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GCAA
ADVISORY CIRCULAR

AERODROME & GROUND AID
AC NO: GCAA AC/AGA/002

SUBJECT:	**AERONAUTICAL DATA INTEGRITY REQUIREMENTS**	**DATE INITIATED:** JULY 15, 2016 **INITIATED BY:** DIRECTOR AVIATION SAFETY REGULATION

1. PURPOSE

The purpose of this Advisory Circular (AC) is to provide guidance on the procedures acceptable to the GCAA for the provision and integrity of aeronautical data.

2. GENERAL INFORMATION/CANCELLATION

a. This Advisory Circular GCAA AC/AGA/002 is an initial issue and the effective date is January 1, 2017.

b. Aeronautical Information Service (AIS) providers; current holders of, and new applicants for, design approval, aerodrome operator's certificate, and developers of airbourne systems and equipment are guided by this AC in the the conduct, provision and integrity of aeronautical data.

c. Aeronautical data information shall ensure absolute integrity throughout the entire data chain from the originator to the intended user. AIS provider shall ensure that its quality system policies, processes and procedures comply with national requirements on aeronautical data integrity.

d. This AC applies to all AIS providers in Guyana.

3. RELATED REFERENCES

a. ICAO Annex 4 (Aeronautical Charts).

b. Annex 11 (Air Traffic Services).

c. Annex 14 (Aerodromes).

d. Annex 15 (Aeronautical Information Services).

4. CONTACT INFORMATION

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5. DEFINITION

a. **Aeronautical Information Service (AIS).** A service established within the defined area of coverage responsible for the provision of aeronautical data and aeronautical information necessary for the safety, regularity and efficiency of air navigation.

b. **Cyclic Redundancy Check (CRC).** This is an error-detecting code commonly used in digital networks and storage devices to detect accidental changes to raw data. Blocks of data entering these systems get a short check value attached, based on the remainder of a polynomial division of their contents.

c. **Data Integrity.** This refers to the overall completeness, accuracy and consistency of data. This can be indicated by the absence of alteration between two instances or between two updates of a data record, meaning data is intact and unchanged.

d. **International Standard Organisation (ISO9001).** This organisation defines an ISO 9000 Quality Management System (QMS) that is focused on meeting customer expectations and delivering customer satisfaction so that attention is paid to the customer.

6. Ensuring Aeronautical Data Integrity

a. In order to meet national and international aeronautical data integrity requirements, the AIS provider should put in place a quality system incorporating a process as shown in Appendix 1. Each step or activity in the process from data origination thru data storage and data processing, to data publication shall be identified and controlled.

b. The AIS provider shall establish an electronic database for the storage of all aeronautical data which shall be subjected to a cyclic redundancy check when the data is transferred from one activity to the next activity.
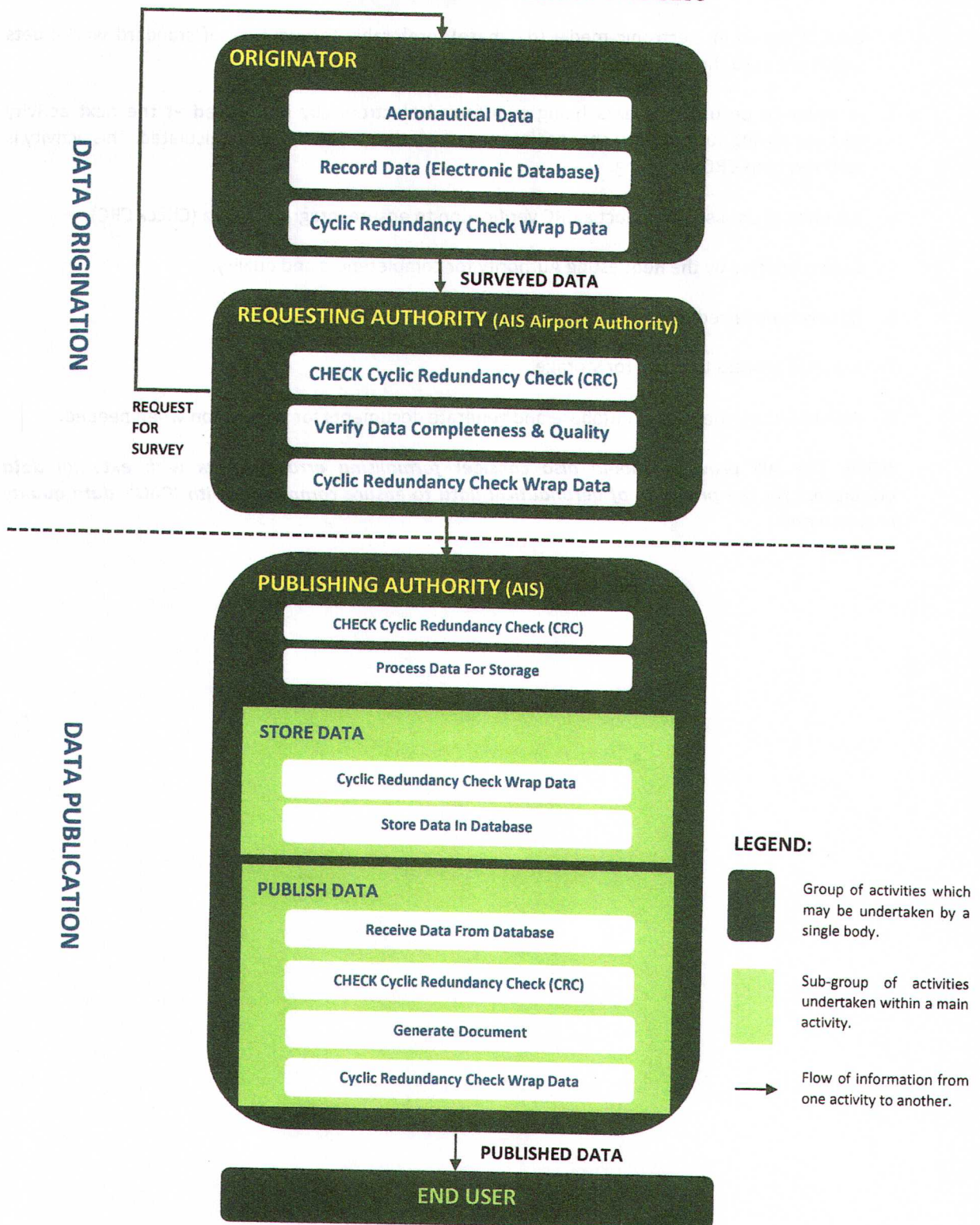
Approved By:

Chaitrani Heeralall
Director General of Civil Aviation (ag.)
Guyana Civil Aviation Authority

APPENDIX: 1
AERONAUTICAL DATA INTEGRITY PROCESS

DATA ORIGINATION

ORIGINATOR

- Aeronautical Data
- Record Data (Electronic Database)
- Cyclic Redundancy Check Wrap Data

↓ SURVEYED DATA

REQUEST FOR SURVEY

REQUESTING AUTHORITY (AIS Airport Authority)

- CHECK Cyclic Redundancy Check (CRC)
- Verify Data Completeness & Quality
- Cyclic Redundancy Check Wrap Data

DATA PUBLICATION

PUBLISHING AUTHORITY (AIS)

- CHECK Cyclic Redundancy Check (CRC)
- Process Data For Storage

STORE DATA

- Cyclic Redundancy Check Wrap Data
- Store Data In Database

PUBLISH DATA

- Receive Data From Database
- CHECK Cyclic Redundancy Check (CRC)
- Generate Document
- Cyclic Redundancy Check Wrap Data

↓ PUBLISHED DATA

END USER

LEGEND:

- ▪ Group of activities which may be undertaken by a single body.
- ▪ Sub-group of activities undertaken within a main activity.
- → Flow of information from one activity to another.

EXPLANATION OF AERONAUTICAL DATA INTEGRITY PROCESS

1. Survey data is provided by ISO9001 accredited companies.

2. Data is stored in electronic media (database), preferably through use of standard worksheets which are used throughout the process.

3. In order to ensure that data being transferred electronically is received at the next activity without having suffered any change, it is necessary that a CRC value be calculated. This activity is referred to as CRC wrapping.

4. Receiver of data shall conduct a CRC verification to ensure integrity of data (Check CRC).

5. Data is verified by the Requesting Authority for completeness and quality.

6. Data is transferred electronically to the Publishing Authority (i.e. AIS).

7. AIS shall process the data for storage.

8. AIS shall store the data in database and generate documents for publication when needed.

NOTE: The AIS provider should also consider formalising arrangements with external data originators for the provision of aeronautical data to ensure compliance with ICAO's data quality requirements.

END