



ICAO

UNITING AVIATION

ICAO – LATEST AIM DEVELOPMENTS

EU/EASA South Asia APP AIM Workshop
Bangkok, Thailand, 17 – 19 June 2019

Prepared by:

Roberta Luccioli – AIM Technical Officer, ICAO Headquarters, Montreal

Shane Sumner – Regional Officer ATM/AIM, ICAO Asia/Pacific Regional Office, Bangkok





| ICAO

UNITING AVIATION

- The Latest AIM Provisions
- The Guidance Material
- The USOAP Protocol Questions
- Future AIM provisions & Roadmap





ICAO

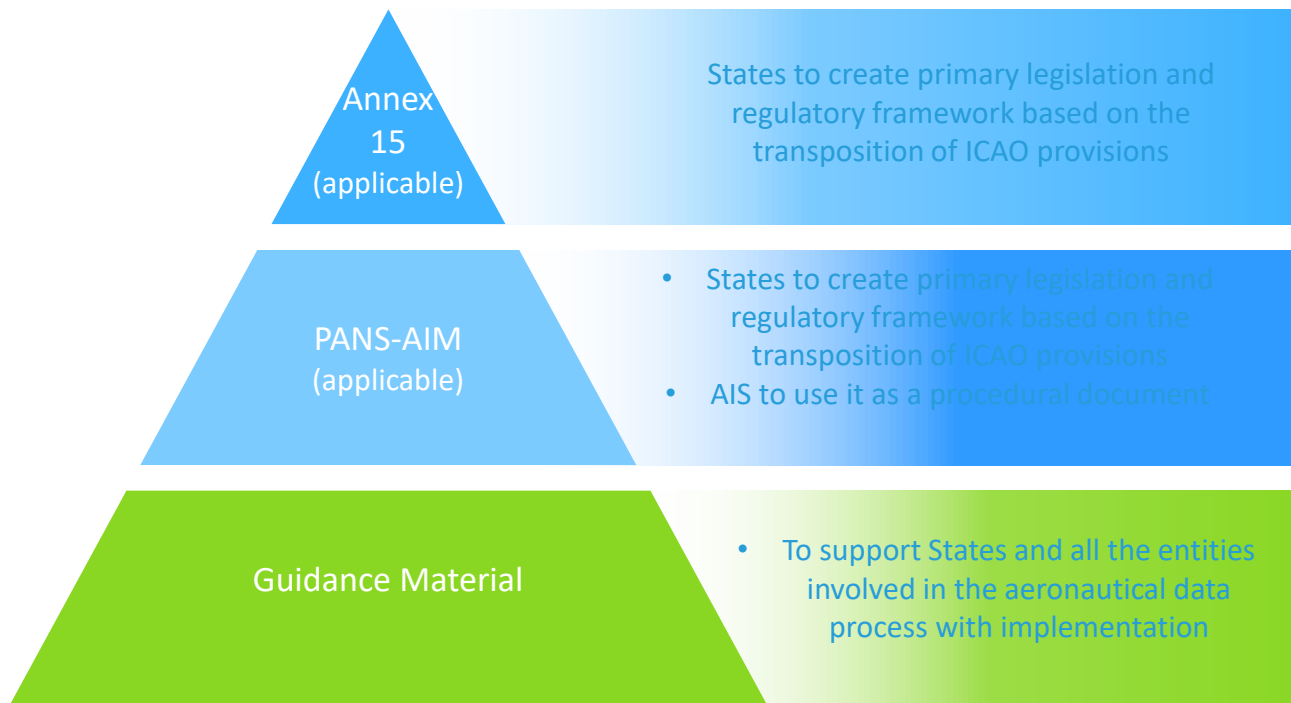
UNITING AVIATION

LATEST AIM PROVISIONS





Latest AIM Provisions





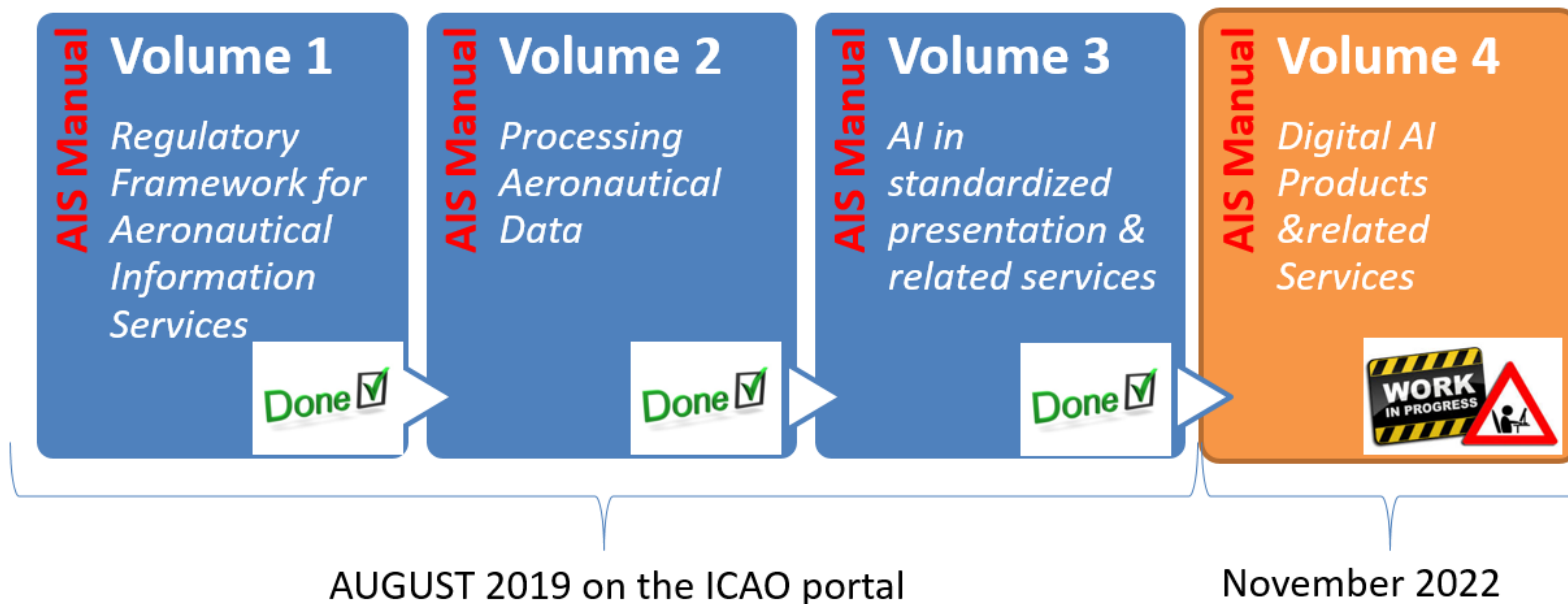
ICAO

UNITING AVIATION

GUIDANCE MATERIAL – AIS MANUAL



Overall view:



Volume 1

*Regulatory
Framework for
Aeronautical
Information
Services*



Table of contents

Chapter 1: Target Audience

Chapter 2: States Responsibilities:

- ❖ CE-1 – Primary Aviation Legislation
- ❖ CE-2 – Specific operating regulations
- ❖ CE-3 – State System and Functions
- ❖ CE-4 – Qualified Technical Personnel
- ❖ CE-5 – Technical guidance, tools and provision of safety-critical info
- ❖ CE-6 – Licensing, certification, authorization and approval obligations
- ❖ CE-7 – Surveillance Obligations
- ❖ CE-8 – Resolution of safety issues

Chapter 3: AIS Responsibilities

Chapter 4: Aeronautical Data Originators Responsibilities

Chapter 5: Aeronautical Information Management

Appendix 1: AIS/AIM Competency Framework

Appendix 2: Annex 15 Compliance Checklist

Appendix 3: PANS-AIM Compliance Checklist

**Table of contents**

Chapter 1: Target Audience

Chapter 2: Scope of Aeronautical Data and General Requirements

Chapter 3: Collection

Chapter 4: Processing

Chapter 5: Distribution

Chapter 6: Quality Assurance and Control

Chapter 7: Automation

Appendix 1: Service Level Agreement Template

Volume 3

*Aeronautical
information in a
standardized
presentation &
related services*

Done



Table of contents

Chapter 1: Target Audience
Chapter 2: Aeronautical Information Publication
Chapter 3: Aeronautical Information Updates
Chapter 4: Aeronautical Information Circulars
Chapter 5: Provision of a. i. in a standardized presentation
Chapter 6: NOTAM
Chapter 7: SNOWTAM
Chapter 8: ASHTAM
Chapter 9: Instructions for the Transmission and Distribution of the notam Messages
Chapter 10: Pre-flight information services
Appendix 1 to 9: Relocated text from existing manual

Volume 4

*Digital AI
Products
& related
Services*



November 2022

Proposed Table of contents

Chapter 1: Target Audience

Chapter 2: Digital Exchange of Information

Chapter 3: Interoperability principles

Chapter 4: General Aspects of Digital Data Sets

Chapter 5: Specific Aspects of Digital Data Sets

- ❖ Chapter 5.1: AIP Data Set
- ❖ Chapter 5.2: Terrain data set
- ❖ Chapter 5.3: Obstacle data set
- ❖ Chapter 5.4: Aerodrome mapping data set
- ❖ Chapter 5.5: Instrument Flight Procedure data set
- ❖ Chapter 5.6: Temporary changes of short duration

Chapter 6: AIM Information Services:

- ❖ How to apply SWIM Information services principles to AIM
- ❖ Information services overview for AIM
- ❖ Information services lifecycle for AIM
- ❖ Information services quality for AIM
- ❖ Type of AIM information services

Chapter 7: Governance aspects of AIM information services



ICAO

UNITING AVIATION

GUIDANCE MATERIAL – MANUAL ON THE QMS FOR AIM





Initial Draft (~2011)

Manual on
QMS for AIM

New aspects:

- ❖ Compliance with the latest provisions (Annex 15, PANS-AIM)
- ❖ Importance for data originators to have QMS implementations
- ❖ Importance of strong interfaces between the QMS systems in the data process (Formal Arrangements, Aeronautical Data Catalogue)
- ❖ Explaining the roles of QMS and SMS for AIM organizations



Final Manual (2020)

Manual on
QMS for AIM



ICAO

UNITING AVIATION

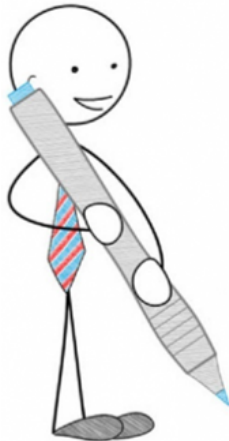
GUIDANCE MATERIAL – AIM TRAINING DEVELOPMENT MANUAL



AIM Training Manual

Initial Draft (~2011)

AIM Training
Development
Manual



Rewriting

New Elements:

- ❖ A new **ICAO Competency-based Training and Assessment methodology** that:
 - ❖ Focuses on ensuring the overall performance of the individuals rather than on the completion of single tasks
 - ❖ Establishes specific workflows for training & assessment



Final Manual (2020)

AIM Training
Development
Manual



Proposed Table of contents:

Chapter 1: Target Audience

Chapter 2: ICAO AIS/AIM competency framework (list of competencies for the AIM domain)

Chapter 3: Competency-based training and assessment process that includes:

- ❖ WORKFLOW 1: Analyse the training needs
- ❖ WORKFLOW 2: Design competency-based training and assessment
- ❖ WORKFLOW 2 — Part 1: Design the adapted competency model
- ❖ WORKFLOW 2 — Part 2: Design the assessment and training plans
- ❖ WORKFLOW 3: Develop the training and assessment materials
- ❖ WORKFLOW 4: Conduct the course
- ❖ WORKFLOW 5: Evaluate course

Chapter 3 will have specific appendices providing **examples of:**

- ❖ Training Specifications
- ❖ Adapted competency models
- ❖ Evidence guides
- ❖ Competency checklists
- ❖ Competency Assessment forms
- ❖ Syllabus

Chapters 4 to 7: various phases of training (ab-initio, initial, on the job, refresher training)



ICAO

UNITING AVIATION

USOAP PROTOCOL QUESTIONS FOR AIM





❖ CE-1 – Primary Aviation Legislation

❖ CE-2 – Specific operating regulations

❖ CE-3 – State System and Functions

❖ CE-4 – Qualified Technical Personnel

❖ CE-5 – Technical guidance, tools and provision of safety-critical info

❖ CE-6 – Licensing, certification, authorization and approval obligations

❖ CE-7 – Surveillance Obligations

❖ CE-8 – Resolution of safety issues

Revising/ Adding Protocol Questions to monitor:

1. CE1,CE2: Robust AIM regulatory framework
2. CE3: Clear responsibilities, functions
3. CE3, CE4: Financial resources & qualified AIM personnel
4. CE5, CE6, CE7, CE-8: Effective approval and surveillance processes for AIS provider
5. ALL: Specific implementation of SARPs
 - ❖ Data Quality Specifications
 - ❖ Formal arrangements
 - ❖ Use of interoperable exchange models
 - ❖ Strong Validation and Verification
 - ❖ Automation & Mitigation
 - ❖ Misuse of NOTAM be prevented

Guidance material content amplified to support the use of the PQs.

Q2 2021



ICAO

UNITING AVIATION

FUTURE AIM PROVISIONS AND ROADMAP



NOTAM Replacement

Problem statement: The NOTAM system dates back to the 1920's and no significant enhancements have been done since 1987. As a result, the NOTAM system is no longer adequate to support modern aviation systems and the increasing number and diversity of users.



ICAO

And all other possible channels!

Survey for NOTAM users:

- ❖ Questions are directed at identifying solutions, rather than problems
- ❖ Long-term solutions should be sought rather than “fixing” the existing system
- ❖ Invite users to think “outside the box”
- ❖ Invite users to value the good aspects of the existing system

Develop an OPERATIONAL CONCEPT – Q2 2021
First set of provisions – Q4/2022

Aeronautical Charts

Problem statement: Annex 4 does not support a data-centric and digital environment, causes a high risk of proliferation of initiatives and may jeopardize the vision of a global interoperable ATM system for all users.



ICAO

And all other possible channels!

Develop an OPERATIONAL CONCEPT – Q2 2021
First set of provisions – Q4/2022

❖ Survey for States and its entities:

- ❖ If they produce all Annex 4 Chart types
- ❖ If they produce charts not in Annex 4
- ❖ If they support the notion of chart based on their use

❖ Survey for the next intended users:

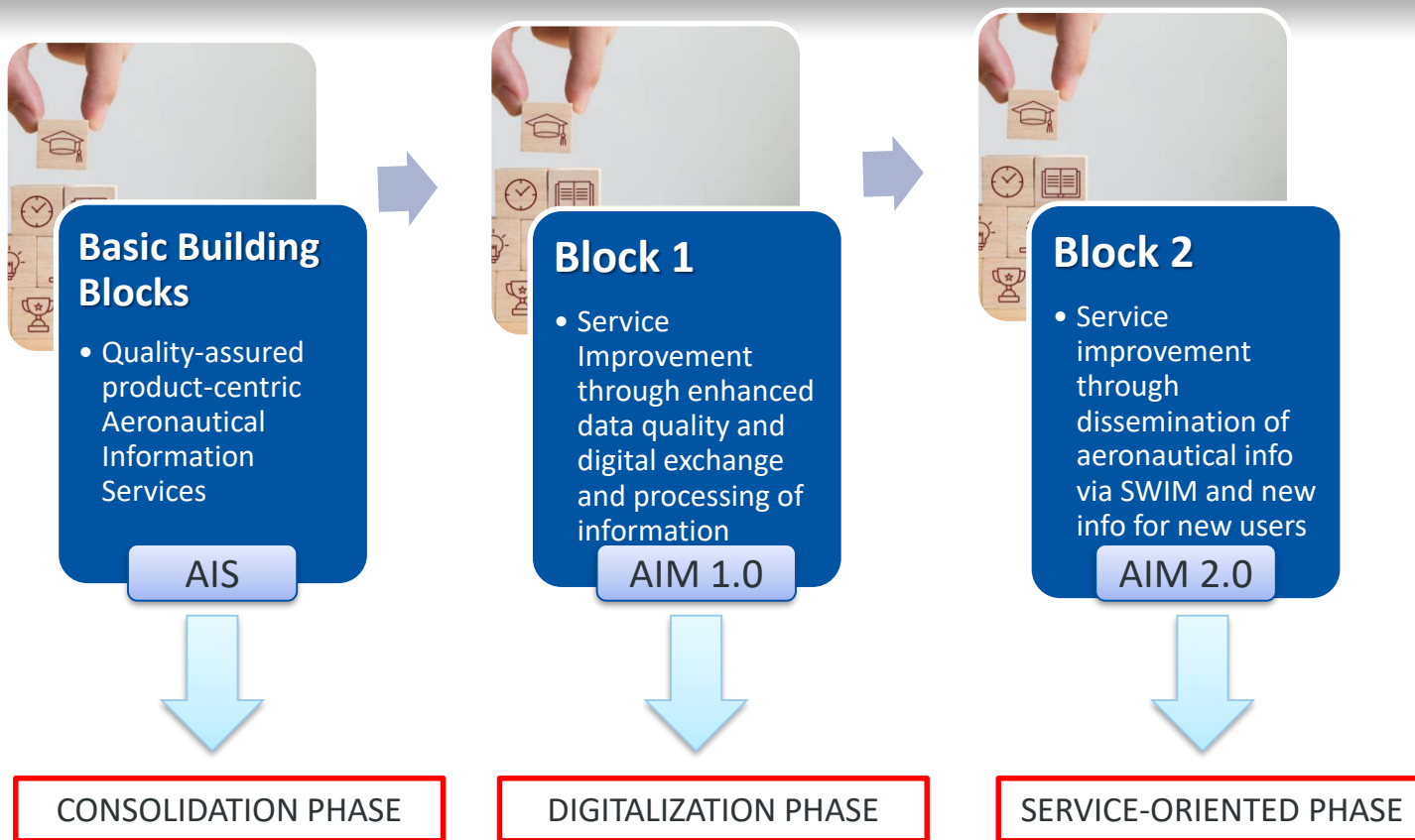
- ❖ If charts have outlived their purpose
- ❖ If data sets will replace charts
- ❖ If the existing charts fulfil the intended function
- ❖ How to improve quality and format



- The starting point is the work on the AIS Manual, Volume 4
- Afterwards some of the material may be uplifted to the PANS-AIM or Annex 15, for increased harmonization



AIM Roadmap



AIM Working Group

Information Management Panel



Architecture
Working
Group

Services
Working
Group

Governance
Working
Group



AIM Working Group

AIM Projects

Global Implementation Support

Digital Data Set

NOTAM

Aeronautical Charts

WGS-84

Supporting AIM 1.0
Facilitating AIM 2.0



ICAO

UNITING AVIATION

