

SIERRA LEONE CIVIL AVIATION REGULATIONS



PART 15 – AERONAUTICAL INFORMATION SERVICES

DECEMBER 2022

PREAMBLE

WHEREAS, The Director-General shall have power to perform such acts, -including the conduct of investigations, to issue and amend orders, rules, regulations and procedures pursuant to and in accordance with the Civil Aviation Act, 2019.

WHEREAS, the Director- General shall have power to publish all reports, orders, decisions, rules, and regulations issued under Civil Aviation Act, 2019 in such form and manner as may be best adapted for public information and use;

NOW THEREBY, The Director General under its powers given by Article 17(1) and 17(2)(a) of the Civil Aviation Act, 2019 issue the following regulations which supersedes previous regulations on Aeronautical Information Services.

1. SHORT TITLE

This regulation may be cited as Sierra Leone Civil Aviation Regulation “SLCAR Part 15- Aeronautical Information Services”

2. EFFECTIVE DATE

This Regulation shall come into force as of the 21st day of December 2022.



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Director General

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1. GENERAL

In transposing ICAO Annex 15 to develop these regulations all amendments 1-42 have been considered.

1.1 Definitions

When the following terms are used in these regulations for aeronautical information services, they have the following meanings:

- a) **Aerodrome.** A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.
- b) **Aerodrome mapping data (AMD).** Data collected for the purpose of compiling aerodrome mapping information.
- c) **Aerodrome mapping database (AMDB).** A collection of aerodrome mapping data organized and arranged as a structured data set.
- d) **Aeronautical chart.** A representation of a portion of the Earth, its culture and relief, specifically designated to meet the requirements of air navigation.
- e) **Aeronautical data.** A representation of aeronautical facts, concepts or instructions in a formalized manner suitable for communication, interpretation or processing
- f) **Aeronautical fixed service (AFS).** 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.
- g) **Aeronautical information.** Information resulting from the assembly, analysis and formatting of aeronautical data.
- h) **Aeronautical Information Circular (AIC).** 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.
- i) **Aeronautical information management (AIM).** The dynamic, integrated management of aeronautical information through the provision and exchange of quality-assured digital aeronautical data in collaboration with all parties.
- j) **Aeronautical information product.** Aeronautical data and aeronautical information provided either as digital data sets or as a standardized presentation in paper or electronic media. Aeronautical information products include:
 - i) Aeronautical Information Publication (AIP), including Amendments and Supplements;
 - ii) Aeronautical Information Circulars (AIC);
 - iii) aeronautical charts;
 - iv) NOTAM; and
 - v) Digital data sets.
- k) **Aeronautical Information Publication (AIP).** A publication issued by or with the authority of a State and containing aeronautical information of a lasting character essential to air navigation.
- l) **Aeronautical information service (AIS).** 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.
- m) **Aeronautical Information Service provider.** The relevant agency/organization designated by the Authority responsible for providing aeronautical information service.
- n) **AIP Amendment.** Permanent changes to the information contained in the AIP.

- o) **AIP Supplement.** Temporary changes to the information contained in the AIP which are provided by means of special pages.
- p) **AIRAC.** An acronym (aeronautical information regulation and control) signifying a system aimed at advance notification, based on common effective dates, of circumstances that necessitate significant changes in operating practices.
- q) **Air defence identification zone (ADIZ).** Special designated airspace of defined dimensions within which aircraft are required to comply with special identification and/or reporting procedures additional to those related to the provision of air traffic services.
- r) **Air traffic management (ATM).** 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.
- s) **Application.** Manipulation and processing of data in support of user requirements.
- t) **Area navigation (RNAV).** 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.
- u) **ASHTAM.** A special series NOTAM notifying by means of a specific format change in activity of a volcano, a volcanic eruption and/or volcanic ash cloud that is of significance to aircraft operations.
- v) **Assemble.** A process of merging data from multiple sources into a database and establishing a baseline for subsequent processing.
- w) **ATS surveillance service.** Term used to indicate a service provided directly by means of an ATS surveillance system.
- x) **ATS surveillance system.** A generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft.
- y) **Authority.** means the Sierra Leone Civil Aviation Authority
- z) **Automatic dependent surveillance — broadcast (ADS-B).** A means by which aircraft, aerodrome vehicles and other objects can automatically transmit and/or receive data such as identification, position and additional data, as appropriate, in a broadcast mode via a data link.
- aa) **Automatic dependent surveillance — contract (ADS-C).** 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.
- bb) **Automatic terminal information service (ATIS).** The automatic provision of current, routine information to arriving and departing aircraft throughout 24 hours or a specified portion thereof:
- cc) **Data link-automatic terminal information service (D-ATIS).** The provision of ATIS via data link.
- dd) **Voice-automatic terminal information service (Voice-ATIS).** The provision of ATIS by means of continuous and repetitive voice broadcasts.
- ee) **Bare Earth.** Surface of the Earth including bodies of water and permanent ice and snow, and excluding vegetation and manmade objects.
- ff) **Calendar.** Discrete temporal reference system that provides the basis for defining temporal position to a resolution of one day
- gg) **Canopy.** Bare Earth supplemented by vegetation height.
- hh) **Confidence level.** The probability that the true value of a parameter is within a certain interval around the estimate of its value.

- ii) **Controller-pilot data link communications (CPDLC).** A means of communication between controller and pilot, using data link for ATC communications.
- jj) **Culture.** All man-made features constructed on the surface of the Earth, such as cities, railways and canals.
- kk) **Cyclic redundancy check (CRC).** A mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data.
- ll) **Danger area.** An airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times.
- mm) **Data accuracy.** A degree of conformance between the estimated or measured value and the true value.
- nn) **Data completeness.** The degree of confidence that all of the data needed to support the intended use is provided.
- oo) **Data format.** A structure of data elements, records and files arranged to meet standards, specifications or data quality requirements.
- pp) **Data integrity (assurance level).** A degree of assurance that an aeronautical data and its value has not been lost or altered since the origination or authorized amendment.
- qq) **Data product.** Data set or data set series that conforms to a data product specification.
- rr) **Data product specification.** 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.
- ss) **Data quality.** A degree or level of confidence that the data provided meet the requirements of the data user in terms of accuracy, resolution, integrity (or equivalent assurance level), traceability, timeliness, completeness and format.
- tt) **Data resolution.** A number of units or digits to which a measured or calculated value is expressed and used.
- uu) **Data set.** Identifiable collection of data.
- vv) **Data set series.** Collection of data sets sharing the same product specification.
- ww) **Data timeliness.** The degree of confidence that the data is applicable to the period of its intended use.
- xx) **Data traceability.** 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.
- yy) **Datum.** Any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities .
- zz) **Digital Elevation Model (DEM).** The representation of terrain surface by continuous elevation values at all intersections of a defined grid, referenced to common datum.
- aaa) **Direct transit arrangements.** 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.
- bbb) **Ellipsoid height (geodetic height).** The height related to the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question.
- ccc) **Feature.** Abstraction of real world phenomena.
- ddd) **Feature attribute.** Characteristic of a feature.
- eee) **Feature operation.** Operation that every instance of a feature type may perform.
- fff) **Feature relationship.** Relationship that links instances of one feature type with instances of the same or a different feature type.
- ggg) **Feature type.** Class of real world phenomena with common properties.
- hhh) **Geodesic distance.** The shortest distance between any two points on a mathematically defined ellipsoidal surface.

- iii) **Geodetic datum.** A minimum set of parameters required to define location and orientation of the local reference system with respect to the global reference system/frame.
- jjj) **Geoid.** The equipotential surface in the gravity field of the Earth which coincides with the undisturbed mean sea level (MSL) extended continuously through the continents.
- kkk) **Geoid undulation.** The distance of the geoid above (positive) or below (negative) the mathematical reference ellipsoid.
- lll) **Gregorian calendar.** Calendar in general use; first introduced in 1582 to define a year that more closely approximates the tropical year than the Julian calendar.
- mmm) **Height.** The vertical distance of a level, point or an object considered as a point, measured from a specific datum.
- nnn) **Heliport.** 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.
- ooo) **Human factors principles.** 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.
- ppp) **Integrity classification (aeronautical data).** Classification based upon the potential risk resulting from the use of corrupted data. Aeronautical data is classified as:
 - i) routine data: 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;
 - ii) essential data: 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
 - iii) critical data: 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.
- qqq) **International airport.** Any 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.
- rrr) **International NOTAM office (NOF).** An office designated by a State for the exchange of NOTAM internationally.
- sss) **Logon address.** A specified code used for data link logon to an ATS unit.
- ttt) **Manoeuvring area.** That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons.
- uuu) **Metadata.** Data about data.
- vvv) **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.
- www) **Minimum obstacle clearance altitude (MOCA).** The minimum altitude for a defined segment of flight that provides the required obstacle clearance.
- xxx) **Movement area.** 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
- yyy) **Navigation specification.** A set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications:

- i) 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.
 - ii) 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.
- zzz) **Next intended user.** The entity that receives the aeronautical data or information from the aeronautical information service.
- aaaa) **NOTAM.** 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.
- bbbb) **Obstacle.** All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that:
 - i) are located on an area intended for the surface movement of aircraft; or
 - ii) extend above a defined surface intended to protect aircraft in flight; or
 - iii) stand outside those defined surfaces and that have been assessed as being a hazard to air navigation.
- cccc) **Obstacle/terrain data collection surface.** A defined surface intended for the purpose of collecting obstacle/terrain data.
- dddd) **Origination (aeronautical data or aeronautical information).** The creation of the value associated with new data or information or the modification of the value of existing data or information.
- eeee) **Originator (aeronautical data or aeronautical information).** An entity that is accountable for data or information origination and/or from which the AIS organization receives aeronautical data and aeronautical information.
- ffff) **Orthometric height.** Height of a point related to the geoid, generally presented as an MSL elevation.
- gggg) **Performance-based communication (PBC).** Communication based on performance specifications applied to the provision of air traffic services.
- hhhh) **Performance-based navigation (PBN).** Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.
- iiii) **Performance-based surveillance (PBS).** Surveillance based on performance specifications applied to the provision of air traffic services.
- jjjj) **Portrayal.** Presentation of information to humans .
- kkkk) **Position (geographical).** 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.
- llll) **Post spacing.** Angular or linear distance between two adjacent elevation points.
- mmmm) **Precision.** The smallest difference that can be reliably distinguished by a measurement process.
- nnnn) **Pre-flight information bulletin (PIB).** A presentation of current NOTAM information of operational significance, prepared prior to flight.
- oooo) **Prohibited area.** An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited.
- pppp) **Quality.** Degree to which a set of inherent characteristics fulfils requirements

- qqqq) **Quality assurance.** Part of quality management focused on providing confidence that quality requirements will be fulfilled.
- rrrr) **Quality control.** Part of quality management focused on fulfilling quality requirements
- ssss) **Quality management.** Coordinated activities to direct and control an organization with regard to quality.
- tttt) **Radio navigation service.** A service providing guidance information or position data for the efficient and safe operation of aircraft supported by one or more radio navigation aids.
- uuuu) **Required communication performance (RCP) specification.** A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication.
- vvvv) **Required surveillance performance (RSP) specification.** A set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance.
- wwww) **Requirement.** Need or expectation that is stated, generally implied or obligatory.
- xxxx) **Restricted area.** 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.
- yyyy) **Route stage.** A route or portion of a route flown without an intermediate landing
- zzzz) **SNOWTAM.** 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.
- aaaaa) **Station declination.** An alignment variation between the zero degree radial of a VOR and true north, determined at the time the VOR station is calibrated.
- bbbbb) **Terrain.** 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.
- ccccc) **Traceability.** Ability to trace the history, application or location of that which is under consideration
- dddd) **Validation.** Confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled
- eeee) **Verification.** Confirmation, through the provision of objective evidence, that specified requirements have been fulfilled
- ffff) **VOLMET.** Meteorological information for aircraft in flight.
- ggggg) **Data link-VOLMET (D-VOLMET).** 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.
- hhhhh) **VOLMET broadcast.** Provision, as appropriate, of current METAR, SPECI, TAF and SIGMET by means of continuous and repetitive voice broadcasts.

1.2 Common Reference Systems for Air Navigation

1.2.1 Horizontal reference System

The aeronautical information service provider and all parties involved in providing aeronautical data and aeronautical information shall:

- a) use the World Geodetic System — 1984 (WGS-84) as the horizontal (geodetic) reference system for international air navigation.
- b) express published aeronautical geographical coordinates (indicating latitude and longitude) in terms of the WGS-84 geodetic reference datum.

1.2.2 Vertical reference system

1.2.2.1 Mean sea level (MSL) datum shall be used as the vertical reference system for international air navigation.

1.2.2.2 The Aeronautical Information Service (AIS) provider shall ensure the Earth Gravitational Model — 1996 (EGM-96) is used as the global gravity model for international air navigation.

1.2.2.3 At those geographical positions where the accuracy of EGM-96 does not meet the accuracy requirements for elevation and geoid undulation on the basis of EGM-96 data, regional, national or local geoid models containing high resolution (short wavelength) gravity field data shall be developed and used. When a geoid model other than the EGM-96 model is used, a description of the model used, including the parameters required for height transformation between the model and EGM-96, shall be provided in the Aeronautical Information Publication (AIP).

1.2.3 Temporal reference system

1.2.3.1 The Gregorian calendar and Coordinated Universal Time (UTC) shall be used as the temporal reference system for international air navigation.

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

1.3 Miscellaneous Specifications

1.3.1 Aeronautical information products intended for international distribution shall include English text for those parts expressed in plain language.

1.3.2 Place names shall be spelt in conformity with local usage, transliterated, when necessary, into the ISO-Basic Latin alphabet.

1.3.3 Units of measurement used in the origination, processing and distribution of aeronautical data and aeronautical information are consistent with the tables contained in Sierra Leone Civil Aviation Regulations (Units of Measurement used in Air and Ground Operations) Part 5.

1.3.4 The aeronautical information service provider shall use ICAO abbreviations in aeronautical information products whenever they are appropriate and their use will facilitate distribution of aeronautical data and aeronautical information

2. RESPONSIBILITIES AND FUNCTIONS

2.1 Responsibilities of aeronautical information service (AIS) provider

2.1.1 The aeronautical information service provider shall ensure the provision of aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation

2.1.2 The aeronautical information service provider shall clearly indicate that aeronautical data and aeronautical information provided for and on behalf of Sierra Leone are provided under the authority of Sierra Leone irrespective of the format in which they are provided

2.1.3 The aeronautical information service provider shall ensure that the aeronautical data and aeronautical information provided are complete, timely and of required quality.

2.1.4 The aeronautical information service provider shall establish formal arrangements with originators of aeronautical data and aeronautical information in relation to the timely and complete provision of aeronautical data and aeronautical information.

- 2.1.5 The aeronautical information service provider shall ensure that aeronautical data and aeronautical information are available for:
- a) personnel involved in flight operations, including flight crews, flight planning and flight simulators;
 - b) the air traffic service provider responsible for flight information service and
 - c) the services responsible for pre-flight information.
- 2.1.6 The aeronautical information service provider shall receive, collate or assemble, edit, format, publish/store and distribute aeronautical data and aeronautical information concerning the entire territory of Sierra Leone as well as those areas over the high seas for which Sierra Leone is responsible for the provision of air traffic services. Aeronautical data and aeronautical information shall be provided as aeronautical information products.
- 2.1.7 The aeronautical information service provider shall provide 24-hour services for NOTAM origination and issuance in its area of responsibility and for pre-flight information needed in relation to route stages originating at the aerodrome/heliport in its area of responsibility.
- 2.1.8 The aeronautical information service provider shall obtain aeronautical data and aeronautical information to enable it to provide pre-flight information service and to meet the need for in-flight information:
- a) from the aeronautical information service of other States; and
 - b) from other sources that may be available.
- 2.1.9 The aeronautical information service provider shall ensure that aeronautical data and aeronautical information obtained from other States shall, when distributed, be clearly identified as having the authority of the State of Origin.
- 2.1.10 The aeronautical information service provider shall ensure that aeronautical data and aeronautical information obtained from other sources are verified before distribution and if not verified, when distributed, be clearly identified as such.
- 2.1.11 The aeronautical information service provider shall promptly make available to the aeronautical information service of other States, any aeronautical data and aeronautical information necessary for the safety, regularity or efficiency of air navigation required by them.

2.2 Exchange of aeronautical data and aeronautical information

- 2.2.1 The aeronautical information service provider shall designate the office to which all elements of aeronautical information products provided by other States is addressed and that office shall be qualified to deal with requests for aeronautical data and aeronautical information originated by other States.
- 2.2.2 The aeronautical information service provider shall arrange, as necessary, to satisfy operational requirements for the issuance and receipt of NOTAM distributed by telecommunication.
- 2.2.3 The aeronautical information service provider shall establish direct contact with other providers of aeronautical information services in order to facilitate the international exchange of aeronautical data and aeronautical information where practicable.

- 2.2.4 The aeronautical information service provider shall make available one copy of each of the elements of the following aeronautical information products, where available, that have been requested by the aeronautical information service of other States without charge:
- a) Aeronautical Information Publication (AIP), including Amendments and Supplements;
 - b) Aeronautical Information Circulars (AIC);
 - c) NOTAM; and
 - d) aeronautical charts.
- 2.2.5 The aeronautical information service provider shall provide aeronautical data and aeronautical information in the form of digital data sets to be used by the aeronautical information service, on the basis of agreement with the State concerned.
- 2.2.6 The aeronautical information service provider shall ensure that globally interoperable; aeronautical data and information exchange model are used for the provision of data sets

2.3 Copyright

- 2.3.1 The aeronautical information service provider shall only make available to a third party any aeronautical information product which has been granted copyright protection by the originating State on the condition that the third party is made aware that the product is copyright protected and appropriately annotated that the product is subject to copyright by the originating State.
- 2.3.2 The aeronautical information service provider shall not provide the digital sets of a providing State to any third party without the consent of the providing State that when aeronautical data and aeronautical information are provided to the aeronautical information service

3. AERONAUTICAL INFORMATION MANAGEMENT

3.1 Information management requirements

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

3.2 Data quality specifications

- 3.2.1 An AIS provider shall ensure that aeronautical data and aeronautical information are provided in accordance with the specifications laid down in the aeronautical data catalogue, specified in IS: 3.2.1
- 3.2.2 The order of accuracy for aeronautical data shall be in accordance with the aeronautical data catalogue, specified in the aeronautical data catalogue.
- 3.2.3 The order of resolution of aeronautical data shall be commensurate with the actual data accuracy.

3.2.4 Data integrity

- 3.2.4.1 The integrity of aeronautical data shall be maintained throughout the data chain from origination to distribution to the next intended user.
- 3.2.4.2 Based on the applicable integrity classifications, procedures shall be put in place in order to:
- (a) for routine data: avoid corruption throughout the processing of the data;

- (b) for essential data: assure corruption does not occur at any stage of the entire process and include additional processes as needed to address potential risks in the overall system architecture to further assure data integrity at this level; and
- (c) for critical data: assure corruption does not occur at any stage of the entire process and include additional integrity assurance processes to fully mitigate the effects of faults identified by thorough analysis of the overall system architecture as potential data integrity risks.

- 3.2.5 The traceability of aeronautical data shall be ensured and retained as long as the data is in use.
- 3.2.6 The timeliness of aeronautical data shall be ensured by including limits on the effective period of the data elements.
- 3.2.7 The completeness of aeronautical data shall be ensured in order to support its intended use.
- 3.2.8 The format of delivered aeronautical data shall be adequate to ensure that the data is interpreted in a manner that is consistent with its intended use.

3.3 Aeronautical data and aeronautical information verification and validation

- 3.3.1 The aeronautical information service provider shall ensure that materials to be issued as part of the aeronautical information products are thoroughly checked before submission in order to ensure that all necessary information has been included and that the information is correct in detail.
- 3.3.2 The aeronautical information service provider shall establish verification and validation procedures which ensure that the aeronautical data and aeronautical information received meets quality requirements (accuracy, resolution, integrity and traceability) are met.

3.4 Data error detection

- 3.4.1 The aeronautical information service provider shall use digital data error detection techniques during the transmission and/or storage of aeronautical data and digital data sets.
- 3.4.2 The aeronautical information service provider shall use digital data error detection techniques are in order to maintain the integrity levels as specified in 3.2.4.

3.5 Use of automation

- 3.5.1 The aeronautical information service provider shall apply automation in order to ensure the quality, efficiency and cost-effectiveness of aeronautical information services.
- 3.5.2 The aeronautical information service provider shall give due consideration to the integrity of data and information when automated processes are implemented and mitigating steps taken where risks are identified.
- 3.5.3 The aeronautical information service provider shall ensure that in order to meet the data quality requirements, the automation:
 - (a) enables digital aeronautical data exchange between the parties involved in the data processing chain; and
 - (b) use aeronautical information exchange models and data exchange models designed to be globally interoperable.

3.6 Quality Management System

- 3.6.1 The aeronautical information service provider shall implement and maintain quality management systems encompassing all functions of an aeronautical information service, as outlined in 2.2. The execution of the quality management systems shall be made demonstrable for each function stage.
- 3.6.2 The quality management system established shall follow the ISO 9000 series of quality assurance standards and be certified by an accredited certification body.
- 3.6.3 The aeronautical information service provider within the context of the established quality management system shall:
 - a) identify the competencies and associated knowledge, skills and abilities required for each function and personnel assigned to perform those functions are appropriately trained.
 - b) have processes in place to ensure that personnel possess the competencies required to perform specific assigned functions.
 - c) maintain appropriate records so that the qualifications of personnel can be confirmed.
 - d) establish initial and periodic assessments that require personnel to demonstrate the required competencies.
 - e) use periodic assessments of personnel as a means to detect and correct shortfalls in knowledge, skills and abilities.
- 3.6.4 The aeronautical information service provider shall ensure the quality management system include the necessary policies, processes and procedures, including those for the use of metadata, to ensure and verify that aeronautical data is traceable throughout the aeronautical information data chain so as to allow any data anomalies or errors detected in use to be identified by root cause, corrected and communicated to affected users.
- 3.6.5 The aeronautical information service provider shall provide users with the necessary assurance and confidence that distributed aeronautical data and aeronautical information satisfy the aeronautical data quality requirements of the established quality management systems.
- 3.6.6 The aeronautical information service provider shall take all necessary measures to monitor compliance with the quality management system in place.
- 3.6.7 The aeronautical information service provider shall:
 - a) conduct audits as a demonstration of compliance of the quality management system applied.
 - b) initiate action to correct any identified nonconformity without undue delay.
 - c) evidence and properly document all audit observations and remedial actions.

3.7 Human Factors

- 3.7.1 The aeronautical information service provider shall take into consideration human factors principles in the organization of the aeronautical information service as well as the design, contents, processing and distribution of aeronautical data and aeronautical information to facilitate their optimum utilization.
- 3.7.2 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.

4. SCOPE OF AERONAUTICAL DATA AND AERONAUTICAL INFORMATION

4.1 Scope of aeronautical data and aeronautical information

4.1.1 The aeronautical information service provider shall receive and manage at least the following sub-domains of aeronautical data and aeronautical information:

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

4.1.2 The aeronautical information service provider shall ensure that determination and reporting of aeronautical data is in accordance with the accuracy and integrity classification required to meet the needs of the end-user of aeronautical data.

4.2 Metadata requirements

4.2.1 The aeronautical information service provider shall collect metadata for aeronautical data processes and exchange points;

4.2.2 The metadata collected shall be applied throughout the aeronautical information data chain, from origination to distribution to the next intended user;

4.2.3 The metadata to be collected in 4.2.1 shall include:

- a) the name 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.

5. AERONAUTICAL INFORMATION PRODUCTS AND SERVICES

5.1 General

5.1.1 The aeronautical information service provider shall provide aeronautical information in the form of aeronautical information products and associated services.

5.1.2 The aeronautical information service provider shall ensure that processes are implemented for data and information consistency between those formats when aeronautical data and aeronautical information are provided in multiple formats.

5.2 Aeronautical information in a standardised presentation

5.2.1 The aeronautical information service provider shall ensure that:

- a) aeronautical information is provided in a standardized presentation and includes the aeronautical information publication (AIP), AIP Amendments, AIP Supplements, AIC, NOTAM and aeronautical charts.

- b) the AIP, AIP Amendment, AIP Supplement and AIC are provided on paper and/or as an electronic document.
- c) the AIP, AIP Amendment, AIP Supplement and AIC provided as an electronic document (eAIP) allow for both displaying on electronic devices and printing on paper.

5.3 Aeronautical Information Publication (AIP)

5.3.1 The AIP shall include:

- a) a statement of the competent authority responsible for the air navigation facilities, services or procedures covered by the AIP;
- b) the general conditions under which the services or facilities are available for international use;
- c) a list of significant differences between the national regulations and practices of the Sierra Leone and the related ICAO Standards and Recommended Practices (SARPs) and procedures, given in a form that would enable a user to differentiate readily between the requirements of Sierra Leone and the related ICAO provisions; and
- d) the choice made by the Sierra Leone in each significant case where an alternative course of action is provided for in the ICAO SARPs and procedures.

5.3.2 The AIP shall:

- a) contain concise, current information relating to, and arranged under, the subject headings listed in IS: 5.3.
- b) clearly indicate the State and publishing authority .
- c) be self-contained and include a table of contents.
- d) not duplicate information within itself or from other sources.
- e) be dated. The date, consisting of the day, month (by name) and year, shall be the publication date or the effective date of the information.
- f) be organized in three parts (GEN, ENR and AD), sections and subsections.

5.4 AIP Amendments

5.4.1 The aeronautical information service provider shall:

- a) publish operationally significant changes to the AIP in accordance with Aeronautical Information Regulation and Control (AIRAC) procedures and are clearly identified by the acronym AIRAC.
- b) specify the AIP Amendment regular interval in the AIP, Part 1 — General (GEN).
- c) originate and distribute by the NOTAM checklist, a NIL notification when an AIP Amendment will not be published at the established interval or publication date.
- d) identify new or revised information contained in the AIP.
- e) allocate to each AIP Amendment a serial number, which are consecutive.
- f) display a publication date to each AIP Amendment page, including the cover sheet.
- g) displays an effective date for each AIRAC AIP Amendment page including the cover sheet, shall. When an effective time other than 0000 UTC is used, the effective time shall also be indicated.

- h) include references to the serial number of the AIP Supplement or the series when an AIP Amendment is issued, and number of the NOTAM which has been incorporated into the amendment.
- i) give on the AIP Amendment cover sheet a brief indication of the subjects affected by the amendment.
- j) include a checklist giving the current date of each loose-leaf page in the AIP to each amendment and provide a recapitulation of any outstanding manuscript corrections.
- k) ensure the checklists in j) that carry both the page number and date.

5.5 AIP Supplements

5.5.1 The aeronautical information service provider shall:

- a) allocate each AIP Supplement a serial number which is consecutive and based on the calendar year.
- b) provide each AIP Supplement on distinctive pages allowing for easy identification from the regular AIP content.
- c) include reference to the series and number of the NOTAM whenever an AIP Supplement is issued as a replacement of a NOTAM.
- d) issue a checklist of valid AIP Supplements at intervals of not more than one month as part of the checklist of NOTAM and with distribution as for the AIP Supplements.
- e) show a publication date for each AIP Supplement page.
- f) show each AIRAC AIP Supplement page a publication date and an effective date.
- g) keep the AIP Supplement pages in the AIP as long as all or some of their contents remain valid.

5.6 Aeronautical Information Circulars

5.6.1 The aeronautical information service provider shall issue an AIC for any of the following:

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

5.6.2 The aeronautical information service provider shall:

- a) select the AIC that are to be given international distribution.
- b) not use an AIC for information that qualifies for inclusion in AIP and NOTAM.
- c) review the validity of AIC currently in force at least once a year.
- d) allocate each AIC a serial number which is consecutive and based on the calendar year.
- e) Issue a checklist of AIC provided internationally in the NOTAM checklist.

5.7 Aeronautical Charts

5.7.1 The aeronautical information service provider shall ensure that the aeronautical charts, where made available, form part of the AIP, or are provided separately to recipients of the AIP:

- a) Aerodrome/Heliport Chart — ICAO;

- b) Aerodrome Ground Movement Chart — ICAO;
- c) Aerodrome Obstacle Chart — ICAO Type A;
- d) Aerodrome Obstacle Chart — ICAO Type B (when available);
- e) Aerodrome Terrain and Obstacle Chart — ICAO (Electronic);
- f) Aircraft Parking/Docking Chart — ICAO;
- g) Area Chart — ICAO;
- h) ATC Surveillance Minimum Altitude Chart — ICAO;
- i) Instrument Approach Chart — ICAO;
- j) Precision Approach Terrain Chart — ICAO;
- k) Standard Arrival Chart — Instrument (STAR) — ICAO;
- l) Standard Departure Chart — Instrument (SID) — ICAO;
- m) Visual Approach Chart — ICAO and
- n) Enroute Chart

5.7.2 The aeronautical information service provider shall ensure that the aeronautical charts, when available, are provided as aeronautical information products:

- a) World Aeronautical Chart — ICAO 1:1 000 000;
- b) Aeronautical Chart — ICAO 1:500 000;
- c) Aeronautical Navigation Chart — ICAO Small Scale; and
- d) Plotting Chart — ICAO chart.

5.7.2 The chart resolution of aeronautical data shall be that as specified for a particular chart.

5.8 Digital Data Sets

5.8.1 General

5.8.1.1 The aeronautical information service provider shall provide digital data in the form of the following data sets:

- a) AIP data set;
- b) terrain data sets;
- c) obstacle data sets;
- d) aerodrome mapping data sets; and
- e) instrument flight procedure data sets.

5.8.1.2 Each data set shall be provided to the next intended user together with at least the minimum set of metadata that ensures traceability.

5.8.1.3 A checklist of valid data sets shall be regularly provided.

5.8.2 AIP Data Set

5.8.2.1 The aeronautical information service provider shall ensure that the AIP data set contain the digital representation of aeronautical information of lasting character (permanent information and long duration temporary changes) essential to air navigation.

5.3.2.4 The AIP data set shall include data about the following subjects, with the properties indicated in brackets being included as a minimum (if applicable):

- a) air traffic services (ATS) airspace (type, name, lateral limits, vertical limits, class of airspace);
- b) special activity airspace (type, name, lateral limits, vertical limits, restriction, activation);

- c) ATS route and other route (designator, flight rules);
- d) route segment (navigation specification, from point, to point, track, length, upper limit, lower limit, minimum en-route altitude (MEA), minimum obstacle clearance altitude (MOCA), direction of cruising level, required navigation performance);
- e) waypoint – en-route (identification, location, formation);
- f) aerodrome/heliport (ICAO location indicator, name, designator IATA, served city, certified ICAO, certification date, certification expiration date, control type, field elevation, reference temperature, magnetic variation, reference point);
- g) runway (designator, nominal length, nominal width, surface type, strength);
- h) runway direction (designator, true bearing, threshold, take off run available (TORA), take-off distance available (TODA), accelerate-stop distance available (ASDA), landing distance available (LDA));
- i) final approach and take-off (FATO) (designation, length, width, threshold point);
- j) touchdown and left-off (TLOF) (designator, centre point, length, width, surface type);
- k) radio navigation aid (type, identification, name, aerodrome/heliport served, hours of operation, magnetic variation, frequency/channel, position, elevation, magnetic bearing, true bearing, zero bearing direction);

5.8.3 Terrain and obstacle data sets

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

- a) Area 1: the entire territory of Sierra Leone;
- 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 Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing terminal control area (TMA) boundary, whichever is nearest;
- 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; and
- d) Area 4:
 - i) 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.
 - ii) where the terrain at a distance greater than 900 m (3 000ft) from the runway threshold is mountainous or otherwise significant, the length of Area 4 is extended to a distance not exceeding 2 000 m (6 500ft) from the runway threshold.

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

5.8.3.2 Terrain and obstacle data for each area shall conform to the applicable numerical requirements in IS: 5.8.3.2

5.8.3.3 Terrain data sets

5.8.3.3.1 Terrain data sets shall contain the digital representation of the terrain surface in the form of continuous elevation values at all intersections (points) of a defined grid, referenced to common datum.

5.8.3.3.2 Terrain data shall be provided for Area 1.

5.8.3.3.3 For aerodromes regularly used by international civil aviation, terrain data shall be provided 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.

5.8.3.3.4 For aerodromes regularly used by international civil aviation, addition terrain data shall be provided within Area 2 as follows:

- a) in the area extending to a 10-km radius from the ARP; and
- b) within the area between 10 km and the TMA boundary or a 45-km radius (whichever is smaller), where terrain penetrates a horizontal terrain data collection surface specified as 120 m above the lowest runway elevation.

5.8.3.3.5 For aerodrome regularly used by international civil aviation, terrain data shall be provided for Area 3

5.8.3.3.6 Terrain data shall be provided for Area 4 for all runways where precision approach Category II or III operations have been established and where detailed terrain information is required by operators to enable them to assess the effect of terrain on decision height determination by use of radio altimeters for aerodromes regularly used by international civil aviation.

5.8.3.4 Obstacle Data Sets

5.8.3.4.1 Obstacle data sets shall contain the digital representation of the vertical and horizontal extent of obstacles.

5.8.3.4.2 Obstacle data shall not be included in terrain data sets.

5.8.3.4.3 Obstacle data shall be provided for obstacles in Area 1 whose height is 100 m or higher above ground.

5.8.3.4.4 Obstacle data shall be provided for all obstacles within Area 2 that are assessed as being a hazard to air navigation for aerodromes regularly used by international civil aviation.

5.8.3.4.5 Obstacle data shall be provided, for aerodromes regularly used by international civil aviation for:

- a) Area 2a for those obstacles that penetrate an obstacle data collection surface outlined by a rectangular area around a runway that comprises the runway strip plus any clearway that exists. The Area 2a obstacle collection surface shall have a height of 3 m above the nearest

runway elevation measured along the runway centre line, and for those portions related to a clearway, if one exists, at the elevation of the nearest runway end;

- b) objects in the take-off flight path area which project above a plane surface having a 1.2 per cent slope and having a common origin with the take-off flight path area; and
- c) penetrations of the aerodrome obstacle limitation surfaces.

5.8.3.4.6 Obstacle data shall be provided for aerodromes regularly used by international civil aviation for 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 per cent to each side. The Area 2b obstacle collection surface has a 1.2 per cent 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 per cent 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 per cent 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 has the elevation of the point of Area 2a at which it commences; and
- c) Area 2d: an area outside Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing 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.

5.8.4.4.7 For aerodromes regularly used by international civil aviation, obstacle data shall be provided for 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.

5.8.3.4.8 Obstacle data shall be provided for Area 4 for all runways where precision approach Category II or III operations have been established for aerodromes regularly used by international civil aviation.

5.8.4 Aerodrome Mapping Data Sets

5.8.4.1 Aerodrome mapping data sets shall contain the digital representation of aerodrome features.

5.8.4.2 Aerodrome mapping data sets shall be made available for aerodromes regularly used by international civil aviation.

5.8.5 Instrument flight procedure data sets

5.8.5.1 Instrument flight procedure data sets shall contain the digital representation of instrument flight procedures.

5.8.5.2 Instrument flight procedure data sets shall be made available for aerodromes regularly used by international civil aviation.

5.9 Distribution Services

5.9.1 General

The aeronautical information service provider shall ensure that:

- a) aeronautical information products are distributed to authorized users who request them.
- b) AIP, AIP Amendments, AIP Supplements and AIC are made available by the most expeditious means.

5.9.2 NOTAM Distribution

5.9.2.1 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 ICAO communication procedures.
- c) use aeronautical fixed service (AFS) for NOTAM distribution whenever practicable

5.9.2.2 When a NOTAM is sent by means other than the AFS, a six-digit date-time group indicating the date and time of NOTAM origination, and the identification of the originator shall be used, preceding the text and the originating State shall select the NOTAM that are to be given international distribution.

5.9.2.3 The aeronautical information service provider shall ensure that the international exchange of NOTAM takes place only as mutually agreed between the international NOTAM offices concerned and between the NOTAM offices and multinational NOTAM Processing Units.

5.9.2.4 The aeronautical information service provider shall, upon request, grant distribution of NOTAM series other than those distributed internationally.

5.10 Pre-flight information service

5.10.1 The aeronautical information service provider shall make available to flight operations personnel, including flight crews and services responsible for pre-flight information, aeronautical information relative to the route stages originating at the aerodrome/heliport for any aerodrome/heliport used for international air operations.

5.10.2 Aeronautical information provided for pre-flight planning purposes shall include information of operational significance from the elements of aeronautical information products.

5.11 Post-flight information service

5.11.1 The aeronautical information service provider shall make arrangement to receive information concerning the state and operation of air navigation facilities or services noted by flight crews for any aerodrome/heliport used for international air operations.

5.11.2 The arrangements specified in 5.11.1 shall ensure that such information is made available to the aeronautical information service (AIS) for distribution as the circumstances necessitate.

5.11.3 The aeronautical information service provider shall make arrangements to receive information concerning the presence of wildlife hazards observed by flight crews for any aerodrome/heliport used for international air operations for any aerodrome/heliport used for international air operations.

5.6.4 The information about presence of wildlife hazards shall be made available to the aeronautical information service for distribution as the circumstances necessitate.

6. AERONAUTICAL INFORMATION UPDATES

6.1 General specifications

6.1.1 The aeronautical information service provider shall keep up to date aeronautical data and aeronautical information

6.2 Aeronautical Information Regulation and Control (AIRAC)

6.2.1 The aeronautical information service provider shall distribute information concerning the following circumstances under the AIRAC system:

- a) limits (horizontal and vertical), regulations and procedures applicable to:
 - i) flight information regions;
 - ii) control areas;
 - iii) control zones;
 - iv) advisory areas;
 - v) air traffic services (ATS) routes;
 - vi) permanent danger, prohibited and restricted areas (including type and periods of activity when known) and air defence identification zones (ADIZ);
 - vii) permanent areas or routes or portions thereof where the possibility of interception exists;
- b) positions, frequencies, call signs, identifiers, known irregularities and maintenance periods of radio navigation aids, and communication and surveillance facilities;
- c) holding and approach procedures, arrival and departure procedures, noise abatement procedures and any other pertinent ATS procedures;
- d) transition levels, transition altitudes and minimum sector altitudes;
- e) meteorological facilities (including broadcasts) and procedures;
- f) runways and stopways;
- g) taxiways and aprons;
- h) aerodrome ground operating procedures (including low visibility procedures);
- i) approach and runway lighting; and
- j) aerodrome operating minima if published by Sierra Leone.

6.2.2 The information notified under the AIRAC system shall not be changed further for at least another 28 days after the effective date, unless the circumstance notified is of a temporary nature and would not persist for the full period.

6.2.3 Information provided under the AIRAC system shall be made available by the aeronautical information service (AIS) so as to reach recipients at least 28 days in advance of the effective date.

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

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

- 6.2.6 The aeronautical information service provider shall ensure that whenever major changes are planned and where advance notice is desirable and practicable, information is made available by the AIS so as to reach recipients at least 56 days in advance of the effective date. This shall be applied to the establishment of, and premeditated major changes in, the circumstances listed below, and other major changes if deemed necessary:
- a) new aerodromes for international instrument flight rules (IFR) operations;
 - b) new runways for IFR operations at international aerodromes;
 - c) design and structure of the ATS route network;
 - d) design and structure of a set of terminal procedures (including change of procedure bearings due to magnetic variation change);
 - e) circumstances listed in 6.2.1 if the entire State or any significant portion thereof is affected or if cross-border coordination is required.

6.3. AIP updates

- 6.3.1 The aeronautical information service provider shall ensure that the AIP is amended or reissued at such regular intervals as may be necessary to keep it up to date.
- 6.3.2 Permanent changes to the AIP shall be published as AIP Amendments.
- 6.3.3 Temporary changes of long duration (three months or longer) and information of short duration which contains extensive text and/or graphics shall be published as AIP Supplements.

6.4 NOTAM

- 6.4.1 The aeronautical information service provider shall ensure that when an AIP Amendment or an AIP Supplement is published in accordance with AIRAC procedures, a Trigger NOTAM is originated.
- 6.4.2 The aeronautical information service provider shall ensure that a NOTAM is originated and issued promptly whenever the information to be distributed is of a temporary nature and of short duration, or when operationally significant permanent changes or temporary changes of long duration are made at short notice, except for extensive text and/or graphics.
- 6.4.3 A NOTAM shall be originated and issued concerning the following information:
- a) establishment, closure or significant changes in operation of aerodrome(s) or heliport(s) or runways;
 - b) establishment, withdrawal or significant changes in operation of aeronautical services (aerodromes, AIS, ATS, communications, navigation and surveillance (CNS), meteorology (MET), search and rescue (SAR), etc.);
 - c) establishment, withdrawal or significant changes in operational capability of radio navigation and air-ground communication services. This includes: interruption or return to operation, change of frequencies, change in notified hours of service, change of identification, change of orientation (directional aids), change of location, power increase or decrease amounting to 50 per cent or more, change in broadcast schedules or contents, or irregularity or unreliability of operation of any radio navigation and air-ground communication services or limitations of relay stations including operational impact, affected service, frequency and area;

- d) unavailability of back-up and secondary systems, having a direct operational impact;
- e) establishment, withdrawal or significant changes to visual aids;
- f) interruption of or return to operation of major components of aerodrome lighting systems;
- g) establishment, withdrawal or significant changes to procedures for air navigation services;
- h) occurrence or correction of major defects or impediments in the manoeuvring area;
- i) changes to and limitations on availability of fuel, oil and oxygen;
- j) major changes to search and rescue facilities and services available;
- k) establishment, withdrawal or return to operation of hazard beacons marking obstacles to air navigation;
- l) changes in regulations requiring immediate action, e.g. prohibited areas for SAR action;
- m) presence of hazards not otherwise promulgated which affect air navigation (including obstacles, military exercises and operations, intentional and unintentional radio frequency interferences, rocket launches, displays, fireworks, sky lanterns, rocket debris, races and major parachuting events);
- n) conflict zones which affect air navigation (to include information that is as specific as possible regarding the nature and extent of threats that conflicts and its consequences for civil aviation);
- o) planned laser emissions, laser displays and search lights if pilots' night vision is likely to be impaired;
- p) erecting or removal of, or changes to, obstacles to air navigation in the take-off/climb, missed approach, approach areas and runway strip;
- q) establishment or discontinuance (including activation or deactivation) as applicable, or changes in the status of prohibited, restricted or danger areas;
- r) establishment or discontinuance of areas or routes or portions thereof where the possibility of interception exists and where the maintenance of guard on the VHF emergency frequency 121.5 MHz is required;
- s) allocation, cancellation or change of location indicators;
- t) changes in aerodrome/heliport rescue and firefighting category provided
- u) presence or removal of, or significant changes in, hazardous conditions due to snow, slush, ice, radioactive material, toxic chemicals, volcanic ash deposition or water on the movement area;
- v) outbreaks of epidemics necessitating changes in notified requirements for inoculations and quarantine measures;
- w) 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;
- x) an operationally significant change in volcanic activity, the location, date and time of volcanic eruptions and/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;

- y) 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 thereof which could be affected and the direction of movement;
- z) establishment of operations of humanitarian relief missions, such as those undertaken under the auspices of the United Nations, together with procedures and/or limitations which affect air navigation; and
- aa) implementation of short-term contingency measures in cases of disruption, or partial disruption, of ATS and related supporting services.

6.4.4 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/heliports that do not affect the safe operation of aircraft;
- d) partial failure of aerodrome/heliport lighting facilities where such failure does not directly affect aircraft operations;
- e) partial temporary failure of air-ground communications when suitable alternative frequencies are known to be available and are operative;
- f) the lack of apron marshalling services and road traffic control;
- g) the unserviceability of location, destination or other instruction signs on the aerodrome movement area;
- h) parachuting when in uncontrolled airspace under VFR (see 6.3.2.3 m)), when controlled, at promulgated sites or within danger or prohibited areas;
- i) training activities by ground units;
- j) unavailability of back-up and secondary systems if these do not have an operational impact;
- k) limitations to airport facilities or general services with no operational impact;
- l) national regulations not affecting general aviation;
- m) announcement or warnings about possible/potential limitations, without any operational impact;
- n) general reminders on already published information;
- o) availability of equipment for ground units without containing information on the operational impact for airspace and facility users;
- p) information about laser emissions without any operational impact and fireworks below minimum flying heights;
- q) closure of movement area parts in connection with planned work locally coordinated of duration of less than one hour;
- r) closure or unavailability of, or changes in, operation of aerodrome(s)/heliport(s) outside the aerodrome(s)/heliport(s) operational hours; and
- s) other non-operational information of a similar temporary nature.

- 6.4.5 NOTAM notifying unserviceability of aids to air navigation, facilities or communication services shall give an estimate of the period of unserviceability or the time at which restoration of service is expected.
- 6.4.6 At least seven days' advance notice shall be given of the activation of established danger, restricted or prohibited areas and of activities requiring temporary airspace restrictions other than for emergency operations.
- 6.4.7 Within three months from the issuing of a permanent NOTAM, the information contained in the NOTAM shall be included in the aeronautical information products affected.
- 6.4.8 Within three months from the issuing of a temporary NOTAM of long duration, the information contained in the NOTAM shall be included in the AIP Supplement.
- 6.4.9 When a NOTAM with estimated end of validity unexpectedly exceeds the three-month period, a replacement NOTAM shall be issued, unless the condition is expected to last for a further period of more than three months; in this case, an AIP Supplement shall be issued.
- 6.4.10 When an AIP Amendment or an AIP Supplement is published in accordance with AIRAC procedures, a so-called "Trigger NOTAM" shall be originated giving a brief description of the contents, the effective date and time, and the reference number of the amendment or supplement.
 - 6.4.10.1 The Trigger NOTAM shall come into force on the same effective date and time as the amendment or supplement and shall remain valid in the pre-flight information bulletin for a period of fourteen days.
 - 6.4.10.2 In the case of an AIP Supplement, the Trigger NOTAM shall remain valid for a period of fourteen days.
 - 6.4.10.3 In the case of an AIP Supplement that is valid for less than fourteen (14) days, the Trigger NOTAM shall remain valid for the complete validity period of the AIP Supplement.
 - 6.4.10.4 In the case of an AIP Supplement that is valid for fourteen days or more, the Trigger NOTAM shall remain valid for at least fourteen days.
- 6.4.11 A checklist of valid NOTAM shall be issued as a NOTAM checklist at intervals of not more than one month.
- 6.4.12 Except as otherwise provided in 6.4.15, each NOTAM shall contain the information in the order shown in the NOTAM Format in IS: 6.4.11
- 6.4.13 Text of NOTAM shall be composed of the significations/uniform abbreviated phraseology assigned to the ICAO NOTAM Code complemented by ICAO abbreviations, indicators, identifiers, designators, call signs, frequencies, figures and plain language.
- 6.4.14 All NOTAM shall be issued in the English language.
- 6.4.15 Information concerning snow, slush, ice, frost, standing water, or water associated with snow, slush, ice or frost on the movement area shall be disseminated by means of a SNOWTAM, and shall contain the information in the order shown in the SNOWTAM Format in IS:6.4.15.
- 6.4.16 When errors occur in a NOTAM, a NOTAM with a new number shall be issued or the erroneous NOTAM shall be cancelled and a new NOTAM issued to replace the erroneous NOTAM

- 6.4.17 The NOTAM originator shall allocate to each NOTAM a series identified by a letter and a four-digit number followed by a stroke and a two-digit number for the year. The four-digit number shall be consecutive and based on the calendar year.
- 6.4.18 When a NOTAM is issued which cancels or replaces a previous NOTAM, the series and number of the previous NOTAM shall be indicated. The series, location indicator and subject of both NOTAM shall be the same. Only one NOTAM shall be cancelled or replaced by a NOTAM.
- 6.4.19 Each NOTAM shall deal with only one subject and one condition of the subject.
- 6.4.20 Each NOTAM shall be as brief as possible and so compiled that its meaning is clear without the need to refer to another document.
- 6.4.21 Each NOTAM shall be transmitted as a single telecommunication message.
- 6.4.22 A NOTAM containing permanent or temporary information of long duration shall carry appropriate AIP or AIP Supplement references.
- 6.4.23 Location indicators included in the text of a NOTAM shall be those contained in ICAO Location Indicators (Doc 7910). In no case shall a curtailed form of such indicators be used.
- 6.4.24 Where no ICAO location indicator is assigned to the location, its place name spelt in accordance with 1.3.2 shall be entered in plain language.
- 6.4.25 A checklist of valid NOTAM shall be issued as a NOTAM checklist at intervals of not more than one month.
- 6.4.26 A NOTAM checklist shall refer to the latest AIP Amendments, AIP Supplements, data sets and at least the internationally distributed AIC, and, when it is selected, include the checklist of AIP Supplements.

6.4 Data Set Updates

- 6.4.1 The aeronautical information service provider shall ensure that data sets are amended or reissued at such regular intervals as may be necessary to keep them up to date.
- 6.4.2 Permanent changes and temporary changes of long duration (three months or longer) made available as digital data shall be issued in the form of a complete data set or a subset that includes only the differences from the previously issued complete data set.
- 6.3.3.3 When made available as a completely reissued data set, the differences from the previously issued complete data set shall be indicated.
- 6.3.3.4 Updates to AIP and digital data sets shall be synchronized.

7. AERODROME SURVEY REQUIREMENTS

7.1 General

7.1.1 Introduction

Aerodrome Operator shall provide accurate survey information of their aerodrome and environs according to the type of operation identified by aerodrome survey classification and survey areas required as prescribed in Table 1 and shall be carried out to measure any changes at the periodic intervals as set out in Table 2.

7.1.2 Survey Areas

The Survey Areas required for a particular Aerodrome Survey Classification are prescribed in Table 1.

Table 1 Aerodrome Survey Classification and Survey Areas Required

Type of Operation	Aerodrome Survey Classification
Aerodrome with no Instrument Flight Procedures (IFP)	1
Aerodrome with Non-precision IFP	2
Aerodrome with Precision ILS CAT I or equivalent IFP	3
Aerodrome with Precision ILS CAT II/III or equivalent IFP	4

Survey Area	Aerodrome Classification			
	1	2	3	4
Aerodrome Plan	✓	✓	✓	✓
AGA	✓	✓	✓	✓
Non-precision Instrument Approach (*)	x	✓	✓	✓
Visual Manoeuvring (Circling)	x	✓	✓	✓
Departure (#)	x	✓	✓	✓
Aerodrome Obstacle Chart - Type A (~)	x	✓	✓	✓
Precision Approach Procedure	x	x	✓	✓
Precision Approach Terrain Chart	x	x	x	✓

(*) Only required for aerodrome classification 3 and 4 if runways have additional Non precision IFP.

(#) Only applicable to runways from which IFR departures take place.

(~) Only required if runways used by Performance A aeroplanes engaged in Public Transport flights.

7.1.3 Survey Periodicity

Surveys shall be undertaken for all Survey Areas required to measure any changes at the periodic intervals prescribed in Table 2.

Table 2 Survey Periodicity

Survey Type	Aerodrome Classification	Periodicity
Geodetic Connection	2, 3 and 4	<ol style="list-style-type: none">1. Together with an initial full survey.2. When a more accurate reference frame for WGS-84 becomes available.
Full Survey	1, 2, 3 and 4	<ol style="list-style-type: none">1. Initial survey.2. If a check survey is not carried out annually.3. If any doubt exists as to the validity of a previous survey.
Check Survey	1, 2, 3 and 4	<ol style="list-style-type: none">1. Annually after a full survey.

7.1.4 Data Management

7.1.4.1 Survey companies shall implement rigorous data handling processes and practices to eliminate erroneous data submission.

7.1.4.2 Each surveyed entity and associated attributes shall be dealt with as a single data record stream.

7.1.4.3 Any change to an existing data record stream identified during a subsequent annual check survey shall necessitate a re-issue of the entire data record with a new unique record number and the deletion of the old record number.

7.1.4.4 If no changes were found to all attributes in an existing record the record shall retain its original record number and survey date.

7.1.4.5 If a later full survey is submitted following an initial full survey, all previous data records shall be declared as obsolete and a new list of survey data records shall be declared with new record numbers and new survey dates.

7.1.5 Survey Declaration Form

7.1.5.1 A “Survey Declaration Form” (see IS 7.1.5.1) shall accompany all full and check survey submissions.

7.1.5.2 The Aerodrome Operator shall state the survey areas appropriate to their operational requirements and the type of survey undertaken, i.e. full or annual check survey. The surveyor is required to state the change or no change status for each survey area.

7.1.5.3 Failure to submit an annual check Survey Declaration Form may result in the withdrawal of the relevant published chart.

7.1.6 Qualifying Surveying Companies

7.1.6.1 The Aerodrome Operator shall satisfy itself as to the competence of the surveyors it employs for aerodrome surveys. The following criteria shall be met:

(a) accredited to an ISO 9001:2000 standard or operate an equivalent quality control system.

(b) Professionally qualified surveyors and project managers to oversee the survey.

(c) Field survey staff competent in aerodrome surveying techniques and experienced at working in an operational aerodrome environment.

1.10.2 All surveying companies employed in survey work for aerodromes with IFPs shall be approved by the Authority.

7.1.7 Accuracy

7.1.7.1 All surveys undertaken shall meet the accuracy and integrity of the data provided as stated in this regulation and ICAO Doc 9674-AN/946 (WGS-84 Manual)

7.1.7.2 Survey methodology shall be clearly demonstrated in the Survey Report.

7.1.8 Survey Package

7.1.8.1 The completed survey package for submission to the Authority shall consist of report, plans, data and declaration form

7.1.8.2 The Aerodrome Operator is responsible for ensuring that copies of all survey information and Survey Declaration Form are forwarded within 60 days of the survey date to:

Sierra Leone Civil Aviation Authority

3rd&4th Floor NDB Building, 21/23 Siaka Stevens Street,
Freetown, Sierra Leone

7.1.8.3 Surveys that fail to conform to the requirements stated in this regulation will be rejected and returned to the Aerodrome Operator.

7.1.9 Conversion Factors

SLCAR Part 5 shall be used as the standard for the application of all conversion factors.

7.2. Survey Procedure

7.2.1 General

7.2.1.1 The accuracy and integrity requirements for the geodetic connection and surveyed data are stated in IS: 3.2.1 and IS: 5.8.3.2.

7.2.1.2 Surveyed data that does not meet the accuracy and integrity requirements is unacceptable for IFP design and shall be published in the AIP with an asterisk.

7.2.1.3 Aerodromes without Instrument Flight Procedures do NOT need to undertake surveys to the accuracy and quality assurance requirements stated in this regulation and ICAO Doc 9674-AN/946 (WGS-84 Manual). The Aerodrome Operator shall be responsible for ensuring the accuracy of information required for Aerodrome Plan and AGA survey areas.

7.2.2 Horizontal Control

7.2.2.1 Co-ordinates shall be required in WGS-84 format (required format for published data).

7.2.2.2 Survey control points shall conform to the ICAO Doc 9674-AN/946 (WGS-84 Manual).

7.2.2.3 Survey companies undertaking these surveys shall be responsible for the accuracy of the control data and any transformation sets used. An analysis of the accumulated error, evidence

confirming the required accuracies have been met and the transformation parameters used shall be included in the Survey Report.

7.2.3 Instrumentation

All survey equipment shall have a current calibration certificate and be able to perform to the accuracy appropriate to the requirements of the surveys.

7.2.4 Methodology

7.2.4.1 All permanent controls that are established within the aerodrome boundary shall be documented and traceable.

7.2.4.2 Local scale factor adjustment to ground distances shall be considered, and the effects of curvature and refraction.

7.2.4.3 New obstacle data shall be proved by two independent measurements and their resultant elevations and positions shall satisfy the appropriate survey criteria.

7.2.4.4 Obstacles heighted on previous surveys need only to be checked to confirm their height and position without the rigour afforded to new obstacles. Particular attention shall be paid to structures and trees whose height may change.

7.3 Survey Reports

7.3.1 The survey report shall conform to that in ICAO Doc 9674-AN/946 (WGS-84 Manual), Attachment C

7.3.2 For traceability purposes the complete documentation shall be reissued on every occasion that a check survey amends the preceding full or check survey.

7.3.3 Format of the schedules listing changes shall be at the discretion of the surveyor or as agreed with the Aerodrome Operator.

7.3.4 To enable users to track changes where an obstacle has been given a new feature number the old number shall be referenced against it.

7.4 Quality Assurance

7.4.1 Quality Records

7.4.1.1 All data elements for aerodromes with Instrument Flight Procedures shall be traceable to their source of production by an unbroken audit trail.

7.4.1.2 The surveying company, shall follow the guidance in the ICAO Doc 9674-AN/946 (WGS-84 Manual), chapter 6 (Quality Assurance), to provide information on the source of production in the form of Quality Records.

7.4.1.3 Quality Records shall include:

(a) Surveying organisation

(b) Name of surveyor(s)

(c) Date and purpose of survey

(d) Method of survey and equipment used

(e) Equipment calibration information and method of checking the survey

(f) Evidence that the accuracy requirements have been met including details of the error budget analysis.

7.4.2 Methodology

The surveying company shall maintain an effective checking system to ensure that the data collected conforms to the accuracy standard and shall present proof of that conformity within the Survey Report.

8. ADMINISTRATIVE REQUIREMENTS

8.1 Training and Personnel Requirement

8.1.1 The aeronautical information service provider shall ensure that all its personnel possess the skills and competencies required to perform the assigned functions and tasks.

8.1.2 The aeronautical information service provider shall develop an overall training programme for the organization as well as job description for each of its staff. The training policy and programme shall lay down the training courses that different levels of staff have to undergo to perform his duties, including initial, recurrent and specialized training, where applicable, and supervised on-the-job training (OJT).

7.1.3 The aeronautical information service provider shall submit the training programmes to the Authority for approval.

8.1.4 The aeronautical information service provider shall conduct a yearly review of the training plan for each staff at the beginning of the year to identify any gaps in competency, changes in training requirement and prioritize the type of training required for the coming year.

8.1.5 The aeronautical information service provider shall maintain individual training records for each of its staff.

8.2 Operations Manual

8.2.1 The aeronautical information service provider shall develop an operations manual which shall serve to demonstrate how the aeronautical information service provider will comply with the requirements of this regulation.

8.2.2 The contents of the operations manual shall contain:

- a) the information required of the aeronautical information service provider as mentioned in this regulation;
- b) an organization chart of the aeronautical information service provider that shows the position of each personnel, qualification, experience, duties and responsibilities of personnel who are responsible for ensuring the compliance of the organization with the requirements in subparagraph a);

8.2.3 The designated the aeronautical information service provider shall:

- a) keep the operations manual in a readily accessible form;
- b) ensure that aeronautical information service personnel have ready access to the operations manual; and
- c) amend the operations manual whenever necessary to keep its content up to date.

8.2.4 The operations manual shall be submitted to the Authority for review and approval.

8.3 Documentation

- 8.3.1 The aeronautical information service provider shall maintain all documents which are necessary for the operation and maintenance of the service. Copies of these documents shall also be made available to personnel where needed.
- 8.3.2 The aeronautical information service provider shall establish a process for the authorization and amendment of these documents to ensure that they are constantly updated. The process shall ensure that:
 - a) the currency of the documentation can be readily determined;
 - b) amendments to the documentation are controlled in accordance with established quality management principles; and
 - c) only current versions of documents are available.
- 8.3.3 The aeronautical information service provider shall ensure that where documents are held as computer based records and where paper copies of computer based records are made, they are subjected to the same control as paper documents.

8.4 Record Keeping

- 8.4.1 The aeronautical information service provider shall establish a system of record-keeping that allows adequate storage of the records and reliable traceability of all its activities
- 8.4.2 The format and the retention period of the records referred to in point 8.4.1 shall be specified in the service provider's management system procedures.
- 8.4.3 Records shall be stored in a manner that ensures protection against damage, alteration and theft.

8.5 Facility Requirements

The aeronautical information service provider shall ensure that there are adequate and appropriate facilities and equipment to perform and manage all tasks and activities in accordance with the applicable requirement .

IMPLEMENTING STANDARDS (IS)

IS: 3.2.1 Aeronautical Data Catalogue

Table-1 Aerodrome/Heliport Data

Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
Aerodrome/Heliport				A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft.						
	Designator			Designator of the aerodrome/heliport						
		ICAO location indicator	Text	The four-letter ICAO location indicator of the aerodrome/heliport, as listed in ICAO Doc 7910 'Location Indicators'	If any					
		IATA designator	Text	The identifier that is assigned to a location in accordance with IATA rules (Resolution 767)	If any					
	Name		Text	The primary official name of an aerodrome as designated by the competent authority						
	Type of traffic permitted									
		International /national	Code list	Indication if international and/or national flights are permitted at the aerodrome/heliport						
		Instrument flight rules (IFR)/	Code list	Indication if IFR and/or VFR flights are permitted at the aerodrome/heliport						

		Visual flight rules (VFR)								
		Scheduled/non-scheduled	Code list	Indication if scheduled and/or non-scheduled flights are permitted at the aerodrome/heliport						
		Civil/military	Code list	Indication if civil commercial aviation and/or general aviation and/or military flights are permitted at the aerodrome/heliport						
	Heliport type		Text	The type of the heliport (surface level, elevated, shipboard or helideck)						
	Control type		Text	Indication if an aerodrome is under civil control, military control or joint control						
	Certified		Text	Indication if an aerodrome is/is not certified in accordance with SLCAR Part 14C						
	Certification date		Date	The date when the airport certification was issued by the Authority						
	Certification expiration date		Date	The date when the aerodrome certification becomes invalid						
	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
		Geoid undulation	Height	Geoid undulation at the aerodrome/ heliport elevation position	where appropriate	0.5 m	essential	surveyed	1m or 1 ft	1m 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				
	Magnetic Variation									
		Angle	Angle	The magnetic variation angle value		1 degree	essential	surveyed	1 degree	1 degree
		Date	Date	The date on which the magnetic variation had the corresponding value						
		Annual change	Value	The annual rate of change of the magnetic variation						
	Reference point									
		Position	Point	Geographical location of aerodrome reference point.		30 m	routine	surveyed/calculated	1 sec	1 sec
		Site	Text	Location of the reference point on the aerodrome						
		Direction	Text	Direction of the aerodrome reference point from the centre of the city or town which the aerodrome serves						
		Distance	Distance	Distance of the aerodrome reference point from the centre of the city or town which the aerodrome serves.						

Landing direction indicator				A device to visually indicate the direction currently designated for landing and for take-off.						
	Location		Text	Description of the secondary power supply						
	Switch- over time		Value	Secondary power supply switch-over time						
Anemometer				Device used for measuring the wind speed						
	Location		Text	Location of the anemometer						
	Lighting		Text	Lighting of the anemometer	If any					
Aerodrome beacon (ABN)/identification beacon (IBN)				Aerodrome beacon/identification beacon used to indicate the location of an aerodrome from the air						
	Location		Text	Location of the aerodrome beacon/identification beacon	If any					
	Characteristics		Text	Description of the aerodrome beacon/identification beacon						
	Hours of operation		Schedule	Hours of operation of the aerodrome beacon/identification beacon						
Wind direction indicator										
	Location		Text	Location of the wind direction indicator						

	Lighting		Text	Lighting of the wind direction indicator					
Runway				A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft					
	Designator		Text	The full textual designator of the RWY, used to uniquely identify the RWY at an aerodrome/heliport (e.g. 09/27, 02R/20L, RWY 1)					
	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
	Centre line points								
		Position	Point	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		
		Elevation	Elevation	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		

		Geoid undulation	Height	The geoid undulation at the corresponding center line point						
	Runway exit line									
		Exit guidance line	Line	The geographical location of the runway exit line		0.5 m	essential	surveyed	1/100 sec	1 sec
		Colour	Text	Colour of the RWY exit line						
		Style	Text	Style of the RWY exit line						
		Directionality	Code list	Directionality of the RWY exit line (one-way or two-way)						
	Surface type		Text	The surface type of the RWY						
	Strength									
		Pavement classification number (PCN)	Text	PCN						
		Pavement type	Text	Pavement type for the aircraft classification number – pavement classification number (ACN-PCN) determination						
		Subgrade category	Text	Subgrade strength category of the RWY						
		Allowable pressure	Text	The maximum allowable tire pressure category or the maximum allowable tire pressure value						
		Evaluation method	Text	The evaluation method used						

	Strip			A defined area including the RWY and the SWY, if provided: to reduce the risk of damage to air craft running off a RWY; and to protect aircraft flying over the RWY during take-off or landing operations						
		Length	Distance	The longitudinal extent of the RWY strip						
		Width	Distance	The transversal extent of the RWY strip						
		Surface type	Text	The surface type of the RWY strip						
	Shoulder			An area adjacent to the edge of a pave-ment, so prepared as to provide a transition area between the pavement and the adjacent surface						
		Geometry	Polygon	Geographical location of the RWY shoulders						
		Surface type	Text	The surface type of the RWY shoulder						
		Width	Distance	The width of the runway shoulder		1m	essential	surveyed	1 m or 1 ft	
	RWY edge LGT									
		Length	Distance	The longitudinal extent of the RWY edge lights						
		Spacing	Distance	Spacing of the RWY edge lights						
		Colour	Text	Colour of the RWY edge lights						

	Reference code			The intent of the reference code is to provide a simple method for interrelating the numerous specifications concerning the characteristics of aerodromes so as to provide a series of aerodrome facilities that are suitable for the aeroplanes intended to operate at the aerodrome.						
		Number	Code list	A number based on the aeroplane reference field length						
		Letter	Code list	A letter based on the aeroplane wingspan and outer main gear wheel span						
Runway Direction										
	Designator		Text	The full textual designator of the landing and take-off direction – examples: 27, 35L, 01R						
	True bearing		Bearing	The true bearing of the runway.		1/100 deg	routine	surveyed	1/100 degree	1 degree
	Type		Text	Type of RWY: precision (Cat I, II, III)/non-precision/non-instrument						
	Threshold			The beginning of the portion of the RWY usable for landing						
		Position	Point	Geographical location for runway threshold		1 m	critical	surveyed	1/100 sec	1 sec
		Elevation	Elevation	Threshold elevation for runways with precision approaches		See Note 1				
		Geoid undulation	Height	WGS-84 geoid undulation at runway threshold, precision approaches		See Note 1				

		Displacement	Distance	Distance of displaced threshold	If displaced threshold	1 m	routine	surveyed	1m or 1ft	
	Runway End			RWY end (flight path alignment point)						
		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			The portion of a RWY beyond the threshold, where landing aeroplanes are intended to first contact the RWY						
		Elevation	Elevation	Highest elevation of the touchdown zone of a precision approach runway	precision approach RWY	0.25 m or 1 ft				
		Slope	Value	The slope of the RWY touchdown zone						
	Stop way			A defined rectangular area on the ground at the end of the take-off RWY available, prepared as a suitable area in which aircraft may be stopped in case of an abandoned take-off						
		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			A defined rectangular area on the ground or water under the control of the appropriate authority, selected or prepared as a suitable area over which an aeroplane may make a portion of its initial climb to a specified height						
		Length	Distance	The longitudinal extent of the clearway		1 m	essential	surveyed	1 m or 1 ft	
		Width	Distance	The transversal extent of the clearway		1 m	essential	surveyed	1 m or 1 ft	
		Ground profile		The vertical profile (or slope) of the clearway						
	RWY end safety area (RESA)			An area symmetrical about the extended RWY centre line and adjacent to the end of the strip, primarily intended to reduce the risk of damage to an aeroplane undershooting or overrunning the RWY						
		Length	Distance	The longitudinal extent of the RESA						
		Width	Distance	The transversal extent of the RESA						
	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		1 m	critical	surveyed	1 m or 1 ft	1 m

				the take-off run available plus the length of the clearway, if provided.						
		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
	RWY end LGT									
		Colour	Text	Colour of the RWY end lights						
		Position	Point	Geographical location of each individual light of the RWY end lights						
	SWY LGT									
		Length	Distance	The longitudinal extent of the SWY lights						
		Colour	Text	Colour of the SWY lights						
		Position	Point	Geographical location of each individual light of the SWY lights						
	RWY threshold lights									
		Colour	Text	Colour of the RWY threshold lights						
		Wing bar colour	Text	Colour of the RWY threshold wing bars						
	Visual-approach slope indicator system									

		Minimum eye height over the threshold (MEHT)	Height	MEHT						
		Location	Point	Geographical location of the visual-approach slope indicator system						
		Angle	Angle	The nominal-approach slope angle(s)						
		Type	Text	The type of visual glide slope indicator (VGSI), visual approach slope indicator (VASI), precision approach path indicator (PAPI), etc.						
		Displacement angle	Angle	Where the axis of the system is not parallel to the RWY centre line, the angle of and the direction of displacement, i.e. left or right						
Final Approach and Take off area (FATO)				A defined area over which the final phase of the approach manoeuvre before hover or landing is completed and from which the take-off manoeuvre is commenced; where the FATO is used by helicopters operated in performance class 1, the defined area includes the rejected take-off area available.						
	Threshold point			A defined area over which the final phase of the approach manoeuvre before hover or landing is						

				completed and from which the take-off manoeuvre is commenced; where the FATO is used by helicopters operated in performance class 1, the defined area includes the rejected take-off area available.						
		Position	Point	Geographical location of FATO threshold		1 m	critical	surveyed	1/100 sec	1 sec
		Elevation	Elevation	Elevation of the FATO threshold		See Note 1				
		Geoid undulation	Height	WGS-84 geoid undulation at the FATO threshold position		See Note 2				
	Departure end of a runway	Position	Point	Geographical location of DER		1m	critical	surveyed	1/100 sec	1 sec
		Elevation	Elevation	The elevation of the DER is the higher of the elevations of the beginning and end of the runway/FATO.						
	Type		Text	Type of FATO						
	Designation		Text	The full textual designator of the landing and take-off area.						
	Length		Distance	The longitudinal extent of FATO		1 m	Critical	Surveyed	1 m or 1 ft	1 m
	Width		Distance	The transversal extent of FATO						
	True Bearing		Bearing	The true bearing of FATO		1/100 deg	routine	surveyed	1/100 degree	

Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
	Declared Distances									
		TODAH	Distance	Take-off distance available - The length of the FATO plus the length of helicopter clearway (if provided)	and if applicable, alternative reduced declared distances	1m	critical	surveyed	1 m or 1 ft	
		RTODAH	Distance	Rejected Take-off 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	
	Aiming point lights									
		Description	Text	Description of the aiming point lights						
		Position	Point	Geographical location of each individual light of the aiming point lights						
Touchdown and lift-off area				An area on which a helicopter may touch down or lift off.						
	Designator		Text	The full textual designator of TLOF						

	Centre point									
		Position	Point	Geographical location of TLOF geometric centre		1m	critical	surveyed	1/100 sec	1 sec
		Elevation	Elevation	Elevation of the TLOF threshold		See Note 1				
		Geoid undulation	Height	The WGS-84 geoid undulation TLOF centre point position		See Note 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				A defined area on a land aerodrome, intended to accommodate aircraft as regards loading or unloading passengers, mail or cargo, fuelling, parking or maintenance						
	Designator		Text	The full textual name or designator used to identify an apron at an aerodrome/heliport						
	Geometry		Polygon	Geographical location of the apron element		1m	routine	surveyed	1/10 sec	1 sec
	Type		Text	Classification of the primary use of the apron						
	Aircraft restriction		Text	Usage restriction (prohibition) for a specified aircraft type						
	Surface type		Text	The surface type of the apron						
	Strength									
		PCN	Text	PCN of the apron						
		Pavement type	Text	ACN-PCN determination						

		Subgrade category	Text	Subgrade strength category of the apron						
		Allowable pressure	Text	The maximum allowable tire pressure category or the maximum allowable tire pressure value						
		Evaluation method	Text	The evaluation method used to determine the apron strength						
	Elevation		Elevation	The elevation of the apron						
Taxiway				A defined path on a land aerodrome, established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another						
	Designator		Text	The full textual designator of the TWY						
	Width		Distance	The transversal extent of the taxiway.		1m	essential	surveyed	1 m or 1 ft	
	Geometry		Polygon	Geographical location of the TWY element						
	Bridge		Text	Type of the bridge (none, overpass, underpass)						
	Surface type		Text	Surface type of the TWY						
	Strength	PCN	Text	PCN of the TWY						
		Pavement type	Text	ACN-PCN determination						
		Subgrade category	Text	Subgrade strength category of the TWY						
		Allowable pressure	Text	Maximum allowable tire pressure category or maximum allowable tire pressure value						
		Evaluation method	Text	The evaluation method used to determine the taxiway strength						

	Aircraft restrictions		Text	Usage restriction (prohibition) for a specified aircraft type						
	Reference code letter		Code list	A letter based on the aeroplane wingspan and outer main gear wheel span						
	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			An area adjacent to the edge of a pavement, so prepared as to provide a transition between the pavement and the adjacent surface						
		Geometry	Polygon	The geographical location of the TWY shoulder						
		Surface type	Text	Surface type of the TWY shoulder						
		Width	Distance	The width of the taxiway shoulder		1m	essential	surveyed	1 m or 1 ft	
	Guidance Lines									
		Geometry	Line	Geographical location of guidance lines		0.5 m	essential	surveyed	1/100 sec	1/100 sec
		Colour	Text	Colour of TWY guidance lines						
		Style	Text	Style of TWY guidance lines						
		Wingspan	Value	Wingspan						
		Maximum speed	Value	Maximum speed						

Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
		Direction	Text	Direction						
	Intermediate holding position marking line		Line	Intermediate holding position marking line		0.5 m	essential	surveyed	1/100 sec	1 sec
	TWY marking									
		Description	Text	Description of the TWY marking						
	TWY edge lights									
		Description	Text	Description of the TWY edge lights						
		Position	Point	Geographical location of each individual light of the TWY edge lights						
	Runway holding position									
				A designated position intended to protect a RWY, an obstacle limitation surface, or an instrument landing system (ILS)/microwave landing system (MLS) critical/sensitive area, at which taxiing aircraft and vehicles shall stop and hold, unless otherwise authorised by the aerodrome control tower						
		Geometry	Line	Geographical location of runway holding position		0.5 m	essential	surveyed	1/100 sec	1 sec

		RWY ahead text	Text							
Helicopter ground taxiway				A ground TWY intended for the ground movement of wheeled undercarriage helicopters.						
	Designator		Text	The full textual designator of the heli-copter ground TWY						
	Center line points		Point	Geographical location of helicopter ground center line taxiway points		0.5m	essential	surveyed / calculate d		
	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		0.5 m	essential	surveyed /calculate d		
	Elevation		Elevation	Elevation of helicopter air taxiway		1m	essential	surveyed		
	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 Check point	Position		Point	Geographical location of the INS check point	where available	0.5m	routine	surveyed	1/100 sec	1/100 sec
Very-high-frequency (VHF)										

omni-directional range (VOR) checkpoint										
	Location		Point	Geographical location of the VOR checkpoint	Where available					
	Frequency		Value	Frequency of the VOR checkpoint						
Altimeter checkpoint										
	Location		Point	Geographical location of the altimeter checkpoints						
	Elevation		Elevation	Elevation of the altimeter checkpoints						
Aircraft Stand				A designated area on an apron intended to be used for parking an aircraft						
	Name		Text	Name of the aircraft stand point						
	Aircraft stand points	Location	Point	Geographical location of aircraft stand point		0.5m	routine	surveyed	1/100 sec	1/100 sec
		Aircraft types	Code list	Aircraft types						
	Identification sign		Text	Description of the aircraft stand identification sign						
	Visual docking/parking guidance system		Text	Description of the visual docking/parking guidance system at the aircraft stand						
	Parking-stand area		Polygon	Geographical location of the parking-stand area						
	Jetway		Code list	Jetway available at the aircraft stand						
	Fuel		Code list	Fuel available at the aircraft stand						
	Ground power		Code list	Ground power available at the aircraft stand						

	Towing		Code list	Towing available at the aircraft stand						
	Terminal		Text	Terminal-building reference						
	Surface type		Text	Surface type of the aircraft stand						
	Aircraft restriction		Text	Usage restriction (prohibition) for a specified aircraft type						
	PCN		Text	PCN of the aircraft stand						
	Stand guidance line									
		Geometry	Line	Geographical location of the stand guidance line		0.5 m	Essential	Surveyed	1/100 sec	
		Elevation	Elevation	Elevation of the parking guidance line points		1 m	Essential	Surveyed		
		Direction	Text	Direction of the stand guidance line						
		Wingspan	Value	Wingspan						
		Colour	Code list	Colour of the stand guidance line						
		Style	Code list	Style of the stand guidance line						
Helicopter stand				An aircraft stand that provides for parking a helicopter, and where ground taxi operations are completed, or where the helicopter touches down and lifts off for air taxiing operations.						
	Name		Text	Name of the helicopter stand						
	Position		Point	Geographical location of helicopter stand point/ INS checkpoints		0.5m	essential	surveyed	1/100 sec	
Communication facility										

	Service designation		Text	Designation of the service provided						
	Call sign		Text	Call sign of the communication facility						
	Channel		Text	Channel/frequency of the communication facility						
	Logon address		Text	Logon address of the facility	As appropriate					
	Hours of operation		Schedule	Operational hours of the station serving the unit						

Table-2 Airspace Data

Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
ATS Airspace				Airspace of defined dimensions, alphabetically designated, within which specific types of flights may operate, and for which ATS and air traffic rules of operation are specified						
	Type		Text	Type of ATS airspace in accordance with SLCAR Part 11						
	Designation		Text	The designator given to the airspace by a responsible authority						
	Lateral limits		Polygon	The surface defining the horizontal shape of the airspace		See Note 1				
	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
	Class of airspace		Code list	A categorisation of airspace which determines the operating rules, flight requirements and services provided.						
	Transition altitude		Altitude	The altitude at or below which the vertical position of aircraft is controlled by reference to altitudes						
	Hours of applicability		Schedule	The hours of applicability of the airspace						
	ATS unit			Unit providing service						
		Name	Text	The name of the unit providing the service						
		Call sign	Text	The call sign of the aeronautical station serving the unit						
		Language	Code list	Information on the language(s) used, specifying area and conditions, as well as when and where to be used, if applicable						
		Applicability	Text	Information on the area and conditions when to be used						
		Hours of service	Schedule	Operational hours of the station serving the unit						

	Frequency	Value	Value	The frequency of the ATS airspace						
		Purpose	Text	Indications for specific purposes of the frequency						
			Note 1	FIR, UIR		2 km	Routine	Declared	1 min	As plotted
				TMA, CTA		100 m	Essential	Calculated	1 sec	As plotted
				Controlled traffic region (CTR)		100 m	Essential	Calculated	1 sec	As plotted
Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
Special-activity airspace										
	Type		Code list	Type of the special-activity airspace (see Note 1)						
	Identification		Text	The identification given to uniquely identify the airspace						
	Name		Text	The name given to the airspace by an authority nominated by the Authority						
	Lateral limits		Polygon	The surface defining the horizontal shape of the airspace		See Note 2 for P, R, and D areas only				
	Vertical limits	Upper limit	Altitude	The upper limit of the airspace						
		Lower limit	Altitude	The lower limit of the airspace						

	Restriction		Text	Type of restriction or nature of hazard						
	Activation		Text	Information on system and means of activation announcements together with information pertinent to civil flights and applicable to air defence identification zone (ADIZ) procedures						
	Time of activity		Schedule	Time interval when the special activity takes place						
	Risk of interception		Text	Risk of interception in the event of penetration						
			Note 1	Prohibited area	Note 2	100 m	Essential	Calculated	1 sec	As plotted
				Restricted area		2 km	Routine	Declared	1 min	As plotted
				Danger area						
				Military exercise area						
				Military training area						
				ADIZ						
				Other						
Other regulated airspace	Type		Text	Type of airspace (reduced vertical separation minima (RVSM), emergency locator transmitter (ELT), etc.)						

	identification		Text	The identification given to uniquely identify the airspace						
	Name		Text	The name given to the airspace by the Authority						
	Lateral limits		Polygon	The surface defining the horizontal shape of the airspace						
	Vertical limits									
		Upper limit	Altitude	The upper limit of the airspace						
		Lower limit	Altitude	The lower limit of the airspace						
	Restriction		Text	Type of restriction, if any						
	Activation		Text	Information on system and means of activation announcements together with information pertinent to civil flights and applicable to ADIZ procedures						
	Time of activity		Schedule	Time interval when the special activity takes place						

Table-3 ATS and other routes Data

Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
ATS route				A specified route designed for channel ling the flow of traffic as necessary for the provision of ATS						

	Designator		Text	Designators for ATS routes in accordance with SLCAR Part 11						
	Designator prefix		Text	The prefix of the route designator as specified in Note 1						
Other route				A specified route designed for channel ling the flow of traffic as necessary with out provision of ATS						
	Designator		Text	Designator of the route						
	Type		Text	Type of route (e.g. VFR uncontrolled navigation routes)						
	Flight rules		Code list	Information on the flight rules that apply to the route (IFR/VFR)						
Route Segment	Navigation specification		Text	Designation of the navigation specification(s) applicable to a specified segment(s) - There are two kinds of navigation specifications: (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.						

				(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.						
	From point			Reference to the first point of a route segment						
		Name	Text	The coded designators or code names of a significant point						
		Reporting	Code list	Indication of the ATS/MET reporting requirement as 'compulsory' or 'on request'						
	To point			Reference to the second point of a route segment						
		Name	Text	The coded designators or code names of a significant point						
		Reporting	Code list	Indication of the ATS/MET reporting requirement as 'compulsory' or 'on request'						
	Track		Bearing	Track, VOR radial or magnetic bearing of a route segment		1/10 degree (terminal arrival departure)	routine (terminal arrival departure)	calculate d (terminal arrival departure)	1 degree (terminal arrival departure)	1 degree (terminal arrival departure)

	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					
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Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
	Length		Distance	The geodesic distance between from point and to point	Airway segments length Terminal arrival	1/10 km	routine	calculated	1/10 km or 1/10 NM	1 km or 1 nm
					Departure route segment length	1/100 km	essential	calculated	1/100 km or 1/10 ONM	1 km or 1 NM
	Minimum en-route altitude (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.	Lower ATS Routes	50 m	routine	calculated	50 m or 100 ft	50 m or 100 ft
	Minimum obstacle clearance		Altitude	Minimum obstacle clearance altitude (MOCA). The minimum altitude for a defined		50 m	routine	calculated	50 m or 100 ft	50 m or 100 ft

	altitude (MOCA)			segment of flight that provides the required obstacle clearance.						
	Minimum flight altitude		Altitude	Minimum flight altitude	Helicopter route	50 m	routine	calculated	50 m or 100 ft	50 m or 100 ft
	Lateral Limits		Distance	Lateral limits of route						
	Area minimum altitude (AMA)		Altitude	It is the minimum altitude to be used under instrument meteorological conditions (IMC), which provides a minimum obstacle clearance within a specified area, normally formed by parallels and meridians						
	Performance-based navigation (PBN) requirements			Area navigation based on PBN requirements for aircraft operating along an ATS route, on an instrument approach procedure, or in a designated airspace	PBN only					
		Navigation performance requirements	Text	The navigation accuracy requirement for each PBN (RNAV or RNP) route segment						
		Sensor requirements	Text	Indication of the sensor requirements including any navigation specification limitations						
	Controlling unit									
		Name	Text	Name of the unit providing the service						

		Channel	Text	Operating channel/frequency of the controlling unit						
		Logon address	Text	A specified code used for data link logon to the controlling ATS unit	If applicable					
			Note 1	U = upper	Note 2	1/10 km	Routine	Calculated	1/10 km or 1/10 nm	1 km or 1 nm
				H = helicopter		1/100 km	Essential	Calculated	1/100 km or 1/100 nm	1 km or 1 nm
				S = supersonic						
				T = tacan						
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
	Formation	Navigation aid (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.	Bearing used for the formation of an en-route fix	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.	Distance used for the formatio	1/10 km	routine	calculated	1/10 km or 1/10 NM	2/10 km (1/10 NM)

					n of an en-route fix					
En-route holding				A predetermined manoeuvre that keeps the aircraft within the specified airspace while awaiting further clearance						
	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
	Inbound track		Bearing	The inbound track of the holding procedure						
	Turn direction		Text	Direction of the procedure turn						
	Speed		Value	Maximum indicated airspeed						
	Level									
		Minimum holding level	Altitude	Minimum holding level of the holding procedure						
		Maximum holding level	Altitude	Maximum holding level of the holding procedure						
	Outbound time/distance		Value	Time/distance value of the holding procedure						
	Controlling unit									
		Name	Text	Indication of the controlling unit						

		Frequency	Value	The operating frequency/channel of the controlling unit						
	Special holding entry procedure		Text	Textual description of the special VOR/DME entry procedure	In case an entry radial to a secondary fix at the end of the outbound leg has been established for a VOR/DME holding pattern					

Table-4 Instrument flight procedure data

Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
Procedure										
	Identification									
		Final-approach segment (FAS) guidance	Code list	The name describing the type of radio navigation aid providing the final approach lateral guidance e.g. ILS, VOR, RNAV, etc.	APCH					
		RWY	Text	The RWY designator of the landing and take-off direction, e.g. 27, 35L, 01R						

		Circling	Code list	Indication if a procedure is/is not a circling approach	APCH					
		Multiple code	Text	A single-letter suffix, starting with the letter 'z', following the radio navigation aid type, shall be used if two or more procedures to the same RWY cannot be distinguished by the radio navigation aid type only, e.g. VOR y RWY 20 or VOR z RWY 20.	APCH					
		NS limiter	Text	Sensor-specific information in case of a use limitation	PBN only					
		Name	Text	Name of the instrument flight procedure						
	Plain-language designation									
		Basic indicator	Text	The basic indicator shall be the name or code names of the significant point where the standard departure route terminates.	SID, STAR					
		Validity indicator	Text	The validity indicator shall be a number from 1 to 9.	SID, STAR					
		Route indicator	Text	The route indicator shall be one letter of the alphabet. The letters 'I' and 'O' shall not be used.	SID, STAR					

		Visual indication	Text	Indication if the route has been established for aircraft operating in accordance with VFR	VFR only					
	Coded designation									
		Significant Point	Text	The coded designator or code names of the significant point	SID, STAR					
		Validity indicator	Text	The validity indicator of the procedure	SID, STAR					
		Route indicator	Text	The route indicator of the procedure	SID, STAR					
	Procedure type		Code list	Indication of the type of procedure (departure, arrival, approach, other)						
	PBN or conventional		Code list	Indication if the procedure is PBN or conventional	IFR only					
	Precision type		Text	The instrument procedure type; instrument approach procedures are classified as follows: (a) non-precision approach (NPA) procedure: an instrument approach procedure that utilises lateral but not vertical guidance. (b) approach procedure with vertical guidance (APV): an instrument procedure that utilises lateral and vertical guidance but does not meet the requirements established for	APCH					

				precision-approach and -landing operations. (c) precision approach (PA) procedure: an instrument approach procedure using precision lateral and vertical guidance with minima as determined by the category of operation.						
	Aircraft category		Code list	Indication of which aircraft categories the procedure is intended for						
	Magnetic variation		Value	The magnetic variation considered for the procedure design						
	Obstacle clearance altitude/height (OCA/H)			OCA/H	APCH					
		Aircraft category	Code list	Aircraft category	APCH					
		Approach type	Code list	Approach type (e.g. straight-in, Cat I, Cat II, LLZ, circling, etc.), or specific navigation aid (e.g. step-down fixes), or a specific navigation specification	APCH					
		Altitude	Altitude	The lowest altitude used in establishing compliance with appropriate obstacle clearance criteria.	APCH	as specified in Doc 8168	essential			
		Height	Height	The lowest height above the elevation of the relevant runway threshold	APCH	as specified in Doc 8168	essential			

				or the aerodrome elevation as applicable, used in establishing compliance with appropriate obstacle clearance criteria.						
	Decision altitude/height (DA/H)			DA/H	APCH					
		Aircraft category	Code list	Aircraft category	APCH					
		Approach type	Code list	Approach type (e.g. straight-in, circling, etc.), or specific navigation aid (e.g. step-down fixes), or a specific navigation specification	APCH					
		Altitude	Altitude	A specified altitude in a 3D instrument approach operation at which a missed approach shall be initiated if the required visual reference to continue the approach is not established	APCH					
		Height	Height	A specified height in a 3D instrument approach operation at which a missed approach shall be initiated if the required visual reference to continue the approach is not established	APCH					
	Minimum descent altitude/height				APCH					

	ght (MDA/H)									
		Aircraft category	Code list	Aircraft category	APCH					
		Approach type	Code list	Approach type (e.g. straight-in, circling, etc.), or specific navigation aid (e.g. step-down fixes), or a specific navigation specification	APCH					
		Altitude	Altitude	A specified altitude in a 2D instrument approach operation or circling approach operation below which descent shall not be initiated without the required visual reference	APCH					
		Height	Height	A specified height in a 2D instrument approach operation or circling approach operation below which descent shall not be initiated without the required visual reference	APCH					
	Minimum sector altitude (MSA)			The lowest altitude that may be used and will provide a minimum clearance of 300 m (1 000 ft) above all objects located in an area contained within a sector of a circle of 46 km (25 nm) radius centred on a radio aid to navigation	IFR only					

		Sector start angle	Angle	Start angle of a sector						
		Sector end angle	Angle	End angle of a sector						
		Based on fix	Text	Centre of the MSA						
		Altitude	Altitude	The minimum altitude for each sector						
		Restrictions	Text	MSA: the lowest altitude that may be used and will provide a minimum clearance of 300 m (1 000 ft) above all objects located in an area contained within a sector of a circle of 46 km (25 nm) radius centred on a radio aid to navigation.						
		Radius	Value	The radius of each sector						
	Terminal arrival altitude (TAA)			The lowest altitude that will provide a minimum clearance of 300 m (1 000 ft) above all objects located in an arc of a circle defined by a 46 km (25 nm) radius centred on the initial-approach fix (IAF) or, where there is no IAF, on the intermediate-approach fix (IF), delimited by straight lines joining the extremity of the arc to the IF; the combined TAAs associated with an approach procedure shall	APCH or PBN only					

				account for an area of 360 degrees around the IF.						
		Reference point	Text	TAA reference point (IAF or IF)						
		IAF	Text	TAA IAF reference point						
		IF Distance to IAF	Text Distance	TAA IF reference point The distance of the TAA area boundary from the IAF						
		Altitude	Altitude	The terminal arrival altitude value						
		Sector start angle	Angle	Start angle of a sector (bearing to the TAA reference point)						
		Sector end angle	Angle	End angle of a sector (bearing to the TAA reference point)						
		Stepdown arc	Distance	Radius of the inner area at a lower altitude.						
	Navigation specification name			A set of aircraft and flight crew requirements needed to support PBN operations within a defined airspace; there are two kinds of navigation specifications: (a) RNP specifications: navigation specifications based on area navigation that includes the requirement for performance monitoring and alerting, designated by the	PBN only					

				<p>prefix RNP, e.g. RNP 4, RNP APCH.</p> <p>(b) RNAV specifications: navigation specifications 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>						
	Operating minima		Text	<p>Aerodrome operating minima: the usability limits of an aerodrome for:</p> <p>(a) take-off, expressed in terms of RVR and/or visibility and, if necessary, cloud conditions;</p> <p>(b) landing in precision approach and landing operations, expressed in terms of visibility and/or RVR and DA/H, as appropriate to the category of the operation;</p> <p>(c) landing in approach and landing operations with vertical guidance, expressed in terms of visibility and/or RVR and DA/H; and</p> <p>(d) landing in non-precision approach and landing operations, expressed in terms of visibility and/or RVR, minimum descent altitude/height (MDA/H)</p>	APCH, DEP					

				and, if necessary, cloud conditions						
	Temperature									
		Minimum temperature	Value	Minimum temperature reference	APCH or PBN only					
		Maximum temperature	Value	Maximum temperature reference	APCH or PBN only					
	PBN requirements			Specific requirements related to a PBN procedure	PBN					
			Code list	Identification of the navigation specification (RNAV 5, RNP 0.3, etc.)						
		Navigation specification	Text	Any navigation sensor limitations (global navigation satellite system (GNSS) required)						
		Functional requirements	Text	Any required functionalities described as options in the navigation specification, that is, not included in the core navigation specification (radio frequency (RF) required)						
Procedure segment					SID, STAR, APCH					
	Start		Text	Identification of the start point of the segment						

	End		Text	Identification of the end point, or a description of the end, of the segment						
	End fix functionality		Code list	Indication if the end fix is a fly-by point (a waypoint that requires a turn to allow tangential interception of the next segment of a route or procedure) or flyover point (a waypoint at which a turn is initiated in order to join the next segment of a route or procedure)	PBN					
	End fix role		Code list	Indication of the role of the end fix missed-approach point (MAPt), IF, IAF, final-approach fix (FAF), missed approach holding fix (MAHF), etc.						
	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.	SID, STAR, APCH certain segments only	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.	SID, STAR, APCH					
	Distance		Distance	Geodesic distance to the nearest tenth of a kilometer or tenth of a		1/100 km	essential	calculated	1/100 km or 1/100 nm	1 km or 1 nm

				nautical mile between each successive designated significant point;						
	True bearing		Bearing	True track to the nearest tenth of a degree to the nearest degree between each successive significant point;	SID, STAR, APCH	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;	SID, STAR, APCH	1/10 degree	routine	calculated	1 degree	1 degree
	Gradient		Value		APCH, DEP					
	Speed		Value	Speed limit at a significant point, expressed in units of 10 kt, as applicable						
	Controlling obstacle				APCH, DEP					
		Type	Text	Indication if the obstacle is lit/unlit, type of obstacle (church/wind turbine, etc.)						
		Position	Point	Coordinates of the controlling obstacle						
		Elevation:	Elevation	Elevation of the top of the controlling obstacle						
Final approach segment				That segment of an instrument approach procedure in which alignment and descent for landing are accomplished						

	LTP/FTP			Landing threshold point (LTP) or fictitious threshold point (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	
		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	
	HAL		Value	Horizontal Alert Limit	SBAS only					
	VAL		Value	Vertical Alert Limit	SBAS only					

Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
Procedure fix	Identification		Text	Names, coded designators or code names given to the significant point						
	ATC reporting requirements		Text	Indication of the ATS/MET reporting requirement as 'compulsory', 'on request' or 'NIL'						
	VFR reporting point		Text	Bridge, church name	VFR					
	Position		Point	Geographical location of the fix	En-route navaid and fixes, holding, STAR/SID points	100 m	essential	surveyed / calculated	1 sec	1 sec
					Final approach fixes/points and other essential	3 m	essential	surveyed / calculated	1/10 sec	1 sec

					fixes/points comprising the instrument approach procedure					
	Type		Text	Indication of the type of the fix, such as navaid, Int, waypoint						
	Formations									
		Navaid	Text	The station identification of the reference VOR/DME						
		Bearing	Bearing	Bearing used for the formation of a terminal fix	The bearing from the reference	1/10 degree	routine	calculated	1/10 degree	1/10 degree
				Bearing used for the formation of an instrument approach procedure fix	VOR/DME, if the waypoint is not collocated with it	1/100 degree	essential	calculated	1/100 degree	1/10 degree
		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				A predetermined manoeuvre that keeps the aircraft within the specified airspace while awaiting further clearance						
	Identification		Text	Identification of the holding procedure						

	Fix		Point	Geographical location that serves as a reference for a holding procedure	Fix	same as proc 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						

Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
	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	
	Magnetic variation									
		Angle	Angle	The magnetic variation of the radio navigation aid of the procedure						
		Date	Date	The date on which the magnetic variation had the corresponding value						
	Navigation specifications name		Text	Name of the navigation specification – set of aircraft and aircrew requirements needed to support a navigation application within a defined airspace concept	RNAV/RNP					
Helicopter Procedure Specifics	HCH		Height	Heliport crossing height		0.5 m	essential	calculated	1 m or 1 ft	1 m or 1 ft
	IDF		Point	Initial departure fix	DEP					
	MAPt		Point	Missed Approach Point	APCH					

Table-5 Radio navigation aids/systems data

Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
Radio navigation aid										

	Type		Text	Type of the radio navigation aid						
	identification		Text	The code assigned to uniquely identify the navaid						
	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.						
	Aerodrome served		Text	The ICAO location indicator or name of the aerodromes served						
	RWY served		Text	Designator of the RWY served						
	Operating entity		Text	Name of the operating entity of the facility						
	Type of supported operations		Code list	Indication of the type of supported operation for ILS/MLS, basic GNSS, satellite-based augmentation system (SBAS), and ground-based augmentation system (GBAS)						
	Collocation		Text	Information that a navaid is collocated with another navaid						
	Hours of operation		Schedule	The hours of operation of the radio navigation aid						
	Magnetic Variation			The angular difference between the true north and the magnetic north						

		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.						
	Station declination		Angle	An alignment variation of the navaid between the zero degree radial and the true north, determined at the time the station is calibrated	VOR/ILS/MLS					
	Zero bearing direction		Text	Direction of the 'zero bearing' provided by the station, e.g. magnetic north, true north, etc.	VOR					
	Frequency		Value	Frequency or tuning frequency of the radio navigation aid						
	Channel		Text	The channel number of the radio navigation aid	DME or GBAS					
	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	

	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 to 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

	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				Ground lights and other light beacons designating geographical positions that are selected by the State as being significant						
	Type		Text	Type of beacon						
	Designator		Text	The code assigned to uniquely identify the beacon						
	Name		Text	The name of the city or town or other identification of the beacon						
	Intensity		Value	Intensity of the light of the beacon					1000 cd	
	Characteristics		Text	Information about the characteristics of the beacon						
	Hours of operations		Schedule	The hours of operation of the beacon						
	Position		Point	Geographical location of the beacon						

Special navigation system	Position		Point	Geographical location of the special navigation system		100m	essential	surveyed / calculated		
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Table-6 Obstacle Data

Subject	Property	Sub property	Type	Description	Note	Accuracy	Integrity	Origin Type	Pub. Resolution.	Chart Resolution.
Obstacle				All fixed (whether temporary or permanent) and mobile obstacles or parts thereof						
	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)
				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	
				Obstacles in Area 4		1 m	essential	surveyed	0.01 m	

	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 0.01 m	1m or 1 ft
				Obstacles in Area 4		1 m	essential	surveyed	0.1 m	
	Type		Text	Type of obstacle						
	Date and time stamp		Date	Date and time the obstacle was created						
	Lighting									
		Type	Text	Type of lighting						
		Colour	Text	Colour of the obstacle lighting						
	Marking		Text	Type of obstacle marking						

Table-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-8 Data Types referred to in column 4 ‘Type’

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
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 achieved
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

IS: 5.3 Contents of the Aeronautical Information Publication (AIP)

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:

- (1) name of the publishing authority;
- (2) applicable ICAO documents;
- (3) publication media (i.e. printed, online or other electronic media);
- (4) AIP structure and established regular amendment interval;
- (5) copyright policy, if applicable; and
- (6) 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:

- (1) amendment number;
- (2) publication date;
- (3) date inserted (for the AIRAC AIP Amendments, effective date); and
- (4) initials of officer who inserted the amendment.

GEN 0.3 Record of AIP Supplements

A record of issued AIP Supplements containing:

- (1) Supplement number;
- (2) Supplement subject;
- (3) AIP section(s) affected;
- (4) period of validity; and
- (5) cancellation record.

GEN 0.4 Checklist of AIP pages

A checklist of AIP pages containing:

- (1) page number/chart title; and
- (2) publication or effective date (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:

- (1) AIP page(s) affected;
- (2) amendment text; and
- (3) 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:

- (1) designated authority;
- (2) name of the authority;
- (3) postal address;
- (4) telephone number;
- (5) telefax number;
- (6) e-mail address;
- (7) aeronautical fixed service (AFS) address; and
- (8) 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:

- (1) 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 SLCAR Part 6,; and
- (2) emergency locator transmitter (ELT), signalling devices and life-saving equipment as presented in SLCAR Part 6 where so determined by regional air navigation agreement, for flights over designated land areas.

GEN 1.6 Summary of national regulations and international agreements/conventions

A list of titles and references and, where applicable, summaries of national regulations affecting air navigation, together with a list of international agreements/conventions ratified by the State.

GEN 1.7 Differences from ICAO Standards, Recommended Practices and Procedures

A list of significant differences between national regulations and practices of the State and related ICAO provisions, including:

- (1) provision affected (Annex and edition number, paragraph); and
- (2) difference in full text.

All significant differences shall be listed under this subsection. 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 (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:

- (1) name/designation of the reference system;
- (2) identification and parameters of the projection;
- (3) identification of the ellipsoid used;
- (4) identification of the datum used;
- (5) area(s) of application; and
- (6) 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:

- (1) name/designation of the reference system;
- (2) description of the geoid model used including the parameters required for height transformation between the model used and EGM-96; and
- (1) 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

A list of radio navigation aids arranged alphabetically, containing:

- (2) identifier;
- (3) name of the station;
- (4) type of facility/aid; and
- (5) 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:

- (1) nautical miles and kilometres and vice versa;
- (2) feet and metres and vice versa;
- (3) decimal minutes of arc and seconds of arc and vice versa; and
- (4) other conversions as appropriate.

GEN 2.7 Sunrise/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:

- (1) station name;
- (2) ICAO location indicator;
- (3) geographical coordinates in degrees and minutes;
- (4) date(s) for which times are given;
- (5) time for the beginning of morning civil twilight;
- (6) time for sunrise;
- (7) time for sunset; and
- (8) time for the end of evening civil twilight.

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:

- (1) service/unit name;
- (2) postal address;
- (3) telephone number;
- (4) telefax number;
- (5) e-mail address;
- (6) AFS address;
- (7) website address, if available;

- (8) 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
- (9) 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:

- (1) AIP and related amendment service;
- (2) AIP Supplements;
- (3) AIC;
- (4) NOTAM and pre-flight information bulletins (PIB);
- (5) checklists and lists of valid NOTAM; and
- (6) 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/heliports

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

- (1) elements of the aeronautical information products held;
- (2) maps and charts held; and
- (3) general area of coverage of such information.

GEN 3.1.6 Digital data sets

Description of the available data sets, including:

- (1) data set title;
- (2) short description;
- (3) data subjects included;
- (4) geographical scope; and
- (5) if applicable, limitations related to its usage.
- (6) Contact details of how data sets may be obtained, containing:
 - (a) name of the individual, service or organization responsible;
 - (b) street address and e-mail address of the individual, service or organization responsible;
 - (c) telefax number of the individual, service or organization responsible;
 - (d) contact telephone number of the individual, service or organization responsible;
 - (e) hours of service (time period including time zone when contact can be made);
 - (f) online information that can be used to contact the individual, service or organization; and
 - (g) 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(s)

Description of service(s) responsible for the production of aeronautical charts, including:

- (1) service name;
- (2) postal address;
- (3) telephone number;
- (4) telefax number;
- (5) e-mail address;
- (6) AFS address;
- (7) website address, if available;
- (8) 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
- (9) 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:

- (1) service/sales agency(ies);
- (2) postal address;
- (3) telephone number;
- (4) telefax number;
- (5) e-mail address;
- (6) AFS address; and
- (7) 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:

- (1) title of series;
- (2) scale of series;
- (3) name and/or number of each chart or each sheet in a series;
- (4) price per sheet; and
- (5) date of latest revision.

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

An index chart showing coverage and sheet layout for the WAC 1:1 000 000 produced by a State. 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:

- (1) name of service/agency(ies);

- (2) postal address;
- (3) telephone number;
- (4) telefax number;
- (5) e-mail address;
- (6) AFS address; and
- (7) 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:

- (1) service name;
- (2) postal address;
- (3) telephone number;
- (4) telefax number;
- (5) e-mail address;
- (6) AFS address;
- (7) website address, if available;
- (8) 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
- (9) 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:

- (1) unit name;
- (2) postal address;
- (3) telephone number;
- (4) telefax number;
- (5) e-mail address;
- (6) AFS address; and
- (7) 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:

- (1) service name;
- (2) postal address;
- (3) telephone number;
- (4) telefax number;
- (5) e-mail address;
- (6) AFS address;
- (7) website address, if available;
- (8) 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
- (9) 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:

- (1) radio navigation services;
- (2) voice and/or data link services;
- (3) broadcasting service;
- (4) language(s) used; and
- (5) 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 (e.g. 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:

- (1) service name;
- (2) postal address;
- (3) telephone number;
- (4) telefax number;
- (5) e-mail address;
- (6) AFS address;
- (7) website address, if available;
- (8) 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

(9) an indication if service is not H24.

GEN 3.5.2 Area of responsibility

Brief description of area and/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:

- (1) name of the station and the ICAO location indicator;
- (2) type and frequency of observation including an indication of automatic observing equipment;
- (3) types of meteorological reports (e.g. METAR) and availability of a trend forecast;
- (4) 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 (e.g. anemometer at intersection of runways, transmissometer next to touchdown zone, etc.);
- (5) hours of operation; and
- (6) 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 and/or D-VOLMET service, including:

- (1) name of transmitting station;
- (2) call sign or identification and abbreviation for the radio communication emission;
- (3) frequency or frequencies used for broadcast;
- (4) broadcasting period;
- (5) hours of service;
- (6) list of aerodromes/heliports for which reports and/or forecasts are included; and
- (7) 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:

- (1) name of the meteorological watch office and the ICAO location indicator;
- (2) hours of service;
- (3) flight information region(s) or control area(s) served;

- (4) SIGMET validity periods;
- (5) specific procedures applied to SIGMET information (e.g. for volcanic ash and tropical cyclones);
- (6) procedures applied to AIRMET information (in accordance with relevant regional air navigation agreements);
- (7) ATS unit(s) provided with SIGMET and AIRMET information; and
- (8) additional information (e.g. concerning any limitation of service, etc.).

GEN 3.5.9 Other automated meteorological services

Description of available automated services for the provision of meteorological information (e.g. automated pre-flight information service accessible by telephone and/or computer modem), including:

- (1) service name;
- (2) information available;
- (3) areas, routes and aerodromes covered; and
- (4) telephone and telefax number(s), e-mail address, and, if available, website address.

GEN 3.6 Search and rescue

GEN 3.6.1 Responsible service(s)

Brief description of service(s) responsible for the provision of search and rescue (SAR),:

- (1) service/unit name;
- (2) postal address; including
- (3) telephone number;
- (4) telefax number;
- (5) e-mail address;
- (6) AFS address;
- (7) website address, if available; and
- (8) 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/HELIPORTS AND AIR NAVIGATION SERVICES

GEN 4.1 Aerodrome/heliport charges

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

- (1) landing of aircraft;
- (2) parking, hangarage and long-term storage of aircraft;
- (3) passenger service;
- (4) security;
- (5) noise-related items;
- (6) other (customs, health, immigration, etc.);
- (7) exemptions/reductions; and
- (8) methods of payment.

4.2 Air navigation services charges

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

- (1) approach control;
- (2) route air navigation services;
- (3) cost basis for air navigation services and exemptions/reductions; and
- (4) 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 SLCAR Part 11, IS: 2.6.3, 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 (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 (conventional or area navigation or both) for departing flights which are common to flights departing from any aerodrome/heliport.

ENR 1.5.4 Other relevant information and procedures

Brief description of additional information, e.g. 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:

- (1) supplementary services;
- (2) the application of radar control service;
- (3) radar and air-ground communication failure procedures;
- (4) voice and CPDLC position reporting requirements; and
- (5) graphic portrayal of area of radar coverage.

ENR 1.6.2 Secondary surveillance radar (SSR)

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

- (1) emergency procedures;
- (2) air-ground communication failure and unlawful interference procedures;
- (3) the system of SSR code assignment;
- (4) voice and CPDLC position reporting requirements; and
- (5) graphic portrayal of area of SSR coverage.

ENR 1.6.3 Automatic dependent surveillance — broadcast (ADS-B)

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

- (1) emergency procedures;
- (2) air-ground communication failure and unlawful interference procedures;
- (3) aircraft identification requirements;
- (4) voice and CPDLC position reporting requirements; and

(5) graphic portrayal of area of ADS-B coverage.

ENR 1.6.4 Other relevant information and procedures

Brief description of additional information and procedures, e.g. 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:

- (1) brief introduction with a statement concerning the ICAO documents on which the procedures are based together with differences to ICAO provisions, if any;
- (2) basic altimeter setting procedures;
- (3) description of altimeter setting region(s);
- (4) procedures applicable to operators (including pilots); and
- (5) 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:

- (1) ATFM structure, service area, service provided, location of unit(s) and hours of operation;
- (2) types of flow messages and descriptions of the formats; and
- (3) 3procedures applicable for departing flights, containing:
 - (a) service responsible for provision of information on applied ATFM measures;
 - (b) flight plan requirements; and
 - (c) slot allocations.
- (4) information on overall responsibility regarding airspace management within FIR(s), details of civil/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:

- (1) procedures for the submission of a flight plan;
- (2) repetitive flight plan system; and
- (3) 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:

- (1) category of flight (IFR, VFR or both);
- (2) route (into or via FIR and/or TMA); and
- (3) 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:

- (1) definition of air traffic incidents;
- (2) use of the “Air Traffic Incident Reporting Form”;
- (3) reporting procedures (including in-flight procedures); and
- (4) purpose of reporting and handling of the form.

ENR 2. ATS AIRSPACE

ENR 2.1 FIR, UIR, TMA and CTA

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

- (1) 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;
- (2) identification of unit providing the service;
- (3) 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;
- (4) frequencies, and if applicable SATVOICE number, supplemented by indications for specific purposes; and
- (5) remarks.

Control zones around military air bases not otherwise described in the AIP shall be included in this subsection. Where the requirements of SLCAR Part 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

Detailed description of lower ATS 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, changeover points;
- 3) upper and lower limits or minimum en-route altitudes, to the nearest higher 50 m or 100 ft, and airspace classification;
- 4) lateral limits and minimum obstacle clearance altitudes;
- 5) direction of cruising levels;
- 6) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and
- 7) 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

Detailed description of upper ATS 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, changeover points;
- 3) upper and lower limits and airspace classification;
- 4) lateral limits;
- 5) direction of cruising levels;
- 6) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and
- 7) 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 3.3 Area navigation routes

Detailed description of PBN (RNAV and RNP) 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) in respect of waypoints defining an area navigation route, additionally as applicable:
 - a) station identification of the reference VOR/DME;

- b) 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
 - c) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft);
- 3) 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;
 - 4) upper and lower limits and airspace classification;
 - 5) direction of cruising levels;
 - 6) the navigation accuracy requirement for each PBN (RNAV or RNP) route segment; and
 - 7) 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

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, changeover 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

The requirement is to describe other specifically designated routes which are compulsory within specified area(s).

ENR 3.6 En-route holding

The requirement is for a detailed description of en-route holding procedures, containing:

- 1) holding identification (if any) and holding fix (navigation aid) or waypoint with geographical coordinates in degrees, minutes and seconds;
- 2) inbound track;
- 3) direction of the procedure turn;
- 4) maximum indicated airspeed;
- 5) minimum and maximum holding level;

- 6) time/distance outbound; and
- 7) indication of the controlling unit and its operating frequency.

ENR 4. RADIO NAVIGATION AIDS/SYSTEMS

ENR 4.1 Radio navigation aids — en-route

A list of stations providing radio navigation services established for en-route purposes and arranged alphabetically by name of the station, including:

- 1) 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;
- 2) identification;
- 3) frequency/channel for each element;
- 4) hours of operation;
- 5) geographical coordinates in degrees, minutes and seconds of the position of the transmitting antenna;
- 6) elevation of the transmitting antenna of DME to the nearest 30 m (100 ft); and
- 7) remarks.

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

ENR 4.2 Special navigation systems

Description of stations associated with special navigation systems (DECCA, LORAN, etc.), including:

- 1) name of station or chain;
- 2) type of service available (master signal, slave signal, colour);
- 3) frequency (channel number, basic pulse rate, recurrence rate, as applicable);
- 4) hours of operation;
- 5) geographical coordinates in degrees, minutes and seconds of the position of the transmitting station; and
- 6) remarks.

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)

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:

- 1) the name of the GNSS element, (GPS, GLONASS, EGNOS, MSAS, WAAS, etc.);
- 2) frequency(ies), as appropriate;
- 3) geographical coordinates in degrees, minutes and seconds of the nominal service area and coverage area; and
- 4) remarks.

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

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:

- 1) name-code designator;
- 2) geographical coordinates in degrees, minutes and seconds of the position;
- 3) reference to ATS or other routes where the point is located; and
- 4) remarks, including supplementary definition of positions where required.

ENR 4.5 Aeronautical ground lights — en-route

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

- 1) name of the city or town or other identification of the beacon;
- 2) type of beacon and intensity of the light in thousands of candelas;
- 3) characteristics of the signal;
- 4) operational hours; and
- 5) remarks.

ENR 5. NAVIGATION WARNINGS

ENR 5.1 Prohibited, restricted and danger areas

Description, supplemented by graphic portrayal where appropriate, of prohibited, restricted and danger areas together with information regarding their establishment and activation, including:

- 1) 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/control zone boundaries;
- 2) upper and lower limits; and
- 3) remarks, including time of activity.

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)

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:

- 1) geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area/control zone boundaries;
- 2) upper and lower limits and system and means of activation announcements together with information pertinent to civil flights and applicable ADIZ procedures; and
- 3) 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

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

- 1) geographical coordinates in degrees and minutes of centre of area and range of influence;
- 2) vertical limits;
- 3) advisory measures;
- 4) authority responsible for the provision of information; and
- 5) remarks, including time of activity.

ENR 5.3.2 Other potential hazards

Description, supplemented by charts where appropriate, of other potential hazards that could affect flights (active volcanoes, nuclear power stations, etc.), including:

- 1) geographical coordinates in degrees and minutes of location of potential hazard;
- 2) vertical limits;
- 3) advisory measures;
- 4) authority responsible for the provision of information; and
- 5) remarks.

ENR 5.4 Air navigation obstacles

A list of obstacles affecting air navigation in Area 1 (the entire State territory), including:

- 1) obstacle identification or designation;
- 2) type of obstacle;
- 3) obstacle position, represented by geographical coordinates in degrees, minutes and seconds;
- 4) obstacle elevation and height to the nearest metre or foot; and
- 5) type and colour of obstacle lighting (if any).

ENR 5.5 Aerial sporting and recreational activities

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:

- 1) designation and geographical coordinates of the lateral limits in degrees, minutes and seconds if inside and in degrees and minutes if outside control area/control zone boundaries;
- 2) vertical limits;
- 3) operator/user telephone number; and
- 4) 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:

- 1) the general conditions under which aerodromes/heliports and associated facilities are available for use; and
- 2) 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:

- 1) organization of the winter service;
- 2) surveillance of movement areas;
- 3) measuring methods and measurements taken;
- 4) actions taken to maintain the usability of movement areas;
- 5) system and means of reporting;
- 6) the cases of runway closure; and
- 7) 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:

- 1) aerodrome/heliport name and ICAO location indicator;

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

AD 1.4 Grouping of aerodromes/heliports

Brief description of the criteria applied by the State in grouping aerodromes/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:

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

**** AD 2.3 Operational hours

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

- 1) aerodrome operator;
- 2) customs and immigration;
- 3) health and sanitation;
- 4) AIS briefing office;
- 5) ATS reporting office (ARO);
- 6) MET briefing office;
- 7) air traffic service;

- 8) fuelling;
- 9) handling;
- 10) security;
- 11) de-icing; and
- 12) remarks.

**** AD 2.4 Handling services and facilities

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

- 1) cargo-handling facilities;
- 2) fuel and oil types;
- 3) fuelling facilities and capacity;
- 4) de-icing facilities;
- 5) hangar space for visiting aircraft;
- 6) repair facilities for visiting aircraft; and
- 7) 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:

- 1) hotel(s) at or in the vicinity of aerodrome;
- 2) restaurant(s) at or in the vicinity of aerodrome;
- 3) transportation possibilities;
- 4) medical facilities;
- 5) bank and post office at or in the vicinity of aerodrome;
- 6) tourist office; and
- 7) remarks.

**** AD 2.6 Rescue and firefighting services

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

- 1) aerodrome category for firefighting;
- 2) rescue equipment;
- 3) capability for removal of disabled aircraft; and
- 4) remarks.

**** AD 2.7 Seasonal availability — clearing

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

- 1) type(s) of clearing equipment;
- 2) clearance priorities; and
- 3) remarks.

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

Details related to the physical characteristics of aprons, taxiways and locations/positions of designated checkpoints, including:

- 1) designation, surface and strength of aprons;

- 2) designation, width, surface and strength of taxiways;
- 3) location and elevation to the nearest metre or foot of altimeter checkpoints;
- 4) location of VOR checkpoints;
- 5) position of INS checkpoints in degrees, minutes, seconds and hundredths of seconds; and
- 6) remarks.

If check locations/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:

- 1) use of aircraft stand identification signs, taxiway guide lines and visual docking/parking guidance system at aircraft stands;
- 2) runway and taxiway markings and lights;
- 3) stop bars and runway guard lights (if any);
- 4) other runway protection measures; and
- 5) remarks.

**** AD 2.10 Aerodrome obstacles

Detailed description of obstacles, including:

- 1) obstacles in Area 2:
 - 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.
- 2) the absence of an Area 2 data set for the aerodrome is to be clearly stated and obstacle data are to be provided for:
 - a) obstacles that penetrate the obstacle limitation surfaces;
 - b) obstacles that penetrate the take-off flight path area obstacle identification surface; and
 - c) other obstacles assessed as being hazardous to air navigation.
- 3) indication that information on obstacles in Area 3 is not provided, or if provided:
 - 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 tenth of a metre or tenth of a foot;
 - e) obstacle marking, and type and colour of obstacle lighting (if any);
 - f) 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
 - g) 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:

- 1) name of the associated meteorological office;
- 2) hours of service and, where applicable, the designation of the responsible meteorological office outside these hours;
- 3) office responsible for preparation of TAFs and periods of validity and interval of issuance of the forecasts;
- 4) availability of the trend forecasts for the aerodrome, and interval of issuance;
- 5) information on how briefing and/or consultation is provided;
- 6) types of flight documentation supplied and language(s) used in flight documentation;
- 7) charts and other information displayed or available for briefing or consultation;
- 8) supplementary equipment available for providing information on meteorological conditions, e.g. weather radar and receiver for satellite images;
- 9) the air traffic services unit(s) provided with meteorological information; and
- 10) additional information (e.g. concerning any limitation of service).

**** AD 2.12 Runway physical characteristics

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

- 1) designations;
- 2) true bearings to one-hundredth of a degree;
- 3) dimensions of runways to the nearest metre or foot;
- 4) strength of pavement (PCN and associated data) and surface of each runway and associated stopways;
- 5) geographical coordinates in degrees, minutes, seconds and hundredths of seconds for each threshold and runway end and, where appropriate, geoid undulation of:
 - thresholds of a non-precision approach runway to the nearest metre or foot; and
 - thresholds of a precision approach runway to the nearest tenth of a metre or tenth of a foot;
- 6) elevations of:
 - thresholds of a non-precision approach runway to the nearest metre or foot; and
 - 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;
- 7) slope of each runway and associated stopways;
- 8) dimensions of stopway (if any) to the nearest metre or foot;
- 9) dimensions of clearway (if any) to the nearest metre or foot;
- 10) dimensions of strips;
- 11) dimensions of runway end safety areas;
- 12) location (which runway end) and description of arresting system (if any);
- 13) the existence of an obstacle-free zone; and
- 14) remarks.

**** AD 2.13 Declared distances

Detailed description of declared distances to the nearest metre or foot for each direction of each runway, including:

- 1) runway designator;
- 2) take-off run available;
- 3) take-off distance available, and if applicable, alternative reduced declared distances;
- 4) accelerate-stop distance available;
- 5) landing distance available; and
- 6) remarks, including runway entry or start point where alternative reduced declared distances have been declared.

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**** AD 2.14

Approach and runway lighting

Detailed description of approach and runway lighting, including:

- 1) runway designator;
- 2) type, length and intensity of approach lighting system;
- 3) runway threshold lights, colour and wing bars;
- 4) type of visual approach slope indicator system;
- 5) length of runway touchdown zone lights;
- 6) length, spacing, colour and intensity of runway centre line lights;
- 7) length, spacing, colour and intensity of runway edge lights;
- 8) colour of runway end lights and wing bars;
- 9) length and colour of stopway lights; and
- 10) remarks.

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

Description of other lighting and secondary power supply, including:

- 1) location, characteristics and hours of operation of aerodrome beacon/identification beacon (if any);
- 2) location and lighting (if any) of anemometer/landing direction indicator;
- 3) taxiway edge and taxiway centre line lights;
- 4) secondary power supply including switch-over time; and
- 5) remarks.

**** AD 2.16 Helicopter landing area

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

- 1) 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:
 - for non-precision approaches, to the nearest metre or foot; and
 - for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- 2) TLOF and/or FATO area elevation:
 - for non-precision approaches, to the nearest metre or foot; and
 - for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- 3) TLOF and FATO area dimensions to the nearest metre or foot, surface type, bearing strength and marking;
- 4) true bearings to one-hundredth of a degree of FATO;

- 5) declared distances available, to the nearest metre or foot;
- 6) approach and FATO lighting; and
- 7) remarks.

**** AD 2.17 Air traffic services airspace

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

Detailed description of radio navigation and landing aids associated with the instrument approach and the terminal area procedures at the aerodrome, including:

- 1) 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;
- 2) identification, if required;
- 3) frequency(ies), channel number(s), service provider and reference path identifier(s) (RPI), as appropriate;
- 4) hours of operation, as appropriate;
- 5) geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;
- 6) 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;
- 7) service volume radius from the GBAS reference point to the nearest kilometre or nautical mile; and

8) remarks.

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:

- 1) runway(s) and associated equipment authorized for use under low visibility procedures;
- 2) defined meteorological conditions under which initiation, use and termination of low visibility procedures would be made;
- 3) description of ground marking/lighting for use under low visibility procedures; and
- 4) 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

The requirement is for charts related to an aerodrome to be included in the following order:

- 1) Aerodrome/Heliport Chart — ICAO;
- 2) Aircraft Parking/Docking Chart — ICAO;
- 3) Aerodrome Ground Movement Chart — ICAO;
- 4) Aerodrome Obstacle Chart — ICAO Type A (for each runway);
- 5) Aerodrome Obstacle Chart — ICAO Type B (when available);
- 6) Aerodrome Terrain and Obstacle Chart — ICAO (Electronic);
- 7) Precision Approach Terrain Chart — ICAO (precision approach Cat II and III runways);
- 8) Area Chart — ICAO (departure and transit routes);
- 9) Standard Departure Chart — Instrument — ICAO;
- 10) Area Chart — ICAO (arrival and transit routes);
- 11) Standard Arrival Chart — Instrument — ICAO;
- 12) ATC Surveillance Minimum Altitude Chart — ICAO;
- 13) Instrument Approach Chart — ICAO (for each runway and procedure type);
- 14) Visual Approach Chart — ICAO; and
- 15) bird concentrations in the vicinity of the aerodrome.

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.

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

**** 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:

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

**** AD 3.3 Operational hours

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

- 1) heliport operator;
- 2) customs and immigration;
- 3) health and sanitation;
- 4) AIS briefing office;
- 5) ATS reporting office (ARO);
- 6) MET briefing office;
- 7) air traffic service;
- 8) fuelling;
- 9) handling;
- 10) security;
- 11) de-icing; and
- 12) remarks.

**** AD 3.4 Handling services and facilities

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

- 1) cargo-handling facilities;
- 2) fuel and oil types;

- 3) fuelling facilities and capacity;
- 4) de-icing facilities;
- 5) hangar space for visiting helicopters;
- 6) repair facilities for visiting helicopters; and
- 7) 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:

- 1) hotel(s) at or in the vicinity of the heliport;
- 2) restaurant(s) at or in the vicinity of the heliport;
- 3) transportation possibilities;
- 4) medical facilities;
- 5) bank and post office at or in the vicinity of the heliport;
- 6) tourist office; and
- 7) remarks.

**** AD 3.6 Rescue and firefighting services

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

- 1) heliport category for firefighting;
- 2) rescue equipment;
- 3) capability for removal of disabled helicopters; and
- 4) remarks.

**** AD 3.7 Seasonal availability — clearing

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

- 1) type(s) of clearing equipment;
- 2) clearance priorities; and
- 3) remarks.

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

Details related to the physical characteristics of aprons, taxiways and locations/positions of designated checkpoints, including:

- 1) designation, surface and strength of aprons, helicopter stands;
- 2) designation, width and surface type of helicopter ground taxiways;
- 3) width and designation of helicopter air taxiway and air transit route;
- 4) location and elevation to the nearest metre or foot of altimeter checkpoints;
- 5) location of VOR checkpoints;
- 6) position of INS checkpoints in degrees, minutes, seconds and hundredths of seconds; and
- 7) remarks.

If check locations/positions are presented on a heliport chart, a note to that effect shall be provided under this subsection.

**** AD 3.9 Markings and markers

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

- 1) final approach and take-off markings;
- 2) taxiway markings, air taxiway markers and air transit route markers; and
- 3) remarks.

**** AD 3.10 Heliport obstacles

Detailed description of obstacles, including:

- 1) obstacle identification or designation;
- 2) type of obstacle;
- 3) obstacle position, represented by geographical coordinates in degrees, minutes, seconds and tenths of seconds;
- 4) obstacle elevation and height to the nearest metre or foot;
- 5) obstacle marking, and type and colour of obstacle lighting (if any); and
- 6) 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:

- 1) name of the associated meteorological office;
- 2) hours of service and, where applicable, the designation of the responsible meteorological office outside these hours;
- 3) office responsible for preparation of TAFs, and periods of validity of the forecasts;
- 4) availability of the trend forecasts for the heliport, and interval of issuance;
- 5) information on how briefing and/or consultation is provided;
- 6) type of flight documentation supplied and language(s) used in flight documentation;
- 7) charts and other information displayed or available for briefing or consultation;
- 8) supplementary equipment available for providing information on meteorological conditions, e.g. weather radar and receiver for satellite images;
- 9) the ATS unit(s) provided with meteorological information; and
- 10) additional information (e.g. concerning any limitation of service).

**** AD 3.12 Heliport data

Detailed description of heliport dimensions and related information, including:

- 1) heliport type (surface-level, elevated or helideck);
- 2) touchdown and lift-off (TLOF) area dimensions to the nearest metre or foot;
- 3) true bearings to one-hundredth of a degree of final approach and take-off (FATO) area;
- 4) dimensions to the nearest metre or foot of FATO, and surface type;
- 5) surface and bearing strength in tonnes (1 000 kg) of TLOF;
- 6) 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:
 - for non-precision approaches, to the nearest metre or foot; and
 - for precision approaches, to the nearest tenth of a metre or tenth of a foot;
- 7) TLOF and/or FATO slope and elevation:
 - for non-precision approaches, to the nearest metre or foot; and
 - for precision approaches, to the nearest tenth of a metre or tenth of a foot;

- 8) dimensions of safety area;
- 9) dimensions, to the nearest metre or foot, of helicopter clearway;
- 10) the existence of an obstacle-free sector; and
- 11) remarks.

**** AD 3.13 Declared distances

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

- 1) take-off distance available, and if applicable, alternative reduced declared distances;
- 2) rejected take-off distance available;
- 3) landing distance available; and
- 4) 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:

- 1) type, length and intensity of approach lighting system;
- 2) type of visual approach slope indicator system;
- 3) characteristics and location of FATO area lights;
- 4) characteristics and location of aiming point lights;
- 5) characteristics and location of TLOF lighting system; and
- 6) remarks

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

Description of other lighting and secondary power supply, including:

- 1) location, characteristics and hours of operation of heliport beacon;
- 2) location and lighting of wind direction indicator (WDI);
- 3) taxiway edge and taxiway centre line lights;
- 4) secondary power supply including switch-over time; and
- 5) remarks.

**** AD 3.16 Air traffic services airspace

Detailed description of air traffic services (ATS) airspace organized at the heliport, 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 ATS unit providing service;
- 5) transition altitude;
- 6) hours of applicability; and
- 7) remarks.

**** AD 3.17 Air traffic services communication facilities

Detailed description of ATS communication facilities established at the heliport, 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 3.18 Radio navigation and landing aids

Detailed description of radio navigation and landing aids associated with the instrument approach and the terminal area procedures at the heliport, including:

- 1) 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;
- 2) identification, if required;
- 3) frequency(ies), channel number(s), service provider and reference path identifier(s) (RPI), as appropriate;
- 4) hours of operation, as appropriate;
- 5) geographical coordinates in degrees, minutes, seconds and tenths of seconds of the position of the transmitting antenna, as appropriate;
- 6) 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;
- 7) service volume radius from the GBAS reference point to the nearest kilometre or nautical mile; and
- 8) remarks.

When the same aid is used for both en-route and heliport purposes, a description shall also be given in section ENR 4. If the GBAS serves more than one heliport, description of the aid shall be provided under each heliport. 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 and/or ADS-B procedures, established on the basis of airspace organization established at the heliport. When established, detailed description of the low visibility procedures at the heliport, including:

- 1) touchdown and lift-off (TLOF) area(s) and associated equipment authorized for use under low visibility procedures;
- 2) defined meteorological conditions under which initiation, use and termination of low visibility procedures would be made;
- 3) description of ground marking/lighting for use under low visibility procedures; and
- 4) 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

The requirement is for charts related to a heliport to be included in the following order:

- 1) Aerodrome/Heliport Chart — ICAO;
- 2) Area Chart — ICAO (departure and transit routes);
- 3) Standard Departure Chart — Instrument — ICAO;
- 4) Area Chart — ICAO (arrival and transit routes);
- 5) Standard Arrival Chart — Instrument — ICAO;
- 6) ATC Surveillance Minimum Altitude Chart — ICAO;
- 7) Instrument Approach Chart — ICAO (for each procedure type);
- 8) Visual Approach Chart — ICAO; and
- 9) bird concentrations in the vicinity of heliport.

If some of the charts are not produced, a statement to this effect shall be given in section GEN 3.2.

IS:6.4.11 NOTAM FORMAT

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												

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 fields is as follows:

1) FIR

a) 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);

or,

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 UIR 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.

b) 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.

2) 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:

a) If the subject is not listed in the NOTAM Code (PANS-ABC, Doc 8400) or in the NOTAM Selection Criteria (Doc 8126), insert "XX" as the second and third letters; If subject is "XX", use "XX" also for condition (e.g. QXXXX).

- b) 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);
- c) When a NOTAM containing operationally significant information is issued 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;
- d) When a NOTAM is issued containing a checklist of valid NOTAM, insert “KKKK” as the second, third, fourth and fifth letters; and
- e) 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/CONDITIONS
 - AO = OPERATIONAL
 - CC = COMPLETED
 - CN = CANCELLED
 - HV = WORK COMPLETED
 - XX = PLAIN LANGUAGE
- 3) TRAFFIC
 - I = IFR
 - V = VFR
 - K = NOTAM is a checklist
- 4) 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 available on request
 - K = NOTAM is a checklist
- 5) SCOPE
 - A = Aerodrome
 - E = En-route
 - W = Nav Warning
 - K = NOTAM is a checklist

If the subject is qualified AE, the aerodrome location indicator shall be reported in Item A).
- 6) and 7) LOWER/UPPER LIMITS

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.

8) 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 ICAO location indicator as contained in 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.

INSTRUCTIONS FOR THE COMPLETION OF THE SNOWTAM FORMAT

1. GENERAL

- 1.1. Metric units shall be used in SNOWTAM and the unit of measurement (e.g. mm, cm, m, etc.) should not be reported.

Example: **09/15/30** (item F): means that the depth of the contaminant in the first part of runway is 9mm, in the second part 15mm and in the third part 30mm. Units of measurement are metric but is not reported in the message.

- 1.2. The maximum validity of SNOWTAM is 8 hours.

Note 1 – when no SNOWTAM is issued after 8 hours of a previous SNOWTAM for an aerodrome, the old SNOWTAM is expired and it is assumed that there is no more significant runway surface condition to be reported.

- 1.3. New SNOWTAM shall be issued whenever a new runway condition report (RCR) is received from the aerodrome operator.

Note 1 – prior arrangement between AIS (NOTAM Office) and the aerodrome authority is required to specify the means and process of submission of the Runway Condition Report (RCR)/initiation of SNOWTAM.

Note 2 – If there is a valid SNOWTAM in the old format (with 24 hours validity) issued on 3 November 2021, it is recommended to issue a new SNOWTAM with the new format, right after 0000 UTC on 4 November 2021 to replace the old format SNOWTAM.

- 1.4. A SNOWTAM cancels the previous SNOWTAM. When a new SNOWTAM is issued for a specific aerodrome that has another valid SNOWTAM, the new one automatically replaces the older SNOWTAM (there is no need to reference the older SNOWTAM in the new SNOWTAM, as what we do for NOTAM).

- 1.5. With reference to the SNOWTAM template (see paragraph 4), the letters used to indicate items (A to T; third column of the SNOWTAM template) are only used for reference purpose and should not be included in the messages. The letters, M (mandatory), C (conditional) and O (optional) (second column of the SNOWTAM template) mark the usage and information.

Example: items B) to G) below without the letters indicating items (separated by one space):

01150915 12L 5/2/2 100/50/75 NR/06/06 WET/SLUSH/SLUSH

- 1.6. The abbreviated heading “TTAAiiii CCCC MMYGGgg (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. LF = FRANCE, EG = United Kingdom (see Location Indicators (ICAO Doc 7910), Part 2, Index to Nationality Letters for Location Indicators);

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

CCCC = four-letter location indicator of the aerodrome to which the SNOWTAM refers (see Location Indicators (ICAO Doc 7910));

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

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

YY = day of the month ¹

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).

Example: Abbreviated heading of SNOWTAM No. 149 from Zurich, measurement/observation of 7 November at 0620 UTC: **SWLS0149 LSZH 11070620**

Note 3. — The information groups are separated by a space, as illustrated above.

- 1.7. 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**.

Note 1.— The SNOWTAM serial number resets at the beginning of each calendar year (begins with SNOWTAM 0001 on January 1 at 0000 UTC).

- 1.8. **Repeating information in the aeroplane performance calculation section for more than one runway:** when a SNOWTAM is reporting on more than one runway of the aerodrome for which the SNOWTAM is issued, Items B to H (aeroplane performance calculation section) should be repeated.

Example:

02170135 09R 5/2/2 100/75/75 NR/06/06 WET/SLUSH/SLUSH

02170225 09C 2/3/3 75/100/100 06/12/12 SLUSH/WET SNOW/WET SNOW 35

02170225 09L 3/3/3 50/50/75 08/15/10 WET SNOW/WET SNOW/WET SNOW 40

- 1.9. **Repeating information in the situational awareness section:** When reported, the information in the situational awareness section could be repeated, as applicable, for each runway, taxiway and apron.

Note 1.— Option 1: it is recommended that the items of situational awareness section be kept in alphabetical order when repeated (item I to S)). It means that item I) should be repeated for several runways (if applicable) and then item J), then item K), etc. and item T) ends the SNOWTAM message. Example:

DRIFTING SNOW. RWY 09L LOOSE SAND. RWY 09R LOOSE SAND. RWY 09L CHEMICALLY TREATED. RWY 09R CHEMICALLY TREATED. RWY 09C CHEMICALLY TREATED.)

Note 2. — Option 2: repeat all relevant items of the same runway (item I) to M)) for each runway, then to continue with the rest of the items (item N) to T)). Example:

DRIFTING SNOW. RWY 09L LOOSE SAND. RWY 09L CHEMICALLY TREATED. RWY 09R LOOSE SAND. RWY 09R CHEMICALLY TREATED. RWY 09C CHEMICALLY TREATED.)

Note 3— since there is no specific guideline/rule for repeating items in the situational awareness section, NOTAM systems should be flexible to receive and process situational awareness information in any order.

Note 4.— items in the situational awareness section are separated by a full stop and a space (item L. item M. item N. etc.).

- 1.10. For readability purposes of the SNOWTAM message, include a line feed after the SNOWTAM serial number, after Item A, and after the aeroplane performance calculation section.
- 1.11. Mandatory information in SNOWTAM 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)

Note 1.— When no information is to be reported, insert “NR” at its relevant position in the message to indicate to the user that no information exists (/NR/).

Example: a SNOWTAM with the minimum (mandatory) information

EADBZTZX ...

111045 EADDYNYX

SWEA0124 EADD 01111035

(SNOWTAM 0124

EADD

01111035 09R 5/5/5 NR/NR/NR NR/NR/NR FROST/FROST/FROST)

2. Aeroplane Performance Calculation Section

Item A — Aerodrome location indicator (four-letter location indicator) of the aerodrome, for which the SNOWTAM is issued. The aerodrome location indicators are listed in the ICAO DOC 7910 (Location Indicators).

Example: **LFPG** = Paris/Charles du Gaulle

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

Example: **12040638**

12 = December; 04 = Day 4 (4th); 0638 (06 hours and 38minutes)

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

Note.1 — Only one runway designator is inserted for each runway and always the lower number.

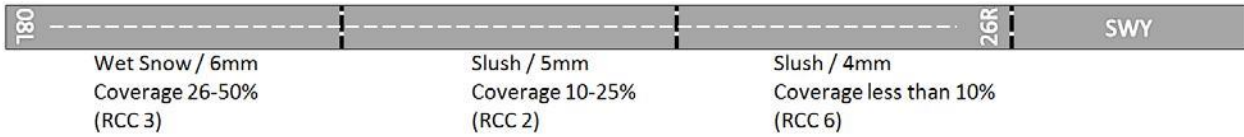
Example: **08L** for RWY08L/26R, 08L should be reported (08<26)



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). Runway Condition Code is determined during the assessment of the runway surface condition, in accordance with the provisions of the PANS-Aerodrome and the Runway Condition Assessment Matrix (RCAM).

Example: **3/2/6**: runway condition code for the first part of runway 08L is 3, for the second part 2 and for the third parts is 6.

Note – Since less than 10% coverage of slush exist on the third part, RWYCC is reported 6 and the condition description will be reported Dry).



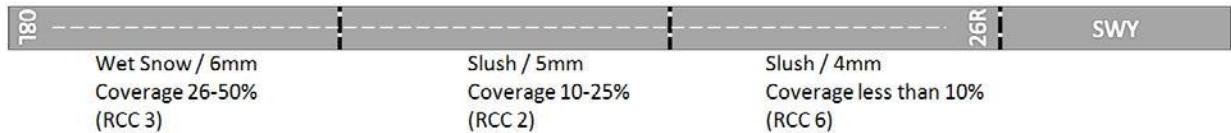
Item E — Per cent coverage is reported as NR (less than 10% or DRY), 25 (10-25 %), 50 (26-50 %), 75 (51-75 %) or 100 (76-100 %) for each runway third, separated by an oblique stroke ([n]nn/[n]nn/[n]nn).

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).

Note 3. — When the runway condition is “DRY” or the coverage is less than 10%, item E shall be reported by inserting “NR”.

Example: **50/25/NR** : percentage of coverage at the first runway third of RWY 08L is 50 % (between 26 to 50%), at the second part of the runway is 25 % (between 10 to 25 %) and the coverage is less than 10 % at the third part of the runway.



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). Depth should be reported in 2 or 3 digits (i.e. 05 for 5mm, 115 for 115mm, etc.) and the units of measurement (mm) is not reported/inserted.

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

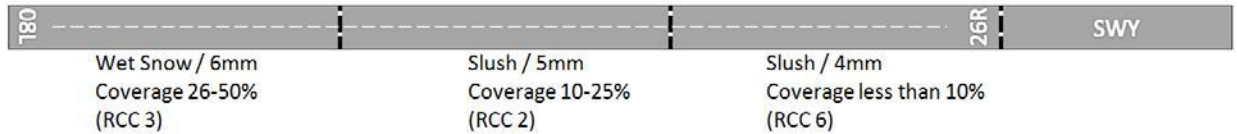
- standing water, values to be reported 04, then assessed value;
- slush, values to be reported 03, then assessed value;
- wet snow, values to be reported 03, then assessed value; and
- dry snow, values to be reported 03, then assessed value.

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

Note 3.— NR also includes the situations when the depth of the contaminant is less than the minimum values to be reported (as indicated above) or that part of runway is dry, etc.

Note 4. – For contaminants other than STANDING WATER, SLUSH, WET SNOW or DRY SNOW, the depth is not reported. The position of this type of information in the information string is then identified by /NR/.

Example: **06/05/04** : depth of the contaminant in the first part of runway is 6mm, in the second part 5mm and in the third part 4mm.

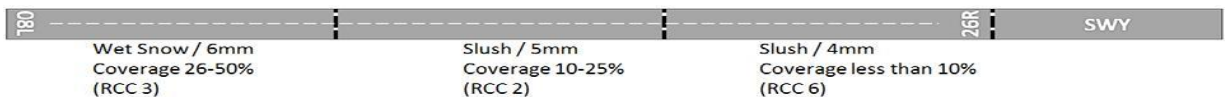


Item G — Condition description for each runway third. Insert any of the following condition descriptions for each runway third, separated by an oblique stroke:

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

Example: **WET SNOW/SLUSH/DRY** : condition description is “Wet snow” for the first part of runway, “Slush” for the second and “Dry” for the third parts of runway (since the coverage of slush on the third part is less than 10%, it is reported as Dry).



Item H — Width of runway to which the runway condition codes apply. Insert the width in meters (without units of measurement), if it is less than the published runway width.

Example: **35**: published width of RWY 08L/26R is 45m and the RCR applies to 35m of it.

3. Situational Awareness

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.

Note 3. — The situational awareness section shall be separated from the aeroplane performance calculation section by an empty line.

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 1. — This information is conditional when a NOTAM has been published with a new set of declared distances, i.e. when the runway length is reduced, this item should be included in the SNOWTAM and a NOTAM should also be issued with the new available declared distances (TORA, TODA, ASDA and LDA).

Example: **RWY 08L REDUCED TO 2800.**

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

Example: **DRIFTING SNOW.**

Note 1.— Drifting snow is an ensemble of snow particles raised by the wind to small heights above the ground (WMO definition).

Note 2. – Drifting snow in the SNOWTAM format refers to the airport (the whole movement area), not a specific runway. However, for large airports with several runways where drifting snow could exist in one or some runways (not all), item J) might be reported with relevant runway designator, e.g. **RWY 08 DRIFTING SNOW**

Item K — Loose sand on the runway. When 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).

Example: **RWY 08L 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).

Example: **RWY 08L CHEMICALLY TREATED.**

Item M — Snow banks on the runway. When snow banks are 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).

Example: **RWY 08L SNOW BANK L12 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).

Example: **TWY B SNOW BANK.**

Note 1.— when there are snow banks on every taxiway, “ALL TWYS SNOWBANKS” might be used.

Item O — Snow banks adjacent to the runway. When snow banks are 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).

Example: **RWY 08R 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).

Example: **TWY C 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).

Note 1.— Aprons are named differently in different aerodromes (e.g. Apron 1, Cargo Apron, Apron Main, Apron XXX, Military Ramp, etc.). The Apron designator/name in the SNOWTAM should be the one indicated in the Aerodrome Chart and/or AIP.

Example: **APRON 1 POOR.**

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

Note 1.— This item is optional and 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.

IS: 5.8.3.2 Terrain and Obstacle Data Requirements

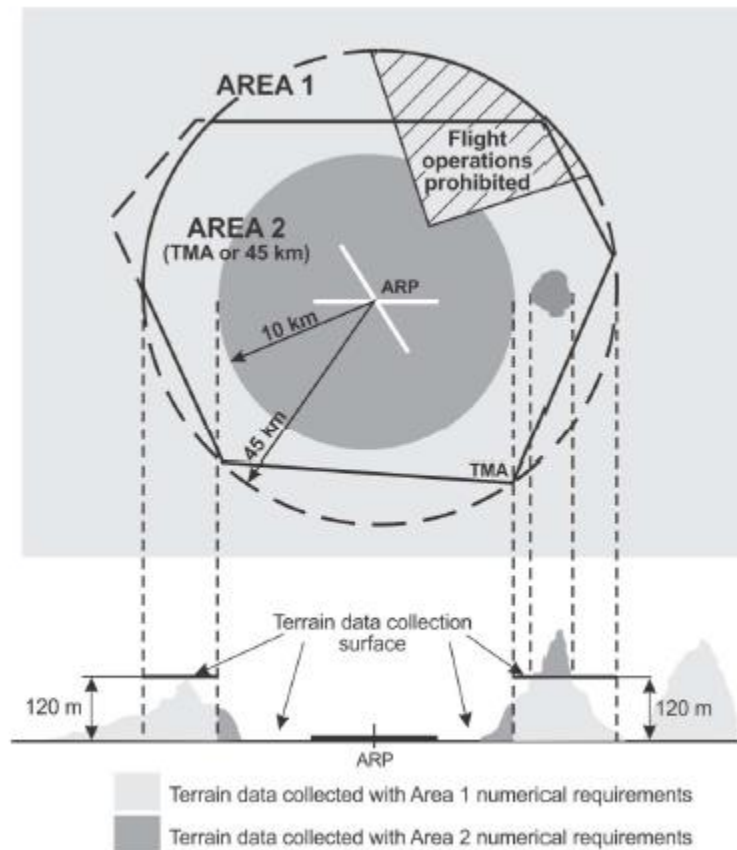


Figure -1 Terrain data collection Surfaces- Area 1 and Area 2

1. Within the area covered by a 10-km radius from the aerodrome reference point (ARP), terrain data shall comply with the Area 2 numerical requirements.
2. In the area between 10 km and the terminal control area (TMA) boundary or 45-km radius (whichever is smaller), data on terrain that penetrates the horizontal plane 120 m above the lowest runway elevation shall comply with the Area 2 numerical requirements.
3. In the area between 10 km and the TMA boundary or 45-km radius (whichever is smaller), data on terrain that does not penetrate the horizontal plane 120 m above the lowest runway elevation shall comply with the Area 1 numerical requirements.
4. In those portions of Area 2 where flight operations are prohibited due to very high terrain or other local restrictions and/or regulations, terrain data shall comply with the Area 1 numerical requirements.

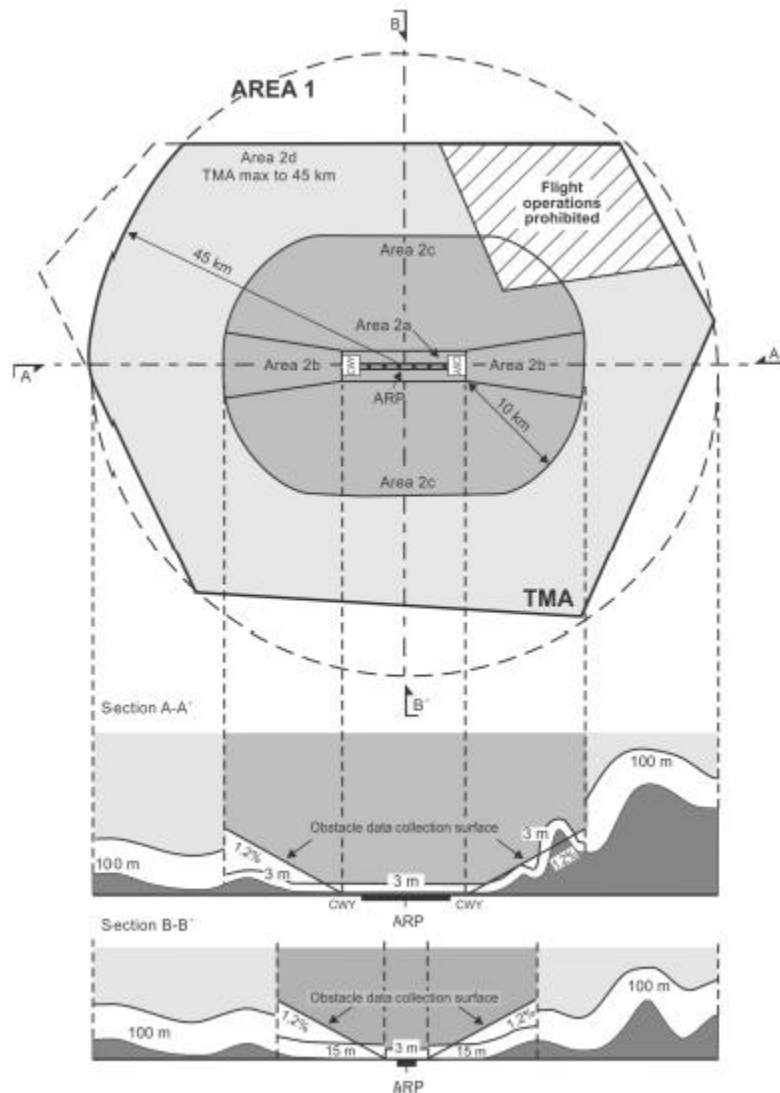


Figure -2 Obstacles data collection Surfaces- Area 1 and Area 2

1. Obstacle data shall be collected and recorded in accordance with the Area 2 numerical requirements specified in Table -2.
2. In those portions of Area 2 where flight operations are prohibited due to very high terrain or other local restrictions and/or regulations, obstacle data shall be collected and recorded in accordance with the Area 1 requirements.
3. Data on every obstacle within Area 1 whose height above the ground is 100 m or higher shall be collected and recorded in the database in accordance with the Area 1 numerical requirements specified in Table -2.

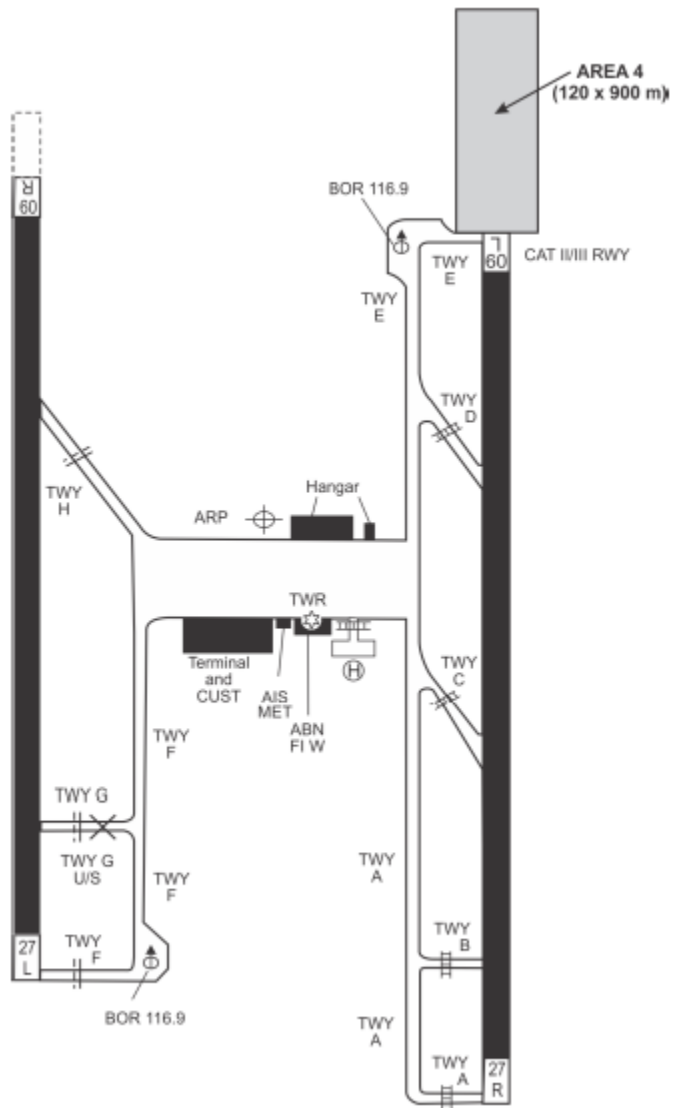


Figure -4 Terrain and obstacle data collection surface — Area 4

Terrain and obstacle data in Area 4 shall comply with the numerical requirements specified in Table -1 and Table -2.

Terrain and obstacle data in Area 4 shall comply with the numerical requirements specified in Table -1 and Table -2 respectively.

Table -1 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 -2. Obstacle data numerical requirements

	Area 1	Area 2	Area 3	Area 4
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 -3 Terrain attributes

Terrain Attribute	Mandatory/Optional
Area of coverage	Mandatory
Data originator identifier	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
Date and time stamp	Mandatory
Unit of measurement used	Mandatory

Table -4. Obstacle attributes

Obstacle Attribute	Mandatory/Optional
Area of coverage	Mandatory
Data originator identifier	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	Optional
Vertical accuracy	Mandatory
Vertical confidence level	Mandatory
Vertical reference system	Mandatory
Vertical resolution	Mandatory
Obstacle type	Mandatory
Geometry type	Mandatory
Integrity	Mandatory
Integrity	Mandatory
Date and time stamp	Mandatory
Unit of measurement used	Mandatory
Operations	Optional
Effectivity	Optional
Lighting	Mandatory

IS:7.1.5.1 Survey Declaration Form

Aerodrome	
Surveying Company	

Aerodrome Classification		Initial/Last Full Survey Date	
Geodetic Connection Date*		Annual Check Survey Date*	

(* If applicable)

Survey Area Required		No Change to Previous Survey	Change to Previous Survey
Aerodrome Plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AGA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-Precision Instrument Approach	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visual Manoeuvring (Circling)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Departure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aerodrome Obstacle Chart - Type A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Precision Approach Procedure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Precision Approach Terrain Chart	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(Check box as appropriate)

Declaration by Aerodrome Operator's Representative			
I certify that information supplied meets the Aerodrome's operational requirements			
Name			
Position			
Signature		Date	

Declaration by Surveyor			
I certify that information supplied is complete and conforms to SLCAR Part 15			
Name			
Signature		Date	

Submit form together with all relevant survey information to:
Sierra Leone Civil Aviation Authority, 21/23 Siaka Steven Street, Freetown.