all stakeholders in real-time.

3.4 This plan, the *Asia/Pacific Plan for Collaborative Aeronautical Information Management*, was developed to guide and assist Asia/Pacific Administrations in meeting the challenges of transitioning to from legacy paper-based AIPs to the digital world of AIM, as envisioned in the GANP and in the *ICAO Roadmap for Transition from AIS to AIM*.

3.5 While noting the need for revision and restructure of the existing Regional AIS guidance manual, this Plan was developed to avoid divergence from, or duplication of, ICAO global guidance material that will be provided in the near to medium term. Such global guidance material is expected to include the updated Doc 8126 – *AIS Manual*, and new Quality Management and AIM Training manuals.

3.6 The plan is also the repository for information and guidance on procedures for Asia/Pacific Administrations relating to Regional aeronautical data managed by the ICAO Regional Office, including:

- Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services (ICAO Doc 8585);
- Location Indicators (ICAO Doc 7910); and
- International Codes and Routes Designators (ICARD).

3.7 Quality-managed, timely aeronautical information is fundamental in supporting current and future aviation systems, supported by collaboration between States to improve the harmonization and interoperability of all processes and systems supporting air navigation. Collaboration in the provision of aeronautical information and data will benefit States facing resource challenges, and benefit the broader Asia/Pacific Region through the overall improvement in the availability, timeliness and quality of aeronautical information. Future development of this document may include Regional planning for multi-State or sub-Regional AIP and, shared aeronautical information databases, and collaborative efforts in AIM training.

Performance Improvement Plan

3.8 A key feature of the Plan is the Performance Improvement Plan which, in this version of the Plan, is aligned with Phases 1 and 2 of the ICAO Roadmap for Transition from AIS to AIM, supporting States in the transition to digital databases of aeronautical information and the implementation of electronic AIP (eAIP). The Performance Improvement Plan is arranged in Regional AIM Capability Phases I and II, listing fundamental AIS performance elements expected to be implemented either immediately (Phase I), in the case of elements that have been reflected ICAO SARPs for many years, or by 7 November 2019 (Phase II).

3.9 A third phase of the Performance Improvement Plan, aligned with Roadmap Phase 3 – *Information Management*, will be developed by AAITF and included in a future update of the Plan.

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ABBREVIATIONS AND ACRONYMS

To facilitate readability, abbreviations have been largely omitted throughout the document. Most abbreviations were defined when introduced. The following provides an alphabetic listing of all abbreviations.

AAITF	AIS-AIM Implementation Task Force
AATIP	ASEAN Air Transport Integration Project
A-CDM	Airport Collaborative Decision Making
ADS-B	Automatic Dependent Surveillance - Broadcast
AFTN	Aeronautical Fixed Telecommunication Network
AI	Aeronautical Information
AIC	Aeronautical Information Circular
AICM	Aeronautical Information Conceptual Model
AIM	Aeronautical Information Management
AIMSG	Aeronautical Information Management Sub-Group
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information Regulation and Control
AIS	Aeronautical Information Service
AIXM	Aeronautical Information eXchange Model
AMDB	Aeronautical Mapping Database
ANSP	Air Navigation Service Provider
AOC	Airline Operations Centre
APANPIRG	Asia Pacific Air Navigation Planning and Implementation Regional Group
ASBU	Aviation system Block Upgrades
ASEAN	Association of Southeast Asian Nations
ATFM	Air Traffic Flow Management
ATC	Air Traffic Control
ATM	Air Traffic Management

ATMRPP	Air Traffic Management Requirements and Performance Panel
ATSA-SURF	Enhanced Traffic Situational Awareness on the Airport Surface
CANSO	Civil Air Navigation Services Organization
CARATS	Collaborative Action for Renovation of Air Transport Systems
CCO	Continuous Climb Operations
CDM	Collaborative Decision Making
CDO	Continuous Descent Operations
CMA	Continuous Monitoring Approach
CNS	Communication, Navigation, Surveillance
CRC	Cyclic redundancy check
DBMS	Database Management System
DSS	Decision Support System
eAIP	Electronic Aeronautical Information Publication
EFF	Electronic Flight Folder
EFOD	Electronic Filing of Differences
ERAM	En-Route Automation Modernization
eTOD	Electronic Terrain and Obstacle Data
EUROCAE	European Council of Aerospace Engineering
FMS	Flight Management System
GANP	Global Air Navigation Plan
GASP	Global Aviation Safety Plan
IATA	International Air Transportation Association
ICAO	International Civil Aviation Organization
ICARD	ICAO Five-Letter Name Code and Route Designator
IFATCA	International Federation of Air Traffic Control Association
IFAIMA	International Federation of AIM Associations
IFR	Instrument Flight Rules

IM	Information Management
IP	Internet Protocol
ISO	International Standards Organization
JAP	Joint Acceptance Plan
KPI	Key Performance Indicator
MET	Meteorological Services
METAR	Aerodrome Routine Meteorological Report
NAS	National Airspace System
NCLB	No Country Left Behind
NOTAM	Notice To Airmen
PAIMS	Preferred Aeronautical Information Management Specifications
PIB	Pre-flight Information Bulletin
PQ	Protocol Questions
QA	Quality Assurance
QMS	Quality Management System
SARP	Standards And Recommended Practices
SESAR	Single European Sky Air Traffic Management Research
SIGMET	Significant meteorological weather phenomena
SWIM	System Wide Information Management
TIS-B	Traffic Information Services – Broadcast
TBO	Trajectory Based Operations
USOAP	Universal Safety Oversight and Audit Programme
WXXM	Weather eXchange Model
XML	eXtensible Markup Language
5LNC	5 Letter Name Code

BACKGROUND INFORMATION

Principles

5.1 This Plan considers four major categories of AIM principles:

Legislation, Policy and Regulation;

Human Performance;

Quality Management;

AIM Systems and Processes;

5.2 AIM principles form the basis for the provision of background guidance information, development of guidance material and identification of performance improvement objectives. The APAC Regional AIM Principles are provided in **Appendix A**.

Aviation System Block Upgrades (ASBU)

5.3 At the Global level the ASBU initiative was included in Doc 9750 – *Global Air Navigation Plan* as a programme framework that developed a set of aviation system solutions or upgrades intended to exploit current aircraft equipage, establish a transition plan and enable global interoperability. The ASBU framework is heavily dependent on AIM, which is a critical prerequisite for the implementation of any current or future ATM or air navigation concept that relies on the accuracy, integrity and timeliness of aeronautical data.

5.4 In the AIM field, the main ASBU blocks which are relevant for Seamless ATM are as follows:

- B0-DATM Service Improvement through Digital Aeronautical Information Management (AIM). B1-DATM Service Improvement through Integration of all Digital AIM Information (2019-2025)

- B1-SWIM Performance Improvement through the application of SWIM applications and infrastructure (2019-2025); and

- B2-SWIM Enabling Airborne Participation in Collaborative ATM through SWIM (2025-2031).

ICAO Roadmap for Transition from AIS to AIM

5.5 The ICAO Roadmap for Transition from AIS to AIM introduces and develops on the AIM concept and associated performance requirements by providing a basis upon which to manage and facilitate, on a worldwide basis, the transition from AIS to AIM.

5.6 The Roadmap includes a number of project steps for the transition to AIM, arranged into three implementation phases. The three phases and the project steps included in them are ~~provided~~ summarized in **Table 1**.

ROADMAP PHASE	ROADMAP STEPS	Expected Implementation
PHASE 1 *Consolidation*	P-03 — AIRAC adherence monitoring	November 2010
	P-04 — Monitoring of States' differences to Annex 4 & 15	
	P-05 — WGS-84 implementation	
	P-17 — Quality	
PHASE 2 *Going Digital*	P-01 — Data quality monitoring	November 2013
	P-02 — Data integrity monitoring	
	P-06 — Integrated aeronautical information database	
	P-07 — Unique identifiers	
	P-08 — Aeronautical information conceptual model	
	P-11 — Electronic AIP	
	P-13 — Terrain	
	P-14 — Obstacles	
	P-15 — Aerodrome mapping	
PHASE 3 *Information Exchange*	P-09 — Aeronautical data exchange	November 2016
	P-10 — Communication networks	
	P-12 — Aeronautical information briefing	
	P-16 — Training	
	P-18 — Agreements with data originators	
	P-19 — Interoperability with meteorological products	
	P-20 — Electronic aeronautical charts	
	P-21 — Digital NOTAM	

Table 1: Phases and Project Steps of the Roadmap for Transition from AIS to AIM.

5.7 Asia/Pacific Regional progress in AIM transition is measured against the implementation of Roadmap steps, reported to the ICAO Asia/Pacific Regional Office at least once each year and recorded in the AIS Transition table, available on the Regional Office website eDocuments web-page at [link]

Interim AIM Transition Guidance

5.8 The Ninth Meeting of the Asia/Pacific Region AIS – AIM Implementation Task Force (AAITF/9, Pattaya, Thailand, 24 – 27 June 2014), recognized that the lack of AIM transition guidance material was a matter of significant concern to Administrations the Region. There had been delays in the production of global ICAO guidance documents, those of most immediate significance being the updated Doc 8126 AIS Manual, the new Doc 9839 Quality Manual and Doc 9991 AIS Training Manual. AAITF/9 agreed to continue to work on Regional AIM transition guidance material for key AIM transition steps from the ICAO Roadmap for Transition from AIS to AIM.

5.9 AAITF/10 updated the *Guidance Manual for AIS in the Asia/Pacific Region* by adding a new appendix, *Interim AIM Transition Guidance*, which emphasizes four priority steps from AIM transition roadmap, they are:

P-17 – Quality,

P-16 – Training,

P-18 – Agreements with data originators, and

P-11 – Electronic AIP.

5.10 Interim AIM Transition Guidance is provided in the *Guidance Manual for Aeronautical AIS in the Asia/Pacific Region*.

AIM Information Sharing Website

5.11 The Asia/Pacific AIM Information Sharing Website was established to share information on the current status and challenges being faced by Asia/Pacific Administrations implementing, or planning to implement, AIM. The website is available at http://aim-tracking.org/.

Quality Management Guidance

5.12 Global guidance for the quality management of aeronautical information will be provided in ICAO Doc 9839 Quality Manual, being developed by the AIM SG. Interim guidance for quality management may be found in the *Guidance Manual for AIS in the Asia/Pacific Region*.

5.13 A key component of any quality management process for aeronautical information is the establishment of formal agreements between the originators of aeronautical data and the AIS. Such agreements specify the content, quality, maintenance and timing of the provision of aeronautical information or data that is required to be promulgated in AIP, and the quality management processes that shall be applied.

5.14 Originators of aeronautical data may include State regulatory authorities, airport operators, geospatial information agencies, air traffic services units, flight procedure design authorities, military authorities, police or other public safety or emergency service organizations.

5.15 A template for the establishment of formal agreements between originators of aeronautical data and the AIS is provided in **Appendix X**.

Selection and Training Guidelines for AIS

5.16 Global guidance for AIM training will be provided in ICAO Doc 9991 *AIS Training Manual*, being developed by the AIM SG. Interim guidance for the recruitment, competency criteria and development of training for AIS personnel may be found in the *Guidance Manual for AIS in the Asia/Pacific Region*.

Operating Procedures for AIS Dynamic Data (OPADD)

5.17 The OPADD, based on the EUROCONTROL OPADD and updated periodically by AAITF, provides regional guidance for common procedures for NOTAM. The OPADD for the Asia/Pacific Region may be found in the *Guidance Manual for AIS in the Asia/Pacific Region*.

Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services

5.18 ICAO Doc 8585 – *Designators for Aircraft Operating Agencies, Aeronautical Authorities and Services* contains the ICAO-approved three-letter designators intended for use on the international aeronautical telecommunications service, and which form part of the Aeronautical Fixed Service (AFS, formerly AFTN) address for connected agencies, authorities and services.

5.19 The allocation, amendment and withdrawal of these designators and the updating of Doc 8585 is managed by ICAO Headquarters through the ICAO 3LD website. This arrangement was communicated to States in State Letter AN 2/16. 1014/72.

5.20 The ICAO 3LD website is located at https://www4.icao.int/3ld. A copy of the State Letter may be obtained from the ICAO Asia/Pacific Regional Office.

ICAO Location Indicators

5.21 ICAO Doc 7910 – Location Indicators lists four-letter location indicators, which are assigned by States and checked by ICAO for conformity with the procedures relating to the formulation and assignment of location indicators, as set out in that document. The following process is used to assign location indicators:

1. The State formulates the new four letter location indicator for the location/airport;

2. The State writes to the ICAO Asia/Pacific Regional Director, requesting registration of the location indicator;

   The ICAO Regional Office coordinates with ICAO Headquarters.

3. The following information is required to be included in the State's request:

   a. location/Airport Name;

      Only provide the airport name if relevant, or if different from the location name, e.g. BANGKOK/DON MUEANG INTL AIRPORT, BRISBANE/BRISBANE INTL, BRISBANE/ARCHERFIELD

   b. requested Location Indicator (e.g. NTKU);

   c. IATA location identifier code, if any; and

   d. Indication of whether the location is, or is intended to be, connected to the AFS.

5.22 ICAO Regional Office will formally notify the State when the location indicator has been registered for inclusion in Doc 7910.

International Codes and Routes Designators

5.23 Annex 11 – *Air Traffic Services* defines a significant point as a specified geographical location used in defining an ATS route or the flight path of an aircraft and for other navigation and ATS purposes. It further states that significant points shall be established and identified in accordance with the principles set forth in Annex 11 Appendix 2. Where a significant point is required at a position not marked by the site of a radio navigation, and is used for ATC purposes, it shall be designated by a unique five-letter pronounceable name-code. This name-code designator then serves as the name as well as the coded designator of the significant point.

Rules ensuring the uniqueness of five-letter name-codes (5LNC) are provided in Annex 11 Appendix 2

5.24 States' requirements for unique fine-letter pronounceable name-code designators shall be notified to the Regional Offices of ICAO for coordination.

5.25 The International Codes and Routes Designators (ICARD) application, administered by ICAO and accessible through the ICAO Secure Portal (https://portallogin.icao.int/) is the sole repository of 5LNCs ensuring global uniqueness, and is the only means by which the requirements of Annex 11 Appendix 2 paragraph 3.5 may be met.

The ICARD application is being adapted for the future management of the assignment of ATS Route Designators

5.26 All States and Administrations with any responsibility for, or involvement in, the design, implementation and/or regulation of ATS routes and instrument flight procedures must have suitable employees registered in ICARD. In all cases where any personnel of a State Regulator or Air Navigation Service Provider are responsible for the allocation of 5LNC for ATS routes, Standard Instrument Departures (SIDs), Standard Terminal Arrival Routes (STARS) or Instrument Approach and Landing (IAL, including RNAV/RNP approaches), at least one person, and preferably two or more, must be registered as an ICARD_5LNC_PLANNER.

5.27 ICARD procedures are provided in the *ICARD 5LNC Guidelines*, available on request from the ICAO Asia/Pacific Regional Office. The process for registering as an ICARD_5LNC_PLANNER, and a flow-chart of the ICARD process, is provided in **Appendix X**.

5.28 An ICAO-coordinated global project has been established to register all AIP-published 5LNC in ICARD, and to eliminate all duplicated 5LNCs. The details of the project, and the rules applicable to duplicate resolution, were promulgated in State Letter AN 11/45.5-17/101. A copy of the State Letter is also available on request from Regional Office.

Implementation Status Monitoring

5.29 The Asia/Pacific Regional Plan for Collaborative AIM is one of several important plans that are subsidiary to the Seamless Air Traffic Management (ATM) Plan, namely:

- Asia/Pacific Search and Rescue (SAR) Plan;
- Asia/Pacific Region ATM Contingency Plan; and
- Asia/Pacific Regional Framework for Collaborative ATFM;

5.1 States report implementation of the performance expectations of the Seamless ATM Plan using an online reporting form. Monitoring and reporting schemes for subsidiary plans enhance the current Seamless ATM monitoring and reporting scheme.

5.2 The monitoring and reporting scheme for Regional collaborative AIM implementation measures State implementation of the performance expectations specified in Section 7 of this document.

5.3 Asia/Pacific Administrations should report their implementation status to the ICAO Asia/Pacific Regional Office at least once annually, by no later than 30 April each year. Reported implementation status will be examined each year by the AAITF, or other appropriate Regional body designated by APANPIRG, to measure, report and advance Regional implementation progress, and to recommend priority AIM elements to be added to the Seamless ATM monitoring and reporting scheme.

5.4 It is expected that the relevant AIM expert/s in each Administration will be responsible for the detailed reporting in the Regional AIM Monitoring and Reporting form, and that these experts will then liaise closely with their Administration's Seamless ATM reporting point of contact to ensure the accuracy of the higher level reporting and consistency between the separate reporting levels.

5.5 The Regional AIM Monitoring and Reporting Form is provided at **Appendix D**, and is available on the ICAO Asia/Pacific Regional Office eDocuments web-page at http://www.icao.int/APAC/Pages/edocs.aspx.

CURRENT SITUATION

Current Status of Transition from AIS to AIM

6.1 The performance objectives of the Asia/Pacific Seamless ATM Plan included the expectation that Phases 1 and 2 of the Roadmap for Transition from AIS – AIM would be completed by November 2015. As on 05 June 2018, regional implementation of Phase 1- Consolidation of the Roadmap is summarized as follows: 18 Administrations (43%) had completed implementation, 20 Administrations (≈ 48%) had partly implemented, 6Administrations (≈ 14%) had not implemented any Phase 1 step, overall regional implementation of Phase 1 ≈ 72%. Regional implementation of Phase 1and 2 is summarized as follows: 18 Administrations (43%) have completed more than 50%, 16 Administrations (≈ 38%) have implemented less than 50%, 6 Administrations (14%) have not completed any Phase 1and 2 step.

6.2 **Figure 1** below indicates that many States are lagging in their implementation for transition from AIS to AIM. (Date last amended on 05 June 2018.)

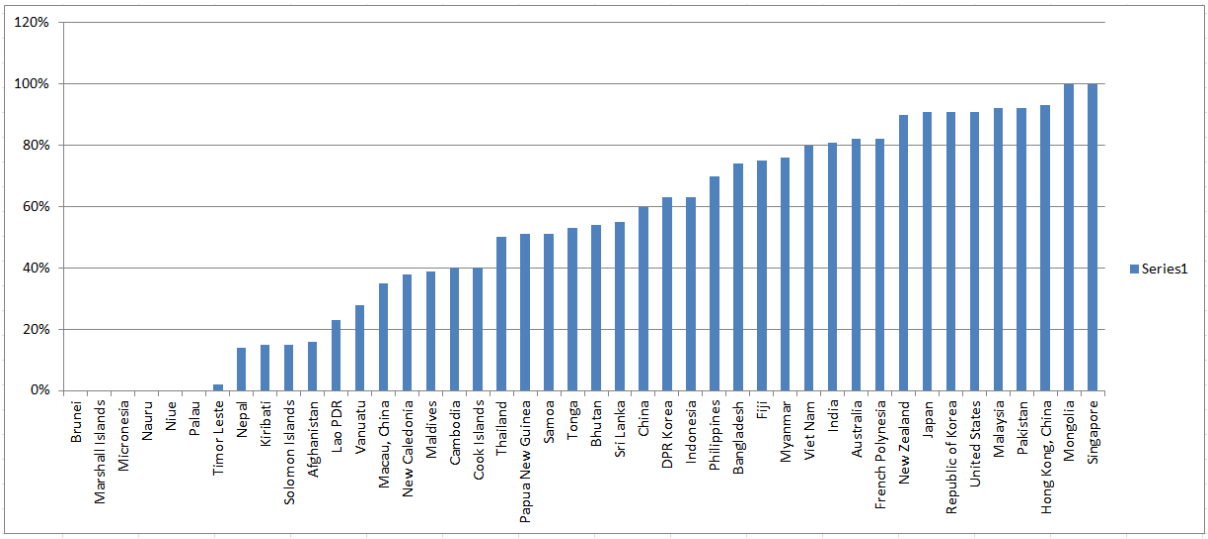

Figure 1: Regional AIM Implementation Status - Phase 1 and 2 Implementation Progress

Asia/Pacific AIM Compliance Analysis

6.3 Protocol Questions (PQs) are the primary tool used in the ICAO Universal Safety Oversight Audit Programme (USOAP) Continuous Monitoring Approach (CMA) for assessing the effective implementation of ICAO Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services (PANS) and ICAO guidance material.

6.4 According to the assessment of Effective Implementation (EI) of AIS-related PQs in May 2018 in APAC Region, an overall EI is **62%**. After analyzing, the EI for 10 AIS-related PQs is below 50% (**Figure 2** refers):

- 37% - Cartographic inspector periodic training plan established;
- 40% - Effective State oversight of service provision (charts);
- 43% - AIS data quality and resolution - Annexes 15 and 4 (AIS);
  Cartographic inspector's formal training programme developed and Implemented;
- 46% - States adoption of International Standards and Procedures ;
  AIS inspector periodic training plan established;
  AIS inspector formal training programme implemented;
  Mechanism for deficiency review and elimination;
  Effective State oversight of service provision (AIS); and
- 49% - AIS data quality and resolution (Annex 15 and 4) (Charts).

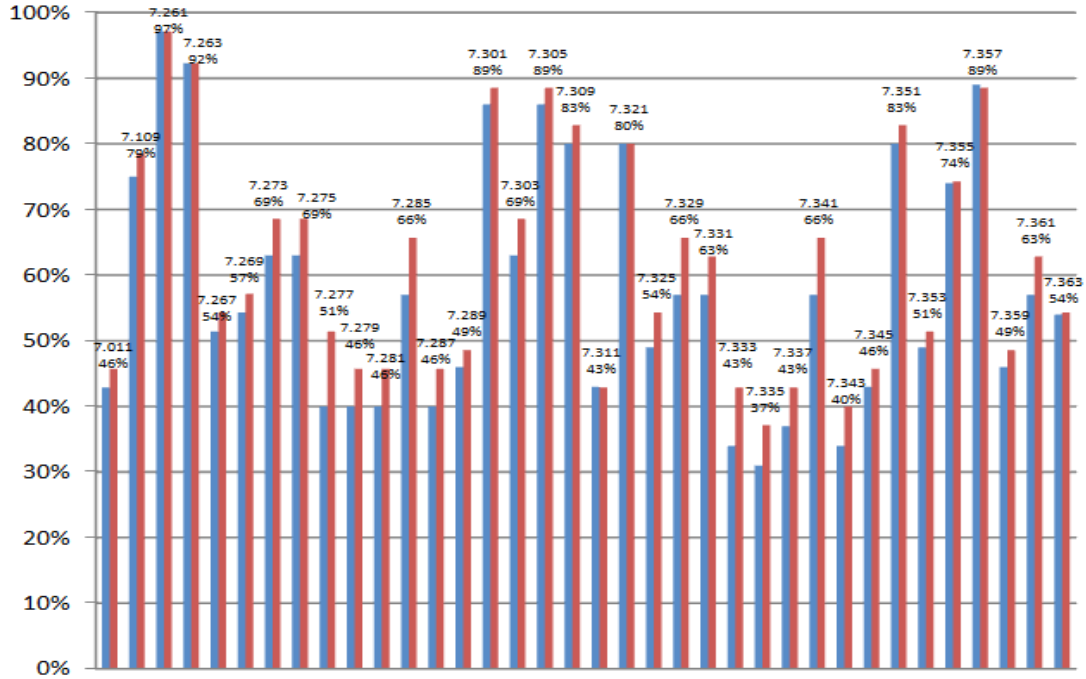

Figure 2: APAC USOAP CMA ANS PQ Compliance (2017 and 2018 Comparison)

6.5 Analysis of PQs which are related with the four priority steps from AIM transition roadmap.

- The four priority transition steps are: P - 03 – AIRAC Adherence Monitoring, P - 04 – Monitoring of States' differences to Annex 4 and Annex 15, P - 05 – WGS-84 implementation, and P - 17 – Quality.

- Analysis of PQs related with the four priority steps above.

PQ 7.309: Does the State ensure that the Aeronautical Information Regulation and Control (AIRAC) system is used to notify the establishment, withdraw and premeditated significant changes of circumstances listed in accordance with Chapter 6 and Appendix 4 Part 2 of Annex 15?

- Associated AIM Transition Step: P – 03: AIRAC Adherence Monitoring
- Average Effective Implementation (EI) of PQ 7.309 for APAC region is 83%, which was 80% in 2017.

PQ 7.011: Has the State implemented procedures for amending its ANS specific regulations as well as for identifying and notifying differences, taking into consideration ICAO provisions and their amendments?

- Associated AIM Transition Step: P – 04: Monitoring of States' differences to Annex 4 and Annex 15
- Average Effective Implementation (EI) of PQ 7.011 for APAC region is 46%, which was 42.86% in 2017.

PQ 7.109: If the State has initiated the implementation of performance-based navigation (PBN), are the prescribed navigation specifications appropriate to the level of communication, navigation and air traffic services? (Where applicable, review documented

evidences that the safety of the system is assured with WGS-84 implementation）

- Associated AIM Transition Step: P – 05: WGS-84 implementation
- Average Effective Implementation (EI) of PQ 7.109 for APAC region is 79%, which was 75% in 2017.

PQ 7.311: Has the State established a mechanism to ensure that aeronautical data quality requirements related to publication resolution and data integrity are I accordance with the provisions of Annex 15, Appendix 7, Tables A7-1 to A7-5?

- Associated AIM Transition Step: P – 17: Quality
- Average Effective Implementation (EI) of PQ 7.311 for APAC region is 43%, same as in 2017.

……

PERFORMANCE IMPROVEMENT PLAN

Structure of the Performance Improvement Plan

7.1 Regional collaborative AIM performance objectives are arranged in *Regional AIM Capability* phases aligned, where practicable, with the implementation phases of the Seamless ATM Plan:

- Regional AIM Capability Phase I, expected to be implemented immediately;
- Regional AIM Capability Phase II, expected to be implemented by 7 November 2019, and
- Regional AIM Capability Phase III, expected to be implemented by 3 November 2022.

7.2 Performance expectations are presented under the following general structure for each Regional AIM Capability phase, where relevant:

- Legislation, Policy and Regulation;
- Human Performance;
- Quality Management;
- AIM Systems and Processes;

Asia/Pacific Seamless ATM Plan – Performance Expectations

7.3 The Seamless ATM Plan includes the following performance expectations in the field of AIS/AIM:

Preferred ATM Service Levels (PASL) Phase I (expected implementation by 12 November 2015)

7.46 ATM systems should be supported by digitally-based AIM systems through implementation of Phase 1 and 2 of the AIS-AIM Roadmap in adherence with ICAO and regional AIM planning and guidance material.

PASL Phase II (expected implementation by 07 November 2019)

7.61 ATM systems should be supported by complete implementation of AIM Phase 3 (using at a minimum, version AIXM 5.1).

REGIONAL AIM CAPABILITY PHASE I

Expected to be implemented immediately

Legislation, Policy and Regulations

7.4 States should develop policy, and enact primary legislation and supporting regulations for Annex 4 and Annex 15 SARPS including:

i. Establishment of an organizational structure for the safety oversight of aeronautical information service providers;

ii. Requirements for aeronautical information/data originators;

iii. Requirement for AIS quality management systems and processes to be established by all entities in the end-to-end AIS data chain.

7.5 AIS should be established either as a separate entity within or, ideally, separated from the civil aviation administration in accordance with the guidance provided in ICAO Doc 8126 – AIS Manual Chapter 3.

Human Performance

7.6 Competency requirements for AIS personnel should be developed, including English language proficiency requirements, supported by a program of regular performance assessment.

7.7 Regular programs of engagement with all stakeholders should be established, including education on:

i. State, organization and individual obligations under the Chicago Convention;

ii. State Legislation and State Regulations;

iii. AIM-related ICAO Annexes to the Chicago Convention, Procedures for Air Navigation Services and guidance material.

Quality Management

7.8 Quality management systems for aeronautical information should be developed and implemented.

AIM Systems

7.9 Full access to relevant ICAO Annexes and Documents should be provided to all personnel having responsibility for the origination, reception, management, publication and/or distribution of aeronautical information and aeronautical data.

REGIONAL AIM CAPABILITY PHASE II

Expected to be implemented by 7 November 2019

Human Performance

7.10 Training, competency development and performance assessment of AIS personnel should be adapted as necessary to the needs of transition to AIM, including aeronautical information exchange, data quality management, e-AIP, electronic charting and digital NOTAM.

Quality Management

7.11 Quality management systems should be implemented and maintained encompassing all functions of an aeronautical information service.

7.12 Formal agreements should be established between AIS providers and aeronautical data originators specifying the content, quality, maintenance and timing of the provision of aeronautical data that is required to be promulgated in AIP, and the quality management process that shall be applied.

AIM Systems

7.13 All Administrations should implement internet-accessible electronic AIP generated from a digital database of aeronautical information

REGIONAL AIM CAPABILITY PHASE III

Expected to be implemented by 1 December 2022

To be developed

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APPENDIX A - REGIONAL COLLABORATIVE AIM PLANNING PRINCIPLES

People: Cultural and Political Background

1. High-level political support (including development of educational information for decision-makers) to support Seamless ATM initiatives, including military cooperation and AIM.

Source: Asia/Pacific Seamless ATM Plan - Principles

Technology and Information: Aeronautical Data

2. Early implementation of AIM, including cooperative development of aeronautical databases and SWIM to support interoperable operations.

Source: Asia/Pacific Seamless ATM Plan - Principles

Legislation, Policy and Regulation

3. Legislation supporting the signatory State obligations under the Chicago Convention provides the legal basis and compulsion for engagement of all stakeholders in the AIS.

4. Regulations establish requirements for all stakeholders in the AIS including information and data originators, the AIS and its users

5. The role of an AIS regulator (AIS & Charts inspectorate) is not to check and approve every item of aeronautical information promulgated by the AIS.

6. The role of an AIS regulator (AIS & Charts inspectorate) is to oversight the processes of AIS, such as quality management and safety management.

Human Performance

7. Clear accountabilities for the quality and timeliness of aeronautical information should be established.

8. English language proficiency requirements for quality-managed AIS translation of information and data received from originators.

9. Standardization where practicable of English language expressions used in aeronautical information

10. Establishment of competency criteria for information/data originators and AIS personnel, supported by regular performance assessment.

11. Contextual understanding of aeronautical information or data received by AIS, brought about through an appropriate mixture of knowledge, experience and skills among AIS personnel.

12. IT capability to ensure AIM capability.

13. Relationships between all stakeholders are built through consultation, inclusion, and

cooperative education activities.

14. Human factors considerations include training, competency assessment, human-machine interfaces and environment.

Quality Management

15. Quality management applies to the entire aeronautical information/data chain

16. Quality management of aeronautical data requires the establishment of formal agreements between originators of aeronautical information/data and the AIS.

AIM Systems and Processes

17. Maintenance regulations and procedures ensure the regular updating, correction and, when redundant, removal of aeronautical information.

18. The use of contemporary technology to improve the quality and timeliness of aeronautical information, and the efficiency of its publication.

19. Migration of aeronautical information into digital databases requires the establishment of a project team and the application of quality and safety management processes.

20. Integration of safety management and quality management systems

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APPENDIX B - TEMPLATE

SERVICE LEVEL AGREEMENT

BETWEEN

{AIS PROVIDER}

AND

{DATA ORIGINATOR}

ON THE SUPPLY OF AERONAUTICAL DATA AND AERONAUTICAL INFORMATION FOR THE PROVISION OF AERONAUTICAL INFORMATION SERVICES

Effective Date : _____ {Date of Inception}

Document Management

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1. General Overview

1.1 Objectives

1.1.1. This Service Level Agreement {Agreement} between **{AIS Providers}** and **{Data Originator}** aims to achieve the following objectives:

i. **Strengthen the coordination** on the supply, maintenance and publication of aerodrome aeronautical data and aeronautical information pertaining to the facilities, services and navigation aids provided within **{Name of State};**

ii. **Give assurance** on the accuracy, integrity, traceability and timeliness of aerodrome aeronautical data and aeronautical information, in accordance to ICAO Annex 4, Annex 14 and Annex15 requirements, originating from **{Data Originator}** for publication in the **{Name of State}** aeronautical publications;

iii. **Establish a framework** for key operational Service Standards and Performance Measurements to meet user's needs;

iv. **Deliver consistent levels of service** for the provision of aerodrome aeronautical data and aeronautical information; and

v. **Establish clear roles and responsibility** of the parties in the provision and dissemination of aerodrome aeronautical data and aeronautical information.

1.2 Scope

1.2.1 This Agreement documents the agreed provision of service for the supply of aerodrome aeronautical data and aeronautical information by **{Data Originator}** ("Originator") to the **{AIS Provider}** and the agreed standards to which the said information shall be published by the **{AIS Provider}**.

1.2.2 This Agreement shall be in line with the requirements set forth in ICAO Annex 15 paragraph 2.1.5, which states that:

"Each Contracting State shall ensure that formal arrangements are established between originators of aeronautical data and aeronautical information service in relation to the timely and complete provision of aeronautical data and aeronautical information."

1.2.3 This Agreement shall be in-line with the requirements set forth in ICAO Annex 14 Volume 1 paragraph 2.13.1, which states that:

"To ensure that aeronautical information services units obtain information to enable them to provide up-to-date pre-flight information and to meet the need for in-flight information,

arrangements shall be made between aeronautical information services and aerodrome authorities responsible for aerodrome services to report to the responsible aeronautical information services unit, with a minimum of delay".

1.3 Reference Documents

1.3.1 This Agreement, including the definition of the terms used, is established to fulfil the other relevant requirements in the following ICAO Standards and Recommended Practices (SARPs), manuals and national regulations:

i. ICAO Annex 15 – Aeronautical Information Services
ii. ICAO Annex 4 – Aeronautical Charts
iii. ICAO Annex 14 – Aerodromes
iv. ICAO Doc 8126 – Manual on Aeronautical Information Services
v. ICAO Doc 9674 – World Geodetic System – 1984 (WGS-84) Manual

{States may include additional reference documents for the purpose of this SLA}

1.4 Validity Period

1.4.1 This Agreement shall be effective from **{Date}** and shall continue to be valid until such time when either party initiates to terminate the Agreement.

1.4.2 This Agreement shall be reviewed every **{Validity Period}** years to ensure compliance to ICAO SARPs and international best practices.

1.4.3 Updates or changes to this Agreement, if required before the periodic review, could be initiated by either party.

1.4.4 The **{Name of the governing, regulatory body or approving authority}** shall be the authority to approve updates, changes and review to this Agreement.

{States to determine the validity period and the governing, regulatory body or approving authority of this SLA}

2.0 Quality Management

2.1 Overview

2.1.1 Quality management gives the assurance that the aeronautical data and aeronautical information supplied by the Originator provides the confidence that quality requirements will be fulfilled. This includes establishing the data quality attributes and service standards of the parties to this

Agreement.

{States to incorporate any other quality management adherence deemed fit for this SLA}

2.2 Data Quality Attributes

2.2.1 The integrity of the aeronautical data shall be maintained throughout the data chain from the Originator to AIS and subsequently to the end users.

2.2.2 Data integrity classifications used within this Agreement are based on ICAO Annex 15, Appendix 7, Tables A7-1 to A7-5.

2.2.3 The validation and verification procedures shall be based on the applicable integrity classifications as follows:

i. Routine data: avoid corruption throughout the processing of the data.
The permitted maximum error rate is 1 in 1000, providing an integrity level of $1x10^{-3}$ (ICAO Doc 9674).

ii. Essential data: assure corruption does not occur at any stage of the entire process and include additional processes as needed to address potential risks in the overall system architecture to further assure data integrity at this level. The permitted maximum error rate is 1 in 100,000, providing an integrity level of $1x10^{-5}$ (ICAO Doc 9674).

iii. Critical data: assure corruption does not occur at any stage of the entire process and include additional integrity assurance processes to fully mitigate the effects of faults identified by thorough analysis of the overall system architecture as potential data integrity risks. The permitted maximum error rate is 1 in 100,000,000, providing an integrity level of
$1x10^{-8}$ (ICAO Doc 9674).

{States to incorporate any other data quality attributes deemed necessary for this SLA}

2.3 Service Standards of Originator

2.3.1 The established service standards aim to outline the responsibilities of the originator as part of the quality management process of the aeronautical information data chain. **{Name of Originator}**, as the Originator shall:

i. Supply, maintain and update **{AIS Provider}** with aerodrome aeronautical data and aeronautical information pertaining to the facilities, services and navigation aids provided within **{Name of Aerodromes}** for which **{Data Originator}** is responsible.

ii. Provide **{AIS Provider}** with a list of aerodrome aeronautical data and aeronautical information originators within **{Data Originator}** who are authorized to supply, maintain

and update the aerodrome aeronautical data and aeronautical information published in the **{Name of State}** aeronautical publications {that is, NOTAMs, AIP Supplements {AIP SUP}, AIP Amendments {AMDT}, AIP **{Name of State}** and Aeronautical Information Circulars {AIC}}.

iii. Maintain and update the list of subject owners for the aerodrome aeronautical data and aeronautical information to be published and to inform **{Name of AIS Provider}**, for accountability purpose, whenever there is a change.

iv. Ensure that regular surveys are conducted by qualified and certified surveyors to determine and / or verify the accuracy and integrity of the aerodrome aeronautical and obstacle / terrain data published in AIP **{Name of State}**. The surveyed aerodrome aeronautical and obstacle / terrain data, including the WGS-84 coordinates, sent to **{Name of AIS Provider}** shall comply with the aeronautical data publication resolution and integrity classification stipulated in ICAO Annexes 4, 14 and 15.

v. Ensure that accurate, updated and complete aerodrome aeronautical data and aeronautical information is provided to **{Name of AIS Provider}** in sufficient time which comply with the AIRAC cycle cut-off date, where necessary, for timely publication and dissemination to users.

vi. Ensure that all aerodrome aeronautical data and aeronautical information submitted to **{Name of AIS Provider}** for publication of AMDT, AIP SUP and AIC must include the name{s} of the originator{s} or subject owner{s} who have vetted and verified the submission, and a declaration that the aerodrome aeronautical data and aeronautical information submitted is accurate, updated and complete.

vii. Ensure that the submission of draft NOTAM{s} for promulgation to **{Name of AIS Provider}** includes the name{s} of person who issues, checks and approves, indicating that the information submitted is vetted and verified, and a declaration that the information submitted is accurate, updated and complete.

viii. Be responsible and accountable for the accuracy and integrity of the aerodrome aeronautical data provided to **{Name of AIS Provider}**. The aerodrome aeronautical data provided shall be in accordance to the data integrity classification for aeronautical data specified in ICAO Annex 15, Appendix 7, Tables A7-1 to A7-5.

ix. Conduct a yearly review of the AIP **{Name of State}** sections under their purview and update **{Name of AIS Provider}** accordingly and to provide a 'Nil' return to **{Name of AIS Provider}** after each review if no updates were required.

x. Check for permanent information that needs to be incorporated into AIP **{Name of State}** from the AIP SUP and NOTAMs submitted to **{Name of AIS Provider}**.

xi. Ensure that personnel performing the role of Data Originator and checker are appropriately trained and equipped with the requisite knowledge, skills and abilities to

prepare the draft aeronautical publications and submit NOTAM proposals to **{Name of AIS Provider}** for promulgation within the context of the established quality management system.

{States to incorporate any other service standards for the Data Originators deemed necessary for this SLA}

2.4 Service Standards of AIS Provider

2.4.1 **{Name of AIS Provider}** is the entity responsible for the provision of aeronautical information services within the **{Name of State}** Flight Information Region {FIR} and areas where air traffic services are provided. The timely availability of accurate, updated and complete aeronautical data and aeronautical information is necessary to ensure the safety, regularity and efficiency of air navigation. **{Name of AIS Provider}** shall:

i. Publish updates and changes to aerodrome aeronautical data and aeronautical information through the most appropriate means (that is, AMDT, AIP SUP, AIC or NOTAM) taking into consideration the accuracy and timeliness of aerodrome aeronautical data and aeronautical information submitted by **{Data Originator}**.

ii. Publish permanent changes to AIP **{Name of State}** in accordance to the schedule of AMDT publication dates published in AIP **{Name of State}** and AIC.

iii. Check the submission date of the aerodrome aeronautical data and aeronautical information against the AMDT publication schedule on receipt of the aerodrome aeronautical data and aeronautical information from **{Data Originator}**. If the aerodrome aeronautical data and aeronautical information is received before the **"Latest date for information to reach AIS",** the aerodrome aeronautical data and aeronautical information received will be checked for completeness and compliance with the aerodrome aeronautical data and aeronautical information quality requirements for publication resolution, integrity and data classification stipulated in ICAO Annex 15, Appendix 7, Tables A7-1 to A7-5.

iv. Check the submission date of the aerodrome **aeronautical charts** against the AMDT publication schedule on receipt of the aerodrome aeronautical charts from **{Data Originator}**. If the aerodrome aeronautical charts are received before the **"Latest date for information to reach AIS",** the charts received will be checked for compliance with the aerodrome aeronautical chart specifications specified in ICAO Annex 4 and the aerodrome aeronautical data quality requirements for chart resolution of geographical coordinates, integrity and data classification stipulated in ICAO Annex 4, Appendix 6, Tables A6-1 to A6-6.

v. Track the aerodrome aeronautical data and aeronautical information submitted by **{Data Originator}** for errors and non-adherence to the specified timeline. Results of the tracking will be shared through a formal dialogue with **{Data Originator}** for compliance and to improve subsequent data submissions to **{Name of AIS Provider}**.

vi. Review, develop and implement work processes which includes ICAO Annex 15 requirements with **{Data Originator}** on the submissions of aerodrome aeronautical data and aeronautical information for publication.

vii. Assess the "Requests for NOTAM promulgation" to ensure that they are unambiguous and complete before the NOTAMs are promulgated.

{States to include any other services provided or requirements of the AIS Provider}

2.5 Service Level Indicators

2.5.1 In order to fulfil the requirements for quality management, **{Name of AIS Provider}** shall be tracking errors detected / observed before and after publication of the aerodrome aeronautical data and aeronautical information provided by **{Data Originator}**. These errors shall be communicated to **{Data Originator}** for follow up remedial actions.

2.5.2 The **{Name of the governing, regulatory body or approving authority}**, as the authority to monitor the effectiveness of coordination between **{Data Originator}** and **{Name of AIS Provider}**, shall oversee the relevant compliance targets on timeliness and accuracy:

AERONAUTICAL PUBLICATIONS	**COMPLIANCE TARGET**
NOTAM	
Aeronautical Data and Aeronautical Information from Originator to NOTAM Office	100%
Aeronautical Data and Aeronautical Information from NOTAM Office to End Users	100%
AMDT/ AIP SUP/ AIP / AIC	
Aeronautical Data and Aeronautical Information from Originator to AIS Provider	100%
Aeronautical Data and Aeronautical Information from AIS Provider to End Users	100%

{States to indicate any other compliance targets expected by the Data Originators to comply}

3. Amendments and Mediation

3.1 Amendments

3.1.2 Either party can propose amendments and modifications to this Agreement through formal notification to the **{Name of the governing, regulatory body or approving authority}**.

3.1.3 The **{Name of the governing, regulatory body or approving authority}**, shall be the approving authority of such amendments and modifications to this Agreement.

3.2 Dispute Management

3.2.1 Disputes between the parties relating to this Agreement and its interpretation shall be arbitrated by the **{Name of the governing, regulatory body or approving authority}**,

3.3 Point Of Contact

3.3.1 **{Data Originator}** and **{Name of AIS Provider}** shall each appoint a point of contact to manage issues pertaining to the provisions in this Agreement.

3.3.2 All communications relating to this Agreement shall be jointly coordinated by the appointed point of contact.

3.3.3 The details of the appointed point of contact is in **Annex A** of this Agreement. Both parties agree to ensure that the point of contact details are updated. Amendments to the details of the point of contact do not require the review of the overall Agreement.

4. Agreement

4.1 This Agreement is concluded on **{DD MMM of YYYY}** by the following signatories:

Name:	**Name:**
Designation:	**Designation:**
Organisation:	**Organisation:**
Date:	**Date:**

{States and Data Originators to indicate the most appropriate officers to be the signatories of this SLA}

ANNEX A

SERVICE LEVEL AGREEMENT

BETWEEN

{STATE AUTHORITY}

AND

{DATA ORIGINATOR}

ON THE SUPPLY OF AERONAUTICAL DATA AND AERONAUTICAL INFORMATION FOR THE PROVISION OF AERONAUTICAL INFORMATION SERVICES

Effective from {DD MMM of YYYY}

Clause 3.2.3. The details of the appointed point of contact are as follows:

Organisation	Primary Contact	Secondary Contact
The AIS provider, **{State Authority}**	**Name:** **Designation:** **Email:** **Tel:**	**Name:** **Designation:** **Email:** **Tel:**
The Originator, **{Data Originator}**	**Name:** **Designation:** **Email:** **Tel:**	**Name:** **Designation:** **Email:** **Tel:**

{States may indicate details of the Points of Contact in an Annex to eliminate the need to sign again the Service Level Agreement if there changes to the Point of Contact from both parties to this Agreement.

APPENDIX C - ICARD REGISTRATION PROCEDURE – AUTHORIZED USERS
- ICARD PROCESS FLOW CHART

ICARD REGISTRATION PROCESS

There are **three** steps to registration as an ICARD 5LNC Planner.

- If you do not yet have user access to the ICAO Secure Portal, complete all three steps.
- If you already have access to the ICAO Secure Portal but not to ICARD, go to Step 2.
- If you already have access to ICARD, but are not registered as an ICARD_5LNC_PLANNER, go to Step 3.

1. Register for access to the ICAO Secure Portal (you may already have this access. If so, proceed directly to step 2.)

   i. Go to http://portal.icao.int/

   ii. Click on **Request an account**

   iii. Follow the instructions. You will be notified when your registration for access to the ICAO Secure Portal is approved.

2. Log in to the ICAO Secure Portal http://portal.icao.int with your secure login credentials, then register for ICARD as follows:

   i. Click on the **PROFILE** link in your Secure Portal home page

   ii. A new window will open. In the menu on the left of the new window, click on the **GROUP SUBSCRIBE/UNSUSCRIBE** link.

   iii. Enter the group name **ICARD** in the **SUBSCRIBE TO** field, and add the justification for your request in the **JUSTIFICATION** field.

   iv. Click the **SUBMIT CHANGES** button.

3. Register for ICARD_5LNC_PLANNER in the same manner as described in step 2: Log in to the ICAO Secure Portal http://portal.icao.int with your secure login credentials, then register for ICARD_5LNC_PLANNER as follows:

   i. Click on the **PROFILE** link in your Secure Portal home page

   ii. A new window will open. In the menu on the left of the new window, click on the **GROUP SUBSCRIBE/UNSUSCRIBE** link.

   iii. Enter the group name **ICARD_5LNC_PLANNER** in the **SUBSCRIBE TO** field, and add the justification for your request in the **JUSTIFICATION** field.

   iv. Click the **SUBMIT CHANGES** button.

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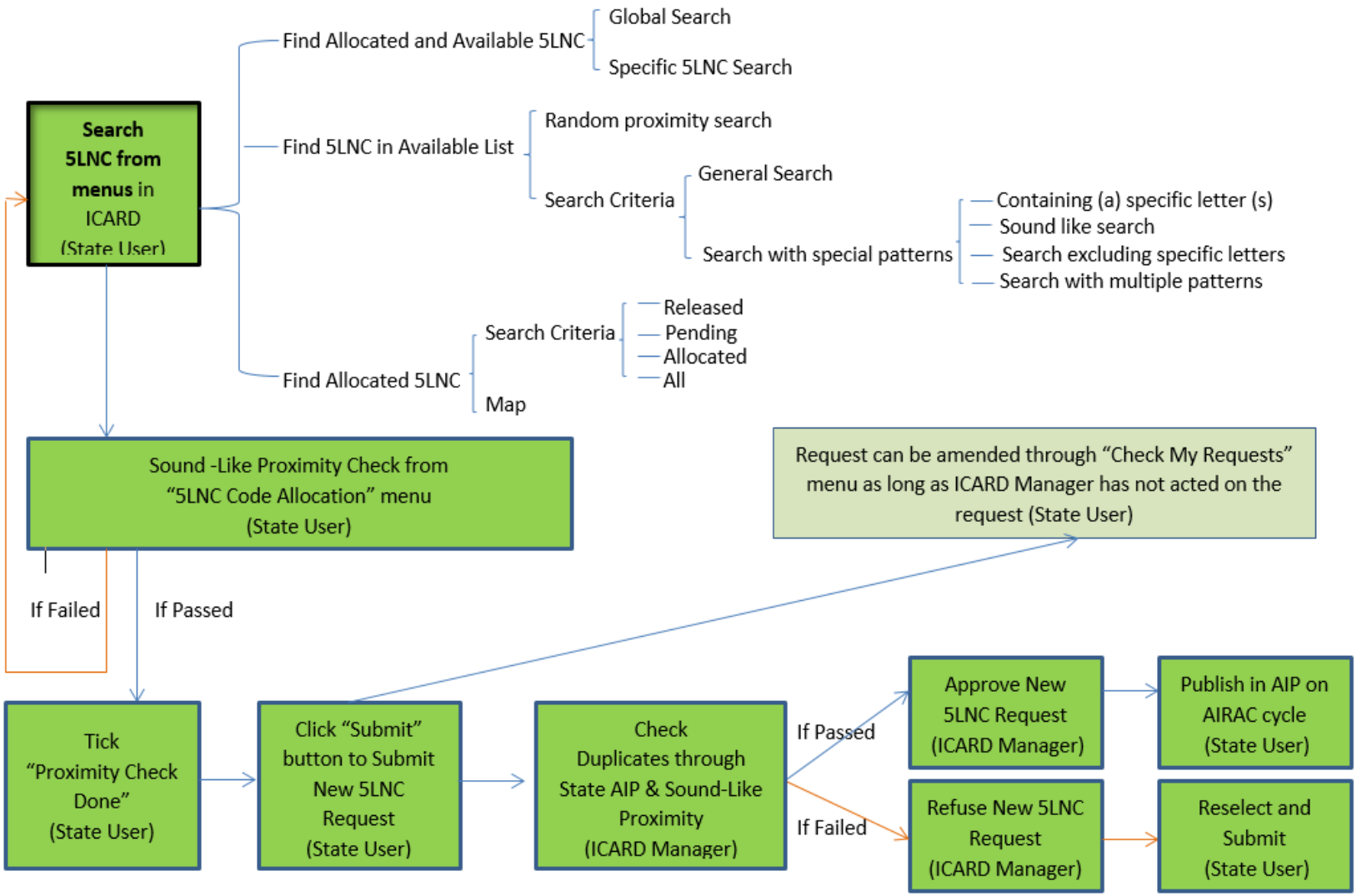
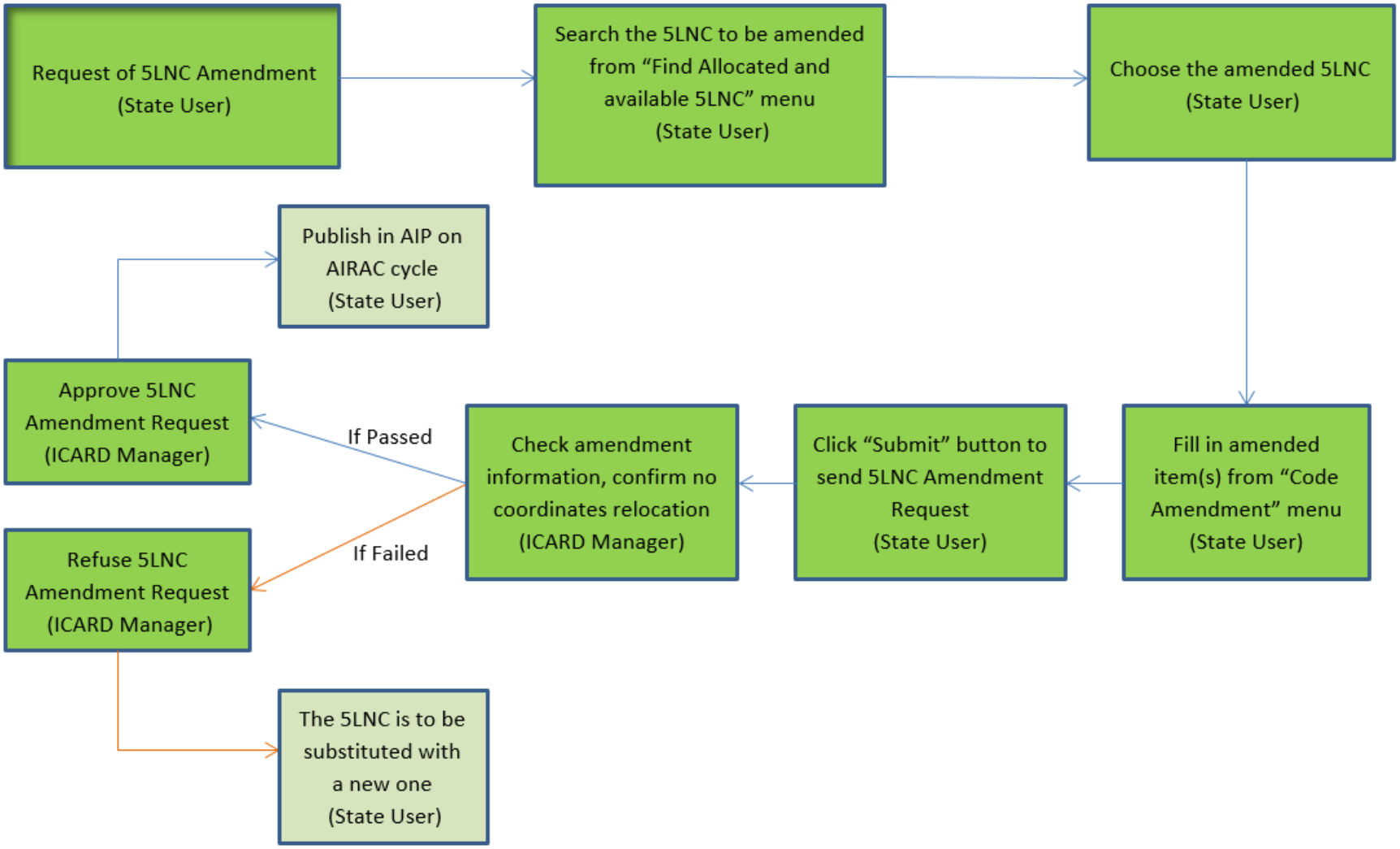


Flow Chart for New 5LNC Request

Notes:

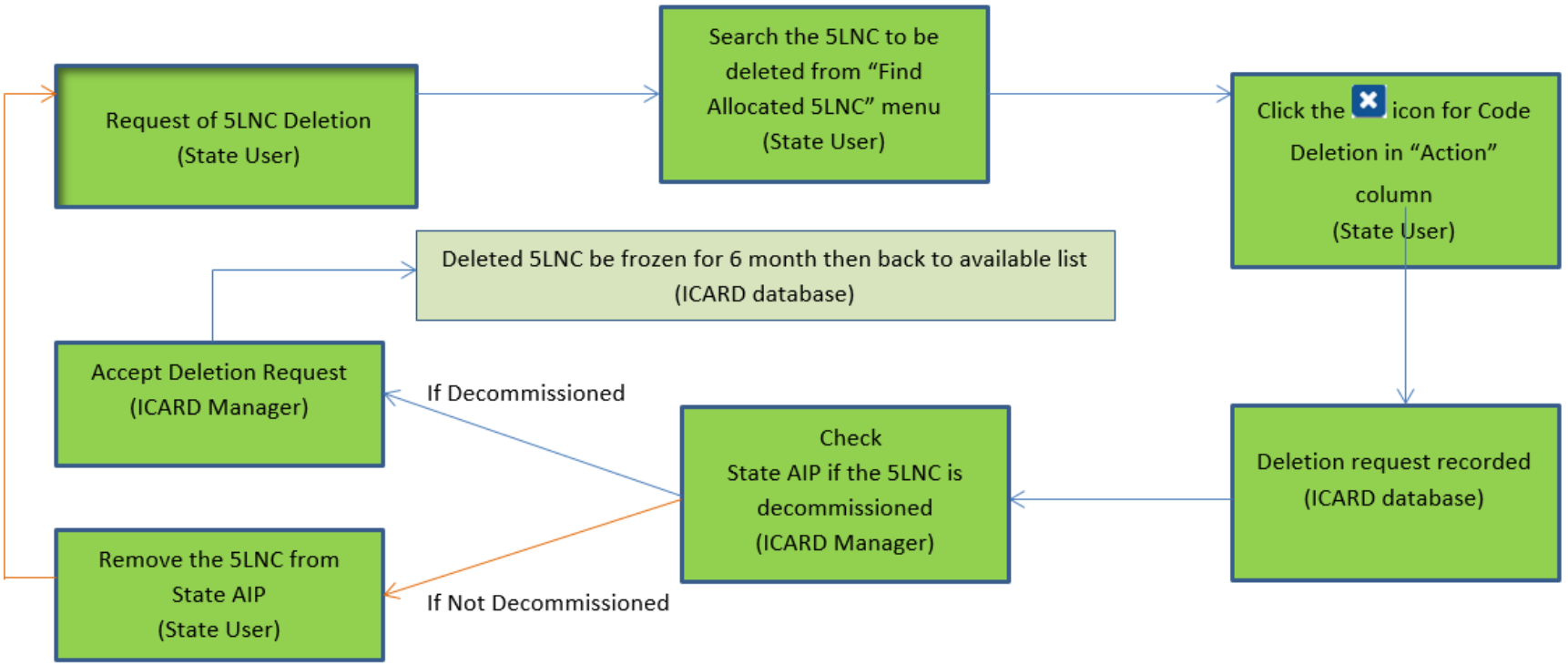
- In all cases, the coordinates of the requested new 5LNC must be within the territory or any FIR of the requesting State. If this is not the case, the request will be refused.
- For 5LNCs on FIR boundaries, the requesting State has to coordinate with all State(s) concerned before the new 5LNCs are requested, implemented and published in relevant AIPs, in accordance with the AIRAC cycle and prior notification requirement of Annex 15.
- After the submission of new 5LNC request, State User's request has been successfully recorded BUT NOT YET approved by ICARD Regional Data Manager. States must wait for Notification of approval by the ICARD Regional Data Manager before proceeding to publication in AIP. If requests are urgent, ICARD Users should inform the ICARD Regional Data Manager by e-mail to expedite processing.



Flow Chart for 5LNC Amendment

Notes:

- There are many types of amendments requested by State users, eg. changes of coordinates, comments, purpose, addition or deletion of coordinating States, etc. It is advised to add reason and purpose of the amendment in the "comment box".
- If the request is the change of coordinates not published yet in States AIP, after proximity checking, if the result is fine, the request can be approved.
- For an implemented 5LNC is to be relocated, it must be substituted with a new 5LNC drawn from ICARD (Annex 11 Appendix 2 paragraph 3.4); and
- For 5LNCs on FIR boundaries, the State/Administration requesting State must coordinate with the State(s) concerned before the submission of amendment request.



Flow Chart for 5LNC Deletion

Note:

- Before the submission of a 5LNC deletion request, the 5LNC must be deleted from relevant State AIP(s):
- For the 5LNC deletion which is at FIR boundary, make sure it has been coordinated between all States concerned and removed from all State AIPs involved; and
- Deleted 5LNC will remain frozen for a period of 6 months. After that time, it will automatically return to the reserve list of the ICARD database of the same ICAO Region.

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AIM PERFORMANCE INDICATORS

The following indicators are based on the Performance Improvement Plan of the Asia/Pacific Regional Framework for Collaborative AIM, which should be read in conjunction with this form. The information provided will be used by the relevant Regional bodies to assess individual Administration and overall regional compliance with the AIM Plan and may be used by Administrations to internally evaluate their implementation status.

INSTRUCTIONS

1. Use the drop-down menu corresponding to each question to respond as follows:
Not implemented = 0 Partial implementation = 0.5 Full implementation = 1

2. Forward the completed form in MS Excel format to apac@icao.int.

Indicate whether your administration has:

1	Developed policy and enacted primary legislation and supporting regulations for Annex 14 and Annex 15 SARPS including:	
1a	Establishment of an organizational structure for the safety oversight of aeronautical information service providers?	0
1b	Requirements for aeronautical information/data originators;	0
1c	Requirement for AIS quality management systems and processes to be established by all entities in the end-to-end AIS data chain	0
2	Established AIS either as a separate entity within, or separated from, the civil aviation administration?	0
3	Developed competency requirements for AIS personnel, including English language proficiency requirements, supported by a program of regular performance assessment.	0
4	Implemented regular programs of engagement with all stakeholders.	0
5	Developed and implemented quality management systems for aeronautical information.	0
6	Provided full access to relevant ICAO Annexes and Documents to all personnel having responsibility for the reception, management,	0
7	Adapted competency development and performance assessment of AIS personnel to the needs of transition to AIM.	0
8	Implemented and maintained quality management systems encompassing all functions of the AIS.	0
9	Established formal agreements between AIS providers and aeronautical data originators.	0
10	Implemented an internet-accessible electronic AIP generated from a digital database of aeronautical information.	

ATM/AIM/SAR Deficiencies List (Updated 03 August 2018)

	Deficiencies			**Corrective Action**		
States/facilities	**Description**	**Date first reported**	**Remarks**	**Executing body**	**Target date**	**Priority ****
	WGS-84 Requirements of Paragraph 3.7.1 of Annex 15					
Afghanistan	WGS-84 - Not implemented	24/6/2014		Afghanistan	TBD	A
Bangladesh	WGS-84 - Not implemented	24/6/2014		Bangladesh	TBD	A
Bhutan	WGS-84 - Not implemented	2/7/1999	Data conversion completed, but not published	Bhutan	TBD	A
Brunei Darussalam	WGS-84 - Not implemented	24/6/2014		Brunei Darussalam	TBD	A
Cook Islands	WGS-84 - Not implemented	24/6/2014		Cook Islands	TBD	A
Marshall Islands	WGS-84 - Not implemented	24/6/2014		Marshall Islands	TBD	A
Micronesia	WGS-84 - Not implemented	24/6/2014		Micronesia	TBD	A
Nauru	WGS-84 - Not implemented		Conferring with consultant	Nauru	TBD	A
Palau	WGS-84 - Not implemented	24/6/2014		Palau	TBD	A
Samoa	WGS-84 - Not implemented	24/6/2014		Samoa	TBD	A
Thailand	WGS-84 - Not implemented	24/6/2014		Thailand	TBD	A
Vanuatu	WGS-84 – Not implemented	2/7/1999	Implemented at main airports	Vanuatu	1999	A
	AIP Format Requirements of Chapter 4 of Annex 15					
Kiribati	AIP Format - Not implemented	7/7/99	ATM/AIS/SAR/SG/18 (June 2009) was advised AIP in draft stage	Kiribati		A
Nauru	AIP Format - Not implemented	7/7/99	ATM/AIS/SAR/SG/18 (June 2008) was advised work soon to start	Nauru		A

	Deficiencies			Corrective Action		
States/facilities	**Description**	**Date first reported**	**Remarks**	**Executing body**	**Target date**	**Priority ****
	<u>AIS Quality Management System</u> Requirements of Paragraph 3.2.1 of Annex 15 Quality Management System - Not implemented					
Afghanistan	AIS Quality Management System - Not implemented	24/6/2014		Afghanistan	TBD	A
Bangladesh	AIS Quality Management System - Not implemented	24/6/2014		Bangladesh	TBD	A
Bhutan	AIS Quality Management System - Not implemented	24/6/2014		Bhutan	TBD	A
Brunei Darussalam	AIS Quality Management System - Not implemented	24/6/2014		Brunei Darussalam	TBD	A
Cambodia	AIS Quality Management System - Not implemented	24/6/2014		Cambodia	TBD	A
Cook Islands	AIS Quality Management System - Not implemented	24/6/2014		Cook Islands	TBD	A
Indonesia	AIS Quality Management System - Not implemented	24/6/2014		Indonesia	TBD	A
Kiribati	AIS Quality Management System - Not implemented	24/6/2014		Kiribati	TBD	A
Lao PDR	AIS Quality Management System - Not implemented	24/6/2014		Lao PDR	TBD	A
Maldives	AIS Quality Management System - Not implemented	24/6/2014		Maldives	TBD	A
Marshall Islands	AIS Quality Management System - Not implemented	24/6/2014		Marshall Islands	TBD	A
Micronesia	AIS Quality Management System - Not implemented	24/6/2014		Micronesia	TBD	A

	Deficiencies			Corrective Action		
States/facilities	**Description**	**Date first reported**	**Remarks**	**Executing body**	**Target date**	**Priority ****
Myanmar	AIS Quality Management System - Not implemented	9/6/2016		Myanmar	TBD	A
Nauru	AIS Quality Management System - Not implemented	24/6/2014		Nauru	TBD	A
Nepal	AIS Quality Management System - Not implemented	24/6/2014		Nepal	TBD	A
Palau	AIS Quality Management System - Not implemented	24/6/2014		Palau	TBD	A
Philippines	AIS Quality Management System - Not implemented	24/6/2014		Philippines	TBD	A
Samoa	AIS Quality Management System - Not implemented	24/6/2014		Samoa	TBD	A
Solomon Islands	AIS Quality Management System - Not implemented	24/6/2014		Solomon Islands	TBD	A
Sri Lanka	AIS Quality Management System - Not implemented	9/6/2016		Sri Lanka	TBD	A
Thailand	AIS Quality Management System - Not implemented	24/6/2014		Thailand	TBD	A
Timor-Leste	AIS Quality Management System - Not implemented	24/6/2014		Timor-Leste	TBD	A
Vanuatu	AIS Quality Management System - Not implemented	24/6/2014		Vanuatu	TBD	A
	Airspace Classification Requirements of Paragraph 2.6 of Annex 11					

	Deficiencies			Corrective Action		
States/facilities	**Description**	**Date first reported**	**Remarks**	**Executing body**	**Target date**	**Priority ****
China	Airspace Classification - Not implemented	7/7/99	Difference to Annex 11 is published in AIP, China.	China	APANPIRG/19 updated, implementation planned by end 2010.	A
Macau, China (proposed)	Airspace Classification - Not implemented	05/09/2018		Macau, China	TBD	A
Nauru	Airspace Classification - Not implemented	7/7/99		Nauru	TBD	A
Solomon Islands	Airspace Classification - Not implemented	7/7/99		Solomon Islands	TBD	A
	ATS Message Addressing Requirements of Doc 4444 PANS-ATM Section 11.4 (Message Types and their Application)					
Bangladesh (Proposed)	DEP message transmission	05/09/2018	DEP messages inconsistently transmitted Conclusion APANPIRG/27/12 and ICAO correspondence	Bangladesh	TBD	A
India	DEP message transmission	05/09/2018	DEP messages inconsistently transmitted Conclusion APANPIRG/27/12 and ICAO correspondence	India	TBD	A
Indonesia	DEP message transmission	05/09/2018	DEP messages inconsistently transmitted Conclusion APANPIRG/27/12 and ICAO correspondence	Indonesia	TBD	A

	Deficiencies			**Corrective Action**		
States/facilities	**Description**	**Date first reported**	**Remarks**	**Executing body**	**Target date**	**Priority ****
Malaysia	DEP message transmission	05/09/2018	DEP messages inconsistently transmitted Conclusion APANPIRG/27/12 and ICAO correspondence	Malaysia	TBD	A
Myanmar	DEP message transmission	05/09/2018	DEP messages inconsistently transmitted Conclusion APANPIRG/27/12 and ICAO correspondence	Myanmar	TBD	A
Philippines	DEP message transmission	05/09/2018	DEP messages inconsistently transmitted Conclusion APANPIRG/27/12 and ICAO correspondence	Philippines	TBD	A
Republic of Korea	DEP message transmission	05/09/2018	DEP messages inconsistently transmitted Conclusion APANPIRG/27/12 and ICAO correspondence	Republic of Korea	TBD	A
USA	DEP message transmission	05/09/2018	DEP messages inconsistently transmitted Conclusion APANPIRG/27/12 and ICAO correspondence	USA	TBD	A
	SAR capability: Requirements of Annex 12					
Afghanistan	SAR Capability Matrix	6/07/2015	SAR Capability (no data)	Afghanistan	2016	U
Bhutan	SAR Capability Matrix	6/07/2015	SAR Capability (no data)	Bhutan	2016	U
Cambodia	SAR Capability Matrix	6/07/2015	SAR Capability (14 of 20)	Cambodia	2016	U

	Deficiencies			Corrective Action		
States/facilities	**Description**	**Date first reported**	**Remarks**	**Executing body**	**Target date**	**Priority ****
Cook Islands	SAR Capability Matrix	6/07/2015	SAR Capability (19 of 20)	Cook Islands	2016	U
Cook Islands	Annex 12 requirements not implemented. No agreements with adjacent States.	31/1/95	Cook Islands - implement Annex 12 requirements and co-ordinate LOA with adjacent States ICAO - assist to develop SAR capability and to co-ordinate with adjacent States	Cook Islands	2009. SAR agreement with New Zealand completed 2007.	U
DPR Korea	SAR Capability Matrix	6/07/2015	SAR Capability (15 of 20 elements non- compliant)	DPR Korea	2016	U
Fiji	SAR Capability Matrix	6/07/2015	SAR Capability (13 of 20 elements non- compliant)	Fiji	2016	U
Kiribati	SAR Capability Matrix	6/07/2015	SAR Capability (no data)	Kiribati	2016	U
Lao PDR	SAR Capability Matrix	6/07/2015	SAR Capability (10 of 20 elements non- compliant)	Lao PDR	2016	U
Macau, China	SAR Capability Matrix	6/07/2015	SAR Capability (10 of 20 elements non- compliant)	Macau, China	2016	U
Maldives	SAR Capability Matrix	6/07/2015	SAR Capability (9 of 20 elements non- compliant)	Maldives	2016	U
Marshall Islands	SAR Capability Matrix	6/07/2015	SAR Capability (no data elements non- compliant)	Marshall Islands	2016	U

	Deficiencies			Corrective Action		
States/facilities	**Description**	**Date first reported**	**Remarks**	**Executing body**	**Target date**	**Priority ****
Micronesia	SAR Capability Matrix	6/07/2015	SAR Capability (20 of 20 elements non- compliant)	Micronesia	2016	U
Myanmar	SAR Capability Matrix	6/07/2015	SAR Capability (17 of 20 elements non- compliant)	Myanmar	2016	U
Nauru	SAR Capability Matrix	6/07/2015	SAR Capability (no data elements non- compliant)	Nauru	2016	U
Nepal	SAR Capability Matrix	6/07/2015	SAR Capability (12 of 20 elements non- compliant)	Nepal	2016	U
Palau	SAR Capability Matrix	6/07/2015	SAR Capability (no data)	Palau	2016	U
Papua New Guinea	SAR Capability Matrix	6/07/2015	SAR Capability (11 of 20 elements non- compliant)	Papua New Guinea	2016	U
Philippines	SAR Capability Matrix	6/07/2015	SAR Capability (12 of 20 elements non- compliant)	Philippines	2016	U
Samoa	SAR Capability Matrix	6/07/2015	SAR Capability (no data elements non- compliant)	Samoa	2016	U
Solomon Islands	SAR Capability Matrix	6/07/2015	SAR Capability (no data)	Solomon Islands	2016	U
Timor-Leste	SAR Capability Matrix	6/07/2015	SAR Capability (no data)	Timor-Leste	2016	U

	Deficiencies			Corrective Action		
States/facilities	**Description**	**Date first reported**	**Remarks**	**Executing body**	**Target date**	**Priority ****
Tonga	SAR Capability Matrix	6/07/2015	SAR Capability (18 of 20 elements non- compliant)	Tonga	2016	U
Vanuatu	SAR Capability Matrix	6/07/2015	SAR Capability (no data)	Vanuatu	2016	U
	Non Provision of Safety-related Data Requirement of Paragraph 3.3.5.1 of Annex 11 (provision of data for monitoring the height-keeping performance of aircraft)					
~~Bangladesh~~ (proposed by RASMAG/23)	~~Annex 11 requirement not implemented~~	~~13/07/2017~~	~~Conclusion 16/6 – Non Provision of safety related data by States, established by RASMAG/22 – Failure to submit 2016 TSD – Failure to provide sufficient feedback regarding RVSM approval data~~	~~Bangladesh~~	~~RASMAG23~~	~~A~~
French Polynesia (proposed by RASMAG/23	Annex 11 requirement not implemented	05/07/2018	Conclusion 16/6 – Non Provision of safety related data by States, established by RASMAG/22 Failure to provide sufficient feedback regarding RVSM approval data	French Polynesia	RASMAG23	A
India	Annex 11 requirement not implemented.	13/07/2017	~~Established by RASMAG/20 failure to provide RVSM approvals summary data~~ Conclusion 16/6 – Non Provision of safety related data by States, established by RASMAG/22 Failure to provide sufficient feedback	India		U

	Deficiencies			Corrective Action		
States/facilities	**Description**	**Date first reported**	**Remarks**	**Executing body**	**Target date**	**Priority ****
~~Lao PDR~~ (proposed for RASMAG/23)	~~Annex 11 requirement not implemented~~	~~13/07/2017~~	~~Conclusion 16/6 – Non Provision of safety related data by States, established by RASMAG/22~~ ~~– Failure to submit 2016 TSD~~ ~~– Failure to provide RVSM approvals update and RVSM annual snapshot~~	~~Lao PDR~~	~~RASMAG23~~	~~A~~
~~Maldives~~ (proposed for RASMAG/23)	~~Annex 11 requirement not implemented~~	~~13/07/2017~~	~~Conclusion 16/6 – Non Provision of safety related data by States, established by RASMAG/22~~ ~~– Failure to submit LHD reports and 2016 TSD~~	~~Maldives~~	~~RASMAG23~~	~~A~~
~~Nepal (proposed for RASMAG/23)~~	~~Annex 11 requirement not implemented~~	~~05/07/2018~~	~~Conclusion 16/6 – Non Provision of safety related data by States, established by RASMAG/23~~	~~Nepal~~	~~TBD~~	~~A~~
	State Responsibility to comply with the Annex 6 Height-Keeping Monitoring Requirement Annex 6 Part I Section 7.2.7 and Part II Section 2.5.2.7					
Bangladesh (2017 44%)	Requirements of Annex 6 paragraph 7.2.7 regarding the monitoring burden of more than 50% airframes to be monitored	RASMAG/ 22	Bangladesh was also identified for a deficiency at RASMAG/20	Bangladesh	RASMAG23	A
Indonesia (2017 42%)	Requirements of Annex 6 paragraph 7.2.7 regarding the monitoring burden of more than 50% airframes to be monitored	RASMAG/ 22		Indonesia	RASMAG23	A
Pakistan (2017 69%)	Requirements of Annex 6 paragraph 7.2.7 regarding the monitoring burden of more than 50% airframes to be monitored	RASMAG/ 22		Pakistan	RASMAG23	A
	Data Link Performance Monitoring and Analysis Requirements of					

	Deficiencies			Corrective Action		
States/facilities	**Description**	**Date first reported**	**Remarks**	**Executing body**	**Target date**	**Priority ****
	Paragraph 2.28 and/or 3.3.5.2 of Annex 11 not met					
Fiji (proposed for RASMAG/23)	Post-implementation monitoring not implemented	25/06/2018	Problem reports not provided to CRA. Performance monitoring and analysis not reported to FIT	Fiji	TBD	A
India	Post-implementation monitoring not implemented	13/07/2017	Performance monitoring and analysis was reported for the Chennai FIR, but was not reported for the Kolkata and Mumbai FIRs.	India	TBD	A
~~Indonesia~~ (proposed for RASMAG/23)	~~Post-implementation monitoring not implemented~~	~~29/5/2015~~	~~Problem Reports not provided to CRA. Performance monitoring and analysis was conducted, but problem reports were not provided to the CRA.~~	~~Indonesia~~	~~TBD~~	A
Malaysia (proposed by RASMAG/23)	Post-implementation monitoring not implemented	29/5/2015	Problem Reports not provided to CRA. ~~Performance monitoring and analysis not reported to FIT.~~	Malaysia	TBD	A
Myanmar (proposed by RASMAG/23)	Post-implementation monitoring not implemented	29/5/2015	Problem Reports not provided to CRA. ~~Performance monitoring and analysis not reported to FIT.~~	Myanmar	TBD	A
Maldives	Post-implementation monitoring not implemented	29/5/2015	Problem Reports not provided to CRA. Performance monitoring and analysis not reported to FIT.	Maldives	TBD	A
~~Sri Lanka~~ (proposed by RASMAG/23)	~~Post-implementation monitoring not implemented~~	~~29/5/2015~~	~~Problem Reports not provided to CRA.. Problem reports were not provided to CRA, performance monitoring and analysis was not reported to FIT, but Sri Lanka was now registered with a competent CRA.Agreed by FIT-Asia/5-6, endorsed by RASMAG/21-22~~	~~Sri Lanka~~	~~Post Implementation Monitoring partially implemented. Data Link Reporting based on the SITA AIRCOM ATS-622~~	~~A~~

	Deficiencies			Corrective Action		
States/facilities	**Description**	**Date first reported**	**Remarks**	**Executing body**	**Target date**	**Priority ****
					~~Traffic & Performance Report will be submitted on monthly basis from Sept 2017 onward. Data Link Performance Reports will be submitted to FIT with effect from Feb 2018. (Target date)~~ ~~(APANPIRG/28)~~	
~~Viet Nam~~ (proposed by RASMAG/23)	~~Post implementation monitoring not implemented~~	~~29/5/2015~~	~~Performance monitoring and analysis not reported to FIT.~~	~~Viet Nam~~	~~TBD~~	~~A~~

** Note: In accordance with the *APANPIRG Handbook - Asia/Pacific Supplement to the Uniform Methodology for the Identification, Assessment and Reporting of Air Navigation Deficiencies*, priority for Air Navigation Deficiencies is guided by the principle that a deficiency with respect to an ICAO Standard is accorded a "U" status, while a non-compliance with a Recommended Practice or a PANS is considered as "A" or "B" subject to additional expert evaluation. The final prioritization of deficiencies is the prerogative of APANPIRG.