



**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**REPORT OF THE FIFTH MEETING OF  
OF THE AIM SUB-GROUP**

**(AIM SG/5)**

*(Cairo, Egypt, 22 – 24 January 2019)*

The views expressed in this Report should be taken as those of the MIDANPIRG AIM Sub-Group and not of the Organization. This Report will, however, be submitted to the MIDANPIRG and any formal action taken will be published in due course as a Supplement to the Report.

Approved by the Meeting  
and published by authority of the Secretary General

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of ICAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontier or boundaries.

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## **PART I – HISTORY OF THE MEETING**

### **1. PLACE AND DURATION**

1.1 The Fifth meeting of the MIDANPIRG AIM Sub-Group (AIM SG/5) was successfully held at the Meeting Room of the ICAO Middle East Regional Office in Cairo, Egypt, from 22 to 24 January 2019.

### **2. OPENING**

2.1 The meeting was opened by Mr. Mohamed Smaoui, the ICAO Deputy Regional Director, Middle East Office, who welcomed the participants to Cairo.

2.2 Mr. Smaoui underlined that the 16<sup>th</sup> Edition of Annex 15 and the new PANS AIM have introduced important changes to the AIS/AIM business, which needs extensive efforts by Regions and States in order to prepare for the implementation of the new AIM provisions, in particular the implementation of digital datasets. Therefore, the first day of the AIM SG/5 was dedicated to a Workshop on the implementation of Annex 15 (16<sup>th</sup> Edition) and the PANS AIM.

2.3 Mr. Smaoui indicated that, in accordance with its Terms of Reference, the AIM Sub-Group should, inter-alia, monitor the status of AIM implementation, identify the associated difficulties and deficiencies and provide a progress report, as part of its regular work programme.

2.4 In closing, Mr. Smaoui thanked the participants for their presence and wished the meeting every success in its deliberations.

### **3. ATTENDANCE**

3.1 The meeting was attended by a total of thirty-four (34) participants from eight (8) States (Bahrain, Egypt, Iran, Kuwait, Lebanon, Saudi Arabia, United Arab Emirates and Yemen) and four (4) International Organizations/Industries (IFAIMA, Jeppesen, NG Aviation and Thales). The list of participants is at **Attachment A**.

### **4. OFFICERS AND SECRETARIAT**

4.1 The AIM SG/5 meeting was chaired by Mr. Abdalla Al Rashidi, Director AIM, GCAA, UAE. Mr. Abbas Niknejad, Regional Officer Air Navigation Implementation was the Secretary of the meeting, supported by Mr. Mohamed Smaoui, Deputy Regional Director (DEPRD).

### **5. LANGUAGE**

5.1 Discussions were conducted in English and documentation was issued in English.

### **6. AGENDA**

6.1 The following Agenda was adopted:

Agenda Item 1: Adoption of the Provisional Agenda

Agenda Item 2: Workshop on the Implementation of Annex 15 (16<sup>th</sup> Edition) and PANS AIM

Agenda Item 3: Follow-up on MIDANPIRG/16 and MSG/6 Conclusions and

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Decisions relevant to AIM

- Agenda Item 4: Global/Regional developments related to AIM and SWIM
- Agenda Item 5: AIM Planning and Implementation in the MID Region
- Agenda Item 6: Review of Air Navigation Deficiencies in the AIM Field
- Agenda Item 7: Future Work Programme
- Agenda Item 8: Any other business

**7. CONCLUSIONS AND DECISIONS – DEFINITION**

7.1 All MIDANPIRG Sub-Groups and Task Forces record their actions in the form of Conclusions and Decisions with the following significance:

- a) **Conclusions** deal with the matters which, in accordance with the Group's terms of reference, merit directly the attention of States on which further action will be initiated by ICAO in accordance with established procedures; and
- b) **Decisions** deal with matters of concern only to the MIDANPIRG and its contributory bodies

**8. LIST OF DRAFT CONCLUSIONS AND DRAFT DECISIONS**

- DRAFT CONCLUSION 5/1: INTERREGIONAL WORKSHOP/SEMINAR ON AIM/SWIM*
- DRAFT CONCLUSION 5/2: ICAO ROADMAP FOR THE TRANSITION FROM AIS TO AIM*
- DRAFT CONCLUSION 5/3: MID REGION AIM IMPLEMENTATION ROADMAP*
- DRAFT DECISION 5/4: ESTABLISHMENT OF THE DIGITAL DATASETS IMPLEMENTATION AD-HOC WORKING GROUP (DDI AD-HOC WG)*
- DRAFT DECISION 5/5: AIM SUB-GROUP TERMS OF REFERENCE (TORS)*
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**PART II: REPORT ON AGENDA ITEMS****REPORT ON AGENDA ITEM 1: ADOPTION OF THE PROVISIONAL AGENDA**

1.1           The subject was addressed in WP/1 presented by the Secretariat. The meeting reviewed and adopted the Agenda as at Para.6 of the History of the Meeting.

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**REPORT ON AGENDA ITEM 2: WORKSHOP ON THE IMPLEMENTATION OF ANNEX 15 (16<sup>TH</sup> EDITION) AND PANS AIM**

2.1 The subject was addressed in PPT/1 to PPT/4 and PPT/7 to PPT/11, presented by Secretariat, UAE, Jeppesen, Thales and NG Aviation.

2.2 The meeting noted the outcome of the Interregional EUR/MID Workshop on PANS AIM (Paris, France, 10-12 July 2018). The meeting reviewed and discussed the challenges and recommendations identified by the Workshop.

2.3 The meeting received a detailed introduction on the provisions of Annex 15 (16<sup>th</sup> Edition) and the PANS AIM. The meeting reviewed the Compliance Checklists for Annex 15 and PANS AIM, prepared by the ICAO Secretariat, as at **Appendices 2A** and **2B**. The meeting commended the effort of the Secretariat for the compilation of the Compliance Checklists and considered that the spreadsheets are useful tools for States for a better understanding of the new provisions of Annex 15 and the PANS AIM.

2.4 The meeting noted UAE's experience with regard to the regulatory approach and rulemaking process related to the provisions of Annex 15 and the PANS AIM and the initial assessment of UAE AIM on the implementation of digital datasets.

2.5 The meeting noted the views of the Users and Industries (Jeppesen, Thales and NG Aviation) on the implementation aspects of digital datasets and quality requirements.

2.6 The meeting discussed different implementation aspects of the new provisions of Annex 15 and the PANS AIM, in particular the digital datasets, and addressed the following challenges:

- Impact on States for the implementation of the new provisions (Amendment 40 to Annex 15 and PANS-AIM), including the transposition of the PANS-AIM provisions in National/Regional Regulations; and completion of the transition to digital AIM (including the implementation of datasets). The applicability date of the new provisions was 8 November 2018, and action should be taken to expedite implementation and change the current business models (business transformation).
- Readiness for change (availability of necessary human and financial resources, training, awareness, communication, etc)
- Need for additional guidance material, including guidance related to the development and distribution/delivery mechanisms of digital datasets (in particular AIP and IFP datasets)
- Interoperability issues
- More stringent need for cross-border data coordination, in a data-centric environment
- Difficulties that may be faced by Users, if digital datasets are implemented by States in different ways (no harmonization/standardization)

2.7 The Meeting recalled that the MSG/6 meeting (Cairo, Egypt, 3-5 December 2018) reviewed the outcome of the Inter-regional EUR/MID Workshop on PANS AIM and agreed to the following MSG Conclusion:

*MSG CONCLUSION 6/8: IMPLEMENTATION OF THE 16<sup>TH</sup> EDITION OF ANNEX 15 AND THE PANS AIM*

*That, States be urged to:*

- a) take necessary actions on the implementation of the 16<sup>th</sup> Edition of Annex 15 and the PANS AIM, including:*
  - updating AIS/AIM National Regulations;*
  - identification and notification of differences (EFOD and AIP GEN 1.7), if any;*
  - coordination with their AISPs to develop necessary operational procedures/practices in order to implement the provisions of Annex 15 and the PANS AIM;*
- b) provide feedback to the ICAO MID Office on the implementation of the 16<sup>th</sup> Edition of Annex 15 and the PANS AIM (Implementation Plan, difficulties/challenges, need for assistance, etc).*

2.8 The meeting urged States to implement the provisions of the MSG Conclusion 6/8 and provide their feedback to the ICAO MID Office (SL Ref.: AN 8/2 – 18/409 dated 19 December 2018 refers).

2.9 Based on the above, the meeting supported the Recommendation of the EUR/MID Workshop on PANS AIM to establish an ad-hoc Working Group composed of volunteers from States and Stakeholders, to take necessary action(s) on the recommendations of the Inter-regional PANS AIM Workshop and address the challenges related to the implementation of the new provisions of Annex 15 and the PANS AIM, in particular the implementation of digital datasets.

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**REPORT ON AGENDA ITEM 3: FOLLOW-UP ON MIDANPIRG/16 AND MSG/6 CONCLUSIONS AND DECISIONS RELEVANT TO AIM**

3.1 The subject was addressed in WP/2 presented by the Secretariat. The meeting noted the status of the MIDANPIRG/16 and MSG/6 Conclusions and Decisions relevant to AIM and the follow-up actions taken by concerned parties as at **Appendices 3A** and **3B**, respectively.

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**REPORT ON AGENDA ITEM 4: GLOBAL/REGIONAL DEVELOPMENTS RELATED TO AIM AND SWIM*****Outcome of the AN Conf/13***

4.1 The subject was addressed in WP/3 presented by the Secretariat. The meeting was apprised of the outcome of the Thirteenth Air Navigation Conference (AN-Conf/13) held in Montréal from 9 to 19 October 2018.

4.2 The meeting recalled that the MSG/6 meeting reviewed the AN-Conf/13 Recommendations related to air navigation and, through MSG Decision 6/1, agreed that the different MIDANPIRG subsidiary bodies should identify clearly the Recommendations related to their terms of reference and agree on the necessary follow-up actions.

4.3 The meeting reviewed the AN-Conf/13 Recommendations related to AIM and SWIM and proposed follow-up actions, as at **Appendix 4A**.

4.4 As a follow-up to the AN-Conf/13 Recommendation 3.1/1, the meeting agreed that an Interregional Workshop/Seminar on AIM/SWIM should be organized in 2020-2021. Accordingly, the meeting agreed to the following Draft Conclusion:

**DRAFT CONCLUSION 5/1: INTERREGIONAL WORKSHOP/SEMINAR ON AIM/SWIM**

*That, an Interregional Workshop/Seminar on AIM/SWIM be organized in 2020-2021.*

***Outcome of the ACAO/ICAO EUR/MID ASBU Workshop***

4.5 The subject was addressed in PPT/6 presented by the Secretariat. The meeting noted the challenges and recommendations identified by the Workshop. The meeting reviewed the proposed changes to the DAIM and SWIM threads in the upcoming GANP 2019.

***Status of Doc 8126 (AIS Manual)***

4.6 The subject was addressed in PPT/5 presented by the Secretariat. The meeting noted with concern the delay in the publication of the new AIS Manual (Doc 8126).

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**REPORT ON AGENDA ITEM 5: AIM PLANNING AND IMPLEMENTATION IN THE MID REGION*****MID Region AIM Implementation Roadmap***

5.1 The subject was addressed in WP/4 presented by the Secretariat. The meeting recalled that the MSG/6 meeting tasked the AIM SG to update the MID Region AIM Implementation Roadmap, in order to include the provisions of the 16<sup>th</sup> Edition of Annex 15 and the PANS AIM, in particular the implementation of digital datasets.

5.2 The meeting recalled that the ICAO Roadmap for the transition from AIS to AIM was developed by the AIS-AIM Study Group in 2009 and is no longer keeping pace with the developments. It was noted that, with the introduction of the ASBUs and the new provisions of Annex 15 and the PANS AIM, there a need for a complete reshuffling of the Document.

5.3 The meeting recalled that UAE presented a Paper at the AN-Conf/13 on this subject (AN-Conf/13 WP/260 at **Appendix 5A**) and agreed to the following Draft Conclusion:

***DRAFT CONCLUSION 5/2: ICAO ROADMAP FOR THE TRANSITION FROM AIS TO AIM***

*That, ICAO consider the review/reshuffling of the Roadmap for the transition from AIS to AIM to keep pace with the developments.*

5.4 The meeting reviewed and updated the MID Region AIM Implementation Roadmap, as at **Appendix 5B**. The meeting agreed that the Roadmap needs further review/update. Accordingly, the meeting agreed to the following Draft Conclusion:

***DRAFT CONCLUSION 5/3: MID REGION AIM IMPLEMENTATION ROADMAP***

*That,*

- a) the revised MID Region AIM Implementation Roadmap at Appendix 5B is endorsed; and*
- b) AIM SG further review the Roadmap to keep pace with the developments, in particular with regard to the harmonized implementation of Digital Datasets.*

***Guidance for AIM Planning and Implementation in the MID Region (MID Doc 008)***

5.5 The subject was addressed in WP/5 presented by the Secretariat. The meeting agreed that the MID Doc 008 needs critical review/update.

5.6 Based on all of the foregoing, the meeting agreed to the establishment of an Ad-hoc Working Group to address the challenges associated with the implementation of digital datasets, propose a Regional Implementation Plan and review/update the MID Doc 008, accordingly. Therefore, the meeting agreed to the following Draft Decision:

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***DRAFT DECISION 5/4: ESTABLISHMENT OF THE DIGITAL DATASETS  
IMPLEMENTATION AD-HOC WORKING GROUP (DDI AD-  
HOC WG)***

*That, the Digital Datasets Ad-hoc Working Group be:*

*a) established to:*

- address the challenges associated with the implementation of digital datasets;*
- propose Regional Implementation Plan for Digital Datasets; and*
- review/update the MID Doc 008; and*

*b) composed of:*

- Abdulla Hasan AlQadhi (Bahrain)*
- Moataz Abdel Aziz Ahmed (Egypt)*
- Rouhahah Salehi (Iran)*
- Mohammad Hussien Al Anezi (Kuwait)*
- Bassem Ali Nasser (Lebanon)*
- Mazen Mohammed Alshihri (Saudi Arabia)*
- Sorin Dan. Onitiu (UAE, Rapporteur)*
- Marek Franko (NG Aviation): and*
- ICAO MID Office*

***ASBU Implementation Monitoring***

***MID eANP Volume III***

5.7 The meeting reviewed and updated the MID eANP Volume III (B0-DATM Tables), as at **Appendix 5C**.

***MID Air Navigation Report***

5.8 The meeting recalled that the MSG/6 meeting reviewed and, through MSG Conclusion 6/3, endorsed the Second Edition of the MID Region Air Navigation Report (2017). The MID Region Air Navigation Report (2017) is available on the ICAO MID website at: [www.icao.int/mid](http://www.icao.int/mid)

5.9 The meeting noted that the MSG/6 meeting, through MSG Conclusion 6/4, urged States to provide the ICAO MID Office, with relevant data necessary for the development of the Third Edition of the MID Region Air Navigation Report (2018), by **15 February 2019**, for presentation to the MIDANPIRG/17 meeting

***MID Air Navigation Strategy***

5.10 The subject was addressed in WP/7 presented by the Secretariat. The meeting reviewed the MID Air Navigation Strategy, endorsed by MSG/6. The meeting agreed that, after endorsement of the 6<sup>th</sup> Edition of GANP by the ICAO Assembly 40, there will be a need for a critical review/update of the Strategy in order to include the DAIM thread/elements.

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**REPORT ON AGENDA ITEM 6: REVIEW OF AIR NAVIGATION DEFICIENCIES IN THE AIM FIELD**

6.1 The subject was addressed in WP/8 presented by the Secretariat. The meeting recalled that, the MIDANPIRG/15, through Conclusion 15/35, urged States to use the MID Air Navigation Deficiency Database (MANDD) for the submission of requests for addition, update, and elimination of Air Navigation Deficiencies. It was underlined that specific Corrective Action Plan (CAP) should be submitted for each deficiency; and the elimination of deficiency(ies) should be supported by a Formal Letter to the ICAO MID Office containing the evidence(s) that mitigation measures have been implemented.

6.2 The meeting urged States to implement the provisions of MIDANPIRG Conclusion 15/35 related to the elimination of Air Navigation Deficiencies, in particular, the submission of a specific Corrective Action Plan (CAP) for each deficiency.

6.3 The meeting noted that total number of AIM deficiencies, endorsed by the MSG/6 meeting, was forty seven (47); forty one (41) priority "A" and six (6) priority "B". Seventeen (17) deficiencies related to TOD; six (6) related to QMS; six (6) related to AIXM; six (6) related to WAC; four (4) related to pre-flight information services; three (3) related to AIP and aeronautical charts; three (3) related to AIRAC adherence; and two (2) related to WGS-84.

6.4 The meeting reviewed and updated the list of deficiencies in the AIM field. The meeting noted with appreciation that Saudi Arabia has implemented the Pre-flight information service, through web-based pilot briefing system. It was highlighted that the elimination of the related Air Navigation Deficiency for Saudi Arabia should be requested through the MANDD and a Formal Letter should be sent by Saudi Arabia to the ICAO MID Office containing supporting evidence(s).

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**REPORT ON AGENDA ITEM 7: FUTURE WORK PROGRAMME**

7.1 The subject was addressed in WP/9 presented by the Secretariat.

7.2 The meeting reviewed the AIM SG Terms of References (TORs) and agreed that they need to be updated to keep pace with the developments, in particular the implementation of digital datasets, Information Management (IM) implementation, etc. The meeting was informed also that the upcoming MIDANPIRG/17 will review the MIDANPIRG Organizational Structure, working arrangements and procedural handbook; and this might have an impact on the TORs of the different subsidiary bodies. Accordingly, the meeting agreed to keep the AIM SG TORs as they are until the MIDANPIRG/17 meeting. Nevertheless, the meeting agreed that States should review the AIM SG TORs and provide their comments/proposals to the ICAO MID Office for the consolidation of a revised version of the TORs. Accordingly, the meeting agreed to the following Draft Conclusion:

***DRAFT CONCLUSION 5/5: AIM SUB-GROUP TERMS OF REFERENCE (TORs)***

*That, States are urged to review the AIM SG TORs and provide their comments/proposals to the ICAO MID Office, not later than 15 March 2019.*

7.3 Taking into consideration, the planned ICAO MID Regional events, which are of relevance to the activity of the AIM Sub-Group, in particular the MIDANPIRG/17 and MIDANPIRG/18 meetings, it was agreed that the AIM SG/6 meeting be held during the second quarter of 2020. The venue will be Cairo, unless a State is willing to host the meeting.

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**REPORT ON AGENDA ITEM 8: ANY OTHER BUSINESS**

8.1 The meeting noted that the IFAIMA Global AIM Conference 2019 is scheduled to be held in Tunis, Tunisia from 11 to 13 June 2019. The meeting encouraged States and Stakeholders to participate in the Conference.

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# *APPENDICES*



## CHAPTER 1: GENERAL

16th Edition		15th Edition		Assessment
Para No.	Text of Standard	Para. No.	Text of Standard	
1.2.1.1	The World Geodetic System — 1984 (WGS-84) shall be used as the horizontal (geodetic) reference system for international air navigation. Consequently, published aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.	1.2.1.1	World Geodetic System — 1984 (WGS-84) shall be used as the horizontal (geodetic) reference system for international air navigation. Consequently, published aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.	No significant change / minor editorial amendment
1.2.2.1	Mean sea level (MSL) datum shall be used as the vertical reference system for international air navigation.	1.2.2.1	Mean sea level (MSL) datum, which gives the relationship of gravity-related height (elevation) to a surface known as the geoid, shall be used as the vertical reference system for international air navigation.	No significant change / minor editorial amendment
1.2.2.2	The Earth Gravitational Model — 1996 (EGM-96) shall be used as the global gravity model for international air navigation.	1.2.2.2	The Earth Gravitational Model — 1996 (EGM-96), containing long wavelength gravity field data to degree and order 360, shall be used by international air navigation as the global gravity model.	No significant change / minor editorial amendment
1.2.2.3	At those geographical positions where the accuracy of EGM-96 does not meet the accuracy requirements for elevation and geoid undulation on the basis of EGM-96 data, regional, national or local geoid models containing high resolution (short wavelength) gravity field data shall be developed and used. When a geoid model other than the EGM-96 model is used, a description of the model used, including the parameters required for height transformation between the model and EGM-96, shall be provided in the Aeronautical Information Publication (AIP).	1.2.2.3	At those geographical positions where the accuracy of EGM-96 does not meet the accuracy requirements for elevation and geoid undulation specified in Annex 14, Volumes I and II, on the basis of EGM-96 data, regional, national or local geoid models containing high resolution (short wavelength) gravity field data shall be developed and used. When a geoid model other than the EGM-96 model is used, a description of the model used, including the parameters required for height transformation between the model and EGM-96, shall be provided in the Aeronautical Information Publication (AIP).	No significant change / minor editorial amendment
1.2.3.1	The Gregorian calendar and Coordinated Universal Time (UTC) shall be used as the temporal reference system for international air navigation.	1.2.3.1	The Gregorian calendar and Coordinated Universal Time (UTC) shall be used as the temporal reference system for international air navigation.	No significant change / minor editorial amendment
1.2.3.2	When a different temporal reference system is used for some applications, the feature catalogue, or the metadata associated with an application schema or a data set, as appropriate, shall include either a description of that system or a citation for a document that describes that temporal reference system.	1.2.3.2	When a different temporal reference system is used for some applications, the feature catalogue, or the metadata associated with an application schema or a data set, as appropriate, shall include either a description of that system or a citation for a document that describes that temporal reference system.	No significant change / minor editorial amendment
1.3.1	Aeronautical information products intended for international distribution shall include English text for those parts expressed in plain language.	1.3.1	Each element of the Integrated Aeronautical Information Package for international distribution shall include English text for those parts expressed in plain language.	Replacement of IAIP with "Aeronautical Information Products"
1.3.2	Place names shall be spelt in conformity with local usage, transliterated, when necessary, into the ISO-Basic Latin alphabet.	1.3.2	Place names shall be spelt in conformity with local usage, transliterated, when necessary, into the Latin alphabet.	No significant change / minor editorial amendment
1.3.4	ICAO abbreviations shall be used in aeronautical information products whenever they are appropriate and their use will facilitate distribution of aeronautical data and aeronautical information.	1.3.4	ICAO abbreviations shall be used in the AIS whenever they are appropriate and their use will facilitate distribution of aeronautical data and aeronautical information.	Replacement of AIS with "Aeronautical Information Products"

**CHAPTER 2: RESPONSIBILITIES AND FUNCTIONS**

16th Edition		15th Edition		Assessment
Para No.	Text of Standard	Para. No.	Text of Standard	
2.1.1	Each Contracting State shall: a) provide an aeronautical information service (AIS); or b) agree with one or more other Contracting State(s) for the provision of a joint service; or c) delegate the authority for the provision of the service to a non-governmental agency, provided the Standards and Recommended Practices of this Annex are adequately met.	2.1.1	Each Contracting State shall: a) provide an aeronautical information service (AIS); or b) agree with one or more other Contracting State(s) for the provision of a joint service; or c) delegate the authority for the provision of the service to a non-governmental agency, provided the Standards and Recommended Practices of this Annex are adequately met.	No significant change / minor editorial amendment
2.1.2	Each Contracting State shall ensure that the provision of aeronautical data and aeronautical information covers its own territory and those areas over the high seas for which it is responsible for the provision of air traffic services (ATS).	2.1.2	Each Contracting State shall ensure that the provision of aeronautical data and aeronautical information covers its own territory and those areas over the high seas for which it is responsible for the provision of air traffic services.	No significant change / minor editorial amendment
2.1.3	The State concerned shall remain responsible for the aeronautical data and aeronautical information provided in accordance with 2.1.2. Aeronautical data and aeronautical information provided for and on behalf of a State shall clearly indicate that they are provided under the authority of that State, irrespective of the format in which they are provided.	2.1.3	The State concerned shall remain responsible for the aeronautical data and aeronautical information provided in accordance with 2.1.2. Aeronautical data and aeronautical information provided for and on behalf of a State shall clearly indicate that they are provided under the authority of that State.	No significant change / minor editorial amendment
2.1.4	Each Contracting State shall ensure that the aeronautical data and aeronautical information provided are of required quality in accordance with 3.2.	2.1.4	Each Contracting State shall ensure that the aeronautical data and aeronautical information provided are complete, timely and of required quality in accordance with 3.3.	No significant change / minor editorial amendment
2.1.5	Each Contracting State shall ensure that formal arrangements are established between originators of aeronautical data and aeronautical information and the AIS in relation to the timely and complete provision of aeronautical data and aeronautical information.	2.1.5	Each Contracting State shall ensure that formal arrangements are established between originators of aeronautical data and aeronautical information and the AIS in relation to the timely and complete provision of aeronautical data and aeronautical information.	No significant change / minor editorial amendment
2.2.1	An AIS shall ensure that aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation are made available in a form suitable for the operational requirements of the air traffic management (ATM) community, including: a) those involved in flight operations, including flight crews, flight planning and flight simulators; and b) the ATS unit responsible for flight information service and the services responsible for pre-flight information.	2.2.1	An AIS shall ensure that aeronautical data and aeronautical information necessary for the safety, regularity or efficiency of air navigation are made available in a form suitable for the operational requirements of the air traffic management (ATM) community, including: a) those involved in flight operations, including flight crews, flight planning and flight simulators; and b) the air traffic services unit responsible for flight information service and the services responsible for pre-flight information.	No significant change / minor editorial amendment
2.2.2	An AIS shall receive, collate or assemble, edit, format, publish/store and distribute aeronautical data and aeronautical information concerning the entire territory of the State as well as those areas over the high seas for which the State is responsible for the provision of ATS. Aeronautical data and aeronautical information shall be provided as aeronautical information products.	2.2.2	An AIS shall receive, collate or assemble, edit, format, publish/store and distribute aeronautical data and aeronautical information concerning the entire territory of the State as well as those areas over the high seas in which the State is responsible for the provision of air traffic services. Aeronautical data and aeronautical information shall be provided as an Integrated Aeronautical Information Package.	Replacement of IAIP with "Aeronautical Information Products"
2.2.3	Where 24-hour service is not provided, service shall be available during the whole period an aircraft is in flight in the area of responsibility of the AIS, plus a period of at least two hours before and after such a period. Service shall also be available at such other time as may be requested by an appropriate ground organization.	2.2.3	Where 24-hour service is not provided, service shall be available during the whole period an aircraft is in flight in the area of responsibility of AIS, plus a period of at least two hours before and after such a period. Service shall also be available at such other time as may be requested by an appropriate ground organization.	No significant change / minor editorial amendment
2.2.4	An AIS shall, in addition, obtain aeronautical data and aeronautical information to enable it to provide pre-flight information service and to meet the need for in-flight information: a) from the AIS of other States; and b) from other sources that may be available.	2.2.4	An AIS shall, in addition, obtain aeronautical data and aeronautical information to enable it to provide pre-flight information service and to meet the need for in-flight information: a) from the AIS of other States; b) from other sources that may be available.	No significant change / minor editorial amendment
2.2.5	Aeronautical data and aeronautical information obtained under 2.2.4 a) shall, when distributed, be clearly identified as having the authority of the originating State.	2.2.5	Aeronautical data and aeronautical information obtained under 2.2.4 a) shall, when distributed, be clearly identified as having the authority of the originating State.	No significant change / minor editorial amendment
2.2.6	Aeronautical data and aeronautical information obtained under 2.2.4 b) shall, if possible, be verified before distribution and if not verified shall, when distributed, be clearly identified as such.	2.2.6	Aeronautical data and aeronautical information obtained under 2.2.4 b) shall, if possible, be verified before distribution and if not verified shall, when distributed, be clearly identified as such.	No significant change / minor editorial amendment
2.2.7	An AIS shall promptly make available to the AIS of other States any aeronautical data and aeronautical information necessary for the safety, regularity or efficiency of air navigation required by them, to enable them to comply with 2.2.1.	2.2.7	An AIS shall promptly make available to the AIS of other States any aeronautical data and aeronautical information necessary for the safety, regularity or efficiency of air navigation required by them, to enable them to comply with 2.2.1.	No significant change / minor editorial amendment
2.3.1	Each Contracting State shall designate the office to which all elements of aeronautical information products provided by other States shall be addressed. Such an office shall be qualified to deal with requests for aeronautical data and aeronautical information provided by other States.	2.3.1	Each State shall designate the office to which all elements of the Integrated Aeronautical Information Package originated by other States shall be addressed. Such an office shall be qualified to deal with requests for aeronautical data and aeronautical information originated by other States.	Replacement of IAIP with "Aeronautical Information Products"
2.3.3	Where more than one international NOTAM office is designated within a State, the extent of responsibility and the territory covered by each office shall be defined.	2.3.2	Where more than one international NOTAM office is designated within a State, the extent of responsibility and the territory covered by each office shall be defined.	No significant change / minor editorial amendment
2.3.4	An AIS shall arrange, as necessary, to satisfy operational requirements for the issuance and receipt of NOTAM distributed by telecommunication.	2.3.3	An AIS shall arrange, as necessary, to satisfy operational requirements for the issuance and receipt of NOTAM distributed by telecommunication.	No significant change / minor editorial amendment
2.3.5	Wherever practicable, direct contact between AIS shall be established in order to facilitate the international exchange of aeronautical data and aeronautical information.	2.3.4	Wherever practicable, direct contact between AIS shall be established in order to facilitate the international exchange of aeronautical data and aeronautical information.	No significant change / minor editorial amendment
2.3.6	Except as provided in 2.3.8, one copy of each of the following aeronautical information products (where available) that have been requested by the AIS of a Contracting State shall be made available by the originating State and provided in the mutually agreed form(s), without charge, even where authority for publication/storage and distribution has been delegated to a non-governmental agency: a) Aeronautical Information Publication (AIP), including Amendments and Supplements; b) Aeronautical Information Circulars (AIC); c) NOTAM; and d) aeronautical charts.	2.3.5	One copy of each of the elements of the Integrated Aeronautical Information Package that have been requested by the AIS of a Contracting State shall be made available by the originating State in the mutually-agreed form(s), without charge, even where authority for publication/storage and distribution has been delegated to a non-governmental agency.	Replacement of IAIP with "Aeronautical Information Products" / New standard indicates elements of AI Products that shall be available to other States' AIS
2.3.8	When aeronautical data and aeronautical information are provided in the form of digital data sets to be used by the AIS, they shall be provided on the basis of agreement between the Contracting States concerned.	---	---	NEW Standard
2.3.10	<b>Globally interoperable aeronautical data and aeronautical information exchange models shall be used for the provision of data sets.</b>	---	---	NEW Standard
2.4.1	Any aeronautical information product which has been granted copyright protection by the originating State and provided to another State in accordance with 2.3 shall only be made available to a third party on the condition that the third party is made aware that the product is copyright protected and provided that it is appropriately annotated that the product is subject to copyright by the originating State.	2.4	Any product of a State's AIS which has been granted copyright protection by that State and provided to another State in accordance with 2.3 shall only be made available to a third party on the condition that the third party is made aware that the product is copyright protected and provided that it is appropriately annotated that the product is subject to copyright by the originating State.	No significant change / minor editorial amendment
2.4.2	When aeronautical data and aeronautical information are provided to a State in accordance with 2.3.8, the receiving State shall not provide the digital data sets of the providing State to any third party without the consent of the providing State.	---	---	NEW Standard

**CHAPTER 3: AERONAUTICAL INFORMATION MANAGEMENT**

16th Edition		15th Edition		Assessment
Para No.	Text of Standard	Para. No.	Text of Standard	
3.1	The information management resources and processes established by an aeronautical information service (AIS) shall be adequate to ensure the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and aeronautical information within the air traffic management (ATM) system.	3.1	The information management resources and processes established by an aeronautical information service (AIS) shall be adequate to ensure the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and aeronautical information within the air traffic management (ATM) system.	No significant change / minor editorial amendment
3.2.1	The order of accuracy for aeronautical data shall be in accordance with its intended use.	3.3.1	The order of accuracy for aeronautical data shall be as specified in Annex 11, Chapter 2, and Annex 14, Volumes I and II, Chapter 2. <del>In that respect, three types of positional data shall be identified: surveyed points (runway thresholds, navigation aid positions, etc.), calculated points (mathematical calculations from the known surveyed points of points in space/fixes) and declared points (e.g. flight information region boundary points).</del>	Reference of order of accuracy to Annex 11 and 14 removed Three types of positional data removed
3.2.2	The order of resolution of aeronautical data shall be commensurate with the actual data accuracy.	3.3.2.1	The order of publication resolution of aeronautical data shall be as specified in Appendix 7.	Reference of order of resolution to App 7 removed
3.2.3.1	The integrity of aeronautical data shall be maintained throughout the data chain from origination to distribution to the next intended user.	3.3.3.2	The integrity of aeronautical data shall be maintained throughout the data process from survey/origin to distribution to the next intended user (the entity that receives the aeronautical information from the AIS provider).	Using the term "Data Chain"
3.2.3.2	Based on the applicable integrity classification, procedures shall be put in place in order to: a) for routine data: avoid corruption throughout the processing of the data; b) for 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; and c) for 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.	3.3.3.2	Based on the applicable integrity classification, the validation and verification procedures shall: a) for routine data: avoid corruption throughout the processing of the data; b) for 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; and c) for 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.	Replacement of the term "verification procedure" instead of "procedure"
3.2.4	Traceability of aeronautical data shall be ensured and retained as long as the data is in use.	---	---	NEW Standard
3.2.5	Timeliness of aeronautical data shall be ensured by including limits on the effective period of the data elements.	---	---	NEW Standard
3.2.6	Completeness of aeronautical data shall be ensured in order to support its intended use.	---	---	NEW Standard
3.2.7	The format of delivered aeronautical data shall be adequate to ensure that the data is interpreted in a manner that is consistent with its intended use.	---	---	NEW Standard
3.3.1	Material to be issued as part of an aeronautical information product shall be thoroughly checked before it is submitted to the AIS in order to ensure that all necessary information has been included and that it is correct in detail.	3.2.1	Material to be issued as part of the Integrated Aeronautical Information Package shall be thoroughly checked before it is submitted to the AIS, in order to make certain that all necessary information has been included and that it is correct in detail prior to distribution.	Replacement of IAIP with "Aeronautical Information Products"
3.3.2	An AIS shall establish verification and validation procedures which ensure that upon receipt of aeronautical data and aeronautical information, quality requirements are met.	3.2.2	An AIS shall establish verification and validation procedures which ensure that upon receipt of aeronautical data and aeronautical information, quality requirements (accuracy, resolution, integrity and traceability) are met.	The parentheses deleted (elements of quality requirements deleted, as they are expanded in the new provisions)
3.4.1	Digital data error detection techniques shall be used during the transmission and/or storage of aeronautical data and digital data sets.	3.5.1	Aeronautical data and data sets shall be protected in accordance with data error detection, security, and authentication techniques.	re-worded + "data" replaced by "digital data"
3.4.2	Digital data error detection techniques shall be used in order to maintain the integrity levels as specified in 3.2.3.	3.5.2	Electronic aeronautical data sets shall be protected by the inclusion in the data sets of a 32-bit cyclic redundancy check (CRC) implemented by the application dealing with the data sets. This shall apply to the protection of the integrity classification of data sets as specified in 3.3.3.	CRC has been removed
3.5.1	<b>Automation shall be applied in order to ensure the quality, efficiency and cost-effectiveness of aeronautical information services.</b>	3.6.1	Automation shall be introduced with the objective of improving the timeliness, quality, efficiency and costeffectiveness of aeronautical information services.	Automation shall be "applied". (instead of "introduced")
3.5.2	Due consideration to the integrity of data and information shall be given when automated processes are implemented and mitigating steps taken where risks are identified.	---	---	NEW Standard
3.5.3	In order to meet the data quality requirements, automation shall: a) enable digital aeronautical data exchange between the parties involved in the data processing chain; and b) use aeronautical information exchange models and data exchange models designed to be globally interoperable.	3.6.3	In order to meet the data quality requirements, automation shall: a) enable digital aeronautical data exchange between the parties involved in the data processing chain; and b) use aeronautical information exchange models and data exchange models designed to be globally interoperable.	No significant change / minor editorial amendment
3.6.1	Quality management systems shall be implemented and maintained encompassing all functions of an AIS, as outlined in 2.2. The execution of such quality management systems shall be made demonstrable for each function stage.	3.7.1	Quality management systems shall be implemented and maintained encompassing all functions of an AIS, as outlined in 2.2. The execution of such quality management systems shall be made demonstrable for each function stage.	No significant change / minor editorial amendment
3.6.4	Within the context of the established quality management system, the competencies and the associated knowledge, skills and abilities required for each function shall be identified, and personnel assigned to perform those functions shall be appropriately trained. Processes shall be in place to ensure that personnel possess the competencies required to perform specific assigned functions. Appropriate records shall be maintained so that the qualifications of personnel can be confirmed. Initial and periodic assessments shall be established that require personnel to demonstrate the required competencies. Periodic assessments of personnel shall be used as a means to detect and correct shortfalls in knowledge, skills and abilities.	3.7.4	Within the context of the established quality management system, the competencies and the associated knowledge, skills and abilities required for each function shall be identified, and personnel assigned to perform those functions shall be appropriately trained. Processes shall be in place to ensure that personnel possess the competencies required to perform specific assigned functions. Appropriate records shall be maintained so that the qualifications of personnel can be confirmed. Initial and periodic assessments shall be established that require personnel to demonstrate the required competencies. Periodic assessments of personnel shall be used as a means to detect and correct shortfalls.	No significant change / minor editorial amendment
3.6.5	Each quality management system shall include the necessary policies, processes and procedures, including those for the use of metadata, to ensure and verify that aeronautical data is traceable throughout the aeronautical information data chain so as to allow any data anomalies or errors detected in use to be identified by root cause, corrected and communicated to affected users.	3.7.5	Each quality management system shall include the necessary policies, processes and procedures, including those for the use of metadata, to ensure and verify that aeronautical data are traceable throughout the aeronautical information data chain so as to allow any data anomalies or errors detected in use to be identified by root cause, corrected and communicated to affected users.	No significant change / minor editorial amendment
3.6.6	The established quality management system shall provide users with the necessary assurance and confidence that distributed aeronautical data and aeronautical information satisfy the aeronautical data quality requirements.	3.7.6	The established quality management system shall provide users with the necessary assurance and confidence that distributed aeronautical data and aeronautical information satisfy the aeronautical data quality requirements for accuracy, resolution and integrity as specified in 3.2 and 3.3 and that the data traceability requirements are met through the provision of appropriate metadata as specified in 3.4. The system shall also provide assurance of the applicability period of intended use of aeronautical data and aeronautical information as well as that the agreed distribution dates will be met.	Second part removed
3.6.7	All necessary measures shall be taken to monitor compliance with the quality management system in place.	3.7.7	All necessary measures shall be taken to monitor compliance with the quality management system in place.	No significant change / minor editorial amendment
3.6.8	Demonstration of compliance of the quality management system applied shall be by audit. If nonconformity is identified, initiating action to correct its cause shall be determined and taken without undue delay. All audit observations and remedial actions shall be evidenced and properly documented.	3.7.8	Demonstration of compliance of the quality management system applied shall be by audit. If nonconformity is identified, initiating action to correct its cause shall be determined and taken without undue delay. All audit observations and remedial actions shall be evidenced and properly documented.	No significant change / minor editorial amendment
3.7.1	The organization of an AIS as well as the design, contents, processing and distribution of aeronautical data and aeronautical information shall take into consideration human factors principles which facilitate their optimum utilization.	3.8.1	The organization of an AIS as well as the design, contents, processing and distribution of aeronautical data and aeronautical information shall take into consideration human factors principles which facilitate their optimum utilization.	No significant change / minor editorial amendment
3.7.2	Due consideration shall be given to the integrity of information where human interaction is required and mitigating steps taken where risks are identified.	3.8.2	Due consideration shall be given to the integrity of information where human interaction is required and mitigating steps taken where risks are identified.	No significant change / minor editorial amendment

**CHAPTER 4: SCOPE OF AERONAUTICAL DATA AND AERONAUTICAL INFORMATION**

<b>16th Edition</b>		<b>15th Edition</b>		<b>Assessment</b>
<b>Para No.</b>	<b>Text of Standard</b>	<b>Para. No.</b>	<b>Text of Standard</b>	
4.1.1	The aeronautical data and aeronautical information to be received and managed by the aeronautical information service (AIS) shall include at least the following sub-domains: a) national regulations, rules and procedures; b) aerodromes and heliports; c) airspace; d) air traffic services (ATS) routes; e) instrument flight procedures; f) radio navigation aids/systems; g) obstacles; h) terrain; and i) geographic information.	---	---	<b>NEW Standard</b>
4.1.2	Determination and reporting of aeronautical data shall be in accordance with the accuracy and integrity classification required to meet the needs of the end-user of aeronautical data.	---	---	<b>NEW Standard</b>
4.2.1	Metadata shall be collected for aeronautical data processes and exchange points.	3.4.1	Metadata shall be collected for aeronautical data processes and exchange points. This metadata collection shall be applied throughout the aeronautical information data chain, from survey/origin to distribution to the next intended user.	No significant change / minor editorial amendment
4.2.2	Metadata collection shall be applied throughout the aeronautical information data chain, from origination to distribution to the next intended user.			No significant change / minor editorial amendment

**CHAPTER 5: AERONAUTICAL INFORMATION PRODUCTS AND SERVICES**

16th Edition		15th Edition		Assessment
Para No.	Text of Standard	Para No.	Text of Standard	
5.1.1	Aeronautical information shall be provided in the form of aeronautical information products and associated services.	---	---	NEW Standard
5.1.2	When aeronautical data and aeronautical information are provided in multiple formats, processes shall be implemented to ensure data and information consistency between formats.	3.6.2	Where aeronautical data and aeronautical information are provided in multiple formats, processes shall be implemented to ensure data and information consistency between formats.	No significant change / minor editorial amendment
5.2.1	Aeronautical information provided in a standardized presentation shall include the aeronautical information publication (AIP), AIP Amendments, AIP Supplements, AIC, NOTAM and aeronautical charts.	---	---	NEW Standard
5.2.1.1	<b>The AIP, AIP Amendment, AIP Supplement and AIC shall be provided on paper and/or as an electronic document.</b>	---	---	NEW Standard
5.2.2	AIP shall include: a) a statement of the competent authority responsible for the air navigation facilities, services or procedures covered by the AIP; b) the general conditions under which the services or facilities are available for international use; c) a list of significant differences between the national regulations and practices of the State and the related ICAO Standards, Recommended Practices and Procedures, given in a form that would enable a user to differentiate readily between the requirements of the State and the related ICAO provisions; d) the choice made by a State in each significant case where an alternative course of action is provided for ICAO Standards, Recommended Practices and Procedures.	4.1.2	AIP shall include in Part 1 — General (GEN): a) a statement of the competent authority responsible for the air navigation facilities, services or procedures covered by the AIP; b) the general conditions under which the services or facilities are available for international use; c) a list of significant differences between the national regulations and practices of the State and the related ICAO Standards, Recommended Practices and Procedures, given in a form that would enable a user to differentiate readily between the requirements of the State and the related ICAO provisions; d) the choice made by a State in each significant case where an alternative course of action is provided for in ICAO Standards, Recommended Practices and Procedures.	No significant change / minor editorial amendment
5.2.3	A checklist of valid AIP Supplements shall be regularly provided.	4.4.6	A checklist of valid AIP Supplements shall be issued at intervals of not more than one month. This information shall be issued through the medium of the monthly plain-language list of valid NOTAM required by 5.2.13.3.	<b>Frequency of the checklist of AIP Supplements changed from "not more than one month" to "regularly". Second part (related to List of Valid NOTAM) removed.</b>
5.2.4.1	An AIC shall be used to provide: a) a long-term forecast of any major change in legislation, regulations, procedures or facilities; or b) information of a purely explanatory or advisory nature liable to affect flight safety; or c) information or notification of an explanatory or advisory nature concerning technical, legislative or purely administrative matters.	7.1.1.1	7.1.1.1 An AIC shall be originated whenever it is desirable to promulgate: a) a long-term forecast of any major change in legislation, regulations, procedures or facilities; b) information of a purely explanatory or advisory nature liable to affect flight safety; c) information or notification of an explanatory or advisory nature concerning technical, legislative or purely administrative matters. <del>This shall include: 1) forecasts of important changes in the air navigation procedures, services and facilities provided; 2) forecasts of implementation of new navigation systems; 3) significant information arising from aircraft accident/incident investigation which has a bearing on flight safety; 4) information on regulations relating to the safeguarding of international civil aviation against acts of unlawful interference; 5) advice on medical matters of special interest to pilots; 6) warnings to pilots concerning the avoidance of physical hazards; 7) effect of certain weather phenomena on aircraft operations; 8) information on new hazards affecting aircraft handling techniques; 9) regulations relating to the carriage of restricted articles by air; 10) reference to the requirements of, and publication of changes in, national legislation; 11) aircrew licensing arrangements; 12) training of aviation personnel; 13) application of, or exemption from, requirements in national legislation; 14) advice on the use and maintenance of specific types of equipment; 15) actual or planned availability of new or revised editions of aeronautical charts; 16) carriage of communication equipment; 17) explanatory information relating to noise abatement; 18) selected airworthiness directives; 19) changes in NOTAM series or distribution, new editions of AIP or major changes in their contents, coverage or format; 20) advance information on the snow plan (see 7.1.1.2); 21) other information of a similar nature.</del>	No significant change / minor editorial amendment
5.2.4.2	An AIC shall not be used for information that qualifies for inclusion in AIP and NOTAM.	7.1.1	An AIC shall be originated whenever it is necessary to promulgate aeronautical information which does not qualify: a) under the specifications in 4.1 for inclusion in an Aeronautical Information Publication (AIP); or b) under the specifications in 5.1 for the origination of a NOTAM.	No significant change / minor editorial amendment
5.2.4.3	The validity of AIC currently in force shall be reviewed at least once a year.	---	---	NEW Standard

5.2.4.4	A checklist of currently valid AIC shall be regularly provided.	7.2.5	A checklist of AIC currently in force shall be issued at least once a year, with distribution as for the AIC.	Frequency of the checklist of AIC changed from "at least once a year" to "regularly". Second part (related to distribution as AIC) removed.
5.2.5.1	The aeronautical charts listed below shall, when available for designated international aerodromes/heliports, form part of the AIP, or be provided separately to recipients of the AIP: a) Aerodrome/Heliport Chart — ICAO; b) Aerodrome Ground Movement Chart — ICAO; c) Aerodrome Obstacle Chart — ICAO Type A; d) Aerodrome Obstacle Chart — ICAO Type B (when available); e) Aerodrome Terrain and Obstacle Chart — ICAO (Electronic); f) Aircraft Parking/Docking Chart — ICAO; g) Area Chart — ICAO; h) ATC Surveillance Minimum Altitude Chart — ICAO; i) Instrument Approach Chart — ICAO; j) Precision Approach Terrain Chart — ICAO; k) Standard Arrival Chart — Instrument (STAR) — ICAO; l) Standard Departure Chart — Instrument (SID) — ICAO; and m) Visual Approach Chart — ICAO.	4.1.3	The aeronautical charts listed alphabetically below shall, when available for designated international aerodromes/heliports, form part of the AIP, or be distributed separately to recipients of the AIP: a) Aerodrome/Heliport Chart — ICAO; b) Aerodrome Ground Movement Chart — ICAO; c) Aerodrome Obstacle Chart — ICAO Type A; d) Aerodrome Terrain and Obstacle Chart — ICAO (Electronic); e) Aircraft Parking/Docking Chart — ICAO; f) Area Chart — ICAO; g) ATC Surveillance Minimum Altitude Chart — ICAO; h) Instrument Approach Chart — ICAO; i) Precision Approach Terrain Chart — ICAO; j) Standard Arrival Chart — Instrument (STAR) — ICAO; k) Standard Departure Chart — Instrument (SID) — ICAO; l) Visual Approach Chart — ICAO.	Added: Aerodrome Obstacle Chart — ICAO Type B (when available);
5.2.5.2	The Enroute Chart — ICAO shall, when available, form part of the AIP, or be provided separately to recipients of the AIP.	---	---	NEW Standard
5.2.5.3	The aeronautical charts listed below shall, when available, be provided as aeronautical information products: a) World Aeronautical Chart — ICAO 1:1 000 000; b) Aeronautical Chart — ICAO 1:500 000; c) Aeronautical Navigation Chart — ICAO Small Scale; and d) Plotting Chart — ICAO chart.	---	---	NEW Standard
5.2.5.5	The chart resolution of aeronautical data shall be that as specified for a particular chart.	---	---	NEW Standard
5.2.6	A checklist of valid NOTAM shall be regularly provided.	5.2.13	A checklist of valid NOTAM shall be issued as a NOTAM over the aeronautical fixed service (AFS) at intervals of not more than one month using the NOTAM Format specified in Appendix 6. One NOTAM shall be issued for each series.	Frequency of the checklist of valid NOTAM changed from "not more than one month" to "regularly". Part related to distribution as NOTAM removed.
5.3.1.1	Digital data shall be in the form of the following data sets: a) AIP data set; b) terrain data sets; c) obstacle data sets; d) aerodrome mapping data sets; and e) instrument flight procedure data sets.	---	---	NEW Standard
5.3.1.2	Each data set shall be provided to the next intended user together with at least the minimum set of metadata that ensures traceability.	---	---	NEW Standard
5.3.1.3	A checklist of valid data sets shall be regularly provided.	---	---	NEW Standard
5.3.2.3	The AIP data set shall contain the digital representation of aeronautical information of lasting character (permanent information and long duration temporary changes) essential to air navigation.	---	---	NEW Standard

5.3.3.1	<p>The coverage areas for terrain and obstacle data sets shall be specified as:</p> <ul style="list-style-type: none"> <li>— Area 1: the entire territory of a State;</li> <li>— Area 2: within the vicinity of an aerodrome, subdivided as follows:</li> <li>— Area 2a: a rectangular area around a runway that comprises the runway strip plus any clearway that exists;</li> </ul> <p>Note.— See Annex 14, Volume I, Chapter 3, for dimensions for runway strips.</p> <ul style="list-style-type: none"> <li>— Area 2b: an area extending from the ends of Area 2a in the direction of departure, with a length of 10 km and a splay of 15 per cent to each side;</li> <li>— Area 2c: an area extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a; and</li> <li>— Area 2d: an area outside Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing terminal control area (TMA) boundary, whichever is nearest;</li> <li>— Area 3: the area bordering an aerodrome movement area that extends horizontally from the edge of a runway to 90 m from the runway centre line and 50 m from the edge of all other parts of the aerodrome movement area; and</li> <li>— Area 4: the area extending 900 m prior to the runway threshold and 60 m each side of the extended runway centre line in the direction of the approach on a precision approach runway, Category II or III.</li> </ul>	10.1.1	<p>The coverage areas for sets of electronic terrain and obstacle data shall be specified as:</p> <ul style="list-style-type: none"> <li>— Area 1: the entire territory of a State;</li> <li>— Area 2: within the vicinity of an aerodrome, subdivided as follows:</li> <li>— Area 2a: a rectangular area around a runway that comprises the runway strip plus any clearway that exists;</li> </ul> <p>Note.— See Annex 14, Volume I, Chapter 3, for dimensions for runway strip.</p> <ul style="list-style-type: none"> <li>— Area 2b: an area extending from the ends of Area 2a in the direction of departure, with a length of 10 km and a splay of 15 per cent to each side;</li> <li>— Area 2c: an area extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a; and</li> <li>— Area 2d: an area outside the Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing terminal control area (TMA) boundary, whichever is nearest;</li> <li>— Area 3: the area bordering an aerodrome movement area that extends horizontally from the edge of a runway to 90 m from the runway centre line and 50 m from the edge of all other parts of the aerodrome movement area; and</li> <li>— Area 4: The area extending 900 m prior to the runway threshold and 60 m each side of the extended runway centre line in the direction of the approach on a precision approach runway, Category II or III.</li> </ul>	No significant change / minor editorial amendment
5.3.3.3.1	Terrain data sets shall contain the digital representation of the terrain surface in the form of continuous elevation values at all intersections (points) of a defined grid, referenced to common datum.	10.2.1	A terrain data set shall contain digital sets of data representing terrain surface in the form of continuous elevation values at all intersections (points) of a defined grid, referenced to common datum. <del>A terrain grid shall be angular or linear and shall be of regular or irregular shape.</del>	No significant change / minor editorial amendment
5.3.3.3.2	Terrain data shall be provided for Area 1.	10.1.3	Electronic terrain data shall be provided for Area 1.	No significant change / minor editorial amendment
5.3.3.3.3	<p>For aerodromes regularly used by international civil aviation, terrain data shall be provided for:</p> <ul style="list-style-type: none"> <li>a) Area 2a;</li> <li>b) the take-off flight path area; and</li> <li>c) an area bounded by the lateral extent of the aerodrome obstacle limitation surfaces.</li> </ul>	10.1.5	<p>At aerodromes regularly used by international civil aviation, electronic terrain data shall be provided for:</p> <ul style="list-style-type: none"> <li>a) Area 2a;</li> <li>b) the take-off flight path area; and</li> <li>c) an area bounded by the lateral extent of the aerodrome obstacle limitation surfaces.</li> </ul>	No significant change / minor editorial amendment
5.3.3.3.8	For aerodromes regularly used by international civil aviation, terrain data shall be provided for Area 4 for all runways where precision approach Category II or III operations have been established and where detailed terrain information is required by operators to enable them to assess the effect of terrain on decision height determination by use of radio altimeters.	10.1.9	At aerodromes regularly used by international civil aviation, electronic terrain and obstacle data shall be provided for Area 4 for terrain and obstacles that penetrate the relevant obstacle data collection surface specified in Appendix 8, for all runways where precision approach Category II or III operations have been established and where detailed terrain information is required by operators to enable them to assess the effect of terrain on decision height determination by use of radio altimeters.	No significant change / minor editorial amendment
5.3.3.4.1	Obstacle data sets shall contain the digital representation of the vertical and horizontal extent of obstacles.	10.3.1	Obstacle data shall comprise the digital representation of the vertical and horizontal extent of the obstacle. Obstacles shall not be included in terrain data sets. <del>Obstacle data elements are features that shall be represented in the data sets by points, lines or polygons.</del>	No significant change / minor editorial amendment
5.3.3.4.2	Obstacle data shall not be included in terrain data sets.			
5.3.3.4.3	Obstacle data shall be provided for obstacles in Area 1 whose height is 100 m or higher above ground.	10.1.3	The obstacle data shall be provided for obstacles in Area 1 higher than 100 m above ground.	No significant change / minor editorial amendment
5.3.3.4.4	For aerodromes regularly used by international civil aviation, obstacle data shall be provided for all obstacles within Area 2 that are assessed as being a hazard to air navigation.	10.1.4	At aerodromes regularly used by international civil aviation, electronic obstacle data shall be provided for all obstacles within Area 2 that are assessed as being a hazard to air navigation.	No significant change / minor editorial amendment
5.3.3.4.5	<p>For aerodromes regularly used by international civil aviation, obstacle data shall be provided for:</p> <ul style="list-style-type: none"> <li>a) Area 2a for those obstacles that penetrate an obstacle data collection surface outlined by a rectangular area around a runway that comprises the runway strip plus any clearway that exists. The Area 2a obstacle collection surface shall have a height of 3 m above the nearest runway elevation measured along the runway centre line, and for those portions related to a clearway, if one exists, at the elevation of the nearest runway end;</li> <li>b) objects in the take-off flight path area which project above a plane surface having a 1.2 per cent slope and having a common origin with the take-off flight path area; and</li> <li>c) penetrations of the aerodrome obstacle limitation surfaces.</li> </ul>	10.1.6	<p>At aerodromes regularly used by international civil aviation, electronic obstacle data shall be provided for:</p> <ul style="list-style-type: none"> <li>a) Area 2a for those obstacles that penetrate the relevant obstacle data collection surface specified in Appendix 8;</li> <li>b) objects in the take-off flight path area which project above a plane surface having a 1.2 per cent slope and having a common origin with the take-off flight path area; and</li> <li>c) penetrations of the aerodrome obstacle limitation surfaces.</li> </ul>	No significant change / minor editorial amendment

5.3.3.4.10	For aerodromes regularly used by international civil aviation, obstacle data shall be provided for Area 4 for all runways where precision approach Category II or III operations have been established.	10.1.9	At aerodromes regularly used by international civil aviation, electronic terrain and obstacle data shall be provided for Area 4 for terrain and obstacles that penetrate the relevant obstacle data collection surface specified in Appendix 8, for all runways where precision approach Category II or III operations have been established and where detailed terrain information is required by operators to enable them to assess the effect of terrain on decision height determination by use of radio altimeters.	No significant change / minor editorial amendment
5.3.4.1	Aerodrome mapping data sets shall contain the digital representation of aerodrome features.	11.3.2	Aerodrome mapping data sets shall contain aerodrome mapping data consisting of aerodrome features.	No significant change / minor editorial amendment
5.3.5.1	<b>Instrument flight procedure data sets shall contain the digital representation of instrument flight procedures.</b>	---	---	<b>NEW Standard</b>
5.4.1.1	Aeronautical information products shall be distributed to authorized users who request them.	---	---	<b>NEW Standard</b>
5.4.1.2	AIP, AIP Amendments, AIP Supplements and AIC shall be made available by the most expeditious means.	4.5	AIP, AIP Amendments and AIP Supplements shall be made available by the most expeditious means.	No significant change / minor editorial amendment
5.4.2.1	NOTAM shall be distributed on the basis of a request.	5.3.1	NOTAM shall be distributed on the basis of a request.	No significant change / minor editorial amendment
5.4.2.2	NOTAM shall be prepared in conformity with the relevant provisions of the ICAO communication procedures.	5.3.2	NOTAM shall be prepared in conformity with the relevant provisions of the ICAO communication procedures.	No significant change / minor editorial amendment
5.4.2.3	The aeronautical fixed service (AFS) shall, whenever practicable, be employed for NOTAM distribution.	5.3.2.1	The AFS shall, whenever practicable, be employed for NOTAM distribution.	No significant change / minor editorial amendment
5.4.2.4	When a NOTAM is sent by means other than the AFS, a six-digit date-time group indicating the date and time of NOTAM origination, and the identification of the originator shall be used, preceding the text. The originating State shall select the NOTAM that are to be given international distribution.	5.3.2.2	When a NOTAM exchanged as specified in 5.3.4 is sent by means other than the AFS, a six-digit date-time group indicating the date and time of NOTAM origination, and the identification of the originator shall be used, preceding the text.	No significant change / minor editorial amendment
		5.3.3	The originating State shall select the NOTAM that are to be given international distribution.	No significant change / minor editorial amendment
5.4.2.5	International exchange of NOTAM shall take place only as mutually agreed between the international NOTAM offices concerned, and between the NOTAM offices and multinational NOTAM processing units.	5.3.4	International exchange of NOTAM shall take place only as mutually agreed between the international NOTAM offices concerned. <del>The international exchange of ASHTAM (see 5.2.4), and NOTAM where States continue to use NOTAM for distribution of information on volcanic activity, shall include volcanic ash advisory centres and the centres designated by regional air navigation agreement for the operation of AFS satellite distribution systems (satellite distribution system for information relating to air navigation (SADIS) and international satellite communications system (ISCS)), and shall take account of the requirements of long range operations.</del>	<b>Added: "and between the NOTAM offices and multinational NOTAM processing units."</b>
5.4.2.6	The originating State shall, upon request, grant distribution of NOTAM series other than those distributed internationally.	---	---	<b>NEW Standard</b>
5.5.1	For any aerodrome/heliport used for international air operations, aeronautical information relative to the route stages originating at the aerodrome/heliport shall be made available to flight operations personnel, including flight crews and services responsible for pre-flight information.	8.1.1	At any aerodrome/heliport normally used for international air operations, aeronautical information essential for the safety, regularity and efficiency of air navigation and relative to the route stages originating at the aerodrome/heliport shall be made available to flight operations personnel, including flight crews and services responsible for pre-flight information.	<b>Re-worded</b>
5.5.2	Aeronautical information provided for pre-flight planning purposes shall include information of operational significance from the elements of aeronautical information products.	8.1.2	Aeronautical information provided for pre-flight planning purposes at the aerodromes/heliports referred to in 8.1.1 shall include relevant: a) elements of the Integrated Aeronautical Information Package; b) maps and charts.	<b>Replacement of IAIP with "Aeronautical Information Products"</b>
5.6.1	For any aerodrome/heliport used for international air operations, arrangements shall be made to receive information concerning the state and operation of air navigation facilities or services noted by flight crews.	8.3.1	Arrangements shall be made to receive at aerodromes/heliports information concerning the state and operation of air navigation facilities or services noted by aircrews and shall ensure that such information is made available to the AIS for such distribution as the circumstances necessitate.	<b>re-worded</b>
5.6.2	The arrangements specified in 5.6.1 shall ensure that such information is made available to the aeronautical information service (AIS) for distribution as the circumstances necessitate.			<b>re-worded</b>
5.6.3	For any aerodrome/heliport used for international air operations, arrangements shall be made to receive information concerning the presence of wildlife hazards observed by flight crews.	8.3.2	Arrangements shall be made to receive at aerodromes/heliports information concerning the presence of birds observed by aircrews and shall ensure that such information is made available to the AIS for such distribution as the circumstances necessitate.	<b>re-worded</b>
5.6.4	The information about presence of wildlife hazards shall be made available to the aeronautical information service for distribution as the circumstances necessitate.			<b>re-worded</b>



**CHAPTER 6: AERONAUTICAL INFORMATION UPDATES**

16th Edition		15th Edition		Assessment
Para No.	Text of Standard	Para. No.	Text of Standard	
6.1	Aeronautical data and aeronautical information shall be kept up to date.	---	---	<b>NEW Standard</b>
6.2.1	Information concerning the following circumstances shall be distributed under the regulated system (AIRAC), i.e. basing establishment, withdrawal or significant changes upon a series of common effective dates at intervals of 28 days, including 8 November 2018: a) limits (horizontal and vertical), regulations and procedures applicable to:1) flight information regions; 2) control areas; 3) control zones; 4) advisory areas; 5) air traffic services (ATS) routes; 6) permanent danger, prohibited and restricted areas (including type and periods of activity when known) and air defence identification zones (ADIZ); 7) permanent areas or routes or portions thereof where the possibility of interception exists; b) positions, frequencies, call signs, identifiers, known irregularities and maintenance periods of radio navigation aids, and communication and surveillance facilities; c) holding and approach procedures, arrival and departure procedures, noise abatement procedures and any other pertinent ATS procedures; d) transition levels, transition altitudes and minimum sector altitudes; e) meteorological facilities (including broadcasts) and procedures; f) runways and stopways; g) taxiways and aprons; h) aerodrome ground operating procedures (including low visibility procedures); i) approach and runway	6.1.1	Information concerning the circumstances listed in Appendix 4, Part 1, shall be distributed under the regulated system (AIRAC), i.e. basing establishment, withdrawal or significant changes upon a series of common effective dates at intervals of 28 days, including 14 January 2010.	<b>re-worded &amp; Appendix 4 added to the standard</b>
		App. 4	Appendix 4 (Information to be notified by AIRAC)	
6.2.2	The information notified under the AIRAC system shall not be changed further for at least another 28 days after the effective date, unless the circumstance notified is of a temporary nature and would not persist for the full period.	6.1.1	The information notified therein shall not be changed further for at least another 28 days after the effective date, unless the circumstance notified is of a temporary nature and would not persist for the full period.	No significant change / minor editorial amendment
6.2.3	Information provided under the AIRAC system shall be made available by the aeronautical information service (AIS) so as to reach recipients at least 28 days in advance of the effective date.	6.2.1	Information provided under the AIRAC system in paper copy form shall be distributed by the AIS unit at least 42 days in advance of the effective date with the objective of reaching recipients at least 28 days in advance of the effective date.	<b>The statement of 42 days removed &amp; for any kind of information provided under AIRAC system, the standard is to reach recipients at least 28 days in advance of the effective date.</b>
		6.3.2	Information provided as electronic media, concerning the circumstances listed in Appendix 4, Part 1, shall be distributed/made available by the AIS unit so as to reach recipients at least 28 days in advance of the AIRAC effective date.	
6.2.4	When information has not been submitted by the AIRAC date, a NIL notification shall be distributed not later than one cycle before the AIRAC effective date concerned.	6.1.3	When information has not been submitted by the AIRAC date, a NIL notification shall be originated and distributed by NOTAM or other suitable means, not later than one cycle before the AIRAC effective date concerned.	No significant change / minor editorial amendment
6.2.5	Implementation dates other than AIRAC effective dates shall not be used for pre-planned operationally significant changes requiring cartographic work and/or for updating of navigation databases.	6.1.4	Implementation dates other than AIRAC effective dates shall not be used for pre-planned operationally significant changes requiring cartographic work and/or for updating of navigation databases.	No significant change / minor editorial amendment
6.3.1.1	The aeronautical information publication (AIP) shall be amended or reissued at such regular intervals as may be necessary to keep it up to date.	4.2.9	AIP shall be amended or reissued at such regular intervals as may be necessary to keep them up to date. <del>Recourse to hand amendments or annotations shall be kept to the minimum. The normal method of amendment shall be by means of replacement sheets.</del>	No significant change / minor editorial amendment
6.3.1.2	Permanent changes to the AIP shall be published as AIP Amendments.	4.3.1	Permanent changes to the AIP shall be published as AIP Amendments.	No significant change / minor editorial amendment
6.3.1.3	Temporary changes of long duration (three months or longer) and information of short duration which contains extensive text and/or graphics shall be published as AIP Supplements.	4.4.1	Temporary changes of long duration (three months or longer) and information of short duration which contains extensive text and/or graphics shall be published as AIP Supplements.	No significant change / minor editorial amendment
6.3.2.1	When an AIP Amendment or an AIP Supplement is published in accordance with AIRAC procedures, a Trigger NOTAM shall be originated.	5.1.1.6	When an AIP Amendment or an AIP Supplement is published in accordance with AIRAC procedures, a NOTAM shall be originated giving a brief description of the contents, the effective date and time, and the reference number of the amendment or supplement. This NOTAM shall come into force on the same effective date and time as the amendment or supplement and shall remain valid in the pre-flight information bulletin for a period of fourteen days.	<b>The term "Trigger NOTAM" is used instead of explanation.</b>
6.3.2.2	A NOTAM shall be originated and issued promptly whenever the information to be distributed is of a temporary nature and of short duration, or when operationally significant permanent changes or temporary changes of long duration are made at short notice, except for extensive text and/or graphics.	5.1.1	A NOTAM shall be originated and issued promptly whenever the information to be distributed is of a temporary nature and of short duration or when operationally significant permanent changes, or temporary changes of long duration are made at short notice, except for extensive text and/or graphics.	No significant change / minor editorial amendment

6.3.2.3	<p>A NOTAM shall be originated and issued concerning the following information: a) establishment, closure or significant changes in operation of aerodrome(s) or heliport(s) or runways; b) establishment, withdrawal or significant changes in operation of aeronautical services (aerodromes, AIS, ATS, communications, navigation and surveillance (CNS), meteorology (MET), search and rescue (SAR), etc.); c) establishment, withdrawal or significant changes in operational capability of radio navigation and air-ground communication services. This includes: interruption or return to operation, change of frequencies, change in notified hours of service, change of identification, change of orientation (directional aids), change of location, power increase or decrease amounting to 50 per cent or more, change in broadcast schedules or contents, or irregularity or unreliability of operation of any radio navigation and air-ground communication services or limitations of relay stations including operational impact, affected service, frequency and area; d) unavailability of back-up and secondary systems, having a direct operational impact; e) establishment, withdrawal or significant changes to visual aids; f) interruption of or return to operation of major components of aerodrome lighting systems; g) establishment, withdrawal or significant changes to procedures for air navigation services; h) occurrence or correction of major defects or impediments in the manoeuvring area; i) changes to and limitations on availability of fuel, oil and oxygen; j) major changes to search and rescue facilities and services available; k) establishment, withdrawal or return to operation of hazard beacons marking obstacles to air navigation; l) changes in regulations requiring immediate action, e.g. prohibited areas for SAR action; m) presence of hazards which affect air navigation (including obstacles, military exercises, displays, fireworks, sky lanterns, rocket debris, races and major parachuting events outside promulgated sites); n) planned laser emissions, laser displays and search lights if pilots' night vision is likely to be impaired; o) erecting or removal of, or changes to, obstacles to air navigation in the</p>	5.1.1.1	<p>A NOTAM shall be originated and issued concerning the following information: a) establishment, closure or significant changes in operation of aerodrome(s)/heliport(s) or runways; b) establishment, withdrawal and significant changes in operation of aeronautical services (AGA, AIS, ATS, CNS, MET, SAR, etc.); c) establishment, withdrawal and significant changes in operational capability of radio navigation and air-ground communication services. This includes: interruption or return to operation, change of frequencies, change in notified hours of service, change of identification, change of orientation (directional aids), change of location, power increase or decrease amounting to 50 per cent or more, change in broadcast schedules or contents, or irregularity or unreliability of operation of any radio navigation and air-ground communication services; d) establishment, withdrawal or significant changes made to visual aids; e) interruption of or return to operation of major components of aerodrome lighting systems; f) establishment, withdrawal or significant changes made to procedures for air navigation services; g) occurrence or correction of major defects or impediments in the manoeuvring area; h) changes to and limitations on availability of fuel, oil and oxygen; i) major changes to search and rescue facilities and services available; j) establishment, withdrawal or return to operation of hazard beacons marking obstacles to air navigation; k) changes in regulations requiring immediate action, e.g. prohibited areas for SAR action; l) presence of hazards which affect air navigation (including obstacles, military exercises, displays, races and major parachuting events outside promulgated sites); m) erecting or removal of, or changes to, obstacles to air navigation in the take-off/climb, missed approach, approach areas and runway strip; n) establishment or discontinuance (including activation or deactivation) as applicable, or changes in the status of prohibited, restricted or danger areas; o) establishment or discontinuance of areas or routes or portions thereof where the possibility of interception exists and where the maintenance of guard on the VHF emergency frequency 121.5 MHz is required; p) allocation, cancellation or</p>	<p><b>Added: items d &amp; n</b> <b>Change/amendment in Items m, s &amp; v (old items: l, 1 &amp; t)</b></p>
6.3.2.4	<p>The following information shall not be notified by NOTAM: a) routine maintenance work on aprons and taxiways which does not affect the safe movement of aircraft; b) runway marking work, when aircraft operations can safely be conducted on other available runways, or the equipment used can be removed when necessary; c) temporary obstructions in the vicinity of aerodromes/heliports that do not affect the safe operation of aircraft; d) partial failure of aerodrome/heliport lighting facilities where such failure does not directly affect aircraft operations; e) partial temporary failure of air-ground communications when suitable alternative frequencies are known to be available and are operative; f) the lack of apron marshalling services and road traffic control; g) the unserviceability of location, destination or other instruction signs on the aerodrome movement area; h) parachuting when in uncontrolled airspace under VFR (see 6.3.2.3 m)), when controlled, at promulgated sites or within danger or prohibited areas; i) training activities by ground units; j) unavailability of back-up and secondary systems if these do not have an operational impact; k) limitations to airport facilities or general services with no operational impact; l) national regulations not affecting general aviation; m) announcement or warnings about possible/potential limitations, without any operational impact; n) general reminders on already published information; o) availability of equipment for ground units without containing information on the operational impact for airspace and facility users; p) information about laser emissions without any operational impact and fireworks below minimum flying heights; q) closure of movement area parts in connection with planned work locally coordinated of duration of less than one hour; r) closure or unavailability of, or changes in, operation of aerodrome(s)/heliport(s) outside the aerodrome(s)/heliport(s) operational hours; and s) other non-operational information of a similar temporary nature.</p>	5.1.1.3	<p>5.1.1.3 The following information shall not be notified by NOTAM: a) routine maintenance work on aprons and taxiways which does not affect the safe movement of aircraft; b) runway marking work, when aircraft operations can safely be conducted on other available runways, or the equipment used can be removed when necessary; c) temporary obstructions in the vicinity of aerodromes/heliports that do not affect the safe operation of aircraft; d) partial failure of aerodrome/heliport lighting facilities where such failure does not directly affect aircraft operations; e) partial temporary failure of air-ground communications when suitable alternative frequencies are known to be available and are operative; f) the lack of apron marshalling services and road traffic control; g) the unserviceability of location, destination or other instruction signs on the aerodrome movement area; h) parachuting when in uncontrolled airspace under VFR (see 5.1.1.1 l)), when controlled, at promulgated sites or within danger or prohibited areas; i) other information of a similar temporary nature.</p>	<p><b>Added items i to r</b></p>
6.3.3.1	<p><b>Data sets shall be amended or reissued at such regular intervals as may be necessary to keep them up to date.</b></p>	---	---	<p><b>NEW Standard</b></p>

6.3.3.2	Permanent changes and temporary changes of long duration (three months or longer) made available as digital data shall be issued in the form of a complete data set or a subset that includes only the differences from the previously issued complete data set.	---	---	NEW Standard
6.3.3.5	Updates to AIP and digital data sets shall be synchronized.	---	---	NEW Standard

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**CHAPTER 1: DEFINITIONS**

PANS AIM		Annex 15 (15th Edition)		Assessment
Para No.	Text of Standard	Para. No.	Text of Standard	
NIL				

## CHAPTER 2: AERONAUTICAL INFORMATION MANAGEMENT

PANS AIM		Annex 15 (15th Edition)		Assessment
Para No.	Text of Standard	Para. No.	Text of Standard	
2.1	<p>INFORMATION MANAGEMENT REQUIREMENTS:</p> <p>Management of aeronautical data and aeronautical information shall include the following processes:</p> <p>a) collection;</p> <p>b) processing;</p> <p>c) quality control; and</p> <p>d) distribution.</p>	3.1	<p>INFORMATION MANAGEMENT REQUIREMENTS:</p> <p>The information management resources and processes established by an aeronautical information service (AIS) shall be adequate to ensure the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and aeronautical information within the air traffic management (ATM) system.</p>	New wording in a revised form
2.1.1.1	The identification of data originators shall be documented based on the scope of aeronautical data and aeronautical information to be collected.	---	---	<b>NEW Standard</b>
2.1.1.6	Appendix 1 shall be considered as a reference for aeronautical data and aeronautical information origination and publication requirements.	---	---	<b>NEW Standard</b>
2.1.2.1	Collected data shall be verified and validated for compliance with data quality requirements.	---	---	<b>NEW Standard</b>

### CHAPTER 3: QUALITY MANAGEMENT

PANS AIM		Annex 15 (15th Edition)		Assessment
Para No.	Text of Standard	Para. No.	Text of Standard	
3.1.1	The general requirements for a QMS shall be to: a) develop a quality manual that includes the scope of a QMS as applied to AIM processes; b) identify the processes needed for the QMS; c) determine the sequence and interaction of these processes; d) determine criteria and methods required to ensure the effective operation and control of these processes; e) ensure the availability of information necessary to support the operation and monitoring of these processes; f) measure, monitor and analyse these processes, and implement action necessary to achieve planned results and continual improvement; and g) maintain appropriate records that are necessary to provide confidence of conformity of the processes and resulting product.	---	---	NEW Standard
3.1.2	In the framework of the QMS, a user feedback system shall be defined and implemented.	---	---	NEW Standard

## CHAPTER 4: AERONAUTICAL DATA REQUIREMENTS

PANS AIM		Annex 15 (15th Edition)		Assessment
Para No.	Text of Standard	Para. No.	Text of Standard	
4.1.1	Data shall be collected and transmitted to the AIS in accordance with the accuracy requirements and integrity classification specified in Appendix 1.	---	---	<b>NEW Standard</b>
4.1.2	Positional data shall be classified as: surveyed points (e.g. navigation aid positions, runway threshold); calculated points (mathematical calculations from the known surveyed points of points in space, fixes); or declared points (e.g. flight information region boundary points).	3.3.1	In that respect, three types of positional data shall be identified: surveyed points (runway thresholds, navigation aid positions, etc.), calculated points (mathematical calculations from the known surveyed points of points in space/fixes) and declared points (e.g. flight information region boundary points).	No significant change / minor editorial amendment
4.1.3	Geographical coordinates indicating latitude and longitude shall be determined and reported to the aeronautical information service (AIS) in terms of the World Geodetic System – 1984 (WGS-84) geodetic reference datum.	1.2.1.1	World Geodetic System — 1984 (WGS-84) shall be used as the horizontal (geodetic) reference system for international air navigation. Consequently, published aeronautical geographical coordinates (indicating latitude and longitude) shall be	No significant change / minor editorial amendment
4.1.4	Geographical coordinates that have been transformed into WGS-84 coordinates by mathematical means and whose accuracy of original field work does not meet the applicable requirements contained in Appendix 1 shall be identified.	1.2.1.3	Geographical coordinates that have been transformed into WGS-84 coordinates but whose accuracy of original field work does not meet the requirements in Annex 11, Chapter 2, and Annex 14, Volumes I and II, Chapter 2, shall be identified by an asterisk.	New wording
4.1.5	In addition to elevation referenced to the MSL (geoid), for the specific surveyed ground positions, geoid undulation (referenced to the WGS-84 ellipsoid) for those positions specified in Appendix 2 shall also be published.	1.2.2.4	In addition to elevation referenced to the MSL (geoid), for the specific surveyed ground positions, geoid undulation (referenced to the WGS-84 ellipsoid) for those positions specified in Appendix 1 shall also be published.	No significant change / minor editorial amendment
4.2	The metadata to be collected shall include, as a minimum: a) the names of the organizations or entities performing any action of originating, transmitting or manipulating the data; b) the action performed; and c) the date and time the action was performed.	3.4.2	The metadata to be collected shall include, as a minimum: a) the name of the organizations or entities performing any action of originating, transmitting or manipulating the data; b) the action performed; and c) the date and time the action was performed.	No significant change / minor editorial amendment

**CHAPTER 5: AERONAUTICAL INFORMATION PRODUCTES AND SERVICES**

PANS AIM		Annex 15 (15th Edition)		Assessment
Para No.	Text of Standard	Para. No.	Text of Standard	
5.1.1	Aeronautical data shall be provided in accordance with the resolution requirements contained in Appendix 1.	---	---	NEW Standard
5.1.2	Geographical coordinates whose accuracy does not meet the requirements specified in Appendix 1 shall be identified.	---	---	NEW Standard
5.2.1.1.1	The AIP shall contain concise, current information relating to, and arranged under, the subject headings listed in Appendix 2. This facilitates both the locating of information under a specific heading and the storage/retrieval of the information using automated processing.	4.1.1	An AIP shall contain, in three parts, sections and subsections uniformly referenced to allow for standardized electronic data storage and retrieval, current information relating to, and arranged under, those subjects enumerated in Appendix 1 that appear in roman type, except that when the AIP, or volume of the AIP, is designed basically to facilitate operational use in flight, the precise format and arrangement may be left to the discretion of the State provided that an adequate table of	New wording
5.2.1.1.3	When the AIP data set (as specified in 5.3.3.1) is provided, the following sections of the AIP may be omitted and reference to the data set availability shall be provided: a) GEN 2.5 List of radio navigation aids; b) ENR 2.1 FIR, UIR, TMA and CTA; c) ENR 3.1 Lower ATS routes; d) ENR 3.2 Upper ATS routes; e) ENR 3.3 Area navigation routes; f) ENR 3.4 Helicopter routes; g) ENR 3.5 Other routes; h) ENR 3.6 En-route holding; i) ENR 4.1 Radio navigation aids — en-route; j) ENR 4.2 Special navigation systems; k) ENR 4.4 Name-code designators for significant points; l) ENR 4.5 Aeronautical ground lights — en-route; m) ENR 5.1 Prohibited, restricted and danger areas; n) ENR 5.2 Military exercise and training areas and air defence identification zone (ADIZ); o) ENR 5.3.1 Other activities of a dangerous nature; p) ENR 5.3.2 Other potential hazards; q) ENR 5.5 Aerial sporting and recreational activities; r) ****AD 2.17 Air traffic services airspace; s) **** AD 2.19 Radio navigation and landing aids; t) **** AD 3.16 Air traffic services airspace; and u) **** AD 3.18 Radio navigation and landing aids.	---	---	NEW Standard
5.2.1.1.4	When the Obstacle Data Set (as specified in 5.3.3.2.2) is provided, the following sections of the AIP may be left blank and a reference to the data set availability shall be provided: a) ENR 5.4 Air navigation obstacles; b) ****AD 2.10 Aerodrome obstacles; and c) ****AD 3.10 Heliport obstacles.	---	---	NEW Standard
5.2.1.2.1	The issuing State and publishing authority shall be clearly indicated.	4.2.5 c)	c) the identification of the issuing State and producing organization (authority);	No significant change / minor editorial amendment
5.2.1.2.2	When two or more States jointly provide an AIP, these States shall be clearly indicated.	4.2.1.2	When two or more States combine to issue a joint AIP, this shall be made clear both on the cover and in the table of contents.	No significant change / minor editorial amendment
5.2.1.2.3	Each AIP shall be self-contained and shall include a table of contents.	4.2.1	Each AIP shall be self-contained and shall include a table of contents.	No significant change / minor editorial amendment
5.2.1.2.4	Each AIP shall not duplicate information within itself or from other sources.	4.2.1.1	Each AIP shall not duplicate information within itself or from other sources.	No significant change / minor editorial amendment
5.2.1.2.5	An AIP shall be organized in three parts (GEN, ENR and AD), sections and subsections, except when the AIP, or a volume of the AIP, is designed to facilitate operational use in flight, in which case the precise format and arrangement may be left to the discretion of the State provided that an adequate table of contents is included.	4.1.1	An AIP shall contain, in three parts, sections and subsections uniformly referenced to allow for standardized electronic data storage and retrieval, current information relating to, and arranged under, those subjects enumerated in Appendix 1 that appear in roman type, except that when the AIP, or volume of the AIP, is designed basically to facilitate operational use in flight, the precise format and arrangement may be left to the discretion of the State provided that an adequate table of contents is included.	New wording in revised form
5.2.1.2.6	Each AIP shall be dated.	4.2.3	Each AIP shall be dated. <del>In the case of AIP issued in loose leaf form, each page shall be dated.</del> The date, consisting of the day, month (by name) and year, shall be the publication date or the effective date of the information.	No significant change / minor editorial amendment
5.2.1.2.6.1	The date, consisting of the day, month (by name) and year, shall be the publication date or the effective date (AIRAC) of the information.			No significant change / minor editorial amendment



5.2.1.2.9	The spelling of place names shall conform with local usage, transliterated where necessary into the ISO basic Latin alphabet.	1.3.2	Place names shall be spelt in conformity with local usage, transliterated, when necessary, into the Latin alphabet.	No significant change / minor editorial amendment	
5.2.1.2.11	When describing periods of activity, availability or operation, the applicable days and times shall be specified.	---	---	<b>NEW Standard</b>	
5.2.1.3.1	Operationally significant changes to the AIP shall be published in accordance with Aeronautical Information Regulation and Control (AIRAC) procedures and shall be clearly identified by the acronym AIRAC.	4.2.8	Operationally significant changes to the AIP shall be published in accordance with Aeronautical Information Regulation and Control (AIRAC) procedures and shall be clearly identified by the acronym — AIRAC.	No significant change / minor editorial amendment	
5.2.1.3.2	When a State has established the regular interval or publication dates for its AIP Amendments, these intervals or publication dates shall be included in the AIP, Part 1 — General (GEN).	4.2.9.1	The regular interval referred to in 4.2.9 shall be specified in the AIP, Part 1 — General (GEN).	No significant change / minor editorial amendment	
5.2.1.3.3	New or revised information contained in the AIP shall be identified.	4.2.7	All changes to the AIP, or new information on a republished page, shall be identified by a distinctive symbol or annotation.	No significant change / minor editorial amendment	
5.2.1.3.4	Each AIP Amendment shall be allocated a serial number, which shall be consecutive.	4.3.2	Each AIP Amendment shall be allocated a serial number, which shall be consecutive.	No significant change / minor editorial amendment	
5.2.1.3.5	Each AIP Amendment shall contain a publication date.	4.3.3	Each AIP Amendment page, including the cover sheet, shall display a publication date.	No significant change / minor editorial amendment	
5.2.1.3.6	Each AIRAC AIP Amendment shall contain an effective date.	4.3.4	Each AIRAC AIP Amendment page, including the cover sheet, shall display an effective date. When an effective time other than 0000 UTC is used, the effective time shall also be displayed on the cover sheet.	No significant change / minor editorial amendment	
5.2.1.3.6.1	When an effective time other than 0000 UTC is used, the effective time shall also be indicated.			No significant change / minor editorial amendment	
5.2.1.3.7	When an AIP Amendment is issued, it shall include references to the serial number of the AIP Supplement or the series and number of the NOTAM which has been incorporated into the amendment.	4.3.5	When an AIP Amendment is issued, it shall include references to the serial number of those elements, if any, of the Integrated Aeronautical Information Package which have been incorporated into the amendment.	Minor editorial amendment	
5.2.1.3.8	A brief indication of the subjects affected by the amendment shall be given on the AIP Amendment cover sheet.	4.3.6	A brief indication of the subjects affected by the amendment shall be given on the AIP Amendment cover sheet.	No significant change / minor editorial amendment	
5.2.1.3.9	Each amendment shall include a checklist giving the current date of each loose-leaf page in the AIP, and shall provide a recapitulation of any outstanding manuscript corrections. The checklist shall carry both the page number and date.	---	---	<b>NEW Standard</b>	
5.2.1.4.1	Each AIP Supplement shall be allocated a serial number which shall be consecutive and based on the calendar year.	4.2.2	Each AIP Supplement shall be allocated a serial number which shall be consecutive and based on the calendar year.	No significant change / minor editorial amendment	
5.2.1.4.1	Each AIP Supplement shall be provided on distinctive pages allowing for easy identification from the regular AIP content.	4.4.7	<i>AIP Supplement pages should be coloured in order to be conspicuous, preferably in yellow.</i>	"Yellow" replaced by "distinctive pages" Recommendation has changed to Standard	
5.2.1.4.1	Whenever an AIP Supplement is issued as a replacement of a NOTAM, a reference to the series and number of the NOTAM shall be included.	4.4.5	When an AIP Supplement is sent in replacement of a NOTAM, it shall include a reference to the serial number of the NOTAM.	No significant change / minor editorial amendment	
5.2.1.4.1	A checklist of valid AIP Supplements shall be issued at intervals of not more than one month as part of the checklist of NOTAM required by 5.2.5.3 and with distribution as for the AIP Supplements.		A checklist of valid AIP Supplements shall be issued at intervals of not more than one month. This information shall be issued through the medium of the monthly plain-language list of valid NOTAM required by 5.2.13.3.	List of valid NOTAM as a means of "Checklist of valid AIP Supplements" has been replaced by the NOTAM Checklist	
5.2.1.4.1	Each AIP Supplement page shall show a publication date.	---	---	<b>NEW Standard</b>	
5.2.1.4.1	Each AIRAC AIP Supplement page shall show a publication date and an effective date.	---	---	<b>NEW Standard</b>	

5.2.2.1	<p>An AIC shall be provided whenever it is desirable to promulgate:</p> <p>a) forecasts of important changes in the air navigation procedures, services and facilities provided; b) forecasts of implementation of new navigation systems; c) significant information arising from aircraft accident/incident investigation which has a bearing on flight safety; d) information on regulations relating to the safeguarding of international civil aviation against acts of unlawful interference; e) advice on medical matters of special interest to pilots; f) warnings to pilots concerning the avoidance of physical hazards; g) effect of certain weather phenomena on aircraft operations; h) information on new hazards affecting aircraft handling techniques; i) regulations relating to the carriage of restricted articles by air; j) reference to the requirements of, and publication of changes in, national legislation; k) flight crew licensing arrangements; l) training of aviation personnel; m) application of, or exemption from, requirements in national legislation; n) advice on the use and maintenance of specific types of equipment; o) actual or planned availability of new or revised editions of aeronautical charts; p) carriage of communication equipment; q) explanatory information relating to noise abatement; r) airworthiness directives; s) changes in NOTAM series or distribution, new editions of AIP or major changes in their contents, coverage or format; t) advance information on the snow plan (see 5.2.2.2); u) other information of a similar nature.</p>	7.1.1	<p>This shall include: 1) forecasts of important changes in the air navigation procedures, services and facilities provided; 2) forecasts of implementation of new navigation systems; 3) significant information arising from aircraft accident/incident investigation which has a bearing on flight safety; 4) information on regulations relating to the safeguarding of international civil aviation against acts of unlawful interference; 5) advice on medical matters of special interest to pilots; 6) warnings to pilots concerning the avoidance of physical hazards; 7) effect of certain weather phenomena on aircraft operations; 8) information on new hazards affecting aircraft handling techniques; 9) regulations relating to the carriage of restricted articles by air; 10) reference to the requirements of, and publication of changes in, national legislation; 11) aircrew licensing arrangements; 12) training of aviation personnel; 13) application of, or exemption from, requirements in national legislation; 14) advice on the use and maintenance of specific types of equipment; 15) actual or planned availability of new or revised editions of aeronautical charts; 16) carriage of communication equipment; 17) explanatory information relating to noise abatement; 18) selected airworthiness directives; 19) changes in NOTAM series or distribution, new editions of AIP or major changes in their contents, coverage or format; 20) advance information on the snow plan (see 7.1.1.2); 21) other information of a similar nature.</p>	No significant change / minor editorial amendment	
5.2.2.2	<p>The snow plan issued under AD 1.2.2 of the AIP shall be supplemented by seasonal information, to be issued well in advance of the beginning of each winter (not less than one month before the normal onset of winter conditions) and shall contain information such as that listed below:</p> <p>a) until 4 November 2020, a list of aerodromes/heliports where snow clearance is expected to be performed during the coming winter:</p> <p>a) as of 5 November 2020, a list of aerodromes/heliports where snow, slush, ice or frost clearance is expected to be performed during the coming winter:</p> <p>*1) in accordance with the runway and taxiway systems; or</p> <p>*2) planned snow clearing, deviating from the runway system (length, width and number of runways, affected taxiways and aprons or portions thereof);</p> <p>*b) information concerning any centre designated to coordinate information on the current state of progress of clearance and on the current state of runways, taxiways and aprons;</p> <p>c) a division of the aerodromes/heliports into SNOWTAM distribution lists in order to avoid excessive NOTAM distribution;</p> <p>*d) an indication, as necessary, of minor changes to the standing snow plan;</p> <p>*e) a descriptive list of clearance equipment;</p> <p>*f) a list of what will be considered as the minimum critical snow bank to be reported at each aerodrome/heliport at which reporting will commence.</p>	7.1.1.2	<p>The snow plan published under AD 1.2.2 of Appendix 1 shall be supplemented by seasonal information, to be issued well in advance of the beginning of each winter — not less than one month before the normal onset of winter conditions — and shall contain information such as that listed below:</p> <p>a) a list of aerodromes/heliports where snow clearance is expected to be performed during the coming winter:</p> <p>*1) in accordance with the runway and taxiway systems; or</p> <p>*2) planned snow clearing, deviating from the runway system (length, width and number of runways, affected taxiways and aprons or portions thereof);</p> <p>*b) information concerning any centre designated to coordinate information on the current state of progress of clearance and on the current state of runways, taxiways and aprons;</p> <p>c) a division of the aerodromes/heliports into SNOWTAM distribution lists in order to avoid excessive NOTAM distribution;</p> <p>*d) an indication, as necessary, of minor changes to the standing snow plan;</p> <p>*e) a descriptive list of clearance equipment;</p> <p>*f) a listing of what will be considered as the minimum critical snow bank to be reported at each aerodrome/heliport at which reporting will commence.</p>	No significant change / minor editorial amendment	
5.2.2.3	<p>The originating State shall select the AIC that are to be given international distribution.</p>	7.2.1	<p>The originating aeronautical information service shall select the AIC that are to be given international distribution.</p>	New wording: AIS replaced by State	
5.2.2.4	<p>States shall give AIC selected for international distribution the same distribution as for the AIP.</p>	7.3	<p>States shall give AIC selected for international distribution the same distribution as for the AIP.</p>	No significant change / minor editorial amendment	
5.2.2.6	<p>Each AIC shall be allocated a serial number which shall be consecutive and based on the calendar year.</p>	7.2.2	<p>Each AIC shall be allocated a serial number which shall be consecutive and based on the calendar year.</p>	No significant change / minor editorial amendment	
5.2.2.7	<p>In the event that AIC are provided in more than one series, each series shall be separately identified by a letter (e.g. A 2/02, B 4/02).</p>	7.2.3	<p>When AIC are distributed in more than one series, each series shall be separately identified by a letter.</p>	No significant change / minor editorial amendment	
5.2.2.8	<p>A checklist of AIC currently in force shall be issued at least once a year, with distribution as for the AIC.</p>	7.2.5	<p>A checklist of AIC currently in force shall be issued at least once a year, with distribution as for the AIC.</p>	No significant change / minor editorial amendment	
5.2.2.9	<p>A checklist of AIC provided internationally shall be included in the NOTAM checklist.</p>	5.2.13.1	<p>A checklist of NOTAM shall refer to the latest AIP Amendments, AIP Supplements and at least the internationally distributed AIC.</p>	No significant change / minor editorial amendment	

5.2.3.1.2	Each AIP issued as a printed volume and each page of an AIP issued in loose-leaf form shall be so annotated as to indicate clearly: a) the identity of the AIP; b) the territory covered and subdivisions when necessary; c) the identification of the issuing State and producing organization (authority); and d) page numbers/chart titles.	4.2.5	Each AIP issued as a bound volume and each page of an AIP issued in loose-leaf form shall be so annotated as to indicate clearly: a) the identity of the AIP; b) the territory covered and subdivisions when necessary; c) the identification of the issuing State and producing organization (authority); d) page numbers/chart titles; e) the degree of reliability if the information is doubtful.	No significant change / minor editorial amendment Item e) deleted	
5.2.3.1.3	The issuing State or the joint issuing States shall be clearly indicated on the cover and in the table of contents.	---	---	<b>NEW Standard</b>	
5.2.3.1.4	The normal method of amendment of the printed volume AIP shall be by means of replacement sheets.	4.2.9	The normal method of amendment shall be by means of replacement sheets.	No significant change / minor editorial amendment	
5.2.3.1.5	New or revised information shall be identified by an annotation against it in the margin. A thick black vertical line or, where the change incorporated covers one line only or a part of a line, a thick black horizontal arrow, is sufficient to identify the change.		All changes to the AIP, or new information on a republished page, shall be identified by a distinctive symbol or annotation.	New wording in revised form With additional descriptions	
5.2.3.1.6	Each AIP Amendment page, including the cover sheet, shall contain a publication date and, when applicable, an effective date.	4.3.3	Each AIP Amendment page, including the cover sheet, shall display a publication date.	Minor editorial amendment	
		4.3.4	Each AIRAC AIP Amendment page, including the cover sheet, shall display an effective date.		
5.2.3.1.7	When the AIP is provided in more than one volume, each volume shall include a: a) preface; b) record of AIP Amendments; c) record of AIP Supplements; d) checklist of AIP pages; and e) list of current hand amendments.	Appendix 1	If an AIP is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments must be included in each volume.	This provision has changed to Standard The condition (if each volume has a separate amendment and supplement service) has been removed	
5.2.3.1.8	When the AIP is published as one volume, the above-mentioned subsections appear only in Part 1 — GEN and the annotation “not applicable” shall be entered against each of these subsections in Parts 2 and 3.	Appendix 1	When the AIP is produced as one volume, the preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments appear only in Part 1 — GEN, and the annotation “not applicable” must be entered against each of these subsections in Parts 2 and 3.	No significant change / minor editorial amendment	
5.2.3.1.10	A checklist giving the current date of each page in the AIP shall be reissued frequently to assist the user in maintaining a current publication.	4.2.4	A checklist giving the current date of each page in the AIP series shall be reissued frequently to assist the user in maintaining a current publication.	No significant change / minor editorial amendment	
5.2.3.1.16	AIP Supplement pages shall be kept in the AIP as long as all or some of their contents remain valid.	4.4.3	AIP Supplement pages shall be kept in the AIP as long as all or some of their contents remain valid.	No significant change / minor editorial amendment	
5.2.4.1	When provided, the information content of the eAIP and the structure of chapters, sections and subsections shall follow the content and structure of the paper AIP. The eAIP shall include files that allow for printing a paper AIP.	4.6.2	When provided, the information content of the eAIP and the structure of chapters, sections and sub-sections shall follow the content and structure of the paper AIP. The eAIP shall include files that allow for printing a paper AIP.	No significant change / minor editorial amendment	
5.2.4.2	New or revised information shall be identified either by an annotation against it in the margin or by a mechanism that allows comparing the new/revised information with the previous information.	---	---	<b>NEW Standard (This addresses eAIP)</b>	
5.2.5.1.1	Except as otherwise provided in 5.2.5.1.4 and 5.2.5.1.5, each NOTAM shall contain the information in the order shown in the NOTAM Format in Appendix 3 .	5.2.1	Except as otherwise provided in 5.2.3 and 5.2.4, each NOTAM shall contain the information in the order shown in the NOTAM Format in Appendix 6.	No significant change / minor editorial amendment	
5.2.5.1.2	NOTAM text shall be composed of the significations/uniform abbreviated phraseology assigned to the ICAO NOTAM Code complemented by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures	5.2.2	Text of NOTAM shall be composed of the significations/uniform abbreviated phraseology assigned to the ICAO NOTAM Code complemented by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures	No significant change / minor editorial amendment	
5.2.5.1.3	All NOTAM shall be issued in the English language.	5.2.2.1	When NOTAM are selected for international distribution, English text shall be included for those parts expressed in plain language.	New wording in revised form	
5.2.5.1.4	Until 4 November 2020, information concerning snow, slush, ice and standing water on aerodrome/heliport pavements shall, when reported by means of a SNOWTAM, contain the information in the order shown in the SNOWTAM Format in Appendix 4.	5.2.3	Information concerning snow, slush, ice and standing water on aerodrome/heliport pavements shall, when reported by means of a SNOWTAM, contain the information in the order shown in the SNOWTAM Format in Appendix 2.	No significant change / minor editorial amendment	
5.2.5.1.4	<i>As of 5 November 2020, information concerning snow, slush, ice, frost, standing water, or water associated with snow, slush, ice or frost on the movement area shall be disseminated by means of a SNOWTAM, and shall contain the information in the order shown in the SNOWTAM Format in Appendix 4.</i>			No significant change / minor editorial amendment (will be applicable on 5 November 2020)	

5.2.5.1.5	Information concerning an operationally significant change in volcanic activity, volcanic eruption and/or volcanic ash cloud shall, when reported by means of an ASHTAM, contain the information in the order shown in the ASHTAM Format in Appendix 5.	5.2.4	Information concerning an operationally significant change in volcanic activity, a volcanic eruption and/or volcanic ash cloud shall, when reported by means of an ASHTAM, contain the information in the order shown in the ASHTAM Format in Appendix 3.	No significant change / minor editorial amendment
5.2.5.1.6	When errors occur in a NOTAM, a NOTAM with a new number to replace the erroneous NOTAM shall be issued or the erroneous NOTAM shall be cancelled and a new NOTAM issued.	5.2.6	When errors occur in a NOTAM, a NOTAM with a new number to replace the erroneous NOTAM shall be issued or the erroneous NOTAM shall be cancelled and a new NOTAM issued.	No significant change / minor editorial amendment
5.2.5.1.7	When a NOTAM is issued which cancels or replaces a previous NOTAM, the series and number of the previous NOTAM shall be indicated.	5.2.7	When a NOTAM is issued which cancels or replaces a previous NOTAM, the series and number of the previous NOTAM shall be indicated. The series, location indicator and subject of both NOTAM shall be the same. Only one NOTAM shall be cancelled or replaced by a NOTAM.	No significant change / minor editorial amendment
5.2.5.1.7.1	The series, location indicator and subject of both NOTAM shall be the same.			No significant change / minor editorial amendment
5.2.5.1.8	Only one NOTAM shall be cancelled or replaced by a NOTAM.			No significant change / minor editorial amendment
5.2.5.1.9	Each NOTAM shall deal with only one subject and one condition of the subject.	5.2.8	Each NOTAM shall deal with only one subject and one condition of the subject.	No significant change / minor editorial amendment
5.2.5.1.10	Each NOTAM shall be as brief as possible and so compiled that its meaning is clear without the need to refer to another document.	5.2.9	Each NOTAM shall be as brief as possible and so compiled that its meaning is clear without the need to refer to another document.	No significant change / minor editorial amendment
5.2.5.1.11	Each NOTAM shall be transmitted as a single telecommunication message.	5.2.10	Each NOTAM shall be transmitted as a single telecommunication message.	No significant change / minor editorial amendment
5.2.5.1.12	A NOTAM containing permanent information or temporary information of long duration shall carry appropriate AIP or AIP Supplement references.	5.2.11	A NOTAM containing permanent or temporary information of long duration shall carry appropriate AIP or AIP Supplement references.	No significant change / minor editorial amendment
5.2.5.1.13	Location indicators included in the text of a NOTAM shall be those contained in Location Indicators (Doc 7910).	5.2.12	Location indicators included in the text of a NOTAM shall be those contained in Location Indicators (Doc 7910).	No significant change / minor editorial amendment
5.2.5.1.13.1	In no case shall a curtailed form of such indicators be used.	5.2.12.1	In no case shall a curtailed form of such indicators be used.	No significant change / minor editorial amendment
5.2.5.1.14	Where no ICAO location indicator is assigned to the location, its place name shall be entered in plain language, spelt in conformity with local usage, transliterated, when necessary, into the ISO basic Latin alphabet.	5.2.12.2	Where no ICAO location indicator is assigned to the location, its place name spelt in accordance with 1.3.2 shall be entered in plain language.	No significant change / minor editorial amendment
5.2.5.2.1	The international NOTAM office shall allocate to each NOTAM a series identified by a letter and a four-digit number followed by a stroke and a two-digit number for the year. The four-digit number shall be consecutive and based on the calendar year.	5.2.5	The NOTAM originator shall allocate to each NOTAM a series identified by a letter and a four-digit number followed by a stroke and a two-digit number for the year. The four-digit number shall be consecutive and based on the calendar year.	Minor editorial amendment NOTAM Originator replaced by NOF
5.2.5.2.2	Letters S and T shall not be used to identify a NOTAM series.	5.2.5	<i>Letters A to Z, with the exception of S and T, may be used to identify a NOTAM</i>	Recommendation changed to Standard
5.2.5.2.3	All NOTAM shall be divided in series based on subject, traffic or location or a combination thereof, depending on end-user needs. NOTAM for aerodromes allowing international air traffic shall be issued in international NOTAM series.	---	---	<b>NEW Standard</b>
5.2.5.2.4	If NOTAM are issued in both English and a national language, the NOTAM series shall be organized such that the national language series is equivalent to the English language series in terms of content.	---	---	<b>NEW Standard</b>
5.2.5.2.5	The content and geographical coverage of each NOTAM series shall be stated in detail in the AIP, section GEN 3.	---	---	<b>NEW Standard</b>
5.2.5.2.6	Series allocation shall be monitored and, if required, appropriate measures shall be taken to assure that no series reach the maximum possible number of issued NOTAM before the end of the calendar year.	---	---	<b>NEW Standard</b>
5.2.5.3.1	A checklist of valid NOTAM shall be issued as a NOTAM checklist at intervals of not more than one month.	5.2.13	A checklist of valid NOTAM shall be issued as a NOTAM over the aeronautical fixed service (AFS) at intervals of not more than one month using the NOTAM Format specified in Appendix 6. One NOTAM shall be issued for each series.	No significant change / minor editorial amendment
5.2.5.3.2	One NOTAM checklist shall be issued for each series.			No significant change / minor editorial amendment
5.2.5.3.3	A NOTAM checklist shall refer to the latest AIP Amendments, AIP Supplements, data sets and at least the internationally distributed AIC, and, when it is selected, include the checklist of AIP Supplements.	5.2.13.1	A checklist of NOTAM shall refer to the latest AIP Amendments, AIP Supplements and at least the internationally distributed AIC.	New wording with revised form Datasets included in NOTAM Checklist
5.2.5.3.4	A NOTAM checklist shall have the same distribution as the actual message series to which it refers and shall be clearly identified as a checklist.	5.2.13.2	A checklist of NOTAM shall have the same distribution as the actual message series to which they refer and shall be clearly identified as a checklist.	
5.3.1.2	A description of available digital data sets shall be provided in the form of data product specifications on which basis air navigation users will be able to evaluate the products and determine whether they fulfil the requirements for their intended use (application).	---	---	<b>NEW Standard</b>
5.3.1.3	The content and structure of digital data sets shall be defined in terms of an application schema and a feature catalogue.	---	---	<b>NEW Standard</b>

5.3.2	Each data set shall include the following minimum set of metadata: a) the names of the organization or entities providing the data set; b) the date and time when the data set was provided; c) period of validity of the data set; and d) any limitations with regard to the use of the data set.	---	---	NEW Standard
5.3.3.1.1	The AIP data set shall include data about the following subjects, with the properties indicated in brackets being included as a minimum (if applicable): a) air traffic services (ATS) airspace (type, name, lateral limits, vertical limits, class of airspace); b) special activity airspace (type, name, lateral limits, vertical limits, restriction, activation); c) ATS route and other route (designator, flight rules); d) route segment (navigation specification from point to point, track, length, upper limit, lower limit, minimum en-route altitude (MEA), minimum obstacle clearance altitude (MOCA), direction of cruising level, required navigation performance); e) waypoint – en-route (identification, location, formation); f) aerodrome/heliport (ICAO location indicator, name, designator IATA, served city, certified ICAO, certification date, certification expiration date, control type, field elevation, reference temperature, magnetic variation, reference point); g) runway (designator, nominal length, nominal width, surface type, strength); h) runway direction (designator, true bearing, threshold, take off run available (TORA), take-off distance available (TODA), accelerate-stop distance available (ASDA), landing distance available (LDA)); i) final approach and take-off (FATO) (designation, length, width, threshold point); j) touchdown and left-off (TLOF) (designator, centre point, length, width, surface type); k) radio navigation aid (type, identification, name, aerodrome/heliport served, hours of operation, magnetic variation,	---	---	NEW Standard
5.3.3.1.2	When a property is not defined for a particular occurrence of the subjects listed in 5.3.3.1.1, the AIP data subset shall include an explicit “not applicable” indication.	---	---	NEW Standard
5.3.3.2.1.1	A terrain grid shall be angular or linear and shall be of regular or irregular shape.	10.2.1	<del>A terrain data set shall contain digital sets of data representing terrain surface in the form of continuous elevation values at all intersections (points) of a defined grid, referenced to common datum. A terrain grid shall be angular or linear and shall be of regular or irregular shape.</del>	No significant change / minor editorial amendment (First part remains in Annex 15)
5.3.3.2.1.2	Sets of terrain data shall include spatial (position and elevation), thematic and temporal aspects for the surface of the Earth containing naturally occurring features such as mountains, hills, ridges, valleys, bodies of water, and permanent ice and snow, and exclude obstacles. Depending on the acquisition method used, this shall represent the continuous surface that exists at the bare Earth, the top of the canopy or something in-between, also known as “first reflective surface”.	10.2.2	Sets of electronic terrain data shall include spatial (position and elevation), thematic and temporal aspects for the surface of the Earth containing naturally occurring features such as mountains, hills, ridges, valleys, bodies of water, permanent ice and snow, and excluding obstacles. In practical terms, depending on the acquisition method used, this shall represent the continuous surface that exists at the bare Earth, the top of the canopy or something in-between, also	No significant change / minor editorial amendment
5.3.3.2.1.3	In terrain data sets, only one feature type, i.e. terrain, shall be provided. Feature attributes describing terrain shall be those listed in Appendix 6, Table A6-1. The terrain feature attributes listed in Appendix 6, Table A6-1 represent the minimum set of terrain attributes, and those annotated as mandatory shall be recorded in the terrain data set.	10.3.3	In terrain data sets, only one feature type, i.e. terrain, shall be provided. Feature attributes describing terrain shall be those listed in Table A8-3. The terrain feature attributes listed in Table A8-3 represent the minimum set of terrain attributes, and those annotated as mandatory shall be recorded in the terrain data set.	No significant change / minor editorial amendment
5.3.3.2.1.4	Terrain data for each area shall conform to the applicable numerical requirements in Appendix 1.	10.2.4	Electronic terrain data for each area shall conform to the applicable numerical requirements in Appendix 8, Table A8-1.	No significant change / minor editorial amendment
5.3.3.2.2.1	Obstacle data elements are features that shall be represented in the data sets by points, lines or polygons.	10.3.1	<del>Obstacle data shall comprise the digital representation of the vertical and horizontal extent of the obstacle. Obstacles shall not be included in terrain data sets. Obstacle data elements are features that shall be represented in the data sets by points, lines or polygons.</del>	No significant change / minor editorial amendment (First part remains in Annex 15)
5.3.3.2.2.2	In an obstacle data set, all defined obstacle feature types shall be provided and each of them shall be described according to the list of mandatory attributes provided in Appendix 6, Table A6-2.	10.3.2	In an obstacle data set, all defined obstacle feature types shall be provided and each of them shall be described according to the list of mandatory attributes provided in Appendix 8, Table A8-4.	No significant change / minor editorial amendment
5.3.3.2.2.3	Obstacle data for each area shall conform to the applicable numerical requirements contained in Appendix 1.	10.3.3	Electronic obstacle data for each area shall conform to the applicable numerical requirements in Appendix 8, Table A8-2.	No significant change / minor editorial amendment
5.3.3.2.2.4	The obstacle data product specification, supported by geographical coordinates for each aerodrome included within the data set, shall describe the following areas: a) Areas 2a, 2b, 2c, 2d; b) the take-off flight path area; and c) the obstacle limitation surfaces.	10.4.10	The obstacle data product specification, supported by geographical coordinates for each aerodrome included within the dataset, shall describe the following areas: — Areas 2a, 2b, 2c, 2d; — the take-off flight path area; and — the obstacle limitation surfaces.	No significant change / minor editorial amendment

5.3.3.4.1	The instrument flight procedure data set shall include data about the following data subjects, with the properties indicated in brackets being included as a minimum (if applicable): a) procedure (all properties); b) procedure segment (all properties); c) final approach segment (all properties); d) procedure fix (all properties); e) procedure holding (all properties); and f) helicopter procedure (all properties).	---	---	NEW Standard
5.4.1.3	A checklist of the available data sets, including their effective and publication dates, shall be made available to allow the users to ensure that current data is being used.	---	---	NEW Standard
5.4.1.4	The checklist of the data sets shall be made available through the same distribution mechanism as is used for the data sets.	---	---	NEW Standard
5.4.2.1	The AIS shall arrange, as necessary, to satisfy operational requirements for the issuance and receipt of NOTAM distributed by telecommunication.	2.3.3	An AIS shall arrange, as necessary, to satisfy operational requirements for the issuance and receipt of NOTAM distributed by telecommunication.	No significant change / minor editorial amendment
5.4.2.2	The international exchange of ASHTAM (see 5.2.5.1.6), and NOTAM where States continue to use NOTAM for distribution of information on volcanic activity, shall include volcanic ash advisory centres and the centres designated by regional air navigation agreement for the operation of AFS Secure Aviation Data Information Service (SADIS) and the World Area Forecast System (WAFS) Internet file service (WIFS), and shall take account of the requirements of long-range operations.	5.3.4	The international exchange of ASHTAM (see 5.2.4), and NOTAM where States continue to use NOTAM for distribution of information on volcanic activity, shall include volcanic ash advisory centres and the centres designated by regional air navigation agreement for the operation of AFS satellite distribution systems (satellite distribution system for information relating to air navigation (SADIS) and international satellite communications system (ISCS)), and shall take account of the requirements of long-range operations.	ISCS replaced by WAFS and WIFS
5.4.2.3	The exchange of NOTAM between international NOTAM offices and between the international NOTAM offices and multinational NOTAM processing units shall, as far as practicable, cover the needs of operations personnel including flight crew members.	5.3.4	International exchange of NOTAM shall take place only as mutually agreed between the international NOTAM offices concerned.	Revised Standard
		5.3.4.1	These exchanges of NOTAM between international NOTAM offices shall, as far as practicable, be limited to the requirements of the receiving States concerned by means of separate series providing for at least international and domestic flights.	
5.4.2.4	A predetermined distribution system for NOTAM transmitted on the AFS in accordance with Annex 15, 6.3.2.3 shall be used whenever possible, subject to the requirements of 5.4.2.3.	5.3.4.2	A predetermined distribution system for NOTAM transmitted on the AFS in accordance with Appendix 5 shall be used whenever possible, subject to the requirements of 5.3.4.	No significant change / minor editorial amendment
5.4.2.5	The originating State shall, upon request, grant distribution of NOTAM series other than those distributed internationally.	---	---	NEW Standard
5.5.3	Automated pre-flight information systems shall be used to make aeronautical data and aeronautical information available to operations personnel including flight crew members for self-briefing, flight planning and flight information service purposes. The aeronautical data and aeronautical information made available shall comply with the provisions of Annex 15.	8.2.1	Automated pre-flight information systems shall be used to make aeronautical data and aeronautical information available to operations personnel including flight crew members for self-briefing, flight planning and flight information service purposes. The aeronautical data and aeronautical information made available shall comply with the provisions of 8.1.2 and 8.1.3.	No significant change / minor editorial amendment
5.5.4	Self-briefing facilities of an automated pre-flight information system shall provide access to operations personnel, including flight crew members and other aeronautical personnel concerned, for consultation as necessary with the AIS by telephone or other suitable telecommunications means. The human/machine interface of such facilities shall ensure easy access in a guided manner to all	8.2.2	Self-briefing facilities of an automated pre-flight information system shall provide access to operations personnel, including flight crew members and other aeronautical personnel concerned, for consultation as necessary with the AIS by telephone or other suitable telecommunications means. The human/machine interface of such facilities shall ensure easy access in a guided manner to all	No significant change / minor editorial amendment
5.5.5	Automated pre-flight information systems for the supply of aeronautical data and aeronautical information for self-briefing, flight planning and flight information service shall: a) provide for continuous and timely updating of the system database and monitoring of the validity and quality of the aeronautical data stored; b) permit access to the system by operations personnel including flight crew members, aeronautical personnel concerned and other aeronautical users through suitable telecommunications means; c) ensure provision, in paper copy form, of the aeronautical data and aeronautical information accessed, as required; d) use access and interrogation procedures based on abbreviated plain language and ICAO location indicators, as appropriate, or based on a menu-driven user interface or other appropriate mechanism as agreed between the civil aviation authority and operator concerned; and e) provide for rapid response to a user request for	8.2.3	Automated pre-flight information systems for the supply of aeronautical data and aeronautical information for self-briefing, flight planning and flight information service shall: a) provide for continuous and timely updating of the system database and monitoring of the validity and quality of the aeronautical data stored; b) permit access to the system by operations personnel including flight crew members, aeronautical personnel concerned and other aeronautical users through suitable telecommunications means; c) ensure provision, in paper copy form, of the aeronautical data and aeronautical information accessed, as required; d) use access and interrogation procedures based on abbreviated plain language and ICAO location indicators, as appropriate, or based on a menu-driven user interface or other appropriate mechanism as agreed between the civil aviation authority and operator concerned; and e) provide for rapid response to a user	No significant change / minor editorial amendment
5.5.7	Where automated pre-flight information systems are used to provide the harmonized, common point of access by operations personnel, including flight crew members and other aeronautical personnel concerned, to aeronautical data, aeronautical information and meteorological information, the civil aviation authority or the agency to which the authority to provide service has been delegated in accordance with 2.1.1 c) of Annex 15 shall remain responsible for the quality and timeliness of the aeronautical data and aeronautical information	8.2.5	Where automated pre-flight information systems are used to provide the harmonized, common point of access by operations personnel, including flight crew members and other aeronautical personnel concerned, to aeronautical data, aeronautical information and meteorological information, the civil aviation authority or the agency to which the authority to provide service has been delegated in accordance with 2.1.1 c) shall remain responsible for the quality and timeliness of the aeronautical data and aeronautical information provided by	No significant change / minor editorial amendment

## CHAPTER 6: AERONAUTICAL INFORMATION UPDATES

PANS AIM		Annex 15 (15th Edition)		Assessment
Para No.	Text of Standard	Para. No.	Text of Standard	
6.1.1	The same update cycle shall be applied to the Aeronautical Information Publication (AIP) and the digital data sets in order to ensure the consistency of the data items that appear in multiple aeronautical information products.	---	---	<b>NEW Standard</b>
6.1.2.1	The AIP Amendment regular interval shall be specified in the AIP, Part 1 — General (GEN).	4.2.9.1	The regular interval referred to in 4.2.9 shall be specified in the AIP, Part 1 — General (GEN).	No significant change / minor editorial amendment
6.1.2.2	When an AIP Amendment will not be published at the established interval or publication date, a NIL notification shall be originated and distributed by the NOTAM checklist.	4.3.7	When an AIP Amendment will not be published at the established interval or publication date, a NIL notification shall be originated and distributed by the monthly plain-language list of valid NOTAM required by 5.2.13.3.	List of valid NOTAM as a means of NIL notification has been replaced by the NOTAM Checklist
6.1.2.3	Recourse to hand amendments or annotations shall be kept to a minimum.	4.2.9	Recourse to hand amendments or annotations shall be kept to the minimum.	No significant change / minor editorial amendment
6.1.3	When an error occurs in an AIP Supplement or when the period of validity of an AIP Supplement is changed, a new AIP Supplement shall be published as a replacement.	4.4.4	When an error occurs in an AIP Supplement or when the period of validity of an AIP Supplement is changed, a new AIP Supplement shall be published as a replacement.	No significant change / minor editorial amendment
6.1.4.2	NOTAM notifying unavailability of aids to air navigation, facilities or communication services shall give an estimate of the period of unavailability or the time at which restoration of service is expected.	5.1.1.5	NOTAM notifying unavailability of aids to air navigation, facilities or communication services shall give an estimate of the period of unavailability or the time at which restoration of service is expected.	No significant change / minor editorial amendment
6.1.4.3	At least seven days' advance notice shall be given of the activation of established danger, restricted or prohibited areas and of activities requiring temporary airspace restrictions other than for emergency operations.	5.1.1.4	At least seven days' advance notice shall be given of the activation of established danger, restricted or prohibited areas and of activities requiring temporary airspace restrictions other than for emergency operations.	No significant change / minor editorial amendment
6.1.4.4	Within three months from the issuing of a permanent NOTAM, the information contained in the NOTAM shall be included in the aeronautical information products affected.	---	---	<b>NEW Standard</b>
6.1.4.5	Within three months from the issuing of a temporary NOTAM of long duration, the information contained in the NOTAM shall be included in the AIP Supplement.	---	---	<b>NEW Standard</b>
6.1.4.6	When a NOTAM with estimated end of validity unexpectedly exceeds the three-month period, a replacement NOTAM shall be issued, unless the condition is expected to last for a further period of more than three months; in this case, an AIP Supplement shall be issued.	---	---	<b>NEW Standard</b>
6.1.4.7	When an AIP Amendment or an AIP Supplement is published in accordance with AIRAC procedures, a so-called "Trigger NOTAM" shall be originated giving a brief description of the contents, the effective date and time, and the reference number of the amendment or supplement.	5.1.1.6	When an AIP Amendment or an AIP Supplement is published in accordance with AIRAC procedures, a NOTAM shall be originated giving a brief description of the contents, the effective date and time, and the reference number of the amendment or supplement. This NOTAM shall come into force on the same effective date and time as the amendment or supplement and shall remain valid in the pre-flight information bulletin for a period of fourteen days.	No significant change / minor editorial amendment
6.1.4.7.1	The Trigger NOTAM shall come into force on the same effective date and time as the amendment or supplement and shall remain valid in the pre-flight information bulletin for a period of fourteen days.	---	---	No significant change / minor editorial amendment
6.1.4.7.2	In the case of an AIP Supplement, the Trigger NOTAM shall remain valid for a period of fourteen days.	---	---	<b>NEW Standard</b>
6.1.4.7.3	In the case of an AIP Supplement that is valid for less than fourteen days, the Trigger NOTAM shall remain valid for the complete validity period of the AIP Supplement.	---	---	<b>NEW Standard</b>
6.1.4.7.4	In the case of an AIP Supplement that is valid for fourteen days or more, the Trigger NOTAM shall remain valid for at least fourteen days.	---	---	<b>NEW Standard</b>
6.1.5.1	The update interval for the digital data sets shall be specified in the data product specification.	---	---	<b>NEW Standard</b>
6.1.5.2	Data sets that have been made available in advance (according to the AIRAC cycle) shall be updated with the non-AIRAC changes that occur between the publication and the effective date.	---	---	<b>NEW Standard</b>

APPENDIX 3A

FOLLOW-UP ACTION PLAN ON MIDANPIRG/16 CONCLUSIONS AND DECISIONS

CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
<p><b>CONCLUSION 16/3: MID REGION AIR NAVIGATION STRATEGY</b></p> <p>That, the revised MID Region Air Navigation Strategy (MID Doc 002, Edition February 2017) at Appendix 5.1A is endorsed.</p>		MID AN Strategy (MID Doc 002)	MIDANPIRG/16	Feb 2017	<b>Completed</b>
<p><b>CONCLUSION 16/4: APPROVAL OF THE AMENDMENT TO THE MID eANP VOLUME III</b></p> <p>That, the amendment to the MID eANP Volume III at Appendix 5.1B is approved.</p>		Amendment  Notification of Amendment	MIDANPIRG/16  ICAO	Feb 2017  May 2017	<b>Completed</b>  Amendment was approved by MIDANPIRG/16 Notification of amendment issued on 18 June 2017
<p><b>CONCLUSION 16/7: MID REGION AIR NAVIGATION REPORT-2016</b></p> <p>That, the MID Region Air Navigation Report-2016 is endorsed.</p>		MID AN Report	MIDANPIRG/16	Feb 2017	<b>Completed</b>  The Report Posted and published
<p><b>CONCLUSION 16/8: MID REGION AIR NAVIGATION REPORT-2017</b></p> <p>That, MID States be urged to:</p> <p>a) develop/update their National ASBU Implementation Plan, ensuring the alignment with and support to the MID Region Air Navigation Strategy (MID Doc 002); and</p> <p>b) provide the ICAO MID Office, with relevant data necessary for the development of the MID Region Air Navigation Report-2017, by 1 November 2017.</p>		State Letter  National ASBU Implementation Plan  Data for AN Report 2017	ICAO  States	Sep 2017  Nov 2017  Nov 2017	<b>Completed</b>  SL Ref.: AN 1/7-17/188 dated 2 July 2017 (Bahrain, Egypt, Jordan, Qatar, Sudan & UAE) The Report was endorsed by MSG/6



CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
<p><b>CONCLUSION 16/10: GUIDANCE FOR AIM PLANNING AND IMPLEMENTATION IN THE MID REGION</b></p> <p>That,</p> <p>a) the Guidance for AIM Planning and Implementation in the MID Region is endorsed as MID Doc 008; and</p> <p>b) States be encouraged to use the MID Doc 008 in their AIM planning and implementation.</p>		<p>MID Doc 008</p> <p>State Letter</p> <p>Updated National AIM Roadmaps</p>	<p>MIDANPIRG/16</p> <p>ICAO</p> <p>States</p>	<p>Feb 2017</p> <p>May 2017</p> <p>Nov 2017</p>	<p><b>Actioned/Ongoing</b></p> <p>SL Ref: AN 8/4-17/133 dated 30 April 2017</p>
<p><b>CONCLUSION 16/11: AIRAC ADHERENCE MONITORING</b></p> <p>That,</p> <p>a) States be urged to:</p> <p>i. implement a system for AIRAC adherence monitoring; and</p> <p>ii. report on annual basis (by 31 March) to the ICAO MID Office the case(s) of late publication of aeronautical information of operational significance and non-adherence to the AIRAC provisions, using the AIRAC Adherence Monitoring Questionnaire at Appendix 5.2.2D.</p> <p>b) IATA report to the concerned State(s) and the ICAO MID Office any case of late publication of aeronautical information of operational significance and non-adherence to the AIRAC provisions.</p>		<p>AIRAC adherence monitoring system</p> <p>State Letter</p> <p>Filled Questionnaire</p>	<p>State Letter</p> <p>ICAO</p> <p>States</p> <p>IATA</p>	<p>Nov 2017</p> <p>Mar. 2017/ continuous</p> <p>Apr.2017/ continuous</p> <p>Nov 2017/ continuous</p>	<p><b>Closed</b></p> <p>SL Ref.: AN 8/4 – 17/087 dated 23 Mar 2017</p> <p>13 States Replied (Bahrain, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Sudan and UAE)</p> <p>The results of the surveys were reviewed by AIM SG/3 and AIM SG/4.</p>

CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
<p><b>CONCLUSION 16/12: INTERREGIONAL SEMINAR ON “SERVICE IMPROVEMENT THROUGH INTEGRATION OF DIGITAL AIM, MET AND ATM INFORMATION”</b></p> <p>That, States, Organizations and Industry be invited to actively participate in the Interregional Seminar on “Service Improvement through Integration of Digital AIM, MET and ATM Information Services” (Brussels, Belgium, 2-5 October 2017).</p>		<p>State Letter</p> <p>Actively participate in the Seminar</p>	<p>ICAO</p> <p>States, Organizations and Industry</p>	<p>Jun 2017</p> <p>Oct 2017</p>	<p><b>Completed</b></p> <p>SL Ref.: AN 8/28.1-17/175 dated 14 June 2017</p> <p>6 MID States participated</p>
<p><b>DECISION 16/32: REVISED ANSIG TERMS OF REFERENCE</b></p> <p>That,</p> <p>a) the ANSIG Terms of Reference (TORs) be updated as at <b>Appendix 7A</b>; and</p> <p>b) the MIDANPIRG Procedural Handbook (MID Doc 001) be amended accordingly.</p>		<p>Updated TORs</p> <p>MID Doc 001 updated</p>	<p>MIDANPIRG/16</p> <p>ICAO</p>	<p>Feb 2017</p> <p>May 2017</p>	<p><b>Completed</b></p> <p>Completed</p> <p>Completed</p>

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APPENDIX 3B

FOLLOW-UP ACTION PLAN ON MSG/6 CONCLUSIONS AND DECISIONS

CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
<p><b>MSG DECISION 6/1: FOLLOW-UP ON THE AN-CONF/13 RECOMMENDATIONS</b></p> <p>That,</p> <p>a) the Secretariat present a Working Paper to the MIDANPIRG/17 meeting to propose follow-up actions on relevant AN-Conf/13 Recommendations, for assignment to States and the different actors/stakeholders; and</p> <p>b) the different MIDANPIRG subsidiary bodies should identify clearly the AN-Conf/13 Recommendations related to their terms of reference and agree on the necessary follow-up actions.</p>		Working Paper	Secretariat	Apr 2019	<b>Ongoing</b>
<p><b>MSG CONCLUSION 6/2: AMENDMENT TO THE MID eANP VOLUME III</b></p> <p>That, the amendment to the MID eANP Volume III at Appendix 5.2A is approved.</p>		Amendment	MSG/6	Dec 2018	<b>Completed</b>
<p><b>MSG CONCLUSION 6/3: SECOND EDITION OF THE MID REGION AIR NAVIGATION REPORT (2017)</b></p> <p>That, the Second Edition of the MID Region Air Navigation Report (2017) at Appendix 5.2B is endorsed.</p>		Notification of Amendment	ICAO	Dec 2018	Amendment was approved by MSG/6 Notification of amendment issued on 19/12/2018
<p><b>MSG CONCLUSION 6/4: MID REGION AIR NAVIGATION REPORT (2018)</b></p> <p>That, MID States be urged to provide the ICAO MID Office, with relevant data necessary for the development of the Third Edition of the MID Region Air Navigation Report (2018), by <b>15 February 2019</b>.</p>		MID AN Report	MSG/6	Dec 2018	<b>Completed</b> The Report Posted and published
<p><b>MSG CONCLUSION 6/4: MID REGION AIR NAVIGATION REPORT (2018)</b></p> <p>That, MID States be urged to provide the ICAO MID Office, with relevant data necessary for the development of the Third Edition of the MID Region Air Navigation Report (2018), by <b>15 February 2019</b>.</p>		State Letter	ICAO	Dec 2018	<b>Actioned/Ongoing</b>
		Data for AN Report 2017	States	Feb 2019	SL Ref.: AN 1/7-18/408 dated 19/12/2018

CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
<p><b>MSG CONCLUSION 6/5: MID REGION AIR NAVIGATION STRATEGY</b></p> <p>That, the revised MID Region Air Navigation Strategy (MID Doc 002, Edition December 2018) at <b>Appendix 5.2E</b> is endorsed.</p>		MID AN Strategy (MID Doc 002)	MSG/6	Dec 2018	<b>Completed</b>
<p><b>MSG CONCLUSION 6/8: IMPLEMENTATION OF THE 16TH EDITION OF ANNEX 15 AND THE PANS AIM</b></p> <p>That, States be urged to:</p> <p>a) take necessary actions on the implementation of the 16<sup>th</sup> Edition of Annex 15 and the PANS AIM, including:</p> <ul style="list-style-type: none"> <li>- updating AIS/AIM National Regulations;</li> <li>- identification and notification of differences (EFOD and AIP GEN 1.7), if any;</li> <li>- coordination with their AISPs to develop necessary operational procedures/practices in order to implement the provisions of Annex 15 and the PANS AIM;</li> </ul> <p>b) provide feedback to the ICAO MID Office on the implementation of the 16<sup>th</sup> Edition of Annex 15 and the PANS AIM (Implementation Plan, difficulties/challenges, need for assistance, etc).</p>		State Letter  Implement the Conclusion & Provide feedback	ICAO  States	Dec 2018  2019/ continuous	<b>Actioned/Ongoing</b>  SL Ref.: AN 8/2 – 18/409 dated 19/12/2018
<p><b>MSG DECISION 6/10: 5LNCs/ICARD REGIONAL REQUIREMENTS</b></p> <p>That, the Secretariat process a Proposal for Amendment to the MID eANP Volume II-Specific Regional Requirements to mandate the use of ICARD as the only means for managing 5LNCs; and the alphanumeric codes for terminal airspace, in accordance with PANS-OPS (Doc 8168) provisions.</p>		Proposal for Amendment	ICAO	Jan 2019	<b>Ongoing</b>

CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/REMARKS
<p><b>MSG CONCLUSION 6/11: ICARD ISSUES</b></p> <p>That,</p> <p>a) States be urged to take necessary actions on the resolution of the issues related to ICARD/5LNCs, including:</p> <ul style="list-style-type: none"> <li>a. registration of all 5LNCs published in AIP into ICARD;</li> <li>b. 5LNCs duplicates;</li> <li>c. Non-ICAO codes;</li> <li>d. sound-like proximity;</li> <li>e. release of unused registered 5LNCs; and</li> <li>f. use of Alphanumeric codes for terminal airspace, in accordance with PANS-OPS (Doc 8168) provisions.</li> </ul> <p>b) Users (IATA, IFALPA, Jeppesen, etc.) are invited to report issues related to ICARD/5LNCs in the MID Region to the ICAO MID Office; and</p> <p>c) an air navigation deficiency be filed against those</p>		<p>State Letter</p> <p>Implement the Conclusion</p> <p>Users</p> <p>File deficiencies</p>	<p>ICAO</p> <p>States</p> <p>Report ICARD issues to ICAO</p> <p>ICAO</p>	<p>Jan 2019</p> <p>2019</p> <p>2019</p> <p>2019</p>	<p><b>Ongoing</b></p>
<p><b>MSG CONCLUSION 6/37: MIDANPIRG WORKING ARRANGEMENTS</b></p> <p>That, States be invited to provide the ICAO MID Office, not later than <b>15 March 2019</b>, with their views and proposals related to the MIDANPIRG working arrangements and efficiency, and the MIDANPIRG Procedural Handbook (organizational structure, empowerment of the subsidiary bodies, approval by passing, etc.).</p>		<p>State Letter</p> <p>Views and proposals</p>	<p>ICAO</p> <p>States</p>	<p>Dec 2018</p> <p>Mar 2019</p>	<p><b>Ongoing</b></p>
<p><b>MSG CONCLUSION 6/38: STATE LETTERS ONLINE MONITORING TOOL</b></p> <p>That, in order to support States in the process of follow-up and effective provision of replies to the ICAO MID Office State Letters, ICAO is invited to explore/implement an online monitoring tool.</p>		<p>Upgrade MID States Letters' online tool</p>	<p>ICAO</p>	<p>2019</p>	<p><b>Ongoing</b></p>

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APPENDIX 4A

Recommendations	Follow-up Actions
<p><b>Recommendation 1.1/1 — Vision and overview of the Sixth Edition of the <i>Global Air Navigation Plan</i> (Doc 9750, GANP)</b></p> <p>That States:</p> <ul style="list-style-type: none"> <li>a) agree that the future <i>Global Air Navigation Plan</i> (Doc 9750, GANP), based on the outcome of the Thirteenth Air Navigation Conference (AN-Conf/13), be available as a web-based platform, including a concise, executive summary (printable) which outlined its key policies, priorities and strategies to ensure that the GANP was easily accessible to all States and key decision makers;</li> <li>b) agree with the proposed multilayer structure for the Sixth Edition of the GANP;</li> <li>c) welcome the proposed vision, performance ambitions and conceptual roadmap for the Sixth Edition of the GANP, with the inclusion of the civil-military dimension;</li> <li>d) recognize the importance of a separate but aligned GANP and <i>Global Aviation Safety Plan</i> (Doc 10004, GASP);</li> </ul> <p>That ICAO:</p> <ul style="list-style-type: none"> <li>e) consider the establishment of a GANP Study Group comprised of Member States from all regions and industry to undertake work on future editions of the GANP;</li> <li>f) make available the GANP global strategic level (printable) in the six ICAO languages;</li> <li>g) develop online training and organize regional seminars in conjunction with the planning and implementation regional groups (PIRGs), where possible, for the familiarization of the Sixth Edition of the GANP and support the deployment and implementation of regional and national air navigation plans;</li> <li>h) develop a national air navigation plan template available for voluntary use by States, as part of the Sixth Edition of the GANP, aligned with the global and regional air navigation plans and support States in developing their national air navigation plans while taking into consideration neighbouring requirements;</li> <li>i) strengthen the relationship between the GASP, the GANP and the newly developed Global Aviation Security Plan (GASeP); and</li> <li>j) continue to work with States, international organizations, air traffic management (ATM) modernization programmes and other stakeholders on the development of the Sixth Edition of the GANP, as required for subsequent endorsement at the 40th Session of the ICAO Assembly.</li> </ul>	<p>For Information of AIM SG</p>

<p><b>Recommendation 1.2/1 — Global technical level of the Sixth Edition of the <i>Global Air Navigation Plan</i> (Doc 9750, GANP)</b></p> <p>That States:</p> <ul style="list-style-type: none"><li>a) agree with the proposed change management process to maintain an up-to-date aviation system block upgrade (ASBU) framework with the formal involvement of the ASBU Panel Project Team (ASBU PPT) to improve transparency, consistency and stability;</li><li>b) welcome the updated ASBU framework and consider the initial version of the basic building block (BBB) framework;</li></ul> <p>That ICAO:</p> <ul style="list-style-type: none"><li>c) map the global technical level of the <i>Global Air Navigation Plan</i> (Doc 9750, GANP) with the strategic level;</li><li>d) make available the ASBU and proposed BBB frameworks in an interactive and simplified format, as part of the web-based GANP Portal, emphasizing the relationship between both frameworks, and between the frameworks and the regional air navigation plan (ANP) elements;</li><li>e) enable the capability, within the GANP Portal, to upload relevant information related to the development and deployment of the ASBU and proposed BBB frameworks in order to allow States, regions and industry to share information;</li><li>f) incorporate a flexible framework for emerging air navigation concepts such as unmanned aircraft systems (UAS), UAS traffic management (UTM), Big Data and the aviation Internet, into future editions of the GANP;</li><li>g) include a Global Aeronautical Distress and Safety System (GADSS) thread in the Sixth Edition of the GANP in line with ICAO provisions;</li><li>h) consider designing a thread for a Global Aviation Internet Network in the GANP, in coordination with aviation and non-aviation-related industries;</li><li>i) emphasize and enhance a human-centric approach to system design and processes for change management;</li><li>j) support the conduct of trials for new air navigation concepts as outlined in the ASBU framework within the GANP; and</li><li>k) continue to work with States, international organizations, air traffic management (ATM) modernization programmes and other stakeholders on the development of the global technical level of the Sixth Edition of the GANP for subsequent endorsement at the 40th Session of the ICAO Assembly.</li></ul>	<p>For Information of AIM SG</p>
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<p><b>Recommendation 1.3/1 – Air navigation roadmaps</b></p> <p>That States:</p> <p>a) provide ICAO with timely information on their modernization plans and the equipage plans of airspace users;</p> <p>That States and ICAO:</p> <p>b) work collaboratively to adopt a performance-based approach for developing performance requirements and acceptable means of compliance to support the implementation of the <i>Global Air Navigation Plan</i> (Doc 9750, GANP) while considering the need for global interoperability;</p> <p>That ICAO:</p> <p>c) provide air navigation roadmaps, linked to the aviation system block upgrade (ASBU) elements, within the GANP which support:</p> <ol style="list-style-type: none"> <li>1) new airspace users and emerging technologies;</li> <li>2) greater flexibility where possible in the choice of technologies, based on performance needs; and</li> <li>3) earlier adoption of new technologies and operational capabilities as they emerge, linked to the performance needs;</li> </ol> <p>d) continue to explore practical means to make use of international standards, in particular through the Standards Roundtable work with recognized standards-making organizations, to expedite the efficient development of ICAO provisions; and</p> <p>e) expedite the work on the Global Data Link Implementation Strategy and develop harmonized solutions to support air-ground data link communications.</p>	<p>For Information of AIM SG</p>
<p><b>Recommendation 1.4/1 — Cost-benefit analysis (CBA) in support of assets deployment</b></p> <p>That States:</p> <p>a) perform a cost-benefit analysis (CBA) as part of all required impact assessments, in coordination with air navigation services providers (ANSPs) and among other relevant stakeholders, when defining optimum solutions for improvements in the performance of the air navigation system through the use of the aviation system block upgrades (ASBU) framework;</p> <p>b) use a simplified mechanism, if they do not have a process already in place, such as the checklist available on the Global Air Navigation Plan (GANP) Portal, for CBA of air navigation infrastructure investment projects to support improvements as described in the ASBU framework; and</p> <p>That ICAO:</p> <p>c) support the implementation of applicable CBA methodologies through dedicated workshops.</p>	<p>For Information of AIM SG</p>



<p><b>Recommendation 3.1/1 — System-wide information management (SWIM)</b></p> <p>That States:</p> <ul style="list-style-type: none"><li>a) support developments and implementation of system-wide information management;</li><li>b) via the mechanism of the planning and implementation regional groups (PIRGs), showcase regional system-wide information management (SWIM) demonstrations, highlighting the operational and economic benefits of SWIM, and evaluate possible transition and mixed-mode scenarios;</li><li>c) share information, lessons learned and observations regarding SWIM development and implementation;</li><li>d) develop national implementation plans in alignment with regional strategies and priorities and in accordance with the strategy outlined in the <i>Global Air Navigation Plan</i> (Doc 9750, GANP) which would include SWIM;</li></ul> <p>That ICAO:</p> <ul style="list-style-type: none"><li>e) while making use of already developed Standards and best practices, continue the development of provisions related to information services, while including relevant guidance, governance aspects, information content and related information exchange models, and supporting technical infrastructure and governance for SWIM in sufficient detail to ensure safe, efficient and secure globally seamless operations;</li><li>f) consider the concept of a global SWIM framework as part of the GANP and the aviation system block upgrades (ASBUs);</li><li>g) consider security-by-design principles when developing interconnected trusted global SWIM frameworks;</li><li>h) develop provisions related to the harmonization of information exchange models and globally interconnected registries;</li><li>i) through regional events, and in collaboration with States and industry, promote SWIM and its benefits, as described in the <i>Manual on System-wide Information Management</i> (Doc 10039), as well as implementation best practices to the aviation community; and</li><li>j) provide assistance to States to support the implementation of Annex 15 — <i>Aeronautical Information Services</i> and <i>Procedures for Air Navigation Services — Aeronautical Information Management</i> (Doc 10066, PANS-AIM).</li></ul>	<p>MID States: to take necessary action(s) on items a) to d)</p> <p>ICAO: to organize an Interregional AIM/SWIM Seminar/Workshop in 2020-2021</p> <p>AIM SG: to address SWIM planning in the MID Region starting from AIM SG/6</p>
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<p><b>Recommendation 3.5/1 — ICAO location indicator system and database of significant points</b></p> <p>That States and industry stakeholders:</p> <ul style="list-style-type: none"> <li>a) urgently complete the population of the ICAO International Codes and Routes Designators (ICARD) database with all five-letter name codes (5LNC) used worldwide to ensure the accuracy of the database;</li> <li>b) ensure that whenever a 5LNC that is used for military purposes is published in an ICAO Aeronautical Information Publication (AIP) and consequently coded into aircraft flight management system (FMS), such 5LNCs are coordinated through the ICARD process;</li> </ul> <p>That ICAO:</p> <ul style="list-style-type: none"> <li>c) continue to address the limitations of both location indicator and 5LNC availabilities in the short-term and determine a long-term solution;</li> <li>d) consider, when developing such solutions, the need for global harmonization and interoperability;</li> <li>e) continue with its efforts to improve awareness and training on the use of ICARD in the regions that do not actively use ICARD;</li> <li>f) continue to work towards removing duplicated 5LNCs and sound-like conflicts; and</li> <li>g) implement improvements to the ICARD database functionality, including the use of maps depicting flight information regions (FIRs), more information regarding 5LNC history and sound-like proximity checks for codes held in reserve but not yet allocated to a region.</li> </ul>	<p>MID States: to take necessary action(s) on items a) and b)</p> <p>AIM SG: to continue addressing ICARD issues</p>
<p><b>Recommendation 3.5/3 — Certification of ANSPs</b></p> <p>That ICAO investigate the potential benefits, balanced against the associated costs of the development of provisions and guidance material for certification of air navigation services providers (ANSPs).</p>	<p>For Information of AIM SG</p>
<p><b>Recommendation 3.5/4 — True North</b></p> <p>That ICAO conduct a detailed study into the technical, operational, and economic feasibility of changing to a “True North” reference system.</p>	<p>For Information of AIM SG</p>

<p><b>Recommendation 4.2/1 – Implementation of essential air navigation services</b></p> <p>That States:</p> <ul style="list-style-type: none"><li>a) consider the use of more advanced technologies and procedures, in coordination with international organizations and industry stakeholders, to provide the essential air navigation services for international civil aviation, taking into account the principles of global interoperability and performance specification compliance;</li><li>b) include planning for the implementation of the essential services outlined in the proposed basic building blocks (BBB) framework within their national air navigation plans;</li></ul> <p>That ICAO:</p> <ul style="list-style-type: none"><li>c) in coordination with the planning and implementation regional groups (PIRGs) and by making use of existing reporting mechanisms, verify the provision of the essential air navigation services for international civil aviation, as outlined in the proposed BBB framework, through the methodology for the identification of air navigation deficiencies against the regional air navigation plans;</li><li>d) develop the necessary tools to support the PIRGs in the verification of the provision of the proposed basic building block (BBB) services at the regional and national levels;</li><li>e) coordinate the interoperability of systems and harmonization of procedures at a regional level, through the PIRGs, in relation to the use of advanced technologies and concepts of operations, taking into account global requirements;</li><li>f) in line with the No Country Left Behind (NCLB) initiative, provide the necessary technical assistance to States for the provision of essential air navigation services as identified by the PIRGs and as reflected in State national air navigation plans; and</li><li>g) urge the aviation manufacturing industry to create a testing environment for States to justify procurement decisions which guaranty interoperability and system functionality within local specific environments, as a follow-up to the provision of essential air navigation services.</li></ul>	<p>MID States: to ensure that the essential AIS services are provided, as per the BBBs (AIP, Charts, NOTAM, Aerodrome AIS Unites, ARO; Pre-flight &amp; post-flight briefing services)</p> <p>AIM SG: to continue monitoring availability of essential AIS Services provided by States, through the air navigation deficiencies</p>
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International Civil Aviation Organization

**WORKING PAPER**

AIM SG/5-REPORT

Appendix 5A

AN-Conf/13-WP/263

29/9/18

(Information Paper)

English only

**THIRTEENTH AIR NAVIGATION CONFERENCE**

**Montréal, Canada, 9 to 19 October 2018**

**COMMITTEE A**

**Agenda Item 3: Enhancing the global air navigation system**

**3.1: System-wide information management (SWIM)**

**UAE'S SWIM GATEWAY**

(Presented by the United Arab Emirates)

**EXECUTIVE SUMMARY**

This paper provides information on the progress made by the United Arab Emirates (UAE) with the implementation of the system wide information management (SWIM) Gateway.

**1. INTRODUCTION**

1.1 The UAE air traffic management (ATM) community is collaboratively building a nationwide system architecture following the principles of SWIM.

1.2 As one of the first SWIM-enabled services, the UAE SWIM Gateway recently entered into operational service and will provide a major step towards a nationwide SWIM architecture. The UAE SWIM Gateway harmonises and consolidates real-time data of flight-related information between the existing legacy systems and those of new SWIM-enabled capabilities.

**2. DISCUSSION**

2.1 The objective of the UAE's SWIM Gateway is to enable access to high quality, consistent and consolidated flight-related information to the UAE aviation community. The system collects flight-related information from various systems, validates the information and consolidates this into flight objects.

2.2 Information is gathered through a data aggregation process and starts with the airline schedules, as well as conventional flight plan messages received from the aeronautical fixed telecommunication networks (AFTN). This flight plan information then generates flight objects which are assigned unique identifiers.

2.3 Flight plan information is automatically validated against static airspace data imported into the system using aeronautical information management (AIM) by means of the Aeronautical Information Exchange Model (AIXM).

2.4 Once generated, flight objects are continuously updated with air traffic services (ATS) messages and 4D trajectory information received from multiple data sources, including legacy flight plan data processing (FDPS), arrival manager (AMAN) and the departure flow manager (DFLOW). DFLOW provides functionality to optimise the airspace utilisation by the allocation of assigned calculated take-off times (CTOT) during peak demand.

2.5 An additional source of information is the European Organisation for the Safety of Air Navigation (EUROCONTROL) Network Manager (NM), which supports the UAE SWIM Gateway by providing updates on all flights within the EUROCONTROL NM area which are of interest to the UAE. The UAE SWIM Gateway in return contributes to the EUROCONTROL NM by providing flight update information for flights bound for the EUROCONTROL NM area.

2.6 Information from the various data sources is harmonised and consolidated by the UAE SWIM Gateway and represented as aggregated flight objects encoded in flight information exchange model (FIXM) format, mapping all available information to their FIXM elements. Where necessary, available information is added as custom extensions to the FIXM.

2.7 An application programming interface allows the introduction of additional customised extensions to the FIXM flight objects without the need for software modification. This enables the General Civil Aviation Authority (GCAA) to add and evaluate new business logics and applications which are immediately SWIM-enabled as they are introduced.

2.8 As a pioneering platform for a SWIM infrastructure, the UAE SWIM Gateway enables the sharing of flight information. Such information was difficult to access due to the isolation of the individual systems utilising proprietary data formats and data models. Additionally, access to data in legacy systems raised concerns towards the availability of safety-critical functionality from external systems.

2.9 By introducing the SWIM Gateway, all access to information by external and new internal systems is now channelled through a dedicated platform that maintains accurate copies of flight objects. Access to safety-critical functionality is restricted through the SWIM Gateway as read only. In addition, the UAE SWIM Gateway is safeguarded by a respective IT security environment with strict access control mechanisms.

2.10 The service is available within a secured internet protocol (IP) environment as well as through public internet. The use of the public internet was a specific request by the stakeholders to facilitate simple access without the need for a dedicated communication infrastructure.

2.11 Access is realised in accordance with the EUROCONTROL specifications for the yellow profile and supports request/response services as well as the publish/subscribe pattern. Using the open standards for access and the data presentation encourages stakeholder to support SWIM-enabled applications and harmonisation for the UAE's ATM community. Capability to monitor information is also made available to stakeholders who have not yet invested in SWIM applications by a web-server interface to authorised users.

2.12 Dubai Airports plans to become the first stakeholder to introduce a SWIM-enabled application. All information will become part of the Dubai Airport's operational management systems.

Similarly, Abu Dhabi airport is currently in preparation to integrate their Airport Operation Database (AODB, scheduled Q1/2019) and the Departure Manager (DMAN, scheduled Q4/2019) within the SWIM Gateway. Both airports will not only be data consumers but will become data providers. Emirates Airlines will also pioneer with using an initial SWIM-enabled client application to monitor the movements of their fleet.

2.13 A further step towards SWIM-enabled infrastructure will be the modernisation of the ATM automation system at Sheikh Zayed Air Navigation Centre in 2020.

### 3. CONCLUSION

3.1 The meeting is invited to note the information contained within this paper and the UAE's approach towards the implementation of a SWIM infrastructure by using a flight-related information service through the UAE SWIM Gateway.

— END —

MID REGION AIM IMPLEMENTATION ROADMAP

Steps/Elements	2018 and before		2019		2020		2021		2022		2023		2024		2025		Priority	Remarks
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2		
AIXM database (AIXM V 5.X)																	1	(P07, P08)
AIP datasets																	1	(P06) (sub-datasets/grouping TBD)
eAIP																	1	(P11)
Terrain A-1 Dataset																	1	(P13)
Obstacle A-1 Dataset																	1	(P14)
Terrain A-4 Dataset(s)																	1	(P13)
Obstacle A-4 Dataset(s)																	1	(P14)
Terrain A-2a Dataset(s)																	1	(P13) Terrain area 2a dataset (and its supplementary areas according to Annex 15, 5.3.3.3.3)
Obstacle A-2a Dataset(s)																	1	(P14) Obstacle area 2a dataset (and its supplementary areas according to Annex 15, 5.3.3.4.5)
NOTAM Improvements																	1	(P21) Step 1 (2019): identification of operational conditions under which a NOTAM shall or shall not be originated Step 2 (TBD): replacement of current NOTAMs by a digital version through the use of AIXM
Agreement with data originators																	1	(P18)
Provision of quality-assured aeronautical data and information																	1	(P01, P02)
Training																	1	(P16) Continuous
Aeronautical Data Exchange																	2	(P09)
Instrument Flight Procedure (IFP) Dataset(s)																	2	(P06)
Dissemination of Aeronautical Information in SWIM environment																	3	(P09)
Aerodrome Mapping Dataset(s)																	3	(P15) Based on the States' decision to be reflected in the States' national Regulations and AIM National Plans, in accordance with operational needs

Steps/Elements	2018 and before		2019		2020		2021		2022		2023		2024		2025		Priority	Remarks
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2		
<b>Interoperability with MET</b>																	3	(P19) Based on the States' decision to be reflected in the States' national Regulations and AIM National Plans, in accordance with operational needs
<b>Aeronautical Information Briefing</b>																	3	(P12) (Digital briefing) Based on the States' decision to be reflected in the States' national Regulations and AIM National Plans, in accordance with operational needs
<b>Electronic Aeronautical Charts</b>																	3	(P20) Based on the States' decision to be reflected in the States' national Regulations and AIM National Plans, in accordance with operational needs

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DRAFT



***B0 – DATM: Service Improvement through Digital Aeronautical Information Management***

**Description and purpose**

The initial introduction of digital processing and management of information, through aeronautical information service (AIS)/aeronautical information management (AIM) implementation, use of aeronautical information exchange model (AIXM), migration to electronic aeronautical information publication (AIP) and better quality and availability of data

**Main performance impact:**

KPA- 01 – Access and Equity	KPA-02 – Capacity	KPA-04 – Efficiency	KPA-05 – Environment	KPA-10 – Safety
N	N	Y	Y	Y

***Applicability consideration:***

Applicable at State level, with increased benefits as more States participate

***B0 – DATM: Service Improvement through Digital Aeronautical Information Management***

<b>Elements</b>	<b>Applicability</b>	<b>Performance Indicators/Supporting Metrics</b>	<b>Targets</b>	<b>Timelines</b>
AIXM	All States	Indicator: % of States that have implemented an AIXM-based AIS database  Supporting Metric: Number of States that have implemented an AIXM-based AIS database	80%	Dec. 2018
eAIP	All States	Indicator: % of States that have implemented an IAID driven AIP Production (eAIP)  Supporting Metric: Number of States that have implemented an IAID driven AIP Production (eAIP)	80%	Dec. 2020
QMS	All States	Indicator: % of States that have implemented QMS for AIS/AIM Supporting Metric: Number of States that have implemented QMS for AIS/AIM	90%	Dec. 2018
WGS-84	All States	Indicator: % of States that have implemented WGS-84 for horizontal plan (ENR, Terminal, AD) Supporting Metric: Number of States that have implemented WGS-84 for horizontal plan (ENR, Terminal, AD) Indicator: % of States that have implemented WGS-84 Geoid Undulation Supporting Metric: Number of States that have implemented WGS-84 Geoid Undulation	Horizontal: 100%  Vertical: 90%	Dec. 2018  Dec. 2018

Agreement with data originators	All States	<p>Indicator: % of States that have signed Service Level Agreements (SLA) with at least 50% of their AIS data originators</p> <p>Supporting Metric: Number of States that have signed Service Level Agreements (SLA) with at least 50% of their AIS data originators</p>	80%	Dec. 2020
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## B0-DATM Enablers/Tables

In order to assist States in the planning for the transition from AIS to AIM in an expeditious manner, the following Tables, which provide more details than the standard ANRF, should be used:

- 1- **Table B0-DATM 3-1** sets out the requirements for the Provision of AIS/AIM products and services based on the Integrated Aeronautical Information Database (IAID). It reflects the transition from the current product centric AIS to data centric AIM. For the future digital environment it is important that the authoritative databases are clearly designated and such designation must be published for the users. This is achieved with the concept of the Integrated Aeronautical Information Database (IAID), a single access point for one or more authoritative databases (AIP, Terrain, Obstacles, AMDB, etc) for which the State is responsible. This Table will be used for the monitoring of the Key Performance Indicators (KPIs) related to elements Nr. 1 and 2 of the Module B0-DATM.
- 2- **Table B0-DATM 3-2** sets out the requirements for aeronautical data quality. It will be used for the monitoring of the Key Performance Indicators (KPIs) related to the element Nr. 3 of the Module B0-DATM.
- 3- **Table B0-DATM 3-3** sets out the requirements for the implementation of the World Geodetic System – 1984 (WGS-84). The requirement to use a common geodetic system remains essential to facilitate the exchange of data between different systems. The expression of all coordinates in the AIP and charts using WGS-84 is an important first step for the transition to AIM. This Table will be used for the monitoring of the Key Performance Indicators (KPIs) related to the element Nr. 4 of the Module B0-DATM.
- 4- **Table B0-DATM 3-4-1** sets out the requirements for the provision of Terrain and Obstacle data sets for Area 1 and Area 4. It will be used for the monitoring of the Key Performance Indicators (KPIs) related to the element Nr. 5 of the Module B0-DATM.
- 5- **Table B0-DATM 3-4-2** sets out the requirements for the provision of Terrain and Obstacle data sets for Area 2. It will be used for the monitoring of the Key Performance Indicators (KPIs) related to the element Nr. 5 of the Module B0-DATM.
- 6- **Table B0-DATM 3-4-3** sets out the requirements for the provision of Terrain and Obstacle data sets for Area 3 and implementation of Airport Mapping Databases (AMDB). It will be used for the monitoring of the Key Performance Indicators (KPIs) related to the element Nr. 5 of the Module B0-DATM.

## Table B0-DATM 3-1

### Provision of AIS/AIM products and services based on the Integrated Aeronautical Information Database (IAID)

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#### EXPLANATION OF THE TABLE

Column:

- 1 Name of the State or territory for which the provision of AIS/AIM products and services based on the IAID is required.
- 2 Requirement for the implementation and designation of the authoritative IAID, shown by:
  - FI – Fully Implemented
  - NI – Not Implemented

*Note 1 — The IAID of a State is a single access point for one or more databases (AIP, Terrain, Obstacles, AMDDB, etc). The minimum set of databases which should be integrated is defined in Annex 15.*

*Note 2 — The information related to the designation of the authoritative IAID should be published in the AIP (GEN 3.1)*
- 3 Requirement for an IAID driven AIP production, shown by:
  - FI – Fully Implemented (eAIP: Text, Tables and Charts)
  - PI – Partially Implemented
  - NI – Not Implemented

*Note 3 — AIP production includes, production of AIP, AIP Amendments and AIP Supplements*

*Note 4 — Charts' GIS-based database should be interoperable with AIP database*
- 4 Requirement for an IAID driven NOTAM production, shown by:
  - FC – Fully Compliant
  - NC – Not Compliant
- 5 Requirement for an IAID driven SNOWTAM processing, shown by:
  - FI – Fully Implemented
  - NI – Not Implemented
- 6 Requirement for an IAID driven PIB production, shown by:
  - FC – Fully Compliant
  - PC – Partially Compliant
  - NC – Not Compliant
- 7 Requirement for Procedure design systems to be interoperable with the IAID, shown by:
  - FI – Fully Implemented
  - PI – Partially Implemented
  - NI – Not Implemented

*Note 5 — full implementation includes the use of the IAID for the design of the procedures and for the storage of the encoded procedures in the IAID*
- 8 Requirement for ATS systems to be interoperable with the IAID, shown by:
  - FI – Fully Implemented
  - PI – Partially Implemented

NI – Not Implemented

- 9 Action Plan — short description of the State’s Action Plan with regard to the provision of AIM products and services based on the IAID, especially for items with a “PC”, “PI”, “NC” or “NI” status, including planned date(s) of full compliance, as appropriate.
- 10 Remarks — additional information, including detail of “PC”, “NC”, “PI” and “NI”, as appropriate.

**TABLE B0-DATM-3-1**

**Provision of AIS/AIM products and services based on the Integrated Aeronautical Information Database (IAID)**

<b>State</b>	<b>IAID</b>	<b>AIP</b>	<b>NOTAM</b>	<b>SNOWTAM</b>	<b>PIB</b>	<b>Procedure Design</b>	<b>ATS</b>	<b>Action Plan</b>	<b>Remarks</b>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
BAHARAIN	FI	FI	FC	FI	FC	PI	FI		AIXM: 5.1
EGYPT	FI	PI	FC	FI	FC	NI	PI		AIXM: 5.1 3 and 7 by2018
IRAN, ISLAMIC REPUBLIC OF	NI	NI	NC	NI	NC	NI	NI		AIXM: NI Separate semi-automated NOTAM/SNOWTAM system is operative
IRAQ	NI	NI	NC	NI	NC	NI	NI		AIXM: NI
JORDAN	NI	NI	FC	NI	FC	NI	NI		AIXM: database through EAD
KUWAIT	NI	NI	FC	NI	PC	NI	NI		AIXM: NI (5.1 in progress)
LEBANON	NI	NI	NC	NI	NC	NI	NI		AIXM: 4.5
LIBYA	NI	NI	NC	NI	NC	NI	NI		AIXM: NI
OMAN	NI	NI	NC	NI	NC	NI	NI		AIXM: NI (5.1 in progress)
QATAR	NI	PI	FC	NI	FC	PI	NI	Q4/2017 – Data Integration (AIP, Terrain, Obstacle, Procedure Design and AMDB)	AIXM: 5.1
SAUDI ARABIA	FI	FI	NC	NI	FC	FI	FI	AIXM 5.1 & NOTAM: 2019	AIXM: 4.5
SUDAN	NI	NI	FC	NI	FC	PI	PI	(5.1 in progress): AIS Automation Project ongoing	AIXM: NI
SYRIAN ARAB REPUBLIC	NI	NI	NC	NI	NC	NI	NI	No Action Plan	AIXM: NI
UNITED ARAB EMIRATES	NI	FI	NC	NI	PC	NI	PI	AMDB: 2016-2021; PIB: AVBL at OMAA, OMDB, OMDW, OMFJ, other ADs 2020; Procedure Design 2020; ATS: ACC AVBL, ADs 2020 Digital NOTAM: 2016-2021	AIXM: 5.1
YEMEN	NI	NI	NC	NI	NC	NI	NI	No Action Plan	AIXM: NI

## Table B0-DATM-3-2 Aeronautical Data Quality

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### EXPLANATION OF THE TABLE

Column:

- 1 Name of the State or territory.
- 2 Compliance with the requirement for implementation of QMS for Aeronautical Information Services including safety and security objectives, shown by:
  - FC – Fully compliant
  - NC – Not compliant
- 3 Compliance with the requirement for the establishment of formal arrangements with approved data originators concerning aeronautical data quality, shown by:
  - FC – Fully compliant
  - PC – Partially compliant
  - NC – Not compliant
- 4 Implementation of digital data exchange with originators, shown by:
  - FI – Implemented
  - PI – Partially Implemented
  - NI – Not implemented

*Note 1 — Information providing detail of “PI” and “NI” should be given in the Remarks column (percentage of implementation).*
- 5 Compliance with the requirement for metadata, shown by:
  - FC – Fully compliant
  - PC – Partially compliant
  - NC – Not compliant
- 6 Compliance with the requirements related to aeronautical data quality monitoring (accuracy, resolution, timeliness, completeness), shown by:
  - FC – Fully compliant
  - PC – Partially compliant
  - NC – Not compliant
- 7 Compliance with the requirements related to aeronautical data integrity monitoring, shown by:
  - FC – Fully compliant
  - PC – Partially compliant
  - NC – Not compliant
- 8 Compliance with the requirements related to the AIRAC adherence, shown by:
  - FC – Fully compliant
  - NC – Not compliant
- 9 Action Plan — short description of the State’s Action Plan with regard to aeronautical data quality requirements implementation, especially for items with a “PC”, “PI”, “NC” or “NI” status, including planned date(s) of full compliance, as appropriate.
- 10 Remarks — additional information, including detail of “PC”, “NC”, “PI” and “NI”, as appropriate.

**TABLE B0-DATM-3-2**  
**Aeronautical Data Quality**

	<b>QMS</b>	<b>Establishment of formal agreements</b>	<b>Digital data exchange with originators</b>	<b>Metadata</b>	<b>Data quality monitoring</b>	<b>Data integrity monitoring</b>	<b>AIRAC adherence</b>	<b>Action Plan</b>	<b>Remarks</b>
<b>State</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
BAHARAIN	FC	PC	PI	FC	FC	FC	FC		
EGYPT	FC	PC	PI	FC	PC	PC	FC	3, 4, 6 and 7 by 2018	
IRAN, ISLAMIC REPUBLIC OF	FC	PC	NI	NC	FC	FC	FC		
IRAQ	NC	NC	NI	NC	NC	NC	FC		
JORDAN	FC	PC	NI	FC	FC	FC	FC		
KUWAIT	FC	PC	NI	NC	NC	NC	FC		
LEBANON	NC	PC	NI	PC	PC	PC	FC		
LIBYA	NC	NC	NI	NC	NC	NC	NC	No Action Plan	
OMAN	NC	NC	NI	NC	PC	PC	FC		
QATAR	FC	PC	PI	FC	PC	PC	FC		
SAUDI ARABIA	FC	FC	NI	FC	FC	FC	FC	4: 2019	
SUDAN	FC	FC	NI	NC	FC	FC	FC		
SYRIAN ARAB REPUBLIC	NC	NC	NI	NC	NC	NC	NC	No Action Plan	
UNITED ARAB EMIRATES	FC	PC	PI	FC	FC	FC	FC	4: implemented for some of internal stakeholders. Completion by 2020	
YEMEN	NC	NC	NI	PC	NC	NC	NC	No Action Plan	



## Table B0-DATM-3-3

### World Geodetic System-1984 (WGS-84)

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#### EXPLANATION OF THE TABLE

Column:

- 1 Name of the State or territory for which implementation of WGS-84 is required.
- 2 Compliance with the requirements for implementation of WGS-84 for FIR and Enroute points, shown by:
  - FC – Fully compliant
  - PC – Partially compliant
  - NC – Not compliant
- 3 Compliance with the requirements for implementation of WGS-84 for Terminal Areas (arrival, departure and instrument approach procedures), shown by:
  - FC – Fully compliant
  - PC – Partially compliant
  - NC – Not compliant
- 4 Compliance with the requirements for implementation of WGS-84 for Aerodrome, shown by:
  - FC – Fully compliant
  - PC – Partially compliant
  - NC – Not compliant
- 5 Compliance with the requirements for implementation of Geoid Undulation, shown by:
  - FC – Fully compliant
  - PC – Partially compliant
  - NC – Not compliant
- 6 Action Plan — short description of the State’s Action Plan with regard to WGS-84 implementation, especially for items with a “PC”, “PI”, “NC” or “NI” status, including planned date(s) of full compliance, as appropriate.
- 7 Remarks — additional information, including detail of “PC” and “NC”, as appropriate.

**TABLE B0-DATM-3-3**  
**World Geodetic System-1984 (WGS-84)**

State	FIR/ENR	Terminal	AD	GUND	Action Plan	Remarks
1	2	3	4	5	6	7
BAHARAIN	FC	FC	FC	FC		
EGYPT	FC	FC	FC	FC		
IRAN, ISLAMIC REPUBLIC OF	FC	FC	FC	FC		
IRAQ	FC	FC	FC	NC		
JORDAN	FC	FC	FC	FC		
KUWAIT	FC	FC	FC	FC		Last survey FEB 2015
LEBANON	FC	FC	FC	FC		
LIBYA	PC	PC	NC	NC	No Action Plan	
OMAN	FC	FC	FC	FC		
QATAR	FC	FC	FC	FC		Annual Validation/Survey
SAUDI ARABIA	FC	FC	FC	FC		
SUDAN	FC	FC	FC	FC		
SYRIAN ARAB REPUBLIC	FC	FC	FC	NC	No Action Plan	
UNITED ARAB EMIRATES	FC	FC	FC	FC		
YEMEN	FC	FC	FC	FC		

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## **Table B0-DATM-3-4-1**

### **Provision of Terrain and Obstacle data sets for Areas 1 and 4**

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#### **EXPLANATION OF THE TABLE**

Column

- 1 Name of the State or territory for which Terrain and Obstacle data sets for Areas 1 and 4 are required.
- 2 Compliance with requirement for the provision of Terrain data sets for Area 1, shown by:
  - FC – Fully Compliant
  - PC – Partially Compliant
  - NC – Not Compliant
- 3 Compliance with requirement for the provision of Terrain data sets for Area 4, shown by:
  - FC – Fully Compliant
  - PC – Partially Compliant
  - NC – Not Compliant
  - N/A – Not Applicable
- 4 Compliance with requirement for the provision of Obstacle data sets for Area 1, shown by:
  - FC – Fully Compliant
  - PC – Partially Compliant
  - NC – Not Compliant
- 5 Compliance with requirement for the provision of Obstacle data sets for Area 4, shown by:
  - FC – Fully Compliant
  - PC – Partially Compliant
  - NC – Not Compliant
  - N/A – Not Applicable
- 6 Action plan — short description of the State’s Action Plan with regard to compliance with the requirements for provision of Terrain and Obstacle data sets for Areas 1 and 4, especially for items with a “PC” or “NC” status, including planned date(s) of full compliance, as appropriate.
- 7 Remarks— additional information, including detail of “PC” and “NC”, as appropriate.

**TABLE B0-DATM-3-4-1**

**Provision of Terrain and Obstacle data sets for Areas 1 and 4**

State	Terrain data sets		Obstacle data sets		Action Plan	Remarks
	Area 1	Area 4	Area 1	Area 4		
1	2	3	4	5	6	7
BAHARAIN	FC	FC	FC	FC		
EGYPT	FC	FC	NC	PC	Completion of area 4: Dec. 2019	
IRAN, ISLAMIC REPUBLIC OF	FC	FC	FC	FC		
IRAQ	NC	NC	NC	NC		
JORDAN	PC	FC	PC	FC		
KUWAIT	FC	FC	FC	FC		
LEBANON	NC	N/A	NC	N/A	2 & 4: Q2-2019	
LIBYA	NC	N/A	NC	N/A	No Action Plan	
OMAN	NC	N/A	NC	N/A		
QATAR	FC	FC	FC	FC		
SAUDI ARABIA	FC	FC	FC	FC		
SUDAN	NC	N/A	NC	N/A		
SYRIAN ARAB REPUBLIC	NC	N/A	NC	N/A	No Action Plan	
UNITED ARAB EMIRATES	FC	FC	FC	FC		
YEMEN	NC	N/A	NC	N/A	No Action Plan	

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## Table B0-DATM-3-4-2

### Provision of Terrain and Obstacle data sets for Area 2

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#### EXPLANATION OF THE TABLE

Column

- |   |  |
|---|--|
| 1 | Name of the State or territory for which Terrain and Obstacle data sets for Area 2 are required.   |
| 2 | Compliance with requirement for the provision of Terrain data sets for Area 2a, shown by:<br>FC – Fully Compliant<br>PC – Partially Compliant<br>NC – Not Compliant                                |
| 3 | Compliance with requirement for the provision of Terrain data sets for Area 2b, shown by:<br>FI – Fully Implemented<br>PI – Partially Implemented<br>NI – Not implemented<br>N/A – Not Applicable  |
| 4 | Compliance with requirement for the provision of Terrain data sets for Area 2c, shown by:<br>FI – Fully Implemented<br>PI – Partially Implemented<br>NI – Not Implemented<br>N/A – Not Applicable  |
| 5 | Compliance with requirement for the provision of Terrain data sets for Area 2d, shown by:<br>FI – Fully Implemented<br>PI – Partially Implemented<br>NI – Not Implemented<br>N/A – Not Applicable  |
| 6 | Compliance with requirement for the provision of Obstacle data sets for Area 2a, shown by:<br>FC – Fully Compliant<br>PC – Partially Compliant<br>NC – Not Compliant                               |
| 7 | Compliance with requirement for the provision of Obstacle data sets for Area 2b, shown by:<br>FI – Fully Implemented<br>PI – Partially Implemented<br>NI – Not implemented<br>N/A – Not Applicable |
| 8 | Compliance with requirement for the provision of Obstacle data sets for Area 2c, shown by:<br>FI – Fully Implemented   |

PI – Partially Implemented  
NI – Not Implemented  
N/A – Not Applicable

- 9 Compliance with requirement for the provision of Obstacle data sets for Area 2d, shown by:  
FI – Fully Implemented  
PI – Partially Implemented  
NI – Not Implemented  
N/A – Not Applicable
- 10 Action plan — short description of the State’s Action Plan with regard to compliance with the requirements for provision of Terrain and Obstacle data sets for Area 2, especially for items with a “PC”, “PI”, “NC” or “NI” status.
- 11 Remarks— additional information, including detail of “PC”, “PI” and “NC”, “NI”, as appropriate.

**TABLE B0-DATM-3-4-2**

**Provision of Terrain and Obstacle data sets for Area 2**

State	Terrain data sets				Obstacle data sets				Action Plan	Remarks
	Area 2a	Area 2b	Area 2c	Area 2d	Area 2a	Area 2b	Area 2c	Area 2d		
1	2	3	4	5	6	7	8	9	10	11
BAHARAIN	NC	NI	NI	NI	FC	FI	FI	FI	To be completed by 2020	
EGYPT	PC	PI	PI	PI	NC	NI	NI	NI	To be completed by 2020	
IRAN, ISLAMIC REPUBLIC OF	FC	FI	FI	FI	FC	FI	FI	FI		
IRAQ	NC	NI	NI	NI	NC	NI	NI	NI		
JORDAN	PC	PI	PI	NI	PC	PI	PI	NI		Area 2a, 2b and 2c implemented for OJAI RWY 26R/08L
KUWAIT	FC	FI	FI	FI	FC	FI	FI	FI		
LEBANON	NC	NI	NI	NI	NC	NI	NI	NI	To be completed by Q4-2019	
LIBYA	NC	NI	NI	NI	NC	NI	NI	NI	No Action Plan	
OMAN	NC	NI	NI	NI	NC	NI	NI	NI		
QATAR	FC	FI	FI	FI	FC	FI	FI	FI		
SAUDI ARABIA	PC	PI	PI	PI	PC	PI	PI	PI	To be completed by 2020	
SUDAN	NC	NI	NI	NI	NC	NI	NI	NI		
SYRIAN ARAB REPUBLIC	NC	NI	NI	NI	NC	NI	NI	NI	No Action Plan	
UNITED ARAB EMIRATES	NC	NI	NI	PI	FC	FI	FI	PI	To be completed by 2020	TOD Area 2 (all sub-areas) survey & data acquisition through international airport service providers
YEMEN	NC	NI	NI	NI	NC	NI	NI	NI	No Action Plan	

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**Table B0-DATM-3-4-3**  
**Provision of Terrain and Obstacle data sets for Area 3 and Airport Mapping**  
**Databases (AMDB)**

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**EXPLANATION OF THE TABLE**

Column

- 1 Name of the State or territory for which Terrain and Obstacle data sets for Area 3 and AMDB are required.
- 2 Compliance with requirement for the provision of Terrain data sets for Area 3, shown by:
  - FI – Fully Implemented
  - PI – Partially Implemented
  - NI – Not Implemented
  - N/A – Not Applicable
- 3 Compliance with requirement for the provision of Obstacle data sets for Area 3, shown by:
  - FI – Fully Implemented
  - PI – Partially Implemented
  - NI – Not Implemented
  - N/A – Not Applicable
- 4 Implementation of AMDB, shown by:
  - FI – Fully Implemented
  - PI – Partially Implemented
  - NI – Not Implemented
  - N/A – Not Applicable
- 5 Action plan — short description of the State’s Action Plan with regard to compliance with the requirements for provision of Terrain and Obstacle data sets for Area 3 and AMDB implementation, especially for items with a “PC”, “PI”, “NC” or “NI” status.
- 6 Remarks— additional information, including detail of “PI” and “NI”, as appropriate.



**TABLE B0-DATM-3-4-3**

**Provision of Terrain and Obstacle data sets for Area 3 and Airport Mapping Databases (AMDB)**

	Terrain data sets (Area 3)	Obstacle data sets (Area 3)	AMDB	Action Plan	Remarks
State					
1	2	3	4	5	6
BAHARAIN	NI	FI	NI	To be completed by 2021	
EGYPT	NI	NI	NI	To be completed by 2020	
IRAN, ISLAMIC REPUBLIC OF	FI	FI	NI	No Action Plan	
IRAQ	NI	NI	NI		
JORDAN	PI	PI	NI		Area 3 implemented for OJAI RWY 26R/08L
KUWAIT	FI	FI	NI		
LEBANON	NI	NI	NI	Area 3: Q4-2019 AMDB: no plan	
LIBYA	NI	NI	NI	No Action Plan	
OMAN	NI	NI	NI		
QATAR	FI	PI	PI	Q4/2017 AMDB implementation	
SAUDI ARABIA	NI	NI	NI	No Action Plan	
SUDAN	NI	NI	NI		
SYRIAN ARAB REPUBLIC	NI	NI	NI	No Action Plan	
UNITED ARAB EMIRATES	FI	FI	NI	AMDB: completed by 2021	AMDB technical infrastructure (metadata, model) implemented in IAID, pending compatibility analysis AIXM 5.1 with revised AMDB model (RTCA DO-272D) when released.
YEMEN	NI	NI	NI	No Action Plan	

***ATTACHMENT A***

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