'AMC and GM to Part-AIS — Issue 1, Amendment 1'

Annex VI to Decision 2017/001/R is amended as follows:

The text of the amendment is arranged to show deleted text, new or amended text as shown below:

(a)   deleted text is ~~struck through~~;

(b)   new or amended text is highlighted in <mark>blue</mark>;

(c)   an ellipsis '[…]' indicates that the rest of the text is unchanged.

Table of contents

AMC/GM TO PART-AIS

SPECIFIC REQUIREMENTS FOR PROVIDERS OF AERONAUTICAL INFORMATION SERVICES

Reserved

SUBPART A — ADDITIONAL ORGANISATION REQUIREMENTS FOR PROVIDERS OF AERONAUTICAL INFORMATION SERVICES (AIS.OR)

Section 1 — General requirements

GM1 AIS.OR.100   Aeronautical information management

AERONAUTICAL INFORMATION

(a)   The object of aeronautical information services is to ensure the flow of aeronautical data and aeronautical information necessary for global air traffic management (ATM) system safety, regularity, economy and efficiency in an environmentally sustainable manner.

(b)   The role and importance of aeronautical data and aeronautical information changed significantly with the implementation of area navigation (RNAV), performance-based navigation (PBN), airborne computer-based navigation systems, performance-based communication (PBC), performance-based surveillance (PBS), data link systems and satellite voice communications (SATVOICE). Corrupt, erroneous, late, or missing aeronautical data and aeronautical information can potentially affect the safety of air navigation.

(c)   Guidance material on the organisation and operation of aeronautical information services is contained in ICAO Doc 8126 'Aeronautical Information Services Manual'.

GM1 AIS.OR.105(1)   Responsibilities of aeronautical information services (AIS) providers

PERSONNEL INVOLVED IN FLIGHT OPERATIONS, INCLUDING FLIGHT CREWS, FLIGHT PLANNING, AND FLIGHT SIMULATORS

The data services (DAT) providers are considered as one of the entities or parties listed in AIS.OR.105(1). They also receive, assemble, translate, select, format, distribute and/or integrate aeronautical data and information that are released by an authoritative source for use in aeronautical databases on certified aircraft application/equipment.

GM1 AIS.OR.105(3)   Responsibilities of aeronautical information services providers

SERVICES RESPONSIBLE FOR PRE-FLIGHT INFORMATION

An AIS provider obtains aeronautical data and aeronautical information to provide pre-flight information service and to meet the need for in-flight information from:

(a)   the aeronautical information services of other States;

(b)   other sources that may be available.

GM1 AIS.OR.105   Responsibilities of aeronautical information services providers

AVAILABILITY OF AERONAUTICAL DATA AND AERONAUTICAL INFORMATION

An AIS provider is not obliged to provide data or information requested by other AIS providers when they are not available.

Section 2 — Data quality management

GM1 AIS.OR.200(a)   General

AERONAUTICAL DATA CATALOGUE

The aeronautical data catalogue presents the scope of data that can be collected and maintained by the AIS providers and provides a common terminology that can be used by data originators and service providers.

GM1 AIS.OR.200(b)   General

DATA QUALITY

The quality of data is a degree or level of confidence that the data provided meets the requirements of the user. Minimum requirements for the processing of aeronautical data may be found in the EUROCAE Document ED-76A 'Standards for Processing Aeronautical Data' which aims to assist aeronautical data chain actors and authorities in meeting their responsibilities. It is intended to be used by organisations seeking approval of the method(s) they use to process or manipulate data.

AMC1 AIS.OR.200(c)   General

AUTOMATED DATA PROCESSING

Where processes or parts of processes used in the origination, production, storage, handling, processing, transfer and distribution of aeronautical data and aeronautical information are subject to automation, they should be:

(a)   automated to a level commensurate with the context of the data process;

(b)   automated to optimise the allocation and interaction of human and machine to achieve a high degree of safety and quality benefits of the process;

(c)   automated to ensure traceability of the performed actions;

(d)   designed to avoid the introduction of data errors; and

(e)   designed to detect errors in received/input data.

AMC1 AIS.OR.205   Formal arrangements

MINIMUM CONTENT

Formal arrangements should include the following minimum content:

(a)   the aeronautical data to be provided;

(b)   the data quality requirements (DQRs) for each data item supplied according to the aeronautical data catalogue;

(c)   the method(s) for demonstrating that the data provided conforms with the specified requirements;

(d)   the action to be taken in the event of discovery of a data error or inconsistency in any data provided;

(e)   the following minimum criteria for notification of data changes:

   (1)   criteria for determining the timeliness of data provision based on the operational or safety significance of the change;

   (2)   any prior notice of expected changes; and

   (3)   the means to be adopted for notification;

(f)   the party responsible for documenting data changes;

(g)   data exchange details such as format or format change processes;

(h)   any limitations on the use of data;

(i)   requirements for the production of data origination quality reports;

(j)   metadata requirements; and

(k)   contingency requirements concerning the continuity of data provision.

AMC1 AIS.OR.210(a)   Exchange of aeronautical data and aeronautical information

EXCHANGE MODEL

An AIS provider should use the aeronautical information exchange model (AIXM) to enable the management and distribution of aeronautical information services data in digital format.

GM1 AIS.OR.210(a)   Exchange of aeronautical data and aeronautical information

EXCHANGE MODEL

(a)   AIXM 5.1 is considered as being the minimum baseline for the exchange of aeronautical data and aeronautical information.

(b)   More information on the AIXM may be found under http://www.aixm.aero.

GM2 AIS.OR.210(a) Exchange of aeronautical data and aeronautical information

DIGITAL TERRAIN DATA

(a) The existing formats for the exchange of electronic terrain datasets do not fully meet the requirements of the ISO 19100 series on geographic information, therefore the GeoTIFF format and Shape file with metadata is preferred.

(b) The list of most used terrain formats can be found in Appendix D to the EUROCONTROL 'Terrain and Obstacle Data (TOD) Manual' (edition 2.2, dated 28 November 2019)

GM1 AIS.OR.210(b) Exchange of aeronautical data and information

ELECTRONIC MEANS

The exchange of aeronautical data and aeronautical information may be done by a number of electronic exchanges avoiding the need of manual interaction with the data itself.

GM1 AIS.OR.215 Tools and software

SOFTWARE

(a) A means by which AIS.OR.215 can be met, is through the verification of software applied to a known executable version of the software in its target operating environment.

(b) The verification of software is a process for ensuring that the software meets the requirements for the specified application or intended use of the aeronautical data and aeronautical information.

(c) The verification of software evaluates the output of an aeronautical data and/or aeronautical information software development process to ensure correctness and consistency with respect to the inputs and applicable software standards, rules and conventions used in that process.

GM2 AIS.OR.215 Tools and software

TOOLS

Tools can be qualified meeting point 2.4.5 Aeronautical Data Tool Qualification of EUROCAE ED-76A/RTCA DO-200B 'Standards for Processing Aeronautical Data', dated June 2015.

GM1 AIS.OR.220 Validation and verification

GENERAL

(a) Validation

Validation is the activity where a data element is checked as having a value that is fully applicable to the identity ascribed to the data element, or a set of data elements is checked as being acceptable for their intended use.

The application of validation techniques considers the entire aeronautical data chain. This includes the validation performed by prior data chain participants and any requirements levied on the data supplier. Providing data integrity has been assured, there is no need to repeat earlier validations as a matter of course.

Examples of validation techniques include the following:

(1)   Validation by application validates by applying data under test conditions. In certain cases, this may not be practical. Validation by application is considered to be the most effective form of validation. For example, flight inspection of final approach segment data prior to publication can be used to ensure that the published data is acceptable.

(2)   Logical consistency validates by comparing two different data sets or elements and identifying inconsistencies between values based on operative rules (e.g. business rules).

(3)   Semantic consistency validates by comparing data to an expected value or range of values for the data characteristics.

(4)   Validation by sampling evaluates a representative sample of data and applies statistical analysis to determine the confidence in the data quality.

(b)   Verification

Verification is a process for checking the integrity of a data element whereby the data element is compared to another source, either from a different process or from a different point in the same process. While verification cannot ensure that the data is correct, it can be effective to ensure that the data has not been corrupted by the data process.

The application of verification techniques considers only the portion of the aeronautical data chain controlled by the organisation. Yet, verification techniques may be applied at multiple phases of the data processing chain.

Examples of verification techniques include the following:

(1)   Feedback testing is the comparison of a data set between its output and input state.

(2)   Independent redundancy testing involves processing the same data through two or more independent processes and comparing the data output of each process.

(3)   Update comparison involves comparison of updated data with its previous version. This comparison can identify all data elements that have changed. The list of changed elements can then be compared to a similar list generated by the supplier. A problem can be detected if an element is identified as changed on one list and not on the other.

AMC1 AIS.OR.220   Validation and verification
DATA PROTECTION

(a)   The processes implemented to carry out validation and verification should define the means used to:

(1)   verify received data and confirm that the data has been received without corruption;

(2)   preserve data quality and ensure that stored data is protected from corruption; and

(3)   confirm that originated data has not been corrupted prior to being stored.

(b)   Those processes should define the:

(1)   actions to be taken when data fails a verification or validation check; and

(2)   tools required for the verification and validation process.

GM1 AIS.OR.225   Metadata

PERSONAL DATA

When collecting metadata, the protection of individuals with regard to the processing of personal data and with regard to the free movement of such data applies, in accordance with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

GM1 AIS.OR.230   Data error detection and authentication

GENERAL

More explanation and guidance on data security, including data error detection and authentication, may be found in Section 2 of EUROCAE ED-76A.

DATA ERROR DETECTION

An example of a digital error detection technique is the use of cyclic redundancy checks (CRCs). Coding techniques can be effective regardless of the transmission media (e.g. computer disks, modem communication, or internet).

GM1 AIS.OR.230(a)   Data error detection and authentication

ERROR

The term 'error' is understood as being defective, degraded, lost, misplaced or corrupted data elements, or data elements not meeting stated quality requirements.

GM1 AIS.OR.235   Error reporting, error measurement and corrective actions

ERROR MANAGEMENT

(a)   An AIS provider should have a system for handling errors and anomalies identified both during data processing and after delivery of the data to the users.

(b)   All problems reported with the data should be analysed and any errors or anomalies documented and resolved or addressed.

(c)   All errors or anomalies detected in the data should be resolved or addressed prior to delivery.

(d)   Information concerning any errors in the data that have been delivered should be made available to all affected users.

AMC1 AIS.OR.250   Consistency requirement

DUPLICATED INFORMATION

The AIS provider should ensure that:

(a)   coordination and explicit agreement are established with the AIS providers responsible for the aeronautical information publications (AIPs) of the States concerned before introducing changes in published border or cross-border data and information; and

(b)   periodic reviews are performed to detect inconsistencies between the AIPs of the States concerned.

GM1 AIS.OR.250   Consistency requirement

DUPLICATED INFORMATION

(a)   Coordination and alignment processes between AIS providers should whenever possible be expanded beyond the AIP content and include all duplicated aeronautical data and information.

(b)   The AIS provider may identify and maintain a list of the data items and information which should be subject to coordination, for reference and use by its operational staff.

(c)   When establishing periodic reviews, the AIS provider may reflect those in formal arrangements established with other AIS providers.

Section 3 — Aeronautical information products

GM1 AIS.OR.300   Aeronautical information products

AERONAUTICAL DATA AND INFORMATION PROVIDED IN MULTIPLE FORMATS

'Aeronautical data and information provided in multiple formats' refers to aeronautical data and aeronautical information provided using different products, such as data sets, electronic or paper products.

Chapter 1 — Aeronautical information in a standardised presentation

AMC1 AIS.OR.325   Aeronautical charts

PRODUCTION

Aeronautical charts should be produced in accordance with the specifications contained in ICAO Annex 4, Amendment No 61.

GM1 AIS.OR.330(a)   NOTAM

SHORT DURATION / SHORT NOTICE

(a)   The term 'short duration' should, in general, be understood as being less than 3 months.

(b)   The term 'short notice' should be understood as insufficient time for the AIS provider to distribute an AIP supplement or amendment.

GM1 AIS.OR.330(b)   NOTAM

TIMELY KNOWLEDGE

It may be considered that the knowledge of the information is 'timely' if it reaches the personnel involved with flight operations in time to ensure the safety, regularity and efficiency of flight operations.

GM2 AIS.OR.330(b)   NOTAM

EXCEPTIONAL SITUATIONS

(a)   It is recognised that, in the cases of NOTAM or digital NOTAM that are crucial to ensure the safety of flight, it is not always possible to comply with all the relevant provisions of the Regulation. However, it is also not possible to determine a priori all cases where this consideration may apply; this is dependent on a case-by-case individual assessment made by competent AIS staff.

(b)   If it is determined that it is not possible to comply with all the relevant provisions of the Regulation, the NOTAM office ensures, at the minimum, that:

(1)   the party originating the aeronautical data is authorised and/or an eligible/reasonable source;

(2)   the content is plausible; and

(3)   the DQRs are validated post publication, as soon as practicable.

Chapter 2 — Digital data sets

GM1 AIS.OR.335(a)   General — Digital data sets

DATA SETS

Data items may appear in multiple data sets.

GM1 AIS.OR.345   AIP data set

GENERAL

The purpose of the AIP data set is to support the initial transition of the ATM domain towards the use of digital data sets instead of paper products. Therefore, its scope is defined considering the likelihood that the data contained in this set is actually being used in digital format by service providers, air traffic control and instrument flight rules/visual flight rules airspace users.

GM1 AIS.OR.350   Terrain and obstacle data – General requirements

GENERAL

(a)   Useful information for those organisations involved in the origination, processing and provision of digital terrain and obstacle data, from the point at which the need for origination is identified through to the point when the Member State makes it available in accordance with the requirements of ICAO Annex 15, can be found in the EUROCONTROL 'Terrain and Obstacle Data (TOD) Manual' (edition 2.2, dated 28 November 2019).

(b)   In addition, EUROCAE ED-98C 'User Requirements For Terrain And Obstacle Data' (October 2015) provides guidance for data gathering by data originators, for data processing by data integrators, for implementation by application integrators, and for end use by the aviation community (e.g. air carriers, air traffic services, procedure designers).

GM2 AIS.OR.350   Terrain and obstacle data – General requirements

NAVIGATION APPLICATIONS

(a)   Terrain and obstacle data are intended to be used in air navigation applications such as:

   (1)   ground proximity warning system with forward-looking terrain avoidance function and minimum safe altitude warning (MSAW) system;

   (2)   determination of contingency procedures for use in the event of an emergency during a missed approach or take-off;

   (3)   aircraft operating limitations analysis;

   (4)   instrument procedure design (including circling procedure);

   (5)   determination of en-route 'drift-down' procedure and en-route emergency landing location;

   (6)   advanced surface movement guidance and control system (A-SMGCS); and

   (7)   aeronautical chart production and on-board databases.

   Additional information on the use of terrain and obstacle data can be found in Appendix C to EUROCAE ED-98C.

(b)   The data may also be used in other applications such as flight simulator and synthetic vision systems, and may assist in determining the height restriction or removal of obstacles that pose a hazard to air navigation.

GM1 AIS.OR.355   Terrain data sets

ADDITIONAL TERRAIN DATA

Where additional terrain data is collected to meet other aeronautical requirements, the terrain data sets may be expanded to include this additional data.

GM1 AIS.OR.355(b)(3)   Terrain data sets

TAKE-OFF FLIGHT PATH AREA

'Take-off flight path area' is defined in 3.8.2 of ICAO Annex 4.

GM1 AIS.OR.355(b)(4)   Terrain data sets

AERODROME OBSTACLE LIMITATION SURFACES

'Aerodrome obstacle limitation surfaces' are defined in Chapter H – Obstacle Limitation Surfaces of Regulation (EU) No 139/2014.

GM1 AIS.OR.360   Obstacle data sets

ADDITIONAL OBSTACLE DATA

Where additional obstacle data is collected to meet other aeronautical requirements, the obstacle data sets may be expanded to include this additional data.

Section 4 — Distribution and pre-flight information services

GM1 AIS.OR.400(a)   Distribution services

DELIVERY METHOD

(a)   The distribution of available aeronautical information products to the intended users differs in the delivery method applied which may either be:

    (1)   physical distribution — the means by which aeronautical data and aeronautical information distribution is achieved through the delivery of a physical package, such as postal services; or

    (2)   direct electronic distribution — the means by which aeronautical data and aeronautical information distribution is achieved automatically through the use of a direct electronic connection between the AIS provider and the intended user.

(b)   Different delivery methods and data media may require different procedures to ensure the required data quality.

(c)   Further guidance on digital dataset distribution can be found in ICAO Doc 10039 'Manual on System Wide Information Management (SWIM) Concept'.

(d)   Global communication networks and web services may be employed for the provision of aeronautical information products.

(e)   Guidance to assist the AIS providers in developing and adapting their systems for the distribution of the State AIP on the internet as an official and authoritative source of information may be found in the EUROCONTROL 'Guidelines for Aeronautical Information Publication (AIP) distribution on the Internet' (edition 1.0, dated October 2017).

GM1 AIS.OR.405(a)   Pre-flight information services

COMMUNICATION

Pre-flight information may be provided as a verbal briefing or a self-briefing.

GM1 AIS.OR.405(b)   Pre-flight information services

OPERATIONAL SIGNIFICANCE

(a)   Geographic coverage for pre-flight information services should be determined and periodically reviewed. In general, the coverage zone should be limited to the flight information region (FIR) within which the aerodrome/heliport is located, the FIR(s) adjacent thereto, and all air route or portion of route flown without an intermediate landing, originating at the aerodrome/heliport and extending beyond the FIR(s) mentioned.

(b)   The elements of the aeronautical information products may be limited to national publications and when practicable, those of immediately adjacent States, provided that a complete library of aeronautical information is available at a central location and means of direct communications with that library are available.

(c)   A recapitulation of valid NOTAM of operational significance and other information of urgent character can be made available to flight crews in the form of plain-language pre-flight information bulletins (PIBs).

(d)   Guidance on the preparation of pre-flight information services and PIBs may be found in Chapter 8 of ICAO Doc 8126 'Aeronautical Information Services Manual' and in Chapter 7 of the EUROCONTROL 'Guidelines — Operating Procedures for AIS Dynamic Data (OPADD)' (edition:4.0, dated 17 April 2015).

Section 5 — Aeronautical information products updates

GM1 AIS.OR.505   Aeronautical information regulation and control (AIRAC)

AIRAC SYSTEM

Further explanations with regard to the application of the AIRAC system can be found in the EUROCONTROL 'Procedure for the Assessment of Information for Notification by AIRAC' (SDP/8), (edition 2.0, dated 17 July 2009). Additional details can be found in SDP/9, 10 and 13 for specific products.

AMC1 AIS.OR.505(2)   Aeronautical information regulation and control (AIRAC)

DISTRIBUTION

AIRAC information, distributed as a physical medium, should be sent at least 42 days in advance of the AIRAC effective dates with the objective of reaching recipients at least 28 days in advance of the effective date.

AMC1 AIS.OR.515   Data set updates

GENERAL

(a)   When made available as a completely re-issued data set, the differences from the previously issued complete data set should be indicated.

(b)   When temporary changes of short duration are made available as digital data, they should use the same information model as the complete data set.

Section 6 — Personnel requirements

GM1 AIS.OR.600(b)   General requirements

COMPETENCE

'Competence' is understood as a situation where the personnel responsible for originating aeronautical data and aeronautical information possess the required level of knowledge, technical and behavioural skills and experience, and language proficiency when required, in order to be authorised to perform their duties.

AUTHORISATION

The authorisation of personnel is usually granted by the AIS provider, but it might be granted by another entity depending on the national arrangements for managing the competence and performance of AIS personnel.

SUBPART B — TECHNICAL REQUIREMENTS FOR PROVIDERS OF AERONAUTICAL INFORMATION SERVICES (AIS.TR)

Section 2 — Data quality management

GM1 AIS.TR.200(b)   General

ACCURACY — RESOLUTION

(a)   The resolution of the data contained in the database may be the same or finer than the publication resolution.

(b)   Stating that resolution needs to be commensurate with the accuracy means that digital data needs to have sufficient resolution to maintain accuracy. Typically, if an accuracy of .1 units is needed, then a resolution of 0.01 or .001 units would enable a data chain to preserve the accuracy without problems. A finer resolution could be misleading as one could assume that it supports a finer accuracy. This factor range of 10 to 100 between accuracy and resolution is applicable regardless of the units of measurements used.

AMC1 AIS.TR.200(d)   General

TRACEABILITY

Aeronautical data and associated metadata should be kept for a minimum period of 5 years beyond the validity period of the associated aeronautical information.

AMC1 AIS.TR.210   Exchange of aeronautical data and aeronautical information

EXCHANGE MODELS

(a)   The exchange model used should encompass the aeronautical data and aeronautical information to be exchanged.

(b)   The exchange model used should:

(1)   use the unified modelling language (UML) to describe the aeronautical information features and their properties, associations and data types;

(2)   include data value constraints and data verification rules;

(3)   include provisions for metadata;

(4)   include a temporality model to enable capturing the evolution of the properties of an aeronautical information feature during its life cycle;

(5)   apply a commonly used data encoding format;

(6)   cover all the features, attributes, data types and associations of the aeronautical information model; and

(7)   provide an extension mechanism by which groups of users can extend the properties of existing features and add new features which do not adversely affect global standardisation.

GM1 to AMC1 AIS.TR.210   Exchange of aeronautical data and aeronautical information

ENABLING EXCHANGE

(a)   The intent of using a commonly used data encoding format is to ensure interoperability of aeronautical data exchange between agencies and organisations involved in the data processing chain.

(b)   Examples of commonly used data encoding formats include extensible markup language (XML), geography markup language (GML), and JavaScript object notation (JSON).

AMC1 AIS.TR.225(a)   Metadata

IDENTIFICATION

The metadata collected should clearly identify the organisation or entity originating the data, as well as any organisation or entity introducing amendments to the data.

AMC1 AIS.TR.225(b)   Metadata

ACTION PERFORMED

The metadata reflecting each action performed involving origination or manipulation of the data should reflect any potential impact on the compliance with the applicable DQRs.

GM1 AIS.TR.225   Metadata

GENERAL

Further explanation on the schema required for describing geographic information and services by means of metadata may be found in the:

(a)   International Organization for Standardization, ISO 19115 — Geographic information — Metadata, Part I; and

(b)   EUROCONTROL 'Guidelines for the provision of Metadata to support the Exchange of Aeronautical Data' (edition 1.0, dated 28 November 2019)

GM1 AIS.TR.240   Data limitations

ANNOTATION

(a)   The objective of such an annotation is to notify the users of the AIS products including their aeronautical data that specific quality requirements are not met and may, therefore, compel limitations in the operational use of the relevant aeronautical data.

(b)   The following principles apply:

(1)   the solution applies for both the eAIP and paper AIP;

(2)   the use of the 'asterisk' is undesirable because it is already used for WGS-84 issues;

(3)   the non-compliance covers all parts of the AIP, i.e. textual aeronautical data and charts; and

(4)   non-compliant aeronautical data items shall be individually and explicitly identified and the use of any general statement with the intention of covering a range of data items shall be avoided.

(c)   The AIP section GEN 1.7 is used to identify non-compliant aeronautical data items. A new sub-header should be introduced at the end of the current section named 'Data non-compliant with European Commission Regulation (EU) 2017/373'.

(d)   Within AIP GEN 1.7, the following two alternatives are proposed. The choice of which depends on national practicalities being based either on the amount of annotations to be published or on individual existing operational or technical constraints.

(1)   Annotation alternative 1

Alternative 1 is recommended if the number of identified non-compliances covers no more than two AIP pages.

The relevant non-compliant data items shall be listed in a table, including as a minimum:

—   specific data item;

—   AIP section(s) concerned;

—   reason for non-compliance;

—   Notes/remarks.

Proposed table format:

Data Item	AIP section	Reason for non-compliance	Notes/remarks

(2)   Annotation alternative 2

Alternative 2 is recommended if the number of non-compliances extends more than two AIP pages. It should then contain a general (global) statement to indicate 'Several data items are not compliant with the given regulation – details can be found online via <link>'. The link shall direct the user to a list on the website which must support compliance with minimum requirements: the list must be accessible online.

Note: The indication of 'available on request', or similar, is clearly insufficient. The list must be kept up to date and fully synchronised (consistent) with the AIP update cycles, as relevant. This list should be in the form of a table as indicated under alternative 1 noting that it will be made available to users as an extra element outside the AIP.

Section 3 — Aeronautical information products

GM1 AIS.TR.300(b)   General — Aeronautical information products
PLACE NAMES

The phrase 'when necessary' means 'for interoperability purposes' e.g. in aeronautical information products that are intended to be processed by automated systems (NOTAM, data sets, etc.).

AMC1 AIS.TR.305(a)   Aeronautical information publication (AIP)
ELECTRONIC FORM

The eAIP, eAIP amendments and eAIP supplements should be provided according to the EUROCONTROL 'Specification for the Electronic Aeronautical Information Publication (eAIP)' (edition 2.1, dated 6 October 2015).

AMC2 AIS.TR.305(a)   Aeronautical information publication (AIP)
ELECTRONIC AIP

When provided, the eAIP should be available on a physical distribution medium (CD, DVD, etc.) and/or online on the internet.

GM1 AIS.TR.305(a)   Aeronautical information publication (AIP)
PRINTED AIP

(a)   A system of page numbering adaptable to the addition or deletion of sheets should be adopted. The page number should include:

(1)   an identification of the part of the AIP;

(2)   the section; and

(3)   subsection, as applicable,

thus creating a separate set of numbers for each subject (e.g. GEN 2.1-3, ENR 4.1-1 or AD 2.2-3).

(b)   If it is necessary by reason of bulk or for convenience, to publish an AIP in two or more parts or volumes, each of them will indicate that the remainder of the information is to be found in the other part(s) or volume(s).

(c)   When the AIP is provided in more than one volume, each volume should include:

    (1)   a preface;

    (2)   a record of AIP amendments;

    (3)   a record of AIP supplements;

    (4)   a checklist of AIP pages; and

    (5)   a list of current hand amendments.

(d)   When the AIP is published as one volume, the above-mentioned subsections should appear only in Part 1 — GEN and the annotation 'not applicable' should be entered against each of these subsections in Parts 2 and 3.

(e)   The AIP should be published in loose-leaf form unless the complete publication is reissued at frequent intervals.

(f)   Further guidelines for a harmonised AIP publication may be found in the EUROCONTROL 'Guidelines for harmonised AIP publication and data set provision' (edition 2.0, dated 23 May 2019).

GM1 AIS.TR.305(c)   Aeronautical information publication (AIP)

INFORMATION RELATED TO LOCATIONS

When listing locations, the city or town should be given in capital letters followed, where the facility is an aerodrome/heliport or is located at an aerodrome/heliport, by an oblique stroke and the name of the aerodrome/heliport in smaller capital letters or lower-case letters. Unless otherwise indicated, the list should be in alphabetical order.

GM2 AIS.TR.305(c)   Aeronautical information publication (AIP)

INFORMATION RELATED TO CHARTS, MAPS OR DIAGRAMS

(a)   Charts, maps or diagrams should be used, when appropriate, to complement the AIP or serve as a substitute for the tabulations or text of the AIP.

(b)   Where appropriate, charts produced in conformity with AIS.OR.325 may be used to fulfil this requirement.

GM3 AIS.TR.305(c)   Aeronautical information publication (AIP)

INFORMATION RELATED TO THE AIP DATA SET

When the AIP data set is provided, the following sections of the AIP may be left blank and a reference to the data set availability should be provided:

(a)   ENR 2.1 FIR, UIR, TMA;

(b)   ENR 3.1 Lower ATS routes;

(c)   ENR 3.2 Upper ATS routes;

(d)   ENR 3.3 Area navigation (RNAV) routes;

(e)   ENR 3.4 Helicopter routes;

(f)   ENR 3.5 Other routes;

(g)   ENR 3.6 En route holding;

(h)   ENR 4.1 Radio navigation aids — en route;

(i)   ENR 4.4 Name-code designators for significant points;

(j)   ENR 4.5 Aeronautical ground lights — en route;

(k)   ENR 5.1 Prohibited, restricted and danger areas;

(l)   ENR 5.2 Military exercise and training areas and air defence identification zone (ADIZ);

(m)   ENR 5.3.1 Other activities of a dangerous nature;

(n)   ENR 5.5 Aerial sporting and recreational activities;

(o)   AD 2.17 Air traffic services airspace;

(p)   AD 2.19 Radio navigation and landing aids;

(q)   AD 3.16 Air traffic services airspace; and

(r)   AD 3.18 Radio navigation and landing aids.

GM4 AIS.TR.305(c)   Aeronautical information publication (AIP)

INFORMATION RELATED TO THE OBSTACLE DATA SET

When the obstacle data set is provided, the following sections of the AIP may be left blank and a reference to the data set availability should be provided:

(a)   ENR 5.4 Air navigation obstacles;

(b)   AD 2.10 Aerodrome obstacles; and

(c)   AD 3.10 Heliport obstacles.

AMC1 AIS.TR.310(g)   AIP amendments

ANNOTATION

(a)   The annotation in the margin should be done by 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.

(b)   For aeronautical charts, the annotation should be made as a marginal note.

GM1 AIS.TR.310(h)   AIP amendments

EFFECTIVE TIME

When an effective time other than 00.00 UTC is used, the effective time should also be indicated.

GM1 AIS.TR.315   AIP supplements

ISSUE OF NOTAM

When there is not sufficient time for the distribution of an AIP supplement, a NOTAM may be issued.

AMC1 AIS.TR.320(a)   Aeronautical information circular (AIC)

ELECTRONIC FORM

When AICs are provided as part of the 'electronic AIP', they should comply with the EUROCONTROL 'Specification for the Electronic Aeronautical Information Publication (eAIP)' (edition 2.1, dated 6 October 2015).

GM1 AIS.TR.320(a)   Aeronautical information circular (AIC)

PRINTED FORM

Differentiation and identification of AIC topics according to subjects using colour coding should be practised where the numbers of AICs in force are sufficient to make identification in this form necessary. For example:

(a)   white — administrative;

(b)   yellow — ATC;

(c)   pink — safety;

(d)   mauve — danger area map; and

(e)   green — maps/charts.

GM1 AIS.TR.320(c)   Aeronautical information circular (AIC)

GENERAL

(a)   AICs are not used to promulgate aeronautical data and aeronautical information that qualify for inclusion in AIP (including amendments and supplements) or in NOTAM. Nevertheless, AICs can be used to provide detailed information and/or interpretation about data contained in those aeronautical information products.

(b)   Consequently:

(1)   an AIC is not used to promulgate aeronautical data that is part of the data catalogue; and

(2)   the content of an AIC is not subject to the application of the DQRs.

(c)   AICs can be made available with the electronic AIP for distribution purpose, as long as it is understood that they remain separate aeronautical information products.

GM1 AIS.TR.320(d)   Aeronautical information circular (AIC)

SNOW PLAN INFORMATION

The seasonal AIC on the snow plan may contain information such as that listed below:

(a) a list of aerodromes/heliports where during the coming winter the following are expected to be performed:

  (1) snow clearance in accordance with the runway and taxiway systems; or

  (2) planned snow clearing, deviating from the runway system (length, width and number of runways, affected taxiways and aprons or portions thereof);

(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;

(c) a division of the aerodromes/heliports into SNOWTAM distribution lists in order to avoid excessive NOTAM distribution;

(d) an indication, as necessary, of minor changes to the standing snow plan;

(e) a descriptive list of clearance equipment; and

(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.

AMC1 AIS.TR.330   NOTAM

USE OF OPADD

The origination and issuing of NOTAM should be in accordance with the EUROCONTROL 'Guidelines — Operating Procedures for AIS Dynamic Data (OPADD)' (edition 4.0, dated 17 April 2015).

GM1 AIS.TR.330(d)   NOTAM

NOTAM CODE

The ICAO NOTAM Code together with significations/uniform abbreviated phraseology, and ICAO Abbreviations are those contained in ICAO Doc 8400 'Procedures for Air Navigation Services — ICAO Abbreviations and Codes (PANS-ABC)'.

GM1 AIS.TR.330(u)   NOTAM

CHECKLIST

The checklist NOTAM may include the checklist of AIP Supplement (SUP)

.

Chapter 2 — Digital data sets

GM1 AIS.TR.335(a)   General — Digital data sets

STANDARD FOR GEOGRAPHIC INFORMATION

The ISO 19100 series of standards for geographic information may be used as a reference framework.

GM1 AIS.TR.335(b) General — Digital data sets

DATA PRODUCT SPECIFICATION

(a)   ISO Standard 19131 specifies the requirements and outline of data product specifications for geographic information. This is intended to facilitate and support the use and exchange of digital data sets between data providers and data users.

(b)   The data product specification enables air navigation users to evaluate the products and determine whether they fulfil the requirements for their intended use (application).

(c)   This may include an overview, specification scope, data product identification, data content and structure, reference system, data quality, data capture, data maintenance, data portrayal, data product delivery, additional information, and metadata.

GM1 AIS.TR.345(b) AIP data set

PROPERTY

There may also be other reasons why a property is not provided, e.g. missing, unknown, withheld, etc.

GM1 AIS.TR.350(d) Terrain and obstacle data — General requirements

AREA 4

Where the terrain at a distance greater than 900 m (3 000 ft) from the runway threshold is mountainous or otherwise significant, the length of Area 4 should be extended to a distance not exceeding 2 000 m (6 500 ft) from the runway threshold.

GM1 AIS.TR.355(e) Terrain data sets

ATTRIBUTES

The following additional terrain feature attributes may be recorded in the terrain data set:

(a)   surface type;

(b)   penetration level; and

(c)   known variations.

GM1 AIS.TR.360(b) Obstacle data sets

ATTRIBUTES

The following additional obstacle feature attributes may be recorded in the obstacle data set:

(a)   height;

(b)   operations; and

(c)   effectiveness.

GM1 AIS.TR.365   Aerodrome mapping data sets

ADDITIONAL GUIDANCE

Further information concerning minimum requirements and reference material applicable to the content, origination, publication, and updating of aerodrome mapping information may be found in EUROCAE ED-99D 'User Requirement for Aerodrome Mapping Information', October 2015, and EUROCAE ED-119C 'Interchange Standards for Terrain, Obstacle and Aerodrome Mapping Data', October 2015.

GM1 AIS.TR.365(a)   Aerodrome mapping data sets

AERODROME FEATURES

Aerodrome features consist of attributes and geometries, which are characterised as points, lines or polygons. Examples include runway thresholds, taxiway guidance lines and parking stand areas.

GM2 AIS.TR.365(a)   Aerodrome mapping data sets

ADDITIONAL DATA

Aerodrome mapping data may be supported by electronic terrain and obstacle data for Area 3 in order to ensure consistency and quality of all geographical data related to the aerodrome.

GM3 AIS.TR.365(a)   Aerodrome mapping data sets

COMMON ACQUISITION TECHNIQUES

Electronic terrain and obstacle data pertaining to Area 3 as well as aerodrome mapping data may be originated using common acquisition techniques and managed within a single geographic information system (GIS).

GM1 AIS.TR.365(b)   Aerodrome mapping data sets

GENERAL

ISO Standard 19100 series on geographic information can be used as a reference framework.

GM1 AIS.TR.365(c)   Aerodrome mapping data sets

GENERAL

ISO Standard 19131 contains standards for data product specification.

GM1 AIS.TR.365(d)   Aerodrome mapping data sets

GENERAL

ISO Standard 19109 contains standards for application schemas, while ISO Standard 19110 describes the feature cataloguing methodology for geographic information.

GM1 AIS.TR.370   Instrument flight procedure data sets

GENERAL

Guidance on the instrument flight procedure data sets can be found in PANS-OPS, ICAO Doc 8168, Volume II – Part III, Section 2, Chapter 5.

Section 4 — Distribution and pre-flight information services

GM1 AIS.TR.400(a)   Distribution services

NOTAM

(a)   The predetermined distribution system provides for incoming NOTAM (including SNOWTAM and ASHTAM) to be channelled through the aeronautical fixed service (AFS) directly to designated addressees predetermined by the receiving country concerned while concurrently being routed to the international NOTAM office for checking and control purposes.

(b)   The addressee indicators for those designated addressees are constituted as follows:

   (1)   First and second letters

           The first two letters of the location indicator for the AFS communication centre associated with the relevant international NOTAM office of the receiving country.

   (2)   Third and fourth letters

           The letters 'ZZ' indicating a requirement for special distribution.

   (3)   Fifth letter

           The fifth letter differentiating between NOTAM (letter 'N'), SNOWTAM (letter 'S'), and ASHTAM (letter 'V').

   (4)   Sixth and seventh letters

           The sixth and seventh letters, each taken from the series A to Z, denoting the national and/or international distribution list(s) to be used by the receiving AFS centre.

           The fifth, sixth and seventh letters replace the three-letter designator YNY which, in the normal distribution system, denotes an international NOTAM office.

   (5)   Eighth letter

           The eighth position letter shall be the filler letter 'X' to complete the eight-letter addressee indicator.

(c)   Member States are to inform the States from which they receive NOTAM of the sixth and seventh letters to be used under different circumstances to ensure proper routing.

GM1 AIS.TR.405(a)   Pre-flight information services

AUTOMATION

(a)   Automated pre-flight information systems that provide a harmonised, common point of access by operations personnel, including flight crew members and other aeronautical personnel concerned, to aeronautical information and meteorological information should be established by an agreement between the AIS provider and the meteorological services provider.

(b)   Where automated pre-flight information systems are used to provide the harmonised, 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 AIS provider remains responsible for the quality and timeliness of the aeronautical data and aeronautical information provided by means of such a system.

(c)   The meteorological services provider concerned remains responsible for the quality of the meteorological information provided by means of such a system in accordance with Annex V to Regulation (EU) 2017/373.

GM1 AIS.TR.405(e)   Pre-flight information services

NOTAM

Although NOTAM with purpose 'M' are regarded not subject for a briefing but available on request, all NOTAM are to be provided for briefing by default, and content reduction should be at user's discretion.

Section 5 — Aeronautical information products updates

GM1 AIS.TR.505(a)   AIRAC

OTHER CIRCUMSTANCES WHERE USE OF THE AIRAC SYSTEM MAY BE CONSIDERED

The AIRAC system may also be considered for the provision of information relating to the establishment and withdrawal of, and planned significant changes in, the circumstances listed below:

(a)   position, height and lighting of air navigation obstacles;

(b)   hours of service of aerodromes, facilities and services;

(c)   customs, immigration and health services;

(d)   temporary danger, prohibited and restricted areas and navigational hazards, military exercises and mass movements of aircraft; and

(e)   temporary areas or routes or portions thereof where the possibility of interception exists.

AMC1 AIS.TR.505(b)   AIRAC

MAJOR CHANGES

Whenever major changes are planned and where advance notice is desirable and possible, information should be distributed and/or made available by the AIS provider, whenever practicable, so as to reach recipients at least 56 days in advance of the AIRAC effective date. This should apply to the establishment of, and premeditated major changes in the circumstances listed below, as well as to other major changes if deemed necessary:

(a)   new aerodromes for international instrument flight rules operations;

(b)   new runways for instrument flight rules (IFR) operations at international aerodromes;

(c)   design and structure of the ATS route network;

(d)   design and structure of a set of terminal procedures (including change of procedure bearings due to magnetic variation change); and

(e)   circumstances listed in AIS.TR.505(a) if the entire State or any significant portion thereof is affected or if cross-border coordination is required.

GM1 AIS.TR.510(a)   NOTAM

ADVANCE NOTICE

(a)   Whenever possible, an at least 24 hours' advance notice is desirable, to permit timely completion of the notification process and to facilitate airspace utilisation planning.

(b)   Notice of any subsequent cancellation of the activities or any reduction of the hours of activity or the dimensions of the airspace should be given as soon as possible.