# BELIZE DEPARTMENT OF CIVIL AVIATION

# BELIZE CIVIL AVIATION REGULATIONS
# AERONAUTICAL INFORMATION SERVICES
# BCAR 15

**Issue: 2**
**Revision: 0**
**Date: 2/12/2024**

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## Issue and Revision System

**THE REVISIONS TO THIS REGULATION WILL BE INDICATED BY A VERTICAL BAR ON THE LEFT SIDE, IN FRONT OF THE LINE, SECTION OR FIGURE THAT HAS BEEN AFFECTED. AN ISSUE WILL BE THE REPLACEMENT OF THE COMPLETE DOCUMENT.**

**THESE REVISIONS MUST BE RECORDED ON THE RECORD OF REVISIONS TABLE OF THIS DOCUMENT, INDICATING THE RESPECTIVE NUMBER, DATE IT WAS ENTERED AND SIGNED BY THE PERSON ENTERING THE REVISION.**

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## Record of Revisions

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|---|---|---|
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| Second Issue | 2/12/2024 | BDCA |
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## Preamble

The BCAR 15 was emitted on May 2010 and it was developed based on ICAO's Annex 15, thirteenth edition of July 2010, amendment 36 dated 12 July 2010.

This second Issued of the BCAR 15 was developed based on ICAO's Annex 15, Sixteenth Edition of July 2018, amendment 43rd applicable on 28 November 2024.

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## Table of Contents

## SECTION 1 – REQUIREMENTS

### PRESENTATION AND INTRODUCTION

1. PRESENTATION

1.1 Section one of BCAR 15 is presented in a single column. Each page is identified by its revision date, issue number and revision number.

1.2 This section Font is arial 10.

2. INTRODUCTION

2.1.1 This document contains the requirements for the development and applicability of the Aeronautical Information Services.

2.2 This document is based on ICAO's Annex 15 text, 43rd amendment, (28 November 2024) issued and published by the International Civil Aviation Organization (ICAO).

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## SUBPART A
## GENERAL

### BCAR 15 1.0 Introduction

The objective of BCAR 15, aeronautical information service is to ensure the flow of aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of international air navigation. The role and importance of aeronautical data and aeronautical information changed significantly with the implementation of area navigation (RNAV), performance-based navigation (PBN), airborne computer-based navigation systems, performance-based communication (PBC), performance-based surveillance (PBS), data link systems and satellite voice communications (SATVOICE). Corrupt, erroneous, late or missing aeronautical data and aeronautical information can potentially affect the safety of air navigation.
(See IEM 15 1.0)

### BCAR 15 1.0.1 Applicability

This BCAR 15 applies to aeronautical information service providers whether they are service providers from the Government of Belize or any other aeronautical information service provider.

### BCAR 15 1.0.2 Effectiveness

This BCAR 15 will be in effect from its official publication.

### BCAR 15 1.1 Definitions

For definitions refer to BCAR 05.

### BCAR 15 1.2 Common reference systems for air navigation

### BCAR 15 1.2.1 Horizontal reference system

**BCAR 15 1.2.1.1** The AIS provider shall use the World Geodetic System — 1984 (WGS-84) as the horizontal (geodetic) reference system for international air navigation. Consequently, published aeronautical geographical coordinates (indicating latitude and longitude) shall be expressed in terms of the WGS-84 geodetic reference datum.
(See IEM 15 1.2.1.1)

**BCAR 15 1.2.1.2** In precise geodetic applications and some air navigation applications, temporal changes in the tectonic plate motion and tidal effects on the Earth's crust shall be modelled and estimated. To reflect the temporal effect, an epoch shall be included with any set of absolute station coordinates.
(See IEM 15 1.2.1.2)

### BCAR 15 1.2.2 Vertical reference system

**BCAR 15 1.2.2.1** The AIS provider shall use Mean sea level (MSL) datum as the vertical reference system for international air navigation.
(See IEM 15 1.2.2.1)

**BCAR 15 1.2.2.2** The Earth Gravitational Model — 1996 (EGM-96) shall be used as the global gravity model for international air navigation.

**BCAR 15 1.2.2.3** At those geographical positions where the accuracy of EGM-96 does not meet the accuracy requirements for elevation and geoid undulation specified in BCAR 14, on the basis of EGM-96 data, regional, national or local geoid models containing high resolution (short wavelength) gravity field data shall be developed and used. When a geoid model other than the EGM-96 model is used, a description of the model used, including the parameters required for height transformation between the model and EGM-96, shall be provided in the Aeronautical Information Publication (AIP).
(See IEM 15 1.2.2.3)

**BCAR 15 1.2.3 Temporal reference system**

**BCAR 15 1.2.3.1** The AIS provider shall use for international civil aviation, the Gregorian calendar and Coordinated Universal Time (UTC) as the temporal reference system.
(See IEM 15 1.2.3.1)

**BCAR 15 1.2.3.2** When a different temporal reference system is used by the AIS provider for some applications, the feature catalogue, or the metadata associated with an application schema or a data set, as appropriate, shall include either a description of that system or a citation for a document that describes that temporal reference system.
(See IEM 15 1.2.3.2)

**BCAR 15 1.3 Miscellaneous specifications**

**BCAR 15 1.3.1** Aeronautical Information products intended for international distribution shall include English text for those parts expressed in plain language.

**BCAR 15 1.3.2** Place names shall be spelt in conformity with local usage, transliterated, when necessary, into the ISO-Basic Latin alphabet by the AIS provider.

**BCAR 15 1.3.3** The AIS provider referring to units of measurement used in the origination, processing and distribution of aeronautical data and aeronautical information shall be consistent and according with the tables contained in BCAR 05 — Units of Measurement to be used in Air and Ground Operations.

**BCAR 15 1.3.4 Use of ICAO abbreviations**

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

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## SUBPART B
## RESPONSIBILITIES AND FUNCTIONS

### BCAR 15 2.1 Aeronautical information services provider(s) responsibilities and functions

**BCAR 15 2.1.1** Aeronautical information services shall be provided by the AIS or AIM provider to whom the Belize Department of Civil Aviation (BDCA) has delegated and must comply with the regulations of this BCAR 15.

**BCAR 15 2.1.2** The AIS provider shall ensure that the provision of aeronautical data and aeronautical information cover Belizean territory and those areas over the high seas for which Belize is responsible for the provision of air traffic services.

**BCAR 15 2.1.3** The AIS provider shall provide aeronautical data and aeronautical information in accordance with BCAR 15 2.1.2 for which the Belize Department of Civil Aviation shall remain responsible. Aeronautical data and aeronautical information provided by the AIS provider for and on behalf of the BDCA shall clearly indicate that it is provided under the authority of the BDCA, irrespective of the format in which they are provided.

**BCAR 15 2.1.4** The AIS provider shall ensure that the aeronautical data and aeronautical information provided are of required quality in accordance with BCAR 15 3.2.

**BCAR 15 2.1.5** The AIS provider shall ensure that formal arrangements are established between originators of aeronautical data and aeronautical information and the AIS in relation to the timely and complete provision of aeronautical data and aeronautical information.
(See IEM 15 2.1.5)

### BCAR 15 2.2 Aeronautical Information Services (AIS) responsibilities and functions

**BCAR 15 2.2.1** An AIS provider shall ensure that aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation are made available in a form suitable for the operational requirements of the air traffic management (ATM) community, including:

a. those involved in flight operations, including flight crews, flight planning and flight simulators; and

b. the ATS unit responsible for flight information service and the services responsible for pre-flight information.

(See IEM 15 2.2.1)

**BCAR 15 2.2.2** An AIS provider shall receive, collate or assemble, edit, format, publish/store and distribute aeronautical data and aeronautical information concerning to the entire Belizean territory as well as those areas over the high seas for which Belize is responsible for the provision of ATS. Aeronautical data and aeronautical information shall be provided as aeronautical information products.
(See IEM 15 2.2.2)

**BCAR 15 2.2.3** Where 24-hour service is not provided by the AIS provider, service shall be available during the whole period an aircraft is in flight in the area of responsibility of the AIS, plus a period of

at least two hours before and after such a period. Service shall also be available at such other time as may be requested by an appropriate ground organization.

**BCAR 15 2.2.4** An AIS provider shall, in addition, obtain aeronautical data and aeronautical information to enable it to provide pre-flight information service and to meet the need for in-flight information:

a. from the AIS of other States; and

b. from other sources that may be available.
(See IEM 15 2.2.4 b))

**BCAR 15 2.2.5** Aeronautical data and aeronautical information obtained under BCAR 15 2.2.4 a) shall, when distributed, be clearly identified as having the authority of the originating State.

**BCAR 15 2.2.6** Aeronautical data and aeronautical information obtained under BCAR 15 2.2.4 b) shall, if possible, be verified before distribution and if not verified shall, when distributed, be clearly identified as such.

**BCAR 15 2.2.7** An AIS provider shall promptly make available to the AIS of other States any aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation required by them, to enable them to comply with BCAR 15 2.2.1.

**BCAR 15 2.3 Exchange of aeronautical data and aeronautical information**

**BCAR 15 2.3.1** The AIS provider shall designate the office to which all elements of aeronautical information products provided by other States shall be addressed. Such an office shall be qualified to deal with requests for aeronautical data and aeronautical information provided by other States.

**BCAR 15 2.3.2** The AIS provider shall establish formal arrangements between those parties providing aeronautical data and aeronautical information on behalf of the States and their users in relation to the provision of the service.
(See IEM 15 2.3.2)

**BCAR 15 2.3.3** Where more than one international NOTAM office is designated by the AIS provider, it shall define the extent of responsibility and the territory covered by each office.

**BCAR 15 2.3.4** The AIS provider shall arrange, as necessary, to satisfy operational requirements for the issuance and receipt of NOTAM distributed by telecommunication.

**BCAR 15 2.3.5** The AIS provider, wherever practicable, shall establish direct contact between AIS in order to facilitate the international exchange of aeronautical data and aeronautical information.

**BCAR 15 2.3.6** The AIS provider, except as provided in BCAR 15 2.3.8, shall make available one copy of each of the following aeronautical information products (where available) that have been requested by the AIS of a Contracting State and provided in the mutually agreed form(s), without charge, even where authority for publication/storage and distribution has been delegated to a non-governmental agency:

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

b) Aeronautical Information Circulars (AIC);

c) NOTAM; and

d) aeronautical charts.

**BCAR 15 2.3.7** The exchange of more than one copy of the elements of the aeronautical information products, and other air navigation documents, including those containing air navigation legislation and regulations, shall be subject to bilateral agreement.

**BCAR 15 2.3.8** When aeronautical data and aeronautical information are provided in the form of digital data sets to be used by the AIS, they shall be provided on the basis of agreement between the AIS providers concerned.
(See IEM 15 2.3.8)

**BCAR 15 2.3.9** The procurement of aeronautical data and aeronautical information, by the AIS provider, including the elements of aeronautical information products, and other air navigation documents, including those containing air navigation legislation and regulations, from AIS providers of States other than Contracting States and from other entities shall be subject to separate agreement.

**BCAR 15 2.3.10** Globally interoperable aeronautical data and aeronautical information exchange models shall be used for the provision of data sets.
(See IEM 15 2.3.10)

**BCAR 15 2.4 Copyright**
(See IEM 15 2.4)

**BCAR 15 2.4.1** Any aeronautical information product which has been granted copyright protection by Belize and provided to another State in accordance with BCAR 15 2.3 shall only be made available to a third party on the condition that the third party is made aware that the product is copyright protected and provided that it is appropriately annotated that the product is subject to copyright by Belize.

**BCAR 15 2.4.2** When aeronautical data and aeronautical information are provided to an AIS in accordance with BCAR 15 2.3.8, the receiving AIS provider shall not provide the digital data sets of the providing AIS provider to any third party without the consent of the providing AIS.

**BCAR 15 2.5 Cost recovery**

The overhead cost of collecting and compiling aeronautical data and aeronautical shall be included in the cost basis for airport and air navigation services charges, as appropriate, in accordance with the principles contained in ICAO's Policies on Charges for Airports and Air Navigation Services (Doc 9082).
(See IEM 15 2.5)

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## SUBPART C
## AERONAUTICAL INFORMATION MANAGEMENT

### BCAR 15 3.1 Information management requirements

The information management resources and process shall be adequate to ensure the timely collection, processing, storing, integration, exchange and delivery of quality-assured aeronautical data and aeronautical information within the air traffic management (ATM) system**.**

### BCAR 15 3.2 Data quality requirements

### BCAR 15 3.2.1 Data accuracy

The order of accuracy for aeronautical data shall be in accordance with its intended use.
(See IEM 15 3.2.1)

### BCAR 15 3.2.2 Data Resolution

The order of resolution of aeronautical data shall be commensurate with the actual data accuracy.
(See IEM 15 3.2.2)

### BCAR 15 3.2.3 Data Integrity

**BCAR 15 3.2.3.1** The integrity of aeronautical data shall be maintained throughout the data chain from origination to distribution to the next intended user.
(See IEM 15 3.2.3.1)

**BCAR 15 3.2.3.2** Based on the applicable integrity classification, procedures shall be put in place in order to:

a) for routine data: avoid corruption throughout the processing of the data;

b) for essential data: ensure corruption does not occur at any stage of the data processing life cycle (e.g. collection, processing, storing, integration, exchange and delivery) and include additional measures or steps as needed to address potential risks in the overall processing of aeronautical data to further ensure data integrity at this level; and

c) for critical data: ensure corruption does not occur at any stage of the data processing life cycle (e.g. collection, processing, storing, integration, exchange and delivery) and include additional data integrity assurance processes to mitigate the risk of errors.

(See IEM 15 3.2.3.2)

### BCAR 15 3.2.4 Data traceability

Traceability of aeronautical data shall be ensured and retained as long as the data is in use.

### BCAR 15 3.2.5 Data timeliness

Timeliness of aeronautical data shall be ensured by including limits on the effective period of the data elements.
(See IEM 15 3.2.5)

**BCAR 15 3.2.6 Data completeness**

Completeness of aeronautical data shall be ensured in order to support its intended use.

**BCAR 15 3.2.7 Data format**

The format of delivered aeronautical data shall be adequate to ensure that the data is interpreted in a manner that is consistent with its intended use.

**BCAR 15 3.3 Aeronautical data and aeronautical information verification and validation**

**BCAR 15 3.3.1** The AIS provider shall ensure that aeronautical data and aeronautical information to be published as part of an aeronautical information product be checked before being submitted to the AIS in order to ensure that all necessary information has been included and that it is correct.

**BCAR 15 3.3.2** The AIS provider shall establish verification and validation procedures which ensure that upon receipt of aeronautical data and aeronautical information, quality requirements are met.

**BCAR 15 3.4 Data error detection**

**BCAR 15 3.4.1** The AIS provider shall use digital data error detection techniques during the transmission and/or storage of aeronautical data and digital data sets.

**BCAR 15 3.4.2** The AIS provider shall use digital data error detection techniques in order to maintain the integrity levels as specified in BCAR 15 3.2.3.
(See IEM 15 3.4.2)

**BCAR 15 3.5 Use of automation**

**BCAR 15 3.5.1** The AIS provider shall apply automation in order to ensure the quality, efficiency and cost-effectiveness of aeronautical information services.
(See IEM 15 3.5.1)

**BCAR 15 3.5.2** The AIS provider shall give due consideration to the integrity of data and information when automated processes are implemented and mitigating steps taken where risks are identified.
(See IEM 15 3.5.2)

**BCAR 15 3.5.3** The AIS provider in order to meet the data quality requirements, automation shall:

a) enable digital aeronautical data exchange between the parties involved in the data processing chain; and

b) use aeronautical information exchange models and data exchange models designed to be globally interoperable.

**BCAR 15 3.6 Quality management system**

**BCAR 15 3.6.1** The AIS provider shall implement and maintain quality management systems that encompass all functions of AIS, as outlined in BCAR 15 2.2. The execution of such quality management systems shall be made demonstrable for each function stage.
(See IEM 15 3.6.1)

**BCAR 15 3.6.2** The AIS provider shall apply quality management to the whole aeronautical data chain from data origination to distribution to the next intended user, taking into consideration the intended use of data.

**BCAR 15 3.6.3** The quality management system established in accordance with BCAR 15 3.6.1 shall follow the International Organization for Standardization (ISO)9000 series of quality assurance standards and be certified by an accredited certification body.

**BCAR 15 3.6.4** Within the context of the established quality management system, the competencies and the associated knowledge, skills and attitudes required for each function shall be identified, and personnel assigned to perform those functions shall be appropriately trained. Processes shall be in place to ensure that personnel possess the competencies required to perform specific assigned functions. Appropriate records shall be maintained so that the qualifications of personnel can be confirmed. Initial and periodic assessments shall be established that require personnel to demonstrate the required competencies. Periodic assessments of personnel shall be used as a means to detect and correct shortfalls in knowledge, skills and attitudes.

**BCAR 15 3.6.5** The training methodology established in accordance with BCAR 15 3.6.4 shall follow the competency-based training and assessment methodology.
(See IEM 15 3.6.5)

**BCAR 15 3.6.6** Each quality management system shall include the necessary policies, processes and procedures, including those for the use of metadata, to ensure and verify that aeronautical data is traceable throughout the aeronautical information data chain so as to allow any data anomalies or errors detected in use to be identified by root cause, corrected and communicated to affected users.

**BCAR 15 3.6.7** The established quality management system shall provide users with the necessary assurance and confidence that distributed aeronautical data and aeronautical information satisfy the aeronautical data quality requirements.

**BCAR 15 3.6.8** The AIS provider shall take all necessary measures to monitor compliance with the quality management system in place.

**BCAR 15 3.6.9** Demonstration of compliance of the quality management system applied shall be by audit. If nonconformity is identified, initiating action to correct its cause shall be determined and taken without undue delay. All audit observations and remedial actions shall be evidenced and properly documented.

**BCAR 15 3.7 Human factors considerations**

**BCAR 15 3.7.1** The AIS provider shall establish the organization of an AIS as well as the design, contents, processing and distribution of aeronautical data and aeronautical information that take into consideration human factors principles which facilitate their optimum utilization.

**BCAR 15 3.7.2** The AIS provider shall give due consideration to the integrity of information where human interaction is required and that mitigating are steps taken where risks are identified.
(See IEM 15 3.7.2)

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## SUBPART D
## SCOPE OF AERONUTICAL DATA AND AERONAUTICAL INFORMATION

(See IEM 15 4.0)

### BCAR 15 4.1 Scope of aeronautical data and aeronautical information

**BCAR 15 4.1.1** The aeronautical data and aeronautical information to be received and managed by the aeronautical information service (AIS) shall include at least the following sub-domains:

a) national regulations, rules and procedures;

b) aerodromes and heliports;

c) airspace;

d) air traffic services (ATS) routes;

e) instrument flight procedures;

f) radio navigation aids/systems;

g) obstacles;

h) terrain; and

i) geographic information.

(See IEM 15 4.1.1)

### BCAR 15 4.1.2 Determination and reporting of aeronautical data

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.
(See IEM 15 4.1.2)

### BCAR 15 4.2 Metadata

**BCAR 15 4.2.1** Metadata shall be collected for aeronautical data processes and exchange points.

**BCAR 15 4.2.2** Metadata collection shall be applied throughout the aeronautical information data chain, from origination to distribution to the next intended user.
(See IEM 15 4.2.2)

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## SUBPART E
## AERONAUTICAL INFORMATION PRODUCTS AND SERVICES

### BCAR 15 5.1 General

**BCAR 15 5.1.1** The AIS provider shall provide the aeronautical information in the form of aeronautical information products and associated services.
(See IEM 15 5.1.1)

**BCAR 15 5.1.2** When aeronautical data and aeronautical information are provided in multiple formats, processes shall be implemented to ensure data and information consistency between formats.

### BCAR 15 5.2 Aeronautical information in a standardized presentation

**BCAR 15 5.2.1** The AIS provider shall provide aeronautical information in a standardized presentation that includes the aeronautical information publication (AIP), AIP Amendments, AIP Supplements, AIC, NOTAM and aeronautical charts.
(See IEM 15 5.2.1)

**BCAR 15 5.2.1.1** The AIP, AIP Amendment, AIP Supplement and AIC shall be provided on paper and/or as an electronic document.

**BCAR 15 5.2.1.2** The AIP, AIP Amendment, AIP Supplement and AIC when provided as an electronic document (eAIP) shall allow for both displaying on electronic devices and printing on paper.

### BCAR 15 5.2.2 Aeronautical Information Publication (AIP)
(See IEM 15 5.2.2)

The AIS provider shall include in AIP:

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 national regulations and practices of Belize related to the ICAO Standards, Recommended Practices and Procedures, given in a form that shall enable a user to differentiate readily between the requirements of Belize and the related ICAO provisions;

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

### BCAR 15 5.2.3 AIP Supplement

The AIS provider shall regularly provide a checklist of valid AIP Supplements.
(See IEM 15 5.2.3)

**BCAR 15 5.2.4 Aeronautical Information Circulars**

**BCAR 15 5.2.4.1** The AIS provider shall use an AIC to provide**:**

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

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

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

**BCAR 15 5.2.4.2** The AIS provider shall not use an AIC for information that qualifies for inclusion in AIP and NOTAM.

**BCAR 15 5.2.4.3** The AIS provider shall review the validity of AIC currently in force at least once a year.

**BCAR 15 5.2.4.4** The AIS provider shall regularly provide a checklist of currently valid AIC.
(See IEM 15 5.2.4.4)

**BCAR 15 5.2.5 Aeronautical Charts**
(See IEM 15 5.2.5)

**BCAR 15 5.2.5.**1 The aeronautical charts listed below shall, when available for designated international aerodromes/heliports, form part of the AIP, or be provided separately to recipients of the AIP by the AIS provider:

a) Aerodrome/Heliport Chart — ICAO;

b) Aerodrome Ground Movement Chart — ICAO;

c) Aerodrome Obstacle Chart — ICAO Type A;

d) Aerodrome Obstacle Chart — ICAO Type B (when available);

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

f) Aircraft Parking/Docking Chart — ICAO;

g) Area Chart — ICAO;

h) ATC Surveillance Minimum Altitude Chart — ICAO;

i) Instrument Approach Chart — ICAO;

j) Precision Approach Terrain Chart — ICAO;

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

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

m) Visual Approach Chart — ICAO.

**BCAR 15 5.2.5.2 Enroute Charts**

The AIS provider shall include when available the En-route Chart — ICAO, in the Belize AIP, or be provided separately to recipients of the AIP.

**BCAR 15 5.2.5.3** When the AIS service provider has available the following aeronautical charts, they shall 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.

**BCAR 15 5.2.5.4 Electronic Aeronautical charts**

The AIS provider shall provide electronic aeronautical charts based on digital databases and the use of geographic information systems.

**BCAR 15 5.2.5.5 Charts Resolution**

The AIS provider shall use the chart resolution of aeronautical data as specified for a particular chart.
(See IEM 15 5.2.5.5)

**BCAR 15 5.2.6 NOTAM**
(See IEM 15 5.2.6)

**BCAR 15 5.2.6.1** The AIS provider shall regularly provide a checklist of valid NOTAM.
(See IEM 15 5.2.6.1)

**BCAR 15 5.3 Digital data set**

**BCAR 15 5.3.1 General**

**BCAR 15 5.3.1.1** The AIS provider shall provide digital data in the form of the following data sets:

a) AIP data set;

b) terrain data sets;

c) obstacle data sets;

d) aerodrome mapping data sets; and

e) instrument flight procedure data sets
(See IEM 15 5.3.1.1)

**BCAR 15 5.3.1.2** The AIS provider shall provide each data set to the next intended user together with at least the minimum set of metadata that ensures traceability.
(See IEM 15 5.3.1.2)

**BCAR 15 5.3.1.3** The AIS provider shall provide regularly a checklist of valid data sets.

**BCAR 15 5.3.2 AIP data set**

**BCAR 15 5.3.2.1** The AIS provider shall provide an AIP data set covering the extent of information as provided in the AIP.

**BCAR 15 5.3.2.2** When it is not possible to provide a complete AIP data set, the data subset(s) that are
available shall be provided.

**BCAR 15 5.3.2.3** 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.

**BCAR 15 5.3.3 Terrain and obstacle data sets**
(See IEM 15 5.3.3)

**BCAR 15 5.3.3.1** The coverage areas for terrain and obstacle data sets shall be specified as:

Area 1: the entire territory of Belize;

Area 2: within the vicinity of an aerodrome, subdivided as follows:

Area 2a: a rectangular area around a runway that comprises the runway strip plus any clearway that exists;
(See IEM 15 5.3.3.1)

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;

Area 2c: an area extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a; and

Area 2d: an area outside Areas 2a, 2b and 2c up to a distance of 45 km from the aerodrome reference point, or to an existing terminal control area (TMA) boundary, whichever is nearest;

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

Area 4: **RESERVED**

**BCAR 15 5.3.3.2 RESERVED**

**BCAR 15 5.3.3.3 Terrain data sets**

**BCAR 15 5.3.3.3.1** The AIS provider in relation to the terrain data sets shall ensure that they 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.

**BCAR 15 5.3.3.3.2** The AIS provider shall provide terrain data for Area 1.

**BCAR 15 5.3.3.3.3** The AIS provider shall provide for aerodromes regularly used by international civil aviation, terrain data for:

a) Area 2a;

b) the take-off flight path area; and

c) an area bounded by the lateral extent of the aerodrome obstacle limitation surfaces.

**BCAR 15 5.3.3.3.4** The AIS provider shall provide for aerodromes regularly used by international civil aviation, additional terrain data within Area 2 as follows:

a) in the area extending to a 10-km radius from the ARP; and

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

**BCAR 15 5.3.3.3.5** The AIS provider shall make arrangements for coordinating the provision of terrain data for adjacent aerodromes where their respective coverage areas overlap to assure that the data for the same terrain is correct.

**BCAR 15 5.3.3.3.6** The AIS provider shall make arrangements among States for those aerodromes located near Belizean territorial boundaries, concerned to share terrain data.

**BCAR 15 5.3.3.3.7** The AIS provider shall provide for aerodromes regularly used by international civil aviation, terrain data for Area 3.

**BCAR 15 5.3.3.3.8 RESERVED**

**BCAR 15 5.3.3.3.9** The AIS provider where additional terrain data is collected to meet other aeronautical requirements, shall expand the terrain data sets to include this additional data.

**BCAR 15 5.3.3.4 Obstacle data sets**

**BCAR 15 5.3.3.4.1** The AIS provider in relation to obstacle data sets shall contain the digital representation of the vertical and horizontal extent of obstacles.

**BCAR 15 5.3.3.4.2** The AIS provider shall not include obstacle data in terrain data sets.

**BCAR 15 5.3.3.4.3** The AIS provider shall provide obstacle data for obstacles in Area 1 whose height is 100 m or higher above ground.

**BCAR 15 5.3.3.4.4** The AIS provider shall provide for aerodromes regularly used by international civil aviation, obstacle data for all obstacles within Area 2 that are assessed as being a hazard to air navigation.

**BCAR 15 5.3.3.4.5** The AIS provider shall provide for aerodromes regularly used by international civil aviation, obstacle data for:

a) Area 2a for those obstacles that penetrate an obstacle data collection surface outlined by a rectangular area around a runway that comprises the runway strip plus any clearway that exists. The Area 2a obstacle collection surface shall have a height of 3 m above the nearest runway elevation measured along the runway centre line, and for those portions related to a clearway, if one exists, at the elevation of the nearest runway end;

b) objects in the take-off flight path area which project above a plane surface having a 1.2 per cent slope and having a common origin with the take-off flight path area; and

c) penetrations of the aerodrome obstacle limitation surfaces.
(See IEM 15 5.3.3.4.5)

**BCAR 15 5.3.3.4.6** The AIS provider shall provide obstacle data for aerodromes regularly used by international civil aviation, for Areas 2b, 2c and 2d for obstacles that penetrate the relevant obstacle data collection surface specified as follows:

a) Area 2b: an area extending from the ends of Area 2a in the direction of departure, with a length of 10 km and a splay of 15 per cent to each side. The Area 2b obstacle collection surface has a 1.2 per cent slope extending from the ends of Area 2a at the elevation of the runway end in the direction of departure, with a length of 10 km and a splay of 15 per cent to each side;

b) Area 2c: an area extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a. The Area 2c obstacle collection surface has a 1.2 per cent slope extending outside Area 2a and Area 2b at a distance of not more than 10 km from the boundary of Area 2a. The initial elevation of Area 2c has the elevation of the point of Area 2a at which it commences; and

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

except that data need not be collected for obstacles less than a height of 3 m above ground in Area 2b and less than a height of 15 m above ground in Area 2c.

**BCAR 15 5.3.3.4.7** The AIS provider shall make arrangements for coordinating the provision of obstacle data for adjacent aerodromes where their respective coverage areas overlap to assure that the data for the same obstacle is correct.

**BCAR 15 5.3.3.4.8** The AIS provider shall make for those aerodromes located near territorial boundaries, arrangements among States concerned to share obstacle data.

**BCAR 15 5.3.3.4.9** The AIS provider shall provide for aerodromes regularly used by international civil aviation, obstacle data for Area 3 for obstacles that penetrate the relevant obstacle data collection

surface extending a half-metre (0.5 m) above the horizontal plane passing through the nearest point on the aerodrome movement area.

**BCAR 15 5.3.3.4.10 RESERVED**

**BCAR 15 5.3.3.4.11** The AIS provider where additional obstacle data is collected to meet other aeronautical requirements, shall expand the obstacle data sets to include this additional data.

**BCAR 15 5.3.4 Aerodrome mapping data sets**

**BCAR 15 5.3.4.1** Aerodrome mapping data sets shall contain the digital representation of aerodrome features.
(See IEM 15 5.3.4.1)

**BCAR 15 5.3.4.2** The AIS provider shall make aerodrome mapping data sets available for aerodromes regularly used by international civil aviation.

**BCAR 15 5.3.5 Instrument flight Procedures data sets**

**BCAR 15 5.3.5.1** Instrument flight procedure data sets shall contain the digital representation of instrument flight procedures.

**BCAR 15 5.3.5.2** The AIS provider shall make Instrument flight procedure data sets available for aerodromes regularly used by international civil aviation.

**BCAR 15 5.4 Distribution services**

**BCAR 15 5.4.1 General**

**BCAR 15 5.4.1.1** The AIS provider shall distribute aeronautical information products distributed to users who request them.

**BCAR 15 5.4.1.2** The AIS provider shall make AIP, AIP Amendments, AIP Supplements and AIC available by the most expeditious means.

**BCAR 15 5.4.1.3** The AIS provider shall employ global communication networks such as the Internet, whenever practicable, for the provision of aeronautical information products.

**BCAR 15 5.4.2 NOTAM distribution**

**BCAR 15 5.4.2.**1 The AIS provider shall distribute NOTAM on the basis of a request.

**BCAR 15 5.4.2.2** NOTAM shall be prepared in conformity with the relevant provisions of the ICAO communication procedures.

**BCAR 15 5.4.2.3** The aeronautical fixed service (AFS) shall, whenever practical, be employed for NOTAM distribution.

**BCAR 15 5.4.2.4** 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 AIS provider shall select the NOTAM that are to be given international

distribution. In Belize NOTAMs for international distribution are NOTAM series A and NOTAMs for national distribution are NOTAM series B.

**BCAR 15 5.4.2.5** 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.

**BCAR 15 5.4.2.6 RESERVED**

**BCAR 15 5.4.2.7** When practicable selective distribution lists shall be used.
(See IEM 15 5.4.2.7)

**BCAR 15 5.4.3 Data set information services**

**BCAR 15 5.4.3.1** When provided, the digital data sets specified in BCAR 15 5.3 shall be made available through information services.
(See IEM 15 5.4.3.1)

**BCAR 15 5.4.3.1.1** A data set information service shall provide, as a minimum, the ability to query and retrieve as a whole each of the digital data sets specified in BCAR 15 5.3.

**BCAR 15 5.4.3.1.2** A data set information service shall provide the ability to query and retrieve selected elements of the digital data sets specified in BCAR 15 5.3.
(See IEM 15 5.4.3.1.2)

**BCAR 15 5.4.3.1.3** A data set information service shall provide the option to subscribe to notifications on data set updates.

**BCAR 15 5.5 Pre-flight Information service**

**BCAR 15 5.5.1** The AIS provider, for aerodrome/heliport used for international air operations, shall provide aeronautical information relative to the route stages originating at the aerodrome/heliport to flight operations personnel, including flight crews and services responsible for pre-flight information.

**BCAR 15 5.5.2** Aeronautical information provided for pre-flight planning purposes shall include information of operational significance from the elements of aeronautical information products.
(See IEM 15 5.5.2)

**BCAR 15 5.6 Post-flight information service**

**BCAR 15 5.6.1** For aerodrome/heliport used for international air operations, arrangements shall be made to receive information concerning the state and operation of air navigation facilities or services noted by flight crews.

**BCAR 15 5.6.2** The arrangements specified in BCAR 15 5.6.1 shall ensure that such information is made available to the aeronautical information service (AIS) for distribution as the circumstances necessitate.

**BCAR 15 5.6.3** For any aerodrome/heliport used for international air operations, arrangements shall be made to receive information concerning the presence of wildlife hazards observed by flight crews.

**BCAR 15 5.6.4** The information about presence of wildlife hazards shall be made available to the aeronautical information service for distribution as circumstances necessitate
(See IEM 15 5.6.4)

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## SUBPART F
## AERONAUTICAL INFORMATION UPDATES

### BCAR 15 6.1 General specifications

The AIS provider shall keep aeronautical data and aeronautical information up to date.

### BCAR 15 6.2 Aeronautical information regulation and control (AIRAC)

**BCAR 15 6.2.1** The AIS provider shall distribute information concerning the following circumstances under the regulated system (AIRAC), i.e. basing establishment, withdrawal, or significant changes upon a series of common effective dates at intervals of 28 days, including 8 November 2018:

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

   1) flight information regions;

   2) control areas;

   3) control zones;

   4) advisory areas;

   5) air traffic services (ATS) routes;

   6) permanent danger, prohibited and restricted areas (including type and periods of activity when known) and air defence identification zones (ADIZ);

   7) permanent areas or routes or portions thereof where the possibility of interception exists;

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

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

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

e) meteorological facilities (including broadcasts) and procedures;

f) runways and stopways;

g) taxiways and aprons;

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

i) approach and runway lighting; and

j) aerodrome operating minima if published by Belize.

**BCAR 15 6.2.2** The AIS provider shall not change the information notified under the AIRAC system further for at least another 28 days after the effective date, unless the circumstance notified is of a temporary nature and would not persist for the full period.

**BCAR 15 6.2.3** The AIS provider shall make available Information provided under the AIRAC system by the aeronautical information service (AIS) so as to reach recipients at least 28 days in advance of the effective date.
(See IEM 15 6.2.3)

**BCAR 15 6.2.4** The AIS provider shall distribute the NIL notification when information has not been submitted by the AIRAC date, not later than one cycle before the AIRAC effective date concerned.

**BCAR 15 6.2.5** The AIS provider shall not use implementation dates other than AIRAC effective dates for pre-planned operationally significant changes requiring cartographic work and/or for updating of navigation databases.

**BCAR 15 6.2.6** The regulated system (AIRAC) shall use for the provision of information relating to the establishment and withdrawal of, and premeditated significant changes in, the circumstances listed below:

a) position, height and lighting of navigational obstacles;

b) hours of service of aerodromes, facilities and services;

c) customs, immigration and health services;

d) temporary danger, prohibited and restricted areas and navigational hazards, military exercises and mass movements of aircraft; and

e) temporary areas or routes or portions thereof where the possibility of interception exists.

**BCAR 15 6.2.7 Major changes planned**

The AIS provider whenever major changes are planned and where advance notice is desirable and practicable, information shall be made available by the AIS so as to reach recipients at least 56 days in advance of the effective date. This shall be applied to the establishment of, and premeditated major changes in, the circumstances listed below, and other major changes if deemed necessary*:*

a) new aerodromes for international instrument flight rules (IFR) operations;

b) new runways for IFR operations at international aerodromes;

c) design and structure of the ATS route network;

a) design and structure of a set of terminal procedures (including change of procedure bearings due to magnetic variation change);

e) circumstances listed in BCAR 15 6.2.1 if the entire territory of Belize or any significant portion thereof is affected or if cross-border coordination is required.

(See IEM 15 6.2.7)

**BCAR 15 6.3 Aeronautical information product updates**

**BCAR 15 6.3.1 AIP updates**

**BCAR 15 6.3.1.1** The AIS provider shall amend the aeronautical information publication (AIP) or reissued at such regular intervals as may be necessary to keep it up to date.

**BCAR 15 6.3.1.2** Permanent changes to the AIP shall be published as AIP Amendments.

**BCAR 15 6.3.1.3** Temporary changes of long duration (three months or longer) and information of short duration which contains extensive text and/or graphics shall be published as AIP Supplements.

**BCAR 15 6.3.2 NOTAM**

**BCAR 15 6.3.2.1** The AIS provider when an AIP amendment or an AIP Supplement is published in accordance with AIRAC procedures, a Trigger NOTAM shall be originated.
(See IEM 15 6.3.2.1)

**BCAR 15 6.3.2.2** The AIS provider shall originate and issue promptly a NOTAM whenever the information to be distributed is of a temporary nature and of short duration, or when operationally significant permanent changes or temporary changes of long duration are made at short notice, except for extensive text and/or graphics.

**BCAR 15 6.3.2.3** The AIS provider shall originate and issue a NOTAM concerning the following information:

a) establishment, closure or significant changes in operation of aerodrome(s) or heliport(s) or runways;

b) establishment, withdrawal or significant changes in operation of aeronautical services (aerodromes, AIS, ATS, communications, navigation and surveillance (CNS), meteorology (MET), search and rescue (SAR), etc.);

c) establishment, withdrawal or significant changes in operational capability of radio navigation and air-ground communication services. This includes: interruption or return to operation, change of frequencies, change in notified hours of service, change of identification, change of orientation (directional aids), change of location, power increase or decrease amounting to 50 per cent or more, change in broadcast schedules or contents, or irregularity or unreliability of operation of any radio navigation and air-ground communication services or limitations of relay stations including operational impact, affected service, frequency and area;

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

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

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

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

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

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

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

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

l) changes in regulations requiring immediate action, e.g. prohibited areas for SAR action;

m) presence of hazards not otherwise promulgated, which affect air navigation (including obstacles, military exercises and operations, intentional and unintentional radio frequency interferences, rocket launches, displays, fireworks, sky lanterns, rocket debris, races and major parachuting events);

n) conflict zones which affect air navigation (to include information that is as specific as possible regarding the nature and extent of threats of that conflict and its consequences for civil aviation);
(See IEM 15 6.3.2.3 n))

o) planned laser emissions, laser displays and search lights if pilots' night vision is likely to be impaired;

p) erecting or removal of, or changes to, obstacles to air navigation in the take-off/climb, missed approach, approach areas and runway strip;

q) establishment or discontinuance (including activation or deactivation) as applicable, or changes in the status of prohibited, restricted or danger areas;

r) establishment or discontinuance of areas or routes or portions thereof where the possibility of interception exists and where the maintenance of guard on the VHF emergency frequency 121.5 MHz is required;

s) allocation, cancellation or change of location indicators;

t) changes in aerodrome/heliport rescue and firefighting category provided (see Annex 14, Volume I, Chapter 9, and Attachment A, Section 17);

u) presence or removal of, or significant changes in, hazardous conditions due to snow, slush, ice, radioactive material, toxic chemicals, volcanic ash deposition or water on the movement area;

v) outbreaks of epidemics necessitating changes in notified requirements for inoculations and quarantine measures;

w) observations or forecasts of space weather phenomena, the date and time of their occurrence, the flight levels where provided and portions of the airspace which may be affected by the phenomena;

x) an operationally significant change in volcanic activity, the location, date and time of volcanic eruptions and/or horizontal and vertical extent of volcanic ash cloud, including direction of movement, flight levels and routes or portions of routes which could be affected;

y) release into the atmosphere of radioactive materials or toxic chemicals following a nuclear or chemical incident, the location, date and time of the incident, the flight levels and routes or portions thereof which could be affected and the direction of movement;

z) establishment of operations of humanitarian relief missions, such as those undertaken under the auspices of the United Nations, together with procedures and/or limitations which affect air navigation; and

aa) implementation of short-term contingency measures in cases of disruption, or partial disruption, of ATS and related supporting services.
(See IEM 15 6.3.2.3 aa))

**BCAR 15 6.3.2.3.1 Launch of balloons and weather probes**

Except in case of urgency and/or natural events such as: hurricanes, earthquakes, the launch of balloons and meteorological probes for scientific purposes shall be requested with a minimum notice of 7 days before the event, in order to publish and inform interested users about the danger.

**BCAR 15 6.3.2.4** The AIS provider shall not notify the following information by NOTAM:

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

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

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

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

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

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

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

h) parachuting when in uncontrolled airspace under VFR (see BCAR 15 6.3.2.3 m)), when controlled, at promulgated sites or within danger or prohibited areas;

i) training activities by ground units;

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

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

l) national regulations not affecting general aviation;

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

n) general reminders on already published information;

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

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

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

r) closure or unavailability of, or changes in, operation of aerodrome(s)/heliport(s) outside the aerodrome(s)/heliport(s) operational hours; and

s) other non-operational information of a similar temporary nature.
(See IEM 15 6.3.2.4)

**BCAR 15 6.3.3 Data set updates**

**BCAR 15 6.3.3.1** The AIS provider shall amend or reissued data sets at such regular intervals as may be necessary to keep them up to date.

**BCAR 15 6.3.3.2** The AIS provider shall issue permanent changes and temporary changes of long duration (three months or longer) made available as digital data in the form of a complete data set or a subset that includes only the differences from the previously issued complete data set.

**BCAR 15 6.3.3.3** When the AIS provider makes available a completely reissued data set, the differences from the previously issued complete data set shall be indicated.

**BCAR 15 6.3.4.** When the AIS provider makes available temporary changes of short duration as digital data (digital NOTAM), the same aeronautical information model as the complete data set shall be used.

**BCAR 15 6.3.5.** The AIS provider shall synchronize AIP updates and digital data sets.

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## SECTION 2 – Interpretative and Explanatory Material (IEM)
## GENERAL

### 1. PRESENTATION

1.1. The sequence after the abbreviation IEM indicates the paragraph number of the referring BCAR-15.

1.2. The abbreviations are defined as follows:

Interpretative and Explanatory Material (IEM) shows the ways or alternatives, but not necessarily the only possible way to comply with a specific paragraph of the BCAR-15.

1.3 The font of this section is Arial 10

## SUBPART A
## GENERAL

### IEM 15 1.0 Standard and Recommended Practices
(See BCAR 15 1.0)

These Standards and Recommended Practices are to be used in conjunction with the Procedures for Air Navigation Services — ICAO Abbreviations and Codes (PANS-ABC, Doc 8400).

These Standards and Recommended Practices are to be used in conjunction with the Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066).

Guidance material on the organization and operation of aeronautical information services is contained in the Aeronautical Information Services Manual (Doc 8126).

### IEM 15 1.2.1.1 horizontal reference system
(See BCAR 15 1.2.1.1)

Comprehensive guidance material concerning WGS-84 is contained in the World Geodetic System — 1984 (WGS-84) Manual (Doc 9674).

### IEM 15 1.2.1.2
(See BCAR 15 1.2.1.2)

The latest version of the WGS-84 (G2139) reference frame is realized through coordinates of 17 GPS tracking stations which are part of the GPS Control Segment. They are aligned to IGb14 (considered to be equivalent to ITRF2014 (International Terrestrial Reference System 2014)) at epoch 2005.0.

Another precise worldwide terrestrial coordinate system is the International Earth Rotation Service (IERS) Terrestrial Reference System (ITRS), and the realization of ITRS is the IERS Terrestrial Reference Frame (ITRF). Guidance material regarding the ITRS is provided in Appendix C of Doc 9674. WGS84 (G2139) is consistent with ITRF2014 and in practical realization the difference between these two systems is statistically insignificant for most applications, meaning WGS-84 (G2139) and ITRF 2014 are essentially identical.

### IEM 15 1.2.2.1 Vertical Reference System
(See BCAR 15 1.2.2.1)

The geoid globally most closely approximates MSL. It is defined as the equipotential surface in the gravity field of the Earth which coincides with the undisturbed MSL extended continuously through the continents.

Gravity-related heights (elevations) are also referred to as orthometric heights while distances of points above the ellipsoid are referred to as ellipsoidal heights.

### IEM 15 1.2.2.3
(See BCAR 15 1.2.2.3)

Specifications concerning determination and reporting (accuracy of field work and data integrity) of elevation and geoid undulation at specific positions at aerodromes/heliports are given in the PANS-AIM (Doc 10066), Appendix 1.

**IEM 15 1.2.3.1 Temporal Reference System**
(See BCAR 15 1.2.3.1)

A value in the time domain is a temporal position measured relative to a temporal reference system.

UTC is a time scale maintained by the Bureau International de l'Heure and the IERS and forms the basis of a coordinated dissemination of standard frequencies and time signals.

Guidance material relating to UTC is constrained in Attachment D of Annex 5 – Units of Measurement to be Used in Air and Ground Operations.

ISO Standard 8601* specifies the use of the Gregorian calendar and 24-hour local or UTC for information interchange while ISO Standard 19108 prescribes the Gregorian calendar and UTC as the primary temporal reference system for use with geographic information.

**IEM 15 1.2.3.2**
(See BCAR 15 1.2.3.2)

ISO Standard 19108*, Annex D, describes some aspects of calendars that may have to be considered in such a description.

ISO Standard
8601 — Data elements and interchange formats — Information interchange — Representation of dates and times
9000 — Quality Management Systems — Fundamentals and Vocabulary
19101 — Geographic information — Reference model
19104 — Geographic information — Terminology
19108 — Geographic information — Temporal schema
19109 — Geographic information — Rules for application schema
19110 — Geographic information — Feature cataloguing schema
19115 — Geographic information — Metadata
19117 — Geographic information — Portrayal
19131 — Geographic information — Data product specification

## SUBPART B
## AIS RESPONSABILITIES AND FUNCTIONS

**IEM 15 2.1.5**
(See BCAR 15 2.1.5)

The scope of aeronautical data and aeronautical information that would be the subject of formal arrangements is specified in Chapter 4.

**IEM 15 2.2.1**
(See BCAR 15 2.2.1)

A description of the ATM community is contained in the Global Air Traffic Management Operational Concept (Doc 9854).

**IEM 15 2.2 2**
(See BCAR 15 2.2.2)

An AIS may include origination functions.

**IEM 15 2.2.4 b)**
(See BCAR 15 2.2.4 b))

One such source is the subject of a provision in BCAR 15 5.6.

**IEM 15 2.3.2**
(See BCAR 15 2.3.2)

Guidance material on such formal arrangements is contained in the Aeronautical Information Services Manual (Doc 8126).

**IEM 15 2.3.8**
(See BCAR 15 2.3.8)

The intention is that States are able to access data for the purposes specified in BCAR 15 2.2.4.

**IEM 15 2.3.10**
(See BCAR 15 2.3.10)

Specifications concerning globally interoperable aeronautical data and aeronautical information exchange models are contained in the Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066).

Guidance material on globally interoperable aeronautical data and aeronautical information exchange models is contained in Doc 8126.

**IEM 15 2.4 Copyright**
(See BCAR 15 2.4)

In order to protect the investment in the products of Belize's AIS as well as to ensure better control of their use, the AIS provider(s) may wish to apply copyright to those products in accordance with Belizean laws and approval from the BDCA.

**IEM 15 2.5 Cost Recovery**
(See BCAR 15 2.5)

When costs of collection and compilation of aeronautical data and aeronautical information are recovered through airports and air navigation services charges, the charge to an individual customer for the supply of a particular aeronautical information product may be based on the costs of printing paper copies, production of electronic media and distribution.

## SUBPART C
## AERONAUTICAL INFORMATION MANAGEMENT

### IEM 15 4.3.2 Data Quality Specifications

### IEM 15 3.2.1 Accuracy
(See BCAR 15 3.2.1)

Specifications concerning the order of accuracy (including confidence level) for aeronautical data are contained in the Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066), Appendix 1.

### IEM 15 3.2.2 Data Resolution
(See BCAR 15 3.2.2)

Specifications concerning the resolution of aeronautical data are contained in the PANS-AIM (Doc 10066), Appendix 1.

The resolution of the data contained in the database may be the same or finer than the publication resolution.

### IEM 15 3.2.3.1 Data integrity
(See BCAR 15 3.2.3.1)

Specifications concerning the integrity classification related to aeronautical data are contained in the PANS-AIM (Doc 10066), Appendix 1.

### IEM 15 3.2.3.2
(See BCAR 15 3.2.3.2)

Note: Guidance concerning measures to ensure data integrity is contained in the Aeronautical Information Service Manual (Doc 8126), Part II, 4.1 and 6.2.

### IEM 15 3.2.5 Data timeliness
(See BCAR 15 3.2.5)

These limits may be associated with individual data elements or data sets.

If the effective period is defined for a data set, it will account for the effective dates of all of the individual data elements.

### IEM 15 3.4 Data Error Detection
(See BCAR 15 3.4.2)

Detailed specifications concerning digital data error detection techniques are contained in the PANS-AIM (Doc 10066).

### IEM 15 3.5 Use of automation
(See BCAR 15 3.5.1)

Guidance material on the development of databases and the establishment of data exchange services is contained in Doc 8126.

**IEM 15 3.5.2**
(See BCAR 15 3.5.2)

Risks of altering the integrity of data and information may be introduced by automated processes in cases of unexpected systems behaviours.

**IEM 15 3.6 Quality management system**
(See BCAR 15 3.6.1)

Guidance material is contained in the Manual on the Quality Management System for Aeronautical Information Services (Doc 9839)

**IEM 15 3.6.5**
(See BCAR 15 3.6.5)

Provisions related to the competency-based training and assessment methodology are contained in the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868) and in the Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066).

Additional guidance concerning a competency-based training and assessment methodology to ensure the competency of personnel in accordance with the Procedures for Air Navigation Services — Training (PANS-TRG, Doc 9868) is contained in the Manual on Aeronautical Information Services Training (Doc 9991).

**IEM 15 3.7 Human factors considerations**
(See BCAR 15 3.7.2)

This may be accomplished through the design of systems, operating procedures or improvements in the operating environment.

## SUBPART D
## SCOPE OF AERONUTICAL DATA AND AERONAUTICAL INFORMATION

(See BCAR 15 4.0)

The scope of aeronautical data and aeronautical information provides the minimum requirement to support aeronautical information products and services, aeronautical navigation data bases, air navigation applications and air traffic management (ATM) systems.

### IEM 15 4.1 Scope of aeronautical data and aeronautical information

(See BCAR 15 4.1.1)

Detailed specifications concerning the content of each sub-domain are contained in the Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066), Appendix 1.

Aeronautical data and aeronautical information in each sub-domain may be originated by more than one organization or authority.

### IEM 15 4.1.2 Determination and reporting of aeronautical data

(See BCAR 15 4.1.2)

Specifications concerning the accuracy and integrity classification related to aeronautical data are contained in the PANS-AIM (Doc 10066), Appendix 1.

### IEM 15 4.2 Metadata

(See BCAR 15 4.2.2)

Detailed specifications concerning metadata are contained in the PANS-AIM (Doc 10066).

## SUBPART E
## AERONAUTICAL INFORMATION PRODUCTS AND SERVICES

### IEM 15 5.1 General
(See BCAR 15 5.1.1.)

Specifications concerning the order of resolution of aeronautical data provided for each aeronautical information product are contained in the Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066), Appendix 1.

### IEM 15 5.2 Aeronautical information in a standardized presentation
(See BCAR 15 5.2.1)

Detailed specifications about AIP, AIP Amendments, AIP Supplements, AIC and NOTAM are contained in the PANS-AIM (Doc 10066).

Cases where digital data sets may replace the corresponding elements of the standardized presentation are detailed in the PANS-AIM (Doc 10066).

### IEM 15 5.2.2 Aeronautical Information Publication
(See BCAR 15 5.2.2)

The AIP is intended primarily to satisfy international requirements for the exchange of aeronautical information of a lasting character essential to air navigation.

The AIP constitutes the basic information source for permanent information and long duration temporary changes.

### IEM 15 5.2.3 AIP Supplement
(See BCAR 15 5.2.3)

Detailed specifications concerning the frequency for providing checklists of valid AIP Supplements are contained in the PANS-AIM (Doc 10066).

### IEM 15 5.2.4 Aeronautical Information Circulars
(See BCAR 15 5.2.4.4)

Detailed specifications concerning the frequency for providing checklists of valid AIC are contained in the PANS-AIM (Doc 10066).

### IEM 15 5.2.5 Aeronautical Charts
(See BCAR 15 5.2.5)

Annex 4 — Aeronautical Charts provides Standards and Recommended Practices including provision requirements for each chart type.

### IEM 15 5.2.5.5 Charts Resolution
(See BCAR 15 5.2.5.5)

Specifications concerning the chart resolution for aeronautical data are contained in the PANS-AIM (Doc 10066), Appendix 1.

**IEM 15 5.2.6 NOTAM**
(See BCAR 15 5.2.6)

Detailed specifications for NOTAM, including formats for SNOWTAM and ASHTAM, are contained in the PANS-AIM (Doc 10066).

**IEM 15 5.2.6.1**
(See BCAR 15 5.2.6.1)

Detailed specifications concerning the frequency for providing checklists of valid NOTAM are contained in the PANS-AIM (Doc 10066).

**IEM 15 5.3 Digital data set**

**IEM 15 5.3.1.1**
(See BCAR 15 5.3.1.1)

Detailed specifications concerning the content of the digital data sets are contained in the PANS-AIM (Doc 10066).

**IEM 15 5.3.1.2**
(See BCAR 15 5.3.1.2)

Detailed specifications concerning metadata are contained in the PANS-AIM (Doc 10066).

**IEM 15 5.3.3 Terrain and obstacle data sets**
(See BCAR 15 5.3.3)

Numerical requirements for terrain and obstacle data sets are contained in the PANS AIM (Doc 10066), Appendices 1 and 8.

Requirements for terrain and obstacle data collection surfaces are contained in the PANS-AIM (Doc 10066), Appendix 8.

**IEM 15 5.3.3.1 Coverage areas for terrain and obstacle data**
(See BCAR 15 5.3.3.1)

See Annex 14, Volume I, Chapter 3, for dimensions for runway strips.

**IEM 15 5.3.3.4 Obstacle data sets**
(See BCAR 15 5.3.3.4.5)

Take-off flight path areas are specified in Annex 4, 3.8.2. Aerodrome obstacle limitation surfaces are specified in Annex 14, Volume 1, Chapter 4.

**IEM 15 5.3.4 Aerodrome mapping data sets**
(See BCAR 15 5.3.4.1)

Aerodrome features consist of attributes and geometries, which are characterized as points, lines or polygons. Examples include runway thresholds, taxiway guidance lines and parking stand areas.

**IEM 15 5.4.2 NOTAM distribution**
(See BCAR 15 5.4.2.7)

Guidance material relating to selective distribution lists is contained in the Aeronautical Information Services Manual (Doc 8126).

**IEM 15 5.4.3.1**
(See BCAR 15 5.4.3.1)

In the context of system-wide information management, the notion of information service addresses machine-to-machine interaction in a service-oriented architecture.

Procedures on information services are contained in the Procedures for Air Navigation Services Information Management (PANS-IM, Doc 10199).

Guidance material on information services can be found in the Manual on System-wide Information Management Implementation (Doc 10203).

**IEM 15 5.4.3.1.2**
(See BCAR 15 5.4.3.1.2)

Guidance material on how to query digital data sets is contained in the Aeronautical Information Services Manual (Doc 8126), Part IV.

**IEM 15 5.5 Pre-flight Information service**
(See BCAR 15 5.5.2)

The elements of aeronautical information products may be limited to national publications and when practicable, those of adjacent States, provided a complete library of aeronautical information is available at a central location and means of direct communications are available with that library.

A recapitulation of valid NOTAM of operational significance and other information of urgent character may be made available to flight crews in the form of plain-language pre-flight information bulletins (PIB). Guidance material on the preparation of PIB is contained in Doc 8126.

**IEM 15 5.6 Post-flight information service**
(See BCAR 15 5.6.4)

See Annex 14, Volume I, Chapter 9, Section 9.4.

## SUBPART F
## AERONAUTICAL INFORMATION UPDATES

**IEM 15 6.2 Aeronautical information regulation and control (AIRAC)**
(See BCAR 15 6.2.3)

AIRAC information is distributed by the AIS unit at least 42 days in advance of the AIRAC effective dates with the objective of reaching recipients at least 28 days in advance of the effective date.

**IEM 15 6.2.7 Major changes planned**
(See BCAR 15 6.2.7)

Guidance material on what constitutes a major change is included in the Aeronautical Information Services Manual (Doc 8126).

**IEM 15 6.3.2 NOTAM**
(See BCAR 15 6.3.2.1)

Detailed specifications concerning the Trigger NOTAM are contained in the Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066).

**IEM 15 6.3.2.3 n)**
(See BCAR 15 6.3.2.3 n))

*Guidance related to conflict zones is contained in the* Risk Assessment Manual for Civil Aircraft Operations Over or Near Conflict Zones *(Doc 10084).*

**IEM 15 6.3.2.3 aa)**
(See BCAR 15 6.3.2.3 aa))

See Annex 11, 2.31 and Attachment C to that Annex.

Specifications concerning the timely promulgation of information by NOTAM are contained in Chapter 6 of the Procedures for Air Navigation Services — Aeronautical Information Management (PANS-AIM, Doc 10066).

**IEM 15 6.2.3.4**
(See BCAR 15 6.2.3.4)

Information which relates to an aerodrome and its vicinity and does not affect its operational status may be distributed locally during pre-flight or in-flight briefing or other local contact with flight crews.