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International Civil Aviation Organization
North American, Central American and Caribbean Office
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Agenda Item 5: AIS (AIM) Developments and Follow-up
5.2 **Implementation of e-TOD**

ELECTRONIC TERRAIN AND OBSTACLES DATA (e-TOD)

(Presented by the Secretariat)

SUMMARY

The purpose of this working paper is to urge States of the Regions to implement required actions for future availability of electronic Terrain and Obstacle Data.

References

- GREPECAS/14 Final Report.
- Annex 15, Chapter 10, Appendix 8.
- ICAO Doc.9881 Guidelines for electronic Terrain, Obstacle and Aerodrome Mapping Information (only in English).

1. Introduction

1.1 This working paper presents aspects of technical requirements related to the provision of electronic Terrain and Obstacle Data by CAR States corresponding to their respective territories and areas designated for such purposes, according to the international requirements contained in Chapter 10 and Appendix 8 of ICAO Annex 15.

1.2 Significant safety benefits for international civil aviation will be provided by in-flight and ground-based applications that rely on quality electronic terrain and obstacle data. The increasing worldwide baggage of aircraft and air traffic control units with systems that make use of electronic terrain data requires standardization in the provision of supporting data. Furthermore, as terrain information is increasingly finding its primary usage in the cockpit, personnel involved with operations will also benefit from the use of quality terrain and obstacle data. The performance of these applications that often make use of multiple data sources, however, may be degraded by data with inconsistent or inappropriate specifications for quality.

1.3 During the GREPRECAS/14 Meeting the problematic related to aeronautical charts electronic display was analyzed and the existence of some key elements directly affecting the implementation of the procedures required to satisfy aeronautical charts display in electronic formats was recognized, and one of these key elements would basically consist of the availability of terrain and obstacles electronic data with great levels of integrity and feasibility. In this regard, GREPECAS/14 Meeting agreed to approve Conclusion 14/40:

CONCLUSION 14/40 COMPLIANCE WITH SARPS CONTAINED IN CHAPTER 10 OF ICAO ANNEX 15 (ELECTRONIC TERRAIN AND OBSTACLE DATA)

That the States and Territories of the CAR and SAM Regions, with a view to ensuring the provision of electronic terrain and obstacle data, take action in order to:

a) include in their planning as soon as possible, the implementation of all required procedures to ensure that electronic terrain and obstacle data be provided in the period between 20 November 2008 (Annex 15, 10.6.1.1) and 18 November 2010 (Annex 15, 10.6.1.2), respectively, as established;

b) ensure effective compliance of item a), through the establishment of a team of specialists in charge of the development of corresponding technical studies on this matter;

c) put into practice an action plan oriented towards the collection of sets of electronic terrain and obstacle data for their classification, storage and availability in digital databases in accordance with the contents and structure specified in Appendix 8 to ICAO Annex 15; and

d) ensure availability of electronic terrain and obstacle data of the State's national territory through coordination with national geographic institutes to have aeronautical Visual (VFR) Flight Charts available in digital format at scales between 1:250,000 and 1:1,000,000, respectively.

2. Discussion

2.1 Chapter 10 of ICAO Annex 15 specifies that States should ensure that electronic terrain and obstacle data, corresponding their entire territory, should be available to satisfy the requirements necessary to adjust air navigation systems and functions related to technical requirements specified in paragraph 10.1 of this Annex, in order that this set of data should also be available to be used in the specified bases, and according to the areas of application as, the whole territory of the State (Area 1), terminal control area (Area 2), aerodrome/heliport area (Area 3) and operations area Category II or III (Area 4).

2.2 Paragraph 10.6 (10.6.1.1 and 10.6.1.2, respectively) of ICAO Annex 15 also specifies that States, even though complying with the responsibilities indicated in paragraph 3.1 above, should also take into consideration that the technical requirements of Areas 1 and 4 should be satisfied starting 20 November 2008, while the technical requirements of Areas 2 and 3 should be satisfied starting 18 November 2010.

2.3 In regard with the previous paragraph and in order to satisfy necessary requirements for electronic terrain and obstacle data, taking into account cost-effectiveness, acquisition methods and data availability, the data are to be provided according to four basic coverage areas (paragraphs 10.2.1 to 10.2.4 of Annex 15 refer). Area 1: the whole territory of a State, including aerodrome/heliport. Area 2: establish terminal control area, not exceeding a 45 km radius from the aerodrome reference point (ARP), to coincide with the existing specification for the provision of information on the Aerodrome and Terrain Obstacle Chart, ICAO Annex 4, Chap. 5. Area 3 covers the area which is within the specified distances from the edges of a defined aerodrome or heliport surface movement area while Area 4 is restricted for use only for those runways where precision approach Category II or III operations have been established.

3. Suggested Action

3.1 When evaluating the contents of this working paper, with regard to the need to provide appropriate follow-up to the requirements of ICAO Annex 15, Chapter 10, concerning the availability by the States of electronic terrain and obstacle data, within the period 2008 and 2010, and with a view to promote the effective compliance of these technical requirements, the Meeting is invited to:

a) carry out Conclusion 14/40 (Availability of Electronic Terrain and Obstacle Data in the CAR/SAM Regions);

b) report to ICAO NACC Office plans or difficulties for e-TOD implementation; and

c) formulate an integrated regional plan for Technical Cooperation regarding the cost-effectiveness for the whole Region instead of individual States/Territories.

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