INTERNATIONAL CIVIL AVIATION ORGANIZATION

ASIA/PACIFIC REGIONAL PLAN

FOR

COLLABORATIVE AERONAUTICAL INFORMATION MANAGEMENT

Version 2.0 August, 2019

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

Approved by the ATM Sub-Group of APANPIRG (ATM/SG/7) and published by the ICAO Asia and Pacific Office, Bangkok

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LIST OF APPENDICES

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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.

Beijing Declaration

1.8 The *Declaration of the Asia/Pacific Ministerial Conference on Civil Aviation* (Beijing Declaration, Beijing, China, 31 January to 01 February 2018), included the following items indicating the direction agreed by the Ministers responsible for civil aviation in the Asia/Pacific Region in relation to AIM planning and implementation:

2.0 Air Navigation Services

2.1 Commit to implementation by 2022 of the Asia/Pacific Seamless Air Traffic Management (ATM) Plan to enhance ATM capacity and harmonization in the Region, including a focus on:

(a) Transitioning from Aeronautical Information Service (AIS) to Aeronautical Information Management;

(g) Air navigation in national planning frameworks such as National Development Plans (NDPs) supported by National Air Navigation Plans

4.0 Human Resource Development

4.1 In line with the ICAO initiative on "Next Generation of Aviation Professionals" (NGAP), accord priority to professionals to support the Region's growing needs, including where appropriate:

(a) Establish access to quality training; and

(b) Encourage sharing of resources bilaterally and/or multi-laterally, as well as with industry partners

1.9 The commitments agreed in the Beijing Declaration are supported by performance expectations in Section 7 of this document.

Asia/Pacific Plan for Collaborative AIM

1.10 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.

1.11 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.

1.12 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

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

1.14 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.

1.15 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.

1.16 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

1.17 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) and Procedures for Air Navigation Services (PANS), 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 27 November 2025.

1.18 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. Where any performance expectation has been included to emphasize the obligation of States to implement ICAO SARPS and PANS, reference is made to the relevant sections of Annex 15 or PANS-AIM.

1.19 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

1.20 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.

1.21 Noting that the Asia/Pacific Seamless ANS Plan undergoes its routine review each three years including 2019, and that the Global Air Navigation Plan (GANP), together with its Aviation System Block Upgrades (ASBUs) is also reviewed each three years including 2019, it is therefore intended that AAITF conducts a complete review of the Plan in 2020, and thence every three years, in alignment with the update cycle of the Seamless ATM Plan and GANP. Reviews should include 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 in conflict 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 was, initially, in version 1.0 of the Plan, 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, II and III, 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), or 27 November 2025 (Phase III).

Global AIM Implementation Dashboards

3.9 ICAO Headquarters is developing a scheme of dashboards to monitor and report global, regional and State progress in AIM implementation. The dashboards will include the implementation status of:

1. Quality Management Systems;

2. World Geodetic System – 1984 (WGS-84);

3. Earth Gravitational Model – 1996 (EGM-96); and

4. Terrain and Obstacle Datasets.

3.10 The Performance Improvement Plan in Section 7 of this document includes performance expectations in each of these areas.

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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).

5.5 The ASBU are undergoing a major re-structure, which will be presented for approval at the 40th Triennial ICAO Assembly, to be held in Montreal, Canada, from 24 September to 04 October 2019. Future amendment of this document will include relevant ASBU references, and any related regional priorities and performance expectations.

Interim AIM Transition Guidance

5.6 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.

5.7 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.

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

AIM Information Sharing Website

5.9 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

5.10 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*.

5.11 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.

5.12 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.

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

Selection and Training Guidelines for AIS

5.14 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)

5.15 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

5.16 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.

5.17 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.

5.18 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

5.19 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.

5.20 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

5.21 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

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

5.23 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

5.24 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.

5.25 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 C**.

5.26 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 available on request from Regional Office.

Implementation Status Monitoring

5.27 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.

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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.)

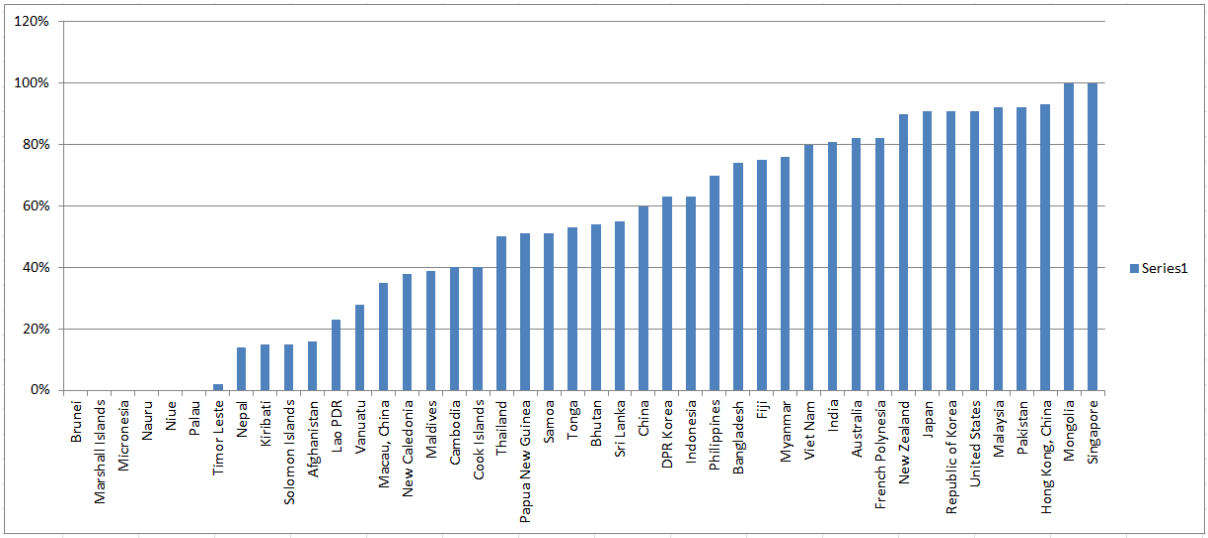

Figure 1: Regional AIM Implementation Status - Phase 1 and 2 Implementation Progress

Asia/Pacific AIM Compliance Analysis – USOAP Audit

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 was **62%**. After analyzing, the EI for 10 AIS-related PQs was **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).

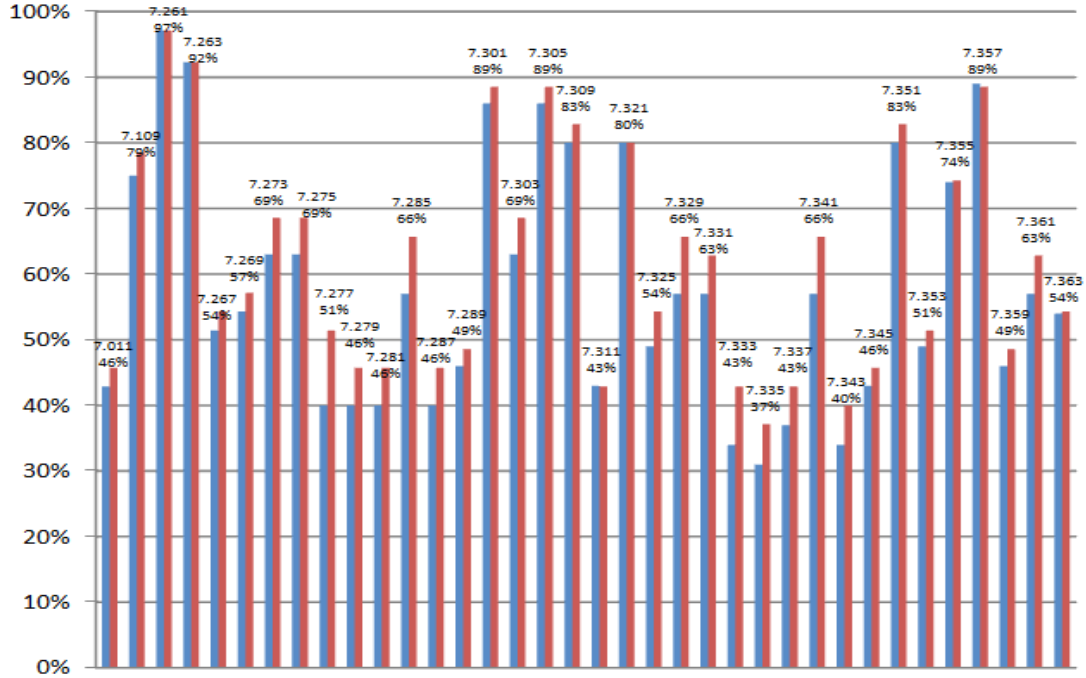

Figure 2: APAC USOAP CMA ANS PQ Compliance (2017 and 2018 Comparison)

6.5 The following summarizes the Asia/Pacific Regional implementation performance in the four priority areas of AIRAC adherence, monitoring of States' differences to Annex 4 and Annex 15, WGS-84 implementation, and quality management:

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?

- Average Effective Implementation (EI) of PQ 7.309 for APAC region was **83%**.

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?

- Average Effective Implementation (EI) of PQ 7.011 for APAC region was **46%**.

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)

- Average Effective Implementation (EI) of PQ 7.109 for APAC region was **79%**.

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?

PQ 7.359: Has the State established a mechanism to ensure that aeronautical data quality requirements related to the data integrity and charting resolution are in accordance with the provisions of Tables 1 to 6 in Appendix 6 of Annex 4? (CE-5)

PQ 7.267: Does the State ensure that a properly organized quality management system in the AIS has been established? (CE-7)

- Average Effective Implementation (EI) of PQ 7.311 for APAC region was **43%**.
- Average Effective Implementation (EI) of PQ 7.359 for APAC region was **49%**.
- Average Effective Implementation (EI) of PQ 7.267 for APAC region was **54%**.

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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 (to be developed).

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).

Structure of the Performance Improvement Plan

7.4 The performance improvement Plan includes performance expectations based on relevant implementation steps from the ICAO Roadmap for Transition from AIS to AIM.

REGIONAL AIM CAPABILITY PHASE I

Expected to be implemented immediately

Legislation, Policy and Regulations

7.5 States should develop policy, and enact primary legislation and supporting regulations for Annex 4 and Annex 15 SARPS and PANS-AIM Procedures including:

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

ii. Requirements for monitoring of differences from Annex 4 and Annex 15 SARPS;

iii. Requirements for aeronautical information/data originators;

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

7.6 National Air Navigation Plans developed in accordance with the Beijing Declaration, and the provisions of the Asia/Pacific Seamless ANS Plan, should include the implementation planning for each of the performance expectations of the Regional Plan for Collaborative AIM.

7.7 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

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

7.9 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

7.10 Quality management processes for aeronautical information services, as are required to be established under the SARPS in Annex 15[1], should include processes for:

i. Data quality monitoring;

[1] Annex 15 *Aeronautical Information Services* Section 3.6

ii. AIRAC adherence monitoring; and

iii. Quality checking

7.11 Formal agreements, as required to be established between AIS providers and aeronautical data originators under the relevant SARPS in Annex 15[2], should specify 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

7.12 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.

7.13 States should ensure full compliance of all aeronautical information products[3] with the following common reference systems in accordance with the relevant SARPS and procedures in Annex 15 and PANS-AIM[4]:

i. Horizontal reference system – *World Geodetic System 1984* (WGS-84);

ii. Vertical reference system – Mean Sea Level (MSL) datum and Earth Gravitational Model – 1996 (EGM-96);

iii. Temporal reference system – UTC.

REGIONAL AIM CAPABILITY PHASE II

Expected to be implemented by 7 November 2019

Legislation, Policy and Regulations

7.14 Policy, primary legislation and supporting regulations for Annex 4, Annex 15 SARPS and PANS AIM should be adapted as necessary to support transition to AIM, including:

i. Requirements for the implementation of digital databases of aeronautical information, from which digital data sets may be generated;

ii. Requirements for production of electronic AIP and other Aeronautical Information

[2] Annex 15 Section 2.15

[3] Annex 15 defines *Aeronautical Information Products* as aeronautical data and aeronautical information provided either as digital data sets or as a standardized presentation in paper or electronic media, including AIP (including Amendments and Supplements), AIC, aeronautical charts, NOTAM and digital data sets.

[4] Annex 15 Section 1.2, and Doc 10066 *Procedures for Air Navigation Services – Aeronautical Information Management* (PANS-AIM) Section 2.1

Products[5] derived from digital databases of aeronautical information.

Human Performance

7.15 Training, competency development and performance assessment of AIS personnel should be adapted as necessary to the needs of transition to AIM, including the establishment and maintenance of digital databases and generation of data sets of aeronautical information, quality management systems, and electronic AIP

Quality Management

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

AIM Systems

7.17 All Administrations should establish and maintain digital databases of aeronautical information as specified in PANS-AIM Appendix 1 Aeronautical Data Catalogue Tables A1-1 to A1-10, where applicable.

7.18 Terrain ~~and~~, Obstacle and Aerodrome Mapping Data should be managed through the establishment of:

i. A terrain database, from which terrain data sets conforming with Annex 15 Section 5.3.3.3 may be generated;

ii. An obstacle database, from which obstacle data sets conforming with Annex 15 Section 5.3.3.4 may be generated; and

iii. An aerodrome mapping database, from which aerodrome mapping data sets conforming with Annex 15 Section 5.3.4 may be generated.

7.18 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 27 November 2025

Legislation, Policy and Regulations

7.19 Policy, primary legislation and supporting regulations for Annex 4 and Annex 15 SARPS, and PANS AIM procedures, should be adapted as necessary to support the automated exchange of aeronautical data in a SWIM environment, including requirements for:

i. Interoperability with meteorological products;

[5] Annex 15 defines *Aeronautical Information Products* as aeronautical data and aeronautical information provided either as digital data sets or as a standardized presentation in paper or electronic media, including AIP (including Amendments and Supplements), AIC, aeronautical charts, NOTAM and digital data sets.

ii. Communications networks for the exchange of aeronautical data; and

iii. Electronic aeronautical charts.

Human Performance

7.20 Training, competency development and performance assessment of AIS personnel should be adapted as necessary to support the automated exchange of aeronautical data in a SWIM environment, and the generation of electronic aeronautical charts.

AIM Systems and Processes

7.21 All Administrations should

i. exchange digital data sets of aeronautical information in a SWIM environment, aligned with ASBU DAIM-B2/1.

ii. provide Aeronautical Information briefing with integrated meteorological information; and

iii. provide Electronic aeronautical charts.

Note 1: The Asia/Pacific Seamless ANS Plan PASL Phase III includes the expectation that ATM systems should be supported by digitally-based NOTAM aligned with ASBU DAIM-B1/7, replacing paper product-based NOTAM with digital NOTAM.

Note 2: Aeronautical briefing with integrated meteorological information, and electronic charts, are subject to the review of the ICAO Roadmap for Transition from AIS to AIM.

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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

TABLE OF CONTENTS

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. 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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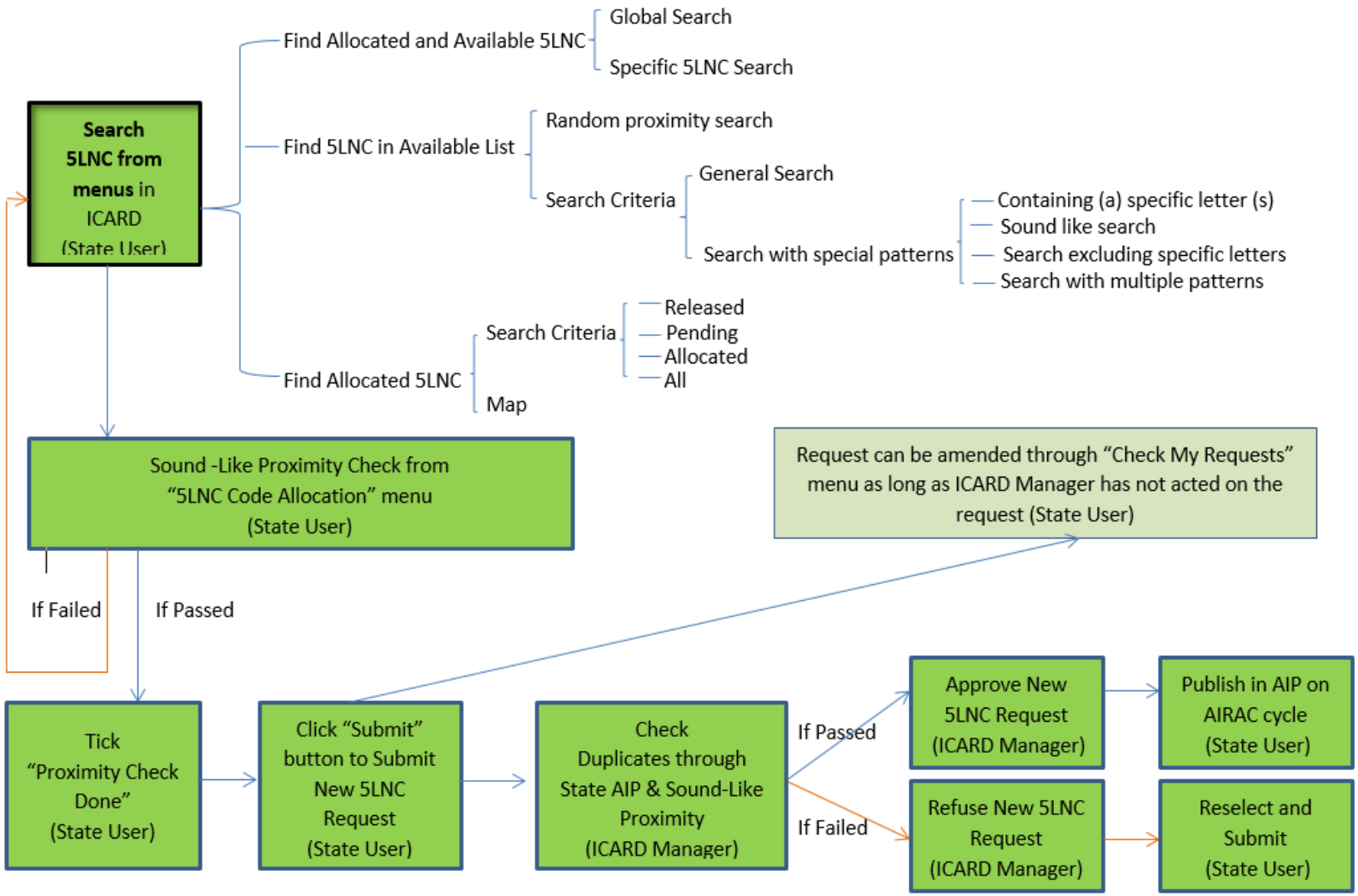
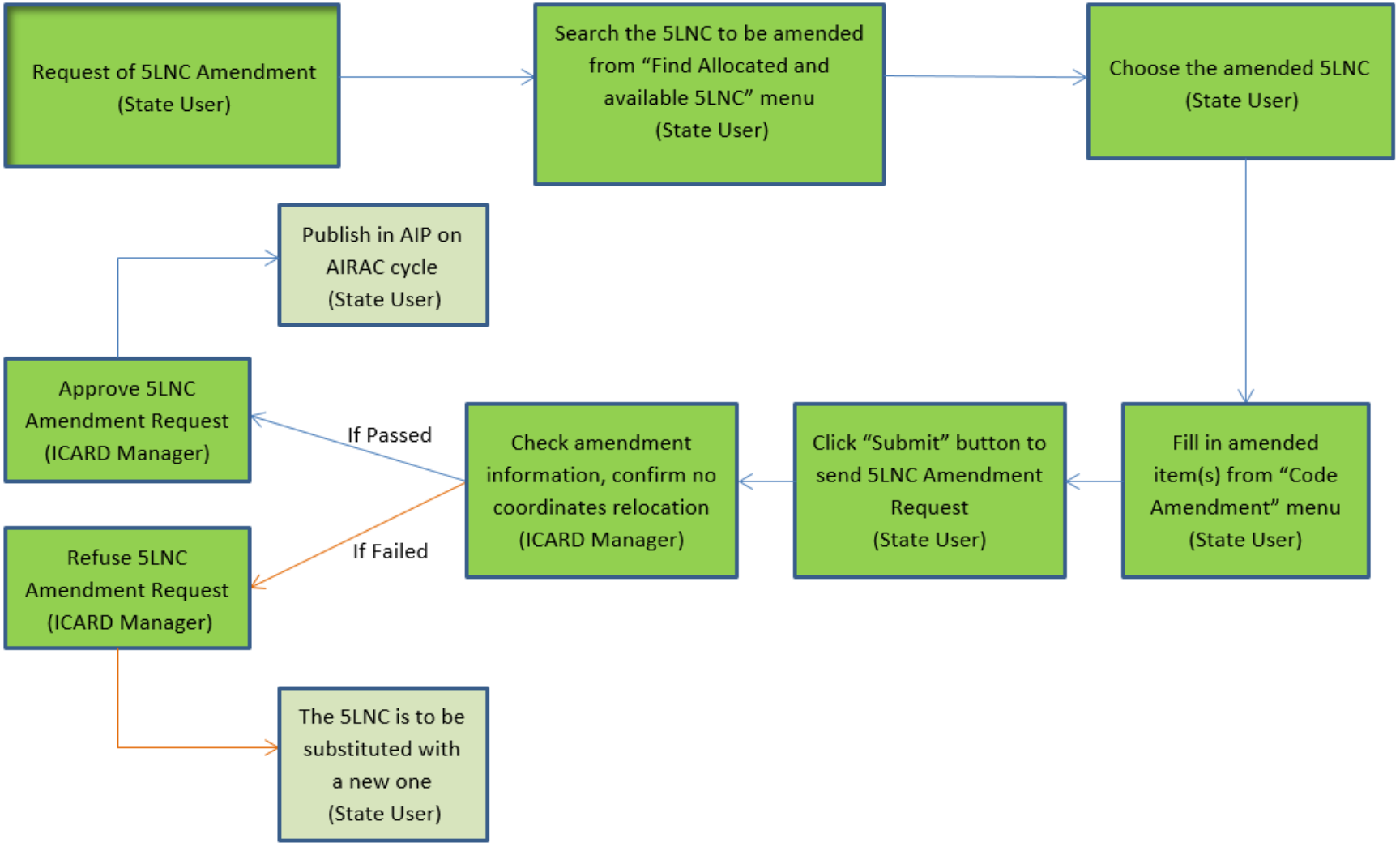


Flow Chart for New 5LNC Request

Notes:

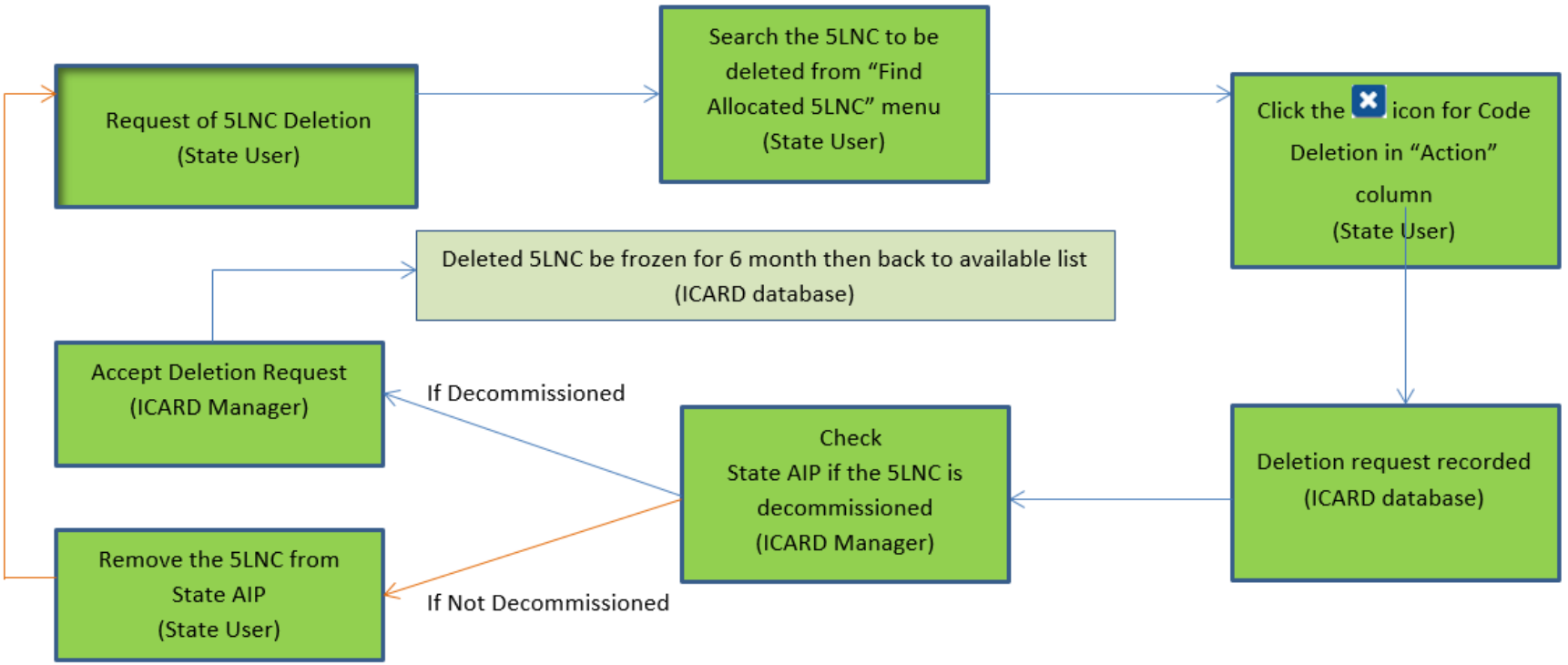
- In all cases, the coordinates of the requested new 5LNC must be within the territory or any FIR of the requesting State. If this is not the case, the request will be refused.
- For 5LNCs on FIR boundaries, the requesting State has to coordinate with all State(s) concerned before the new 5LNCs are requested, 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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REGIONAL AIM PLAN MONITORING AND REPORTING FORM

AIM PERFORMANCE INDICATORS

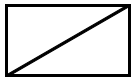
The following indicators are based on the Performance Improvement Plan of the Asia/Pacific Regional Framework for Collaborative AIM, which should be read in conjunction with this form. The information provided will be used by the relevant Regional bodies to assess individual Administration and overall 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 to input a value corresponding to each question.

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

Indicate whether your administration has:

	Regional AIM Capability Phase I	
1	Developed policy and enacted primary legislation and supporting regulations for Annex 4 and Annex 15 SARPS, and PANS-AIM Procedures including:	
1a	establishment of an organizational structure for the safety oversight of aeronautical information service providers;	0%
1b	requirements for monitoring of differences from Annex 4 and Annex 15 SARPS;	0%
1c	requirements for aeronautical information/data originators;	0%
1d	requirement for AIS quality management systems and processes to be established by all entities in the end-to-end AIS data chain.	0%
2	Ensured National Air Navigation Plans include implementation planning for each of the performance expectations of the Regional Plan for Collaborative AIM.	0%
3	Established AIS either as a separate entity within, or separated from the civil aviation administration.	0%
4	Developed competency requirements for AIS personnel, including English language proficiency requirements, supported by a program of regular performance assessment.	0%
5	Established regular programs of engagement with all stakeholders.	0%
6	Established quality management processes for aeronautical information.	0%
7	Established formal agreements between AIS providers and aeronautical data originators.	0%
8	Provided full access to relevant ICAO Annexes and Documents to all personnel having responsibility for the reception, management, publication and/or distribution of aeronautical information and aeronautical data.	0%
9	Ensured compliance of all aeronautical products with common reference systems WGS-84, MSL/EGM-96 and UTC	0%

	Regional AIM Capability Phase II	
10	Adapted policy, primary legislation and supporting regulations to support digital data sets of aeronautical information and associated products	0%
11	Adapted training, competency and performance assessment of AIS personnel for digital data sets and eAIP	0%
12	Implemented and maintained quality management systems encompassing all functions of the AIS	0%
13	Established and maintained digital databases of aeronautical information (PANS-AIM Appendix 1)	0%
14	Managed terrain, obstacle and aerodrome mapping data through the establishment of:	
14a	a terrain database, from which terrain data sets conforming with Annex 15 Section 5.3.3.3 may be generated	0%
14b	an obstacle database, from which obstacle data sets conforming with Annex 15 Section 5.3.3.4 may be generated	0%
14c	an aerodrome mapping database, from which aerodrome mapping data sets conforming with Annex 15 Section 5.3.4 may be generated	0%
15	Implemented internet-accessible electronic AIP generated from digital database of aeronautical information	0%
	Regional AIM Capability Phase III	
16	Adapted policy, primary legislation and supporting regulations to support automated exchange of aeronautical data in a SWIM environment	0%
17	Adapted competency development and performance assessment of AIS personnel to support the automated exchange of aeronautical data and production of electronic charts in a SWIM environment.	0%
18	Commenced aeronautical information exchange through digital data sets, integrated briefing and electronic charts in a SWIM environment.	0%
		0%