

STATUTORY INSTRUMENTS SUPPLEMENT

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S T A T U T O R Y I N S T R U M E N T S

2020 No. 34.

**THE CIVIL AVIATION (AERONAUTICAL INFORMATION SERVICES)
REGULATIONS, 2020**

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STATUTORY INSTRUMENTS

2020 No. 34

The Civil Aviation (Aeronautical Information Services) Regulations, 2020

*(Under section 35, 61(2)(d) of the Civil Aviation Authority Act,
Cap. 354)*

IN EXERCISE of powers conferred upon the Minister by section 61(2)(d) of the Civil Aviation Authority Act, Cap. 354, and on the recommendation of Civil Aviation Authority, these Regulations are made this 5th day of February, 2020.

PART I— PRELIMINARY

1. Title

These Regulations may be cited as the Civil Aviation (Aeronautical Information Services) Regulations, 2020.

2. Application

(1) These Regulations apply to—

- (a) an aeronautical information service provider; and
- (b) all parties involved in providing aeronautical data.

(2) Notwithstanding subregulation (1), these Regulations do not apply to aeronautical information service provided by the military.

(3) For the avoidance of doubt, these Regulations apply up to the moment the aeronautical data or information is made available by the aeronautical information service provider to the next intended user.

3. Interpretation

In these Regulations unless the context otherwise requires—

“Act” means the Civil Aviation Act, Cap 354;

“Aerodrome Mapping Data (AMD)” means data collected for the purpose of compiling aerodrome mapping information;

- “Aerodrome Mapping Database (AMDB)” means collection of aerodrome mapping data organised and arranged as a structured data set;
- “aerodrome” means a defined area on land or water including buildings, installations and equipment intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft;
- “aeronautical information product” means aeronautical data and aeronautical information provided either as digital data sets or as a standardized presentation in paper or electronic media;
- “aeronautical chart” means a representation of a portion of the earth, its culture and relief, specifically designated to meet the requirements of air navigation;
- “aeronautical data or information originator” means an entity that is accountable for data or information origination and from which the AIS organization receives aeronautical data and information;
- “aeronautical data” means a representation of aeronautical facts, concepts or instructions in a formalized manner suitable for communication, interpretation or processing;
- “Aeronautical Fixed Service (AFS)” means a telecommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular, efficient and economical operation of air services;
- “aeronautical information circular” (AIC) means a notice containing information that does not qualify for the origination of a NOTAM or for inclusion in the AIP, but which relates to flight safety, air navigation, technical, administrative or legislative matters;
- “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;

- “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;
- “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;
- “aeronautical information service (AIS) provider” means the organisation responsible for the provision of an AIS;
- “Aeronautical Information Service” (AIS), means a service established within the defined area of coverage responsible for the provision of aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation;
- “aeronautical information” means information resulting from the assembly, analysis and formatting of aeronautical data;
- “AIP Amendment” means permanent changes to the information contained in the AIP;
- “AIP Supplement” means temporary changes to the information contained in the AIP which are provided by means of special pages;
- “Air Defence Identification Zone (ADIZ)” means special designated airspace of defined dimensions within which an aircraft is required to comply with special identification and reporting procedures additional to those related to the provision of air traffic services;
- “air traffic management (ATM)” means the dynamic, integrated management of air traffic and airspace, including air traffic services, airspace management and air traffic flow management, safely, economically and efficiently, through the provision of facilities and seamless services in

collaboration with all parties and involving airborne and ground-based functions;

“Air Traffic Services” mean air traffic services and includes Flight Information Service, alerting service air traffic advisory service, air traffic control service, area control service, approach control service and aerodrome control service;

“application” means manipulation and processing of data in support of user requirements;

“area navigation (RNAV) specification” means a navigation specification based on area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV;

“area navigation (RNAV)” means a method of navigation which permits aircraft operation on any desired flight path within the coverage of ground or space-based navigation aids or within the limits of the capability of self-contained aids, or a combination of these aids;

“ASHTAM” means a special series NOTAM notifying by means of a specific format change in activity of a volcano, a volcanic eruption and volcanic ash cloud that is of significance to aircraft operations;

“assemble” means a process of merging data from multiple sources into a database and establishing a baseline for subsequent processing;

“ATS surveillance services” means a term used to indicate a service provided directly by means of an ATS surveillance system;

“ATS surveillance system” variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft;

“Authority” means the Uganda Civil Aviation Authority;

“Automatic Dependent Surveillance – Broadcast (ADS-B)” means, a means by which aircraft, aerodrome vehicles

and other objects can automatically transmit or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link;

“Automatic Dependent Surveillance – Contract (ADS- C)” means, a means by which the terms of an ADS-C agreement will be exchanged between the ground system and the aircraft, via a data link, specifying under what conditions ADS-C reports would be initiated, and what data would be contained in the reports;

“Automatic Terminal Information Service (ATIS)” means the automatic provision of current, routine information to arriving and departing aircraft throughout twenty four hours or a specified portion thereof;

“bare earth” means surface of the earth including bodies of water and permanent ice and snow, and excluding vegetation and manmade objects;

“calendar” means discrete temporal reference system that provides the basis for defining temporal position to a resolution of one day;

“canopy” means bare earth supplemented by vegetation height;

“confidence level” means the probability that the true value of a parameter is within a certain interval around the estimate of its value;

“Controller-Pilot Data Link Communications (CPDLC)” means a means of communication between controller and pilot, using data link for ATC communications;

“culture” means all man-made features constructed on the surface of the earth, such as cities, railways and canals;

“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;

“danger area” means an airspace of defined dimensions within which activities dangerous to the flight of an aircraft may

- exist at specified times;
- “data accuracy” means a degree of conformance between the estimated or measured value and the true value;
- “data completeness” means the degree of confidence that all of the data needed to support the intended use is provided;
- “data format” means a structure of data elements, records and files arranged to meet standards, specifications or data quality requirements;
- “data integrity (assurance level)” means a degree of assurance that an aeronautical data and its value has not been lost or altered since the origination or authorized amendment;
- “Data link-VOLMET (D-VOLMET)” means provision of current aerodrome routine meteorological reports (METAR) and aerodrome special meteorological reports (SPECI), aerodrome forecasts (TAF), SIGMET, special air-reports not covered by a SIGMET and, where available, AIRMET via data link;
- “data product specification” means a detailed description of a data set or data set series together with additional information that will enable it to be created, supplied to and used by another party;
- “data product” means a data set or data set series that conforms to a data product specification;
- “data quality” means a degree or level of confidence that the data provided meets the requirements of the data user in terms of accuracy, resolution, integrity (or equivalent assurance level), traceability, timeliness, completeness and format;
- “data resolution” means a number of units or digits to which a measured or calculated value is expressed and used;
- “data set series” means a collection of data sets sharing the same product specification;
- “data set” means an identifiable collection of data;

- “data timeliness” means the degree of confidence that the data is applicable to the period of its intended use;
- “data traceability” means the degree that a system or a 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 originator;
- “datum” means any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities;
- “Digital Elevation Model (DEM)” means the representation of terrain surface by continuous elevation values at all intersections of a defined grid, referenced to common datum;
- “direct transit arrangements” means special arrangements approved by the public authorities concerned by which traffic which is pausing briefly in its passage through the Contracting State may remain under their direct control;
- “ellipsoid height (geodetic height)” means the height related to the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question;
- “feature attribute” means the characteristic of a feature;
- “feature operation” means operation that every instance of a feature type may perform;
- “feature relationship” means relationship that links instances of one feature type with instances of the same or a different feature;
- “feature type” means class of real world phenomena with common properties
- “feature” means abstraction of real world phenomena;
- “geodesic distance” means the shortest distance between any two points on a mathematically defined ellipsoidal surface;
- “geodetic datum” means minimum set of parameters required to define location and orientation of the local reference

system with respect to the global reference system or frame;

“geoid undulation” means the distance of the geoid above (positive) or below (negative) the mathematical reference ellipsoid;

“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;

“gregorian calendar” means calendar in general use, first introduced in 1582 to define a year that more closely approximates the tropical year than the Julian calendar;

“height” means the vertical distance of a level, point or an object considered as a point, measured from a specific datum;

“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;

“human factors principles” means principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance;

“integrity classification of aeronautical data” means classification based upon the potential risk resulting from the use of corrupted data;

“international airport” means an airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out;

“international NOTAM office (NOF)” means an office designated by a State for the exchange of NOTAM internationally;

“logon address” means a specified code used for data link logon to an ATS unit.

“manoeuvring area” means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons;

“metadata” means data about data;

“Minimum En-route Altitude” (MEA) means the altitude for an en-route segment that provides adequate reception of relevant navigation facilities and ATS communications, complies with the airspace structure and provides the required obstacle clearance;

“Minimum Obstacle Clearance Altitude” (MOCA) means the minimum altitude for a defined segment of flight that provides the required obstacle clearance;

“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;

“navigation specification” means a set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace;

“next intended user” means the entity that receives the aeronautical data or information from the aeronautical information service;

“NOTAM” means a notice distributed by means of telecommunication containing information concerning the establishment, condition or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel concerned with flight operations;

“obstacle or terrain data collection surface” means defined surface intended for the purpose of collecting obstacle or terrain data;

“obstacle” means all fixed whether temporary or permanent and mobile objects or parts of the object, that—

- (a) are located on an area intended for the surface movement of aircraft;

- (b) extend above a defined surface intended to protect aircraft in flight; or
- (c) stand outside those defined surfaces and that have been assessed as being a hazard to air navigation;

“origination (aeronautical data or aeronautical information)” means the creation of the value associated with new data or information or the modification of the value of existing data or information;

“orthometric height” means height of a point related to the geoid, generally presented as an MSL elevation;

“performance-based communication (PBC)” means communication based on performance specifications applied to the provision of air traffic services;

“Performance-Based Navigation (PBN)” means area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

“performance-based surveillance” (PBS) means a surveillance based on performance specifications applied to the provision of air traffic services;

“portrayal” means presentation of information to humans;

“position (geographical)” means 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;

“post spacing” means angular or linear distance between two adjacent elevation points;

“pre-flight information bulletin” (PIB) means a presentation of current NOTAM information of operational significance, prepared prior to flight;

“precision” means the smallest difference that can be reliably distinguished by a measurement process;

- “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;
- “quality assurance” means part of quality management focused on providing confidence that quality requirements will be fulfilled;
- “quality control” means part of quality management focused on fulfilling quality requirements;
- “quality management” means coordinated activities to direct and control an organization with regard to quality;
- “quality” means a degree to which a set of inherent characteristics fulfils requirements;
- “radio navigation service” means a service providing guidance information or position data for the efficient and safe operation of aircraft supported by one or more radio navigation aids;
- “Required Communication Performance (RCP) specification” means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication;
- “Required navigation performance (RNP) specification” means a navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP, for instance, RNP 4, RNP APCH;
- “Required Surveillance Performance (RSP) specification” means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance.
- “requirement” means a need or expectation that is stated, generally implied or obligatory;

- “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;
- “route stage” means a route or portion of a route flown without an intermediate landing;
- “SNOWTAM” means a special series NOTAM given in a standard format providing a surface condition report notifying the presence or cessation of hazardous conditions due to snow, ice, slush, frost, standing water or water associated with snow, slush, ice or frost on the movement area;
- “station declination” means an alignment variation between the zero degree radial of a VOR and true north, determined at the time the VOR station is calibrated;
- “terrain” means the surface of the earth containing naturally occurring features such as mountains, hills, ridges, valleys, bodies of water, permanent ice and snow, and excluding obstacles;
- “traceability” means ability to trace the history, application or location of that which is under consideration;
- “validation” means confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled;
- “verification” means confirmation, through the provision of objective evidence, that specified requirements have been fulfilled;
- “Voice-Automatic Terminal Information Service (Voice-ATIS)” means the provision of automatic terminal information service by means of continuous and repetitive voice broadcasts;
- “VOLMET” means meteorological information for aircraft in flight;
- “VOLMET broadcast” means provision, as appropriate, of current METAR, SPECI, TAF and SIGMET by means of continuous and repetitive voice broadcasts.

4. Horizontal reference system

(1) The world geodetic system — 1984 (WGS-84) shall be used as the horizontal reference system for air navigation.

(2) The published aeronautical geographical coordinates indicating latitude and longitude shall be expressed in terms of the WGS-84 geodetic reference datum.

5. Vertical reference system

(1) The mean sea level datum shall be used as the vertical reference system for air navigation.

(2) The earth gravitational model — 1996 (EGM-96) shall be used as the global gravity model for air navigation.

(3) At geographical positions where the accuracy of EGM-96 does not meet the accuracy requirements for elevation and geoid undulation on the basis of EGM-96 data, the regional, national or local geoid models containing high resolution (short wave length) gravity field data shall be developed and used.

(4) When a geoid model other than the EGM-96 model is used, a description of the model used, including the parameters required for height transformation between the model and EGM-96 shall be provided in Aeronautical Information Publication.

6. Temporal reference system

(1) The Gregorian calendar and coordinated universal time shall be used as the temporal reference system for air navigation.

(2) Where a different temporal reference system is used for some applications, the feature catalogue, the metadata associated with an application schema or a data set, as appropriate, shall include either a description of that system or a citation for a document that describes that temporal reference system.

PART III— RESPONSIBILITIES AND FUNCTIONS

7. **Responsibility of Authority**

(1) The Department of Aeronautical Service Management in the Authority shall, in accordance with the Act, provide aeronautical information services.

(2) In performing the function of providing aeronautical information services, the Department of Aeronautical Information Management shall be known as the aeronautical information service provider.

(3) The aeronautical data and aeronautical information provided for and on behalf of the Authority shall indicate that the data and information are provided under the authorisation of the Authority, irrespective of the format in which they are provided.

(4) The Authority shall—

- (a) ensure that the aeronautical data and aeronautical information provided covers the territory of Uganda for which the Authority is responsible for the provision of air traffic services;
- (b) be responsible for the aeronautical data and aeronautical information provided in accordance with sub regulation (4)(a); and
- (c) ensure that the aeronautical data and aeronautical information provided is complete, timely and of required quality in accordance with regulation 14.

(5) The Authority shall ensure that formal arrangements are established between originators of aeronautical data and aeronautical information and the aeronautical information service provider in relation to the timely and complete provision of aeronautical data and aeronautical information.

8. Responsibilities and functions of aeronautical information service provider

(1) The aeronautical information service provider shall make available, in a form suitable for the operational requirements of the air traffic management community, aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation, including—

- (a) those involved in flight operations, including flight crews, flight planning and flight simulators; and
- (b) air traffic services unit responsible for flight information service and the services responsible for pre-flight information.

(2) Subject to subregulation (1), the aeronautical information service provider shall—

- (a) receive, collate or assemble, edit, format, publish or store and distribute aeronautical data and aeronautical information concerning the entire territory of Uganda;
- (b) provide aeronautical data and aeronautical information as aeronautical information products;
- (c) where 24-hour service is not provided, make available aeronautical information service during the whole period an aircraft is in flight in the area of responsibility of an aeronautical information service, plus a period of at least two hours before and after such a period;
- (d) make available aeronautical information service at such other time as may be requested by an appropriate ground organisation;
- (e) obtain aeronautical data and aeronautical information to enable it to provide pre-flight information service and to meet the need for in-flight information from the aeronautical information services of other States or other sources that may be available;

- (f) clearly identify the aeronautical data and aeronautical information obtained from the aeronautical information service of other States, when distributed, as having the Authority of the originating State; and
- (g) if possible, verify before distribution, aeronautical data and aeronautical information obtained from other sources other than aeronautical information service of other States, and if not verified shall, when distributed, be clearly identified as such.

(3) Notwithstanding subregulation (2), the aeronautical information service provider shall promptly make available to the aeronautical information services of other states, any aeronautical data and aeronautical information necessary for the safety, regularity or efficiency of air navigation required by those states.

9. Exchange of aeronautical data and aeronautical information

Where there is an exchange of aeronautical data and aeronautical information, with other states, the aeronautical information service provider shall—

- (a) designate the office to which all elements of the aeronautical information products provided by other states shall be addressed and shall ensure that the office is qualified to deal with requests for aeronautical data and aeronautical information provided by other states;
- (b) define, where more than one international NOTAM office is designated within Uganda, the extent of responsibility and the territory covered by each office;
- (c) establish formal arrangements with the users of aeronautical data and aeronautical information in relation to the provision of the service;
- (d) arrange, as necessary, to satisfy operational requirements for the issuance and receipt of NOTAM distributed by telecommunication;

- (e) wherever practicable, establish direct contact with other providers of aeronautical information services in order to facilitate the international exchange of aeronautical data and aeronautical information;
- (f) except as provided in paragraph (h), avail one copy of each of the following aeronautical information products, where available, upon request by the aeronautical information service of an ICAO contracting state in the mutually—agreed form without charge—
 - (i) aeronautical information publication (AIP), including amendments and supplements;
 - (ii) aeronautical information circulars;
 - (iii) NOTAM; and
 - (iv) aeronautical charts;
- (g) enter into agreement with participating ICAO contracting states and other entities for the exchange of more than one copy of the elements of aeronautical information products and other air navigation documents, including those containing air navigation legislation and regulations;
- (h) provide on the basis of agreement with concerned ICAO contracting states aeronautical information and aeronautical data provided in the form of digital data sets to be used by the aeronautical information service;
- (i) enter into separate agreement with states other than ICAO contracting states and other entities for the procurement of aeronautical data and aeronautical information, including the elements of aeronautical information products and other air navigation documents, including those containing air navigation legislation and regulations; and
- (j) use globally interoperable aeronautical data and information exchange models for the provision of data

sets.

10. Copyright and cost recovery

(1) Where a product has been granted copyright protection by a state, the aeronautical information service provider shall—

- (a) make available to a third party that product which has been granted copyright protection by the state and provided to another state, in accordance with regulation 9, on condition that the—
 - (i) third party is aware that the product is copyright protected; and
 - (ii) product is appropriately annotated that it is subject to copyright by the originating State.

(2) For avoidance of doubt, where aeronautical information and aeronautical data is received in accordance with regulation 9(h), the aeronautical information service provider shall not provide digital data sets of the providing State to any third party without the consent of the providing State.

(3) Subject to subregulation (1) and (2), the aeronautical information service provider shall only recover the overhead cost of collecting and compiling aeronautical data and aeronautical information.

PART IV— AERONAUTICAL INFORMATION MANAGEMENT

11. Information management requirements

The aeronautical information service provider shall establish adequate information management resources and processes to ensure the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and aeronautical information within the air traffic management system.

12. Classification of aeronautical data

(1) Aeronautical data shall be classified as follows—

- (a) routine data which means there is a very low probability when using corrupted routine data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe;
- (b) essential data which means there is a low probability when using corrupted essential data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe; and
- (c) critical data which means there is a high probability when using corrupted critical data that the continued safe flight and landing of an aircraft would be severely at risk with the potential for catastrophe.

(2) Subject to subsection (1), where classification is based upon the potential risk resulting from the use of corrupted data, it shall be known as integrity classification of aeronautical data.

13. Aeronautical data and aeronautical information validation and verification

(1) An aeronautical data originator shall, before submitting data and information to the aeronautical information service, check the material, aeronautical data and information to be issued as part of an aeronautical information product, in order to ensure that all necessary information is included and that the information is correct in detail.

(2) Subject to subregulation (1), the aeronautical information service provider shall establish verification and validation procedures which ensure that upon receipt of aeronautical data and aeronautical information quality requirements are met.

14. Data quality specifications

Where data is in possession of the aeronautical information service provider, the aeronautical information service provider shall—

- (a) ensure that the order of accuracy for aeronautical data is in accordance with the intended use;

- (b) ensure that order of resolution of aeronautical data is commensurate with the actual data accuracy;
- (c) ensure that the integrity of aeronautical data is maintained throughout the data chain from origination to distribution to the next intended user;
- (d) establish procedures based on the applicable integrity classification in order to—
 - (i) for routine data, avoid corruption throughout the processing of the data;
 - (ii) for essential data, assure corruption does not occur at any stage of the entire process and may include additional processes as needed to address potential risks in the overall system architecture to further assure data integrity at this level; and
 - (iii) for critical data, assure corruption does not occur at any stage of the entire process and include additional integrity assurance processes to fully mitigate the effects of faults identified by thorough analysis of the overall system architecture as potential data integrity risks;
- (e) ensure and retain traceability of aeronautical data as long as the data is in use;
- (f) ensure timeliness of the aeronautical data by including limits on the effective period of the data elements;
- (g) ensure completeness of the aeronautical data in order to support its intended use;
- (h) ensure that the format of delivered aeronautical data is adequate to ensure that the data is interpreted in a manner that is consistent with its intended use; and
- (i) ensure that specifications concerning the order of the

accuracy including confidence level of aeronautical data, the resolution and integrity classification related to aeronautical data are contained in Schedule 1.

15. Data originating requirements

(1) Data shall be collected and transmitted to the aeronautical information service provider in accordance with the accuracy requirements and integrity classification specified in Schedule 1.

(2) For avoidance of doubt, positional data shall be classified as—

- (a) surveyed points such as navigation aid positions, runway threshold;
- (b) calculated points such as mathematical calculations from the known surveyed points of points in space, fixes; or
- (c) declared points such as flight information region boundary points.

(3) Geographical coordinates indicating latitude and longitude shall be determined and reported to the aeronautical information service provider in terms of the World Geodetic System – 1984 (WGS-84) geodetic reference datum.

(4) Geographical coordinates that have been transformed into WGS-84 coordinates by mathematical means and whose accuracy of original field work does not meet the applicable requirements contained in Schedule 1, shall be identified.

(5) In addition to elevation referenced to the MSL (geoid), for the specific surveyed ground positions, geoid undulation (referenced to the WGS-84 ellipsoid) for those positions specified in Schedule 2 shall also be published.

16. Data error detection

Subject to regulation 14, the aeronautical information service

provider shall—

- (a) use digital data error detection techniques during the transmission and storage of aeronautical data and digital data sets; and
- (b) use digital data error detection techniques in order to maintain the integrity levels of data sets as specified in regulation 14 (d).

17. Use of automation

Subject to these Regulations, the aeronautical information service provider shall—

- (a) apply automation in order to ensure the quality, efficiency and cost effectiveness of aeronautical information services;
- (b) give due consideration to the integrity of data and information when automated processes are implemented and take mitigating steps where risks are identified;
- (c) in order to meet the data quality requirements ensure that automation –
 - (i) enables digital aeronautical data exchange between the parties involved in the data processing chain; and
 - (ii) uses aeronautical information exchange models and data exchange models designed to be globally interoperable.

18. Quality management system

(1) In accordance with these Regulations, the aeronautical information service provider shall—

- (a) implement and maintain a quality management system that encompasses all functions of an aeronautical information service;

- (b) make the execution of the quality management system demonstrable for each function stage;
- (c) apply the quality management to the whole aeronautical information data chain from data origination to distribution to the next intended user; and
- (d) ensure that the established quality management system follows the International Organization for Standardization (ISO) 9000 series of quality assurance standards, and is certified by an accredited certification body.

(2) Subject to the quality management system established under subregulation (1) the aeronautical information service provider shall—

- (a) identify the competencies and the associated knowledge, skills and abilities required for each function;
- (b) ensure that the personnel assigned to perform each function are appropriately trained;
- (c) put in place processes to ensure that personnel possess the competencies required to perform specific assigned functions;
- (d) maintain appropriate records so that the qualifications of personnel can be confirmed;
- (e) establish initial and periodic assessments that require personnel to demonstrate the required competencies; and
- (f) use periodic assessments of personnel as a means to detect and correct shortfalls in knowledge, skills and abilities.

(3) A quality management system established under subregulation (1), shall include the necessary policies, processes and procedures, including those for the use of metadata, to ensure and verify that aeronautical data is traceable throughout the aeronautical

information data chain, so as to allow any data anomalies or errors detected in use to be identified by root cause, corrected and communicated to affected users.

(4) The aeronautical information service provider shall ensure that a quality management system established under this regulation provides users with the necessary assurance and confidence that distributed aeronautical data and aeronautical information satisfy the aeronautical data quality requirements.

(5) Subject to this regulation, the aeronautical information service provider shall—

- (a) take all necessary measures to monitor compliance with the quality management system in place;
- (b) demonstrate compliance of the quality management system applied by audit;
- (c) initiate action to determine and correct causes of nonconformities without undue delay; and
- (d) ensure that the audit observations and remedial actions are evidenced and properly documented.

19. Human factor considerations

Where human factors are provided for or utilised in the organisation of an AIS, design, contents, processing and distribution of aeronautical data and aeronautical information, the aeronautical information service provider shall give due consideration to the integrity of information, where human interaction is required and mitigating steps taken where risks are identified.

PART V— SCOPE OF AERONAUTICAL DATA AND AERONAUTICAL INFORMATION

20. Scope of aeronautical data and aeronautical information

(1) The aeronautical data and aeronautical information to be received and managed by the aeronautical information service provider shall include the following sub-domains—

- (a) national regulations, rules and procedures;
- (b) aerodromes and heliports;
- (c) airspace;
- (d) ATS routes;
- (e) instrument flight procedures;
- (f) radio navigation aids or systems;
- (g) obstacles;
- (h) terrain; and
- (i) geographic information.

(2) In determining and reporting of aeronautical data, the aeronautical information service provider shall, ensure that the determination and reporting of the aeronautical data is in accordance with the accuracy and integrity classification required to meet the needs of the end-user of aeronautical data.

21. Metadata

(1) The aeronautical information service provider shall collect metadata for aeronautical data processes and exchange points.

(2) Metadata collection shall be applied throughout the aeronautical information data chain, from origination to distribution to the next intended user.

(3) The metadata to be collected under subregulation (1), shall include—

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

22. Aeronautical information

(1) Aeronautical information shall be provided in the form of aeronautical information products and associated services.

(2) Aeronautical information products—shall consists of the following elements—

- (a) Aeronautical Information Publication (AIP), including amendments and supplements;
- (b) aeronautical information circulars (AIC);
- (c) aeronautical charts;
- (d) NOTAM; and
- (e) digital data sets;

(3) When aeronautical data and aeronautical information are provided in multiple formats, the aeronautical information service provider shall implement processes to ensure data and information consistency between formats.

23. Aeronautical information in a standardized presentation

(1) Aeronautical information provided in a standardized presentation shall include the AIP, AIP Amendments, AIP Supplements, AICs, NOTAM and aeronautical charts.

(2) The AIP, AIP amendment, AIP supplement and AIC shall be provided by the aeronautical information service provider on paper or as an electronic document.

(3) The AIP, AIP amendment, and AIP supplement and AIC when provided as an electronic document (eAIP) shall be in a format that allows for displaying on electronic devices and printing on paper.

24. Aeronautical Information Publication

The aeronautical information service provider shall ensure that the Aeronautical Information Publication (AIP) includes—

- (a) a statement of the competent Authority responsible for the air navigation facilities, services and procedures covered by the aeronautical information publication;
- (b) the general conditions under which the services or facilities are available for international use;
- (c) the choice made by the Authority in each significant case where an alternative course of action is provided for in International Civil Aviation Organisation standards, recommended practices and procedures;
- (d) a list of significant differences between the national regulations and practices of the Authority and the related ICAO Standards, recommended practices and procedures, given in a form that would enable a user to differentiate readily between the requirements of the State and the related ICAO provisions; and
- (e) concise, current information relating to, and arranged under, the subject headings listed in the Schedule 2.

25. Aeronautical Information Publication (AIP) Supplement

(1) The aeronautical information service provider shall provide a checklist of valid AIP supplements.

(2) Each AIP Supplement shall be allocated a serial number which is consecutive and based on the calendar year.

(3) Each AIP Supplement shall be provided on distinctive pages allowing for easy identification from the regular Aeronautical Information Publication content.

(4) 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.

(5) 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 with distribution as for the Aeronautical Information Publication Supplements.

(6) Each AIP Supplement page shall show a publication date.

(7) Each Aeronautical Information Regulation and Control (AIRAC) AIP Supplement page shall show a publication date and an effective date.

(8) When an error in an AIP Supplement or when the period of validity of an AIP Supplement is changed, a new AIP Supplement shall be published as a replacement.

26. Aeronautical Information Circulars (AIC)

(1) An AIC shall be used to provide—

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

(2) For avoidance of doubt, an AIC shall not be used for information that qualifies for inclusion in the AIP or NOTAM.

(3) The validity of an AIC in force shall be reviewed at least once a year.

(4) The aeronautical information service provider shall regularly provide a checklist of valid AIC.

(5) An AIC shall be provided whenever it is desirable to promulgate—

- (a) forecasts of important changes in the air navigation procedures, services and facilities provided;
- (b) forecasts of implementation of new navigational systems;
- (c) significant information arising from aircraft accident or incident investigation which has a bearing on flight safety;
- (d) information on regulations relating to the safeguarding of international civil aviation against acts of unlawful interference;
- (e) advice on medical matters of special interest to pilots;
- (f) warnings to pilots concerning the avoidance of physical hazards;
- (g) effect of certain weather phenomena on aircraft operations;
- (h) information on new hazards affecting aircraft handling techniques;
- (i) regulations relating to the carriage of restricted articles by air;
- (j) reference to the requirements of, and publication of changes in, national legislation;
- (k) aircrew licensing arrangements;
- (l) training of aviation personnel;
- (m) application of, or exemption from, requirements in national legislation;

- (n) advice on the use and maintenance of specific types of equipment;
- (o) actual or planned availability of new or revised editions of aeronautical charts;
- (p) carriage of communication equipment;
- (q) explanatory information relating to noise abatement;
- (r) selected airworthiness directives;
- (s) changes in NOTAM series or distribution, new editions of AIP or major;
- (t) changes in their contents, coverage or format; and
- (u) other information of a similar nature.

(6) Subject to this regulation, the aeronautical information provider shall—

- (a) select the AICs that are to be given international distribution and give them the same distribution as for the AIP;
- (b) allocate each AIC a serial number which shall be consecutive and based on the calendar year;
- (c) separately identify each series of AIC by a letter in the event that they are provided in more than one series;
- (d) issue a checklist of AIC currently in force at least once a year, with distribution as for the aeronautical information circulars; and
- (e) include in the NOTAM a checklist of AIC provided internationally.

27. Aeronautical charts

The aeronautical information service provider shall—

- (a) make available the aeronautical charts listed in subparagraphs (i) to (xiii), when available for designated international aerodromes or heliports, to form part of the

aeronautical information publication, or to be provided separately to recipients of the aeronautical information publication, as follows—

- (i) Aerodrome or Heliport Chart — ICAO;
 - (ii) Aerodrome Ground Movement Chart — ICAO;
 - (iii) Aerodrome Obstacle Chart — ICAO Type A;
 - (iv) Aerodrome Obstacle Chart — ICAO Type B (when available);
 - (v) Aerodrome Terrain and Obstacle Chart — ICAO; (Electronic);
 - (vi) Aircraft Parking or Docking Chart — ICAO;
 - (vii) Area Chart — ICAO;
 - (viii) ATC Surveillance Minimum Altitude Chart — ICAO;
 - (ix) Instrument Approach Chart — ICAO;
 - (x) Precision Approach Terrain Chart — ICAO;
 - (xi) Standard Arrival Chart — Instrument (STAR) — ICAO;
 - (xii) Standard Departure Chart — Instrument (SID) — ICAO; and
 - (xiii) Visual Approach Chart — ICAO;
- (b) provide the Enroute Chart, when available, as part of the AIP, or separately to recipients of the AIP;
 - (c) provide the aeronautical charts listed in subparagraphs (i) to (iv), when available, as aeronautical information products, as follows—

- (i) World Aeronautical Chart — ICAO 1:1 000 000;
 - (ii) Aeronautical Chart — ICAO 1:500 000;
 - (iii) Aeronautical Navigation Chart — ICAO Small Scale; and
- (d) provide electronic aeronautical charts based on digital databases and the use of geographic information systems; and
 - (e) ensure that the chart resolution of aeronautical data is as specified for a particular chart.

28. NOTAM

(1) The aeronautical information service provider shall regularly provide a checklist of valid NOTAM.

(2) Except as otherwise provided in subregulation (5), each NOTAM shall contain the information in the order shown in the NOTAM format in Schedule 3.

(3) NOTAM text shall be composed of the significations or uniform abbreviated phraseology assigned to the ICAO NOTAM Code complemented by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language.

(4) All NOTAM shall be issued in the English language.

(5) Information providing a surface condition report notifying the presence or cessation of hazardous conditions due to standing water or water shall be disseminated by means of a SNOWTAM, and shall contain the information in the order shown in the SNOWTAM format in Schedule 4.

(6) Information concerning an operationally significant change in volcanic activity, volcanic eruption or volcanic ash cloud shall, when reported by means of an ASHTAM, contain the information in the order shown in the ASHTAM format in Schedule 5.

(7) Subject to this regulation, the aeronautical information service provider shall—

- (a) publish NOTAM 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) give an estimate of the period of unserviceability or the time at which restoration of service is expected for NOTAM notifying unserviceability of aids to air navigation, facilities or communication services;
- (c) give at least seven days' advance notice of the activation of established danger, restricted or prohibited areas and of activities requiring temporary airspace restrictions other than for emergency operations;
- (d) give as soon as possible notice of any subsequent cancellation of the activities or any reduction of the hours of activity or the dimensions of the airspace;
- (e) within three months from the issuing of a permanent NOTAM, the information contained in the NOTAM is included in the aeronautical information products affected;
- (f) within three months from the issuing of a temporary NOTAM of long duration, the information contained in the NOTAM is included in the AIP Supplement;
- (g) when a NOTAM with estimated end of validity unexpectedly exceeds the three-month period, issue a replacement NOTAM unless the condition is expected to last for a further period of more than three months, in this case, an AIP Supplement shall be issued;
- (h) when an AIP Amendment or an AIP Supplement is published in accordance with AIRAC procedures,

originate a Trigger NOTAM giving a brief description of the contents, the effective date and time, and the reference number of the amendment or supplement;

- (i) ensure the Trigger NOTAM comes into force on the same effective date and time as the AIRAC Amendment or Supplement and the Trigger NOTAM shall remain valid in the pre-flight information bulletin for a period of fourteen days;
- (j) in the case of an AIRAC AIP Supplement that is valid for less than fourteen days, ensure the Trigger NOTAM remains valid for the complete validity period of the AIP Supplement; and
- (k) in the case of an AIRAC AIP Supplement that is valid for fourteen days or more, ensure the Trigger NOTAM remains valid for at least fourteen days.

29. Digital data sets

Where digital data is provided, the aeronautical information service provider shall—

- (a) ensure that digital data is in the form of the following data sets—
 - (i) AIP data set;
 - (ii) terrain data sets;
 - (iii) obstacle data sets;
 - (iv) aerodrome mapping data sets; and
 - (v) instrument flight procedure data sets;
- (b) provide to the next intended user each data set together, with at least the minimum set of metadata that ensures traceability; and
- (c) regularly provide a checklist of valid data sets.

30. AIP data set

Where digital data is in the form of AIP data set, the aeronautical information service provider shall—

- (a) provide an AIP data set covering the extent of information as provided in the AIP;
- (b) provide the available data subsets, when it is not possible to provide a complete AIP data set; and
- (c) ensure that the AIP data set contains the digital representation of aeronautical information of lasting character that is permanent and temporary changes of long duration essential to air navigation.

31. Terrain and obstacle data sets

(1) The coverage areas for terrain and obstacle data sets shall be specified as follows—

- (a) Area 1- the entire territory of Uganda;
- (b) Area 2- within the vicinity of an aerodrome, subdivided as follows—
 - (i) Area 2a- a rectangular area around a runway that comprises the runway strip plus any clearway that exists;
 - (ii) Area 2b- an area extending from the ends of Area 2a in the direction of departure, with a length of 10 km and a splay of 15 per cent to each side;
 - (iii) Area 2c- an area extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a; and
 - (iv) Area 2d- an area outside the Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing Terminal Area boundary, whichever is nearest;

- (c) Area 3- the area bordering an aerodrome movement area that extends horizontally from the edge of a runway to 90 m from the runway centre line and 50 m from the edge of all other parts of the aerodrome movement area;
- (d) Area 4- the area extending 900 m prior to the runway threshold and 60 m each side of the extended runway centre line in the direction of the approach on a precision approach runway, category II or III;

(2) where the terrain at a distance greater than 900 m from the runway threshold is mountainous or otherwise significant, the length of Area 4 is extended to a distance not exceeding 2,000 m from the runway threshold.

32. Terrain data sets

Subject to regulation 31, the aeronautical information service provider shall—

- (a) ensure that terrain data sets contain the digital representation of the terrain surface in the form of continuous elevation values at all intersections or points of a defined grid, referenced to common datum;
- (b) provide terrain data for Area 1;
- (c) for aerodromes regularly used by international civil aviation, provide—
 - (i) terrain data for—
 - (A) Area 2a;
 - (B) the take-off flight path area; and
 - (C) an area bounded by the lateral extent of the aerodrome obstacle limitation surfaces;

- (ii) additional terrain data within Area 2 as follows—
 - (A) in the area extending to 10 kilometres from the ARP; and
 - (B) within the area between 10 kilometres and the TMA boundary or 45 kilometres radius, whichever is smaller, where terrain penetrates a horizontal terrain data collection surface specified as one hundred twenty metres above the lowest runway elevation.
- (iii) terrain data for Area 3;
- (iv) terrain data for Area 4 for all runways where precision approach Category II or III operations have been established and where detailed terrain information is required by operators to enable them to assess the effect of terrain on decision height determination by use of radio altimeters.
- (d) make arrangements for coordinating the provision of terrain data for adjacent aerodromes where their respective coverage areas overlap to assure that the data for the same terrain are correct;
- (e) make arrangements with states concerned to share terrain data for those aerodromes located near territorial boundaries;
- (f) where additional terrain data is collected to meet other aeronautical requirements, expand the terrain data sets to include this additional data;
- (g) ensure that the feature attributes describing terrain are those listed in Schedule 6 and those annotated as mandatory are recorded in the terrain data set; and
- (h) ensure that terrain data for each area conforms to the applicable numerical requirements contained in Schedule 1.

33. Obstacle data sets

The aeronautical information service provider shall—

- (a) ensure that obstacle data sets contain the digital representation of the vertical and horizontal extent of obstacles;
- (b) ensure that obstacle data is—
 - (i) not included in terrain data sets;
 - (ii) provided for obstacles in Area 1 whose height is 100m or higher above ground.
- (c) for aerodromes regularly used by international civil aviation, provide obstacle data for—
 - (i) all obstacles within Area 2 that are assessed as being a hazard to air navigation;
 - (ii) Area 2a for those obstacles that penetrate an obstacle data collection surface outlined by a rectangular area around a runway that comprises the runway strip plus any clearway that exists and the Area 2a obstacle collection surface shall have height of 3 metres 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;
 - (iii) objects in the take-off flight path area which project above a plane surface having a 1.2 per cent slope and having a common origin with the take-off flight path area; and
 - (iv) penetrations of the aerodrome obstacle limitation surfaces.
 - (v) Areas 2b, 2c and 2d for obstacles that penetrate the relevant obstacle data collection surface specified as follows—

- (A) 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. 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;
 - (B) Area 2c: an area extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a. The Area 2c obstacle collection surface has a 1.2% slope extending outside Area 2a and Area 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; and
 - (C) Area 2d: an area outside the Areas 2a, 2b and 2c up to a distance of 45 kilometres from the aerodrome reference point, or to an existing TMA boundary, whichever is nearest. The Area 2d obstacle collection surface has a height of 100 m above ground; except that data need not be collected for obstacles less than a height of 3 m above ground in Area 2b and less than a height of 15 m above ground in Area 2c.
- (vi) Area 3 for obstacles that penetrate the relevant obstacle data collection surface extending a half-metre (0.5 m) above the horizontal plane passing through the nearest point on the aerodrome movement area.
 - (vii) Area 4 for all runways where precision approach Category II or III operations have been established.

- (d) make arrangements—
 - (i) for coordinating the provision of obstacle data for adjacent aerodromes where their respective coverage areas overlap to assure that the data for the same obstacle are correct;
 - (ii) with States concerned to share obstacle data for those aerodromes located near territorial boundaries; and
- (e) where additional obstacle data is collected to meet other aeronautical requirements, expand the obstacle data sets to include these additional data.

34. Aerodrome mapping data sets

The aeronautical information service provider shall—

- (a) ensure that aerodrome mapping data sets contain the digital representation of aerodrome features;
- (b) make available aerodrome mapping data sets for aerodromes regularly used by international civil aviation; and
- (c) ensure that aerodrome mapping data is supported by electronic terrain and obstacle data for Area 3 in order to ensure consistency and quality of a geographic data related to the Aerodrome.

35. Instrument flight procedure data sets

The aeronautical information service provider shall—

- (a) ensure that instrument flight procedure data sets contain the digital representation of instrument flight procedures. and
- (b) make available instrument flight procedures data sets for aerodromes regularly used by international civil aviation.

36. Distribution services

The aeronautical information service provider shall—

- (a) distribute aeronautical information products to authorised users who request for them;
- (b) make available the AIP, AIP amendments, AIP supplements and AIC by the most expeditious means; and
- (c) whenever practicable, employ global communication networks and web services, for the provision of aeronautical information products.

37. NOTAM distribution

(1) The aeronautical information service provider shall—

- (a) distribute NOTAM on the basis of a request;
- (b) prepare NOTAM in conformity with the relevant provisions of the Civil Aviation (Communication Procedures) Regulations, 2020;
- (c) whenever practicable, employ the Aeronautical fixed service (AFS) for NOTAM distribution;
- (d) when a NOTAM is sent by means other than the AFS, use a six- digit date-time group indicating the date and time of NOTAM origination, and the identification of the originator, preceding the text;
- (e) select the NOTAM that are to be given international distribution;
- (f) exchange NOTAM Internationally only as mutually agreed with the international NOTAM offices concerned and multinational NOTAM Processing Units, and ensure that as far as practicable, cover the needs of operations personnel including flight crew members;
- (g) upon request grant distribution of NOTAM series other than those distributed internationally; and

(h) when practicable use selective distribution lists.

(2) The international exchange of ASHTAM and NOTAM, where NOTAM is used for distribution of information on volcanic activity, shall include volcanic ash advisory centre and the centre designated by regional air navigation agreement for the operation of AFS Secure Aviation Data Information Service (SADIS) and the World Area Forecast System (WAFS) Internet file service (WIFS), and shall take account of the requirements of long-range operations.

(3) A predetermined distribution system for NOTAM transmitted on the AFS in accordance with regulation 39 shall be used whenever possible, subject to the requirements of sub regulation (1) (f).

38. Pre-Flight information service

(1) The aeronautical information service provider shall—

- (a) make available aeronautical information relative to the route stages originating at the aerodrome or heliport to flight operations personnel including flight crews and services responsible for pre-flight information, for any aerodrome or heliport used for international air operations ;
- (b) ensure that aeronautical information provided for pre-flight planning purposes includes information of operational significance from the elements of the aeronautical information products.
- (c) use Automated pre-flight information systems 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 and the aeronautical data and aeronautical information made available shall comply with the provisions of these regulations;

- (d) use self-briefing facilities of an automated pre-flight information system to provide access to operations personnel, including flight crew members and other aeronautical personnel concerned and the human or machine interface of such facilities when provided shall ensure easy access in a guided manner to all relevant information or data.

(2) Automated pre-flight information systems for the supply of aeronautical data and aeronautical information for self-briefing, flight planning and flight information service shall—

- (a) provide for continuous and timely updating of the system database and monitoring of the validity and quality of the aeronautical data stored;
- (b) permit access to the system by operations personnel including flight crew members, aeronautical personnel concerned and other aeronautical users through suitable telecommunications means;
- (c) ensure provision, in paper copy form, of the aeronautical data and aeronautical information accessed, as required;
- (d) use access and interrogation procedures based on abbreviated plain language and ICAO location indicators, as appropriate, or based on a menu-driven user interface or other appropriate mechanism as agreed between the civil aviation Authority and operator concerned; and
- (e) provide for rapid response to a user request for information.

(3) Automated pre-flight information systems providing a harmonized, common point of access by operations personnel, including flight crew members and other aeronautical personnel concerned, to aeronautical data and aeronautical information shall be established by an agreement between the Civil Aviation Authority and the relevant meteorology department.

(4) Where automated pre-flight information systems are used to provide the harmonized common point of access by operations personnel, including flight crew members and other aeronautical personnel concerned, to aeronautical data, aeronautical information and meteorological information, the Air Navigation Service Provider shall remain responsible for the quality and timeliness of the aeronautical data and aeronautical information provided by means of such a system.

(5) The aeronautical information referred to in subregulation (3) shall be in accordance with subregulation (1)(c), and the Meteorological Service Regulations, 2019

39. Post-flight information service

The aeronautical information service provider shall—

- (a) make arrangements to receive information concerning the state and operation of air navigation facilities or services noted by aircrews, for any aerodrome or heliport used for international air operations and ensure that the information is distributed as the circumstances necessitate;
- (b) make arrangements to receive information concerning the presence of wildlife hazard observed by flight crews, for any aerodrome or heliport used for international air operations; and
- (c) distribute information about presence of wildlife hazards made available to the aeronautical information service as the circumstances necessitate.

PART VII—AERONAUTICAL INFORMATION UPDATES

40. General specifications for aeronautical information updates

Aeronautical data and aeronautical information shall be kept up-to-date.

41. Aeronautical Information Regulation and Control (AIRAC)

(1) The aeronautical information service provider shall distribute under the regulated system (AIRAC) information concerning, the

following circumstances, basing establishment, withdrawal or significant changes, upon a series of common effective dates at intervals of twenty eight days as follows—

- (a) horizontal and vertical limits, regulations and procedures applicable to—
 - (i) flight information regions;
 - (ii) control areas;
 - (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 ADIZ;
 - (vii) permanent areas or routes or portions where the possibility of interception exists;
- (b) positions, frequencies, call signs, identifiers, known irregularities and maintenance periods of radio navigation aids, and communication and surveillance facilities;
- (c) holding and approach procedures, arrival and departure procedures, noise abatement procedures and any other pertinent ATS procedures;
- (d) transition levels, transition altitudes and minimum sector altitudes;
- (e) meteorological facilities, including broadcasts and procedures;
- (f) runways and stop ways;

- (g) taxiways and aprons;
- (h) aerodrome ground operating procedures including low visibility procedures;
- (i) approach and runway lighting; and
- (j) aerodrome operating minima if published by the Authority.

(2) The information notified under the AIRAC system shall not be changed further for at least another twenty eight days after the effective date, unless the circumstance notified is of a temporary nature and would not persist for the full period.

(3) Information provided under the AIRAC system shall be made available by the AISP so as to reach recipients at least twenty eight days in advance of the AIRAC effective date.

(4) When information has not been submitted by the AIRAC date, a NIL notification shall be distributed not later than one cycle before the AIRAC effective date concerned.

(5) Implementation dates other than AIRAC effective dates shall not be used for pre-planned operationally significant changes requiring cartographic work or for updating of navigation databases.

(6) The regulated AIRAC system shall be used for the provision of information relating to the establishment and withdrawal of, and premeditated significant changes in, the following circumstances—

- (a) position, height and lighting of navigational 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.

(7) Whenever major changes are planned and where advance notice is desirable and practicable, information shall be made available by the AIS so as to reach recipients at least fifty six days in advance of the effective date and the effective date shall be applied to the establishment of, and premeditated major changes in, the following circumstances and other major changes if deemed necessary—

- (a) new aerodromes for international IFR operations;
- (b) new runways for IFR operations at international aerodromes;
- (c) design and structure of the air traffic services route network;
- (d) design and structure of a set of terminal procedures including change of procedure bearings due to magnetic variation change;
- (e) circumstances listed in sub regulation (1) if the entire State or any significant portion is affected or if cross- border coordination is required.

42. Aeronautical Information Publication (AIP) updates

The aeronautical service provider shall—

- (a) amend or reissue the AIP at such regular intervals as may be necessary to keep it up to date;
- (b) publish permanent changes to the AIP as AIP Amendments; and
- (c) publish temporary changes of long duration, three months or longer, and information of short duration which contains extensive text or graphics as AIP Supplements.

43. NOTAM updates

(1) A Trigger NOTAM shall be originated when an AIP amendment or an AIP supplement is published in accordance with AIRAC procedures.

(2) A NOTAM shall be originated and issued promptly whenever the information to be distributed is of a temporary nature and of short duration or when operationally significant permanent changes or temporary changes of long duration are made at short notice, except for extensive text or graphics.

(3) A NOTAM shall be originated and issued concerning the following information—

- (a) establishment, closure or significant changes in operation of aerodrome or heliport or runways;
- (b) establishment, withdrawal and significant changes in operation of aeronautical services;
- (c) establishment, withdrawal and significant changes in operational capability of radio navigation and air-ground communication services including interruption or return to operation, change of frequencies, change in notified hours of service, change of identification, change of orientation or directional aids, change of location, power increase or decrease amounting to 50 per cent or more, change in broadcast schedules or contents, or irregularity or unreliability of operation of any radio navigation and air-ground communication services or limitations of relay stations including operational impact, affected service, frequency and area;
- (d) unavailability of back-up and secondary systems, having a direct operational impact;
- (e) establishment, withdrawal or significant changes made to visual aids;

- (f) interruption of or return to operation of major components of aerodrome lighting systems;
- (g) establishment, withdrawal or significant changes made to procedures for air navigation services;
- (h) occurrence or correction of major defects or impediments in the manoeuvring area;
- (i) changes to and limitations on availability of fuel, oil and oxygen;
- (j) major changes to search and rescue facilities and services available;
- (k) establishment, withdrawal or return to operation of hazard beacons marking obstacles to air navigation;
- (l) changes in regulations requiring immediate action, such as prohibited areas for search and rescue action;
- (m) presence of hazards which affect air navigation including obstacles, military exercises, displays, fireworks, sky lanterns, rocket debris, races and major parachuting events outside promulgated sites;
- (n) planned laser emissions, laser displays and search lights if pilots' night vision is likely to be impaired;
- (o) erecting or removal of, or changes to, obstacles to air navigation in the take-off or climb, missed approach, approach areas and runway strip;
- (p) establishment or discontinuance including activation or deactivation as applicable, or changes in the status of prohibited, restricted or danger areas;

- (q) establishment or discontinuance of areas or routes or portions of the areas or routes where the possibility of interception exists and where the maintenance of guard on the VHF emergency frequency 121.5 MHz is required;
- (r) allocation, cancellation or change of location indicators;
- (s) changes in aerodrome or heliport rescue and firefighting category provided;
- (t) presence or removal of, or significant changes in, hazardous conditions due to radioactive material, toxic chemicals, volcanic ash deposition or water on the movement area;
- (u) outbreaks of epidemics necessitating changes in notified requirements for inoculations and quarantine measures;
- (v) observations or forecasts of space weather phenomena, the date and time of their occurrence, the flight levels where provided, and portions of the airspace which may be affected by the phenomena;
- (w) an operationally significant change in volcanic activity, the location, date and time of volcanic eruptions or horizontal and vertical extent of volcanic ash cloud, including direction of movement, flight levels and routes or portions of routes which could be affected;
- (x) 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 which could be affected and the direction of movement;
- (y) establishment of operations of humanitarian relief missions, such as those undertaken under the auspices of the United Nations, together with procedures or limitations which affect air navigation;

(z) implementation of short-term contingency measures in cases of disruption or partial disruption, of air traffic services and related supporting services; and

(aa) specific loss of satellite based navigation systems integrity.

(4) The following information shall not be notified by NOTAM —

(a) routine maintenance work on aprons and taxiways which does not affect the safe movement of aircraft;

(b) runway marking work, when aircraft operations can safely be conducted on other available runways, or the equipment used can be removed when necessary;

(c) temporary obstructions in the vicinity of aerodromes or heliports that do not affect the safe operation of aircraft;

(d) partial failure of aerodrome or heliport lighting facilities where such failure does not directly affect aircraft operations;

(e) partial temporary failure of air-ground communications when suitable alternative frequencies are known to be available and are operative;

(f) the lack of apron marshalling services and road traffic control;

(g) the unserviceability of location, destination or other instruction signs on the aerodrome movement area;

(h) parachuting when in uncontrolled airspace under VFR, when controlled at promulgated sites or within danger or prohibited areas;

(i) training activities by ground units;

- (j) unavailability of back-up and secondary systems if these do not have an operational impact;
- (k) limitations to airport facilities or general services with no operational impact;
- (l) national regulations not affecting general aviation;
- (m) announcement or warnings about possible or potential limitations, without any operational impact;
- (n) general reminders on already published information;
- (o) availability of equipment for ground units without containing information on the operational impact for airspace and facility users;
- (p) information about laser emissions without any operational impact and fireworks below minimum flying heights;
- (q) closure of movement area parts in connection with planned work locally coordinated of duration of less than one hour;
- (r) closure, changes, unavailability in operation of aerodrome or heliport other than aerodrome or heliport operation hours; and
- (s) other non-operational information of a similar temporary nature.

44. Data set updates

(1) Data sets shall be amended or reissued at such regular intervals as may be necessary to keep them up to date.

(2) Permanent changes and temporary changes of long duration that is three months or longer, made available as digital data shall be issued in the form of a complete data set or a sub-set that includes only the differences from the previously issued complete data set.

(3) The differences from the previously issued complete data set shall be indicated when made available as a completely re-issued data set.

(4) When temporary changes of short duration are made available as digital data that is digital NOTAM), they shall use the same aeronautical information model as the complete data set.

(5) Updates to AIP, digital data sets shall be synchronised.

PART VIII— EXEMPTIONS

45. Requirements for application for exemption

(1) A person may apply to the Authority for an exemption from any provision of these Regulations.

(2) Unless in case of emergency, a person who requires an exemption from any provision of these regulations shall apply to the Authority at least sixty days prior to the proposed effective date, giving the following information—

- (a) name and contact address including electronic mail and fax if any;
- (b) telephone number;
- (c) a citation of the specific requirement from which the applicant seeks exemption;
- (d) justification for the exemption;
- (e) a description of the type of operations to be conducted under the proposed exemption;
- (f) the proposed duration of the exemption;
- (g) an explanation of how the exemption would be in the public interest;

- (h) a detailed description of the alternative means by which the applicant will ensure a level of safety equivalent to that established by the regulation in question;
- (i) a safety risk assessment carried out in respect of the exemption applied for;
- (j) if the applicant handles international operations and seeks to operate under the proposed exemption, an indication whether the exemption would contravene any provision of the standards and recommended practices of the International Civil Aviation Organization; and
- (k) any other information that the Authority may require.

(3) Where the applicant seeks emergency processing of an application for exemption, the application shall contain supporting facts and reasons for not filing the application within the time specified in subregulation (2) and satisfactory reason for deeming the application an emergency.

(4) The Authority may in writing, refuse an application made under sub regulation (3), where in the opinion of the Authority, the reasons given for emergency processing are not satisfactory.

(5) The application for exemption shall be accompanied by a fee prescribed by the Authority.

46. Review and publication

(1) The Authority shall review the application for exemption made under regulation 45 for accuracy and compliance and if the application is satisfactory, the Authority shall publish a detailed summary of the application for comments, within a prescribed time, in either—

- (a) the Gazette;
- (b) aeronautical information circular; or
- (c) a daily newspaper with national circulation.

(2) The Authority shall request the applicant in writing, to comply prior to publication or making a decision where application requirements have not been fully complied with.

47. Evaluation of the request

(1) The Authority shall, where the application requirements are satisfied, conduct an evaluation of the request to include—

- (a) determination of whether an exemption would be in the public interest;
- (b) a determination, after a technical evaluation of whether the proposal of the applicant would provide a level of safety equivalent to that established by the regulation, although where the Authority decides that a technical evaluation of the request would impose a significant burden on the technical resources of the Authority, the Authority may deny the exemption on that basis;
- (c) a determination of whether a grant of the exemption would contravene these Regulations; or
- (d) a recommendation based on the preceding elements, of whether the request should be granted or denied and of any conditions or limitations that should be part of the exemption.

(2) The Authority shall notify the applicant in writing, the decision to grant or deny the request and publish a detailed summary of its evaluation and decision.

(3) The summary referred to in sub-regulation (2) shall specify the duration of the exemption and any conditions or limitations of the exemption.

(4) The Authority shall publish the decision after processing the application if the request is for emergency relief.

(5) The Authority shall publish the summary in aeronautical information circular if the exemption affects a significant population of the aviation community of the State.

PART IX— GENERAL PROVISIONS

48. Miscellaneous specifications

The aeronautical service provider shall—

- (a) include English text for those parts of the aeronautical information products intended for international distribution expressed in plain language;
- (b) spell the names of places in conformity with local usage, transliterated, when necessary, into the ISO-Basic Latin alphabet;
- (c) use ICAO abbreviations in the aeronautical information products whenever they are appropriate and their use will facilitate distribution of aeronautical data and aeronautical information; and
- (d) use units of measurement in the origination, processing and distribution of aeronautical data and aeronautical information consistent with the tables contained in the Civil Aviation (Units of Measurement for air and ground Operations) Regulations, 2020.

49. Use and retention of approvals and records

(1) A person shall not—

- (a) use an approval, permission, exemption or any other document issued or required by or under these Regulations which is forged, altered, revoked, suspended or which the person is not entitled to use;
- (b) forge or alter an approval, permission, exemption or any other document issued or required by or under these Regulations;

- (c) lend a licence, certificate, approval, permission, exemption or any other document issued or required by or under these Regulations to any other person; or
- (d) make any false representation for the purposes of procuring for himself, herself or any other person, issuance, renewal or variation of an approval, permission or exemption or other document.

(2) A person shall not, during the period for which it is required under these Regulations to be preserved—

- (a) mutilate, alter, render illegible or destroy an approval or any entry made in any record;
- (b) make, procure or assist in the making of any false entry in an approval or record; or
- (c) omit to make a material entry in an approval or record.

(3) A record required to be maintained under these Regulations shall be recorded in a permanent and indelible material.

(4) A person shall not purport to issue an approval or exemption for the purposes of these Regulations unless that person is authorised to do so.

(5) The Authority may suspend or cancel an approval of AIS service provider who contravenes any provision of these Regulations.

50. Aeronautical information and data that requires regulatory approval

(1) Aeronautical information and data submitted to the AISP may require regulatory approval from the Authority before submission can be accepted by the AISP for publication in the AIP.

(2) Aeronautical information and data requiring regulatory approval in sub regulation (1) shall be prescribed by the Authority and this data shall include—

- (a) Controlled or Regulated Airspace;
- (b) Ground or Satellite base Navigation Systems;
- (c) Instrument Flight Procedures;
- (d) VHF or UHF frequencies;
- (e) Danger or Restricted Areas;
- (f) Civil or Military Aerodrome Traffic Zones;
- (g) Aerodrome Runway Declared Distances; and
- (h) Aerodrome Rescue and Fire Fighting categories.

(3) For aeronautical data that requires regulatory approval, data originators shall take into account of the additional time required by the Authority for the approvals process.

51. Deviations from regulations and procedures

Any deviation from a prescribed requirement or procedure in these Regulations shall be set out in an endorsement on the MANSOPS.

52. Inspections and audits

The Authority shall—

- (a) carry out such inspections and audits as may be necessary for the purpose of verifying the application and implementation of these Regulations; and
- (b) carry out inspections and audits of any document and records of Cartographic service provider, which may be necessary to determine compliance with the appropriate requirements as prescribed in these Regulations.

PART X— SAVINGS AND TRANSITION

53. Savings and Transition

Any approval, permission, exemption or any document issued to a AIS provider prior to the commencement of these Regulations shall continue in force as if it was issued under these Regulations until it expires or is cancelled by the Authority.

54. Revocation

The Civil Aviation (Air Navigation Services) Regulations, 2008 are hereby repealed.

SCHEDULE 1

reg.14(l), 15, 32(h)

AERONAUTICAL DATA CATALOGUE
TABLE S1-1 Aerodrome/Heliport Data

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
Aerodrome/ Heliport	Field Elevation	Elevation	Elevation	The vertical distance above Mean Sea Level (MSL) of the highest point of the landing area.	0.5 m	essential	surveyed	1m or 1 ft	1 m or 1 ft
		G e o i d undulation	Height	Geoid undulation at the aerodrome/ heliport elevation position, where appropriate	0.5 m	essential	surveyed	1 m or 1 ft	1 m or 1 ft
	Reference temperature		Value	The monthly mean of the daily maximum temperatures for the hottest month of the year at an aerodrome. This temperature should be averaged over a period of years.					
	Mean low temperature		Value	The mean lowest temperature of the coldest month of the year, for the last five years of data at the aerodrome elevation.	5 degrees				

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
	Magnetic Variation	Angle	Angle	The magnetic variation angle value	1 degree	essential	surveyed	1 degree	1 degree
	Reference point	Position	Point	Geographical location of aerodrome reference point.	30 m	routine	surveyed/ calculated	1 sec	1 sec
Runway	Nominal length		Distance	The declared longitudinal extent of the runway for operational (performance) calculations.	1 m	critical	surveyed	1 m or 1 ft	1 m
	Nominal width		Distance	The declared transversal extent of the runway for operational (performance) calculations.	1 m	essential	surveyed	1 m or 1 ft	1 m
				The geographical location of runway centre line at each end of the runway, at the stopway and at the origin of each take-off flight path area, and at each significant change in slope of runway and stopway	1 m	critical	surveyed		
				The elevation of the corresponding centre line point. Any significant high and low intermediate points along the runway shall be measured to the accuracy of one-half metre or foot.	0.25 m	critical	surveyed		
		Elevation	Elevation						

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
		Geoid undulation	Height	The geoid undulation at the corresponding center line point					
	Runway exit line	E x i t guidance line	Line	The geographical location of the runway exit line	0.5 m	essential	surveyed	1/100 sec	1 sec
	Shoulder	Width	Distance	The width of the runway shoulder	1m	essential	surveyed	1 m or 1 ft	
Runway Direction	True bearing		Bearing	The true bearing of the runway.	1 / 1 0 0 deg	Routine	surveyed	1 / 1 0 0 degree	1 degree
	Threshold	Position	Point	Geographical location for runway threshold	1 m	critical	surveyed	1/100 sec	1 sec
		Elevation	Elevation of the runway threshold	Threshold elevation for runways with non-precision approaches	0.5 m	essential	surveyed	1 m or 1 ft	1 m or 1 ft
		Elevation	Elevation of the runway threshold	Threshold elevation for runways with precision approaches	0.25 m	critical	surveyed	0.1 m or 0.1 ft	0.5 m or 1 ft
		G e o i d undulation	Height	WGS-84 geoid undulation at runway threshold, non-precision approaches	0.5 m	essential	surveyed	1 m or 1 ft	1 m or 1 ft
		G e o i d undulation	Height	WGS-84 geoid undulation at runway threshold, precision approaches	0.25 m	critical	surveyed	0.1 m or 0.1 ft	0.5 m or 1 ft

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
		Displacement	Distance	Distance of displaced threshold	1 m	routine	surveyed	1m or 1 ft	
	Runway End	Position	Point	Location of the runway end in the direction of departure	1 m	critical	surveyed	1/100 sec	1 sec
		Elevation	Elevation	Elevation of the runway end and any significant high and low intermediate points along the runway for non-precision approaches	0.5 m or 1 ft				
		Elevation	Elevation	Elevation of the runway end and the highest elevation of the touchdown zone for precision approach runways	0.25 m or 1 ft				
	Touch Down Zone	Elevation	Elevation	Highest elevation of the touchdown zone of a precision approach runway	0.25 m or 1 ft				
	Stop way	Length	Distance	The longitudinal extent of stopway, if any	1 m	critical	surveyed	1 m or 1 ft	1 m
		Width	Distance	Width of the stop way	1 m	critical	surveyed	1 m or 1 ft	1 m
	Clearway	Length	Distance	The longitudinal extent of the clearway	1 m	essential	surveyed	1 m or 1 ft	

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
		Width	Distance	The transversal extent of the clearway	1 m	essential	surveyed	1 m or 1 ft	
		G r o u n d profile		The vertical profile (or slope) of the clearway					
Declared Distances		TORA	Distance	Take-off run available - The length of runway declared available and suitable for the ground run of an aeroplane taking off.	1 m	critical	surveyed	1 m or 1 ft	1 m
		TODA	Distance	Take-off distance available - The length of the take-off run available plus the length of the clearway, if provided.	1 m	critical	surveyed	1 m or 1 ft	1 m
		ASDA	Distance	Accelerate - stop distance available - The length of the take-off run available plus the length of the stopway, if provided.	1 m	critical	surveyed	1 m or 1 ft	1 m
		LDA	Distance	Landing distance available - The length of runway which is declared available and suitable for the ground run of an aeroplane landing.	1 m	critical	surveyed	1 m or 1 ft	1 m

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
Final Approach and Take off area (FATO)	Threshold	Position	Point	Geographical location of FATO threshold	1m	critical	surveyed	1/100 sec	1 sec
		Elevation	Elevation	FATO threshold, for heliports with or without a PinS approach	0.5m	essential	surveyed	1 m or 1 ft	FATO threshold, for heliports with or without a PinS approach
				FATO threshold, for heliports intended to be operated in accordance with ICAO Annex 14, Appendix 2	0.25m	critical	surveyed	1 m or 1 ft (non-precision) or 0.1 m or 0.1 ft (precision)	FATO threshold, for heliports intended to be operated in accordance with ICAO Annex 14, Appendix 2
		G e o i d undulation	Height	WGS-84 geoid undulation at FATO threshold, TLOF geometric centre, for heliports with or without a PinS approach	0.5m	essential	surveyed	1 m or 1 ft	WGS-84 geoid undulation at FATO threshold, TLOF geometric centre, for heliports with or without a PinS approach

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
				WGS-84 geoid undulation at FATO threshold, TLOF geometric centre, for heliports intended to be operated in accordance with ICAO Annex 14, Appendix 2	0.25m	critical	surveyed	1 m or 1 ft (non-precision) 0.1 m or 0.1 ft (precision)	WGS-84 geoid undulation at FATO threshold, TLOF geometric centre, for heliports intended to be operated in accordance with ICAO Annex 14, Appendix 2
	Departure end of a runway	Position	Point	Geographical location of DER	1m	critical	surveyed	1/100 sec	
		Elevation	Elevation	The elevation of the DER is the higher of the elevations of the beginning and end of the runway/FATO.					
	Length		Distance	The longitudinal extent of FATO	1m	critical	surveyed	1 m or 1 ft	1 m
	True Bearing		Bearing	The true bearing of FATO	1 / 100 deg	routine	surveyed	1 / 10 0 degree	
	Declared Distances	TODAH	Distance	Take-off distance available - The length of the FATO plus the length of helicopter clearway (if provided)	1m	critical	surveyed	1 m or 1 ft	

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
		RTODAH	Distance	Rejected distance available - The length of the FATO declared available and suitable for helicopters operated in performance class 1 to complete a rejected take-off.	1m	critical	surveyed	1 m or 1 ft	
		LDAH	Distance	Landing distance available - The length of the FATO plus any additional area declared available and suitable for helicopters to complete the landing manoeuvre from a defined height.	1m	critical	surveyed	1 m or 1 ft	
Touchdown and lift-off area	Centre point	Position	Point	Geographical location of TLOF geometric centre	1m	critical	surveyed	1/100 sec	1 sec
		Elevation	Elevation	FATO threshold, for heliports with or without a PinS approach	0.5m	essential	surveyed	1 m or 1 ft	FATO threshold, for heliports with or without a PinS approach

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
				FATO threshold, for heliports intended to be operated in accordance with ICAO Annex 14, Appendix 2	0.25m	critical	surveyed	1 m or 1 ft (non-precision) 0.1 m or 0.1 ft (precision)	FATO threshold, for heliports intended to be operated in accordance with ICAO Annex 14, Appendix 2
		G e o i d undulation	Height	WGS-84 geoid undulation at FATO threshold, TLOF geometric centre, for heliports with or without a PinS approach	0.5m	essential	surveyed	1 m or 1 ft	WGS-84 geoid undulation at FATO threshold, TLOF geometric centre, for heliports with or without a PinS approach

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
				WGS-84 geoid undulation at FATO threshold, TLOF geometric centre, for heliports intended to be operated in accordance with ICAO Annex 14, Appendix 2	0.25m	critical	surveyed	1 m or 1 ft (non-precision) or 0.1 m (precision)	WGS-84 geoid undulation at FATO threshold, TLOF geometric centre, for heliports intended to be operated in accordance with ICAO Annex 14, Appendix 2
	Length		Distance	The longitudinal extent of TLOF	1m	critical	surveyed	1 m or 1 ft	1 m
	Width		Distance	The transversal extent of TLOF	1m	critical	surveyed	1 m or 1 ft	1 m
	Bearing strength		Value	The bearing strength of TLOF				1 tone	
Apron	Geometry		Polygon	Geographical location of the apron element	1m	routine	surveyed	1/10 sec	1 sec
Taxiway	Width		Distance	The transversal extent of the taxiway.	1m	essential	surveyed	1 m or 1 ft	
	Centre line points	Position	Point	Geographical coordinates of taxiway center line points	0.5m	essential	surveyed	1/100 sec	1/100 sec
		Elevation	Elevation	Elevation of taxiway center line points	1m	essential	surveyed		
	Shoulder	Width	Distance	The width of the taxiway shoulder	1m	essential	surveyed	1 m or 1 ft	

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
	Guidance Lines	Geometry	Line	Geographical location of guidance lines	0.5 m	essential	surveyed	1/100 sec	1/100 sec
	Intermediate holding position marking line		Line	Intermediate holding position marking line	0.5 m	essential	surveyed	1/100 sec	1 sec
	Runway holding position	Geometry	Line	Geographical location of runway holding position	0.5m	essential	surveyed	1/100 sec	1 sec
Helicopter ground taxiway	Center line points		Point	Geographical location of helicopter ground center line taxiway points	0.5m	essential	surveyed/ calculated		
	Elevation		Elevation	Elevation of helicopter ground taxiway	1m	essential	surveyed		
	Width		Distance	The transversal extent of the helicopter ground taxiway	1m	essential	surveyed		
	Surface type		Text	The surface type of the helicopter ground taxiway					
	Intersection marking line		Line	Helicopter ground taxiway intersection marking line	0.5 m	essential	surveyed	1/100 sec	1 sec
Helicopter air taxiway	Center line points		Point	Geographical location of helicopter air taxiway center line points	0.5m	essential	surveyed/ calculated		
	Elevation		Elevation	Elevation of helicopter air taxiway	1m	essential	surveyed		

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
	Width		Distance	The transversal extent of the helicopter air taxiway	1m	essential	surveyed		
Helicopter air transit route	Width		Distance	The transversal extent of the helicopter air transit route	1m	essential	Surveyed		
INS Checkpoint	Position		Point	Geographical location of the INS check point, where available	0.5m	routine	surveyed	1/100 sec	1/100 sec
Aircraft Stand	Aircraft stand points	Position	Point	Geographical location of aircraft stand point	0.5m	routine	surveyed	1/100 sec	1/100 sec
	Stand guidance line	Geometry	Line	Geographical location of stand guidance line	0.5m	essential	surveyed	1/100 sec	
		Elevation	Elevation	Parking guidance line points elevation	1m	essential	surveyed		
Helicopter stand	Position		Point	Geographical location of helicopter stand point/ INS checkpoints	0.5m	essential	surveyed	1/100 sec	
De-Icing Area	Geometry		Polygon	Geographical location of de-icing area	1m	routine	surveyed	1/10 sec	1 sec

TABLE S1-2 Airspace Data

Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
ATS Airspace	Lateral limits		Polygon	FIR, UIR		2 km	routine	declared	1 min	as plotted
				TMA, CTA		100 m	essential	calculated	1 sec	as plotted
				CTR		100 m	essential	calculated	1 sec	as plotted
	Vertical Limits	Upper limit	Altitude	The upper limit of the airspace						
		Lower limit	Altitude	The lower limit of the airspace		50 m	routine	calculated	50 m or 100 ft	50 m or 100 ft
Special activity airspace	Name		Text	The name given to the airspace by a responsible authority						
	Type		Code list	Type of special activity airspace (Prohibited Area, Restricted Area, Danger Area, Military Exercise Area, Military Training Area, Air Defence Identification Zone (ADIZ), Other)						
	Lateral limits		Polygon	inside CTA/CTR		100 m	essential	calculated	1 sec	as plotted
				outside CTA/CTR		2 km	routine	declared	1 min	as plotted

TABLE S1-3 ATS and other routes Data

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
Route Segment	Navigation specification		Text	<p>Designation of the navigation specifications applicable to a specified segment. There are two kinds of navigation specification—</p> <p>(a) Required navigation performance (RNP) specification, A navigation specification based on area navigation that includes the requirement for performance monitoring and alerting, designated by the prefix RNP, e.g. RNP 4, RNP APCH; and</p> <p>(b) Area navigation (RNAV) specification, A navigation specification based on area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV, e.g. RNAV 5, RNAV 1.</p>					
	Track		Bearing	Track, VOR radial or magnetic bearing of a route segment	1/10 degree (terminal arrival departure)	routine (terminal arrival departure)	calculated (terminal arrival departure)	1 degree (terminal arrival departure)	1 degree (terminal arrival departure)

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
	Change-over point		Point	The point at which an aircraft navigating on an ATS route segment defined by reference to very high frequency omnidirectional radio ranges is expected to transfer its primary navigational reference from the facility behind the aircraft to the next facility ahead of the aircraft, in case of VOR radial.					
	Length		Distance	The geodesic distance between from point and to point, for Airway segments length	1/10 km	routine	calculated	1/10 km or 1/10 NM	1 km or 1 NM
	MEA		Altitude	Minimum en-route altitude (MEA). The altitude for an en-route segment that provides adequate reception of relevant navigation facilities and ATS communications, complies with the airspace structure and provides the required obstacle clearance.	50 m	routine	calculated	50 m or 100 ft	50 m or 100 ft
	MOCA		Altitude	Minimum obstacle clearance altitude (MOCA). The minimum altitude for a defined segment of flight that provides the required obstacle clearance.	50 m	routine	calculated	50 m or 100 ft	50 m or 100 ft
	Minimum flight altitude		Altitude	Minimum flight altitude	50 m	routine	calculated	50 m or 100 ft	50 m or 100 ft
	Lateral Limits		Distance	Lateral limits of route					
Waypoint	Identification		Text	Names, coded designators or name-codes assigned to the significant point.					
	Position		Point	Geographical location of the waypoint	100 m	essential	surveyed calculated	1 sec	1 sec

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
	Formation	Navaid	Text	The station identification of the reference VOR/DME					
		Bearing	Bearing	The bearing from the reference VOR/DME, if the waypoint is not collocated with it.	1/10 degree	routine	calculated	1/10 degree	1/10 degree
		Distance	Distance	The distance from the reference VOR/DME, if the waypoint is not collocated with it.	1/10 km	routine	calculated	1/10 km or 1/10 NM	2/10 km (1/10 NM)
Enroute holding	Identification		Text	Identification of the holding procedure					
	Fix		Text	Identification of the holding procedure fix					
	Waypoint		Point	Geographical location of the holding waypoint	100m	essential	surveyed calculated	1 sec	1 sec

TABLE S1-4 Instrument flight procedure data

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
Procedure	OCA/H	Altitude	Altitude	The lowest altitude used in establishing compliance with appropriate obstacle clearance criteria.	as specified in Doc 8168	essential			as specified in Doc 8168
		Height	Height	The lowest height above the elevation of the relevant runway threshold or the aerodrome elevation as applicable, used in establishing compliance with appropriate obstacle clearance criteria.	as specified in Doc 8168	essential			as specified in Doc 8168

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
Procedure segment	Procedure altitude/height		Altitude/Height	A specified altitude/height flown operationally a tor above the minimum altitude/height and established to accommodate a stabilized descent ata prescribed descent gradient/angle in the intermediate/final approach segment.	as specified in Doc 8168	essential			as specified in Doc 8168
	MOCA		Altitude	The minimum altitude for a defined segment that provides the required obstacle clearance.					
	Distance		Distance	Geodesic distance to the nearest tenth of a kilometer or tenth of a nautical mile between each successive designated significant point;	1/100 km	essential	calculated	1/100 km or 1/100 NM	1 km or 1 NM
	True bearing		Bearing	True track to the nearest tenth of a degree to the nearest degree between each successive significant point;	1/10 degree	routine	calculated	1/10 degree	1 degree
	Magnetic bearing		Bearing	Magnetic track to the nearest tenth of a degree to the nearest degree between each successive significant point;	1/10 degree	routine	calculated	1 degree	1 degree
Final approach segment	LTP/FTP	Position	Point	Latitude and Longitude of the LTP/FTP	0.3 m (1 ft)	critical		0.0005'' (0.01'')	
		Ellipsoid height	Elevation	The height of the LTP/FTP above the WGS-84 ellipsoid	0.25 m	critical		0.1 m	

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
		Orthometric height	Elevation	The height of the LTP/FTP as related to the geoid and presented as an MSL elevation					
	FPAP			Flight path alignment point (FPAP)					
		Position	Point	Latitude and Longitude of the FPAP	0.3 m (1 ft)	critical		0.0005" (0.01")	
		Orthometric height	Elevation	The height of the FPAP as related to the geoid and presented as an MSL elevation					
	TCH		Height	Approach Threshold Crossing Height (TCH) - The designated crossing height of the flight path angle above the LTP (or FTP).	0.5 m	critical	calculated	0.05 m	
	GPA		Value	Glide Path Angle (GPA) - The angle of the approach path (glide path) with respect to the horizontal plane defined according to WGS-84 at the LTP/FTP.	0.01°	N/A		0.01°	
	Course Width at threshold		Value	The semi-width of the lateral course width at the LTP/FTP, defining the lateral offset at which the receiver will achieve full-scale deflection.	N/A	critical		0.25 m	
	Delta Length Offset		Distance	The distance from the stop end of the runway to the FPAP. It defines the location where lateral sensitivity changes to the missed approach sensitivity.	N/A	N/A		8 m	

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
	HAL		Value	Horizontal Alert Limit					
	VAL		Value	Vertical Alert Limit					
	FAS Data Block		Text	Binary string describing the Final Approach Segment (FAS) data block generated with an appropriate software tool. The FAS data block is a set of parameters to identify a single precision approach or APV and define its associated approach					
	CRC Remainder		Text	An 8-character hexadecimal representation of the calculated remainder bits used to determine the integrity of the FAS data block data during transmission and storage.					
Procedure fix	Position		Point	Geographical location of the fix	100 m	essential	surveyed / calculated	1 sec	1 sec
					3 m	essential	surveyed / calculated	1/10 sec	1 sec
	Formations	Navaid	Text	The station identification of the reference VOR/DME					
		Bearing	Bearing	Bearing used for the formation of a terminal fix	routine	calculated	1/10 degree	1/10 degree	Bearing used for the formation of a terminal fix
				Bearing used for the formation of an instrument approach procedure fix	essential	calculated	1/100 degree	1/10 degree	Bearing used for the formation of an instrument approach procedure fix

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
		Distance	Distance	The distance from the reference VOR/DME, if the waypoint is not collocated with it.	1/100 km	essential	calculated	1/100 km or 1/100 NM	2/10 km (1/10 NM)
Procedure Holding	Fix		Point	Geographical location that serves as a reference for a holding procedure.	same as proc fix				Fix
	Inbound course		Angle	Inbound true course				1/10 degree	
	Outbound course		Angle	Outbound true course				1/10 degree	
	Leg distance		Distance	Outbound distance of the leg				1/10 km or 1/10 NM	
	Turn direction		Value	Direction of the procedure turn					
	Minimum altitude		Altitude	Minimum holding level to the nearest higher 50 m or 100 ft/ flight level	50 m	routine	calculated	50 m or 100 ft/flight level	
	Maximum altitude		Altitude	Maximum holding level to the nearest higher 50 m or 100 ft/ flight level				50 m or 100 ft/flight level	
	Speed		Value	Maximum indicated air speed				10 kts	
Helicopter Procedure Specifics	HCH		Height	Helport crossing height	0.5 m	essential	calculated	1 m or 1 ft	1 m or 1 ft
	IDF		Point	Initial departure fix					
	MAPt		Point	Missed Approach Point					

TABLE S1-5 Radio navigation aids/systems data

Subject	Property	Sub-property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
Radio navigation aid	Name		Text	The textual name assigned to the navaid						
	Purpose		Code list	Indication whether navigation aid serves en-route (E), aerodrome (A) or dual (AE) purposes.						
	Magnetic Variation	Angle	Angle	The magnetic variation at the radio navigation aid	ILS Localizer	1 degree	essential	surveyed	1 degree	
					NDB	1 degree	routine	surveyed	1 degree	
		Date	Date	The date on which the magnetic variation had the corresponding value.						
	Position		Point	Geographical location of the radio navigation aid	Aerodrome Navaid	3 m	essential	surveyed	1/10 sec	as plotted
					GBAS Ref Point	1 m				
					Enroute	100 m	essential	surveyed	1 sec	
	Elevation		Elevation	The elevation of the transmitting antenna of DME The elevation of GBAS reference point	DME	30m (100ft)	essential	surveyed	30 m (100 ft)	30 m (100 ft)
					DME/P	3 m	essential	surveyed	3 m (10 ft)	
					GBAS Ref Point	0.25 m	essential		1 m or 1 ft	

Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
	Ellipsoidal height		Height	The ellipsoid height of the GBAS reference point,	GBAS					
	Localizer alignment	Bearing	Bearing	The localizer course	ILS Localizer	1/100 deg	essential	surveyed	1/100 degree (if true)	1 degree
		Type	Text	Type of localizer alignment, true or magnetic	ILS Localizer					
	Zero azimuth alignment		Bearing	MLS zero azimuth alignment	MLS	1/100 deg	essential	surveyed	1/100 degree (if true)	1 degree
	Angle		Angle	The angle of the glide path of an ILS or the normal glide path angle for the MLS installation	ILS GP / MLS					
	RDH		Value	The value of the ILS Reference Datum Height (ILS RDH).	ILS GP	0.5m	critical	calculated	0.1m or 0.1ft	0.5m or 1ft
	Localizer antenna rwy end distance		Distance	ILS localizer runway/FATO end distance	ILS Localizer	3 m	routine	calculated	1 m or 1 ft	as plotted
	ILS glideslope antenna TRSH distance		Distance	ILS glideslope antenna - threshold distance along centerline	ILS GP	3 m	routine	calculated	1 m or 1 ft	as plotted
	ILS marker TRSH distance		Distance	ILS marker - threshold distance	ILS	3 m	essential	calculated	1 m or 1 ft	2/10 km (1/10 NM)
	ILS DME antenna TRSH distance		Distance	ILS DME antenna - threshold distance along centerline	ILS	3 m	essential	calculated	1 m or 1 ft	as plotted
	MLS azimuth antenna rwy end distance		Distance	MLS azimuth antenna - runway/FATO end distance	MLS	3 m	routine	calculated	1 m or 1 ft	as plotted

Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
	MLS DME antenna TRHS distance		Distance	MLS DME/P antenna - threshold distance along centre line	MLS	3 m	essential	calculated	1 m or 1 ft	as plotted
	Signal polarization		Code list	GBAS signal polarization (GBAS/H or GBAS/E)	GBAS					
	DOC		Text	Designated operational coverage (DOC or standard service volume SSV) as range or service volume radius from the navaid / GBAS reference point, height and sectors if required						
Aeronautical ground lights	Intensity		Value	Intensity of the light of the beacon					1000 candela	
Special navigation system	Position		Point	Geographical location of the special navigation system		100m	essential	surveyed / calculated		

Table S1-6 Obstacle Data

Subject	Property	Sub property	Type	Description	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
Obstacle	Obstacle identifier		Text	Unique identifier of obstacle					
	Operator / Owner		Text	Name and Contact information of obstacle operator or owner					
	Geometry type		Code list	An indication whether the obstacle is a point, line or polygon.					

	Horizontal position	Point Line Polygon	Obstacles in Area 1	50 m	routine	surveyed	1 sec	as plotted
			Obstacles in Area 2 (including 2a, 2b, 2c, 2d, take-off flight path area and obstacle limitation surfaces)	5 m	essential	surveyed	1/10 sec	1/10 sec
			Obstacles in Area 3	0.5 m	essential	surveyed	1/10 sec	1/10 sec
			Obstacles in Area 4	2.5 m	essential	surveyed		
	Horizontal extent	Distance	Horizontal extent of the obstacle					
	Elevation	Elevation	Obstacles in Area 1	30 m	routine	surveyed	1 m or 1 ft	3 m (10 ft)
	Height	Height	Obstacles in Area 2 (including 2a, 2b, 2c, 2d, take-off flight path area and obstacle limitation surfaces)	3 m	essential	surveyed	1 m or 1 ft	1 m or 1 ft
			Obstacles in Area 3	0.5 m	essential	surveyed	0.1 m or 0.1 ft	1 m or 1 ft
			Obstacles in Area 4	1 m	essential	surveyed	0.01 m	
							0.1 m	
	Type	Text	Type of obstacle					
	Date and time stamp	Date	Date and time the obstacle was created					
	Operations	Text	Feature operations of mobile obstacles					
	Effectivity	Text	Effectivity of temporary types of obstacles					

Table S1-7. Terrain Data Numerical Requirements

	Area 1	Area 2	Area 3	Area 4
Post spacing	3 arc seconds (approx. 90 m)	1 arc second (approx. 30 m)	0.6 arc seconds (approx. 20 m)	0.3 arc seconds (approx. 9 m)
Vertical accuracy	30 m	3 m	0.5 m	1 m
Vertical resolution	1 m	0.1 m	0.01 m	0.1 m
Horizontal accuracy	50 m	5 m	0.5 m	2.5 m
Confidence level	90%	90%	90%	90%
Integrity classification	routine	essential	essential	essential
Maintenance period	as required	as required	as required	as required

Table S1-8 Data Types

Type (1)	Description (2)	Data elements (3)
Point	A pair of coordinates (latitude and longitude) referenced to the mathematical reference ellipsoid which define the position of the point on the surface of the Earth.	Latitude
		Longitude
		Horizontal reference system
		Units of measurement
		Horizontal accuracy achieved
Line	Sequence of Points defining a linear object	Sequence of Points
Polygon	Sequence of Points forming the boundary of the polygon. The first and last Point are identical.	Closed sequence of Points
Height	The vertical distance of a level, point or an object considered as a point, measured from a specific datum.	Numerical value
		Vertical reference system
		Units of measurement
		Vertical accuracy achieved

Type (1)	Description (2)	Data elements (3)
Altitude	The vertical distance of a level, a point or an object considered as a point, measured from mean sea level.	Numerical value
		Vertical reference system
		Units of measurement
		Vertical accuracy achieved
Elevation	The vertical distance of a point or a level, on or affixed to the surface of the earth, measured from mean sea level.	Numerical value
		Vertical reference system
		Units of measurement
		Vertical accuracy
Distance	A linear value	Numerical value
		Units of measurement
		Accuracy achieved
Angle / Bearing	An angular value	Numerical value
		Units of measurement
		Accuracy achieved
Value	Any measured, declared or derived value not listed above.	Numerical Value
		Units of Measurement
		Accuracy achieved
Date	A calendar date referencing a particular day or month	Text
Schedule	A repetitive time period, composed of one or more intervals or special dates (e.g. holidays) occurring cyclically	Text
Code list	A set of predefined Text strings or values	Text
Text	Free text	String of characters without constraints

SCHEDULE 2

reg.24(e)

Contents of the Aeronautical Information Publication (AIP)

Note 1. — The information elements prefixed with “#AIP-DS#” may be omitted when available through the AIP data set

Note 2.— The information elements prefixed with “#OBS-DS#” may be omitted when available through the obstacle data set

PART 1 — GENERAL (GEN)

When the AIP is produced as one volume, the preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments appear only in Part 1 — GEN, and the annotation “not applicable” shall be entered against each of these subsections in Parts 2 and 3.

If an AIP is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments shall be included in each volume.

GEN 0.1 Preface

Brief description of the AIP, including—

- (a) name of the publishing authority;
- (b) applicable ICAO documents;
- (c) publication media, that is, printed, online or other electronic media;
- (d) AIP structure and established regular amendment interval;
- (e) copyright policy, if applicable; and
- (f) service to contact in case of detected AIP errors or omissions.

GEN 0.2 Record of AIP Amendments

A record of AIP Amendments and AIRAC AIP Amendments published in accordance with the AIRAC system containing-

- (a) amendment number;
- (b) publication date;
- (c) date inserted for the AIRAC AIP Amendments, effective date; and
- (d) initials of officer who inserted the amendment.

GEN 0.3 Record of AIP Supplements

A record of issued AIP Supplements containing—

- (a) Supplement number;
- (b) Supplement subject;
- (c) AIP section affected;
- (d) period of validity; and
- (e) cancellation record.

GEN 0.4 Checklist of AIP pages

A checklist of AIP pages containing—

- (a) page number or chart title; and
- (b) publication or effective date, including, day, month by name and year of the aeronautical information.

GEN 0.5 List of hand amendments to the AIP

A list of current hand amendments to the AIP containing:

- (a) AIP page affected;
- (b) amendment text; and
- (c) AIP Amendment number by which a hand amendment was introduced.

GEN 0.6 Table of contents to Part 1

A list of sections and subsections contained in Part 1 — General (GEN).

GEN 1. NATIONAL REGULATIONS AND REQUIREMENTS

GEN 1.1 Designated authorities

The addresses of designated authorities concerned with the facilitation of international air navigation (civil aviation, meteorology, customs, immigration, health, en-route and aerodrome/heliport charges, agricultural quarantine and aircraft accident investigation) containing, for each authority—

- (a) designated authority;
- (b) name of the authority;
- (c) postal address;
- (d) telephone number;
- (e) telefax number;
- (f) e-mail address;
- (g) aeronautical fixed service (AFS) address; and
- (h) website address, if available.

GEN 1.2 Entry, transit and departure of aircraft

Regulations and requirements for advance notification and applications for permission concerning entry, transit and departure of aircraft on international flights.

GEN 1.3 Entry, transit and departure of passengers and crew

Regulations (including customs, immigration and quarantine, and requirements for advance notification and applications for permission) concerning entry, transit and departure of non-immigrant passengers and crew.

GEN 1.4 Entry, transit and departure of cargo

Regulations (including customs, and requirements for advance notification and applications for permission) concerning entry, transit and departure of cargo.

GEN 1.5 Aircraft instruments, equipment and flight documents

Brief description of aircraft instruments, equipment and flight documents, including—

- (a) instruments, equipment (including aircraft communication, navigation and surveillance equipment) and flight documents to be carried on aircraft, including any special requirement in addition to the provisions specified in Annex 6, Part I, Chapters 6 and 7; and
- (b) emergency locator transmitter (ELT), signaling devices and life-saving equipment as presented in Annex 6, Part I, 6.6 and Part II, 2.4.5, where so determined by regional air navigation agreement, for flights over designated land areas.

GEN 1.7 Differences from ICAO Standards, Recommended Practices and Procedures

- (1) A list of significant differences between national regulations and practices of the State and related ICAO provisions, including—
 - (a) provision affected (Annex and edition number, paragraph); and
 - (b) difference in full text.
- (2) All significant differences shall be listed under this subsection.

- (3) All Annexes shall be listed in numerical order even if there is no difference to an Annex, in which case a NIL notification shall be provided. National differences or the degree of non-application of the regional supplementary procedures (SUPPs) shall be notified immediately following the Annex to which the supplementary procedure relates.

GEN 2. TABLES AND CODES

GEN 2.1 Measuring system, aircraft markings, holidays

GEN 2.1.1 Units of measurement

Description of units of measurement used including table of units of measurement.

GEN 2.1.2 Temporal reference system

Description of the temporal reference system such as calendar and time system employed, together with an indication of whether or not daylight saving hours are employed and how the temporal reference system is presented throughout the AIP.

GEN 2.1.3 Horizontal reference system

Brief description of the horizontal (geodetic) reference system used, including—

- (a) name or designation of the reference system;
- (b) identification and parameters of the projection;
- (c) identification of the ellipsoid used;
- (d) identification of the datum used;
- (e) area of application; and
- (f) an explanation, if applicable, of the asterisk used to identify those coordinates that do not meet the accuracy requirements.

GEN 2.1.4 Vertical reference system

Brief description of the vertical reference system used, including—

- (a) name or designation of the reference system;
- (b) description of the geoid model used including the parameters required for height transformation between the model used and EGM-96; and

- (c) an explanation, if applicable, of the asterisk used to identify those elevations/geoid undulations that do not meet the accuracy requirements.

GEN 2.1.5 Aircraft nationality and registration marks

Indication of aircraft nationality and registration marks adopted by the State.

GEN 2.1.6 Public holidays

A list of public holidays with indication of services being affected.

GEN 2.2 Abbreviations used in aeronautical information products

A list of alphabetically arranged abbreviations and their respective significations used by the State in its AIP and in the distribution of aeronautical data and aeronautical information with appropriate annotation for those national abbreviations that are different from those contained in the *Procedures for Air Navigation Services — ICAO Abbreviations and Codes* (PANS-ABC, Doc 8400).

GEN 2.3 Chart symbols

A list of chart symbols arranged according to the chart series where symbols are applied.

GEN 2.4 Location indicators

A list of alphabetically arranged location indicators assigned to the locations of aeronautical fixed stations to be used for encoding and decoding purposes. An annotation to locations not connected to the aeronautical fixed service (AFS) shall be provided.

GEN 2.5 List of radio navigation aids

#AIP-DS#A list of radio navigation aids arranged alphabetically, containing—

- (a) identifier;
- (b) name of the station;
- (c) type of facility or aid; and
- (d) indication whether aid serves en-route (E), aerodrome (A) or dual (AE) purposes.

GEN 2.6 Conversion of units of measurement

Tables for conversion or, alternatively, conversion formulae between-

- (a) nautical miles and kilometres and vice versa;
- (b) feet and metres and vice versa;
- (c) decimal minutes of arc and seconds of arc and vice versa; and
- (d) other conversions as appropriate.

GEN 2.7 Sunrise or sunset

Information on the time of sunrise and sunset including a brief description of criteria used for determination of the times given and either a simple formulae or table from which times may be calculated for any location within its territory/area of responsibility, or an alphabetical list of locations for which the times are given in a table with a reference to the related page in the table and the sunrise/sunset tables for the selected stations/locations, including—

- (a) station name;
- (b) ICAO location indicator;
- (c) geographical coordinates in degrees and minutes;
- (d) date(s) for which times are given;
- (e) time for the beginning of morning civil twilight;
- (f) time for sunrise;
- (g) time for sunset; and
- (h) time for the end of evening civil twilight.

GEN 3. SERVICES

GEN 3.1 Aeronautical information services

GEN 3.1.1 Responsible service

Description of the aeronautical information service (AIS) provided and its major components, including-

- (a) service or unit name;
- (b) postal address;
- (c) telephone number;
- (d) telefax number;
- (e) e-mail address;
- (f) AFS address;
- (g) website address, if available;

- (h) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
- (i) an indication if service is not H24.

GEN 3.1.2 Area of responsibility

The area of responsibility for the AIS.

GEN 3.1.3 Aeronautical publications

Description of the elements of the aeronautical information products, including—

- (a) AIP and related amendment service;
- (b) AIP Supplements;
- (c) AIC;
- (d) NOTAM and pre-flight information bulletins (PIB);
- (e) checklists and lists of valid NOTAM; and
- (f) how they may be obtained.

When an AIC is used to promulgate publication prices, that shall be indicated in this section of the AIP.

GEN 3.1.4 AIRAC system

Brief description of the AIRAC system provided including a table of present and near future AIRAC dates.

GEN 3.1.5 Pre-flight information service at aerodromes or heliports

A list of aerodromes or heliports at which pre-flight information is routinely available, including an indication of relevant—

- (a) elements of the aeronautical information products held;
- (b) maps and charts held; and
- (c) general area of coverage of such information.

GEN 3.1.6 Digital data sets

Description of the available data sets, including—

- (a) data set title;
- (b) short description;
- (c) data subjects included;

- (d) geographical scope; and
- (e) if applicable, limitations related to its usage.
- (f) Contact details of how data sets may be obtained, containing:
 - (i) name of the individual, service or organization responsible;
 - (ii) street address and e-mail address of the individual, service or organization responsible;
 - (iii) telefax number of the individual, service or organization responsible;
 - (iv) contact telephone number of the individual, service or organization responsible;
 - (v) hours of service, for insatnce, time period including time zone when contact can be made;
 - (vi) online information that can be used to contact the individual, service or organization; and
 - (vii) supplemental information, if necessary, on how and when to contact the individual, service or organization.

GEN 3.2 Aeronautical charts

GEN 3.2.1 Responsible service

Description of service responsible for the production of aeronautical charts, including—

- (a) service name;
- (b) postal address;
- (c) telephone number;
- (d) telefax number;
- (e) e-mail address;
- (f) AFS address;
- (g) website address, if available;
- (h) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
- (i) an indication if service is not H24.

GEN 3.2.2 Maintenance of charts

Brief description of how aeronautical charts are revised and amended.

GEN 3.2.3 Purchase arrangements

Details of how charts may be obtained, containing—

- (a) service or sales agency;
- (b) postal address;
- (c) telephone number;
- (d) telefax number;
- (e) e-mail address;
- (f) AFS address; and
- (g) website address, if available.

GEN 3.2.4 Aeronautical chart series available

A list of aeronautical chart series available followed by a general description of each series and an indication of the intended use.

GEN 3.2.5 List of aeronautical charts available

A list of aeronautical charts available, including—

- (a) title of series;
- (b) scale of series;
- (c) name or number of each chart or each sheet in a series;
- (d) price per sheet; and
- (e) date of latest revision.

GEN 3.2.6 Index to the World Aeronautical Chart (WAC) — ICAO 1:1 000 000

- (1) An index chart showing coverage and sheet layout for the WAC 1:1 000 000 produced by a State.
- (2) If Aeronautical Chart — ICAO 1:500 000 is produced instead of WAC 1:1 000 000, index charts shall be used to indicate coverage and sheet layout for the Aeronautical Chart — ICAO 1:500 000.

GEN 3.2.7 Topographical charts

Details of how topographical charts may be obtained, containing—

- (a) name of service or agency;
- (b) postal address;
- (c) telephone number;
- (d) telefax number;
- (e) e-mail address;
- (f) AFS address; and

- (g) website address, if available.

GEN 3.2.8 Corrections to charts not contained in the AIP

A list of corrections to aeronautical charts not contained in the AIP, or an indication where such information can be obtained.

GEN 3.3 Air traffic services

GEN 3.3.1 Responsible service

Description of the air traffic service (ATS) and its major components, including:

- (a) service name;
- (b) postal address;
- (c) telephone number;
- (d) telefax number;
- (e) e-mail address;
- (f) AFS address;
- (g) website address, if available;
- (h) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
- (i) an indication if service is not H24.

GEN 3.3.2 Area of responsibility

Brief description of area of responsibility for which ATS is provided.

GEN 3.3.3 Types of services

Brief description of main types of ATS provided.

GEN 3.3.4 Coordination between the operator and ATS

General conditions under which coordination between the operator and air traffic services is effected.

GEN 3.3.5 Minimum flight altitude

The criteria used to determine minimum flight altitudes.

GEN 3.3.6 ATS units address list

A list of ATS units and their addresses arranged alphabetically, containing-

- (a) unit name;
- (b) postal address;

- (c) telephone number;
- (d) telefax number;
- (e) e-mail address;
- (f) AFS address; and
- (g) website address, if available.

GEN 3.4 Communication and navigation services

GEN 3.4.1 Responsible service

Description of the service responsible for the provision of telecommunication and navigation facilities, including-

- (a) service name;
- (b) postal address;
- (c) telephone number;
- (d) telefax number;
- (e) e-mail address;
- (f) AFS address;
- (g) website address, if available;
- (h) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
- (i) an indication if service is not H24.

GEN 3.4.2 Area of responsibility

Brief description of area of responsibility for which telecommunication service is provided.

GEN 3.4.3 Types of service

Brief description of the main types of service and facilities provided, including-

- (a) radio navigation services;
- (b) voice or data link services;
- (c) broadcasting service;
- (d) language used; and
- (e) an indication of where detailed information can be obtained.

GEN 3.4.4 Requirements and conditions

Brief description concerning the requirements and conditions under which the communication service is available.

GEN 3.4.5 Miscellaneous

Any additional information, for instance, selected radio broadcasting stations, telecommunications diagram.

GEN 3.5 Meteorological services

GEN 3.5.1 Responsible service

Brief description of the meteorological service responsible for the provision of meteorological information, including—

- (a) service name;
- (b) postal address;
- (c) telephone number;
- (d) telefax number;
- (e) e-mail address;
- (f) AFS address;
- (g) website address, if available;
- (h) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed; and
- (i) an indication if service is not H24.

GEN 3.5.2 Area of responsibility

Brief description of area or air routes for which meteorological service is provided.

GEN 3.5.3 Meteorological observations and reports

Detailed description of the meteorological observations and reports provided for international air navigation, including—

- (a) name of the station and the ICAO location indicator;
- (b) type and frequency of observation including an indication of automatic observing equipment;
- (c) types of meteorological reports such as METAR and availability of a trend forecast;
- (d) specific type of observation system and number of observation sites used to observe and report surface wind, visibility, runway visual range, cloud base, temperature and, where applicable, wind shear, for instance, anemometer at intersection of runways, transmissometer next to touchdown zone;
- (e) hours of operation; and
- (f) indication of aeronautical climatological information available.

GEN 3.5.4 Types of services

Brief description of the main types of service provided, including details of briefing, consultation, display of meteorological information, flight documentation available for operators and flight crew members, and of the methods and means used for supplying the meteorological information.

GEN 3.5.5 Notification required from operators

Minimum amount of advance notice required by the meteorological authority from operators in respect of briefing, consultation and flight documentation and other meteorological information they require or change.

GEN 3.5.6 Aircraft reports

As necessary, requirements of the meteorological authority for the making and transmission of aircraft reports.

GEN 3.5.7 VOLMET service

Description of VOLMET or D-VOLMET service, including—

- (a) name of transmitting station;
- (b) call sign or identification and abbreviation for the radio communication emission;
- (c) frequency or frequencies used for broadcast;
- (d) broadcasting period;
- (e) hours of service;
- (f) list of aerodromes/heliports for which reports and/or forecasts are included; and
- (g) reports, forecasts and SIGMET information included and remarks.

GEN 3.5.8 SIGMET and AIRMET service

Description of the meteorological watch provided within flight information regions or control areas for which air traffic services are provided, including a list of the meteorological watch offices with—

- (a) name of the meteorological watch office and the ICAO location indicator;
- (b) hours of service;
- (c) flight information region or control area served;
- (d) SIGMET validity periods;
- (e) specific procedures applied to SIGMET information, for instance, for volcanic ash and tropical cyclones;

- (f) procedures applied to AIRMET information in accordance with relevant regional air navigation agreements;
- (g) ATS unit provided with SIGMET and AIRMET information; and
- (h) additional information, for instance, concerning any limitation of service.

GEN 3.5.9 Other automated meteorological services

Description of available automated services for the provision of meteorological information, for instance, automated pre-flight information service accessible by telephone and/or computer modem, including-

- (a) service name;
- (b) information available;
- (c) areas, routes and aerodromes covered; and
- (d) telephone and telefax number, e-mail address, and, if available, website address.

GEN 3.6 Search and rescue

GEN 3.6.1 Responsible service

Brief description of service responsible for the provision of search and rescue (SAR), including-

- (a) service or unit name;
- (b) postal address;
- (c) telephone number;
- (d) telefax number;
- (e) e-mail address;
- (f) AFS address;
- (g) website address, if available; and
- (h) a statement concerning the ICAO documents on which the service is based and a reference to the AIP location where differences, if any, are listed.

GEN 3.6.2 Area of responsibility

Brief description of area of responsibility within which SAR services are provided.

GEN 3.6.3 Types of service

Brief description and geographical portrayal, where appropriate, of the type of service and facilities provided including indications where SAR aerial coverage is dependent upon significant deployment of aircraft.

GEN 3.6.4 SAR agreements

Brief description of SAR agreements in force, including provisions for facilitating entry and departure of other States' aircraft for search, rescue, salvage, repair or salvage in connection with lost or damaged aircraft, either with airborne notification only or after flight plan notification.

GEN 3.6.5 Conditions of availability

Brief description of provisions for SAR, including the general conditions under which the service and facilities are available for international use, including an indication of whether a facility available for SAR is specialized in SAR techniques and functions, or is specially used for other purposes but adapted for SAR purposes by training and equipment, or is only occasionally available and has no particular training or preparation for SAR work.

GEN 3.6.6 Procedures and signals used

Brief description of the procedures and signals employed by rescue aircraft and a table showing the signals to be used by survivors.

GEN 4 - CHARGES FOR AERODROMES OR HELIPORTS AND AIR NAVIGATION SERVICES

GEN 4.1 Aerodrome or heliport charges

Brief description of type of charges which may be applicable at aerodromes or heliports available for international use, including—

- (a) landing of aircraft;
- (b) parking, hangarage and long-term storage of aircraft;
- (c) passenger service;
- (d) security;
- (e) noise-related items;
- (f) other, for instance, customs, health, immigration;
- (g) exemptions or reductions; and
- (h) methods of payment.

GEN 4.2 Air navigation services charges

Brief description of charges which may be applicable to air navigation services provided for international use, including—

- (a) approach control;
- (b) route air navigation services;
- (c) cost basis for air navigation services and exemptions or reductions; and
- (d) methods of payment.

PART 2 — EN-ROUTE (ENR)

If an AIP is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments shall be included in each volume. In the case of an AIP being published as one volume, the annotation “not applicable” shall be entered against each of the above subsections.

ENR 0.1 Table of contents to Part 2

A list of sections and subsections contained in Part 2 — En-route.

ENR 1. GENERAL RULES AND PROCEDURES

ENR 1.1 General rules

The requirement is for publication of the general rules as applied within the State.

ENR 1.2 Visual flight rules

The requirement is for publication of the visual flight rules as applied within the State.

ENR 1.3 Instrument flight rules

The requirement is for publication of the instrument flight rules as applied within the State.

ENR 1.4 ATS airspace classification and description

ENR 1.4.1 ATS airspace classification

Description of ATS airspace classes in the form of the ATS airspace classification table in Annex 11, Appendix 4, appropriately annotated to indicate those airspace classes not used by the State.

ENR 1.4.2 ATS airspace description

Other ATS airspace descriptions as applicable, including general textual descriptions.

ENR 1.5 Holding, approach and departure procedures

ENR 1.5.1 General

The requirement is for a statement concerning the criteria on which holding, approach and departure procedures are established. If different from ICAO provisions, the requirement is for presentation of criteria used in a tabular form.

ENR 1.5.2 Arriving flights

The requirement is to present procedures, for instance, conventional or area navigation, or both for arriving flights which are common to flights into or within the same type of airspace. If different procedures apply within a terminal airspace, a note to this effect shall be given together with a reference to where the specific procedures can be found.

ENR 1.5.3 Departing flights

The requirement is to present procedures, for instance, conventional or area navigation, or both for departing flights which are common to flights departing from any aerodrome or heliport.

ENR 1.5.4 Other relevant information and procedures

Brief description of additional information, for instance, entry procedures, final approach alignment, holding procedures and patterns.

ENR 1.6 ATS surveillance services and procedures

ENR 1.6.1 Primary radar

Description of primary radar services and procedures, including:

- (a) supplementary services;
- (b) the application of radar control service;
- (c) radar and air-ground communication failure procedures;
- (d) voice and CPDLC position reporting requirements; and
- (e) graphic portrayal of area of radar coverage.

ENR 1.6.2 Secondary surveillance radar

Description of secondary surveillance radar (SSR) operating procedures, including:

- (a) emergency procedures;
- (b) air-ground communication failure and unlawful interference procedures;
- (c) the system of SSR code assignment;
- (d) voice and CPDLC position reporting requirements; and
- (e) graphic portrayal of area of SSR coverage.

ENR 1.6.3 Automatic dependent surveillance — broadcast

Description of automatic dependent surveillance — broadcast (ADS-B) operating procedures, including-

- (a) emergency procedures;
- (b) air-ground communication failure and unlawful interference procedures;

- (c) aircraft identification requirements;
- (d) voice and CPDLC position reporting requirements; and
- (e) graphic portrayal of area of ADS-B coverage.

ENR 1.6.4 Other relevant information and procedures

Brief description of additional information and procedures, for instance, radar failure procedures and transponder failure procedures.

ENR 1.7 Altimeter setting procedures

The requirement is for a statement of altimeter setting procedures in use, containing:

- (a) brief introduction with a statement concerning the ICAO documents on which the procedures are based together with differences to ICAO provisions, if any;
- (b) basic altimeter setting procedures;
- (c) description of altimeter setting region;
- (d) procedures applicable to operators including pilots; and
- (e) table of cruising levels.

ENR 1.8 Regional supplementary procedures

The requirement is for presentation of regional supplementary procedures (SUPPs) affecting the entire area of responsibility.

ENR 1.9 Air traffic flow management and airspace management

Brief description of air traffic flow management (ATFM) system and airspace management, including—

- (a) ATFM structure, service area, service provided, location of unit(s) and hours of operation;
- (b) types of flow messages and descriptions of the formats; and
- (c) procedures applicable for departing flights, containing:
 - (i) service responsible for provision of information on applied ATFM measures;
 - (ii) flight plan requirements; and
 - (iii) slot allocations;
- (d) information on overall responsibility regarding airspace management within FIR(s), details of civil or military airspace allocation and management coordination, structure of manageable airspace (allocation and changes to allocation) and general operating procedures.

ENR 1.10 Flight planning

The requirement is to indicate any restriction, limitation or advisory information related to the flight planning stage which may assist the user in the presentation of the intended flight operation, including—

- (a) procedures for the submission of a flight plan;
- (b) repetitive flight plan system; and
- (c) changes to the submitted flight plan.

ENR 1.11 Addressing of flight plan messages

The requirement is for an indication, in tabular form, of the addresses allocated to flight plans, showing—

- (a) category of flight (IFR, VFR or both);
- (b) route (into or via FIR or TMA); and
- (c) message address.

ENR 1.12 Interception of civil aircraft

The requirement is for a complete statement of interception procedures and visual signals to be used with a clear indication of whether ICAO provisions are applied and, if not, that differences exist.

ENR 1.13 Unlawful interference

The requirement is for presentation of appropriate procedures to be applied in case of unlawful interference.

ENR 1.14 Air traffic incidents

Description of air traffic incidents reporting system, including-

- (a) definition of air traffic incidents;
- (b) use of the “Air Traffic Incident Reporting Form”;
- (c) reporting procedures (including in-flight procedures); and
- (d) purpose of reporting and handling of the form.

ENR 2. ATS AIRSPACE

ENR 2.1 FIR, UIR, TMA and CTA

#AIP-DS# Detailed description of flight information regions (FIR), upper flight information regions (UIR), and control areas (CTA) (including specific CTA such as TMA), including-

- (a) name, geographical coordinates in degrees and minutes of the FIR/UIR lateral limits and in degrees, minutes and seconds of the CTA lateral limits, vertical limits and class of airspace;

- (b) identification of unit providing the service;
- (c) call sign of aeronautical station serving the unit and language(s) used, specifying the area and conditions, when and where to be used, if applicable;
- (d) frequencies, and if applicable SATVOICE number, supplemented by indications for specific purposes; and
- (e) remarks.

#AIP-DS# Control zones around military air bases not otherwise described in the AIP shall be included in this subsection. Where the requirements of Annex 2 concerning flight plans, two-way communications and position reporting apply to all flights in order to eliminate or reduce the need for interceptions and/or where the possibility of interception exists and the maintenance of guard on the VHF emergency channel 121.5 MHz is required, a statement to this effect shall be included for the relevant area(s) or portion(s) thereof. A description of designated areas over which the carriage of an emergency locator transmitter (ELT) is required and where aircraft shall continuously guard the VHF emergency frequency 121.5 MHz, except for those periods when aircraft are carrying out communications on other VHF channels or when airborne equipment limitations or cockpit duties do not permit simultaneous guarding of two channels.

ENR 2.2 Other regulated airspace

Where established, a detailed description of other types of regulated airspace and airspace classification.

ENR 3. ATS ROUTES

ENR 3.1 Lower ATS routes

#AIP-DS# Detailed description of lower ATS routes, including—

- (a) route designator, designation of the required communication performance (RCP) specification, navigation specification or required surveillance performance (RSP) specification applicable to a specified segment, names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
- (b) tracks or VOR radials to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between each

successive designated significant point and, in the case of VOR radials, changeover points;

- (c) upper and lower limits or minimum en-route altitudes, to the nearest higher 50 m or 100 ft, and airspace classification;
- (d) lateral limits and minimum obstacle clearance altitudes;
- (e) direction of cruising levels;
- (f) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and
- (g) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

ENR 3.2 Upper ATS routes

#AIP-DS# Detailed description of upper ATS routes, including—

- (a) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
- (b) tracks or VOR radials to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between each successive designated significant point and, in the case of VOR radials, changeover points;
- (c) upper and lower limits and airspace classification;
- (d) lateral limits;
- (e) direction of cruising levels;
- (f) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and
- (g) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification limitations.

ENR 3.3 Area navigation routes

#AIP-DS# Detailed description of PBN (RNAV and RNP) routes, including-

- (a) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all significant points defining the route including “compulsory” or “on-request” reporting points;
- (b) in respect of waypoints defining an area navigation route, additionally as applicable:
 - (i) station identification of the reference VOR/DME;
 - (ii) bearing to the nearest degree and the distance to the nearest tenth of a kilometre or tenth of a nautical mile from the reference VOR/DME, if the waypoint is not collocated with it; and
 - (iii) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft);
- (c) magnetic bearing to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between defined end-points and distance between each successive designated significant point;
- (d) upper and lower limits and airspace classification;
- (e) direction of cruising levels;
- (f) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and
- (g) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

ENR 3.4 Helicopter routes

#AIP-DS# Detailed description of helicopter routes, including:

- (1) route designator, designation of the required communication performance (RCP) specification(s), navigation specification(s) and/or required surveillance performance (RSP) specification(s) applicable to a specified segment(s), names, coded designators or name-codes and the geographical coordinates in degrees, minutes and seconds of all

significant points defining the route including “compulsory” or “on-request” reporting points;

- (2) tracks or VOR radials to the nearest degree, geodesic distance to the nearest tenth of a kilometre or tenth of a nautical mile between each successive designated significant point and, in the case of VOR radials, change over points;
- (3) upper and lower limits and airspace classification;
- (4) minimum flight altitudes to the nearest higher 50 m or 100 ft;
- (5) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and
- (6) remarks, including an indication of the controlling unit, its operating channel and, if applicable, its logon address, SATVOICE number, and any navigation, RCP and RSP specification(s) limitations.

ENR 3.5 Other routes

#AIP-DS# The requirement is to describe other specifically designated routes which are compulsory within specified 1area(s).

ENR 3.6 En-route holding

#AIP-DS# The requirement is for a detailed description of en-route holding procedures, containing—

- (a) holding identification, if any, and holding fix (navigation aid) or waypoint with geographical coordinates in degrees, minutes and seconds;
- (b) inbound track;
- (c) direction of the procedure turn;
- (d) maximum indicated airspeed;
- (e) minimum and maximum holding level;
- (f) time or distance outbound; and
- (g) indication of the controlling unit and its operating frequency.

ENR 4. RADIO NAVIGATION AIDS OR SYSTEMS

ENR 4.1 Radio navigation aids — en-route

- (1) *#AIP-DS#* A list of stations providing radio navigation services

established for en-route purposes and arranged alphabetically by name of the station, including—

- (a) name of the station and magnetic variation to the nearest degree and for VOR, station declination to the nearest degree used for technical line-up of the aid;
 - (b) identification;
 - (c) frequency or channel for each element;
 - (d) hours of operation;
 - (e) geographical coordinates in degrees, minutes and seconds of the position of the transmitting antenna;
 - (f) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft); and
 - (g) remarks.
- (2) If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority shall be indicated in the remarks column. Facility coverage shall be indicated in the remarks column.

ENR 4.2 Special navigation systems

- (1) *#AIP-DS#* Description of stations associated with special navigation systems, for instance, DECCA, LORAN, including—
- (a) name of station or chain;
 - (b) type of service available (master signal, slave signal, colour);
 - (c) frequency (channel number, basic pulse rate, recurrence rate, as applicable);
 - (d) hours of operation;
 - (e) geographical coordinates in degrees, minutes and seconds of the position of the transmitting station; and
 - (f) remarks.
- (2) If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority shall be indicated in the remarks column. Facility coverage shall be indicated in the remarks column.

ENR 4.3 Global navigation satellite system (GNSS)

- (1) A list and description of elements of the global navigation satellite system (GNSS) providing the navigation service established for en-route purposes and arranged alphabetically by name of the element, including—
 - (a) the name of the GNSS element, (GPS, GLONASS, EGNOS, MSAS, WAAS, etc.);
 - (b) frequency(ies), as appropriate;
 - (c) geographical coordinates in degrees, minutes and seconds of the nominal service area and coverage area; and
 - (d) remarks.
- (2) If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority shall be indicated in the remarks column.

ENR 4.4 Name-code designators for significant points

#AIP-DS# A list of alphabetically arranged name-code designators (five-letter pronounceable “name-code”) established for significant points at positions not marked by the site of radio navigation aids, including—

- (a) name-code designator;
- (b) geographical coordinates in degrees, minutes and seconds of the position;
- (c) reference to ATS or other routes where the point is located; and
- (d) remarks, including supplementary definition of positions where required.

ENR 4.5 Aeronautical ground lights — en-route

#AIP-DS# A list of aeronautical ground lights and other light beacons designating geographical positions which are selected by the State as being significant, including—

- (a) name of the city or town or other identification of the beacon;
- (b) type of beacon and intensity of the light in thousands of candelas;
- (c) characteristics of the signal;
- (d) operational hours; and
- (e) remarks.

ENR 5. NAVIGATION WARNINGS

ENR 5.1 Prohibited, restricted and danger areas

- (1) *#AIP-DS#* Description, supplemented by graphic portrayal where appropriate, of prohibited, restricted and danger areas together with information regarding their establishment and activation, including—
- (a) identification, name and geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area or control zone boundaries;
 - (b) upper and lower limits; and
 - (c) remarks, including time of activity.
- (2) Type of restriction or nature of hazard and risk of interception in the event of penetration shall be indicated in the remarks column.

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

#AIP-DS# Description, supplemented by graphic portrayal where appropriate, of established military training areas and military exercises taking place at regular intervals, and established air defence identification zone (ADIZ), including—

- (a) geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area or control zone boundaries;
- (b) upper and lower limits and system and means of activation announcements together with information pertinent to civil flights and applicable ADIZ procedures; and
- (c) remarks, including time of activity and risk of interception in the event of penetration of ADIZ.

ENR 5.3 Other activities of a dangerous nature and other potential hazards

ENR 5.3.1 Other activities of a dangerous nature

#AIP-DS# Description, supplemented by charts where appropriate, of activities that constitute a specific or obvious danger to aircraft operation and could affect flights, including—

- (a) geographical coordinates in degrees and minutes of centre of area and range of influence;
- (b) vertical limits;

- (c) advisory measures;
- (d) authority responsible for the provision of information; and
- (e) remarks, including time of activity.

ENR 5.3.2 Other potential hazards

#AIP-DS# Description, supplemented by charts where appropriate, of other potential hazards that could affect flights active volcanoes, nuclear power stations, including—

- (a) geographical coordinates in degrees and minutes of location of potential hazard;
- (b) vertical limits;
- (c) advisory measures;
- (d) authority responsible for the provision of information; and
- (e) remarks.

ENR 5.4 Air navigation obstacles

#OBS-DS# A list of obstacles affecting air navigation in Area 1 (the entire State territory), including—

- (a) obstacle identification or designation;
- (b) type of obstacle;
- (c) obstacle position, represented by geographical coordinates in degrees, minutes and seconds;
- (d) obstacle elevation and height to the nearest metre or foot; and
- (e) type and colour of obstacle lighting, if any.

ENR 5.5 Aerial sporting and recreational activities

#AIP-DS# Brief description, supplemented by graphic portrayal where appropriate, of intensive aerial sporting and recreational activities together with conditions under which they are carried out, including—

- (a) designation and geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area or control zone boundaries;
- (b) vertical limits;
- (c) operator or user telephone number; and
- (d) remarks, including time of activity.

ENR 5.6 Bird migration and areas with sensitive fauna

Description, supplemented by charts where practicable, of movements of birds associated with migration, including migration routes and permanent resting areas and areas with sensitive fauna.

ENR 6. EN-ROUTE CHARTS

The requirement is for the En-route Chart — ICAO and index charts to be included in this section.

PART 3 — AERODROMES (AD)

If an AIP is produced and made available in more than one volume with each having a separate amendment and supplement service, a separate preface, record of AIP Amendments, record of AIP Supplements, checklist of AIP pages and list of current hand amendments shall be included in each volume. In the case of an AIP being published as one volume, the annotation “not applicable” shall be entered against each of the above subsections.

AD 0.1 Table of contents to Part 3

A list of sections and subsections contained in Part 3 — Aerodromes (AD).

AD 1. AERODROMES/HELIPORTS — INTRODUCTION

AD 1.1 Aerodrome/heliport availability and conditions of use

AD 1.1.1 General conditions

Brief description of the State’s designated authority responsible for aerodromes and heliports, including—

- (a) the general conditions under which aerodromes/heliports and associated facilities are available for use; and
- (b) a statement concerning the ICAO documents on which the services are based and a reference to the AIP location where differences, if any, are listed.

AD 1.1.2 Use of military air bases

Regulations and procedures, if any, concerning civil use of military air bases.

AD 1.1.3 Low visibility procedures

The general conditions under which the low visibility procedures applicable to Cat II/III operations at aerodromes, if any, are applied.

AD 1.1.4 Aerodrome operating minima

Details of aerodrome operating minima applied by the State.

AD 1.1.5 Other information

If applicable, other information of a similar nature

AD 1.2 Rescue and firefighting services and snow plan

AD 1.2.1 Rescue and firefighting services

Brief description of rules governing the establishment of rescue and firefighting services at aerodromes and heliports available for public use together with an indication of rescue and firefighting categories established by a State.

AD 1.2.2 Snow plan

Brief description of general snow plan considerations for aerodromes/heliports available for public use at which snow conditions are normally liable to occur, including:

- (a) organization of the winter service;
- (b) surveillance of movement areas;
- (c) measuring methods and measurements taken;
- (d) actions taken to maintain the usability of movement areas;
- (e) system and means of reporting;
- (f) the cases of runway closure; and
- (g) distribution of information about snow conditions.

AD 1.3 Index to aerodromes and heliports

A list, supplemented by graphic portrayal, of aerodromes and heliports within a State, including—

- (a) aerodrome or heliport name and ICAO location indicator;
- (b) type of traffic permitted to use the aerodrome or heliport (international/national, IFR/VFR, scheduled or non-scheduled, general aviation, military and other); and
- (c) reference to AIP, Part 3 subsection in which aerodrome or heliport details are presented.

AD 1.4 Grouping of aerodromes/heliports

Brief description of the criteria applied by the State in grouping aerodromes or heliports for production/distribution/provision of information purposes (international/national; primary/secondary; major/other; civil/military; etc.).

AD 1.5 Status of certification of aerodromes

A list of aerodromes in the State, indicating the status of certification, including:

- (1) aerodrome name and ICAO location indicator;
- (2) date and, if applicable, validity of certification; and
- (3) remarks, if any.

AD 2. AERODROMES

Note.—**** is to be replaced by the relevant ICAO location indicator.

****** AD 2.1 Aerodrome location indicator and name**

The requirement is for the ICAO location indicator allocated to the aerodrome and the name of aerodrome. An ICAO location indicator shall be an integral part of the referencing system applicable to all subsections in section AD 2.

****** AD 2.2 Aerodrome geographical and administrative data**

The requirement is for aerodrome geographical and administrative data, including—

- (a) aerodrome reference point (geographical coordinates in degrees, minutes and seconds) and its site;
- (b) direction and distance of aerodrome reference point from centre of the city or town which the aerodrome serves;
- (c) aerodrome elevation to the nearest metre or foot, reference temperature and mean low temperature;
- (d) where appropriate, geoid undulation at the aerodrome elevation position to the nearest metre or foot;
- (e) magnetic variation to the nearest degree, date of information and annual change;
- (f) name of aerodrome operator, address, telephone and telefax numbers, e-mail address, AFS address and, if available, website address;
- (g) types of traffic permitted to use the aerodrome (IFR/VFR); and
- (h) remarks.

****** AD 2.3 Operational hours**

Detailed description of the hours of operation of services at the aerodrome, including—

- (a) aerodrome operator;
- (b) customs and immigration;
- (c) health and sanitation;
- (d) AIS briefing office;
- (e) ATS reporting office (ARO);
- (f) MET briefing office;

- (g) air traffic service;
- (h) fuelling;
- (i) handling;
- (j) security;
- (k) de-icing; and
- (l) remarks.

****** AD 2.4 Handling services and facilities**

Detailed description of the handling services and facilities available at the aerodrome, including—

- (a) cargo-handling facilities;
- (b) fuel and oil types;
- (c) fuelling facilities and capacity;
- (d) de-icing facilities;
- (e) hangar space for visiting aircraft;
- (f) repair facilities for visiting aircraft; and
- (g) remarks.

****** AD 2.5 Passenger facilities**

Passenger facilities available at the aerodrome, provided as a brief description or a reference to other information sources such as a website, including—

- (a) hotel at or in the vicinity of aerodrome;
- (b) restaurant at or in the vicinity of aerodrome;
- (c) transportation possibilities;
- (d) medical facilities;
- (e) bank and post office at or in the vicinity of aerodrome;
- (f) tourist office; and
- (g) remarks.

****** AD 2.6 Rescue and firefighting services**

Detailed description of the rescue and firefighting services and equipment available at the aerodrome, including-

- (a) aerodrome category for firefighting;
- (b) rescue equipment;
- (c) capability for removal of disabled aircraft; and
- (d) remarks.

****** AD 2.7 Seasonal availability — clearing**

Detailed description of the equipment and operational priorities established for the clearance of aerodrome movement areas, including-

- (a) type of clearing equipment;
- (b) clearance priorities; and
- (c) remarks.

****** AD 2.8 Aprons, taxiways and check locations or positions data**

- (1) Details related to the physical characteristics of aprons, taxiways and locations or positions of designated checkpoints, including-
 - (a) designation, surface and strength of aprons;
 - (b) designation, width, surface and strength of taxiways;
 - (c) location and elevation to the nearest metre or foot of altimeter checkpoints;
 - (d) location of VOR checkpoints;
 - (e) position of INS checkpoints in degrees, minutes, seconds and hundredths of seconds; and
 - (f) remarks.
- (2) If check locations or positions are presented on an aerodrome chart, a note to that effect shall be provided under this subsection.

****** AD 2.9 Surface movement guidance and control system and markings**

Brief description of the surface movement guidance and control system and runway and taxiway markings, including—

- (a) use of aircraft stand identification signs, taxiway guide lines and visual docking or parking guidance system at aircraft stands;

- (b) runway and taxiway markings and lights;
- (c) stop bars and runway guard lights, if any;
- (d) other runway protection measures; and
- (e) remarks.

****** AD 2.10 Aerodrome obstacles**

#OBS-DS# Detailed description of obstacles, including—

- (a) obstacles in Area 2—
 - (i) obstacle identification or designation;
 - (ii) type of obstacle;
 - (iii) obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;
 - (iv) obstacle elevation and height to the nearest metre or foot;
 - (v) obstacle marking, and type and colour of obstacle lighting, if any; and
 - (vi) NIL indication, if appropriate;
- (b) the absence of an Area 2 data set for the aerodrome is to be clearly stated and obstacle data are to be provided for—
 - (i) obstacles that penetrate the obstacle limitation surfaces;
 - (ii) obstacles that penetrate the take-off flight path area obstacle identification surface; and
 - (iii) other obstacles assessed as being hazardous to air navigation;
- (c) indication that information on obstacles in Area 3 is not provided, or if provided—
 - (i) obstacle identification or designation;
 - (ii) type of obstacle;
 - (iii) obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;
 - (iv) obstacle elevation and height to the nearest tenth of a metre or tenth of a foot;

- (v) obstacle marking, and type and colour of obstacle lighting, if any;
- (vi) if appropriate, an indication that the list of obstacles is available as a digital data set, and a reference to GEN 3.1.6; and
- (vii) NIL indication, if appropriate.

****** AD 2.11 Meteorological information provided**

Detailed description of meteorological information provided at the aerodrome and an indication of which meteorological office is responsible for the service enumerated, including:

- (a) name of the associated meteorological office;
- (b) hours of service and, where applicable, the designation of the responsible meteorological office outside these hours;
- (c) office responsible for preparation of TAFs and periods of validity and interval of issuance of the forecasts;
- (d) availability of the trend forecasts for the aerodrome, and interval of issuance;
- (e) information on how briefing and/or consultation is provided;
- (f) types of flight documentation supplied and language used in flight documentation;
- (g) charts and other information displayed or available for briefing or consultation;
- (h) supplementary equipment available for providing information on meteorological conditions, for instance, weather radar and receiver for satellite images;
- (i) the air traffic services unit provided with meteorological information; and
- (j) additional information, for instance concerning any limitation of service.

****** AD 2.12 Runway physical characteristics**

Detailed description of runway physical characteristics, for each runway, including—

- (a) designations;
- (b) true bearings to one-hundredth of a degree;
- (c) dimensions of runways to the nearest metre or foot;
- (d) strength of pavement (PCN and associated data) and surface of each runway and associated stopways;
- (e) geographical coordinates in degrees, minutes, seconds and hundredths of seconds for each threshold and runway end and, where appropriate, geoid undulation of—
 - (i) thresholds of a non-precision approach runway to the nearest metre or foot; and
 - (ii) thresholds of a precision approach runway to the nearest tenth of a metre or tenth of a foot;
- (f) elevations of:
 - (i) thresholds of a non-precision approach runway to the nearest metre or foot; and
 - (ii) thresholds and the highest elevation of the touchdown zone of a precision approach runway to the nearest tenth of a metre or tenth of a foot;
- (g) slope of each runway and associated stopways;
- (h) dimensions of stopway (if any) to the nearest metre or foot;
- (i) dimensions of clearway (if any) to the nearest metre or foot;
- (j) dimensions of strips;
- (k) dimensions of runway end safety areas;
- (l) location (which runway end) and description of arresting system ,if any;
- (m) the existence of an obstacle-free zone; and
- (n) remarks.

****** AD 2.13 Declared distances**

- (1) Detailed description of declared distances to the nearest metre or foot for each direction of each runway, including—

- (a) runway designator;
 - (b) take-off run available;
 - (c) take-off distance available, and if applicable, alternative reduced declared distances;
 - (d) accelerate-stop distance available;
 - (e) landing distance available; and
 - (f) remarks, including runway entry or start point where alternative reduced declared distances have been declared.
- (2) If a runway direction cannot be used for take-off or landing, or both, because it is operationally forbidden, then this shall be declared and the words “not usable” or the abbreviation “NU” entered (Annex 14, Volume I, Attachment A, Section 3).

****** AD 2.14 Approach and runway lighting**

Detailed description of approach and runway lighting, including-

- (a) runway designator;
- (b) type, length and intensity of approach lighting system;
- (c) runway threshold lights, colour and wing bars;
- (d) type of visual approach slope indicator system;
- (e) length of runway touchdown zone lights;
- (f) length, spacing, colour and intensity of runway centre line lights;
- (g) length, spacing, colour and intensity of runway edge lights;
- (h) colour of runway end lights and wing bars;
- (i) length and colour of stopway lights; and
- (j) remarks.

****** AD 2.15 Other lighting and secondary power supply**

Description of other lighting and secondary power supply, including-

- (a) location, characteristics and hours of operation of aerodrome beacon or identification beacon, if any;
- (b) location and lighting, if any of anemometer or landing direction indicator;

- (c) taxiway edge and taxiway centre line lights;
- (d) secondary power supply including switch-over time; and
- (e) remarks.

****** AD 2.16 Helicopter landing area**

Detailed description of helicopter landing area provided at the aerodrome, including—

- (a) geographical coordinates in degrees, minutes, seconds and hundredths of seconds and, where appropriate, geoid undulation of the geometric centre of touchdown and lift-off (TLOF) or of each threshold of final approach and take-off (FATO) area-
 - (i) for non-precision approaches, to the nearest metre or foot; and
 - (ii) for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- (b) TLOF or FATO area elevation—
 - (i) for non-precision approaches, to the nearest metre or foot; and
 - (ii) for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- (c) TLOF and FATO area dimensions to the nearest metre or foot, surface type, bearing strength and marking;
- (d) true bearings to one-hundredth of a degree of FATO;
- (e) declared distances available, to the nearest metre or foot;
- (f) approach and FATO lighting; and
- (g) remarks.

****** AD 2.17 Air traffic services airspace**

#AIP-DS# Detailed description of air traffic services (ATS) airspace organized at the aerodrome, including:

- (1) airspace designation and geographical coordinates in degrees, minutes and seconds of the lateral limits;
- (2) vertical limits;
- (3) airspace classification;

- (4) call sign and language(s) of the ATS unit providing service;
- (5) transition altitude;
- (6) hours of applicability; and
- (7) remarks.

****** AD 2.18 Air traffic services communication facilities**

Detailed description of ATS communication facilities established at the aerodrome, including:

- (1) service designation;
- (2) call sign;
- (3) channel(s);
- (4) SATVOICE number(s), if available;
- (5) logon address, as appropriate;
- (6) hours of operation; and
- (7) remarks.

****** AD 2.19 Radio navigation and landing aids**

- (1) *#AIP-DS#* Detailed description of radio navigation and landing aids associated with the instrument approach and the terminal area procedures at the aerodrome, including-
 - (a) type of aids, magnetic variation to the nearest degree, as appropriate, and type of supported operation for ILS/MLS, basic GNSS, SBAS, and GBAS, and for VOR/ILS/MLS also station declination to the nearest degree used for technical line-up of the aid;
 - (b) identification, if required;
 - (c) frequency(ies), channel number(s), service provider and reference path identifier(s) (RPI), as appropriate;
 - (d) hours of operation, as appropriate;
 - (e) geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;

- (f) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft) and of DME/P to the nearest 3 m (10 ft); elevation of GBAS reference point to the nearest metre or foot, and the ellipsoid height of the point to the nearest metre or foot. For SBAS, the ellipsoid height of the landing threshold point (LTP) or the fictitious threshold point (FTP) to the nearest metre or foot;
 - (g) service volume radius from the GBAS reference point to the nearest kilometre or nautical mile; and
 - (h) remarks.
- (2) When the same aid is used for both en-route and aerodrome purposes, a description shall also be given in section ENR 4. If the GBAS serves more than one aerodrome, description of the aid shall be provided under each aerodrome. If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority shall be indicated in the remarks column. Facility coverage shall be indicated in the remarks column.

****** AD 2.20 Local aerodrome regulations**

Detailed description of regulations applicable to the use of the aerodrome, including the acceptability of training flights, non-radio and microlight aircraft and similar, and to ground manoeuvring and parking but excluding flight procedures.

****** AD 2.21 Noise abatement procedures**

Detailed description of noise abatement procedures established at the aerodrome.

****** AD 2.22 Flight procedures**

Detailed description of the conditions and flight procedures, including radar and/or ADS-B procedures, established on the basis of airspace organization at the aerodrome. When established, detailed description of the low visibility procedures at the aerodrome, including—

- (a) runway(s) and associated equipment authorized for use under low visibility procedures;

- (b) defined meteorological conditions under which initiation, use and termination of low visibility procedures would be made;
- (c) description of ground marking or lighting for use under low visibility procedures; and
- (d) remarks.

****** AD 2.23 Additional information**

Additional information at the aerodrome, such as an indication of bird concentrations at the aerodrome, together with an indication of significant daily movement between resting and feeding areas, to the extent practicable.

****** AD 2.24 Charts related to an aerodrome**

- (1) The requirement is for charts related to an aerodrome to be included in the following order:
 - (a) Aerodrome or Heliport Chart — ICAO;
 - (b) Aircraft Parking or Docking Chart — ICAO;
 - (c) Aerodrome Ground Movement Chart — ICAO;
 - (d) Aerodrome Obstacle Chart — ICAO Type A (for each runway);
 - (e) Aerodrome Obstacle Chart — ICAO Type B (when available);
 - (f) Aerodrome Terrain and Obstacle Chart — ICAO (Electronic);
 - (g) Precision Approach Terrain Chart — ICAO (precision approach Cat II and III runways);
 - (h) Area Chart — ICAO (departure and transit routes);
 - (i) Standard Departure Chart — Instrument — ICAO;
 - (j) Area Chart — ICAO (arrival and transit routes);
 - (k) Standard Arrival Chart — Instrument — ICAO;
 - (l) ATC Surveillance Minimum Altitude Chart — ICAO;
 - (m) Instrument Approach Chart — ICAO (for each runway and procedure type);
 - (n) Visual Approach Chart — ICAO; and
 - (o) bird concentrations in the vicinity of the aerodrome.
- (2) If some of the charts are not produced, a statement to this effect shall be given in section GEN 3.2.

AD 3. HELIPORTS

When a helicopter landing area is provided at the aerodrome, associated data shall be listed only under **** AD 2.16.

****** AD 3.1 Heliport location indicator and name**

The requirement is for the ICAO location indicator assigned to the heliport and the name of heliport. An ICAO location indicator shall be an integral part of the referencing system applicable to all subsections in section AD 3.

****** AD 3.2 Heliport geographical and administrative data**

The requirement is for heliport geographical and administrative data, including—

- (a) heliport reference point (geographical coordinates in degrees, minutes and seconds) and its site;
- (b) direction and distance of heliport reference point from centre of the city or town which the heliport serves;
- (c) heliport elevation to the nearest metre or foot, reference temperature and mean low temperature;
- (d) where appropriate, geoid undulation at the heliport elevation position to the nearest metre or foot;
- (e) magnetic variation to the nearest degree, date of information and annual change;
- (f) name of heliport operator, address, telephone and telefax numbers, e-mail address, AFS address and, if available, website address;
- (g) types of traffic permitted to use the heliport (IFR/VFR); and
- (h) remarks.

****** AD 3.3 Operational hours**

Detailed description of the hours of operation of services at the heliport, including—

- (a) heliport operator;
- (b) customs and immigration;
- (c) health and sanitation;
- (d) AIS briefing office;
- (e) ATS reporting office (ARO);
- (f) MET briefing office;

- (g) air traffic service;
- (h) fuelling;
- (i) handling;
- (j) security;
- (k) de-icing; and
- (l) remarks.

****** AD 3.4 Handling services and facilities**

Detailed description of the handling services and facilities available at the heliport, including—

- (a) cargo-handling facilities;
- (b) fuel and oil types;
- (c) fuelling facilities and capacity;
- (d) de-icing facilities;
- (e) hangar space for visiting helicopters;
- (f) repair facilities for visiting helicopters; and
- (g) remarks.

****** AD 3.5 Passenger facilities**

Passenger facilities available at the heliport, provided as a brief description or as a reference to other information sources such as a website, including—

- (a) hotels at or in the vicinity of the heliport;
- (b) restaurants at or in the vicinity of the heliport;
- (c) transportation possibilities;
- (d) medical facilities;
- (e) bank and post office at or in the vicinity of the heliport;
- (f) tourist office; and
- (g) remarks.

****** AD 3.6 Rescue and firefighting services**

Detailed description of the rescue and firefighting services and equipment available at the heliport, including:

- (a) heliport category for firefighting;
- (b) rescue equipment;
- (c) capability for removal of disabled helicopters; and
- (d) remarks.

****** AD 3.7 Seasonal availability - clearing**

Detailed description of the equipment and operational priorities established for the clearance of heliport movement areas, including—

- (a) type(s) of clearing equipment;
- (b) clearance priorities; and
- (c) remarks.

****** AD 3.8 Aprons, taxiways and check locations or positions data**

- (1) Details related to the physical characteristics of aprons, taxiways and locations or positions of designated checkpoints, including—
 - (a) designation, surface and strength of aprons, helicopter stands;
 - (b) designation, width and surface type of helicopter ground taxiways;
 - (c) width and designation of helicopter air taxiway and air transit route;
 - (d) location and elevation to the nearest metre or foot of altimeter checkpoints;
 - (e) location of VOR checkpoints;
 - (f) position of INS checkpoints in degrees, minutes, seconds and hundredths of seconds; and
 - (g) remarks.
- (2) If check locations or positions are presented on a heliport chart, a note to that effect shall be provided under this paragraph.

****** AD 3.9 Markings and markers**

Brief description of final approach and take-off area and taxiway markings and markers, including-

- (a) final approach and take-off markings;
- (b) taxiway markings, air taxiway markers and air transit route markers; and
- (c) remarks.

****** AD 3.10 Heliport obstacles**

#OBS-DS# Detailed description of obstacles, including—

- (a) obstacle identification or designation;
- (b) type of obstacle;
- (c) obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;
- (d) obstacle elevation and height to the nearest metre or foot;
- (e) obstacle marking, and type and colour of obstacle lighting (if any); and
- (f) NIL indication, if appropriate.

****** AD 3.11 Meteorological information provided**

Detailed description of meteorological information provided at the heliport and an indication of which meteorological office is responsible for the service enumerated, including—

- (a) name of the associated meteorological office;
- (b) hours of service and, where applicable, the designation of the responsible meteorological office outside these hours;
- (c) office responsible for preparation of TAFs, and periods of validity of the forecasts;
- (d) availability of the trend forecasts for the heliport, and interval of issuance;
- (e) information on how briefing and/or consultation is provided;
- (f) type of flight documentation supplied and language(s) used in flight documentation;

- (g) charts and other information displayed or available for briefing or consultation;
- (h) supplementary equipment available for providing information on meteorological conditions, for instance, weather radar and receiver for satellite images;
- (i) the ATS unit provided with meteorological information; and
- (j) additional information concerning any limitation of service.

****** AD 3.12 Heliport data**

Detailed description of heliport dimensions and related information, including—

- (a) heliport type (surface-level, elevated or helideck);
- (b) touchdown and lift-off (TLOF) area dimensions to the nearest metre or foot;
- (c) true bearings to one-hundredth of a degree of final approach and take-off (FATO) area;
- (d) dimensions to the nearest metre or foot of FATO, and surface type;
- (e) surface and bearing strength in tonnes (1 000 kg) of TLOF;
- (f) geographical coordinates in degrees, minutes, seconds and hundredths of seconds and, where appropriate, geoid undulation of the geometric centre of TLOF or of each threshold of FATO—
 - (i) for non-precision approaches, to the nearest metre or foot; and
 - (ii) for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- (g) TLOF or FATO slope and elevation—
 - (i) for non-precision approaches, to the nearest metre or foot; and
 - (ii) for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- (h) dimensions of safety area;
- (i) dimensions, to the nearest metre or foot, of helicopter clearway;
- (j) the existence of an obstacle-free sector; and
- (k) remarks.

****** AD 3.13 Declared distances**

Detailed description of declared distances to the nearest metre or foot, where relevant for a heliport, including—

- (a) take-off distance available, and if applicable, alternative reduced declared distances;
- (b) rejected take-off distance available;
- (c) landing distance available; and
- (d) remarks, including entry or start point where alternative reduced declared distances have been declared.

****** AD 3.14 Approach and FATO lighting**

Detailed description of approach and FATO lighting, including—

- (a) type, length and intensity of approach lighting system;
- (b) type of visual approach slope indicator system;
- (c) characteristics and location of FATO area lights;
- (d) characteristics and location of aiming point lights;
- (e) characteristics and location of TLOF lighting system; and
- (f) remarks.

****** AD 3.15 Other lighting and secondary power supply**

Description of other lighting and secondary power supply, including—

- (a) location, characteristics and hours of operation of heliport beacon;
- (b) location and lighting of wind direction indicator (WDI);
- (c) taxiway edge and taxiway centre line lights;
- (d) secondary power supply including switch-over time; and
- (e) remarks.

****** AD 3.16 Air traffic services airspace**

#AIP-DS# Detailed description of air traffic services (ATS) airspace organized at the heliport, including—

- (a) airspace designation and geographical coordinates in degrees, minutes and seconds of the lateral limits;
- (b) vertical limits;
- (c) airspace classification;
- (d) call sign and language(s) of ATS unit providing service;
- (e) transition altitude;
- (f) hours of applicability; and
- (g) remarks.

****** AD 3.17 Air traffic services communication facilities**

Detailed description of ATS communication facilities established at the heliport, including:

- (a) service designation;
- (b) call sign;
- (c) channel;
- (d) SATVOICE number, if available;
- (e) logon address, as appropriate;
- (f) hours of operation; and
- (g) remarks.

****** AD 3.18 Radio navigation and landing aids**

- (1) #AIP-DS# Detailed description of radio navigation and landing aids associated with the instrument approach and the terminal area procedures at the heliport, including—
 - (a) type of aids, magnetic variation to the nearest degree, as appropriate, and type of supported operation for ILS/MLS, basic GNSS, SBAS and GBAS, and for VOR/ILS/MLS also station declination to the nearest degree used for technical line-up of the aid;
 - (b) identification, if required;
 - (c) frequency, channel number, service provider and reference path identifier (RPI), as appropriate;
 - (d) hours of operation, as appropriate;
 - (e) geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;
 - (f) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft) and of DME/P to the nearest 3 m (10 ft), elevation of GBAS reference point to the nearest metre or foot, and the ellipsoid height of the point to the nearest metre or foot. For SBAS, the ellipsoid height of the landing threshold point (LTP) or the fictitious threshold point (FTP) to the nearest metre or foot;

- (g) service volume radius from the GBAS reference point to the nearest kilometre or nautical mile; and
 - (h) remarks.
- (2) When the same aid is used for both en-route and heliport purposes, a description shall also be given in section ENR 4.
 - (3) If the GBAS serves more than one heliport, description of the aid shall be provided under each heliport.
 - (4) If the operating authority of the facility is other than the designated governmental agency, the name of the operating authority shall be indicated in the remarks column. Facility coverage shall be indicated in the remarks column.

****** AD 3.19 Local heliport regulations**

Detailed description of regulations applicable to the use of the heliport, including the acceptability of training flights, non-radio and microlight aircraft and similar, and to ground manoeuvring and parking but excluding flight procedures.

****** AD 3.20 Noise abatement procedures**

Detailed description of noise abatement procedures established at the heliport.

****** AD 3.21 Flight procedures**

Detailed description of the conditions and flight procedures, including radar or ADS-B procedures, established on the basis of airspace organisation established at the heliport. When established, detailed description of the low visibility procedures at the heliport, including—

- (a) touchdown and lift-off (TLOF) area and associated equipment authorised for use under low visibility procedures;
- (b) defined meteorological conditions under which initiation, use and termination of low visibility procedures would be made;
- (c) description of ground marking or lighting for use under low visibility procedures; and
- (d) remarks.

****** AD 3.22 Additional information**

Additional information about the heliport, such as an indication of bird concentrations at the heliport, together with an indication of significant daily movement between resting and feeding areas, to the extent practicable.

****** AD 3.23 Charts related to a heliport**

- (1) The requirement is for charts related to a heliport to be included in the following order—
 - (a) Aerodrome or Heliport Chart — ICAO;
 - (b) Area Chart — ICAO (departure and transit routes);
 - (c) Standard Departure Chart — Instrument — ICAO;
 - (d) Area Chart — ICAO (arrival and transit routes);
 - (e) Standard Arrival Chart — Instrument — ICAO;
 - (f) ATC Surveillance Minimum Altitude Chart — ICAO;
 - (g) Instrument Approach Chart — ICAO (for each procedure type);
 - (h) Visual Approach Chart — ICAO; and
 - (i) bird concentrations in the vicinity of heliport.
- (2) If some of the charts are not produced, a statement to this effect shall be given in section GEN 3.2.

Priority Indicator																→	
Address																	
Date and time of filing																→	
Originator's Indicator																✖(
Message Series, Number and Identifier																	
NOTAM containing new information NOTAMN (series and number/year)																
NOTAM replacing a previous NOTAM NOTAMR..... (series and number/year) (series and number/year of NOTAM to be replaced)																
NOTAM cancelling a previous NOTAM NOTAMC..... (series and number/year) (series and number/year of NOTAM to be cancelled)																✖
Qualifiers																	
	FIR	NOTAM Code	Traffic	Purpose	Scope	Lower Limit	Upper Limit	Coordinates, Radius									
Q)																	✖
Identification of ICAO location indicator in which the facility, airspace or condition reported on is located								A)								→	
Period of Validity																	
From (date-time group)	B)																→
To (PERM or date-time group)	C)															EST* PERM*	✖
Time Schedule (if applicable)	D)															→	
																✖	
Text of NOTAM; Plain-language Entry (using ICAO Abbreviations)																	
E)																	
Lower Limit	F)															→	
Upper Limit	G)) ✖	
Signature																	

*Delete as appropriate

INSTRUCTIONS FOR THE COMPLETION OF THE NOTAM FORMAT

(1) General

The qualifier line (Item Q) and all identifiers (Items A) to G) inclusive) each followed by a closing parenthesis, as shown in the format, shall be transmitted unless there is no entry to be made against a particular identifier.

(2) NOTAM numbering

Each NOTAM shall be allocated a series identified by a letter and a four-digit number followed by a stroke and a two-digit number for the year (e.g. A0023/03). Each series shall start on 1 January with number 0001.

(3) Qualifiers (Item Q)

(Item Q) is divided into eight fields, each separated by a stroke. An entry shall be made in each field. Examples of how fields are to be filled are shown in the Aeronautical Information Services Manual (Doc 8126). The definition of the field is as follows—

(a) FIR

- (i) if the subject of the information is located geographically within one FIR, the ICAO location indicator shall be that of the FIR concerned. When an aerodrome is situated within the overlying FIR of another State, the first field of Item Q) shall contain the code for that overlying FIR (e.g. Q) LFRR/...A) EGJJ);
- (ii) if the subject of the information is located geographically within more than one FIR, the FIR field shall be composed of the ICAO nationality letters of the State originating the NOTAM followed by “XX”. (The location indicator of the overlying FIR shall not be used). The ICAO location indicators of the FIRs concerned shall then be listed in Item A) or indicator of State or non-governmental agency

which is responsible for provision of a navigation service in more than one State; or

- (iii) if one State issues a NOTAM affecting FIRs in a group of States, the first two letters of the ICAO location indicator of the issuing State plus “XX” shall be included. The location indicators of the FIRs concerned shall then be listed in Item A) or indicator of State or non-governmental agency which is responsible for provision of a navigation service in more than one State.

(b) NOTAM CODE

All NOTAM Code groups contain a total of five letters and the first letter is always the letter Q. The second and third letters identify the subject, and the fourth and fifth letters denote the status or condition of the subject reported upon. The two-letter codes for subjects and conditions are those contained in the PANS-ABC (Doc 8400). For combinations of second and third, and fourth and fifth letters, refer to the NOTAM Selection Criteria contained in Doc 8126 or insert one of the following combinations, as appropriate—

- (i) if the subject is not listed in the NOTAM Code (Doc 8400) or in the NOTAM Selection Criteria (Doc 8126), insert “XX” as the second and third letters (e.g. QXXAK);
- (ii) if the condition of the subject is not listed in the NOTAM Code (Doc 8400) or in the NOTAM Selection Criteria (Doc 8126), insert “XX” as the fourth and fifth letters (e.g. QFAXX);
- (iii) when a NOTAM containing operationally significant information is issued in accordance with Appendix 4 and Chapter 6 and when it is used to announce the existence of AIRAC AIP Amendments or

Supplements, insert “TT” as the fourth and fifth letters of the NOTAM Code;

- (iv) when a NOTAM is issued containing a checklist of valid NOTAM, insert “KKKK” as the second, third, fourth and fifth letters; and
- (v) the following fourth and fifth letters of the NOTAM Code shall be used in NOTAM cancellations:

AK = RESUMED NORMAL OPERATION
AL = OPERATIVE (OR RE-OPERATIVE)
SUBJECT TO PREVIOUSLY PUBLISHED
LIMITATIONS OR CONDITIONS

AO = OPERATIONAL

CC = COMPLETED

CN = CANCELLED

HV = WORK COMPLETED

XX = PLAIN LANGUAGE

(c) TRAFFIC

I = IFR

V = VFR

K = NOTAM is a checklist

(d) PURPOSE

N = NOTAM selected for the immediate attention of flight crew members

B = NOTAM of operational significance selected for PIB entry

O = NOTAM concerning flight operations

M = Miscellaneous NOTAM; not subject for a briefing, but it is available on request

K = NOTAM is a checklist

(e) SCOPE

A = Aerodrome

E = En-route

W = Nav Warning

K = NOTAM is a checklist

(c) LOWER and UPPER

LOWER and UPPER limits shall only be expressed in flight levels (FL) and shall express the actual vertical limits of the area of influence without the addition of buffers. In the case of navigation warnings and airspace restrictions, values entered shall be consistent with those provided under Items F and G.

If the subject does not contain specific height information, insert “000” for LOWER and “999” for UPPER as default values.

(d) COORDINATES, RADIUS

The latitude and longitude accurate to one minute, as well as a three-digit distance figure giving the radius of influence in NM (e.g. 4700N01140E043). Coordinates present approximate centre of circle whose radius encompasses the whole area of influence, and if the NOTAM affects the entire FIR/UIR or more than one FIR/UIR, enter the default value “999” for radius.

(4) Item A

Insert the location indicator as contained in ICAO Doc 7910 of the aerodrome or FIR in which the facility, airspace, or condition being reported on is located. More than one FIR/UIR may be indicated when appropriate. If there is no available ICAO location indicator, use the ICAO nationality letter as given in ICAO Doc 7910, Part 2, plus “XX” and followed up in Item E) by the name, in plain language. If information concerns GNSS, insert the appropriate ICAO location indicator allocated for a GNSS element or the common location indicator allocated for all elements of GNSS (except GBAS).

(5) Item B

For date-time group use a ten-figure group, giving year, month, day, hours and minutes in UTC. This entry is the date-time at

which the NOTAMN comes into force. In the cases of NOTAMR and NOTAMC, the date-time group is the actual date and time of the NOTAM origination. The start of a day shall be indicated by “0000”.

(6) Item C

With the exception of NOTAMC, a date-time group (a ten-figure group giving year, month, day, hours and minutes in UTC) indicating duration of information shall be used unless the information is of a permanent nature in which case the abbreviation “PERM” is inserted instead. The end of a day shall be indicated by “2359” (i.e. do not use “2400”). If the information on timing is uncertain, the approximate duration shall be indicated using a date-time group followed by the abbreviation “EST”. Any NOTAM which includes an “EST” shall be cancelled or replaced before the date-time specified in Item C.

(7) Item D

If the hazard, status of operation or condition of facilities being reported on will be active in accordance with a specific time and date schedule between the dates-times indicated in Items B and C, insert such information under Item D. If Item D exceeds 200 characters, consideration shall be given to providing such information in a separate, consecutive NOTAM.

(8) Item E

Use decoded NOTAM Code, complemented where necessary by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language. When NOTAM is selected for international distribution, English text shall be included for those parts expressed in plain language. This entry shall be clear and concise in order to provide a suitable PIB entry. In the case of NOTAMC, a subject reference and status message shall be included to enable accurate plausibility checks.

(9) Items F and G

These items are normally applicable to navigation warnings or airspace restrictions and are usually part of the PIB entry. Insert both lower and upper height limits of activities or restrictions, clearly indicating only one reference datum and unit of measurement. The abbreviations GND or SFC shall be used in Item F to designate ground and surface respectively. The abbreviation UNL shall be used in Item G to designate unlimited.

SCHEDULE 4

reg. 28

SNOWTAM FORMAT

(COM heading)	(PRIORITY INDICATOR)	(ADDRESSES)		<B
	(DATE AND TIME OF FILING)	(ORIGINATOR'S INDICATOR)		<B
(Abbreviated heading)	(SW* SERIAL NUMBER)	(LOCATION INDICATOR)	DATE/TIME OF ASSESSMENT	(OPTIONAL GROUP)
S	W	*	*	<B

SNOWTAM	(Serial number)	<B	
Aeroplane performance calculation section			
(AERODROME LOCATION INDICATOR)	M	A)	<B
(DATE/TIME OF ASSESSMENT (Time of completion of assessment in UTC))	M	B)	→
(LOWER RUNWAY DESIGNATION NUMBER)	M	C)	→
(RUNWAY CONDITION CODE (RWYCC) ON EACH RUNWAY THIRD) (From Runway Condition Assessment Matrix (RCAM) 0, 1, 2, 3, 4, 5 or 6)	M	D)	/ / →
(PER CENT COVERAGE CONTAMINANT FOR EACH RUNWAY THIRD)	C	E)	/ / →
(DEPTH (mm) OF LOOSE CONTAMINANT FOR EACH RUNWAY THIRD)	C	F)	/ / →
(CONDITION DESCRIPTION OVER TOTAL RUNWAY LENGTH) (Observed on each runway third, starting from threshold having the lower runway designation number)	M	G)	/ /
COMPACTED SNOW DRY DRY SNOW DRY SNOW ON TOP OF COMPACTED SNOW DRY SNOW ON TOP OF ICE FROST ICE SLUSH STANDING WATER WATER ON TOP OF COMPACTED SNOW WET WET ICE WET SNOW WET SNOW ON TOP OF COMPACTED SNOW WET SNOW ON TOP OF ICE			→
(WIDTH OF RUNWAY TO WHICH THE RUNWAY CONDITION CODES APPLY, IF LESS THAN PUBLISHED WIDTH)	O	H)	<B
Situational awareness section			
(REDUCED RUNWAY LENGTH, IF LESS THAN PUBLISHED LENGTH (m))	O	I)	→
(DRIFTING SNOW ON THE RUNWAY)	O	J)	→
(LOOSE SAND ON THE RUNWAY)	O	K)	→
(CHEMICAL TREATMENT ON THE RUNWAY)	O	L)	→
(SNOWBANKS ON THE RUNWAY) (If present, distance from runway centre line (m) followed by "L", "R" or "LR" as applicable)	O	M)	→
(SNOWBANKS ON A TAXIWAY)	O	N)	→
(SNOWBANKS ADJACENT TO THE RUNWAY)	O	O)	→
(TAXIWAY CONDITIONS)	O	P)	→
(APRON CONDITIONS)	O	R)	→
(MEASURED FRICTION COEFFICIENT)	O	S)	→
(PLAIN-LANGUAGE REMARKS)	O	T)	}
NOTES: 1. *Enter ICAO nationality letters as given in ICAO Doc 7910, Part 2 or otherwise applicable aerodrome identifier. 2. Information on other runways, repeat from B to H. 3. Information in the situational awareness section repeated for each runway, taxiway and apron. Repeat as applicable when reported. 4. Words in brackets () not to be transmitted. 5. For letters A) to T) refer to the instructions for the completion of the SNOWTAM Format, paragraph 1, item b).			

SIGNATURE OF ORIGINATOR (not for transmission)

INSTRUCTIONS FOR THE COMPLETION OF THE SNOWTAM FORMAT

Note.— Origin of data, assessment process and the procedures linked to the surface conditions reporting system are prescribed in the Procedures for Air Navigation Services — Aerodromes.

1. General

- (1) When reporting on more than one runway, repeat Items B to H (aeroplane performance calculation section).
- (2) The letters used to indicate items are only used for reference purpose and should not be included in the messages. The letters, M (mandatory), C (conditional) and O (optional) mark the usage and information and shall be included as explained below.
- (3) Metric units shall be used and the unit of measurement not reported.
- (4) The maximum validity of SNOWTAM is 8 hours. New SNOWTAM shall be issued whenever a new runway condition report is received.
- (5) A SNOWTAM cancels the previous SNOWTAM.
- (6) The abbreviated heading “TTAAiiii CCCC MMYYGggg (BBB)” is included to facilitate the automatic processing of SNOWTAM messages in computer data banks. The explanation of these symbols is:

TT = data designator for SNOWTAM = SW;

AA = geographical designator for States, e.g. HU = Uganda,
EG = United Kingdom;

iiii = SNOWTAM serial number in a four-digit group;

CCCC = four-letter location indicator of the aerodrome to which the SNOWTAM refers;

MMYYGggg = date/time of observation/measurement, whereby:

MM = month, e.g. January = 01, December = 12

YY = day of the month

GGgg = time in hours (GG) and minutes (gg) UTC;
(BBB) = optional group for correction, in the case of an error, to a SNOWTAM message previously disseminated with the same serial number = COR.

Note 1.— Brackets in (BBB) are used to indicate that this group is optional.

Note 2.— When reporting on more than one runway and individual dates/times of observation/assessment are indicated by repeated Item B, the latest date/time of observation/assessment is inserted in the abbreviated heading (MMYYGGgg).

- (7) The text “SNOWTAM” in the SNOWTAM Format and the SNOWTAM serial number in a four-digit group shall be separated by a space, for example: SNOWTAM 0124.
- (8) For readability purposes for the SNOWTAM message, include a line feed after the SNOWTAM serial number, after Item A, and after the aeroplane performance calculation section.
- (9) When reporting on more than one runway, repeat the information in the aeroplane performance calculation section from the date and time of assessment for each runway before the information in the situational awareness section.
- (10) Mandatory information is—
 - (a) aerodrome location indicator;
 - (b) date and time of assessment;
 - (c) lower runway designator number;
 - (d) runway condition code for each runway third; and
 - (e) condition description for each runway third (when runway condition code (RWYCC) is reported 1–5)

2. Aeroplane performance calculation section

Item A — Aerodrome location indicator (four-letter location indicator).

Item B — Date and time of assessment (eight-figure date/time group giving time of observation as month, day, hour and minute in UTC).

Item C — Lower runway designator number (nn[L] or nn[C] or nn[R]).

Note.— *Only one runway designator is inserted for each runway and always the lower number.*

Item D — Runway condition code for each runway third. Only one digit (0, 1, 2, 3, 4, 5 or 6) is inserted for each runway third, separated by an oblique stroke (n/n/n).

Item E — Per cent coverage for each runway third. When provided, insert 25, 50, 75 or 100 for each runway third, separated by an oblique stroke ([n]nn/[n]nn/[n]nn).

Note 1.— *This information is provided only when the runway condition for each runway third (Item D) has been reported as other than 6 and there is a condition description for each runway third (Item G) that has been reported other than DRY.*

Note 2.— *When the conditions are not reported, this will be signified by the insertion of “NR” for the appropriate runway third(s).*

Item F — Depth of loose contaminant for each runway third. When provided, insert in millimetres for each runway third, separated by an oblique stroke (nn/nn/nn or nnn/nnn/nnn).

Note 1.— *This information is only provided for the following contamination types:*

- *standing water, values to be reported 04, then assessed value. Significant changes 3 mm up to and including 15 mm;*
- *slush, values to be reported 03, then assessed value. Significant changes 3 mm up to and including 15 mm;*
- *wet snow, values to be reported 03, then assessed value. Significant changes 5 mm; and*
- *dry snow, values to be reported 03, then assessed value. Significant changes 20 mm.*

Note 2.— When the conditions are not reported, this will be signified by the insertion of “NR” for the appropriate runway third(s).

Item G — Condition description for each runway third. Insert any of the following condition descriptions for each runway third, separated by an oblique stroke.

COMPACTED SNOW

DRY SNOW

DRY SNOW ON TOP OF COMPACTED SNOW

DRY SNOW ON TOP OF ICE

FROST

ICE

SLUSH

STANDING WATER

WATER ON TOP OF COMPACTED SNOW

WET

WET ICE

WET SNOW

WET SNOW ON TOP OF COMPACTED SNOW

WET SNOW ON TOP OF ICE

DRY (only reported when there is no contaminant)

Note.— When the conditions are not reported, this will be signified by the insertion of “NR” for the appropriate runway third(s).

Item H — Width of runway to which the runway condition codes apply. Insert the width in metres if less than the published runway width.

3. Situational awareness section

Note 1.— Elements in the situational awareness section end with a full stop.

Note 2.— Elements in the situational awareness section for which no information exists, or where the conditional circumstances for publication are not fulfilled, are left out completely.

Item I — Reduced runway length. Insert the applicable runway designator and available length in meters (example: RWY nn [L] or nn [C] or nn [R] REDUCED TO [n]nnn).

Note.— This information is conditional when a NOTAM has been published with a new set of declared distances.

Item J — Drifting snow on the runway. When reported, insert “DRIFTING SNOW”.

Item K — Loose sand on the runway. When loose sand is reported on the runway, insert the lower runway designator and with a space “LOOSE SAND” (RWY nn or RWY nn[L] or nn[C] or nn[R] LOOSE SAND).

Item L — Chemical treatment on the runway. When chemical treatment has been reported applied, insert the lower runway designator and with a space “CHEMICALLY TREATED” (RWY nn or RWY nn[L] or nn[C] or nn[R] CHEMICALLY TREATED).

Item M — Snow banks on the runway. When snow banks are reported present on the runway, insert the lower runway

designator and with a space “SNOW BANK” and with a space left “L” or right “R” or both sides “LR”, followed by the distance in metres from centre line separated by a space FM CL (RWY nn or RWY nn[L] or nn[C] or nn[R] SNOW BANK Lnn or Rnn or LRnn FM CL).

Item N — Snow banks on a taxiway. When snow banks are present on a taxiway, insert the taxiway designator and with a space “SNOW BANK” (TWY [nn]n SNOW BANK).

Item O — Snow banks adjacent to the runway. When snow banks are reported present penetrating the height profile in the aerodrome snow plan, insert the lower runway designator and “ADJ SNOW BANKS”

(RWY nn or RWY nn[L] or nn[C] or nn[R] ADJ SNOW BANKS).

Item P — Taxiway conditions. When taxiway conditions are reported as poor, insert the taxiway designator followed by a space “POOR” (TWY [n or nn] POOR or ALL TWYS POOR).

Item R — Apron conditions. When apron conditions are reported as poor, insert the apron designator followed by a space “POOR” (APRON [nnnn] POOR or ALL APRONS POOR).

Item S — Measured friction coefficient. Where reported, insert the measured friction coefficient and friction measuring device.

Note.— This will only be reported for States that have an established programme of runway friction measurement using a State-approved friction measuring device.

Item T — Plain language remarks.

SCHEDULE 5

ASHTAM FORMAT

reg. 28(6)

ASHTAM	(SERIAL NUMBER)
(FLIGHT INFORMATION REGION AFFECTED)	A)
(DATE/TIME (UTC) OF ERUPTION)	B)
(VOLCANO NAME AND NUMBER)	C)
(VOLCANO LATITUDE/LONGITUDE OR VOLCANO RADIAL AND DISTANCE FROM NAVAID)	D)
(VOLCANO LEVEL OF ALERT COLOUR CODE, INCLUDING ANY PRIOR LEVEL OF ALERT COLOUR CODE) ³	E)
(EXISTENCE AND HORIZONTAL/VERTICAL EXTENT OF VOLCANIC ASH CLOUD) ⁴	F)
(DIRECTION OF MOVEMENT OF ASH CLOUD) ⁴	G)
(AIR ROUTES OR PORTIONS OF AIR ROUTES AND FLIGHT LEVELS AFFECTED)	H)
(CLOSURE OF AIRSPACE AND/OR AIR ROUTES OR PORTIONS OF AIR ROUTES, AND ALTERNATIVE AIR ROUTES AVAILABLE)	I)
(SOURCE OF INFORMATION)	J)
(PLAIN-LANGUAGE REMARKS)	K)
<p>NOTES:</p> <ol style="list-style-type: none"> 1. See also Appendix 5 regarding addressee indicators used in predetermined distribution systems. 2. *Enter ICAO nationality letter as given in ICAO Doc 7910, Part 2. 3. See paragraph 3.5 below. 4. Advice on the existence, extent and movement of volcanic ash cloud (G) and H) may be obtained from the Volcanic Ash Advisory Centre(s) responsible for the FIR concerned. 	

INSTRUCTIONS FOR THE COMPLETION OF THE ASHTAM FORMAT

(1) General

- (a) The ASHTAM provides information on the status of activity of a volcano when a change in its activity is, or is expected to be of operational significance. This information is provided using the volcano level of alert colour code given in (3)(e) below.
- (b) In the event of a volcanic eruption producing ash cloud of operational significance, the ASHTAM also provides information on the location, extent and movement of the ash cloud and the air routes and flight levels affected.
- (c) Issuance of an ASHTAM giving information on a volcanic eruption, in accordance with paragraph (3) below, should not be delayed until complete information A) to K) is available but should be issued immediately following receipt of notification that an eruption has occurred or is expected to occur, or a change in the status of activity of a volcano of operational significance has occurred or is expected to occur, or an ash cloud is reported. In the case of an expected eruption, and hence no ash cloud evident at that time, items A) to E) should be completed and items F) to I) indicated as “not applicable”. Similarly, if a volcanic ash cloud is reported, e.g. by special air-report, but the source volcano is not known at that time, the ASHTAM should be issued initially with items A) to E) indicated as “unknown”, and items F) to K) completed, as necessary, based on the special air-report, pending receipt of further information. In other circumstances, if information for a specific field A) to K) is not available indicate “NIL”.
- (d) The maximum period of validity of ASHTAM is 24 hours. New ASHTAM must be issued whenever there is a change in the level of alert.

(2) Abbreviated heading

- (a) Following the usual AFTN communications header, the abbreviated heading “TT AAiiii CCCC MMYYGg (BBB)” is included to facilitate the automatic processing of ASHTAM messages in computer data banks. The explanation of these symbols is:

TT = data designator for ASHTAM = VA;

AA = geographical designator for States, e.g. NZ - New Zealand (see Location Indicators (Doc 7910), Part 2, Index to Nationality Letters for Location Indicators);

iiii = ASHTAM serial number in a four-figure group;

CCCC = four-letter location indicator of the flight information region concerned (see Location Indicators (Doc 7910), Part 5, addresses of centres in charge of FIR/UIR);

MMYYGg = date/time of report, whereby:

MM = month, e.g. January - 01, December - 12

YY = day of the month

Gg = time in hours (GG) and minutes (gg) UTC;

(BBB) = Optional group for correction to an ASHTAM message previously disseminated with the same serial number - COR.

(3) Content of ASHTAM

- (a) Item A— Flight information region affected, plain-language equivalent of the location indicator given in the abbreviated heading, in this example “Auckland Oceanic FIR”.
- (b) Item B — Date and time (UTC) of first eruption.
- (c) Item C — Name of volcano, and number of volcano as listed in the ICAO Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds (Doc 9691), Appendix H, and on the World Map of Volcanoes and Principal Aeronautical Features.

- (d) Item D — Latitude/Longitude of the volcano in whole degrees or radial and distance of volcano from NAVAID (as listed in the ICAO Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds (Doc 9691), Appendix H, and on the World Map of Volcanoes and Principal Aeronautical Features).
- (e) Item E — Colour code for level of alert indicating volcanic activity, including any previous level of alert colour code follows:

<i>Level of alert colour code</i>	<i>Status of activity of volcano</i>
GREEN	Volcano is in normal, non-eruptive state.
ALERT	or, after a change from a higher alert level: Volcanic activity considered to have ceased, and volcano reverted to its normal, non-eruptive state.
YELLOW	Volcano is experiencing signs of elevated unrest above known background levels.
ALERT	or, after a change from higher alert level: Volcanic activity has decreased significantly but continues to be closely monitored for possible renewed increase.

ORANGE	Volcano is exhibiting heightened unrest with increased likelihood of eruption.
ALERT	<p>or,</p> <p>Volcanic eruption is underway with no or minor ash emission [specify ash-plume height if possible].</p>
RED	Eruption is forecasted to be imminent with significant emission of ash into the atmosphere likely.
ALERT	<p>or,</p> <p>Eruption is underway with significant emission of ash into the atmosphere [specify ash-plume height if possible]</p>

Note; The colour code for the level of alert indicating the status of activity of the volcano and any change from a previous status of activity shall be provided to the area control centre by the responsible vulcanological agency in the State concerned, e.g. “RED ALERT FOLLOWING YELLOW” OR “GREEN ALERT FOLLOWING ORANGE”.

- (f) Item F — If volcanic ash cloud of operational significance is reported, indicate the horizontal extent and base/top of the ash cloud using latitude/longitude (in whole degrees) and altitudes in thousands of metres (feet) and/or radial and distance from source volcano. Information initially may be based only on special air-report, but subsequent information may be more detailed based on advice from the responsible meteorological watch office and/or volcanic ash advisory centre.
- (g) Item G — Indicate forecast direction of movement of the ash cloud at selected levels based on advice from the

responsible meteorological watch office and/or volcanic ash advisory centre.

- (h) Item H — Indicate air routes and portions of air routes and flight levels affected, or expected to become affected.
- (i) Item I — Indicate closure of airspace, air routes or portions of air routes, and availability of alternative routes.
- (j) Item J — Source of the information, e.g. “special air-report” or “vulcanological agency”, etc. The source of information should always be indicated, whether an eruption has actually occurred or ash cloud reported, or not.
- (k) Item K — Include in plain language any operationally significant information additional to the foregoing.

SCHEDULE 6

reg. 32(g)

TERRAIN AND OBSTACLE ATTRIBUTES

Provision Requirements

Table S5-1. Terrain attributes

Terrain Attribute	Mandatory/Optional
Area of coverage	Mandatory
Data source identifier	Mandatory
Acquisition method	Mandatory
Post spacing	Mandatory
Horizontal reference system	Mandatory
Horizontal resolution	Mandatory
Horizontal accuracy	Mandatory
Horizontal confidence level	Mandatory
Horizontal position	Mandatory
Elevation	Mandatory
Elevation reference	Mandatory
Vertical reference system	Mandatory
Vertical resolution	Mandatory
Vertical accuracy	Mandatory
Vertical confidence level	Mandatory
Surface type	Optional
Recorded surface	Mandatory
Penetration level	Optional
Known variations	Optional
Integrity Mandatory	Mandatory
Date and time stamp	Mandatory
Unit of measurement used	Mandatory

Table S5-2. Obstacle attributes

Obstacle attribute	Mandatory/Optional
Area of coverage	Mandatory
Data source identifier	Mandatory
Obstacle identifier	Mandatory
Horizontal accuracy	Mandatory
Horizontal confidence level	Mandatory
Horizontal position	Mandatory
Horizontal resolution	Mandatory
Horizontal extent	Mandatory
Horizontal reference system	Mandatory
Elevation	Mandatory
Height	Mandatory
Vertical accuracy	Mandatory
Vertical confidence level	Mandatory
Vertical resolution	Mandatory
Vertical reference system	Mandatory
Obstacle type	Mandatory
Geometry type	Mandatory
Integrity	Mandatory
Date and time stamp	Mandatory
Unit of measurement used	Mandatory
Operations	Optional
Effectivity	Optional
Lighting	Mandatory
Marking	Mandatory

Cross references

The Civil Aviation (Aerodromes) Regulations, 2019

The Civil Aviation (Aeronautical Charts) Regulations, 2020

The Civil Aviation (Communication Procedures) Regulations, 2020

Civil Aviation (Units of Measurement for air and ground Operations) Regulations, 2020.

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Minister of Works and Transport

