International Civil Aviation Organization
South American Regional Office
Eleventh Multilateral Meeting of the SAM Region for the Transition of AIS to AIM (SAM/AIM/11)
Lima, Peru, 23 to 27 April 2018

Agenda Item 5: Analysis of objectives, metrics and dates for the implementation of elements regarding the second phase of the plan for the transition of AIS to digital AIM

Second phase of the transition to digital AIM: Implementation of B0-DATM and B1-DATM, follow-up to the implementation of automated systems and other requirements in accordance with Annex 15

(Presented by the Secretariat)

SUMMARY

This working paper underlines the need for the Meeting to analyse a format of a national plan for the implementation of the transition of AIS to AIM and proposes the coordination of goals, indicators and metrics for the digital phase of AIM and the updating of the implementation of automated systems.

REFERENCES

- Annex 15 to the Convention on International Civil Aviation
- Doc 9750 - Global Air Navigation Plan
- Doc 8126 - Aeronautical Information Services Manual
- RAAC/14 meeting
- SAM/AIM meetings
- Roadmap for the transition of AIS to AIM

***ICAO strategic objectives*:**	*A - Safety* *B - Air navigation capacity and efficiency* *E - Environmental protection*

1. Background

1.1 The SAM/AIM/8 meeting was presented with the implementation plan for the second phase of the Roadmap for the transition of AIS to AIM.

1.2 The fourth edition of the Global Air Navigation Plan introduced the ASBU methodology, which was ratified in the fifth edition.

1.3 According to Annex 15 to the Convention on International Civil Aviation, automation is required in order to improve the timeliness, quality, efficiency, and profitability of aeronautical information services.

2. **Discussion**

2.1 The second phase of the Roadmap for the transition of AIS to AIM should start upon completion of Phase 1. The second phase comprises the implementation of steps 1, 2, 6, 7, 11, 13, 14 and 15 of the Roadmap.

2.2 The Global Air Navigation Plan (Doc 9750), under the ASBU methodology, specifically in PIA 2, includes module B0-DATM in Block 0, which becomes B1-DATM in Block 1.

Implementation of B0-DATM

2.1 The Secretariat has been following up on B0-DATM implementation at recent SAM/AIM meetings. It should be recalled that this module is implemented through the States and benefits will be greater as more States implement it. In this regard, it is important for States to work on an implementation methodology, based on the experience of those that are already in the process of implementation. **Appendix A** to this working paper presents the elements included in B0-DATM, for which an analysis and implementation strategies are requested from States.

2.2 The initial investment required for the provision of digital AIS data could be reduced through regional cooperation, although it is still a little high compared with the cost of other ATM systems. The transition from paper-based products to digital data is a pre-requisite of critical importance for the implementation of any current or future ATM or air navigation concept that relies on data accuracy, integrity and timeliness.

2.3 According to the previous paragraph, there is a need for regional coordination among the States in order to develop concerted, easy to measure regional metrics that may be available on the agreed dates for delivery to the Regional Office.

National plan for AIS-to-AIM migration

2.4 The national AIS-to-AIM transition plan should describe the strategy to be implemented to migrate to an electronic environment. Management of databases, communication infrastructure and networks to support data transmission will be very important, together with the software or packages acquired or developed by the State to manage aeronautical information in the electronic environment.

2.5 Likewise, emphasis should be placed on agreements with AIS/AIM information providers so that the products and data to be delivered meets the requirements set forth in Annex 15 in terms of accuracy, resolution and integrity.

2.6 Training of personnel in the new technologies is a fundamental step to be included in the migration plan. States must understand that it is necessary to modify the AIS technical professional profile. The restructuring of Doc 8126 is intended to introduce this issue by developing an entire volume to address the training of AIS/AIM personnel.

2.7 The SAM/AIM/9 meeting recognised that the implementation of Phase 2 implied a change of paradigm, a change of culture, and although the AIS/AIM technician should continue to receive basic training, it was also important to consider the need for changing the profile of the AIS/AIM technician to that of an AIS/IT technician specialised in information management.

2.8 **Appendix B** to this working paper shows some training areas identified for AIS personnel since the SAM/AIM/9 meeting. The Meeting could review the appendix, add topics, and discuss it with the CATCs of their respective State in order to generate an initial training programme or training courses containing the aforementioned topics. These training programmes or courses must be part of the Plan for the implementation of Phase 2 or some other action taken in its regard.

Planning of B1-DATM

2.9 The Meeting should remember that the ASBU methodology presented in the GANP, in its fourth edition, foresees that technology and regulations should be available before planning module B1-DATM, based on the second block (2019). The Meeting will recall that this module provides for further integration of information and will serve as support for the new ATM information exchange concept, which will facilitate access through tools based on Internet protocols. Exchange models, such as AIXM, FIXM, IWXXM and other models correlate their concepts with the AIRM model to foster convergence, re-utilisation and harmonisation.

2.10 The elements that should be taken into account are similar to those of Block 0, but in a digital environment. The elements to be planned in this module are:

a) Provision of quality aeronautical information data.
b) Provision of electronic aeronautical information publication (AIP) data sets.
c) Provision of digital terrain data sets.
d) Provision of digital obstacle data sets.
e) Provision of digital aerodrome charting data sets.
f) Provision of digital instrument flight procedure data sets.
g) Improvements in the provision of NOTAMs.

2.11 The Meeting must recognise the need for automation in order to ensure that there is no unnecessary duplication of efforts and to ensure the standardisation of procedures, products, and services for end users.

3. Conclusion

3.1 No progress has been made since the SAM/AIM/8 meeting in the implementation of B0-DATM, or on issues related to reports on the Plan for the transition of AIS to AIM, the survey conducted by Headquarters, and service level agreements. It will be important for the Meeting to outline a national B0-DATM implementation plan for inclusion in the national air navigation plans (PNNA).

3.2 It will be important to have a regional follow-up sheet, since the benefits of working in an electronic environment will increase as more States adopt the digital exchange of aeronautical data and make possible the creation of an interoperable environment.

3.3 States should plan for the required training well in advance, so that Phase 2 may be implemented without much delay. Likewise, they should review the professional profile of new AIM technicians for training purposes.

3.4 Furthermore, States should plan for, and secure, the necessary resources for the implementation of the elements to be included in Block 1 – Training of AIS/AIM technical personnel in digital aeronautical data management.

4. **Suggested action**:

4.1 The Meeting is invited to:

a) review this working paper and update the information requested in Appendices A and B, as well as regional reporting mechanisms;

b) those States that have not yet completed the survey on indicators and metrics, provide that information during the Meeting; and

c) consider any other action it may deem appropriate.

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APPENDIX A

STATUS OF IMPLEMENTATION OF B0-DATM ELEMENTS

B0 – DATM: Service improvement through digital aeronautical information				
ELEMENTS	**SCOPE**	**INDICATORS/ METRICS**	**GOALS: %/ Date**	**STATUS**
1- National AIM plan / Action plan				
2 - AIXM				
3 - Electronic AIP				
4 - QMS				

B0 – DATM: Service improvement through digital aeronautical information				
ELEMENTS	**SCOPE**	**INDICATORS/ METRICS**	**GOALS: %/ Date**	**STATUS**
6 - Electronic terrain and obstacle data (e-TOD)				
7 - Digital NOTAM				
8 - Integrated aeronautical information databases (IAID)				

APPENDIX B

Training Needs for Phase 2

- ATM operational concept.
- ASBU concept.
- PBN implementation and mapping representation.
- Quality, integrity, and timely distribution of AIS products.
- Standard models for the creation of databases on integrated aeronautical information, terrain and obstacle information, and aerodrome mapping data.
- Metadata management across the aeronautical information supply chain.
- Data protection systems.
- Data packaging for electronic use.
- Electronic terrain and obstacle data (e-TOD) surveying.
- English language in aeronautical publications.
- Mapping and geoid undulation to be represented in aerodrome and heliport charts.
- Use and application of geographic information systems (GIS).
- Volcanic ash and ASHTAMs (even in cases of no volcanic activity).
- SWIM.
- Procedures design (PANS-OPS).