LEGAL NOTICE NO. 153 OF 2024

THE CIVIL AVIATION ACT, 2022

(Act No. 4 of 2022)

THE CIVIL AVIATION (AERONAUTICAL INFORMATION SERVICES) REGULATIONS, 2024
(Under section 105)

In exercise of powers conferred by section 105 of the Civil Aviation Act, 2022, the Minister for Public Works and Transport issues the following Regulations –

ARRANGEMENT OF REGULATIONS

13. Data quality specifications

14. Aeronautical data and aeronautical information validation and verification

15. Data error detection

16. Aeronautical data resolution

17. Data integrity monitoring and assurance

18. Metadata

19. Use of automation

20. Quality Management System (QMS)

21. Human factors

PART V
AERONAUTICAL DATA AND AERONAUTICAL INFORMATION

22. Scope of aeronautical data and aeronautical information

PART VI
AERONAUTICAL INFORMATION PRODUCTS AND SERVICES

23. General aeronautical information in a standardized presentation

24. Aeronautical Information Publication (AIP)

25. AIP Supplement

26. Aeronautical Information Circular (AIC)

27. Aeronautical Charts

28. NOTAM

29. NOTAM numbers and series allocation

30. NOTAM checklist

31. Digital data set

32. AIP data set

33. Terrain and obstacle data set

34. Terrain data set

35. Obstacle data set

36. Aerodrome mapping data set

PART X
MISCELANAOUS PROVISIONS

SCHEDULES

PART I
PRELIMINARY PROVISIONS

Citation and commencement

1. (1) These Regulations may be cited as the Civil Aviation (Aeronautical Information Services) Regulations 2024.

(2) These Regulations shall come into force on the date of publication in the Gazette.

Interpretation

2. In these Regulations unless the context otherwise requires-

"accuracy" means a degree of conformance between the estimated or measured value and the true value;

"aerodrome" means 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 an aircraft;

"aerodrome mapping data" means data collected for the purpose of compiling aerodrome mapping information;

"aerodrome mapping database (AMDB)" means a collection of aerodrome mapping data organized and arranged as a structured data set;

"aeronautical chart" means a representation of a portion of the Earth, its culture and relief, specifically designated to meet the requirements of air navigation;

"aeronautical data" means a representation of aeronautical facts, concepts or instructions in a formalized manner suitable for communication, interpretation or processing;

"aeronautical information" means information resulting from the assembly, analysis and formatting of aeronautical data;

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

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

"aeronautical information product" means 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 -

(a) aeronautical Information Publication (AIP), including Amendments and Supplements;

(b) aeronautical Information Circulars (AIC);

(c) aeronautical charts;

(d) NOTAM; and

(e) digital data sets.

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

"aeronautical information service (AIS)" means a service established within the defined area of coverage responsible for the provision of aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation;

"aeronautical information service provider (AISP) means an entity established for the purpose of operating and managing an aeronautical information service;

"AIP amendment" means permanent changes to the information contained in the AIP;

"AIP supplement" means temporary changes to the information contained in the AIP which are published by means of special pages;

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

"air defence identification zone (ADIZ)" means special designated airspace of defined dimensions within which aircraft are required to comply with special identification and reporting procedures additional to those related to the provision of air traffic services (ATS);

"air traffic management (ATM)" means the dynamic, integrated management of air traffic and airspace (including air traffic services, airspace management and air traffic flow management) - safely, economically and efficiently - through the provision of facilities and seamless services in collaboration with all parties and involving airborne and ground-based functions;

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

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

"area navigation (RNAV) specification" means a navigation specification based on area navigation that does not include the requirement for performance monitoring and alerting, designated by the prefix RNAV, e.g., RNAV 5, RNAV 1;

"ASHTAM" means 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;

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

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

"ATS surveillance system" means a generic term meaning variously, ADS-B, PSR, SSR or any comparable ground-based system that enables the identification of aircraft;

"automatic dependent surveillance - broadcast (ADS-B)" means 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;

"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;

"automatic terminal information service (ATIS)" means the automatic provision of current, routine information to arriving and departing aircraft throughout twenty four (24) hours or of a specified portion;

"data link-automatic terminal information service (D-ATIS)" means the provision of ATIS via data link;

"voice-automatic terminal information service (Voice-ATIS)" means the provision of ATIS by means of continuous and repetitive voice broadcasts;

"bare earth" means a surface of the Earth including bodies of water and permanent ice and snow and excluding vegetation and manmade objects;

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

"canopy" means bare Earth supplemented by vegetation height;

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

"controller-pilot data link communications (CPDLC)" means a means of communication between controller and pilot, using data link for ATC communications;

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

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

"danger area" means an airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times;

"data accuracy" means a degree of conformance between the estimated or measured value and the true value;

"data completeness" means the degree of confidence that all of the data needed to support the intended use is provided;

"data format" means a structure of data elements, records and files arranged to meet standards, specifications or data quality requirements;

"data integrity (assurance level)" means a degree of assurance that aeronautical data and its value has not been lost or altered since the origination or authorized amendment;

"data product" means a data set or data set series that conforms to a data product specification;

"data product specification" means a detailed description of a data set or data set series together with additional information that will enable it to be created, supplied to and used by another party;

"data quality" means 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, timelines, completeness and format;

"data link-VOLMET (D-VOLMET)" means a provision of current aerodrome routine meteorological reports (METAR) and aerodrome special meteorological reports (SPECI), aerodrome forecasts (TAF), SIGMET, special air-reports not covered by a SIGMET and, where available, AIRMET via data link;

"data resolution" means a number of units or digits to which a measured or calculated value is expressed and used;

"data set" means an identifiable collection of data;

"data set series" means a collection of data sets sharing the same product specification;

"data timeliness" means the degree of confidence that the data is applicable to the period of its intended use;

"data traceability" means the degree that a system or a data product can provide a record of the changes made to that product and thereby enable an audit trail to be followed from the end-user to the originator;

"datum" means any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities;

"Digital Elevation Model (DEM)" means the representation of terrain surface by continuous elevation values at all intersections of a defined grid, referenced to common datum;

"direct transit arrangements" means special arrangements approved by the public authorities concerned by which traffic which is pausing briefly in its passage through the Contracting State may remain under their direct control;

"ellipsoid height (Geodetic height)" means the height related to the reference ellipsoid, measured along the ellipsoidal outer normal through the point in question;

"feature" means abstraction of real-world phenomena;

"feature attribute" means characteristic of a feature;

"feature operation" means operation that every instance of a feature type may perform;

"feature relationship" means relationship that links instances of one feature type with instances of the same or a different feature type;

"feature type" means class of real-world phenomena with common properties;

"geodesic distance" means the shortest distance between any two points on a mathematically defined ellipsoidal surface;

"geodetic datum" means a minimum set of parameters required to define location and orientation of the local reference system with respect to the global reference system/frame;

"geoid" means the equipotential surface in the gravity field of the Earth which coincides with the undisturbed mean sea level (MSL) extended continuously through the continents;

"geoid undulation" means the distance of the geoid above positive or below negative the mathematical reference ellipsoid;

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

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

"heliport" means an aerodrome or a defined area on a structure intended to be used wholly or in part for the arrival, departure and surface movement of helicopters;

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

"integrity (aeronautical data)" means a degree of assurance that an aeronautical data and its value has not been lost or altered since the data origination or authorized amendment;

"integrity classification (aeronautical data)" means classification based upon the potential risk resulting from the use of corrupted data. Aeronautical data are classified as -

(a) 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;

(b) 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

(c) 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;

"international airport" means 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;

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

"logon address" means a specified code used for data link logon to an ATS unit;

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

"metadata" means data about data;

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

"minimum obstacle clearance altitude (MOCA)" means the minimum altitude for a defined segment of flight that provides the required obstacle clearance;

"movement area" means that part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, consisting of the manoeuvring area and the apron;

"navigation specification" means a set of aircraft and flight crew requirements needed to support performance-based navigation operations within a defined airspace. There are two kinds of navigation specifications;

"next intended user" means the entity that receives the aeronautical data or information from the Aeronautical Information Service Provider;

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

"obstacle" means all fixed immobile objects, whether temporary or permanent and mobile objects, or parts of it, that -

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

(b) extend above a defined surface intended to protect aircraft in flight; or

(c) stand outside those defined surfaces and that have been assessed as being a hazard to air navigation;

"obstacle or terrain data collection surface" means a defined surface intended for the purpose of collecting obstacle or terrain data;

"origination of aeronautical data or aeronautical information" means the creation of the value associated with new data or information or the modification of the value of an existing data or information;

"originator of aeronautical data or aeronautical information" means an entity that is accountable for data or information origination and from which the AIS organisation receives aeronautical data and information;

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

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

"performance-based navigation (PBN)" means area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace;

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

"portrayal" means a presentation of information to humans;

"position geographical" means a set of coordinates, latitude and longitude, referenced to the mathematical reference ellipsoid which define the position of a point on the surface of the Earth;

"post spacing" means an angular or linear distance between two adjacent elevation points.

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

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

"prohibited area" means an airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited;

"quality" means a degree to which a set of inherent characteristics fulfils requirements;

"quality assurance" means part of quality management focused on providing confidence that quality requirements will be fulfilled;

"quality control" means part of quality management focused on fulfilling quality requirements;

"quality management" means coordinated activities to direct and control an organization with regard to quality;

"radio navigation service" means a service providing guidance information or position data for the efficient and safe operation of aircraft supported by one or more radio navigation aids;

"required communication performance (RCP) specification" means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based communication;

"required navigation performance (RNP) specification" means 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.;

"required surveillance performance (RSP) specification" means a set of requirements for air traffic service provision and associated ground equipment, aircraft capability, and operations needed to support performance-based surveillance;

"requirement" means a need or expectation that is stated, generally implied or obligatory;

"restricted area" means an airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is restricted in accordance with certain specified conditions;

"route stage" means a route or portion of a route flown without an intermediate landing;

"Safety management system (SMS)" means a systematic approach to managing safety, including the necessary organizational structures, accountability, responsibilities, policies and procedures.

"station declination" means an alignment variation between the zero-degree radial of a VOR and true north, determined at the time the VOR station is calibrated;

"terrain" means the surface of the Earth containing naturally occurring features such as mountains, hills, ridges, valleys, bodies of water, permanent ice and snow, and excluding obstacles;

"traceability" means ability to trace the history, application or location of that which is under consideration;

"validation" means confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled;

"verification" means confirmation, through the provision of objective evidence, that specified requirements have been fulfilled;

"VOLMET" means meteorological information for aircraft in flight;

"VOLMET broadcast" means provision, as appropriate, of current METAR, SPECI, TAF and SIGMET by means of continuous and repetitive voice broadcasts;

"VOLMET" means meteorological information for aircraft in flight;

Application

3. These Regulations shall apply to all aeronautical information service providers, with the exception of the military.

Aeronautical information service

4. A person shall not-

(a) provide aeronautical information service; or

(b) undertake aeronautical data and information management,

unless certified in accordance with the Civil Aviation (Certification of Air Navigation Service Providers) procedures.

Operations manual

5. (1) A certified aeronautical information service provider (AISP) shall, develop an operations manual to serve and demonstrate compliance with the requirements of these Regulations.

(2) The operations manual referred to under sub-regulation (1), shall be issued under authority of the air navigation service provider and approved by the Authority, and is to include-

(a) services to be provided;

(b) personnel requirements, responsibilities, duties and organogram;

(c) training and performance assessment of personnel;

(d) quality management system;

(e) contingency plans;

(f) procedures for reporting of aeronautical information service system malfunction;

(g) maintenance of documents and records;

(h) the hours of service;

(i) detailed description of the aeronautical information service systems and procedures used in the provision of aeronautical information services or aeronautical information management;

(j) the main manual covering the main areas that need to be addressed, as well as separate supporting documents and manuals; and

(k) any other information requested by the Authority.

(3) An aeronautical information service provider shall, easily amend and update the operations manual and associated procedures whenever necessary to ensure accuracy and currency of information.

(4) The procedure contained in the developed operational manual shall be consistent with the current departmental ISO procedure.

PART II
COMMON REFERENCE SYSTEM FOR AIR NAVIGATION

Reference systems for air navigation

6. (1) The common reference systems for air navigation consist of the -

(a) horizontal reference system for air navigation;

(b) vertical reference system; and

(c) temporal reference system.

(2) The aeronautical information service provider under each reference system of air navigation shall ensure that the-

(a) ***horizontal reference system*** - system used is the world geodetic system -1984 (WGS-84) and the published aeronautical geographical coordinates indicating latitude and longitude are expressed in terms of the WGS-84 geodetic reference datum;

(b) ***vertical reference system*** -

(i) mean sea level (MSL) datum is used as the vertical reference system for air navigation;

(ii) safeguard that the earth gravity model used is the 1996 (EGM-96);

(iii) geographical positions where the accuracy of EGM-96 does not meet the accuracy requirements for elevation and geoid undulation on the basis of EMG-96 data, regional, national or local geoid models containing high resolution (short wave) gravity field data is developed and used; and

(iv) geoid model other than the EGM-96 model is used, a description of the model used, including parameters required for height information between the model and EGM-96 and as such is provided in the AIP;

(c) ***temporal reference system*** -

(i) gregorian calendar and coordinated universal time (UTC) is used as the temporal reference system for aviation; and

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

Miscellaneous specifications

7. The aeronautical information service provider (AISP) shall -

(a) ensure that aeronautical information products intended for international distribution is in English language;

(b) provide for place names to be spelt in conformity with local usage, transliterated, when necessary, into the ISO-Basic Latin alphabet; and

(c) ensure that ICAO abbreviations are used whenever they are appropriate and their use will facilitate distribution of aeronautical data and aeronautical information.

PART III
THE RESPONSIBILITY AND FUNCTION OF THE AERONAUTICAL INFORMATION SERVICE PROVIDER (AISP)

The AISP

8. A certified aeronautical information service provider shall -

(a) provide an aeronautical information service (AIS);

(b) ensure that the provision of aeronautical data and aeronautical information covers the entire territory for which Eswatini is responsible for the provision of air traffic services;

(c) note that the Authority remains responsible for the aeronautical data and aeronautical information provided;

(d) ensure that aeronautical data and aeronautical information provided for and on behalf of the Authority is clearly indicated that it's provided under authorization of the Authority;

(e) guarantee that the aeronautical data and aeronautical information is provided timeously an in a complete, and required quality manner in accordance with these Regulations;

(f) ensure that formal arrangements are established between originators of aeronautical data and aeronautical information, and the aeronautical information service in relation to the timely and complete provision of aeronautical data and aeronautical information;

(g) confirm that each data element to be collected is mapped to an identified data originator, in accordance with the formal arrangements established between data originators and the AIS;

(h) ensure that aeronautical information subjects and their properties, to be used to establish formal arrangements between the originators and the AIS are as prescribed by the Authority;

(i) make sure that aeronautical data and aeronautical information necessary for the safety, regularity or efficiency of air navigation is made available in a form suitable for the operational requirements of the air traffic management community, including -

(i) those involved in flight operations, including flight crews, flight planning and flight simulators; and

(ii) the air traffic services unit responsible for flight information service and the services responsible for pre- flight information;

(j) receive, collate or assemble, edit, format, publish or store and distribute aeronautical data and aeronautical information or data concerning the entire territory of Eswatini which the country is responsible for the provision of air traffic services;

(k) provide aeronautical data and aeronautical information as Aeronautical Information Products;

(l) to make available aeronautical information service during the whole period an aircraft is in flight in the area of responsibility of the aeronautical information service and the period of at least two hours before and after such a period where 24-hour service is not provided;

(m) make available aeronautical information service at such other time as may be requested by an appropriate ground organisation;

(n) obtain aeronautical data and aeronautical information for pre-flight information service and in-flight information from the aeronautical information services of other States or other sources that may be available;

(o) ensure that the aeronautical data and aeronautical information obtained from other States, when distributed, is clearly identified as having the authority of the State of Origin;

(p) warrant aeronautical data and aeronautical information obtained from other sources other than other States, be verified before distribution and if not verified, when distributed, be clearly identified as such; and

(q) promptly make available to the aeronautical information services of other States, any aeronautical data and aeronautical information necessary for the safety, regularity or efficiency of air navigation required under these Regulations.

Exchange of aeronautical data and aeronautical information

9. The AISP shall, when there is exchange of aeronautical data and aeronautical information -

(a) designate the office to which all elements of the integrated aeronautical information products originated by other States are addressed and the office must be qualified to deal with requests for aeronautical data and aeronautical information originated by other States;

(b) define, in case more than one international NOTAM office is designated within Eswatini, the extent of responsibility and the territory covered by each office;

(c) arrange for the issuance and receipt of NOTAM distributed by means of telecommunication;

(d) establish direct contact with other providers of aeronautical information services in order to facilitate the international exchange of aeronautical data and aeronautical information;

(e) avail one copy of each of the following Aeronautical Information Products (where available) upon request by the aeronautical information service of an ICAO Contracting State without charge even where authority for publication or storage and distribution has been delegated to a non-governmental agency -

(i) Aeronautical Information Publication (AIP), including amendments and supplements;

(ii) Aeronautical Information Circulars (AIC); and

(iii) NOTAM;

(f) ensure that the provision of aeronautical information and aeronautical data in the form of digital data sets to be used by the AIS is on the basis of agreement between itself and the contracting State concerned; and

(g) ensure that globally interoperable aeronautical information exchange models and data exchange models are used for the provision of data sets.

Obligation of aeronautical data and aeronautical information provider

10. (1) The aeronautical information service provider shall identify, notify and make formal arrangements with custodians of aeronautical data and aeronautical information.

(2) The formal arrangements established with data provider identified in sub regulation (1) shall require timely submission of new or amended aeronautical data and aeronautical information.

(3) The data provider shall ensure that the aeronautical data and aeronautical information provided is accurate, complete and timely.

(4) A data or information provider commits an offence, if as soon as practicable after becoming aware of the need for the change of the data or information does not provide an AIM with updated aeronautical data and aeronautical information with an effective date.

(5) Aeronautical information service providers shall by written notice request a person that owns, controls or operates objects and structures that affect aviation safety to submit data or information on the objects and structures.

(6) A person that contravenes sub-regulation (5), commits an offence and shall on conviction, be liable to a fine not exceeding forty thousand Emalangeni (E40,000) or to imprisonment for a term not exceeding two (2) years.

Copyright and costs recovery

11. (1) An AISP provider shall -

(a) ensure that an aeronautical information service product which is copyright protected by the State and provided to another State in accordance with these Regulations is only made available to a third party on condition that -

(i) the third party is made aware that the product is copyright protected; and

(ii) it is appropriately annotated that the product is subject to copyright by the originating State;

(b) where aeronautical data and aeronautical information are provided to a State ensure the receiving State does not provide the digital data sets of the providing State to any third party without the consent of the providing State.

(2) The costs recoverable by an AISP shall be only for the overhead costs of collecting and compiling aeronautical data and aeronautical information.

PART IV
AERONAUTICAL INFORMATION MANAGEMENT

Information management requirement

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

Data quality specifications

13. AISPs shall for purposes of data quality specifications -

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

(b) confirm that the order of resolution of aeronautical data is commensurate with the actual data accuracy;

(c) guarantee that the integrity of aeronautical data is maintained throughout the data process from origination to distribution to the next intended user;

(d) ensure that effectiveness under this Part is achieved and that procedures are put in place in order for-

(i) routine data: avoid corruption throughout the processing of the data;

(ii) 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

(iii) critical data: assure corruption does not occur at any stage of the entire process and include additional integrity assurance processes to fully mitigate the effects of faults identified by thorough analysis of the overall system architecture as potential data integrity risks.

(e) provide traceability of aeronautical data and ensure that it retained as long the data is in use;

(f) ensure timeliness by including limits on the effective period of the data elements;

(g) guarantee the completeness of the aeronautical data in order to support the intended use; or

(h) provide the format of delivered data is adequate to ensure that the data is interpreted in a manner that is consistent with its intended use.

Aeronautical data and aeronautical information verification and validation

14. (1) The material issued as part of an aeronautical information product shall be thoroughly checked before it is submitted to the AISP, to ensure that all the necessary information is included and correct in detail.

(2) The AISP shall establish a verification and validation procedure to ensure that upon receipt of aeronautical data and aeronautical information, quality requirements are met.

Data error detection

15. The aeronautical information service provider shall -

(a) ensure that digital data error detection techniques are used during the transmission and storage of aeronautical data and digital data sets;

(b) guarantee that digital data error detection techniques apply to all integrity levels of data sets; and

(c) ensure that the technical means used for data error detection should be based on the use of systematic cycling codes.

Aeronautical data resolution

16. The aeronautical information service provider shall ensure that the order of publication resolution of aeronautical data is as specified in the Seventh Schedule.

Data integrity monitoring and assurance

17. The aeronautical information service provider shall -

(a) ensure that data integrity is assured by employing cryptographic technologies such as hash functions, message authentication codes, asymmetric and symmetric encryption, and digital certificates; and

(b) maintain the integrity of aeronautical data throughout the data process from survey or origin to distribution to the next intended user.

Metadata

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

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

Use of automation

19. (1) The aeronautical information service provider shall -

(a) introduce automation to ensure quality, efficiency and cost effectiveness of the aeronautical information services;

(b) consider the integrity of data collection when automated processes are implemented and mitigation steps are taken when risks are identified; and

(c) ensure that data quality requirements are met, through-

(i) enabling digital aeronautical data exchange between the parties involved in the data processing chain; and

(ii) using aeronautical information exchange models and data exchange models designed to be globally interoperable.

Quality Management System (QMS)

20. An aeronautical information management provider shall -

(a) implement and maintain a quality management system that -

(i) encompasses all functions of an aeronautical information service as outlined in these regulations;

(ii) ensure its execution is demonstrable for each function stage;

(iii) is applicable to the whole aeronautical information data chain from data origination to distribution to the next intended user, taking into consideration the intended use of data;

(iv) follows the ISO 9000 series of quality assurance standards and be certified by an accredited certification body; or

(v) includes quality management procedures that address the quality management requirements mentioned in the aeronautical data processing standards.

(b) within the context of the established quality management system, ensure the -

(i) competencies and the associated knowledge, skills and abilities required for each function are identified;

(ii) personnel assigned to perform those functions are appropriately trained;

(iii) processes are in place to ensure that personnel possess the competencies required to perform specific assigned functions;

(iv) appropriate records are maintained so that the qualifications of personnel can be confirmed;

(v) initial and periodic assessments are established that require personnel to demonstrate the required competencies;

(vi) procedures are established to maintain currency of the competence of the personnel;

(vii) periodic assessments of personnel are conducted and used as a means to detect and correct shortfalls in knowledge, skills and abilities;

(c) ensure that each quality management system (QMS) includes 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;

(d) ensure the QMS provide users with the necessary assurance and confidence that distributed aeronautical data and aeronautical information satisfy the aeronautical data quality requirements;

(e) ensure all necessary measures are taken to monitor compliance with the quality management system in place; and

(f) demonstrate compliance of the quality management system through audit, and –

(i) if a non-conformity is identified, initiating action to correct its cause shall be determined and taken without undue delay; and

(ii) all audit observations and remedial actions are evidenced and properly documented.

Human factors

21. (1) The aeronautical information service provider shall take into consideration human factors in the organization, of an aeronautical service as well as the design, contents, processing and distribution of aeronautical data and aeronautical information which facilitate their utilization.

(2) Subject to sub-regulation (1), due consideration shall be given to the integrity of information, where human interaction is required and mitigating steps are taken where risks are identified and this may be accomplished through the design of systems, operating procedures or improvements in the operating environment.

PART V
AERONAUTICAL DATA AND AERONAUTICAL INFORMATION

Scope of aeronautical data and information

22. (1) The aeronautical information service provider shall ensure that aeronautical data and aeronautical information to be received and managed include -

(a) national regulations, rules and procedures;

(b) aerodromes and heliports;

(c) airspace;

(d) ATS routes;

(e) instrument flight procedures;

(f) radio navigation aids/systems;

(g) obstacles;

(h) geographic information; and

(i) terrain

(2) The determination and reporting of aeronautical data shall be in accordance with the accuracy and integrity classification required to meet the needs of the end-user of aeronautical data.

PART VI
AERONAUTICAL INFORMATION PRODUCTS AND SERVICES

General aeronautical information in a standardized presentation

23. (1) The aeronautical information provider shall -

(a) ensure that aeronautical information is provided in the form of aeronautical information products and associated services; and

(b) where aeronautical data and aeronautical information are provided in multiple formats, processes are implemented to ensure data and information consistency between formats.

(2) Aeronautical information shall be provided in a standardized presentation to include the AIP, AIP amendments, AIP supplements, AICs, NOTAMs and aeronautical charts.

(3) The aeronautical information under sub-regulation (1) shall be provided on paper or as an electronic document.

Aeronautical information publication (AIP)

24. (1) The aeronautical information service provider shall ensure the AIP include -

(a) a statement of the competent authority responsible for the air navigation facilities, services or procedures covered by the AIP;

(b) the general conditions under which the services or facilities are available for international use;

(c) a list of significant differences between the national regulations and practices of the State and the related ICAO Standards, Recommended Practices and Procedures, given in a form that would enable a user to differentiate readily between the requirements of the State and the related ICAO provisions;

(d) the choice made by a State in each significant case where an alternative course of action is provided for in ICAO Standards, Recommended Practices and Procedures;

AIP Supplement

25. A checklist of a valid AIP Supplement shall be regularly provided by the AISP.

Aeronautical Information Circular (AIC)

26.(1) The AISP shall ensure that an AIC is used to provide -

(a) a long-term forecast of any major change in legislation, regulations, procedures or facilities;

(b) information of a purely explanatory or advisory nature liable to affect flight safety; and

(c) information or notification of an explanatory or advisory nature concerning technical, legislative or purely administrative matters.

(2) The AIC shall not to be used for information that qualifies for inclusion in the AIP or NOTAM.

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

Aeronautical Charts

27. (1) The AISP shall ensure that the aeronautical charts listed alphabetically in sub-regulation (2), when available for designated international aerodromes or heliports, form part of the AIP, or be distributed separately to recipients of the AIP.

(2) Aeronautical charts include -

(a) Aerodrome or Heliport Chart — ICAO;

(b) Aerodrome Ground Movement Chart — ICAO;

(c) Aerodrome Obstacle Chart — ICAO Type A;

(d) Aerodrome Obstacle Chart – Type B (when available);

(e) Aerodrome Terrain and Obstacle Chart — ICAO (Electronic);

(f) Aircraft Parking or Docking Chart — ICAO;

(g) Area Chart — ICAO;

(h) ATC Surveillance Minimum Altitude Chart — ICAO;

(i) Instrument Approach Chart — ICAO;

(j) Precision Approach Terrain Chart — ICAO;

(k) Standard Arrival Chart — Instrument (STAR) — ICAO;

(l) Standard Departure Chart — Instrument (SID) — ICAO; and

(m)Visual Approach Chart — ICAO.

(3) The "Enroute Chart — ICAO" shall when available, be part of the AIP, or be provided separately to recipients of the AIP.

(4) The aeronautical charts listed alphabetically below shall when available, be provided as Aeronautical Information Products -

(a) World Aeronautical Chart — ICAO 1:1 000 000;

(b) Aeronautical Chart — ICAO 1:500 000;

(c) Aeronautical Navigation Chart — ICAO Small Scale; and

(d) Plotting Chart — ICAO chart.

NOTAM

28. (1) A NOTAM shall contain information in the order shown in the NOTAM format in the Second Schedule of these Regulation.

(2) The NOTAM shall be composed of the significations or uniform abbreviated phraseology assigned to the ICAO NOTAM CODE complimented by ICAO abbreviations, identifiers, designators, call signs, frequencies, figures and plain language.

(3) NOTAMs shall be issued in the English language.

(4) The information containing snow, slush, ice, frost, standing water, or water associated with snow, slush or frost on the movement area shall be decimated by means of a SNOWTAM and is to contain the information shown in the SNOWTAM Format in the First Schedule.

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

(6) When errors occur in a NOTAM, a NOTAM with a new number to replace the erroneous NOTAM shall be issued or the erroneous NOTAM shall be cancelled, and a new NOTAM issued.

(7) When a NOTAM is issued which cancels or replaces a previous NOTAM, the series and number of the previous NOTAM shall be indicated and the series, location indicator and subject of both NOTAM shall be the same

(8) Only one NOTAM shall be cancelled or replaced by a NOTAM.

(9) A NOTAM shall -

(a) deal with only one subject and one condition of the subject;

(b) be as brief as possible and so compiled that its meaning is clear without the need to refer to another document; and

(c) be transmitted as a single telecommunication message

(10) A NOTAM containing permanent information or temporary information of long duration shall carry appropriate AIP or AIP Supplement references

(11) Location indicators included in the text of a NOTAM shall be those contained in Location Indicators ICAO Doc 7910 and in no case shall a curtailed form of such indicators be used.

(12) Where no ICAO location indicator is assigned to the location, its place name shall be entered in plain language, spelt in conformity with local usage, transliterated, when necessary, into the ISO basic Latin alphabet.

NOTAM number and series allocation

29. (1) The international NOTAM office shall allocate to each NOTAM a series identified by a letter and a four-digit number followed by a stroke and a two-digit number for the year. The four-digit number shall be consecutive and based on the calendar year.

(2) Letters S and T shall not be used to identify a NOTAM series.

(3) NOTAMs shall be divided in series based on subject, traffic or location or a combination of it, depending on end-user needs.

(4) A NOTAM for aerodromes allowing international air traffic shall be issued in international NOTAM series.

(5) The content and geographical coverage of each NOTAM series shall be stated in detail in the AIP, section GEN 3.

(6) A series allocation shall be monitored and, if required, appropriate measures be taken to assure that no series reach the maximum possible number of issued NOTAM before the end of the calendar year.

NOTAM Checklist

30. (1) A checklist of valid NOTAM shall be regularly provided.

(2) One NOTAM checklist shall be issued for each series.

(3) A NOTAM checklist shall refer to the latest AIP Amendments, AIP Supplement, data sets and at least the internationally distributed AIC, and, when it is selected, include the checklist of AIP Supplement.

(4) A NOTAM checklist shall have the same distribution as the actual message series to which it refers and shall be clearly identified as a checklist.

Digital data set

31. (1) A digital data shall, when provided, be in the form of -

(a) AIP data set;

(b) terrain data set;

(c) obstacle data set;

(d) aerodrome mapping data set; and

(e) instrument flight procedure data set.

(2) A data set shall be provided to the next intended user together with a minimum set of metadata that ensures data traceability from the end-user to the originator.

(3) The checklist of valid data sets shall be regularly provided.

AIP data set

32. The AIP data set shall contain the digital representation of aeronautical information of lasting character, permanent information and long duration temporary changes, essential to air navigation.

Terrain and obstacle data set

33. The coverage areas for sets of terrain and obstacle data shall be specified as -

(a) Area 1: the entire territory of a State;

(b) Area 2: within the vicinity of an aerodrome, subdivided as -

(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;

(iv) Area 2d: an area outside the Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing terminal 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: 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 and III.

Terrain data set

34. (1) The terrain data set 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.

(2) Terrain data shall be provided for Area 1.

(3) Where aerodromes are 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.

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

(5) The terrain data for each area shall conform to the applicable numerical requirements as contained in table S6-1 to the Sixth Schedule.

Obstacle data set

35. (1) Obstacle data shall -

(a) contain the digital representation of the vertical and horizontal extent of the obstacle;

(b) not be included in terrain data sets; and

(c) be provided for obstacles in Area 1 whose height is 100 m or higher above ground.

(2) For aerodromes regularly used by international civil aviation, obstacle data shall be provided for -

(a) all obstacles within Area 2 that are assessed as being a hazard to air navigation;

(b) 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 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;

(c) 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;

(d) penetration of the aerodrome obstacle limitation surfaces; and

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

(3) In an obstacle data set, all defined obstacle feature types shall be provided and each of them shall be described according to the list of mandatory attributes provided in the fourth schedule.

Aerodrome mapping data set

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

Instrument flight procedure data set

37. The instrument flight procedure data set shall contain the digital representation of instrument flight procedures.

Distribution services

38. (1) Aeronautical Information Products shall be distributed to those users who request them.

(2) AIP, AIP Amendments, AIP Supplements and AIC shall be made available by the most expeditious means.

(3 NOTAM shall be distributed on the basis of a request

(4) NOTAM shall be prepared in conformity with the relevant provisions of the ICAO communication procedures.

(5) The Aeronautical Fixed Service (AFS) shall, whenever practicable, be employed for NOTAM distribution and be in accordance to the Fifth Schedule.

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

(7) International exchange of NOTAM shall take place only as mutually agreed between the international NOTAM offices concerned and between the NOTAM offices and multinational NOTAM Processing Units.

(8) The originating State shall upon request grant distribution of NOTAM series other than those distributed internationally.

Pre-Flight Information

39. (1) The Aeronautical Information Provider (AIP) shall ensure that -

(a) for services any aerodrome or heliport used for international air operations, aeronautical information relative to the route stages originating at the aerodrome or heliport is made available to flight operations personnel, including flight crew and services responsible for pre-flight information; and

(b) aeronautical information provided for pre-flight planning purposes includes information of operational significance from the elements of the Aeronautical Information Products.

Post-flight information services

40. (1) The AISP shall ensure that for any aerodrome or heliport used for international air operations, arrangements are made to receive information concerning the State and operation of air navigation facilities or services noted by flight crews.

(2) The arrangements made in sub-regulation (1), shall ensure that such information, as made available, is distributed as the circumstances necessitate.

(3) For any aerodrome or heliport used for international air operations, arrangements are made to receive information, as may made available, concerning the presence of wildlife hazard observed by flight crews.

(4) The information in sub-regulation (3), shall be distributed as the circumstances necessitate.

PART VII
AERONAUTICAL INFORMATION UPDATES

General information

41. The AISP shall ensure that aeronautical data and aeronautical information is kept up to date.

Aeronautical information Regulation and control (AIRAC)

42. (1) The Aeronautical information provider shall ensure that information concerning the circumstances, listed in sub-regulation (2), are distributed under the regulated system (AIRAC), that is basing establishment, withdrawal or significant changes upon a series of common effective dates at intervals of twenty eight (28) days, including 8 November, 2018.

(2) The circumstances under this regulation shall include -

(a) horizontal and vertical limits, regulations and procedures applicable to -

(i) flight information regions;

(ii) control areas;

(iii) control zones;

(iv) advisory areas;

(v) ATS routes;

(vi) permanent danger, prohibited and restricted areas, including type and periods of activity when known and ADIZ; and

(vii) permanent areas or routes or portions of it where the possibility of interception exists;

(b) positions, frequencies, call signs, identifiers, known irregularities and maintenance periods of radio navigation aids, and communication and surveillance facilities;

(c) holding and approach procedures, arrival and departure procedures, noise abatement procedures and any other pertinent ATS procedures;

(d) transition levels, transition altitudes and minimum sector altitudes;

(e) meteorological facilities, including broadcasts and procedures;

(f) runways and stop ways;

(g) taxiways and aprons;

(h) aerodrome ground operating procedures, including low visibility procedures;

(i) approach and runway lighting; and

(j) aerodrome operating minima when published.

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

(4) The information provided under the AIRAC system shall be made available by the AIS so as to reach recipients at least twenty eight (28) days in advance of the AIRAC effective date.

(5) 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) The 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.

Aeronautical Information product (AIP) updates

43. The Aeronautical information provider shall ensure that -

(a) the AIP is amended or reissued at such regular intervals as may be necessary to keep them up to date;

(b) permanent changes to the AIP are published as AIP Amendments; and

(c) temporary changes of long duration (three (3) months or longer) and information of short duration which contains extensive text and/or graphics are published as AIP Supplements

NOTAM updates

44. (1) The AISP shall ensure that-

(a) when an AIP Amendment or Supplement is published in accordance with AIRAC procedures, a "Trigger" NOTAM is originated; and

(b) 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 or graphics.

(2) A NOTAM shall be originated and issued the information regards the -

(a) establishment, closure or significant changes in operation of an aerodrome or heliport or runway;

(b) establishment, withdrawal and significant changes in operation of aeronautical services which include AGA, AIS, ATS, CNS, MET, and SAR;

(c) establishment, withdrawal and significant changes in operational capability of radio navigation and air-ground communication services, which include -

(i) interruption or return to operation;

(ii) change of frequencies;

(iii) change in notified hours of service;

(iv) change of identification;

(v) change of orientation (directional aids);

(vi) change of location;

(vii) power increase or decrease amounting to 50 per cent or more; and

(viii) change in broadcast schedules or contents, or irregularity or unreliability of operation of any radio navigation and air-ground communication services;

(d) unavailability of back-up and secondary systems, having a direct operational impact;

(e) establishment, withdrawal or significant changes made to visual aids;

(f) interruption of or return to operation of major components of aerodrome lighting systems;

(g) establishment, withdrawal or significant changes made to procedures for air navigation services;

(h) occurrence or correction of major defects or impediments in the manoeuvring area;

(i) changes to and limitations on availability of fuel, oil and oxygen;

(j) major changes to search and rescue facilities and services available;

(k) establishment, withdrawal or return to operation of hazard beacons marking obstacles to air navigation;

(l) changes in regulations requiring immediate action, including prohibited areas for SAR action;

(m) presence of hazards not otherwise promulgated, which affect air navigation including obstacles, military exercises and operations, intentional an un intentional 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 specific as possible regarding the nature and extent of threats of conflict and its consequences for civil aviation;

(o) planned laser emissions, laser displays and search lights if pilot's night vision is lightly 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 or heliport rescue and fire fighting 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) observation or forecasts of space whether phenomena, the date and time of their occurrence, the flight levels where provided and portions of airspace which may be affected by the phenomena solar cosmic radiation, where provided;

(x) an operationally significant change in volcanic activity, the location, date and time of volcanic eruptions and 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; or

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

(3) The information that shall not be notified by NOTAM include -

(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 or heliport lighting facilities where such failure does not directly affect aircraft operations;

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

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

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

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

(i) training activities by ground units;

(j) unavailability of back-up and secondary systems if these do not have an operational impact;

(k) limitations to airport facilities or general services with no operational impact;

(l) national regulations not affecting general aviation;

(m) announcement or warnings about possible or potential limitations, without any operational impact;

(n) general reminders on already published information;

(o) availability of equipment for ground units without containing information on the operational impact for airspace and facility users;

(p) information about laser emissions without any operational impact and fireworks below minimum flying heights;

(q) closure of movement area parts in connection with planned work locally coordinated of duration of less than one hour;

(r) closure, changes, unavailability in operation of an aerodrome or heliport other than aerodrome or heliport operation hours; or

(s) other non-operational information of a similar temporary nature.

Data set updates

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

(2) The permanent changes and temporary changes of long duration shall, three (3) months or longer, be made available as digital data and be issued in the form of a complete data set or a sub-set that includes only the differences from the previously issued complete data set.

(3) The updates to AIP, AIP data sets and Instrument Flight Procedures data sets shall be synchronized.

PART VIII
ADMINISTRATIVE AND PERSONNEL REQUIREMENTS

Establishment of air traffic service reporting office

46. (1) Subject to the provisions of the Civil Aviation (Rules of the Air) Regulations as amended, the Aeronautical Information Service Provider shall, establish and operationalize air traffic service reporting office (ARO) as appropriate for the purpose of reception and management of flight plans.

(2) An established ARO shall be adequately equipped and staffed with personnel sufficient for the effective execution of the function.

(3) A person shall not provide an ARO service other than when under supervision provided that person is a holder of an appropriate instrument of Authority in the form of a certificate of competency with endorsement type equivalent to the function being undertaken.

(4) The certificate of competency required in sub regulation (3) shall be issued by the Authority.

AIM and air traffic service requirements

47. (1) The aeronautical information management (AIM) provider shall appoint -

(a) an accountable officer for AIS or AIM, to whom authority has been granted to ensure that all activities undertaken are carried out in accordance with the applicable requirements prescribed in this regulation;

(b) a Standards and Quality Assurance officer who shall be responsible for quality control and implementation of the Authority's requirements on QMS and SMS and who has direct access to the accountable officer referred to in sub regulation (a); and

(c) adequately trained personnel to -

(i) plan, provide and supervise the approved services listed in the unit's manual of operations, in a safe and efficient manner;

(ii) receive, collate or assemble, edit, format, check, coordinate, publish or store and distribute aeronautical data and aeronautical information;

(iii) facilitate flight planning, provide pre-flight information, receive and process post flight information as necessary; and

(iv) facilitate the development, maintenance and promulgation of aeronautical charts.

(2) An AIM provider shall -

(a) include in the manual of operations an analysis of the personnel required to perform the aeronautical information service and aeronautical charts function by taking into account the duties and responsibilities of the staff concerned and also guidance provided by the Authority;

(b) maintain individual training records for each of its staff, which shall include details of the courses completed by each staff as well as the timeframe for attending future courses as required under the training plan;

(c) conduct a yearly review of the training plan for each staff at the beginning of the financial year to identify any gaps in competency, changes in training requirements and prioritize the type of training required for the subsequent years;

(d) develop a training policy, training programme and training plan as well as job description for each of the staff under the jurisdiction of the accountable manager and implement the same as applicable with considerations to include -

(i) the training policy and programme shall lay down the training courses that different levels of staff shall have to undergo to perform their duties, including initial, recurrent and specialized training, where applicable; and

(ii) the job description shall depict the job purpose, key responsibilities, and outcome to be achieved of each staff;

(e) develop and implement a policy to guide the identification of required competencies and endorsements to undertake specific tasks and

(f) identify the competencies and the associated knowledge, skills and abilities required for each function and ensure that personnel possess the competencies required to perform the specific assigned functions;

(g) establish initial and periodic assessments that require personnel to demonstrate the required competencies;

(h) adequately train personnel assigned to perform specific functions;

(i) ensure that procedures are established to maintain currency of the competence of the personnel; and

(j) ensure that its personnel are of sufficient numbers and with the requisite experience and have been given appropriate authority to be able to discharge their duties.

Instrument of Authority to perform AIM functions

48. (1) A person shall not provide an AIM service other than when under than the supervision provided the person is a holder of an appropriate instrument of Authority in the form of a certificate of competency with endorsement type equivalent to the function being undertaken;

(2) The certificate of competency required in sub regulation (1) shall be issued by the Authority.

AIM facility, equipment, data and information requirements

49. The aeronautical Information management (AIM) provider shall -

(a) have the facilities and equipment that are necessary for providing its AIS, including appropriate premises and equipment to allow operational personnel to perform their duties; and

(b) provide its operational personnel with access to the aeronautical data and aeronautical information required for the publication of the aeronautical information products, or the aeronautical charts, that the provider publishes.

AIM contingency plan

50. (1) The aeronautical information management provider shall ensure that a contingency plan is in place that sets out the procedures to be followed if a service provided as part of its aeronautical information management is interrupted.

(2) The contingency plan required in sub regulation (1) shall include the -

(a) actions to be taken by personnel responsible for providing the service;

(b) possible alternative arrangements for providing the service; and

(c) arrangements for resuming normal provision of the service.

Requirements of SMS implementation

51. The aeronautical information management provider shall implement a safety management system that -

(a) is a systemic approach to managing safety;

(b) integrates human factors principles; and

(c) includes the following elements -

(i) organisational structures, accountabilities, policies and procedures necessary to manage safety in a systemic way;

(ii) a statement of the provider's safety policy, objectives and planning;

(iii) the management commitment to, and responsibility for, safety;

(iv) the safety accountabilities of managers;

(v) the appointment of safety management personnel;

(vi) how human factors principles are integrated into the safety management system;

(vii) a safety management system implementation plan;

(viii) relevant third-party relationships and interactions;

(ix) coordination of an emergency response plan;

(x) safety management system documentation;

(d) a safety risk management process, including -

(i) hazard identification processes; and

(ii) risk assessment and mitigation processes;

(e) a safety assurance system, including details of processes for -

(i) safety performance monitoring and measurement;

(ii) internal safety investigation;

(iii) management of change; and

(iv) continuous improvement of the safety management system;

(f) a safety training and promotion system, including details of -

(i) safety management system training; and

(ii) safety management system safety communication.

Maintenance of records

52. (1) The AIM provider shall have procedures for making, collecting, indexing, storing, securing, maintaining, accessing and disposing of records that -

(a) identify all incoming and outgoing aeronautical data and aeronautical information;

(b) identify each person who is authorised by the provider to process, check, edit, publish and distribute aeronautical data and aeronautical information;

(c) list the endorsements, qualifications and competencies of personnel who process, check, edit, publish and distribute aeronautical data and aeronautical information;

(d) identify each AIP responsible person for an aeronautical data originator that provides aeronautical data or aeronautical information to the provider;

(e) identify each NOTAM authorised person for an aeronautical data originator that requests the provider to issue NOTAMS;

(f) identify each occurrence of an error or omission in aeronautical data or aeronautical information published by the provider in the Integrated Aeronautical Information Package or on an aeronautical chart; and

(g) records that contain the results of any audit, inspection or review of the provider's AIS.

(2) An aeronautical service provider shall -

(a) ensure that records referred in sub-regulation (1) are legible and permanent; and

(b) keep records referred in sub-regulation (1) and the data or information for at least ten (10) years after the data or information ceases to be effective.

PART IX
EXEMPTIONS

Application for exemption

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

(2) The person, in a case of an emergency, requiring an exemption from any of these regulations shall make an application to the Authority at least sixty (60) days before the proposed effective date and state -

(a) name and contact address including electronic mail and fax if any;

(b) telephone number;

(c) a citation of the specific requirement from which the applicant seeks exemption;

(d) justification for the exemption;

(e) a description of the type of operations to be conducted under the proposed exemption;

(f) the proposed duration of the exemption;

(g) an explanation of how the exemption would be in the public interest;

(h) a detailed description of the alternative means by which the applicant will ensure a level of safety equivalent to that established by the regulation in question;

(i) a safety risk assessment carried out in respect of the exemption applied for;

(j) if the applicant handles international operations and seeks to operate under the proposed exemption, an indication whether the exemption would contravene any provision of the Standards and Recommended Practices of the International Civil Aviation Organization (ICAO); and

(k) any other information that the Authority may require.

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

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

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

Review and publication

54. (1) Where the Authority reviews an application for exemption under these Regulations for accuracy and compliance and is satisfied, it shall publish a detailed summary of the application for comments, within a prescribed time, in either -

(a) the Eswatini Gazette;

(b) aeronautical information circular; or

(c) a daily newspaper with national circulation.

(2) Where the applicant has failed to fully comply with the requirements, the Authority shall request in writing, for compliance before publication or making a decision under sub regulation (3).

(3) If the request is for an emergency relief, the Authority shall publish the decision as soon as possible after processing the application.

Evaluation of the request

55. (1) Where the application requirements have been satisfied, the Authority shall conduct an evaluation of the request to include-

(a) determination of whether an exemption would be in the public interest;

(b) a determination, after a technical evaluation of whether the applicant's proposal would provide a level of safety equivalent to that established by the regulation, although where the Authority decides that a technical evaluation of the request would impose a significant burden on the Authority's technical resources, the Authority may deny the exemption on that basis;

(c) a determination of whether a grant of the exemption would contravene these Regulations; and

(d) a recommendation based on the preceding elements, of whether the request should be granted or denied, and of any conditions or limitations that should be part of the exemption.

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

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

(4) If the exemption affects a significant population of the aviation community of the Eswatini, the Authority shall publish the summary in aeronautical information circular.

Validity of an exemption

56. The validity of any exemption issued under these regulations shall be dependent on the air navigation service provider complying with any condition that Authority may specify in the exemption as being necessary in the interests of safety of air navigation.

Compliance with conditions of the exemption

57. An air navigation service provider shall comply with any condition specified by the Authority in the exemption

PART X
MISCELLANEOUS PROVISIONS

Replacement of documents

58. A person may apply to the Authority in the prescribed form for replacement of documents issued under these Regulations if the documents are lost or destroyed.

Reports of violation

59. (1) A person who knows of a violation of the Act, or any Regulation, rule, or order issued there under, shall report it to the Authority.

(2) The Authority may determine the nature and type of investigation or enforcement action that need to be taken.

Failure to comply with direction

60. A person who fails to comply with any direction given by the Authority or by an authorised person under these Regulations shall be deemed to have contravened that provision.

Offences and penalties

61. (1) A person who contravenes any provision of these Regulations may have the certificate or exemption cancelled or suspended.

(2) A person who -

(a) contravenes a provision of these Regulations, order, notice or proclamation made there under shall, upon conviction, be liable to a fine or imprisonment or both, and in the case of a continuing contravention, each day of the contravention shall constitute a separate offence; or

(b) contravenes any provision of these Regulations shall upon conviction be liable to a fine not exceeding Forty thousand Emalangeni (E40 000.00) or to imprisonment for a term not exceeding six (6) months or to both.

(3) If it is proved that an act or omission of any person, which would otherwise have been a contravention by that person of a provision of these Regulations, order or notice made was due to any cause not avoidable by the exercise of reasonable care by that person, the act or omission shall be deemed not to be a contravention by that person of that provision.

Appeal

62. Where a person is aggrieved by any order made under these Regulations the person may, within twenty-one (21) days of the order being made, lodge an appeal to a court with competent jurisdiction.

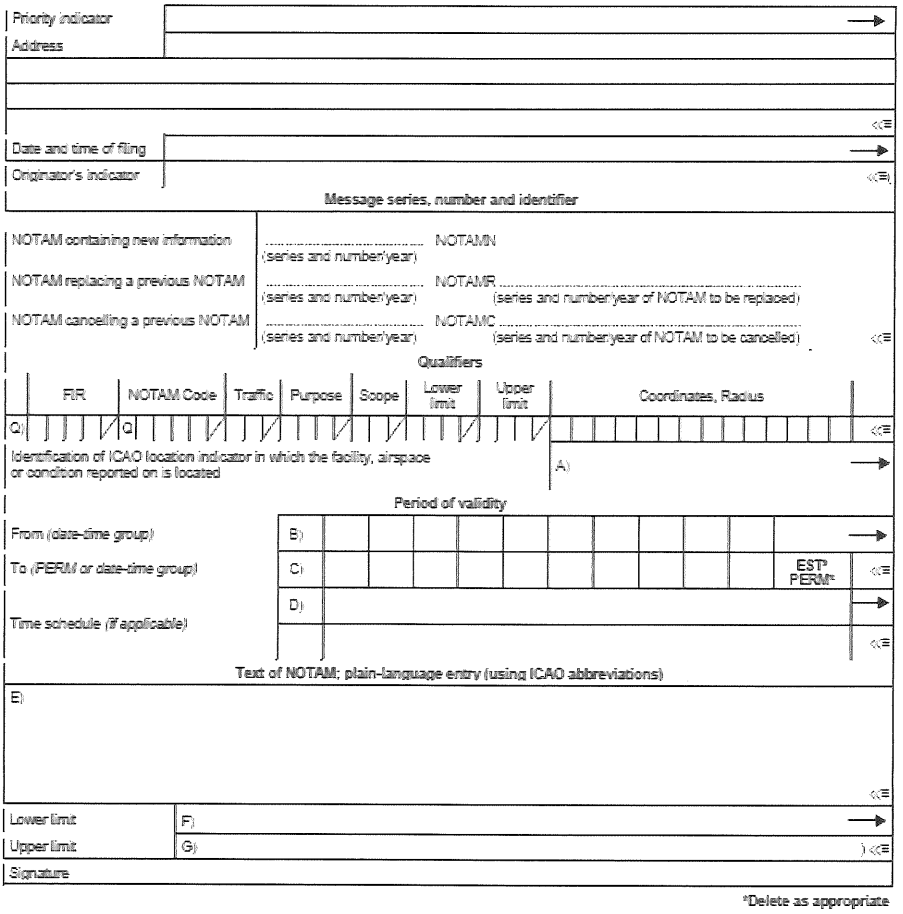
Transition and savings

63. A valid licence, certificate, permit or authorization issued or granted by the Authority before the commencement of these Regulations shall remain operational until it expires, revoked, annulled or replaced.

(COM heading)	(PRIORITY INDICATOR)	(ADDRESSEES)	-≡
	(DATE AND TIME OF FILING)	(ORIGINATOR'S INDICATOR)	-≡
(Abbreviated heading)	(SIWAA* SERIAL NUMBER) S W * *	(LOCATION INDICATOR)	(DATE-TIME OF OBSERVATION)	(OPTIONAL GROUP) ≡

SNOWTAM	(Serial number) -≡	
(AERODROME LOCATION INDICATOR)	A)	-≡
(DATE-TIME OF OBSERVATION (Time of completion of measurement in UTC))	B)	→
(RUNWAY DESIGNATOR)	C)	→
(CLEARED RUNWAY LENGTH, IF LESS THAN PUBLISHED LENGTH (m))	D)	→
(CLEARED RUNWAY WIDTH, IF LESS THAN PUBLISHED WIDTH (m) if offset left or right of centre line add 'L' or 'R')	E)	→
(DEPOSITS OVER TOTAL RUNWAY LENGTH (Observed on each third of the runway, starting from threshold having the lower runway designation number) NIL — CLEAR AND DRY 1 — DAMP 2 — WET 3 — RIME OR FROST COVERED (depth normally less than 1 mm) 4 — DRY SNOW 5 — WET SNOW 6 — SLUSH 7 — ICE 8 — COMPACTED OR ROLLED SNOW 9 — FROZEN RUTS OR RIDGES)	F) ../../..	→
(MEAN DEPTH (mm) FOR EACH THIRD OF TOTAL RUNWAY LENGTH)	G) ../../..	→
(ESTIMATED SURFACE FRICTION ON EACH THIRD OF RUNWAY ESTIMATED SURFACE FRICTION GOOD — 5 MEDIUM/GOOD — 4 MEDIUM — 3 MEDIUM/POOR — 2 POOR — 1 (The intermediate values of 'MEDIUM/GOOD' and 'MEDIUM/POOR' provide for more precise information in the estimate when conditions are found to be between medium and either good or poor.))	H) ../../..	→
(CRITICAL SNOWBANKS (If present, insert height (cm)/distance from the edge of runway (m) followed by 'L', 'R' or 'LR' if applicable))	J)	→
(RUNWAY LIGHTS (If obscured, insert 'YES' followed by 'L', 'R' or both 'LR' if applicable))	K)	→
(FURTHER CLEARANCE (If planned, insert length (m)/width (m) to be cleared or if to full dimensions, insert 'TOTAL'))	L)	→
(FURTHER CLEARANCE EXPECTED TO BE COMPLETED BY . . (UTC))	M)	→
(TAXIWAY (If no appropriate taxiway is available, insert 'NOT'))	N)	→
(TAXIWAY SNOWBANKS (If higher than 60 cm, insert 'YES' followed by the lateral distance apart, m))	P)	-≡
(APRON (If unusable, insert 'NOT'))	R)	→
(NEXT PLANNED OBSERVATION/MEASUREMENT IS FOR) (month/day/hour in UTC)	S)	→
(PLAIN LANGUAGE REMARKS (including contaminant coverage and other operationally significant information, e.g. sanding, de-icing chemicals))	T)	≡

NOTES: 1. *Enter ICAO nationality letters as given in ICAO Doc 7910, Part 2.*
2. *Information on other runways, repeat from B to P.*
3. *Words in brackets (...) not to be transmitted.*



*Delete as appropriate

(COM heading)	(PRIORITY INDICATOR)	(ADDRESSEE INDICATOR(S))[1]	
	(DATE AND TIME OF FILING)	(ORIGINATOR'S INDICATOR)	
(Abbreviated heading)	(VA[2] SERIAL NUMBER) V A [2] [2]	(LOCATION INDICATOR)	DATE/TIME OF ISSUANCE

ASHTAM	(SERIAL NUMBER)

(FLIGHT INFORMATION REGION AFFECTED)	A)
(DATE/TIME (UTC) OF ERUPTION)	B)
(VOLCANO NAME AND NUMBER)	C)
(VOLCANO LATITUDE/LONGITUDE OR VOLCANO RADIAL AND DISTANCE FROM NAVAID)	D)
(VOLCANO LEVEL OF ALERT COLOUR CODE, INCLUDING ANY PRIOR LEVEL OF ALERT COLOUR CODE)[3]	E)
(EXISTENCE AND HORIZONTAL/VERTICAL EXTENT OF VOLCANIC ASH CLOUD)[4]	F)
(DIRECTION OF MOVEMENT OF ASH CLOUD)[4]	G)
(AIR ROUTES OR PORTIONS OF AIR ROUTES AND FLIGHT LEVELS AFFECTED)	H)
(CLOSURE OF AIRSPACE AND/OR AIR ROUTES OR PORTIONS OF AIR ROUTES, AND ALTERNATIVE AIR ROUTES AVAILABLE)	I)
(SOURCE OF INFORMATION)	J)
(PLAIN-LANGUAGE REMARKS)	K)

NOTES:

1. See also Appendix 5 regarding addressee indicators used in predetermined distribution systems.
2. [a]Enter ICAO nationality letter as given in ICAO Doc 7910, Part 2.
3. See paragraph 3.5 below.
4. Advice on the existence, extent and movement of volcanic ash cloud G) and H) may be obtained from the volcanic ash advisory centre(s) responsible for the FIR concerned.
5. Item titles in brackets ( ) not to be transmitted.

SIGNATURE OF ORIGINATOR *(not for transmission)*

FOURTH SCHEDULE

Under Regulation 35

TERRAIN AND OBSTACLE ATTRIBUTES PROVISION REQUIREMENTS

Table S4 – 1- 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 S4 – 2- 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 resolution	Mandatory
Vertical reference system	Mandatory
Obstacle type	Mandatory
Geometry type	Mandatory
Integrity	Mandatory
Date and time stamp	Mandatory
Unit of measurement used	Mandatory
Operations	Optional
Effectivity	Optional
Lighting	Mandatory
Marking	Mandatory

FIFTH SCHEDULE: PRE-DETERMINED DISTRIBUTION SYSTEM FOR NOTAM

Under Regulation 38

1. The pre-determined distribution system provides for incoming NOTAM (including ASHTAM) to be channelled through the AFS direct to designated addressees pre-determined by the receiving country concerned while concurrently being routed to the international NOTAM office for checking and control purposes.

2. The addressee indicators for those designated addressees are constituted as follows -

   (1) First and second letters:

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

   (2) Third and fourth letters:

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

   (3) Fifth letter:

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

   (4) Sixth and seventh letters:

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

   (5) Eighth letter:

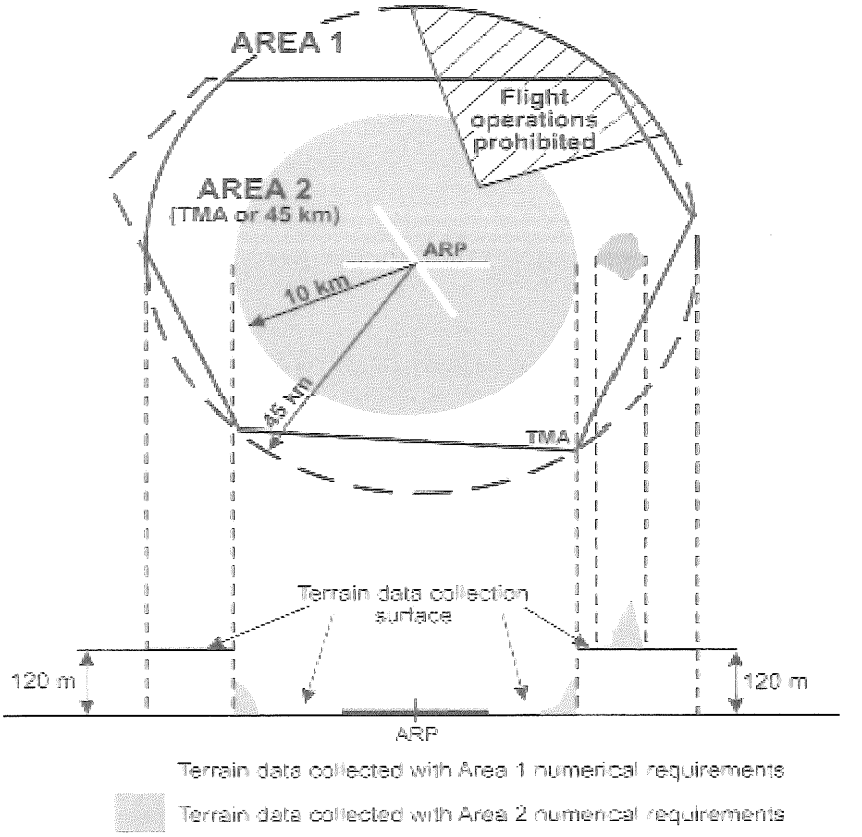
   The eighth position letter shall be the filler letter "X" to complete the eight-letter addressee indicator.

   The aeronautical information service provider is required to inform the States from which they receive NOTAM of the sixth and seventh letters to be used under different circumstances to ensure proper routing.

SIXTH SCHEDULE: TERRAIN AND OBSTACLE DATA REQUIREMENTS

Under Regulation 34

Fig. 6-1 Terrain data collection surfaces – area 1 and area 2



1) Within the area covered by a 10-km radius from the ARP, terrain data shall comply with the Area 2 numerical requirements.

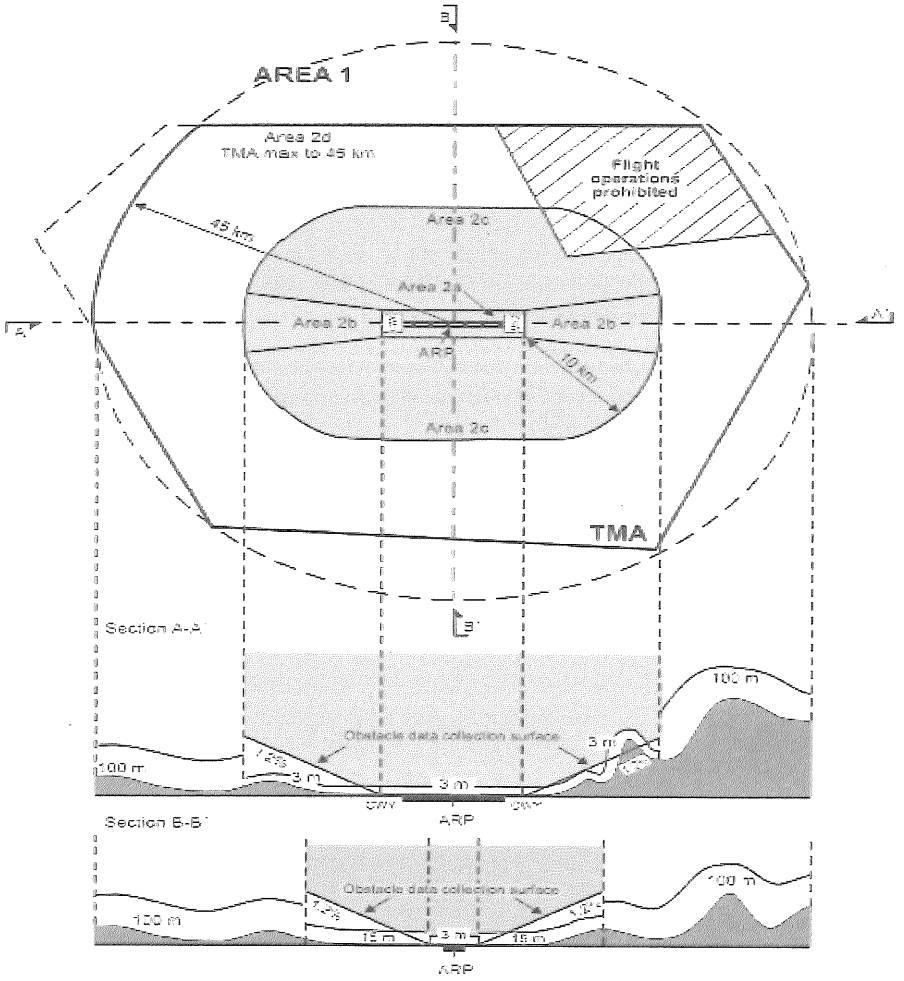
2) In the area between 10 km and the TMA boundary or 45-km radius (whichever is smaller), data on terrain that penetrates the horizontal plane 120 m above the lowest runway elevation shall comply with the Area 2 numerical requirements.

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.

Note. - Terrain data numerical requirements for Areas 1 and 2 are specified in Table S6-1.

Fig. 6-2 Obstacle data collection surfaces



1) Obstacle data shall be collected and recorded in accordance with the Area 2 numerical requirements specified in Table S6 -2:

a) Area 2a: a rectangular area around a runway that comprises the runway strip plus any clearway that exists. The Area 2a obstacle collection surface shall have 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) Area 2b: an area extending from the ends of Area 2a in the direction of departure, with a length of 10 km and a splay of 15% to each side. The Area 2b obstacle collection surface has a 1.2% slope extending from the ends of Area 2a at the elevation of the runway end in the direction of departure, with a length of 10 km and a splay of 15% to each side. Obstacles less than 3 m in height above ground need not be collected;

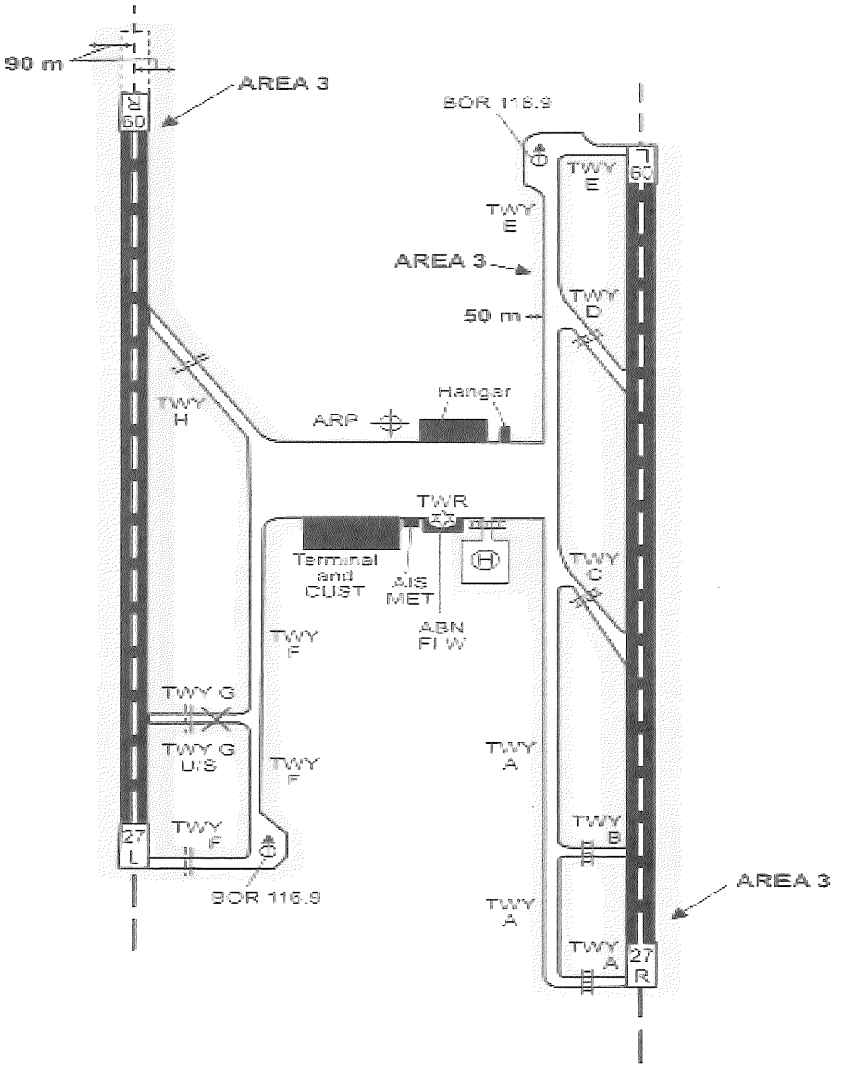
c) Area 2c: an area extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a. The Area 2c obstacle collection surface has a 1.2% slope extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a. The initial elevation of Area 2c shall be the elevation of the point of Area 2a at which it commences. Obstacles less than 15 m in height above ground need not be collected; and

d) Area 2d: an area outside the Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing TMA boundary, whichever is nearest. The Area 2d obstacle collection surface has a height of 100 m above ground.

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 S6-2.

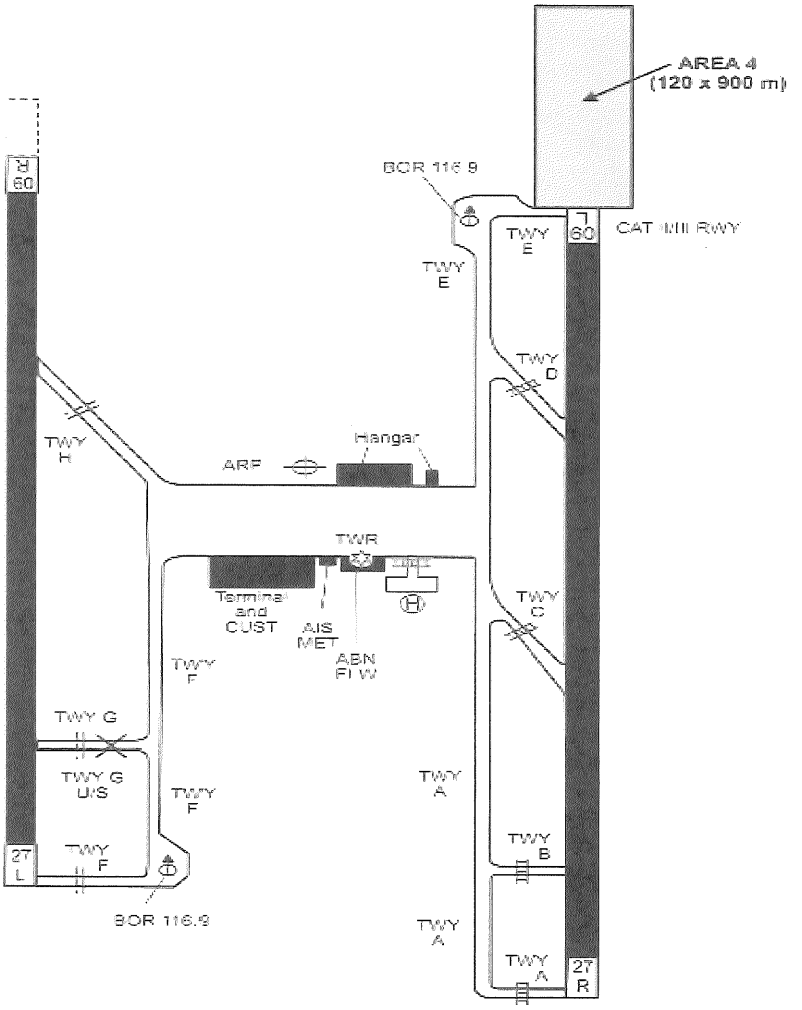
Fig. 6 -3 terrain and obstacle data collection surfaces – area 3



1) The data collection surface for terrain and obstacles extends a half-metre (0.5 m) above the horizontal plane passing through the nearest point on the aerodrome movement area.

2) Terrain and obstacle data in Area 3 shall comply with the numerical requirements specified in Table S6-1 and Table S6-2, respectively.

Fig. 6 – 4 Terrain and obstacle data collection surfaces – area 4



Terrain and obstacle data in Area 4 shall comply with the numerical requirements specified in Table S6-1 and Table S6-2 respectively.

Table S6-1: Terrain data numeric 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 S6- 2: Obstacle data numeric 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

SEVENTH SCHEDULE: AERONAUTICAL DATA PUBLICATION RESOLUTION AND INTEGRITY CLASSIFICATION

Under Regulation 16

Table S7 – 1- Latitude and longitude

Latitude and longitude	Publication resolution	Integrity classification
Flight information region boundary points	1 min	routine
P, R, D area boundary points (outside CTA/CTR boundaries)	1 min	routine
P, R, D area boundary points (inside CTA/CTR boundaries)	1 sec	essential
CTA/CTR boundary points	1 sec	essential
En-route NAVAIDS, intersections and waypoints, and holding, and STAR/SID points	1 sec	essential
Obstacles in Area 1 (the entire State territory)	1 sec	routine
Aerodrome/heliport reference point	1 sec	routine
NAVAIDS located at the aerodrome/heliport	1/10 sec	essential
Obstacles in Area 3	1/10 sec	essential
Obstacles in Area 2	1/10 sec	essential
Final approach fixes/points and other essential fixes/points comprising the instrument approach procedure	1/10 sec	essential
Runway threshold	1/100 sec	critical
Runway end	1/100 sec	critical
Runway holding position	1/100 sec	critical
Taxiway centre line/parking guidance line points	1/100 sec	essential
Taxiway intersection marking line	1/100 sec	essential
Exit guidance line	1/100 sec	essential
Aircraft stand points/INS checkpoints	1/100 sec	routine
Geometric centre of TLOF or FATO thresholds, heliports	1/100 sec	critical
Apron boundaries (polygon)	1/10 sec	routine
De-icing/anti-icing facility (polygon)	1/10 sec	routine

Table 7-2 Elevation/ altitude/ height

Elevation/altitude/height	Publication resolution	Integrity classification
Aerodrome/heliport elevation	1 m or 1 ft	essential
WGS-84 geoid undulation at aerodrome/heliport elevation position	1 m or 1 ft	essential
GBAS reference point	1 m or 1 ft	essential
Heliport crossing height, PinS approaches	1 m or 1 ft	essential
Runway or FATO threshold, non-precision approaches	1 m or 1 ft	essential
WGS-84 geoid undulation at runway or FATO threshold, TLOF geometric centre, non-precision approaches	1 m or 1 ft	essential
Runway or FATO threshold, precision approaches	0.1 m or 0.1 ft	critical
WGS-84 geoid undulation at runway or FATO threshold, TLOF geometric centre, precision approaches	0.1 m or 0.1 ft	critical
Threshold crossing height (reference datum height), precision approaches	0.1 m or 0.1 ft	critical
Obstacles in Area 2	1 m or 1 ft	essential
Obstacles in Area 3	0.1 m or 0.1 ft	essential
Obstacles in Area 1 (the entire State territory)	1 m or 1 ft	routine
Distance measuring equipment/precision (DME/P)	3 m (10 ft)	essential
Distance measuring equipment (DME)	30 m (100 ft)	essential
Minimum altitudes	50 m or 100 ft	routine

Table S7 – 3 Declination and magnetic variation

Declination/variation	Publication resolution	Integrity classification
VHF NAVAID station declination used for technical line-up	1 degree	essential
NDB NAVAID magnetic variation	1 degree	routine
Aerodrome/heliport magnetic variation	1 degree	essential
ILS localizer antenna magnetic variation	1 degree	essential
MLS azimuth antenna magnetic variation	1 degree	essential

Table S7 – 4 Bearing

Bearing	Publication resolution	Integrity classification
Airway segments	1 degree	routine
Bearing used for the formation of an en-route and a terminal fix	1/10 degree	routine
Terminal arrival/departure route segments	1 degree	routine
Bearing used for the formation of an instrument approach procedure fix	1/100 degree	essential
ILS localizer alignment (True)	1/100 degree	essential
MLS zero azimuth alignment (True)	1/100 degree	essential
Runway and FATO bearing (True)	1/100 degree	routine

Table S7 – 5 Length/ Distance/ Dimension

Length/distance/dimension	Publication resolution	Integrity classification
Airway segment length	1/10 km or 1/10 NM	routine
Distance used for the formation of an en-route fix	1/10 km or 1/10 NM	routine
Terminal arrival/departure route segment length	1/100 km or 1/100 NM	essential
Distance used for the formation of a terminal and instrument approach procedure fix	1/100 km or 1/100 NM	essential
Runway and FATO length. TLOF dimensions	1 m or 1 ft	critical
Runway width	1 m or 1 ft	essential
Displaced threshold distance	1 m or 1 ft	routine
Clearway length and width	1 m or 1 ft	essential
Stopway length and width	1 m or 1 ft	critical
Landing distance available	1 m or 1 ft	critical
Take-off run available	1 m or 1 ft	critical
Take-off distance available	1 m or 1 ft	critical
Accelerate-stop distance available	1 m or 1 ft	critical
Runway shoulder width	1 m or 1 ft	essential
Taxiway width	1 m or 1 ft	essential
Taxiway shoulder width	1 m or 1 ft	essential
ILS localizer antenna-runway end, distance	1 m or 1 ft	routine
ILS glide slope antenna-threshold, distance along centre line	1 m or 1 ft	routine
ILS marker-threshold distance	1 m or 1 ft	essential
ILS DME antenna-threshold, distance along centre line	1 m or 1 ft	essential
MLS azimuth antenna-runway end, distance	1 m or 1 ft	routine
MLS elevation antenna-threshold, distance along centre line	1 m or 1 ft	routine
MLS DME/P antenna-threshold, distance along centre line	1 m or 1 ft	essential

CHIEF NDLALUHLAZA NDWANDWE
MINISTER FOR PUBLIC WORKS AND TRANSPORT.