International Civil Aviation Organization

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WORKING PAPER

ASSEMBLY — 37TH SESSION

TECHNICAL COMMISSION

Agenda Item 39: Transition from Aeronautical Information Service (AIS) to Aeronautical Information Management (AIM)

DEVELOPMENT OF STANDARDIZED METHODS FOR ETOD IMPLEMENTATION

(Presented by the Republic of Korea)

EXECUTIVE SUMMARY

The Contracting States are experiencing difficulties in implementing the electronic terrain and obstacle data (eTOD) and therefore, it is required to develop guidance material and provide qualified examples for survey methods, eTOD area and the e-TOD database to help States avoid spending considerable time and money, while seeking global harmonization in the eTOD implementation.

Action: The Assembly is invited to:
a) note the contents of this paper; and
b) agree that ICAO should develop standardized methods for the implementation of eTOD

Strategic Objectives:	This working paper relates to Strategic Objective A: Safety – *Enhance global civil aviation safety*
Financial implications:	No additional resources required.
References:	Annex 15 — *Aeronautical Information Services* Doc 9881 — *Guidelines for Electronic Terrain, Obstacle and Aerodrome Mapping Information*

1. INTRODUCTION

1.1 ICAO provides SARPs and guidance material related to the electronic terrain and obstacle data (eTOD) in a number of documents including Annex 15 and Doc 9881. The eTOD, as proven in some cases of implementation by a number of States, requires knowledge about not only aeronautical information, but also airport facilities, geographical information and even technical understanding of databases. For this reason, the eTOD Area 2 application date has been postponed to November 2015.

1.2 Relevant references provided by ICAO need to be as specific as possible because of complexity of eTOD. Only then can they provide practical guidance for Contracting States to collect and manage the eTOD.

1.3 In this regard, standardized examples for survey method, defined eTOD area and eTOD database, need to be developed and provided by ICAO in addition to currently available documents.

2. DISCUSSION

2.1 There were several ICAO seminars explaining the concept and the importance of eTOD, and Contracting States have reached a strong consensus on the reason why eTOD is essential for the aeronautical information. If the aeronautical information management (AIM) is one of key enablers of the ATM Operational Concept, eTOD is considered as the key enabler of the AIM.

2.2 Understanding the crucial importance of eTOD, an airport operator of Republic of Korea (ROK) developed eTOD database for Area 3 and Area 4 in 2009 in accordance with ICAO reference material based on the series of case studies of developing countries, but it is difficult to confirm if the database perfectly met ICAO requirements. It is expected that other Contracting States may have similar difficulties when they develop eTOD.

2.3 Furthermore, even after partial eTOD development, the airport operator was not sure whether their data perfectly met ICAO requirements or not. It estimates that other Contracting States may have similar difficulties when th ey develop eTOD.

3. DEVELOPMENT OF QUALIFIED SAMPLES

3.1 A standardized method for surveying needs to be developed for international harmonization and cost effectiveness. Most States working on the eTOD have utilized the LiDAR, SRTM or satellite images for the eTOD, because these methods are considered to meet the ICAO data quality requirements. Outcomes could be slightly different depending on what kind of survey method was utilized to collect terrain and obstacle data.

3.2 Examples of defined eTOD areas from 1 to 4 need to be presented. The references can prevent Contracting States from defining the respective area differently when they individually interpret the related numbers in Annex 15.

3.3 Structure and language of the eTOD database need to be standardized so that the eTOD database of each Contracting State can be exchangeable in the future.

3.4 Finally, the cases of eTOD development and extensive application need to be widely shared among the Contracting States in order that other States can be encouraged to take part in eTOD development.

4. CONCLUSION

4.1 The development of the standardized qualified examples for survey methods, defined eTOD area and e-TOD database is expected to be a great support for the AIS experts to save time and money when understanding about non-aeronautical information fields, such as the airport facilities, geographical information system and technical understanding on database.

4.2 Furthermore, these standardized samples are expected to avoid “trial and error” phases that each Contracting State may go through while preparing eTOD, and to support the harmonized implementation of eTOD worldwide.

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