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STATUTORY INSTRUMENTS

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**2021 No. 1203**

**The Aviation Safety (Amendment) (No. 3) Regulations 2021**

**PART 3**

**Amendment of retained direct minor EU legislation**

**CHAPTER 6**

**Amendment of Commission Implementing Regulation (EU) No 2017/373**

**Commission Implementing Regulation (EU) 2017/373 (air traffic management/air navigation services)**

**22.** Commission Implementing Regulation (EU) 2017/373 of 1 March 2017 laying down common requirements for providers of air traffic management/air navigation services and other air traffic management network functions and their oversight, repealing Regulation (EC) No 482/2008, Implementing Regulations (EU) No 1034/2011, (EU) No 1035/2011 and (EU) 2016/1377 and amending Regulation (EU) No 677/2011<sup>(1)</sup> is amended in accordance with regulations 23 to 29.

**Amendment of Article 2 of Commission Implementing Regulation (EU) 2017/373**

**23.** In Article 2 (definitions), for point (2) substitute—

“(2) “ATM/ANS provider” means any legal or natural person providing any of the ATM/ANS as defined by Article 3(5) of Regulation (EU) 2018/1139, either individually or bundled, for general air traffic;”.

**Amendment of Article 3 Commission Implementing Regulation (EU) 2017/373**

**24.** In Article 3 (provision of ATMS/AS and ATM network functions), after paragraph (4) insert—

“(5) Organisations other than an ATM/ANS provider referred to in point (2) of Article 2 of this Regulation or aerodrome operators regulated by Regulation (EU) No 139/2014, when originating, processing or transmitting aeronautical data or aeronautical information intended for use in IFR traffic, shall meet the requirements laid down in:

- (a) point ATM/ANS.OR.A.085 of Annex 3, except points (c), (d) and (f)(1) and (i);
- (b) point ATM/ANS.OR.A.090 of Annex 3.

Such organisations shall ensure that aeronautical data and aeronautical information are originated, processed and transmitted by adequately trained, competent and authorised personnel.”.

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<sup>(1)</sup> EUR 2017/373, amended by S.I. 2019/459 and 2020/694.

### **Amendment of Annex 1 to Commission Implementing Regulation (EU) 2017/373**

**25.**—(1) Annex 1 (definitions of terms used in Annexes 2 to 8) is amended as follows.

(2) After point (1) insert—

“(1A) ‘air-ground communication’ means two-way communication between aircraft and stations or locations on the surface of the Earth;”.

(3) After point (26) insert—

“(26A) ‘aeronautical information circular (AIC)’ means a notice containing information that does not qualify for the origination of a NOTAM or for inclusion in the aeronautical information publication, but which relates to flight safety, air navigation, technical, administrative or legislative matters;

(26B) ‘aeronautical information management (AIM)’ means the dynamic, integrated management of aeronautical information through the provision and exchange of quality-assured digital aeronautical data in collaboration with all parties;

(26C) ‘aeronautical information product’ means aeronautical data and aeronautical information provided either as digital data sets or as a standardised presentation in paper or electronic media. Aeronautical information products include:

- aeronautical information publication, including amendment and supplements;
- AIC;
- aeronautical charts;
- NOTAM;
- digital data sets;

(26D) ‘aeronautical information publication (AIP)’ means a publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation;

(26E) ‘AIP amendment’ means a permanent change to the information contained in the AIP;

(26F) ‘AIP supplement’ means a temporary change to the information contained in the AIP, which is provided by means of special pages;

(26G) ‘aeronautical information regulation and control’ (AIRAC) means a system aimed at advance notification, based on common effective dates, of circumstances that necessitate significant changes in operating practices;”.

(4) After point (29) insert—

“(29A) ‘assemble’ means a process of merging data from multiple sources into a database and establishing a baseline for subsequent processing;”.

(5) After point (30) insert—

“(30A) ‘ATS route’ means a specified route designated for channelling the flow of traffic as necessary for the provision of ATS;”.

(6) After point (35) insert—

“(35A) ‘broadcast’ means a transmission of information relating to air navigation that is not addressed to a specific station or stations;”.

(7) After point (38) insert—

“(38A) ‘completeness’ means, in relation to data, the degree of confidence that all data needed to support the intended use is provided;

(38B) ‘confidence level’ means the probability that the true value of a parameter is within a certain interval around the estimate of its value;”.

(8) After point (39) insert—

“(39A) ‘control zone’ means a controlled airspace extending upwards from the surface of the Earth to a specified upper limit;

(39B) ‘controlled airspace’ means an airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification;”.

(9) After point (40) insert—

“(40A) ‘cruising level’ means a level maintained during a significant portion of a flight;

(40B) ‘cyclic redundancy check (CRC)’ means a mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data;

(40C) ‘danger area’ means an airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times;

(40D) ‘data accuracy’ means a degree of conformance between the estimated or measured value and the true value;

(40E) ‘data collection surface’ means a defined surface intended for the purpose of collecting obstacle or terrain data;

(40F) ‘data integrity’ means a degree of assurance that aeronautical data and its value has not been lost or altered since the data origination or authorised amendment;

(40G) ‘data item’ means a single attribute of a complete data set, which is allocated a value that defines its current status;

(40H) ‘data origination’ means the creation of a new data item with its associated value, the modification of the value of an existing data item or the deletion of an existing data item;

(40I) ‘data product specification’ means a detailed description of a data set or a collection of data sets together with additional information that will enable it to be created, supplied to and used by another party;

(40J) ‘data set’ means an identifiable collection of data;”.

(10) After point (41) insert—

“(41A) ‘datum’ means any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities;”.

(11) After point (48) insert—

“(48A) ‘feature’ means an abstraction of real world phenomena;

(48B) ‘feature attribute’ means a characteristic of a feature that has a name, a date type and a value domain associated with it;

(48C) ‘feature type’ means a class of real world phenomena with common properties, which forms the basic level of classification in a feature catalogue;

(48D) ‘final approach’ means that part of an instrument approach procedure which:

(a) commences at the specified fix or point, or, where such a fix or point is not specified, at either of the following places:

(i) at the end of the last procedure turn, base turn or inbound turn of a racetrack procedure, if specified;

(ii) at the point of the interception of the last track specified in the approach procedure,

- (b) ends at a point in the vicinity of an aerodrome from which a landing can be made or a missed approach procedure is initiated;”.
- (12) After point (55) insert—  
“(55A) ‘format’ means in relation to data, a structure of data items, records and files arranged to meet standards, specifications or data quality requirements;”.
- (13) After point (57) insert—  
“(57A) ‘geoid’ means the equipotential surface in the gravity field of the Earth which coincides with the undisturbed mean sea level (MSL) extended continuously through the continents;  
(57B) ‘geoid undulation’ means the distance of the geoid above (positive) or below (negative) the mathematical reference ellipsoid;”.
- (14) After point (62) insert—  
“(62A) ‘heliport’ means an aerodrome or a defined area on a structure intended to be used wholly or in part for the arrival, departure and surface movement of helicopters;  
(62B) ‘identification’ means the situation which exists when the position indication of a particular aircraft is seen on a situation display and positively identified;  
(62C) ‘integrity classification’ means, in relation to aeronautical data, a classification based upon the potential risk resulting from the use of corrupted data, defining routine, essential and critical data;  
(62D) ‘international NOTAM office (NOF)’ means an office designated by a State for the exchange of NOTAM internationally;”.
- (15) After point (65) insert—  
“(65A) ‘metadata’ means data about data;”.
- (16) After point (72) insert—  
“(72A) ‘movement area’ means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron;  
(72B) ‘navigation aid’ means a facility or system external to the aircraft, which generates electro-magnetic signals to be used by aircraft navigation systems for position determination or flight path guidance;”.
- (17) After point (76) insert—  
“(76A) ‘position’ means, in a geographical context, a set of coordinates (latitude and longitude) referenced to the mathematical reference ellipsoid, which define the position of a point on the surface of the Earth;”.
- (18) After point (80) insert—  
“(80A) ‘prohibited area’ means an airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited.”.
- (19) After point (82) insert—  
“(82A) ‘resolution’ means, in relation to data, a number of units or digits to which a measured or calculated value is expressed and used;”.
- (20) After point (83) (definition of ‘rest period’) insert—  
“(83A) ‘restricted area’ means an airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions;”.
- (21) After point (85) insert—

- “(85A) ‘route stage’ means a route or portion of a route flown without an intermediate landing;”.
- (22) After point (94) insert—
- “(94A) ‘SNOWTAM’ means a special series NOTAM given in a standard format, which provides a surface condition report notifying the presence or cessation of hazardous conditions due to snow, ice, slush, frost or water associated with snow, slush, ice, or frost on the movement area;”.
- (23) After point (99) insert—
- “(99A) ‘taxiing’ means movement of an aircraft on the surface of an aerodrome or an operating site under its own power, excluding take-off and landing;”.
- (24) After point (102) insert—
- “(102A) ‘timeliness’ means, in relation to data, the degree of confidence that the data is applicable to the period of its intended use;”.
- (25) After point (103) (definition of ‘touchdown zone’) insert—
- “(103A) ‘traceability’ means, in relation to data, the degree to which a system or data product can provide a record of the changes made to that product and thereby enable an audit trail to be followed from the end-user to the party originating data;
- (103B) ‘track’ means the projection on the Earth’s surface of the path of an aircraft, the direction of which path at any point is usually expressed in degrees from North (true, magnetic or grid);
- (103C) ‘transition altitude’ means the altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes;
- (103D) ‘transition level’ means the lowest flight level available for use above the transition altitude;”.
- (26) After point (105) insert—
- “(105A) ‘validation’ means, in relation to data, the process of ensuring that data meets the requirements for the specified application or intended use;
- (105B) ‘verification’ means, in relation to data, the evaluation of the output of an aeronautical data process to ensure correctness and consistency with respect to the inputs and applicable data standards, rules and conventions used in that process;”.
- (27) After point (106) insert—
- “(106A) ‘visual approach’ means an approach by an IFR flight when either part or all of an instrument approach procedure is not completed and the approach is executed in visual reference to terrain;
- (106B) ‘visual flight rules flight’ or ‘VFR flight’ means a flight conducted in accordance with the visual flight rules;”.
- (28) After point (107) (definition of ‘volcanic ash advisory centre (VAAC)’ insert—
- “(107A) ‘waypoint’ means a specified geographical location used to define an area navigation route or the flight path of an aircraft employing area navigation. Waypoints are identified as either:
- (a) fly-by waypoint – a waypoint which requires turn anticipation to allow tangential interception of the next segment of a route or procedure, or
- (b) fly-over waypoint – a waypoint at which a turn is initiated in order to join the next segment of a route or procedure;”.

*Status: This is the original version (as it was originally made). This item of legislation is currently only available in its original format.*

### Amendment of Annex 2 to Commission Implementing Regulation (EU) 2017/373

26. In Annex 2, Appendix 1 (certificate of service provider), for the table ‘Aeronautical information services (AIS)’ substitute—

Services/Functions	Type of Service/Function	Scope of Service/Function	Limitations (*)
Aeronautical Information Services (AIS)	Aeronautical information products (including distribution services)	Aeronautical information publication (AIP)	
		Aeronautical information circular (AIC)	
		NOTAM	
		AIP data set	
		Obstacle data sets	
		Aerodrome mapping data sets	
		Instrument flight procedure data sets	
	Preflight information services	n/a	
<b>Conditions (**)</b>			
(*) As prescribed by the competent authority.			
(**) Where necessary.;			

### Amendment of Annex 3 to Commission Implementing Regulation (EU) 2017/373

27. In Annex 3, Subpart A (general requirement ATM/ANS.OR.A), after point ATM/ANS.OR.A.075 (Open and transparent provision of services) insert—

#### “ATM/ANS.OR.A.080 Provision of aeronautical data

- (a) A service provider shall ensure that aeronautical data related to its services is provided in due time to the AIS provider.
- (b) When aeronautical data related to its services is published, the service provider shall:
  - (1) monitor the data;
  - (2) notify the AIS provider of any changes necessary to ensure that the data is correct and complete;
  - (3) notify the AIS provider when the data is incorrect or inappropriate.

#### ATM/ANS.OR.A.085 Aeronautical data quality management

When originating, processing or transmitting data to the AIS provider, the service provider shall:

- (a) ensure that aeronautical data conforms with the ‘Aeronautical Data Catalogue’ referred to in ICAO PANS-AIM (Doc 10066);
- (b) ensure that the following data quality requirements are met:
  - (1) the accuracy of aeronautical data is as specified in the aeronautical data catalogue;
  - (2) the integrity of aeronautical data is maintained;
  - (3) based on the integrity classification specified in the aeronautical data catalogue, procedures are put in place so that:

- (i) for routine data as defined in ICAO PANS-AIM, corruption is avoided throughout the processing of the data;
  - (ii) for essential data as defined in ICAO PANS-AIM, corruption does not occur at any stage of the entire process and additional processes are included, as needed, to address potential risks in the overall system architecture to further assure data integrity at this level;
  - (iii) for critical data as defined in ICAO PANS-AIM, corruption does not occur at any stage of the entire process and additional integrity assurance processes are included to fully mitigate the effects of faults identified as potential data integrity risks by thorough analysis of the overall system architecture;
- (4) the resolution of aeronautical data is commensurate with the actual data accuracy;
- (5) the traceability of aeronautical data is ensured;
- (6) the timeliness of the aeronautical data is ensured, including any limits on the effective period of the data;
- (7) the completeness of the aeronautical data is ensured;
- (8) the delivered data meet the specified format requirements;
- (c) with regard to data origination, establish specific formal arrangements with the party originating data that contain instructions for data creation, modification or deletion, which include as a minimum:
  - (1) an unambiguous description of the aeronautical data to be created, modified or deleted;
  - (2) the entity to which the aeronautical data is to be provided;
  - (3) the date and time by which the aeronautical data is to be provided;
  - (4) the format of the data origination report to be used;
  - (5) the format of the aeronautical data to be transmitted;
  - (6) the requirement to identify any limitation on the use of the data;
- (d) ensure that data validation and verification techniques are employed to ensure that the aeronautical data meets the associated data quality requirements and in addition:
  - (1) the verification shall ensure that aeronautical data is received without corruption and that corruption does not occur at any stage of the entire aeronautical data process;
  - (2) aeronautical data and aeronautical information entered manually shall be subject to independent verification to detect any errors that may have been introduced;
  - (3) when using aeronautical data to derive or calculate new aeronautical data, the initial data shall be verified and validated, except when provided by an authoritative source;
- (e) transmit aeronautical data by electronic means;
- (f) establish formal arrangements with:
  - (1) all parties transmitting data to them;
  - (2) other service providers or aerodrome operators when exchanging aeronautical data and aeronautical information;

- (g) ensure that the information listed in point AIS.OR.505(a) is provided in due time to the AIS provider;
- (h) collect and transmit metadata which include as a minimum:
  - (1) the identification of the organisations or entities performing any action of originating, transmitting or manipulating the aeronautical data;
  - (2) the action performed;
  - (3) the date and time the action was performed;
- (i) ensure that tools and software used to support or automate aeronautical data and aeronautical information processes perform their functions without adversely impacting the quality of aeronautical data and aeronautical information;
- (j) ensure that digital data error detection techniques are used during the transmission or storage of aeronautical data, or both, in order to support the applicable data integrity levels;
- (k) ensure that the transfer of aeronautical data is subject to a suitable authentication process such that recipients are able to confirm that the data has been transmitted by an authorised source;
- (l) ensure that errors identified during data origination and after data delivery are addressed, corrected or resolved and that priority is given to managing errors in critical and essential aeronautical data.

#### **ATM/ANS.OR.A.090 Common reference systems for air navigation**

For the purpose of air navigation, service providers shall use:

- (a) the World Geodetic System – 1984 (WGS-84) as the horizontal reference system;
- (b) the mean sea level (MSL) datum as the vertical reference system;
- (c) the Gregorian calendar and coordinated universal time (UTC) as the temporal reference systems.”.

#### **Amendment of Annex 4 to Commission Implementing Regulation (EU) 2017/373**

**28.** In Annex 4, Subpart A (additional organisation requirements for providers of air traffic services) (ATS.OR), after point ATS.OR.105 (open and transparent provision of service) insert—

##### **“ATS.OR.110 Coordination between aerodrome operators and air traffic services providers**

An air traffic services provider shall establish arrangements with the operator of the aerodrome at which it provides air traffic services to ensure adequate coordination of activities and services provided as well as exchange of relevant data and information.

##### **ATS.OR.125 Coordination between aeronautical information services and air traffic services providers**

- (a) An air traffic services provider shall provide to the relevant aeronautical information services provider the aeronautical information to be published as necessary to permit the utilisation of such air traffic services.
- (b) To ensure that the aeronautical information services providers obtain information to enable them to provide up-to-date pre-flight information and to meet the need for in-flight information, an air traffic services provider shall make arrangements to report to the aeronautical information services provider, with a minimum of delay:
  - (1) information on aerodrome conditions;



- (2) the operational status of associated facilities, services and navigation aids within their area of responsibility;
  - (3) the occurrence of volcanic activity observed by air traffic services personnel or reported by aircraft;
  - (4) any other information considered to be of operational significance.
- (c) Before introducing changes to systems for air navigation under its responsibility, an air traffic services provider shall:
- (1) ensure close coordination with the aeronautical information services provider;
  - (2) take due account of the time needed by the aeronautical information services provider for the preparation, production and issuance of relevant material for promulgation;
  - (3) provide the information in a timely manner to the aeronautical information services provider.
- (d) An air traffic services provider shall observe the predetermined, internationally agreed aeronautical information regulation and control (AIRAC) effective dates when submitting to aeronautical information services providers the information or data, or both, subject to the AIRAC cycle.”.

#### **Amendment of Annex 6 to Commission Implementing Regulation (EU) 2017/373**

**29.** For Annex 6 (specific requirements for the providers of aeronautical information services) (Part-AIS) substitute—

### “ANNEX VI

#### SPECIFIC REQUIREMENTS FOR THE PROVIDERS OF AERONAUTICAL INFORMATION SERVICES (Part-AIS)

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

##### SECTION 1 – GENERAL REQUIREMENTS

##### **AIS.OR.100 Aeronautical information management**

An aeronautical information services (AIS) provider shall establish information management resources and processes that are adequate to ensure the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and aeronautical information within the ATM system.

##### **AIS.OR.105 Responsibilities of aeronautical information services (AIS) providers**

An AIS provider shall ensure the provision of aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation.

An AIS provider shall receive, collate or assemble, edit, format, publish, store and distribute aeronautical data and aeronautical information concerning the entire territory and airspace of the United Kingdom and Crown Dependencies as well as those areas over the high seas for which the United Kingdom is responsible for the provision of air traffic services.

An AIS provider shall ensure that aeronautical data and aeronautical information are available for:

- (1) personnel involved in flight operations, including flight crews, flight planning, and flight simulators;

- (2) ATS providers responsible for flight information services, and
- (3) the services responsible for pre-flight information.

An AIS provider shall provide 24-hour service for NOTAM origination and issuance in its area of responsibility and for pre-flight information needed in relation to route stages originating at any aerodrome or heliport in its area of responsibility.

An AIS provider shall make available to other AIS providers aeronautical data and aeronautical information required by them.

An AIS provider shall ensure that procedures are in place to assess and mitigate safety risks to aviation arising from data and information errors.

An AIS provider shall clearly indicate that aeronautical data and aeronautical information provided for and on behalf of the United Kingdom are provided under the authority of the United Kingdom, irrespective of the format in which it is provided.

#### *SECTION 2 – DATA QUALITY MANAGEMENT*

##### **AIS.OR.200 General**

An AIS provider shall ensure that:

- (a) aeronautical data and aeronautical information conforms with the ‘Aeronautical Data Catalogue’ referred to in ICAO PANS-AIM (Doc 10066);
- (b) data quality is maintained; and
- (c) automation is applied to enable the processing and exchange of digital aeronautical data.

##### **AIS.OR.205 Formal arrangements**

An AIS provider shall ensure that formal arrangements are established with:

- (a) all parties transmitting data to them; and
- (b) other AIS providers, when exchanging aeronautical data and aeronautical information with them.

##### **AIS.OR.210 Exchange of aeronautical data and aeronautical information**

An AIS provider shall ensure that:

- (a) the format of aeronautical data is based on an aeronautical information exchange model designed to be globally interoperable; and
- (b) aeronautical data is exchanged through electronic means.

##### **AIS.OR.215 Tools and software**

An AIS provider shall ensure that tools and software used to support or automate aeronautical data and aeronautical information processes perform their functions without adversely impacting on the quality of aeronautical data and aeronautical information.

##### **AIS.OR.220 Validation and verification**

An AIS provider shall ensure that verification and validation techniques are employed so that the aeronautical data meets the associated data quality requirements (DQRs) specified in point AIS.TR.200.

##### **AIS.OR.225 Metadata**

An AIS provider shall collect and preserve metadata.

##### **AIS.OR.230 Data error detection and authentication**

An AIS provider shall ensure that:

- (a) digital data error detection techniques are used during the transmission or storage of aeronautical data in order to support the applicable data integrity levels specified in point AIS.TR.200(c); and

(b) the transfer of aeronautical data is subject to a suitable authentication process such that recipients are able to confirm that the data or information has been transmitted by an authorised source.

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

An AIS provider shall ensure that error reporting, error measurement and corrective action mechanisms are established and maintained.

**AIS.OR.240 Data limitations**

An AIS provider shall identify, in the aeronautical information products, except for NOTAM, the aeronautical data and aeronautical information that do not meet the DQRs.

**AIS.OR.250 Consistency requirement**

Where aeronautical data or aeronautical information is duplicated in the AIP of more than one State, the AIS providers responsible for those AIPs shall establish mechanisms to ensure consistency between the duplicated information.

**SECTION 3 – AERONAUTICAL INFORMATION PRODUCTS**

**AIS.OR.300 General – Aeronautical information products**

When providing aeronautical data and aeronautical information in multiple formats, an AIS provider shall ensure that processes are implemented for data and information consistency between those formats.

Chapter 1 – Aeronautical information in a standardised presentation

**AIS.OR.305 Aeronautical information publication (AIP)**

An AIS provider shall issue an AIP.

**AIS.OR.310 AIP amendments**

An AIS provider shall:

- (a) issue permanent changes to the AIP as AIP amendments; and
- (b) ensure that the AIP is amended or reissued at such regular intervals as necessary to ensure that the information is complete and up to date.

**AIS.OR.315 AIP supplements**

An AIS provider shall:

- (a) issue, as AIP supplements, temporary changes of long duration (three months or longer) and information of short duration which contains extensive text or graphics;
- (b) regularly provide a checklist of the valid AIP supplements; and
- (c) publish a new AIP supplement as a replacement when an error occurs in an AIP supplement or when the period of validity of an AIP supplement is changed.

**AIS.OR.320 Aeronautical information circular (AIC)**

An AIS provider shall issue as an AIC any of the following:

- (a) a long-term forecast of any major change in legislation, regulations, procedures or facilities;
- (b) information of a purely explanatory or advisory nature which affects flight safety;
- (c) information or notification of an explanatory or advisory nature, concerning technical, legislative or purely administrative matters.

An AIS provider shall review at least once a year the validity of an AIC in force.

**AIS.OR.325 Aeronautical charts**

An AIS provider shall ensure that the following aeronautical charts, where made available:

- (a) form part of the AIP or are provided separately to recipients of the AIP:
  - (1) aerodrome obstacle chart – Type A;
  - (2) aerodrome/heliport chart;
  - (3) aerodrome ground movement chart;
  - (4) aircraft parking/docking chart;
  - (5) precision approach terrain chart;
  - (6) ATC surveillance minimum altitude chart;
  - (7) area chart;
  - (8) standard arrival chart – instrument (STAR);
  - (9) standard departure chart – instrument (SID);
  - (10) instrument approach chart;
  - (11) visual approach chart; and
  - (12) en route chart; and
- (b) are provided as part of the aeronautical information products:
  - (1) aerodrome obstacle chart – Type B;
  - (2) world aeronautical chart 1:1 000 000;
  - (3) world aeronautical chart 1:500 000;
  - (4) aeronautical-navigation chart – small scale; and
  - (5) plotting chart.

#### **AIS.OR.330 NOTAM**

An AIS provider shall:

- (a) promptly issue a NOTAM 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 (three months or longer), are made at short notice, except for extensive text or graphics; and
- (b) issue, as a NOTAM, information on the establishment, condition, or change of any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel involved with flight operations.

Compliance with point AIS.OR.200 shall not inhibit the urgent distribution of aeronautical information necessary to ensure the safety of flight.

Chapter 2 – Digital data sets

#### **AIS.OR.335 General – Digital data sets**

If available, an AIS provider shall ensure that digital data is in the form of the following data sets:

- (1) AIP data set;
- (2) terrain data set;
- (3) obstacle data sets;
- (4) aerodrome mapping data sets; and
- (5) instrument flight procedure data sets.

An AIS provider shall ensure that a checklist of valid data sets shall be regularly provided.

An AIS provider shall ensure that a checklist of valid data sets shall be regularly provided.

#### **AIS.OR.340 Metadata requirements**

Each data set shall include a minimum set of metadata to be provided to the next user.

**AIS.OR.345 AIP data set**

An AIS provider shall ensure that the AIP data set, if available, contains the digital representation of aeronautical information of lasting character, including permanent information and long-duration temporary changes.

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

An AIS provider shall ensure that terrain and obstacle data, if available, are provided in accordance with point AIS.TR.350.

**AIS.OR.355 Terrain data sets**

An AIS provider shall ensure that terrain data, if available, is provided:

- (a) for Area 1, as laid down in point AIS.TR.350; and
- (b) for aerodromes to cover:
  - (1) Area 2a or parts of Area 2a, as laid down in point AIS.TR.350(b)(1);
  - (2) Areas 2b, 2c and 2d or parts of those Areas, as laid down in points AIS.TR.350(b)(2), (3) and (4), for terrain:
    - (i) within 10 km from the aerodrome reference point (ARP); and
    - (ii) beyond 10 km from the ARP if the terrain penetrates the horizontal plane 120 m above the lowest runway elevation;
  - (3) the take-off flight path area or parts of that area;
  - (4) an area, or parts of an area, bounded by the lateral extent of the aerodrome obstacle limitation surfaces;
  - (5) Area 3 or parts of Area 3, as laid down in point AIS.TR.350(c), for terrain that extends 0.5 m above the horizontal plane, passing through the nearest point on the aerodrome movement area; and
  - (6) Area 4 or parts of Area 4, as laid down in point AIS.TR.350(d), 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.

**AIS.OR.360 Obstacle data sets**

An AIS provider shall ensure that obstacle data, if available, is provided:

- (a) for obstacles in Area 1 whose height is 100 m or higher above ground;
- (b) for aerodromes, for all obstacles within Area 2 that are assessed as being a hazard to air navigation; and
- (c) for aerodromes, to cover:
  - (1) Area 2a or parts of Area 2a, for those obstacles that penetrate the relevant obstacle data collection surface;
  - (2) objects in the take-off flight path area or parts of that area, which project above a plane surface having a 1.2 % slope and having a common origin with the take-off flight path area;
  - (3) penetrations of the aerodrome obstacle limitation surfaces or parts of those surfaces;
  - (4) Areas 2b, 2c and 2d, for obstacles that penetrate the relevant obstacle data collection surfaces;

(5) Area 3 or parts of Area 3, for obstacles that penetrate the relevant obstacle data collection surface; and

(6) Area 4 or parts of Area 4, for all runways where precision approach Category II or III operations have been established.

**AIS.OR.365 Aerodrome mapping data sets**

An AIS provider shall ensure that aerodrome mapping data sets, if available, are provided in accordance with point AIS.TR.365.

**AIS.OR.370 Instrument flight procedure data sets**

An AIS provider shall ensure that instrument flight procedure data sets, if available, are provided in accordance with point AIS.TR.370.

*SECTION 4 – DISTRIBUTION AND PRE-FLIGHT INFORMATION SERVICES*

**AIS.OR.400 Distribution services**

An AIS provider shall:

- (a) distribute available aeronautical information products to those users who request them;
- (b) make available the AIP, AIP amendments, AIP supplements, NOTAM and AIC by the most expeditious means;
- (c) ensure that NOTAM are distributed through the aeronautical fixed service (AFS), whenever practicable;
- (d) ensure that international exchange of NOTAM takes place only as mutually agreed between the international NOTAM offices and multinational NOTAM processing units concerned; and
- (e) arrange, as necessary, the issuance and receipt of NOTAM distributed by telecommunication to satisfy operational requirements.

**AIS.OR.405 Pre-flight information services**

An AIS provider shall ensure that:

- (a) for any aerodrome or heliport, aeronautical information relative to the route stages originating at the aerodrome or heliport is made available to flight operations personnel, including flight crew and services responsible for pre-flight information; and
- (b) aeronautical information provided for pre-flight planning purposes includes information of operational significance from the elements of the aeronautical information products.

*SECTION 5 – AERONAUTICAL INFORMATION PRODUCTS UPDATES*

**AIS.OR.500 General – Aeronautical information products updates**

An AIS provider shall ensure that aeronautical data and aeronautical information are amended or reissued to keep them up to date.

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

An AIS provider shall ensure that information concerning the circumstances listed in point AIS.TR.505(a) is distributed under the AIRAC system.

An AIS provider shall ensure that:

- (1) the information notified under the AIRAC system is not changed further for at least another 28 days after the AIRAC effective date unless the circumstance notified is of a temporary nature and would not persist for the full period;
- (2) the information provided under the AIRAC system is distributed or made available so as to reach recipients at least 28 days in advance of the AIRAC effective date; and

(3) implementation dates other than the AIRAC effective dates are not used for pre-planned operationally significant changes requiring cartographic work or for updating of navigation databases.

#### **AIS.OR.510 NOTAM**

An AIS provider shall:

- (a) ensure that NOTAM are provided in accordance with point AIS.TR.510; and
- (b) provide a ‘trigger NOTAM’, as laid down in point AIS.TR.510(f), when an AIP amendment or an AIP supplement is published in accordance with AIRAC procedures.

#### **AIS.OR.515 Data set updates**

An AIS provider shall:

- (a) amend or reissue data sets at such regular intervals as may be necessary to keep them up to date; and
- (b) issue permanent changes and temporary changes of long duration (three months or longer) made available as digital data in the form of a complete data set or a subset that includes only the differences from the previously issued complete data set.

### **SECTION 6 – PERSONNEL REQUIREMENTS**

#### **AIS.OR.600 General requirements**

In addition to point ATM/ANS.OR.B.005(a)(6) of Annex 3, the AIS provider shall ensure that personnel responsible for the provision of aeronautical data and aeronautical information are:

- (a) made aware of and apply the following:
  - (1) the requirements on aeronautical information products and services, as specified in Sections 2 to 5;
  - (2) the update cycles applicable to the issuing of AIP amendments and AIP supplements for the areas for which they provide aeronautical data or aeronautical information;
- (b) adequately trained, competent and authorised for the job they are required to do.

### *SUBPART B – ADDITIONAL TECHNICAL REQUIREMENTS FOR PROVIDERS OF AERONAUTICAL INFORMATION SERVICES (AIS.TR)*

#### **SECTION 2 – DATA QUALITY MANAGEMENT**

#### **AIS.TR.200 General**

- (a) The accuracy of aeronautical data shall be in conformity with the ‘Aeronautical Data Catalogue’ referred to in ICAO PANS-AIM (Doc 10066).
- (b) The resolution of aeronautical data shall be commensurate with the actual data accuracy.
- (c) The integrity of aeronautical data shall be maintained. Based on the integrity classification specified in the aeronautical data catalogue, procedures shall be put in place so that:
  - (1) for routine data as defined in ICAO PANS-AIM, corruption is avoided throughout the processing of the data;
  - (2) for essential data as defined in ICAO PANS-AIM, corruption does not occur at any stage of the entire process and additional processes are included, as needed, to address potential risks in the overall system architecture to further assure data integrity at this level;
  - (3) for critical data as defined in ICAO PANS-AIM, corruption does not occur at any stage of the entire process and additional integrity assurance processes are

included to fully mitigate the effects of faults identified by thorough analysis of the overall system architecture as potential data integrity risks.

- (d) The traceability of aeronautical data shall be ensured.
- (e) The timeliness of the aeronautical data shall be ensured, including any limits on the effective period of the data.
- (f) The completeness of the aeronautical data shall be ensured.
- (g) The format of delivered data shall be adequate to ensure that the data is interpreted in a manner that is consistent with its intended use.

#### **AIS.TR.210 Exchange of aeronautical data and aeronautical information**

Except for terrain data, the exchange format of aeronautical data shall:

- (a) enable the exchange of data for both individual features and feature collections;
- (b) enable the exchange of baseline information as a result of permanent changes;
- (c) be structured in accordance with the subjects and properties of the aeronautical data catalogue, and be documented through a mapping between the exchange format and the aeronautical data catalogue.

#### **AIS.TR.220 Verification**

- (a) The verification shall ensure that:
  - (1) the aeronautical data was received without corruption;
  - (2) the aeronautical data process does not introduce corruption.
- (b) Aeronautical data and aeronautical information entered manually shall be subject to independent verification to identify any errors that may have been introduced.

#### **AIS.TR.225 Metadata**

The metadata to be collected shall include, as a minimum:

- (a) the identification of the organisations or entities performing any action of originating, transmitting or manipulating the aeronautical data;
- (b) the action performed;
- (c) the date and time the action was performed.

#### **AIS.TR.235 Error reporting, error measurement and corrective actions**

The error reporting, error measurement and corrective mechanisms shall ensure that:

- (a) problems identified during origination, production, storage, handling and processing, or those reported by users after publication, are recorded;
- (b) all problems reported in relation to the aeronautical data and aeronautical information are analysed by the AIS provider and the necessary corrective actions are performed;
- (c) priority is given to resolution of all errors, inconsistencies and anomalies detected in critical and essential aeronautical data;
- (d) affected users are warned of errors by the most effective means, taking into account the integrity level of the aeronautical data and aeronautical information;
- (e) error feedback is facilitated and encouraged.

#### **AIS.TR.240 Data limitations**

The identification of data not meeting the DQRs shall be made with an annotation or by explicitly providing the quality value.

### **SECTION 3 – AERONAUTICAL INFORMATION PRODUCTS**

#### **AIS.TR.300 General – Aeronautical information products**



- (a) Aeronautical information products intended for distribution shall be in English.
- (b) Place names shall be spelt in conformity with local usage and transliterated, when necessary, into the International Organization for Standardization (ISO) basic Latin alphabet.
- (c) International Civil Aviation Organization (ICAO) abbreviations shall be used in the aeronautical information products whenever they are appropriate.

#### Chapter 1 – Aeronautical information in a standardised presentation

#### **AIS.TR.305 Aeronautical information publication (AIP)**

- (a) The AIP, AIP amendments and AIP supplements shall be provided as an ‘electronic AIP’ (eAIP). The eAIP shall allow for displaying on computer screen and printing on paper. In addition, the AIP, AIP amendments and AIP supplements may also be provided on paper.
- (b) The AIP shall include:
  - (1) a statement of the competent authority responsible for the air navigation facilities, services or procedures covered by the AIP;
  - (2) the general conditions under which the services or facilities are available for use;
  - (3) a list of significant differences between the regulations and practices of the United Kingdom and, where available, the Crown Dependencies, and the related ICAO Standards and Recommended Practices (SARPs) and Procedures;
  - (4) the choice made by a State in each significant case where an alternative course of action is provided for in the ICAO SARPs and procedures.
- (c) The AIP shall contain information related to, and arranged under, the subject headings listed in the Contents of the Aeronautical Information Publication (AIP) in PANS-AIM (Doc 10066).
- (d) The issuer and AIS provider shall be clearly indicated.
- (e) Each AIP shall be self-contained and include a table of contents.
- (g) An AIP shall be organised 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 are not prescribed provided that an adequate table of contents is included.
- (h) Each AIP shall be dated.
- (i) The date, consisting of the day, month (by name), and year, shall be the publication date or the AIRAC effective date.
- (j) When describing periods of activity, availability or operation, the applicable days and times shall be specified.
- (k) Each AIP volume issued in printing format and each page of an AIP issued in printing format shall be annotated to clearly indicate:
  - (1) the identity of the AIP;
  - (2) the territory covered and its subdivisions, when necessary;
  - (3) the identification of the issuing State and producing organisation (authority); and
  - (4) page numbers/chart titles.
- (l) Any amendment to the volume of the AIP issued in printing format shall be clearly identifiable by means of replacement pages.

**AIS.TR.310 AIP amendments**

- (a) Any operationally significant changes to the AIP, in accordance with point AIS.OR.505, shall be issued under AIRAC and clearly identified as such.
- (b) Each AIP amendment shall be allocated a serial number, which shall be consecutive.
- (c) When an AIP amendment is issued, it shall include references to the serial number of the NOTAM which have been incorporated into the amendment.
- (d) The most current update cycles applicable to AIP amendments shall be made publicly available.
- (e) Recourse to hand amendments/annotations shall be kept to a minimum; the normal method of amendment shall be by reissuing or by replacement of pages.
- (f) Each AIP amendment shall:
  - (1) include a checklist with the current dates and numbers of each loose-leaf page in the AIP; and
  - (2) provide a recapitulation of any outstanding hand amendments.
- (g) New or revised information shall be identified by an annotation against it in the margin.
- (h) Each AIP amendment page, including the cover sheet, shall contain a publication date and, when applicable, an effective date.
- (i) The regular intervals between the AIP amendments shall be specified in Part 1 – General (GEN) of the AIP.

**AIS.TR.315 AIP supplements**

- (a) AIP supplements issued in printing format shall be provided by means of distinctive pages.
- (b) The most current update cycles applicable to AIP supplements shall be made publicly available.
- (c) Each AIP supplement shall be allocated a serial number which shall be consecutive and based on the calendar year.
- (d) 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.
- (e) A checklist of valid AIP supplements shall be issued at intervals of not more than one month, as part of the checklist of NOTAM and also with distribution as for the AIP supplements.
- (f) Each AIP supplement page shall have a publication date. Each AIRAC AIP supplement page shall have both a publication and an effective date.

**AIS.TR.320 Aeronautical information circular (AIC)**

- (a) The AIC shall be provided as an electronic document.
- (b) The AIC shall be provided whenever it is desirable to promulgate:
  - (1) forecasts of important changes in the air navigation procedures, services and facilities;
  - (2) forecasts of implementation of new navigational systems;
  - (3) significant information derived from aircraft accident/incident investigation which has a bearing on flight safety;
  - (4) information on regulations related to the safeguarding of civil aviation against acts of unlawful interference that jeopardise the security of civil aviation;
  - (5) advice on medical matters of special interest to pilots;

- (6) warnings to pilots concerning the avoidance of physical hazards;
  - (7) information on the effect of certain weather phenomena on aircraft operations;
  - (8) information on new hazards affecting aircraft handling techniques;
  - (9) information on regulations related to the carriage of restricted articles by air;
  - (10) references to the requirements of national and EU legislation and to the publication of changes therein;
  - (11) information on aircrew licensing arrangements;
  - (12) information on training of aviation personnel;
  - (13) information on the implementation of, or exemption from, requirements in national and EU legislation;
  - (14) advice on the use and maintenance of specific types of equipment;
  - (15) the actual or planned availability of new or revised editions of aeronautical charts;
  - (16) information on the carriage of communication equipment;
  - (17) explanatory information related to noise abatement;
  - (18) selected airworthiness directives;
  - (19) information on changes in NOTAM series or distribution, new editions of AIP or major changes in their content, coverage or format;
  - (20) advance information on the snow plan; and
  - (21) other information of a similar nature.
- (c) The AIC shall not be used for information that qualifies for inclusion in AIP or NOTAM.
  - (d) The snow plan issued in accordance with point AD 1.2.2 of the AIP shall be supplemented by seasonal information to be issued as an AIC well in advance of the beginning of each winter – not less than one month before the normal onset of winter conditions.
  - (e) When the AIC is selected for international distribution it shall have the same distribution as the AIP.
  - (f) Each AIC shall be allocated a serial number which shall be consecutive and based on the calendar year.
  - (g) In the event that an AIC is provided in more than one series, each series shall be separately identified by a letter.
  - (h) A checklist of AIC currently in force shall be issued at least once a year, with distribution as for the AIC.
  - (i) A checklist of AIC provided internationally shall be included in the NOTAM checklist.

#### **AIS.TR.330 NOTAM**

- (a) A NOTAM shall be issued when it is necessary to provide the following information:
  - (1) establishment of, closure of, or significant changes in the operation of aerodromes or heliports or runways;
  - (2) establishment of, withdrawal of, and significant changes in, the operation of aeronautical services;
  - (3) establishment of, withdrawal of, and significant changes in, the operational capability of radio navigation and air-ground communication services;

- (4) unavailability of backup and secondary systems, having a direct operational impact;
- (5) establishment of, withdrawal of, or significant changes to, visual aids;
- (6) interruption of, or return to operation of, major components of aerodrome lighting systems;
- (7) establishment of, withdrawal of, or significant changes to, procedures for air navigation services;
- (8) occurrence or correction of major defects or impediments in the manoeuvring area;
- (9) changes to, and limitations on, the availability of fuel, oil and oxygen;
- (10) major changes to search and rescue (SAR) facilities and services available;
- (11) establishment of, withdrawal of, or return to, operation of hazard beacons marking obstacles to air navigation;
- (12) changes in regulations applicable in the State(s) concerned that require immediate action from an operational perspective;
- (13) operational directives requiring immediate action or changes thereto;
- (14) presence of hazards that affect air navigation;
- (15) planned laser emissions, laser displays and search lights if pilots' night vision is likely to be impaired;
- (16) erecting or removal of, or changes to, obstacles to air navigation in the take-off or climb, missed approach, approach areas as well as on the runway strip;
- (17) establishment or discontinuance of, including activation or deactivation, as applicable, or changes in, the status of prohibited, restricted or danger areas;
- (18) establishment or discontinuance of areas or routes, or portions of areas or routes, where the possibility of interception exists and where the maintenance of guard on the very high frequency (VHF) emergency frequency 121,500 MHz is required;
- (19) allocation, cancellation or change of location indicators;
- (20) changes in aerodrome/heliport rescue and firefighting (RFF) category;
- (21) presence of, removal of, or significant changes in, hazardous conditions due to snow, slush, ice, radioactive material, toxic chemicals, volcanic ash deposition or water on the movement area;
- (22) outbreaks of epidemics necessitating changes in notified requirements for inoculations and quarantine measures;
- (23) forecasts of solar cosmic radiation, where provided;
- (24) an operationally significant change in volcanic activity, the location, date and time of volcanic eruptions, or the horizontal and vertical extent of a volcanic ash cloud, including direction of movement, flight levels and routes or portions of routes that could be affected;
- (25) release into the atmosphere of radioactive materials or toxic chemicals following a nuclear or chemical incident, the location, date and time of the incident, the flight levels and routes, or portions of these, that could be affected, as well as the direction of movement;
- (26) establishment of operations of humanitarian relief missions, together with procedures or limitations that affect air navigation;

- (27) implementation of short-term contingency measures in cases of disruption, or partial disruption, of ATS and related supporting services;
  - (28) specific loss of integrity of satellite-based navigation systems.
  - (29) unavailability of a runway due to runway marking works or, if the equipment used for those works can be removed, a time lag required for making the runway available.
- (b) A NOTAM shall not be issued to provide any of the following information:
- (1) routine maintenance work on aprons and taxiways that does not affect the safe movement of aircraft;
  - (2) temporary obstructions in the vicinity of aerodromes/heliports that do not affect the safe operation of aircraft;
  - (3) partial failure of aerodrome/heliport lighting facilities where such failure does not directly affect aircraft operations;
  - (4) partial temporary failure of air-ground communications when suitable alternative frequencies are available and are operative;
  - (5) lack of apron marshalling services, road traffic closures, limitations and control;
  - (6) the unserviceability of location, destination or other instruction signs on the aerodrome movement area;
  - (7) parachuting when in uncontrolled airspace under visual flight rules (VFR), nor when in controlled airspace at promulgated sites or within danger or prohibited areas;
  - (8) training activities performed by ground units;
  - (9) unavailability of backup and secondary systems if these do not have an operational impact;
  - (10) limitations to airport facilities or general services, with no operational impact;
  - (11) national regulations not affecting general aviation;
  - (12) announcements or warnings about possible/potential limitations, with no operational impact;
  - (13) general reminders on already published information;
  - (14) availability of equipment for ground units, without information on the operational impact on airspace and facility users;
  - (15) information about laser emissions with no operational impact and about fireworks below the minimum flying heights;
  - (16) closure of parts of the movement area in connection with locally coordinated, planned work of duration of less than one hour;
  - (17) closure, changes, unavailability in the operation of aerodrome(s)/ heliport(s) other than in the aerodrome(s)/heliport(s) operation hours; and
  - (18) other non-operational information of a similar temporary nature.
- (c) Except as provided for in points AIS.TR.330(f) and AIS.TR.330(g), each NOTAM shall contain the information in the order referred to in the NOTAM FORMAT in PANS-AIM (Doc 10066).

- (d) 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 and plain language.
- (e) All NOTAM shall be issued in English language.
- (f) 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 SNOWTAM and shall contain the information in the order referred to in the SNOWTAM format in PANS-AIM (Doc 10066).
- (g) Information concerning an operationally significant change to volcanic activity, volcanic eruption or volcanic ash cloud shall, when reported by means of an ASHTAM, contain the information in the order referred to in the ASHTAM format in PANS-AIM (Doc 10066).
- (h) When errors occur in a NOTAM, a NOTAM with a new number shall be issued to replace the erroneous NOTAM or the erroneous NOTAM shall be cancelled and a new NOTAM shall be issued.
- (i) When a NOTAM is issued that cancels or replaces a previous NOTAM:
  - (1) the series and number/year of the previous NOTAM shall be indicated;
  - (2) the series, location indicator and subject of both NOTAM shall be the same.
- (j) Only one NOTAM shall be cancelled or replaced by a NOTAM.
- (k) Each NOTAM shall deal with only one subject and one condition of the subject.
- (l) Each NOTAM shall be as brief as possible and compiled so that its meaning is clear without the need to refer to another document.
- (m) A NOTAM containing permanent or temporary information of long duration (three months or longer) shall include appropriate references to the AIP or AIP supplement.
- (n) Location indicators included in the text of a NOTAM shall be those contained in ICAO Doc 7910. A curtailed form of such indicators shall not be used. Where no ICAO location indicator is assigned to the location, its place name shall be entered in plain language.
- (o) A series identified by a letter and a four-digit number followed by a stroke and a two-digit number for the year shall be allocated to each NOTAM. The four-digit number shall be consecutive and based on the calendar year.
- (p) All NOTAM shall be divided in series based on subject, traffic or location or a combination of these, depending on end-user needs. NOTAM for aerodromes allowing international air traffic shall be issued in international NOTAM series.
- (q) If NOTAM are issued in both English and national language, the NOTAM series shall be organised so that the national language series are equivalent to the English language series in terms of content and numbering.
- (r) The content and geographical coverage of each NOTAM series shall be stated in detail in the AIP, in point GEN 3.
- (s) A checklist of valid NOTAM shall be regularly provided.
- (t) One checklist NOTAM shall be issued for each series.
- (u) A checklist NOTAM shall also refer to the latest AIP amendments, AIP supplements, data sets and, at least, to distributed AIC.
- (v) A checklist NOTAM shall have the same distribution as the actual message series to which it refers and shall be clearly identified as a checklist.

- (w) Series allocation shall be monitored and, if required, appropriate measures shall be taken to assure that no series reaches the maximum possible number of issued NOTAM before the end of a calendar year.

## Chapter 2 – Digital data sets

### **AIS.TR.335 General— Digital data sets**

- (a) A standard for geographic information shall be used as a reference framework.
- (b) A description of each available data set shall be provided in the form of a data product specification.
- (c) A checklist of the available data sets, including their effective and publication dates, shall be made available to users to ensure that current data is being used.
- (d) The checklist of data sets shall be made available through the same distribution mechanism as the one used for the data sets.

### **AIS.TR.340 Metadata requirements**

The minimum metadata for each data set shall include:

- (a) the name of the organisations or entities providing the data set;
- (b) the date and time when the data set was provided;
- (c) the validity of the data set; and
- (d) any limitations on the use of the data set.

### **AIS.TR.345 AIP data set**

- (a) The AIP data set shall include data about the following subjects, including the properties indicated, if applicable:

<b>Data subjects</b>	<b>Associated properties as a minimum</b>
Aerodrome/heliport	Location, indicator, name, International Air Transport Association (IATA) designator, served city, certification date, certification expiration date, if applicable, control type, field elevation, reference temperature, magnetic variation, airport reference point.
ATS airspace	Type, name, lateral limits, vertical limits, class of airspace
Final approach and take-off area	Designation, length, width, threshold point
Radio navigation aid	Type identification, name, aerodrome served, hours of operation, magnetic variation, frequency/channel, position, elevation, magnetic bearing, zero bearing direction
Route	Identifier prefix, flight rules, designator
Route segment	Navigation specification, start point, end point, track, distance, upper limit, lower limit, minimum en route altitude (MEA), minimum obstacle clearance altitude (MOCA), direction of cruising level, reverse direction of cruising level, required navigation performance
Runway	Designator, nominal length, nominal width, surface type, strength

<b>Data subjects</b>	<b>Associated properties as a minimum</b>
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), rejected TODA (for helicopters)
Special activity airspace	Type, name, lateral limits, vertical limits, restriction, activation
Touch down and lift-off area (TLOF)	Designator, centre point, length, width, surface type
Waypoint – en route	Reporting requirement, identification, location, formation

- (b) When a property is not defined for a particular occurrence of the subjects listed in (a), the AIP data subset shall include an explicit indication: ‘not applicable’.

#### **AIS.TR.350 Terrain and obstacle data – General requirements**

The coverage areas for sets of terrain and obstacle data shall be specified as:

- (a) Area 1: the entire territory of a State;
- (b) Area 2: within the vicinity of an aerodrome, subdivided as follows:
  - (1) Area 2a: a rectangular area around a runway which comprises the runway strip plus any clearway that exists;
  - (2) 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 % to each side;
  - (3) Area 2c: an area extending outside Areas 2a and 2b at a distance of not more than 10 km from the boundary of Area 2a; and
  - (4) 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 manoeuvring area (TMA) boundary, whichever is nearer;
- (c) Area 3: the area bordering an aerodrome movement area which 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
- (d) Area 4: the area extending 900 m prior to the runway threshold and 60 m to each side of the extended runway centre line in the direction of the approach on a precision approach runway, Category II or III.

#### **AIS.TR.355 Terrain data sets**

When terrain data sets are provided in accordance with point AIS.OR.355:

- (a) terrain data sets shall contain the digital representation of the terrain surface in the form of continuous elevation values at all intersections of a defined grid, referenced to a common datum;
- (b) a terrain grid shall be angular or linear and shall be of a regular or irregular shape;
- (c) terrain data sets shall include spatial (position and elevation), thematic, and temporal aspects of the surface of the Earth, containing naturally occurring features, excluding obstacles;
- (d) only one feature type, i.e. terrain, shall be provided;
- (e) the following terrain feature attributes shall be recorded in the terrain data set:

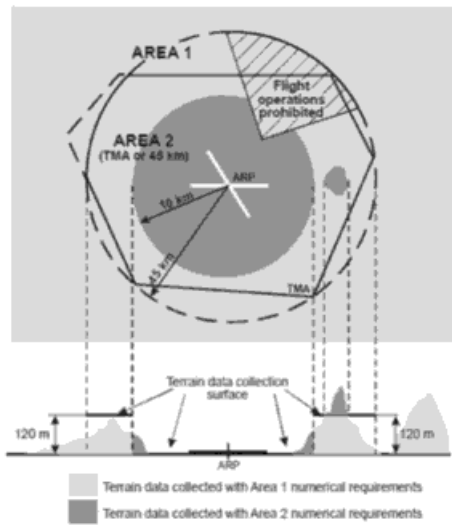


- (1) area of coverage;
  - (2) identification of the data originator;
  - (3) data source identifier;
  - (4) acquisition method;
  - (5) post spacing;
  - (6) horizontal reference system;
  - (7) horizontal resolution;
  - (8) horizontal accuracy;
  - (9) horizontal confidence level;
  - (10) horizontal position;
  - (11) elevation;
  - (12) elevation reference;
  - (13) vertical reference system;
  - (14) vertical resolution;
  - (15) vertical accuracy;
  - (16) vertical confidence level;
  - (17) recorded surface;
  - (18) integrity;
  - (19) date and time stamp; and
  - (20) unit of measurement used;
- (f) within the area covered by a 10-km radius from the ARP, terrain data shall comply with the Area 2 numerical requirements;
- (g) in the area between 10 km and the TMA boundary or a 45-km radius, whichever is smaller, data on terrain that penetrates the horizontal plane 120 m above the lowest runway elevation shall comply with the Area-2 numerical requirements;
- (h) in the area between 10 km and the TMA boundary or a 45-km radius, whichever is smaller, data on terrain that does not penetrate the horizontal plane 120 m above the lowest runway elevation shall comply with the Area-1 numerical requirements; and
- (i) in those portions of Area 2 where flight operations are prohibited due to very high terrain or other local restrictions or other local restrictions or regulations, terrain data shall comply with the Area 1 numerical requirements.

The following diagram contains a graphical illustration of Area 1 and Area 2 terrain data collection surfaces:

**Terrain data collection surfaces – Area 1 and Area 2**

*Status: This is the original version (as it was originally made). This item of legislation is currently only available in its original format.*



### AIS.TR.360 Obstacle data sets

When obstacle data sets are provided in accordance with point AIS.OR.360:

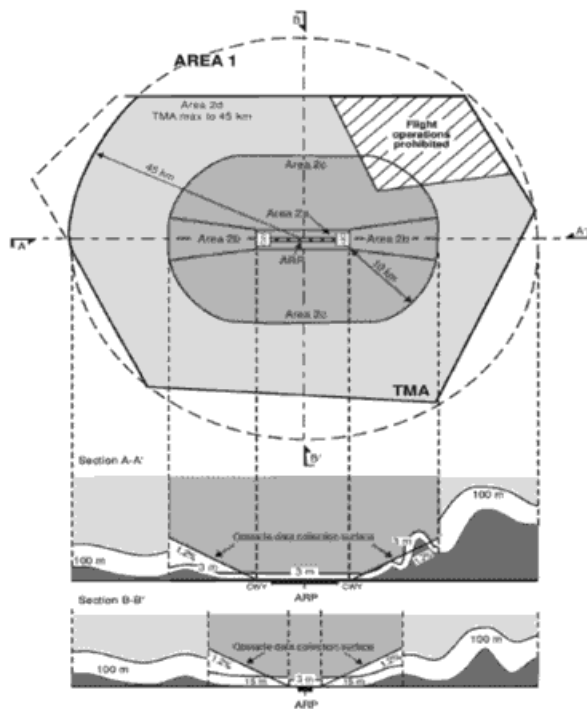
- (a) obstacle data items are features that shall be represented in the data sets by points, lines or polygons;
- (b) all defined obstacle feature types shall be provided and each of them shall be described according to the following list of attributes:
  - (1) area of coverage;
  - (2) identification of the data originator;
  - (3) data source identifier;
  - (4) obstacle identifier;
  - (5) horizontal accuracy;
  - (6) horizontal confidence level;
  - (7) horizontal position;
  - (8) horizontal resolution;
  - (9) horizontal extent;
  - (10) horizontal reference system;
  - (11) elevation;
  - (12) vertical accuracy;
  - (13) vertical confidence level;
  - (14) vertical resolution;
  - (15) vertical reference system;
  - (16) obstacle type;
  - (17) geometry type;
  - (18) integrity;
  - (19) date and time stamp;
  - (20) unit of measurement used;
  - (21) lighting; and

- (22) marking;
- (c) obstacle data for Areas 2 and 3 shall be collected in accordance with the following obstacle collection surfaces:
- (1) the Area 2a obstacle collection surface has 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;
  - (2) the Area 2b obstacle collection surface has a 1.2 % slope extending from the ends of Area 2a at the elevation of the runway end in the direction of departure, with a length of 10 km and a splay of 15 % to each side; obstacles less than 3 m in height above the ground need not be collected;
  - (3) the Area 2c obstacle collection surface has a 1.2 % slope extending outside Areas 2a and 2b at a distance of not more than 10 km from the boundary of Area 2a; the initial elevation of Area 2c shall be the elevation of the point of Area 2a at which it commences; obstacles less than 15 m in height above the ground need not be collected;
  - (4) the Area 2d obstacle collection surface has a height of 100 m above the ground; and
  - (5) the Area 3 obstacle collection surface extends 0.5 m above the horizontal plane passing through the nearest point on the aerodrome movement area;
- (d) in those portions of Area 2 where flight operations are prohibited due to very high terrain or other local restrictions or regulations, obstacle data shall be collected and recorded in accordance with the Area 1 numerical requirements;
- (e) the obstacle data product specification, supported by geographical coordinates for each aerodrome included within the dataset, shall describe the following areas:
- (1) Areas 2a, 2b, 2c and 2d;
  - (2) the take-off flight path area; and
  - (3) the obstacle limitation surfaces;
- (f) obstacle data sets shall contain the digital representation of the vertical and horizontal extent of the obstacles; and
- (g) obstacles shall not be included in terrain data sets.

The following diagram contains a graphical illustration of Area 1 and Area 2 obstacle data collection surfaces and criteria used to identify obstacles in Area 2.

### **Obstacle data collection surfaces – Area 1 and Area 2**

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**AIS.TR.365 Aerodrome mapping data sets**

- (a) Aerodrome mapping data sets shall contain the digital representation of aerodrome features.
- (b) ISO standards for geographic information shall be used as a reference framework.
- (c) Aerodrome mapping data products shall be described following the relevant data product specification standard.
- (d) The content and structure of aerodrome mapping data sets shall be defined in terms of an application schema and a feature catalogue.

**AIS.TR.370 Instrument flight procedure data sets**

- (a) Instrument flight procedure data sets shall contain the digital representation of instrument flight procedures.
- (b) The instrument flight procedure data sets shall include data about the following subjects, including all of their properties:
  - (1) procedure;
  - (2) procedure segment;
  - (3) final approach segment;
  - (4) procedure fix;
  - (5) procedure holding;
  - (6) helicopter procedure specifics.

**SECTION 4 – DISTRIBUTION AND PRE-FLIGHT INFORMATION SERVICES**

**AIS.TR.400 Distribution services**

- (a) A predetermined distribution system for NOTAM transmitted on the AFS shall be used whenever possible.

- (b) Distribution of NOTAM series other than those distributed internationally shall be granted upon request.
- (c) NOTAM shall be prepared in conformity with ICAO communication procedures laid down in ICAO Annex 10, Volume II (Seventh Edition, July 2016) to the Chicago Convention.
- (d) Each NOTAM shall be transmitted as a single telecommunication message.
- (e) The international exchange of ASHTAM and NOTAM where NOTAM is used for distribution of information on volcanic activity, shall include volcanic ash advisory centres and the world area forecast centres, and take account of the requirements of long-range operations.

**AIS.TR.405 Pre-flight information services**

- (a) 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.
- (b) The human machine interface of the pre-flight information services facilities shall ensure easy access to all relevant information or data in a guided manner.
- (c) Self-briefing facilities of an automated pre-flight information system shall provide access, as necessary, to the aeronautical information service for consultation by telephone or other suitable telecommunication means.
- (d) Automated pre-flight information systems for the supply of aeronautical data and aeronautical information for self-briefing, flight planning and flight information service shall:
  - (1) provide for continuous and timely updating of the system database and monitoring of the validity and quality of the aeronautical data stored;
  - (2) permit access to the system by operations personnel, including flight crew members, aeronautical personnel concerned and other aeronautical users, through suitable telecommunications means;
  - (3) ensure the provision of the aeronautical data and aeronautical information accessed, in paper form, as required;
  - (4) use access and interrogation procedures based on abbreviated plain language and ICAO location indicators laid down in ICAO Doc 7910, as appropriate, or based on a menu-driven user interface or other appropriate mechanism;
  - (5) provide a timely response to a user request for information.
- (e) All NOTAM shall be made available for briefing by default, and content reduction shall be at user's discretion.

**SECTION 5 – AERONAUTICAL INFORMATION PRODUCTS UPDATES**

**AIS.TR.500 General – Aeronautical information products updates**

The same AIRAC cycle update shall be applied to the AIP amendments, AIP supplements, AIP data set and the instrument flight procedure data sets in order to ensure consistency of the data items that appear in multiple aeronautical information products.

**AIS.TR.505 AIRAC**

- (a) Information concerning the following circumstances shall be distributed under the AIRAC system:
  - (1) horizontal and vertical limits, regulations and procedures applicable to:
    - (i) flight information regions (FIRs);
    - (ii) control areas (CTAs);

- (iii) control zones;
- (iv) advisory areas;
- (v) ATS routes;
- (vi) permanent danger, prohibited and restricted areas (including type and periods of activity, when known) and air defence identification zones (ADIZs);
- (vii) permanent areas or routes, or portions of these, where the possibility of interception exists;
- (viii) RMZ, TMZ or both;
- (2) positions, frequencies, call signs, identifiers, known irregularities and maintenance periods of radio navigation aids, and communication and surveillance facilities;
- (3) holding and approach procedures, arrival and departure procedures, noise abatement procedures and any other pertinent ATS procedures;
- (4) transition levels, transition altitudes and minimum sector altitudes;
- (5) meteorological facilities (including broadcasts) and procedures;
- (6) runways and stopways;
- (7) taxiways and aprons;
- (8) aerodrome ground operating procedures (including low-visibility procedures);
- (9) approach and runway lighting; and
- (10) aerodrome operating minima.
- (b) Special arrangements shall be made whenever major changes are planned and where advance notice is desirable and practicable.
- (c) When information has not been submitted by the AIRAC date, a NIL notification shall be distributed through a NOTAM or other suitable means, not later than one cycle before the AIRAC effective date concerned.

#### **AIS.TR.510 NOTAM**

- (a) A NOTAM shall be published with sufficient lead time for the affected parties to take any required action, except in the case of unserviceability, volcanic activity, release of radioactive material, toxic chemicals and other events that cannot be foreseen.
- (b) A NOTAM notifying unserviceability of aids to air navigation, facilities or communication services shall provide an estimate of the unserviceability period or of the time at which restoration of service is expected.
- (c) 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.
- (d) Within three months from the issuing of a temporary NOTAM of long duration (three months or longer), the information contained in the NOTAM shall be included in an AIP supplement.
- (e) When a NOTAM with an 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 that case, an AIP supplement shall be issued.
- (f) A ‘trigger NOTAM’ shall briefly describe the content, the effective date and time, as well as the reference number of the amendment, or supplement.

- (g) A ‘trigger NOTAM’ shall come into force on the same effective date and time as the AIP amendment or supplement.
- (h) In the case of an AIP amendment, a ‘trigger NOTAM’ shall remain valid for a period of 14 days.
- (i) In the case of an AIP supplement that is valid for less than 14 days, the ‘trigger NOTAM’ shall remain valid for the complete validity period of the AIP supplement.
- (j) In the case of an AIP supplement that is valid for 14 days or more, the ‘trigger NOTAM’ shall remain valid for at least 14 days.

**AIS.TR.515 Data set updates**

- (a) The update interval for the AIP data set and the instrument flight procedure data sets shall be specified in the data product specification.
- (b) Data sets that have been made available in advance, according to the AIRAC cycle, shall be updated with the non-AIRAC changes that occurred between the publication and the effective date.”.