International Civil Aviation Organization SAM/AIM/10-WP/03
South American Regional Office 18/07/17
Tenth Multilateral Meeting of the SAM Region for the transition from AIS to AIM (SAM/AIM/9)
Lima, Peru, 28 August to 1st September 2017

Agenda Item 1: Implementation of Provision of Electronic Terrain and Obstacle Data (e-TOD)

Deficiencies in e-TOD implementation and Action Plan

(Presented by the Secretariat)

SUMMARY

This working paper presents the description of the deficiency regarding e-TOD provision and a corrective action plan model to be considered by the States.

REFERENCES:

- Annex 15 – Aeronautical Information Services
- Report of PPRC/4 Meeting
- ICAO Roadmap for the transition from AIS to AIM
- Doc 9881 - *Guidelines for Electronic Terrain, Obstacle and Aerodrome Mapping Information*
- Letters SA253 and SA413

ICAO Strategic Objectives	*A – Safety* *B – Air Navigation Capacity and Efficiency* *E – Environmental protection*

1. Introduction

1.1 Annex 15 has established as the implementation date for the provision of e-TOD for Area 2a, take-off path area and the areas defined by the lateral extensions of the aerodrome obstacle limitation surfaces of international airports, as well as for Area 4 of the airport with Cat. II and III runways, 12 November 2015.

1.2 Significant safety benefits for international civil aviation will be provided by ground and in-flight applications based on quality terrain and obstacle electronic data.

1.3 The implementation of e-TOD data established in Annex 15, represent a requirement for States to support PBN implementation project, with regard to PANS-OPS and aeronautical charts.

1.4 It shall be reminded that the provision of terrain and obstacle data in electronic format is one of the steps contained in the Roadmap for the transition from AIS to AIM.

2. Analysis

2.1 States should consider that the increasing number of aircraft with equipment and air traffic control units around the world, with systems using terrain electronic data, require the standardization in the provision of support data.

2.2 In addition, the use of terrain information is each time more frequent, mainly in the cockpit, and other people involved with operations are also benefit from the use of terrain information and obstacle data quality. The risk in the use of these data in operations is that often multiple data sources are used resulting in a possible degradation of the data by inconsistent or inappropriate specifications for the required quality.

2.3 Worryingly, in the SAM Region, e-TOD implementation has been postponed by States. During PPRC/4 Meeting, this situation was analyzed taking into account that the implementation date was 12 November 2015, and considering that the implementation date has not been postponed by Annex 15, failing to implement it will become a deficiency of the State and, therefore, it is important to present a Corrective Action Plan with e-TOD implementation as final objective.

2.4 The Secretariat has requested the Corrective Action Plan through a State Letter in September 2016. In addition, through letters sent to States in June and August 2016, the Secretariat has required the Corrective Action plan with dates and milestones in order to give the corresponding follow up.

2.5 In addition, the Secretariat has presented, during SAM/AIM/9, a Model of Corrective Action Plan Template to be presented to the Secretariat for its implementation in order to assist States in this issue.

2.6 Most States have sent their Corrective Action Plans but without the necessary details that could facilitate the follow up. **Appendix A** presents the Corrective Action Plans provided by States. The Meeting could consider to evaluate these action plans in order to reformulate them so that they could be used as a planning tool for the State.

2.7 When planning e-TOD implementation, States should take into account that the purpose of the data product specifications is intended to support information interchange between interested parties by providing feature types, feature attributes, geometry and attribute encoding rules, maintenance, quality requirements and metadata. It should be taken into account that successful interchange of data sets implies delivery, receipt and interpretation of data among the communicating parties and this interchange could be achieved through data set transfer.

2.8 In view of the above, it should be considered that this type of interaction-based process represents an extension of the fundamental interchange principle and would lead to a dynamic (real-time) interchange of terrain and obstacle data. Therefore, the Standards in Annex 15 for terrain and obstacle data interchange represent a conceptual step towards networked interoperability aimed at an XML-based implementation of the data set transfer model (AIXM).

3. Suggested action

3.1 That States of the SAM Region:

a) analyze the Corrective Action Plans regarding e-TOD implementation, presented in Appendix A;

b) take note of the information presented in this working paper; and

c) take other actions the may be considered necessary.

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APPENDIX A

SAM Region States	Action Plan	Follow up
Argentina	Estimated date: 27 November 2019.	
Bolivia	Date to start the corrective actions: July 2017.	
Brazil	2017 – 13 aerodromes 2018 – 14 aerodromes 2019 – 14 aerodromes	
Chile	Conclusion foreseen for 2022. Survey of Area 2a of Arturo Merino Benitez Airport of Santiago and Chacalluta Airport of Arica has been initiated	
Colombia	Plan has not been presented.	
Ecuador	Plan has not been presented.	
French Guiana	Plan has not been presented.	
Guyana	Estimated starting date: April 2017. So far the first seven points of the Action Plan presented should be completed	
Panama	Plan has not been presented.	
Paraguay	Data compilation for areas 2a, b, c, d completed. Other e-TOD related activities are foreseen for 2016 to 2019.	
Peru	Plan has not been presented.	
Suriname	Plan has not been presented.	
Uruguay	Plan has not been presented.	
Venezuela	During the second half of 2017 the corresponding terrain and obstacle data will begin.	