

Pursuant to Article 16 and Article 61(1) of the Law on Administration (Official Gazette of BIH 32/02 and 102/09), Article 14(1) of the Aviation Law of Bosnia and Herzegovina (Official Gazette of BIH 39/09), the Director General of the Bosnia and Herzegovina Directorate of Civil Aviation has hereby adopted

## **RULEBOOK ON AERONAUTICAL INFORMATION SERVICES IN BOSNIA AND HERZEGOVINA**

### **Article 1 (Subject Matter)**

- (1) This Rulebook lays down the manner of provision of aeronautical information services, including quality system requirements.
- (2) This Rulebook moreseely prescribes contents and layout of the elements of the Integrated Aeronautical Information Package (hereinafter: IAIP), types of information to be entered into the IAIP, sources of information and the manner of collection, submission and publication of the information.

### **Article 2 (Terms and Acronyms)**

- (1) The terms used in this Rulebook shall have the following meanings:
- a) Aerodrome: A defined area on land or water (including any buildings, installations and equipment) intended to be used either wholly or in part for the arrival, departure and surface movement of aircraft;
  - b) Aerodrome operator: any natural or legal person holding an aerodrome certificate issued by the competent aviation authority;
  - c) AIP Amendment: contains permanent changes to the information published in the AIP;
  - d) AIS product: Aeronautical data and aeronautical information provided in the form of elements of the Integrated Aeronautical Information Package (except NOTAM and PIB), including aeronautical charts, or in the form of suitable electronic media;
  - e) Altitude: The vertical distance of a level, a point, or an object considered as a point, measured from mean sea level (MSL);
  - f) Human factor principles: principles which apply to aircraft design, certification, personnel training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance;
  - g) Datum): Any quantity or set of quantities that may serve as a reference or basis for the calculation of other quantities (ISO 19104\*);
  - h) Bosnia and Herzegovina Directorate of Civil Aviation: The competent aviation authority of Bosnia and Herzegovina;
  - i) National Supervisory Authority: means the BHDCA;
  - j) AIP Supplement: Temporary changes to the information contained in the AIP which are published by means of special pages;
  - k) Quality assurance: Part of quality management focused on providing confidence that quality requirements will be fulfilled (ISO 9000\*);
  - l) Geoid: The equipotential surface in the gravity field of the Earth which coincides with the undisturbed mean sea level (MSL) extended continuously through the continents. The geoid is irregular in shape because of local gravitational disturbances (wind tides, salinity, current, etc.) and the direction of gravity is perpendicular to the geoid at every point;
  - m) Gregorian calendar: Calendar in general use. First introduced in 1582 to define a year that more closely approximates the tropical year than the Julian calendar (ISO 19108\*);
  - n) Heliport: An aerodrome or a defined area on land or on a structure intended to be used wholly or in part

- for the arrival, departure and surface movement of helicopters;
- o) **Integrated Aeronautical Information Package:** A package which consists of the following elements:
- 1) Aeronautical Information Publication (AIP), including AIP Amendments;
  - 2) Supplements to the AIP;
  - 3) NOTAM and Pre-flight Information Bulletins (PIB);
  - 4) Aeronautical Information Circulars (AIC);
  - 5) checklists and lists of valid NOTAMs; and
  - 6) Integrity (aeronautical data): A degree of assurance that an aeronautical data and its value has not been lost or altered since the data origination or authorised amendment;
- r) **Calendar:** Discrete temporal reference system that provides the basis for defining temporal position to a resolution of one day (ISO 19108\*);
- s) **Feature attribute:** Characteristic of a feature (ISO 19101\*). A feature attribute has a name, a data type and a value domain associated with it;
- t) **Integrity classification:** Classification based upon the potential risk resulting from the use of lost or altered data. Aeronautical data are classified as:
- 1) 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;
  - 2) 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;
  - 3) 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;
  - 4) *Control zone:* A controlled airspace extending upwards from the surface of the earth to a specified upper limit;
  - 5) Control area: A controlled airspace extending upward from a specified limit above the earth.
- u) **Cyclic redundancy check:** A mathematical algorithm applied to the digital expression of data that provides a level of assurance against loss or alteration of data;
- v) **Data quality:** A degree or level of confidence that the data provided meet the requirements of the data user in terms of accuracy, resolution and integrity;
- z) **Quality:** Degree to which a set of inherent characteristics fulfills requirements (ISO 9000\*);
- aa) **Quality control:** Operational procedures and activities used to fulfill quality requirements (ISO 9000\*);
- bb) **Maneuvering area:** That part of an aerodrome to be used for the take-off, landing and taxiing of aircraft, excluding aprons;
- cc) **International NOTAM Office (NOF):** An office designated by a State for the exchange of NOTAM internationally;
- dd) **International airport:** Any airport designated by the Contracting State in whose territory it is situated as an airport of entry and departure for international air traffic, where the formalities incident to customs, immigration, public health, animal and plant quarantine and similar procedures are carried out;
- ee) **Metadata:** Data about data (ISO 19115\*). A structured description of the contents, quality, condition or other characteristics of data;
- ff) **Aerodrome elevation:** The elevation of the highest point of the landing area;
- gg) **Elevation:** The vertical distance of a point or a sea level on the surface of the earth, measured from mean sea level.
- hh) **NOTAM (Notice to Airmen):** 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;
- ii) **Flight Information Region – FIR:** A specified region of airspace in which a flight information service and an alerting service are provided;
- jj) **Restricted area:** A portion of airspace within which the flight of aircraft is restricted in accordance with certain specified conditions and during a specified time;
- kk) **Danger area:** A portion of airspace of defined dimensions within which activities dangerous to the flight of aircraft may exist at specified times;
- ll) **Apron:** A defined area intended to accommodate aircraft for purposes of loading and unloading passengers, mail or cargo, and for fuelling, parking or maintenance;
- mm) **Aeronautical Information Service Provider:** The Air Navigation Services Agency (BHANSA) or another organisation which holds a valid certificate for the provision of aeronautical information services and is designated by the competent aviation authority;
- nn) **Runway:** A defined rectangular area on a land aerodrome prepared for the landing and take-off of aircraft;
- oo) **Obstacle/terrain data collection surface:** A defined surface intended for the purpose of collecting obstacle/terrain data;
- pp) **Position (geographical):** Set of coordinates (latitude and longitude) referenced to the mathematical reference ellipsoid which define the position of a point on the surface of the Earth;
- rr) **Obstacle:** All fixed (whether temporary or permanent) and mobile objects, or parts thereof, that:
- 1) are located on an area intended for the surface movement of aircraft; or

- 2) extend above a defined surface intended to protect aircraft in flight; or
- 3) stand outside those defined surfaces and that have been assessed as being a hazard to air navigation.
- ss) **Pre-flight information bulletin:** A presentation of current NOTAM information of operational significance, prepared prior to flight;
- tt) **Transition Altitude:** The altitude at or below which the vertical position of an aircraft is controlled by reference to altitudes;
- uu) **Threshold:** The beginning of that portion of the runway usable for landing;
- x) **Human Factor Principles:** principles which apply to aircraft design, certification, personnel training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance;
- zz) **Aeronautical Information Regulation and Control (AIRAC):** A system aimed at advance notification, based on common effective dates, of circumstances that necessitate significant changes in operating practices;
- aaa) **Resolution:** A number of units or digits to which a measured or calculated value is expressed and used;
- bbb) **Taxiway:** A defined path on a land aerodrome established for the taxiing of aircraft and intended to provide a link between one part of the aerodrome and another, including:
- 1) aircraft stand taxilane – a portion of an apron designated as a taxiway and intended to provide access to aircraft stands only;
  - 2) apron taxiway – a portion of a taxiway system located on an apron and intended to provide a through taxi route across the apron;
  - 3) rapid exit taxiway – a taxiway connected to a runway at an acute angle and designed to allow landing aeroplanes to turn off at higher speeds than are achieved on other exit taxiways thereby minimizing runway occupancy times;
  - 4) **Certification:** means a procedure for determining an applicant's compliance with the applicable requirements, including the provisions of the Aviation Law of Bosnia and Herzegovina and any regulations adopted pursuant to this Law, as well as for issuance of an appropriate certificate confirming such compliance and for entry of the certificate holder into the relevant register;
  - 5) **Traceability:** Ability to trace the history, application or location of that which is under consideration;
  - 6) **Data Product Specification:** Detailed description of a data set or data set series together with additional information that will enable it to be created, supplied to and used by another party (ISO 19131\*). A data product specification provides a description of the universe of discourse and a specification for mapping the universe of discourse to a data set. It may be used for production, sales, end-use or other purpose;
- 7) **Accuracy:** A degree of conformance between the estimated or measured value and the true value;
- 8) **Terrain:** The surface of the Earth containing naturally occurring features such as hills, ridges, valleys, bodies of water, permanent ice and snow, and excluding obstacles;
- 9) **Geoid undulation:** The distance of the geoid above or below the mathematical reference ellipsoid;
- 10) **Quality management:** Coordinated activities to direct and control an organisation with regards to quality (ISO 9000\*);
- 11) **Aeronautical Information Management:** The dynamic, integrated management of aeronautical information through the provision and exchange of quality-assured digital aeronautical data in collaboration with all parties;
- 12) **Aeronautical Information Services:** Services 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;
- 13) **Air navigation services:** A generic term meaning the provision of aeronautical information services, air traffic services, navigation, communication and surveillance services, and meteorological services;
- ccc) **Validation:** Confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled (ISO 9000\*);
- ddd) **Aeronautical data:** A representation of aeronautical facts, concepts or instructions in a formalized manner suitable for communication, interpretation or processing;
- eee) **Aeronautical information:** Information resulting from the assembly, analysis and formatting of aeronautical data;
- fff) **Aeronautical Information Circular:** A notice containing information that does not qualify for publication by means of a NOTAM or the AIP, but which relates to flight safety, air navigation, technical, administrative or legislative matters;
- ggg) **Aircraft:** Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface;
- hhh) **Verification:** Confirmation, through the provision of objective evidence, that specified requirements have been fulfilled (ISO 9000\*);
- iii) **Runway Visual Range – RVR:** The range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the

- lights delineating the runway or identifying its centre line;
- jjj) **Prohibited area:** An airspace of defined dimensions, above the land areas or territorial waters of a State, within which the flight of aircraft is prohibited;
- kkk) **Requirement:** Need or expectation that is stated, generally implied or obligatory (ISO 9000);
- lll) **Aeronautical Information Publication:** A publication issued by or with authority of a State and containing aeronautical information of a lasting character essential to air navigation;
- mmm) **Air Defence Identification Zone:** Special designated airspace of defined dimensions within which aircraft are required to comply with special identification and/or reporting procedures additional to those related to the provision of air traffic services;
- nnn) **Obstacle free zone:** The airspace above the inner approach surface, inner transitional surfaces, and balked landing surface and that portion of the strip bounded by these surfaces, which is not penetrated by any fixed obstacle other than a low-mass and frangibly mounted one required for air navigation purposes.

\*ISO Standard

- **9000 - Quality Management System - Fundamentals and Vocabulary** (embodies a management system concept, and the terminology used)
  - **19101 - Geographic information - Reference Model** (Standardisation of geographic information – Reference model)
  - **19104 - Geographic information - Terminology** (Standardisation of geographic information – Terminology)
  - **19108 - Geographic information - Temporal schema** (Standardisation of geographic information – Temporal schema)
  - **19109 - Geographic information - Rules for application schema** (Standardisation of geographic information – Rules for application schema)
  - **19110 - Geographic information - Feature cataloguing schema** (Standardisation of geographic information – Feature cataloguing schema)
  - **19115 - Geographic information - Metadata** (Standardisation of geographic information – Metadata)
  - **19117 - Geographic information - Portrayal** (Standardisation of geographic information – Portrayal)
  - **19131 - Geographic information - Data product specification** (Standardisation of geographic information – Specification)
- (1) The acronyms used in this Rulebook shall have the following meanings:
- a) **AIC** - Aeronautical Information Circular;
  - b) **AIP** - Aeronautical Information Publication;
  - c) **AIS** - Aeronautical Information Services;
  - d) **AIRAC** - Aeronautical Information Regulation and Control;
  - e) **AMDT** - Amendment (AIP Amendment);
  - f) **AFTN** - Aeronautical Fixed Telecommunication Network;
  - g) **ATM** - Air Traffic Management;
  - h) **ATS** - Air Traffic Services;
  - i) **AIP SUP** - AIP Supplement;
  - j) **BHDCA** - Bosnia and Herzegovina Directorate of Civil Aviation;
  - k) **CPDLC** - Controller-pilot data link communications;
  - l) **CRC** - Cyclic Redundancy Check;
  - m) **CTA** - Control Area;
  - n) **CTZ** - Control Zone;
  - o) **D** - Danger Area;
  - p) **DME** - Distance Measuring Equipment;
  - r) **H24** - Continuous day and night service;
  - s) **FIS** - Flight Information Service;
  - r) **FATO** - Final Approach and Take-off Area;
  - t) **IAIP** - Integrated Aeronautical Information Package;
  - u) **ICAO** - International Civil Aviation Organisation;
  - v) **ILS** - Instrument Landing System;
  - z) **IFR** - Instrument Flight Rules;
  - aa) **MSL** - Mean Sea Level;
  - bb) **NOF** - International NOTAM Office;
  - cc) **NOTAM** (*Notice To Airmen*) - 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;
  - dd) **NSA** - National Supervisory Authority;
  - ee) **P** - Prohibited Area;
  - ff) **QMS** - Quality Management System;
  - gg) **PIB** - Pre-flight Information Bulletin;
  - hh) **R** - Restricted Area;
  - ii) **RWY** - Runway;
  - jj) **SARPs** - Standard and Recommended Practices (ICAO);
  - kk) **SID** - Standard Instrument Departure;
  - ll) **SSR** - Secondary Surveillance Radar;
  - mm) **STAR** - Standard Instrument Arrival;
  - nn) **THR** - Threshold;
  - oo) **TLOF** - Touchdown and Lift-off Area;
  - pp) **WGS-84** - World Geodetic System 1984;
  - rr) **UTC** - Coordinated Universal Time.

### Article 3 (Competences)

- (1) Bosnia and Herzegovina shall ensure, in accordance with ICAO Annex 15 (Aeronautical Information Services):
- a) provision of aeronautical information services; or

- b) conclusion of agreements with other signatory States of the Chicago Convention, on joint provision of aeronautical information services, or
  - c) delegation of authority to provide aeronautical information services to an organisation, provided that it fulfills the standards and recommended practices of ICAO Annex 15 (*Aeronautical Information Services*).
- (2) Any aeronautical information published in the name and on behalf of Bosnia and Herzegovina shall be indicated as such, i.e. shall be indicated as published by Bosnia and Herzegovina.
  - (3) Bosnia and Herzegovina shall, in accordance with the Aviation Law of Bosnia and Herzegovina, undertake any necessary measures in order to ensure publication of timely and adequate information and their appropriate quality. Such information/data shall pertain to the information/data provided by Bosnia and Herzegovina within its territory, as well as for areas in which Bosnia and Herzegovina is responsible for the provision of air navigation services outside its territory.
  - (4) The BHDCA shall ensure appropriate oversight of the application of this Rulebook, in particular regarding safe and efficient operations of the aeronautical information service providers providing services in the airspace that is under the responsibility of Bosnia and Herzegovina.
  - (5) The BHDCA shall carry out relevant audits and inspections to verify compliance with the common and specific requirements for the provision of aeronautical information services.
  - (6) The BHDCA shall conclude relevant cooperation agreements in order to ensure adequate oversight of any aeronautical information service provider holding a valid certificate issued by another State and providing services pertaining to the airspace under the responsibility of Bosnia and Herzegovina.
- j) publishing differences between the regulations of Bosnia and Herzegovina, i.e. the regulations of the competent aviation authority, and the standards and recommended practices contained in ICAO Annexes.
- (3) Coordination procedures, submission modalities, periods, contents, updates, record-keeping, as well as other data relevant to the safe conduct of aircraft operations and air navigation, shall be regulated in a joint agreement by the aeronautical information service provider and the relevant service, including aerodrome operators.
  - (4) The tasks referred to in paragraph (2) of this Article shall be achieved through provision of aeronautical information/data necessary for the discharge of their responsible functions of all stakeholders (flight crews, operators and other entities interested for the operation or development of international air transport).
  - (5) An aeronautical information service provider shall be:
    - a) functionally organised;
    - b) equipped with the required technical devices for the purpose of processing and originating information;
    - c) staffed in order to ensure an efficient and reasonable process of gathering, processing and distributing information, in the way that staff profiles and numbers are such so as to ensure a speedy and efficient work flow.
  - (6) The aeronautical information service provider shall publish and distribute the IAIP.

#### Article 5

##### (Responsibilities and Functions of an Aeronautical Information Service Provider)

- Article 4  
(Tasks of an Aeronautical Information Service Provider)
- (1) The task of an aeronautical information service provider shall be to ensure a flow of accurate information necessary for the safety, regularity and efficiency of international air navigation.
  - (2) The tasks of an aeronautical information service provider shall be defined according to the actual situation in its area of competence and shall include as follows:
    - a) coordination with the relevant services being the sources of aeronautical information;
    - b) coordination between the aeronautical information service provider and the aerodrome operator;
    - c) collection of any relevant flight data in its area of competence that are used to prepare aeronautical information;
    - d) verification of received data for the purpose of determining authenticity of the elements relevant to the duration and accuracy of information;
    - e) defining the form and priority of information submission;
    - f) processing information;
    - g) distribution of data and information to potential users of information;
    - h) distribution, based on international obligations, of aeronautical data and information, as well as data relevant to the aeronautical information, to other countries or aeronautical information service providers of other countries;
    - i) development and optimisation of the work methods and organisation of the aeronautical information service provider;
  - (1) Pursuant to Article 4(1) of this Rulebook, the aeronautical information service provider shall be responsible for the execution of the tasks specified in Article 4 of this Rulebook.
  - (2) The aeronautical information service provider shall have the sole responsibility for the collection, assessment, development, publication, updates and distribution of aeronautical data and information relating to FIR Sarajevo.
  - (3) Where 24-hour (H24) aeronautical information service is not provided, service shall be available during the whole period an aircraft is in flight in the area of responsibility of the aeronautical information service provider, plus a period of at least two hours before and after such a period.
  - (4) Aeronautical information services shall also be available at such other time as may be agreed upon between the aeronautical information service provider and a stakeholder.
  - (5) In order to provide pre-flight and in-flight aeronautical data and information, an aeronautical information service provider shall obtain the aeronautical data from the following sources:
    - a) from the aeronautical information service provider of other countries;
    - b) from other sources that may be available.
  - (6) Aeronautical data and information obtained under Article 5(5)b) of this Rulebook, shall, if possible, be verified before distribution and if not verified before distribution, shall be clearly identified as such.
  - (7) An aeronautical information service provider shall ensure that aeronautical data and information necessary for the safety, regularity and efficiency of air navigation are made available in a form suitable for:
    - a) the personnel tasked for flight operations (including flight crews), flight planning and flight simulators;
    - b) the air traffic services units responsible for flight information service and the services responsible for pre-flight information.

- (8) Aeronautical data and aeronautical information shall be made available to users by the aeronautical information service provider in the form of IAIP.
- (9) An aeronautical information service provider shall collate and/or determine the origin of, edit, assemble, publish/store and distribute aeronautical data and information concerning the territory of Bosnia and Herzegovina, as well as those areas in which Bosnia and Herzegovina is responsible for the provision of air traffic services outside its territory.
- (10) An aeronautical information service provider shall take all necessary measures to ensure the adequacy and accuracy of aeronautical data and information and shall regularly verify that they are kept up-to-date.

#### Article 6

##### (Work Methods and Operational Manuals)

An aeronautical information service provider shall be able to prove that his work methods and operating procedures are compliant with the standards contained in:

- a) Rulebook on the quality of aeronautical data and aeronautical information (Official Gazette of BIH 61/14);
- b) Annex 3, Meteorological Service for International Air Navigation;
- c) Annex 4, Aeronautical Charts; and
- d) Annex 15, Aeronautical Information Services, notwithstanding the Rulebook on the quality of aeronautical data and aeronautical information (Official Gazette of BIH 61/14).

#### Article 7

##### (Exchange of Aeronautical data/information)

- (1) The competent organisational unit of the aeronautical information service provider shall receive the elements of the IAIP that are distributed by service providers of other States and shall deal with their requests.
- (2) An aeronautical information service provider shall, as necessary, satisfy operational requirements for the publication and receipt of NOTAM distributed by telecommunication.
- (3) To facilitate the exchange of aeronautical data and information, the aeronautical information service provider shall establish direct contact with aeronautical information service providers of other States, in order to facilitate the international exchange of aeronautical data and information.
- (4) One copy of each of the elements of the IAIP that have been requested by the aeronautical information service provider of an ICAO Contracting State shall be made available by the aeronautical information service provider of Bosnia and Herzegovina. This copy shall have a standardised form and shall be free of charge, even where authority for publication and distribution has been delegated to a commercial agency.
- (5) The exchange of more than one copy of the elements of the IAIP and other air navigation documents, including those containing air navigation legislation of the BHDCA, as hardcopy and/or in electronic form, with other ICAO States, may be subject to bilateral agreement.

#### Article 8

##### (Horizontal reference system)

- (1) The World Geodetic System - 1984 (WGS-84) shall be used as the horizontal (geodetic) reference system for international air navigation.

- (2) In line with paragraph (1) of this Article, published aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference system.
- (3) Geographic coordinates which have been transformed into WGS-84 coordinates but whose accuracy and application in the field does not meet the requirements in Annex 11 – Air Traffic Services, Chapter 2, and ICAO Annex 14 – Aerodromes, Volumes I and II, Chapter 2, shall be identified by an asterisk (\*).
- (4) The order of publication resolution of geographical coordinates shall be that specified in Table 1 of Appendix 1 of this Rulebook, while the order of chart resolution of geographical coordinates shall be that specified in ICAO Annex 4 - Aeronautical charts, Appendix 6, Table 1.

#### Article 9

##### (Vertical reference system)

- (1) Mean sea level (MSL) datum, which gives the relationship of gravity-related height (elevation) to a surface known as the geoid, shall be used as the vertical reference system for international air navigation.
- (2) The Earth Gravitational Model – 1996 (EGM-96), containing wavelength gravity field data to degree and order 360, shall be used as the global gravity model.
- (3) At those geographical positions where the accuracy of EGM-96 does not meet the accuracy requirements for elevation and geoid undulation specified in Annex 14, Volumes I and II, on the basis of EGM-96 data, national, regional and local geoid models containing high resolution (short wavelength) data shall be developed and used. When another geoid model is used, a description of the model used, including the parameters required for height transformation between the model used and EGM-96, shall be provided in the Aeronautical Information Publication (AIP).
- (4) In addition to elevation referenced to the MSL (geoid), for the specific surveyed ground positions, geoid undulation (referenced to the WGS-84 ellipsoid) for those positions specified in Appendix 1 of ICAO Annex 15 - Aeronautical Information Services, shall also be published;
- (5) The order of publication resolution of elevation and geoid undulation shall be that specified in Table 2 of Appendix I of this Rulebook, while the order of chart resolution of elevation and geoid undulation shall be that specified in ICAO Annex 4 - Aeronautical Charts, Appendix 6, Table 2.

#### Article 10

##### (Temporal reference system)

- (1) For international civil aviation, the Gregorian calendar and Coordinated Universal Time (UTC) shall be used as the temporal reference system.
- (2) Where there is a need to use a different temporal reference system for some applications, the feature catalogue, or the metadata associated with an application schema or a data set shall include either a description of that system or a citation for a document that describes that temporal reference system.
- (3) If another temporal reference system is used (e.g. Local Time), it shall be published in the AIP (GEN 2.1.2, Aeronautical Information Publication).

## Article 11

(Use of language, units of measurement and abbreviations)

- (1) Each element of the IAIP intended for international distribution shall include English text for those parts expressed in plain language, and place names shall be spelt in conformity with local usage, transliterated into the Latin alphabet.
- (2) Units of measurement used in the origination, processing and distribution of aeronautical data and information shall be consistent with the Rulebook on the use of units of measurement in civil aviation (Official Gazette of BIH 20/11).
- (3) ICAO abbreviations shall be used in the provision of aeronautical information services whenever they are appropriate and their use will facilitate distribution of aeronautical data and information.

## Article 12

(Copyright)

In order to protect the investment in the products of an aeronautical information service provider, as well as to ensure better control of their use, copyright may be applied to those AIS products in accordance with the laws and other regulations of Bosnia and Herzegovina in the field of intellectual property.

## Article 13

(Aeronautical information management requirements)

- (1) An aeronautical information service providers shall establish aeronautical information management resources and processes to ensure the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and information within the air traffic management system.
- (2) An aeronautical information service provider shall establish a quality system that includes procedures, processes and resources necessary for the implementation of quality management at each functional level and shall demonstrate, where needed, quality management at each functional level.
- (3) The procedures referred to in paragraph (2) of this Article shall at all times ensure the traceability of data to their source, in order to rectify any anomalies and errors detected during the origination or updating phases, or in operational use.

## Article 14

(Aeronautical data and information validation and verification)

- (1) Before submitting them to the aeronautical information service provider, data originators/data sources shall check aeronautical data and information to be published as part of the IAIP, in order to make certain that all necessary information has been included and that it is entirely correct.
- (2) Upon receipt of aeronautical data and information, the aeronautical information service provider shall implement the established procedures for the verification and validation of aeronautical data and information, which ensure that quality requirements (accuracy, resolution, integrity and traceability) are met.

## Article 15

(Accuracy of aeronautical data)

The accuracy of aeronautical data shall be aligned with the specifications given in ICAO Annex 11 - Air Traffic Services, Chapter 2, and ICAO Annex 14 - Aerodromes, Volume I and II, Chapter 2, where three types of coordinates shall be identified:

- a) surveyed points (runway thresholds, navigation aid positions, etc);

- b) calculated points (mathematically calculated coordinates of points in space from the coordinates of known surveyed points);
- c) declared points (e.g. FIR boundaries).

## Article 16

(Resolution of aeronautical data)

The publication resolution of aeronautical data shall be aligned with the specifications given in Appendix I to this Rulebook.

## Article 17

(Integrity of aeronautical data)

- (1) The integrity classification of aeronautical data shall be aligned with the requirements provided in the tables under Appendix I to this Rulebook.
- (2) The integrity of aeronautical data shall be maintained throughout the data process from survey/origin to distribution to the next intended user.
- (3) Depending on the delivery method, distribution to the next intended user may be:
  - a) physical distribution, achieved through the delivery of a physical package (e.g. postal service), or
  - b) direct electronic distribution, achieved through the use of a direct electronic connection between the aeronautical information service provider and the next intended user.
- (4) The validation and verification procedures are based on the applicable integrity classification and shall:
  - a) for routine data – avoid corruption throughout the processing of the data;
  - b) for essential data – assure corruption does not occur at any stage of the process and may include additional processes as needed to address potential risks in the overall system architecture to further assure data integrity at this level;
  - c) for critical data – assure corruption does not occur at any stage of the process and include additional integrity assurance processes to fully mitigate the effects of faults identified by analysis of the overall system architecture as potential data integrity risks.

## Article 18

(Metadata)

- (1) Metadata shall be collected during the processing and exchange of aeronautical data throughout the aeronautical information data chain, from origin to distribution to the next intended user.
- (2) The metadata to be collected shall include:
  - a) the name of the organisation or entities performing any action of originating, transmitting or processing the data;
  - b) the action performed, and
  - c) the date and time the action was performed.

## Article 19

(Aeronautical data protection)

- (1) Aeronautical data and data sets shall be protected in accordance with data error detection, security, and authentication techniques.
- (2) Electronic aeronautical data sets shall be protected by a 32-bit cyclic redundancy check (CRC) implemented by the electronic application dealing with the data sets.

- (3) The protection by use of a 32-bit cyclic redundancy check shall be applied to the integrity classification referred to in Article 17 of this Rulebook.

#### Article 20

##### (Use of automation)

- (1) If automation is introduced with the objective of improving the timeliness, efficiency and cost-effectiveness of aeronautical information services, it must ensure:
- digital aeronautical data exchange between the parties involved in the data processing chain;
  - the use of aeronautical information exchange models and data exchange models designed to be globally interoperable.
- (2) Where aeronautical data and information are made available in multiple formats, data and information consistency between such formats shall be ensured.

#### Article 21

##### (Quality management system)

- (1) An aeronautical information service provider shall implement and maintain a quality management system encompassing all functions of an aeronautical information service as outlined in Article 5 of this Rulebook, and shall be made demonstrable for each functional level.
- (2) Quality management shall be 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.
- (3) The quality management system established in accordance with paragraph (1) of this Article shall be compliant with the ISO 9000 series of standards.
- (4) An ISO 9000 certificate issued by a relevant accredited organisation shall be considered a sufficient means of compliance with the requirement of paragraph (1) of this Article.
- (5) Within the context of the established quality management system, the aeronautical information service provider shall identify the competencies, knowledge, skills and abilities required for each aeronautical information function; shall define training for the personnel performing such functions, and establish processes to ensure that personnel possess the competencies required to perform assigned functions.
- (6) The qualifications of personnel shall be confirmed through maintenance of appropriate records and through initial and periodic checks that require personnel to demonstrate the required competencies and that are used as a means to detect and correct shortfalls.
- (7) A quality management system shall include the policies, processes and procedures, including those for the use of metadata, to ensure and verify that aeronautical data are traceable throughout the aeronautical information data chain, so as to allow any data anomalies or errors to be identified by root cause, corrected and communicated to affected users.
- (8) The established quality management system shall provide users with necessary assurance and confidence that distributed aeronautical data and information satisfy the aeronautical data quality requirements for accuracy, resolution and integrity, and the data traceability requirements through the provision of appropriate metadata as specified in Article 17 of this Rulebook.
- (9) The quality management system shall provide assurance of the applicability period of intended use of aeronautical data, as well as that the agreed distribution dates will be met.

- (10) An aeronautical information service provider shall take all necessary measures to monitor compliance with the quality management system in place, to detect nonconformities, take corrective action and record and document all findings and remedial actions.

#### Article 22

##### (Human factors)

In the provision of aeronautical information services, as well as in the design, processing and distribution of aeronautical data and information, Human Factors principles which facilitate their utilisation shall be taken into consideration, and special attention shall be given to the integrity of information when human interaction is required.

#### Article 23

##### (AIRAC – General provisions)

- (1) Information concerning the circumstances listed in Appendix II to this Rulebook shall be distributed under the regulated system of AIRAC, based on pre-defined effective dates at intervals of 28 days.
- (2) AIRAC information shall not be changed further for at least another 28 days, unless they are of a temporary nature and would not persist for the full period.
- (3) Where there are no information to be published on a specific AIRAC date, a NIL notification shall be published and distributed by NOTAM or other suitable means, not later than one cycle before the AIRAC effective date concerned.
- (4) For changes to operationally significant aeronautical data and information requiring cartographic work and/or updating of navigation databases, data sources/originators shall plan implementation dates to coincide with AIRAC effective dates.
- (5) As a rule of thumb, dates within the AIRAC cycle occurring between 21 December and 17 January, both dates inclusive, are not used as effective dates.

#### Article 24

##### (Provision of information in paper copy form)

- (1) The aeronautical information service provider shall distribute information in paper copy at least 42 days in advance of the effective date, with the objective of reaching recipients at least 28 days in advance of the effective date.
- (2) Where major changes are planned and where advance notice is practicable, AIRAC information in paper copy form shall be distributed by the aeronautical information service provider at least 56 days in advance of the effective date.
- (3) Paragraph (2) of this Article shall be applied to the establishment of the circumstances listed in Part 3 of Appendix II to this Rulebook and to premeditated major changes in relation to such circumstances, and other major changes if deemed necessary.

#### Article 25

##### (Provision of information as electronic media)

- (1) When updating the contents of an aeronautical database concerning the circumstances listed in Part 1 of Appendix II to this Rulebook, the aeronautical information service provider shall ensure that the effective dates coincide with the AIRAC effective dates.
- (2) Information provided as electronic media concerning the circumstances listed in Part 1 of Appendix II to this Rulebook shall be distributed/made available by the aeronautical information service provider so as to reach recipients at least 28 days in advance of the effective date.



- (3) Where major changes are planned and where advance notice is practicable, the aeronautical information service provider shall distribute/make available information provided as electronic media at least 56 days in advance of the effective date.

#### Article 26

##### (Aeronautical Information Circular)

- (1) An aeronautical information circular (hereinafter: AIC) shall be originated whenever it is necessary to promulgate aeronautical information which does not qualify for inclusion in an aeronautical information publication (AIP) or for publication by a NOTAM.
- (2) An AIC shall be originated whenever it is desirable to promulgate:
- a long-term forecast of any change in legislation, regulations, procedures or facilities;
  - information of an explanatory or advisory nature liable to affect flight safety;
  - information of an explanatory or advisory nature concerning technical, legislative or administrative matters.

#### Article 27

##### (Information published in an AIC)

Information published in an AIC shall include:

- forecasts of important changes in the air navigation procedures, services and facilities provided;
- forecasts of implementation of new navigation systems;
- significant information arising from aircraft accident/incident investigation which has a bearing on flight safety;
- information on regulations relating to the safeguarding of international civil aviation against acts of unlawful interference;
- advice on medical matters of special interest to pilots;
- warnings to pilots concerning the avoidance of physical hazards;
- effect of certain weather phenomena on aircraft operations;
- information on new hazards affecting aircraft handling techniques;
- regulations relating to the carriage of restricted articles by air;
- reference to the requirements of, and publication of changes in, national legislation;
- aircrew licensing arrangements;
- training of aviation personnel;
- application of, or exemption from, requirements in national legislation;
- advice on the use and maintenance of specific types of equipment;
- actual or planned availability of new or revised editions of aeronautical charts;
- carriage of communication equipment;
- information relating to noise abatement;
- selected airworthiness directives;
- changes in NOTAM series or distribution, new editions of AIP or major changes in their contents, coverage or format;
- advance information on the snow plan;
- other information of a similar nature.

#### Article 28

##### (The snow plan)

- (1) The snow plan published under AIP AD 1.2.2, whose contents are given in Appendix 1, ICAO Annex 15 -

Aeronautical Information Services, shall be supplemented by seasonal information, to be issued not less than one month before the onset of winter conditions.

- (2) The seasonal information referred to in paragraph (1) of this Article shall contain:
- a list of aerodromes/heliports where snow clearance is expected to be performed during the coming winter:
    - in accordance with the runway and taxiway systems; or
    - planner snow clearing, deviating from the runway system (length, width and number of runways, affected taxiways and aprons or portions thereof);
  - information concerning any centre designated to coordinate information on the current state of progress of clearance and on the current state of runways, taxiways and aprons;
  - a division of the aerodromes/heliports into SNOWTAM distribution lists in order to avoid excessive NOTAM distribution;
  - an indication, as necessary, of minor changes to the standing snow plan;
  - a descriptive list of clearance equipment;
  - the criteria to define the minimum critical snow bank at each aerodrome/heliport at which reporting will commence.
- (3) The information referred to in paragraph (2) of this Article, except for point c), shall be included in the AIP, as necessary.

#### Article 29

##### (AIC – General provisions)

- An aeronautical information service provider shall select the AIC that is to be given international distribution.
- Each AIC shall be a serial number which shall be consecutive and based on the calendar year.
- When AICs are distributed in more than one series, each series shall be separately identified by a letter.
- When there is a significant number of AICs in force, they shall be differentiated and identified according to topics using colour coding.
- A checklist of AIC shall be published at least once a year, with distribution as for the AIC.

#### Article 30

##### (Pre-flight information)

- At any aerodrome/heliport normally used for international air operations, aeronautical information essential for the safety, regularity and efficiency of air navigation and relative to the route stages originating at the aerodrome/heliport shall be made available to flight operations personnel, including flight crews and personnel responsible for pre-flight information.
- Aeronautical information provided for pre-flight planning purposes at the aerodromes/heliports referred to in paragraph (1) of this Article shall include relevant elements of the IAIP, maps and charts.

#### Article 31

##### (Additional pre-flight information)

- For pre-flight information purposes, additional information relating to the aerodrome of departure shall be provided concerning the following:
  - construction or maintenance work on or immediately adjacent to the manoeuvring area;
  - rough portions of any part of the manoeuvring area, whether marked or not (e.g. broken parts of the asphalt surface);

- c) presence and depth of snow, ice or water on runways, including their effect on surface friction;
  - d) snow drifted or piled on or adjacent to runways or taxiways;
  - e) parked aircraft or other objects on or immediately adjacent to taxiways;
  - f) presence of other temporary hazards;
  - g) presence of birds constituting a potential hazard to aircraft operations;
  - h) failure or irregular operation of part or all of the aerodrome lighting system including approach, threshold, runway, taxiway, obstruction and manoeuvring area unserviceability and aerodrome power supply;
  - i) failure, irregular operation and changes in the operational status of SSR (*secondary surveillance radar*), ADS-B (*automatic dependent surveillance - broadcast*), ADS-C (*automatic dependent surveillance - contract*), CPDLC (*controller-pilot data link communications*), D-ATIS (*data link automatic terminal information service*), D-VOLMET (*data link VOLMET*), radio navigation services, VHF (*very high frequency*) aeromobile channels, RVR (*runway visual range*) observing system, and secondary power supply;
  - j) presence and operation of humanitarian relief missions (e.g. missions of the United Nations), together with any associated procedures and/or limitations.
- (2) Valid NOTAMs of operational significance and other information of urgent character shall be made available to flight crews in the form of plain-language pre-flight information bulletins (PIB).

#### Article 32

##### (Automated pre-flight information systems)

- (1) Automated pre-flight information systems shall be used to make aeronautical data available to operations personnel including flight crew members for self-briefing, flight planning and flight information service purposes.
- (2) Where an automated pre-flight information system is used, it shall make available the information referred to in Article 31 of this Rulebook.
- (3) Self-briefing facilities and equipment shall be made available to operations personnel, including flight crew members and other aeronautical personnel concerned, for consultation with the personnel of the aeronautical information service provider by telephone or other suitable means.
- (4) Automated pre-flight information systems for the supply of aeronautical data and information for self-briefing, flight planning and flight information service shall:
  - a) provide for continuous and timely updating of their databases and monitoring of the validity and quality of the aeronautical data stored;
  - b) permit access to the system by operations personnel including flight crew members, aeronautical personnel concerned and other aeronautical users through suitable telecommunications means;
  - c) ensure provision, in paper copy form, of the aeronautical data and information accessed, as required;
  - d) enable access and interrogation procedures based on abbreviated plain language and ICAO location

indicators or other appropriate mechanisms, as appropriate;

- e) provide for rapid response to a user request.

#### Article 33

##### (Post-flight information)

An aeronautical information service provider shall ensure that arrangements are made at aerodromes/heliports to receive information concerning the state and operation of air navigation facilities and concerning the presence of birds observed by aircrews, and shall ensure that such information is distributed as the circumstances necessitate.

#### Article 34

##### (Telecommunications requirements)

- (1) International NOTAM offices shall be connected to the aeronautical fixed service (AFS).
- (2) The AFS connections shall provide for printed communications.
- (3) Each international NOTAM office shall be connected, through the aeronautical fixed service, to the following points within the territory for which it provides service:
  - a) area control centres and flight information centres, and
  - b) aerodromes/heliports at which an aerodrome information service is established in accordance with Articles 30, 31, 32 and 33 of this Rulebook.

#### Article 35

##### (Data applications)

- (1) Electronic terrain and obstacle data are intended to be used in the following air navigation applications:
  - a) ground proximity warning system with forward looking terrain avoidance function and minimum safe altitude warning (MSAW) system;
  - b) determination of contingency procedures for use in the event of an emergency during a missed approach or take-off;
  - c) aircraft operating limitations analysis;
  - d) instrument procedure design (including circling procedure);
  - e) determination of en-route "drift-down" procedure and en-route emergency landing location;
  - f) advanced surface movement guidance and control system (A-SMGCS); and
  - g) aeronautical chart production and on-board databases.
- (2) Electronic obstacle and terrain data may also be used in other applications, such as flight simulator and synthetic vision systems, and may assist in determining the height restriction or removal of obstacles that pose a hazard to air navigation.

#### Article 36

##### (Coverage areas and requirements for data provision)

- (1) The coverage areas for sets of electronic 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. Area 2 is subdivided as follows:
    - 1) Area 2a – a rectangular area around a runway that comprises the runway strip plus any clearway that exists;
    - 2) Area 2b – an area extending from the ends of Area 2a in the direction of departure, with a length of 10km and a splay of 15 per cent to each side;

- 3) Area 2c – an area extending outside Area 2a and 2b at a distance of not more than 10 km from the boundary of Area 2a;
- 4) 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.
- c) Area 3 – the area bordering an aerodrome movement area that extends horizontally from the edge of a runway to 90 m from the runway centre line and 50 m from the edge of all other parts of the aerodrome movement area;
- d) Area 4 – the area extending 900 m prior to the runway threshold and 60 m each side of the extended runway centre line in the direction of the approach on a precision approach runway, Category II or III.

#### Article 37

(Requirements for the provision of data in Areas 1 and 2)

- (1) Electronic terrain data and the obstacle data for obstacles higher than 100 m above ground shall be provided for Area 1.
- (2) At aerodromes regularly used by international civil aviation, electronic 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.
- (3) At aerodromes regularly used by international civil aviation, electronic obstacle data shall be provided for:
  - a) Area 2a – for those obstacles that penetrate the relevant obstacle data collection surface specified in Appendix 8 to ICAO Annex 15;
  - b) objects in the take-off flight path area which project above a plane surface having a 1.2 per cent slope and having a common origin with the take-off flight path area.
- (4) At aerodromes regularly used by international civil aviation, electronic terrain and obstacle data shall be provided for Areas 2b, 2c and 2d for obstacles and terrain that penetrate the relevant terrain and obstacle data collection surface specified in Appendix 8 to ICAO Annex 15 – Aeronautical Information Services, except for data less than a height of 3 m above ground in Area 2d or less than a height of 15 m above ground in Area 2c.
- (5) Where Area 2 data for adjacent aerodromes overlap, arrangements shall be made for the coordination of providing Area 2 terrain and obstacle data, to assure that the data for the same terrain or obstacle are correct.
- (6) At those aerodromes located near national boundaries, arrangements shall be made among States concerned to share Area 2 terrain and obstacle data.

#### Article 38

(Requirements for the provision of data in Areas 3 and 4)

- (1) At aerodromes regularly used by international civil aviation, electronic terrain and obstacle data shall be provided for Area 3 for terrain and obstacles that penetrate the relevant obstacle data collection surface specified in Appendix 8 to ICAO Annex 15 - Aeronautical Information Services, Figure A8-3.
- (2) At aerodromes regularly used by international civil aviation, electronic terrain and obstacle data shall be provided for Area 4 for terrain and obstacles that penetrate the relevant

obstacle data collection surface specified in Appendix 8 to ICAO Annex 15 - Aeronautical Information Services, 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.

#### Article 39

(Terrain data set – content, numerical specification and structure)

- (1) A terrain data set shall contain digital sets of data representing terrain surface in the form of continuous elevation values at all intersections (points) of a defined grid, referenced to common datum, where a terrain grid shall be angular or linear and shall be of regular or irregular shape.
- (2) Sets of electronic terrain data shall include spatial (position and elevation), thematic and temporal aspects for the surface of the Earth containing naturally occurring features (such as mountains, hills, ridges, valleys, bodies of water, permanent snow and ice), and excluding obstacles.
- (3) Depending on the data collection method, a set of electronic terrain data shall represent the continuous surface that exists at the bare Earth, the top of the canopy or something in-between, also known as “first reflective surface”.
- (4) A set of terrain data shall include only one feature type, i.e. terrain described by the attributes listed in Table A8-3, ICAO Annex 15, Aeronautical Information Services, Appendix 8. The terrain attributes listed in Table A8-3 (ICAO Annex 15, Aeronautical Information Services, Appendix 8) represent the minimum set of terrain attributes, and those annotated as mandatory shall be recorded in the terrain data set.
- (5) Electronic terrain data for each area shall conform to the applicable numerical requirements in Appendix 8, Table A8-1, ICAO Annex 15 - Aeronautical Information Services.

#### Article 40

(Obstacle data set – content, numerical specification and structure)

- (1) Obstacle data shall comprise the digital representation of the vertical and horizontal extent of the obstacle.
- (2) Obstacle data elements are features that shall be represented in the data sets by points, lines or polygons.
- (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 Appendix 8, Table A8-3, ICAO Annex 15, Aeronautical Information Services.
- (4) Electronic obstacle data for each area shall conform to the applicable numerical requirements in Appendix 8, Table A8-2, ICAO Annex 15, Aeronautical Information Services.

#### Article 41

(Terrain and obstacle data product specification)

- (1) To support the interchange and use of terrain and obstacle data sets among different data sources and useful data, the ISO 19100 series of standards for geographic information

- shall be used as a general data modelling framework.
- (2) A statement of available electronic terrain and obstacle data sets shall be provided in the form of terrain data product specifications as well as obstacle data product specifications on which basis air navigation users will be able to evaluate the products and determine whether they fulfil the requirements for their intended use.
  - (3) A terrain data product specification shall include an overview and scope of the specification, data product identification, data content and structure, reference system, data quality, data capture, data maintenance, data portrayal, data product delivery, additional information, and metadata.
  - (4) The overview of terrain data product specifications or obstacle data product specifications shall contain general information about the data product.
  - (5) Specification of terrain data may not be homogenous across the whole data product but may vary for different parts of the data sets, and a specification scope shall be identified for each data subset.
  - (6) Identification information concerning both terrain and obstacle data products shall include the title of the product, a brief description of the content, purpose, and spatial resolution if appropriate (a general statement about the density of spatial data), the geographic area covered by the data product, and supplemental information.
  - (7) Content information of feature-based terrain data sets or feature-based obstacle data sets shall be described in terms of:
    - a) an application schema, providing a formal description of the data structure and content of data sets;
    - b) a feature catalogue, providing the semantics of all feature types together with their attributes and attribute value domains, association types between feature types and feature operations, inheritance relations and constraints.
  - (8) Terrain and obstacle data product specifications shall identify clearly the coverage and/or imagery they include and shall provide a description of each of them, and coverage is considered a subtype of a feature and can be derived from a collection of features that have common attributes.
  - (9) Terrain and obstacle data product specifications shall include information on the reference system used in the data product, including the spatial reference system and temporal reference system.
  - (10) Terrain and obstacle data product specifications shall identify the data quality requirements for each data product, which includes a statement on acceptable conformance quality levels and corresponding data quality measures, covering all the data quality elements and data quality sub-elements.
  - (11) Terrain data product specifications shall include a data capture statement which shall be a general description of the sources and of processes applied for the capture of terrain data.
  - (12) The principles and criteria applied in the maintenance of terrain data sets and obstacle data sets shall be provided with the data specifications, including the frequency with which data products are updated, and of particular importance shall be the maintenance information of obstacle data sets and an indication of the principle, methods and criteria applied for obstacle data maintenance.
  - (13) Terrain data product specifications shall contain information on whether data held with data sets are presented as a graphic output, as a plot or as an image.
  - (14) The data product specifications for both terrain and obstacles shall also contain data product delivery information which shall include delivery formats and delivery medium information.
  - (15) The core terrain and obstacle metadata elements shall be included in the data product specifications, as well as any additional metadata items required to be supplied, together with the format and encoding of the metadata.
  - (16) The obstacle data product specification, supported by geographical coordinates for each aerodrome included within the dataset, shall describe the following areas:
    - a) Areas 2a, 2b, 2c, 2d;
    - b) the take-off flight path area;
    - c) the obstacle limitation surface.
- Article 42  
(Aerodrome mapping data – requirements for provision)
- (1) Aerodrome mapping data should be supported by electronic terrain and obstacle data for Area 3 in order to ensure consistency and quality of all geographical data related to the aerodrome.
  - (2) Accuracy and integrity requirements for aerodrome mapping data are contained in ICAO Annex 14 - Aerodromes, Volume I, Appendix 5.
- Article 43  
(Aerodrome mapping data product specification)
- (1) The ISO 19100 series of standards shall be used as a reference framework for aerodrome mapping data specification.
  - (2) Aerodrome mapping data shall be described following the ISO 19131 series of standards.
- Article 44  
(Aerodrome mapping database – data set content and structure)
- (1) The content and structure of aerodrome mapping data sets shall be defined in the form of a feature catalogue.
  - (2) Aerodrome mapping data sets shall contain aerodrome mapping data consisting of a catalogue of features.
  - (3) Aerodrome mapping metadata shall comply with the ISO 19115 series of standards.
- Article 45  
(Repeal)
- The entry into force of this Rulebook shall repeal the Rulebook on Aeronautical Information Services in Bosnia and Herzegovina (Official Gazette of BIH 33/13 of 30 April 2013).
- Article 46  
(Entry into force)
- This Rulebook shall enter into force on the eighth day following its publication in the Official Gazette of BIH.
- Ref. number: 1-3-02-2-194-1/17
- 9 March 2017  
Banja Luka
- Director General  
**Đorđe Ratkovića, sgd.**
- APPENDIX I – AERONAUTICAL DATA PUBLICATION  
RESOLUTION AND INTEGRITY CLASIFICATION**
- Table 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, 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	1/10 sec	essential
Runway (RWY) threshold	1/100 sec	critical
Runway (RWY) 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

**Note: See Appendix 8 (ICAO Annex 15 - Aeronautical Information Services) for graphical illustrations of obstacle data collection surfaces and criteria used to identify obstacles in the defined areas.**

**APPENDIX I – AERONAUTICAL DATA PUBLICATION RESOLUTION AND INTEGRITY CLASSIFICATION**

**Table 2 - Elevation/altitude/height**

Elevation/altitude/height	Publication resolution	Integrity classification
Aerodrome elevation	1 m or 1 ft	essential
WGS-84 geoid undulation at aerodrome/heliport elevation position	1 m or 1 ft	essential
RWY 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
RWY or FATO threshold, precision approaches	0.1 m or 0.1 ft	essential
WGS-84 geoid undulation at runway or FATO threshold, TLOF geometric centre, precision approaches	0.1 m or 0.1 ft	essential
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
DME/P	3 m (10 ft)	essential
DME	30 m (100 ft)	essential
Minimum altitudes	50 m or 100 ft	routine

**Note: See Appendix 8 (ICAO Annex 15 - Aeronautical Information Services) for graphical illustrations of obstacle data collection surfaces and criteria used to identify obstacles in the defined areas.**

**APPENDIX I – AERONAUTICAL DATA PUBLICATION RESOLUTION AND INTEGRITY CLASSIFICATION**

**Table 3 – Declination and magnetic variation**

Declination and magnetic variation	Publication resolution	Integrity classification
VHF NAVAID statio declination used for technical line-up	1 degree	essential
NDB NAVAID magnetic declination	1 degree	routine
Aerodrome/heliport magnetic declination	1 degree	essential

I LS localizer antenna magnetic declination	1 degree	essential
MLS azimuth antenna magnetic declination	1 degree	essential

**APPENDIX I - AERONAUTICAL DATA PUBLICATION RESOLUTION AND INTEGRITY CLASSIFICATION**

**Table 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
I LS 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

**APPENDIX I – AERONAUTICAL DATA QUALITY REQUIREMENTS**

**Table 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
RWY 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
I LS localizer antenna-runway end, distance	1 m or 1 ft	routine
I LS glide slope antenna-threshold, distance along centre line	1 m or 1 ft	routine
I LS marker-threshold distance	1 m or 1 ft	essential
I LS DME antenna-threshold, distance along centre line	1 m or 1 ft	routine
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

**APPENDIX II – INFORMATION TO BE NOTIFIED BY AIRAC PART 1**

1. The establishment, withdrawal of, or premeditated significant changes (including operational trials) to:
  - 1.1 limits (horizontal and vertical), regulations and procedures applicable to:
    - a. flight information regions (FIR);
    - b. control areas;
    - c. control zones;
    - d. advisory areas;
    - e. ATS routes;

- f. permanent danger, prohibited and restricted areas (including type and periods of activity when known) and ADIZ;
  - g. permanent areas or routes or portions thereof where the possibility of interception exists.
- 1.2 positions, frequencies, call signs, known irregularities and maintenance periods of radio navigation aids, and communication and surveillance facilities;
  - 1.3 holding and approach procedures, arrival and departure procedures, noise abatement procedures and any other pertinent ATS procedures;
  - 1.4 transition levels, transition altitudes and minimum sector altitudes;
  - 1.5 meteorological facilities (including broadcasts) and procedures;
  - 1.6 runways and stopways;
  - 1.7 taxiways and aprons;
  - 1.8 aerodrome ground operating procedures (including low visibility procedures);
  - 1.9 approach and runway lighting;
  - 1.10 aerodrome operating minima if published by a State;

**PART 2**

- 2. The establishment, withdrawal of, and premeditated significant changes to:
  - 2.1 position, height and lighting of navigational obstacles;
  - 2.2 hours of service of aerodromes, facilities and services;
  - 2.3 customs, immigration and health services;
  - 2.4 temporary danger, prohibited and restricted areas and navigational hazards, military exercises and mass movements of aircraft;
  - 2.5 temporary areas or routes or portions thereof where the possibility of interception exists.

**PART 3**

- 3. The establishment of, and premeditated major changes to:
  - 3.1 new aerodromes for international IFR operations;
  - 3.2 new runways for IFR operations at international aerodromes;
  - 3.3 design and structure of the air traffic services route network;
  - 3.4 design and structure of a set of terminal procedures (including change of procedure bearings due to magnetic declination change);
  - 3.5 circumstances listed in paragraph (1) of this Article if the entire State or any significant portion thereof is affected or if cross-border coordination is required.