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AIM strategy for current and future implementations

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ANI WG 04





- Status-quo:
 - ICAO AIM provisions
- Next steps:
 - Leading the way to implementation
 - Future AIM developments
 - The ICAO AIM projects
 - The AIM Implementation Strategy





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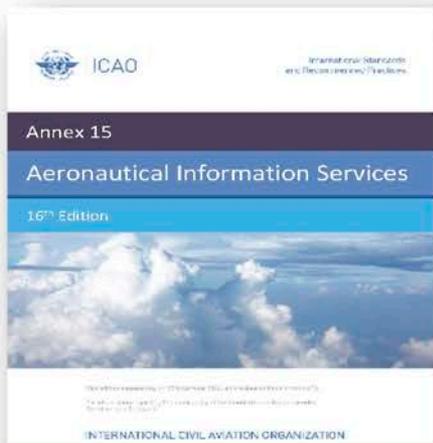
The Status - Quo



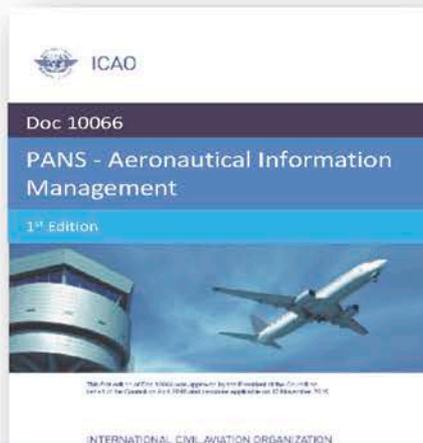
Where are we?



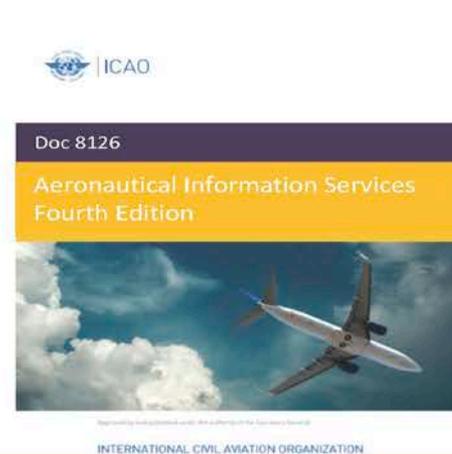
ICAO AIM framework of documents



- Adopted by ICAO Council (Feb 2018)
- State Letter (April 2018)
- App. Date Nov 2018



- To be approved by ICAO Council
- State Letter (July 2018)
- App. Date Nov 2018



- Still Under work
- Ready by the applicability date (Nov 2018)



ICAO AIS Manual

Volume 1 – Organisational Development

(70% of the document is written)

- guidance for the organizational development of AIS including the transition to AIM
- **Management bodies: ANSP, Regulators**

Volume 2 – Processing Aeronautical Data

(90% of the document is written)

- guidance for processing aeronautical data and information in a data centric environment
- **Operational personnel**

Volume 3 – Aeronautical Information in a Standardized Presentation

(100% of the document is written)

- guidance for the provision of aeronautical information in a standardized presentation
- **Operational personnel**

Volume 4 – Digital Products and Services

(40% of the document is written)

- guidance for providing digital products and services
- **Operational personnel, AIM SW manufacturers**



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The next steps



What`s
next?



Lead the way to implementation...

Support the implementation of AIM requirements (Annex 15, 16th edition and PANS-AIM):

- Revise and/or enhance existing requirements (e.g. in response to State Letter 2017/22);
- development of guidance material for AIM;
- development of web-based guidance;
- identification of specific training needs;
- direct assistance to States to transition to AIM;
- any other AIM implementation support, as required.



Look into the future...

Develop new aeronautical information management requirements. This task may encompass:

- develop an operational concept and corresponding provisions for the establishment of an information service that serves as a replacement for the information currently provided by NOTAMs;
- facilitate the migration of existing paper-based aeronautical charting products into the digital environment and identify requirements for the graphical representation of aeronautical information in a SWIM environment;
- facilitate the provision of digital datasets through SWIM services;
- identify and analyze aeronautical information requirements specific to UAS traffic management (UTM);
- Any other requirements, as needed.

AIM Projects

AIM Projects

- 1) AIM Awareness
- 2) Training
- 3) QMS Implementation & Oversight
- 4) Data Origination
- 5) AIRAC
- 6) WGS-84
- 7) Aeronautical Charting
- 8) NOTAM
- 9) Digital Datasets
- 10) AIM interoperability
- 11) AIM in SWIM
- 12) AIM for UTM





AIM Projects

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1) AIM Awareness

2) Training

3) QMS Implementation & Oversight

4) Data Origination

5) AIRAC

6) WGS-84

7) Aeronautical Charting

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9) Digital Datasets

10) AIM interoperability

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12) AIM for RPAS



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AIM Awareness

Problem statement:

- There is lack of awareness in the global aviation community of the role and importance of quality-assured, aeronautical information and of the adverse impact that erroneous information may have on flight safety and efficiency

Impact:

- Global priorities: PBN, A-CDM, ATFM, SWIM

Action Plan:

- AIM Roadmap
- Guidance material for specific audiences
- Regional seminars/workshops targeting audiences
- Direct assistance to States (“Go-Teams”)

Metrics:

Measure implementation:

- N. States QMS implementation/year
- N. States Reg. Frameworks /year

Measure actions:

- N. ICAO AIS/AIM related workshops
- N. of presentations for States’ Regulators
- N. of presentations for AIM Managers



QMS Implementation & Oversight

Problem statement:

- Non-effective or Non implementation of a QMS exists today in AIS Provider (AISP) organizations.
- Furthermore it is difficult for State Authorities to oversee QMS Implementation by the AISP.

Impact:

- Configuration management issues, poor consistency checks: errors and inconsistencies in AI
- Global priorities: PBN, A-CDM, ATFM, SWIM

Action Plan:

- Expansion of procedures in PANS-AIM
- Manual on QMS for AIM (web-based)
- Share-point with States Best Practices
- Go Teams/Seminars/workshops

Metrics:

Measure implementation:

- N. of States QMS implementation/year, based on USOAP results and regional reports



Aeronautical Data Origination

Problem statement:

There are several issues with origination of aeronautical data and information:

- Originated data are not of the right quality
- Non effective communication among stakeholders
- Lack of formal arrangements.

Impact:

- Quality is not commensurate with the intended use of the information
- Global priorities: PBN, A-CDM, ATFM, SWIM

Action Plan:

- **AIS Manual is already under work:**
 - Guidance on formal arrangements
 - Formal arrangements template
 - Aeronautical Data Catalogue
 - Roles and responsibilities
- **Additional work on the Data Catalogue?**

Metrics:

Measure implementation:

- N. of established formal arrangements between data originators and the ANSP/year





Notice to Airmen (NOTAM)

Problem statement:

- For pilots and flight planning units it is difficult to filter the NOTAM properly
- The total number of NOTAM issued per year has increased by 2.4 times worldwide
- Quality of NOTAM information is not always adequate
- The filtering criteria are not sufficient to cope with modern operations (TBO).

Impact:

- High impact on flight safety and efficiency
- Global priorities: PBN, A-CDM, ATFM, SWIM

Action Plan:

- Looking into long-term solutions: develop a new concept for an Information Service (SWIM)
- Coordination with communities of interest
- Develop ICAO provisions
- Regional roll-out implementation activities

Metrics:

Qualitative:

- Evaluation of report by aircraft operating agencies and data providers



AIM in SWIM

Problem statement:

- The Annex 15 and PANS-AIM specify five categories of digital aeronautical data sets that shall/should be provided by AIS, but do not indicate how these data sets are actually provided

Impact:

- Proliferation of different ways to provide information, therefore jeopardizing interoperability
- Impact on the vision of an interoperable global ATM system for all users.

Action Plan:

- Define minimum set of requirements for the provision of digital data sets services
- Define set of requirements for more advanced “query/reply” digital data services.
- Define set of requirements for “dynamic” updates to digital data sets service

Metrics:

Measure Implementation:

- Number of State AIS providing digital data sets through a SWIM service



AIM for UTM

Problem statement:

- The drone manufacturing industry and user community has seen fast expansion. With limited airspace and a dense population, the need for a traffic management system that includes drones has become urgent. This system needs information and data supporting both aircraft and drones traffic management.



Action Plan:

- UAS Advisory Group (UAS-AG) is addressing all aspects of UTM at ICAO.
- Coordinate with the UAS-AG on AIM support
- Establish actions accordingly

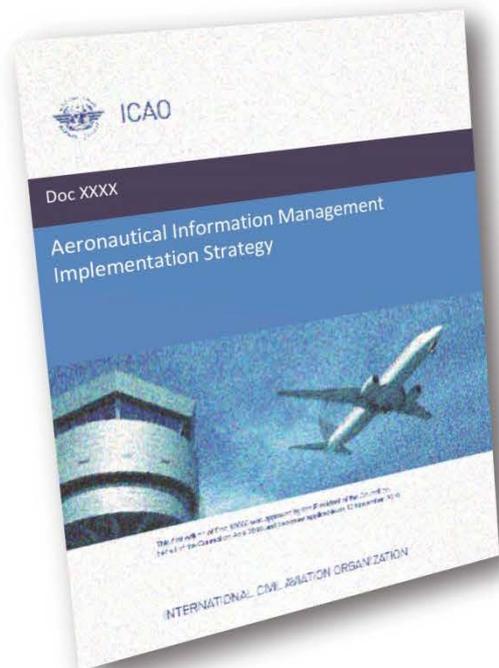




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AIM Implementation Strategy



- Introduction
 - Why an AIM implementation Strategy
 - The main objectives
 - A project-management approach
- The ICAO Provisions: current situation
 - Annex 15, PANS-AIM
 - The AIS Manual
- Upcoming requirements
 - Airspace Users requirements (ATM)
 - Requirements coming from other domains (e.g.UTM)
 - Towards SWIM
- The Strategy: the “AIM” Projects
 - Projects to support implementation of existing provisions
 - Projects for future implementations



Status and next actions

- Projects definition phase is almost completed
- ICAO internal peer review to finalize the project documents
- Consultation with the Air Navigation Commission
- Drafting of the AIM Implementation Strategy
- Starting working on the projects (tentative: end of the year)





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ICAO AIM Expert Group

- Establishment of ICAO expert group/s to execute the 12 AIM projects
- The ICAO expert group/s will be formalized soon!





Conclusions

- Focus on implementation as a matter of priority!
- Create a solid base by enhancing the quality of the existing products and services
- Develop new requirements for facilitating the integration of the aeronautical information domain into SWIM
- Develop an effective strategy for continuing planning and progressing the work on AIM

Work on AIM SHALL progress forward!



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