



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

IMPLEMENTATION OF AN AERONAUTICAL GEOGRAPHICAL INFORMATION SYSTEM (AEROSIG) AND THE AVAILABILITY AND MANAGEMENT OF ELECTRONIC TERRAIN AND OBSTACLES DATA, E-TOD.

(Presented by Chile)

SUMMARY

This working paper informs about the Action Plans prepared by the Directorate General of Civil Aeronautics of Chile for the implementation of an Aeronautical Geographical Information System (AEROSIG), whose first stage is the availability and management of electronic Terrain and Obstacles data e-TOD for Arturo Merino Benitez Airport of Santiago (Chile).

References:

- SAM/AIM/3 Meeting - 12-16 March 2012, Lima-Peru.
- SAM/AIM/4 Meeting - 15-19 October 2012, Lima-Peru.
- ATS Action Plan (PNA 2013-2023) of the Directorate General of Civil Aeronautics - Chile”

ICAO Strategic Objectives:

A - Safety
C - Environmental Protection

1 Introduction

1.1 The International Civil Aviation Organization has designated geographical areas for the collection of electronic terrain and obstacles data (e-TOD) that States should make available to users of airspaces defined in their territory.

1.2 In its need to comply with ICAO recommendation of Annex 15 “Aeronautical Information Services” concerning the availability of e-TOD data that States should guarantee for transition of AIS to AIM, the Directorate General of Civil Aeronautics had to collect data on terrain and obstacles located in Areas 2, 3 and 4 defined by ICAO.

2 Subject

2.1 The Directorate General of Civil Aeronautics (Chile), pursuant to Project G1 “*Development for the provision of electronic terrain and obstacles data (e-TOD)*” for ICAO SAM Region, has developed the Technical Bases for e-TOD mapping of areas 2, 3 and 4 of Santiago Airport “Arturo Merino Benítez” in a first phase.

2.2 The objective of the Technical Bases is to generate a digital elevation model of the terrain and obstacles from an information survey in areas 2a, 2b and 2c for Arturo Merino Benítez Airport.

2.3 On the other hand, to generate a digital elevation model of the terrain and obstacles located in the movement area of the airport, which extends horizontally from the runway center line to 90 m to each side of it and up to 5 m with regard to the edge of all the other movement areas (taxiways) of said airport. Data concerning e-TOD that extends more than half a meter (0,5) over the horizontal plane passing through the point nearest to the movement area will be collected and recorded.

2.4 In addition, to generate a digital elevation model of e-TOD located in the movement area which extends from the runway strip to 2100 m and up to 250 m to each side of the extension of the runway center line in the approach direction of existing runways. The area data collection surface has a slope of 1,2% determined by the sloping surface applied from front ends of the runway strip.

2.5 Lastly, geographical coordinates of areas 2, 3 and 4 will be made in WGS-84 format (latitude and longitude) and survey control points will be adjusted to ICAO Doc. 9674/-AN/946 (WGS-84 Manual).

3 Conclusion

3.1 Technical Bases for e-TOD surveying of areas 2a, 2b and 2c of Arturo Merino Benítez Airport will be the model for future implementation of e-TOD at other airports in Chile.

3.2 On the other hand, the Directorate General of Civil Aeronautics of Chile, through the Aerodromes and Aeronautical Services Department (DASA), the Communications and Information Technologies Department (TIC) and the Logistics Department, have prepared an action plan for developing the AEROSIG and the e-TOD, according to enclosed **Appendix A** to this working paper.

4. Suggested action:

4.1 The meeting is invited to note the information contained in this working paper.

APPENDIX A

ACTION PLAN OF THE AERONAUTICAL INFORMATION SERVICE (AIS-AIM)

Task Description:

AERONAUTICAL INFORMATION SERVICE (AIS-AIM)

1.- In order to migrate to provision of electronic aeronautical information, the Directorate General of Civil Aeronautics, through the Aerodromes and Aeronautical Services Department (DASA), will be responsible for preparing, with the support of the Communications and Information Technologies Department (TIC) and the Logistics Department, a Plan that will allow this migration, considering the purchase and implementation of an Aeronautical Geographic Information System (AEROSIG), whose first stage is the availability and management.

NAP Compliance date: December 2014

Action Plan:

- Phase 1: November 2013
Licenses and hardware necessary for implementing the Aeronautical Geographical Information System should be available, in addition to the availability of the first electronic terrain and Obstacles data (e-TOD) of Arturo Merino Benítez (AMB) airport and the digitalization of information on existing obstacles by the Aerodromes Services Sub department.
- Phase 2: August 2014
AEROSIG should be operational with the use of the first e-TOD data of AMB airport. In addition, the bidding process for the purchase of the rest of AMB airport e-TOD data should be ready.
- Phase 3: December 2014
All AMB airport e-TOD data should be available and start the management of said information.
- Phase 4: December 2020
Implementation of AEROSIG in the rest of the country's airports in accordance with the National Action Plan.

Remarks

The task will be accomplished as long as software and necessary data for AEROSIG implementation are purchased within the proposed timeline.

ACTION PLAN OF THE AERONAUTICAL INFORMATION SERVICE (AIS-AIM)

Task Description:

AERONAUTICAL INFORMATION SERVICE (AIS-AIM)

2.- The Directorate General of Civil Aeronautics through the Aerodromes and Aeronautical Services Department (DASA) will prepare a National Action Plan (PAN) of an Aeronautical Geographic Information System (AEROSIG), and a National Action Plan of an electronic of Obstacles and Terrain data base (e-TOD).

NAP Compliance date: December 2020

Action Plan: Aeronautical Geographic Information System GIS (AEROSIG)

Phase 1: December 2014

- Define requirements of internal users regarding the handling of information.
- Design and apply procedures and methods for requirements surveying.
- Priorized technical training.
- Definition of requirements, capabilities and information needs of internal users.

Phase 2: November 2016

- Institutional framework and development of AEROSIG System.
- Creation of an institutional framework that allows for the sustainability of the AEROSIG System in the DGAC.
- Development and strengthening of AEROSIG System .

Phase 3: December 2016

- Exchange of georeferenced data generated by the various departments of the institution.
- Identify and apply existing standards for regulating data flow.
- Design and implementation of a web server of the AEROSIG System at national level.

Phase 4: November 2017

- Have available data guaranteeing its integrity, quality and updating, that facilitates the traceability of the information and that allows supporting of the aeronautical information service.
- Migrate and update data base existing in the institution to be used in AEROSIG System.
- Administration of existing AEROSIG System data base.
- Exploration of potential use of the data base in new products.

Phase 4: December 2020

- Use of data base for the aeronautical information service.
- Migration and use of the AEROSIG System, for preparation of air navigation cartography.
- Transition of AIS information to AIM.

NAP Compliance date: December 2020

ACTION PLAN: ELECTRONIC TERRAIN AND OBSTACLES DATABASE (E-TOD)

- Phase 1: December 2014
Collection of the total of electronic terrain and obstacle data bases (e-TOD) of Arturo Merino Benítez airport.
- Phase 2: December 2018
The 70% of e-TOD data basis of country's airports should be collected as of this date.
- Phase 3: December 2020
Collection of all e-TOD data bases of country's airports.

Remarks

The task will be accomplished as long as electronic terrain and obstacle data base (e-TOD) of the country's airports for AEROSIG implementation is purchased in the proposed timeline.

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