



SAM/AIM/5

**INTERNATIONAL CIVIL AVIATION ORGANIZATION
South American Regional Office**

**FIFTH MULTILATERAL MEETING OF THE SAM REGION
FOR THE TRANSITION OF AIS TO AIM
(SAM/AIM/5)**

FINAL REPORT

Lima, Peru, 22 to 26 July 2013

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HISTORY OF THE MEETING

ii-1 PLACE AND DURATION OF THE MEETING

The Fifth Multilateral Meeting of the SAM Region for the Transition of AIS to AIM (SAM/AIM/5) was held at the ICAO SAM Regional Office, Lima, Peru, from 22 to 26 July 2013.

ii-2 OPENING CEREMONY AND OTHER MATTERS

Mr. Franklin Hoyer, Regional Director of the ICAO South American Office, greeted the participants, and highlighted the importance of the objectives of the meeting, as regards consolidation of Phase 1 of the Roadmap for the Transition from AIS to AIM, and the continuation and follow-up of the tasks of AIM Projects for the provision of Electronic Terrain and Obstacle Data (e-TOD), aeronautical information/data management and the preparation of quality specifications applicable to the digital AIM environment.

The Meeting had the opportunity to count with a presentation of Mr. Bill Kellog, from JEPPESEN, on “AIS to AIM - A commercial data supplier view”, covering the roles, processes and value of actors in the aeronautical data supply chain from the AIS to the aircraft. It addressed the increasing importance of high quality and timely information in a data dependent operating environment characterized by computerized navigation and RNAV operations. Data chain activities, standards, quality management, timelines and emerging systems were covered. Likewise, Mr. Travis Clemens, Geospacial Solutions Engineer, Navigation Analyst of JEPPESEN, made a very instructive presentation about the concept, implementation phases and the provision of electronic terrain and obstacle data, which substantially contributed in the training of experts in such subjects. Eng. Antonio Nicoletti, from IDS, made a presentation on e-TOD solutions. Finally, Mr. Marcilio Pinto de Vasconcelos offered a presentation on IFAIMA and its global objectives and activities.

ii-3 SCHEDULE, ORGANIZATION, WORKING METHODS, OFFICERS AND SECRETARIAT

The Meeting agreed to hold its sessions from 0830 to 1530 hours, with appropriate breaks. The work was done with the meeting as a Single Committee, contemplating the creation of Ad-Hoc Groups to deal with some items of the agenda, if deemed appropriate.

Mrs. Gladys Roa de la Cruz, from the Delegation of Colombia, acted as President of the Meeting. Mrs Lidia Cáceres, delegate from Paraguay was elected as Vice-Chairman of the Meeting.

Mr Roberto Arca Jaurena, RO/ATM/SAR/AIM from the Lima Regional Office, acted as Secretary.

ii-4 WORKING LANGUAGES

The working languages of the Meeting were Spanish and English, and its relevant documentation was presented in both languages. There was simultaneous interpretation during the sessions.

ii-5 AGENDA

The following agenda was adopted:

Agenda

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

Agenda

Item 2: Implementation of systems for aeronautical information and data exchange.

Agenda

Item 3: Implementation of the Quality Management System in AIM units.

Agenda

Item 4: NOTAM Contingency Plan.

Agenda

Item 5: Other business

ii-6 ATTENDANCE

The Meeting was attended by 37 participants from 12 States of the SAM Region (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana, Panama, Paraguay, Peru, Suriname and Uruguay), as well as IDS and JEPPESEN, IATA and the Professional Associations APADA and IFAIMA.



**ORGANIZACIÓN DE AVIACIÓN CIVIL INTERNACIONAL
INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**Quinta Reunión Multilateral AIM para la Región SAM para la Transición del AIS a la AIM
Fifth Multilateral Meeting of the SAM Region for the Transition of AIS to AIM
(Lima, Perú, 22 al 26 de julio de 2013 / Lima, Peru, 22 to 26 July 2013)**

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3. María Cecilia Paris
4. Silvina Rotta

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5. Mery Frontanilla Vásquez

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6. Airton Silva de Salles
7. Leonardo Coelho de Almeida
8. Camila Bassetto Guedes

COLOMBIA

9. Gladys Mercedes Roa de la Cruz
10. John Jairo Mesa Alcaraz

CHILE

11. Sergio García Jorquera

ECUADOR

12. José Chuma López
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15. Erazel del C. Anguizola C.

PARAGUAY

16. Lidia Cáceres Ocampos

PERÚ

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18. Andrés Harvey
19. Miriam Gonzáles
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21. Sergio Rojas

22. Juan Pablo Portilla

23. Abel Pasache

SURINAME

24. Lunette Edam

25. Joyce Telgt

URUGUAY

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27. María Alejandra Ferreiro

APADA

28. Marcelo Fernando Sana

29. Ricardo Luis González

30. Rodolfo Eduardo Gaspar

IATA

31. Marco Vidal

IDS

32. Antonio Nicoletti

IFAIMA

33. Marcilio Pinto de Vasconcelos

JEPPESEN

34. Bill Kellogg

35. Demetrius Zuidema

36. Blanca Lara

37. Travis Clemens

OACI

38. Roberto Arca



**ORGANIZACIÓN DE AVIACIÓN CIVIL INTERNACIONAL
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Agenda Item 1: Implementation of provision of electronic Terrain and Obstacle Data (e-TOD)

1.1 The Meeting reviewed Project G1 “*Implementation of the provision of electronic Terrain and Obstacle Data (e-TOD)*”, whose description and GANTT appear in **Appendix A** to this part of the report. It also analysed the action plan for the introduction of functional improvements to the provision of aeronautical information services.

1.2 Regarding this Project, the Meeting took note that 4 States had a GIS or an automated system for the integration of aeronautical information, and that all SAM States had approved the Guide-Document. The Meeting also recognised that SLAs were essential for ensuring the quality of the data received by aeronautical information services for publication, and considered that States should take the necessary steps to enter into these agreements to ensure the quality of the data received by AIM units for processing.

1.3 The Meeting took note of the status of implementation of e-TOD provision in Argentina. As a first step, a geographical information system (ARC INFO) was purchased. Argentina informed that courses were being planned for the personnel, and estimated that the equipment would be delivered by October 2013.

1.4 In a second phase, Argentina is planning to implement a 3D geographical terrain and obstacle database (in accordance with the Aeronautical Information Exchange Model - AIXM) containing elevation vector data for all significant natural or man-made obstacles in the vicinity of the airport. This task is estimated to be completed 24 months after it is started.

1.5 Brazil has an e-TOD digital terrain model for Area 1 that includes contour lines and points plotted in 3D obtained from 1:250,000 aeronautical charts and 1:100,000 and 1:500,000 terrain charts. The aeronautical charts are produced by the Aeronautical Mapping Institute, and the terrain charts are produced by the federal agencies responsible for mapping the national territory. For areas of the national territory for which the aforementioned products are not available, use is made of an SRTM-derived digital terrain model made available free of charge by the United States government. Regarding obstacle data for this Area, the national legislation stipulates that new engineering projects exceeding 100 m in height must be authorised by DECEA. Nevertheless, since this legislation is recent (2011), only in the medium/long term will it be possible to ensure that “all” obstacles in Area 1 are registered.

1.6 For Area 2, Brazil is contemplating 38 aerodromes (36 international + 2 domestic). The aerial photogrammetric survey was conducted at 11 airports, all of which were in the processing phase (terrain and obstacles) – It has not been completed. The studies covered an area of 10 km around each airport, where the most critical resources were located. For the rest of the area, Area 1 data was being used.

1.7 Regarding Area 3, data acquisition for this area was being carried out together with Area 2, using aerial photogrammetry, since it was within the boundaries of Area 2.

1.8 Brazil has completed the ground survey of Area 4.

1.9 Due to its limited processing capabilities, the Aeronautical Mapping Institute of Brazil is trying to reach an agreement with another organisation to expedite the process. Even so, the Aeronautical Mapping Institute is contemplating the use of new methodologies for developing e-TOD in Brazil, such as high-resolution satellite imagery. Brazil is also reformulating its e-TOD implementation strategy,

resuming activities and drafting the documentation required to continue with the work, including a detailed action plan.

1.10 The e-TOD project was formally started in June 2013 and the action plan shall be completed late this year.

1.11 Colombia has an obstacle information storage system but has no e-TOD system as required by ICAO. The State is planning to purchase an e-TOD survey system in 2014. The Colombia AIS will develop by December 2013 an action plan for the implementation of the provision of terrain and obstacle data (e-TOD).

1.12 The Meeting took note that the DGCA of Chile, under Project G1 “*Developments for the provision of electronic terrain and obstacle data (e-TOD)*” for the ICAO SAM Region, had developed the technical specifications for e-TOD surveying of Areas 2, 3, and 4 at the Arturo Merino Benítez of Santiago airport, in a first stage.

1.13 The delegate of Chile explained that the objective of the technical specifications was to generate a digital terrain and obstacle elevation model, based on a data survey in Areas 2a, 2b, and 2c for the Arturo Merino Benítez airport.

1.14 Likewise, Chile is planning to generate a digital elevation model of terrain and obstacles located in the movement area of the airport, which extends horizontally from the runway centre line 90 m to each side, and up to 5 m from the edge of all other movement areas (taxiways) of the airport. E-TOD data from the area extending more than half a meter (0.5) beyond the horizontal plane passing through the point nearest to the movement area shall be collected and recorded.

1.15 Furthermore, Chile is planning to generate a digital elevation model of e-TOD for the movement area extending from the runway strip up to 2100 m and up to 250 m on each side of the extended runway centre line in the approach direction of the runways that exist at the airport. The data capture surface has a slope of 1.2 % defined by the ground surface starting at the front edges of the runway strip.

1.16 The e-TOD survey technical specifications for Areas 2a, 2b, and 2c of the Arturo Merino Benítez airport will serve as a model for future e-TOD implementations at other airports in Chile.

1.17 The Meeting acknowledged the information provided by Chile and decided to include the action plan for the development of AEROSIG and e-TOD as per **Appendix B** to this part of the report.

1.18 In Ecuador, the e-TOD project is in the phase of requesting quotes and purchasing the hardware and software, to be followed by training and, finally, the implementation phase. It was foreseen to start in mid 2014, with an implementation period of three years, up to 2017.

1.19 In order to ensure the availability of the electronic terrain data set (e-TOD), Panama established a work team made up by the Directorates of Air Navigation and Airports, which analysed the documentation submitted at the Fourth AIM Multilateral Meeting (Guide-Document on the Objectives of the e-TOD Project and Technical Specifications), and drafted an action plan describing the approval process by the Civil Aviation Authority.

1.20 Furthermore, as part of the air navigation service modernisation project, the hardware and software for AIS automation was being purchased, including the geographical information system (GIS). Training and installation of the new system would start in September and October. It was expected that the GIS would be implemented and the first electronic terrain data would be available by the third quarter of

2014, with 50% progress made in data collection for Area 2 of the Tocumen and Gelabert international airports.

1.21 The AIS of Paraguay concluded updating the mapping survey at two international airports (SGAS and SGES) in 2011, and surveys at the SGCO international airport would start in August 2013. This work was done by DISERGEMIL, which is a national mapping institute, in compliance with Annex 4 requirements. The data is in printed and electronic format.

1.22 Peru informed the Meeting that it had purchased the Integrated Aeronautical Information System, which had a mapping module developed on a GIS platform. It was in the process of implementation, and scheduled to be completed by late 2014.

1.23 Peru also reported that it was developing the procedures for migrating terrain and obstacle data to the Integrated System. Other procedures to be developed referred to the collection and storage of information. It is estimated that these procedures would be completed by July 2014.

1.24 Regarding GIS implementation, Guyana informed that Meeting that it required training for its personnel, since such training had not been contemplated when the GIS ArcGIS10 was purchased.

1.25 JEPPESEN suggested coordinating the provision of on-line training with ESRI, and other States would study the possibility of supporting Guyana by including it in a GIS training programme.

Presentation on e-TOD by JEPPESEN

1.26 In the JEPPESEN presentation it was highlighted the many important factors that need to be taken into consideration during the source data acquisition planning phase. These platforms include satellite-based, aerial-based and ground-based systems, along with the availability of ancillary sources, such as States AIP and the internet. Before the source data is acquired an organization needs to take into account the cost-effectiveness, acquisition methods, accuracy requirements, data integrity and data availability of the source data. One important factor that needs to be understood is that source data collection methods that are incorporated for Area 3 and 4, could technically be used for Area 1 or 2, but are usually cost prohibitive. Below is a breakdown of the primary data platforms or repositories that enable collection of the essential e-TOD data, which then allow the ICAO requirements to be met.

Satellite-based

1.27 **Imagery:** there are multiple commercial satellite vendors available today that have the capability to capture imagery in locations throughout the world using a multitude of satellite image sensor platforms. This imagery can be collected in the form of monoscopic (2-D) or stereoscopic (3-D) and either as color or black and white. Stereo imagery could be used as a primary source for terrain generation as well as obstacle collection. The standard satellite image product usually is delivered with 0.5m pixel resolution, 5m horizontal accuracy and a 3m vertical accuracy. Most sensors today are exceeding these values, which are providing customers with a higher quality product.

E-TOD Application: The primary use for stereo imagery would be to generate terrain and obstacle data for Area 2. Mono imagery could be used to generate obstacle data for Areas 1 and 2 using 2-D measuring techniques.

1.28 **Radar:** there are a limited number of commercial satellite vendors that provide access to Radar sensors. Radar sensors are primarily responsible for generating the world wide terrain datasets, such as Shuttle Radar Terrain Mission (SRTM) and Digital Terrain Elevation Data (DTED), which we use today. Most of these dataset are used in the form of Digital Elevation Models (DEM). Two sub

products that are produced from DEM's include Digital Terrain Models (DTM) and Digital Surface Models (DSM). These datasets, when using at least a 5m posting, can achieve vertical accuracies of +/- 0.5m to +/- 3.0 m. It is important to understand that the accuracy the requirements or requests, greater the cost. (Remote Sensing for GIS Managers, 214).

E-TOD Application: The primary use for these datasets is the generation of terrain data for Area 1. A Radar satellite could produce terrain data with Area 2 accuracy requirements, but at an increase in cost.

Aerial-based

1.29 **Imagery:** there are multiple commercial vendors available today that have the capability to capture imagery in locations throughout the world using an aircraft platform. This imagery could be in the form of monoscopic or stereoscopic and either in color or black and white. Based on the aircraft's flying height and available ground control, the imagery's resolution and accuracy could vary, but would exceed the Areas 3 and 4 requirements.

E-TOD Application: Stereo aerial imagery is primarily used for Areas 3 and 4 terrain and obstacle collection. Mono imagery, limited to 2-D collection methods, has applications in Areas 2, 3 and 4 obstacle collection, with additional data processing.

1.30 **LiDAR:** LiDAR, which stands for Light Detection and Ranging, uses active remote sensing technology that measures the distance to, or other properties around targets by illuminating the target with laser light and analyzing the backscatter. This data is used for generating highly accurate terrain data and allows you to collect obstacle features based on the resolution of the data collected. Accuracy of this data when flown from an aerial platform can exceed horizontal accuracies of 30cm and vertical accuracies of 20cm, which would exceed Areas 3 and 4 requirements. (Remote Sensing for GIS Managers, 231).

E-TOD Application: LiDAR data can be used for both obstacle and terrain generation for Areas 3 and 4 if collected at an optimal resolution.

Ground-based

1.31 **Ground Survey:** includes all data that is collected using survey grade data collection instruments and the less accurate GPS systems. It also includes any technical process for height collection such as laser range finders or manual measurement devices.

E-TOD Application: This data could be used as control data for runway extents and for the more rigorous Areas 3 and 4. This control data could also be used for image control data applied to Area 2.

1.32 **Field Data:** includes any data, physical, cultural, etc. collected on-site or researched that provides additional characteristics for e-TOD attribution or assists in the data collection process.

E-TOD Application: this data collection method is primarily used in the analysis of Area 1 through 4.

Ancillary

1.33 **State sources:** includes Aeronautical Information Publications (AIP), archived data and cultural information used to extract terrain or obstacle data.

E-TOD Application: the primary use for state sources in the past has been for Area 1, terrain and obstacle data. If the data has proven accuracy attributed then it could be applied to Areas 2, 3 or 4 once verified.

1.34 **Internet sources:** includes any internet based system that provides reliable data and information relating to terrain or obstacle data.

E-TOD Application: the primary use for internet sources would be to access archived terrain data (SRTM or DTED). There are potential opportunities to access obstacle data, but they would need to be verified

before use.

JEPPESEN Area 1 Terrain and Obstacle Data Program

1.35 JEPPESEN recognizes that the terrain and obstacle requirements of ICAO Annex 15, Chapter 10 challenge many Civil Aviation Authorities (CAA) and Air Navigation Service Providers (ANSP) around the world. Also, JEPPESEN understands that certain States may not have processes established to deliver e-TOD information to other users or may wish to outsource this responsibility. JEPPESEN has established some processes, in cooperation with States that contract with JEPPESEN, to maintain a State's Area 1 terrain and/or obstacle database and deliver it as required. It should be noted that our Terrain and Obstacle Area 1 data model has resolved the issues in relation to cross-border harmonization.

JEPPESEN Area 2 Terrain and Obstacle Data Program

1.36 The JEPPESEN Area 2 electronic Terrain and Obstacle Database (e-TOD) is comprised of man-made and certain natural obstacles considered as relevant to aviation procedure design and related products. The JEPPESEN e-TOD product contains complete terrain models and project-based obstacle datasets that cover only the specified ICAO Area 2 regions (10 km buffer from the runway extents) for each airport. The TMA or 45 km buffer from the ARP, based on the customers' project requirements, will be offered, but adds a significant cost to the project and is considered in most cases cost prohibitive. The JEPPESEN Area 2 Terrain and Obstacle program is delivered to the customer following the most stringent guidelines set forth by ICAO and RTCA for aeronautical terrain and obstacle data generation. Below are some of the key product features:

- JEPPESEN e-TOD exceeds the DO-276B/ ED-98A integrity requirement. Essential integrity is achieved by developing data generation processes in compliance with the DO-200A/ED-76 [1]. One of the key steps for achieving this accuracy is validation at different levels of data generation. The data in JEPPESEN e-TOD Database is provided as compliant to DO-200A 9 [C.2.3 and B.1.3]. This assurance level applies to DO-200A only and does not imply adherence to any other aviation standards.
- JEPPESEN also generates terrain data for each airport and the final terrain database will exhibit horizontal accuracies exceeding +/- 5m (CE90) and vertical accuracies greater than +/- 3m (LE90) and will encompass the Area 2 polygon specific to each airport and also generates obstacle data with a horizontal accuracy exceeding +/- 5m (CE90) and vertical accuracy exceeding +/- 3m (LE90). The data will encompass the Area 2 polygon specific to each airport.

1.37 The Meeting expressed its acknowledgment to JEPPESEN for its excellent presentation, and felt the need to analyse this matter in more detail, and requested the Secretariat to conduct a seminar in 2014 to provide e-TOD training to the experts of the Region.

Presentation on e-TOD solutions by IDS

1.38 Eng. Antonio Nicoletti, from IDS, also made a presentation on available e-TOD solutions, which was highly appreciated by the Meeting and clarified many questions concerning e-TOD implementation and available solutions.

1.39 This presentation addressed the Italian experience in e-TOD implementation and the possibilities of modular integration with multiple systems for information management, including the application of AIXM for data exchange.

1.40 The Meeting agreed on the need to delve into these subjects in a more extensive seminar and asked the Secretariat to consider the possibility of conducting such training in 2014.

APPENDIX A

SAM Region	PROJECT DESCRIPTION (DP)	DP N° G1	
<i>Programme</i>	Title of the Project	Start	End
<p><i>AIM</i></p> <p>(ICAO Programme Coordinator: Roberto Arca Jáurena)</p>	<p style="text-align: center;">Implementation of the provision of electronic terrain and obstacle data (e-TOD) (SAM)</p> <p>Project coordinator: Juan González (Uruguay)</p> <p>Experts contributing to the project: SAM/AIM IG</p>	26/09/11	31/12/15
Objective	Support the implementation of the provision of e-TOD by SAM States, and provide guidance to States on GIS acquisition and management.		
Scope	The scope of the project contemplates the assessment and identification of implementation levels associated to the provision of electronic terrain and obstacle data. It contemplates the drafting of an Action plan and guides for the implementation of e-TOD to support developments in the provision of electronic terrain and obstacle data for the evolution of digital terrain models (DTM) to gradually improve electronic aeronautical charts and other similar products, with the support of tools such as the geographical information systems (GIS).		
Metrics	<ul style="list-style-type: none"> • Number of States that have implemented GIS or automated systems. • Guide-document with action plan approved. • Number of States that establish SLAs. 		

Strategy	<p>The conduction of project activities will be coordinated among project members, the project coordinator, and the programme coordinator, mainly through teleconferences (GoToMeeting application) and meetings that may be held within other scheduled events, based on the activities of the work programme. The project coordinator will coordinate with the programme coordinator for the inclusion of additional experts, if warranted by the tasks and works to be executed.</p> <p>The results of the work done will be submitted to the consideration and review of State experts in the form of a final consolidated document for analysis, review, and approval, and for presentation to the GREPECAS PPRC by the programme coordinator.</p>				
Goals	<p>Draft the Guide-document containing the objectives of the e-TOD project. 2012.</p> <p>Define the technical and e-TOD project specifications. 2012.</p> <p>Prepare the document containing the e-TOD technical specifications. 2012.</p> <p>Guide on the acquisition of a geographical information system (GIS). 2012.</p> <p>GIS implementation Manual. 2012.</p>				
Rationale	<p>Compliance with the SARPs of Annexes 15 and 4 to facilitate the execution of performance-based air operations and to advance with the AIS-AIM Transition Roadmap. A close relationship with other projects is needed in order to obtain the operational requirements of the aforementioned applications and their respective tentative dates of implementation.</p>				
Related projects	<p>This project is related to Project G2 “Implementation of Aeronautical Information Exchange Systems (AIXM)” and Project G3 “Implementation of the Quality Management System in the AIM units” in the CAR/SAM States.</p>				
Project deliverables	Relationship with the performance-based regional plan (PFF)	Responsible party	Status of implementation*	Delivery date	Comments
Survey on the status of eTOD implementation.	PFF: SAM AIM/02	Juan González Uruguay		30/11/2011	Finalised on schedule.

Generate follow-up report.	PFF: SAM AIM/02	Juan González Uruguay		30/04/2012	Finalised on schedule.
Develop Guide-Document with the objectives of the eTOD project.	PFF: SAM AIM/02	Juan González Uruguay		30/09/2012	Finalised on schedule. Delivered 30/09/2012
Define the technical specification of the eTOD project.	PFF: SAM AIM/02	Juan González Uruguay		30/09/2012	Finalised on schedule. Delivered 30/09/2012
Develop the document with the eTOD technical specifications.	PFF: SAM AIM/02	Juan González Uruguay		30/09/2012	Finalised on schedule. Delivered 30/09/2012
Guide for the acquisition of a geographical information system (GIS).	PFF: SAM AIM/01	Juan González Uruguay		09/03/2012	Finalised on schedule.
GIS implementation manual.	PFF: SAM AIM/01	Juan González Uruguay		09/03/2012	Finalised on schedule.
Conduct seminars for eTOD specialists, describing the plans and expected operational and economic benefits.	PFF: SAM AIM/02	ICAO coordinator		30/09/2014	
Develop a training programme and documentation for eTOD operators.	PFF: SAM AIM/02	Juan González Uruguay		31/10/2014	
Resources required	Designation of experts in the execution of some of the deliverables. More commitment by States to support the designated Coordinators and experts.				

*Grey

Task not started

Green

Activity underway as scheduled

Yellow

Activity started with some delay but expected to be completed on time

Red

It has not been possible to implement this activity as scheduled; mitigating measures are required

Timetable in MS Project with the tasks, sub-tasks, deliverables, and responsible parties

APPENDIX B**ACTION PLAN OF THE AERONAUTICAL INFORMATION SERVICE (AIS-AIM)****CHILE**

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 Databases (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.

Agenda Item 2: Implementation of systems for aeronautical information and data exchange

2.1 Regarding **Project G2 “Implementation of Aeronautical Information Exchange Systems (AIXM)”**, whose corresponding description and GANTT appear in **Appendix A** to this part of the report, it was noted that this Project still had no Coordinator, and its tasks had been performed by the Programme Coordinator.

2.2 The Meeting considered that, in order to address the issues related to the exchange of aeronautical information and data, more expertise was needed, since there were no AIM experts in the Region duly trained to develop and contribute to this project. The Secretariat informed that an AIXM seminar had been scheduled for 2014.

2.3 Furthermore, several States had not made sufficient progress in the implementation of quality in their units, which was essential to ensure the quality of the data to be exchanged *via* AIXM.

2.4 The Secretariat was requested to redefine the Project’s activities to place emphasis on the training of experts in the Region. The Secretariat informed that it would make a proposal to amend the Project to place emphasis on training.

APPENDIX A

SAM Region	PROJECT DESCRIPTION (DP)	DP N° G2	
<i>Programme</i>	Title of the Project	Start	End
<i>AIM</i> (ICAO Programme Coordinator: Roberto Arca Jáurena)	G2: Implementation of Aeronautical Information Exchange Systems (AIXM) (SAM) Project coordinator: No coordinator Experts contributing to the project: SAM/AIM/IG	01/03/12	03/03/15
Objective	Prepare an action plan to be implemented by States for the application of the aeronautical information/data exchange model.		
Scope	The scope of the project contemplates the evaluation and identification of automation levels associated to the integration of the aeronautical information and data exchange model in the Region, through surveys, the identification of database providers, and the follow-up on the development of SARPs on this matter.		
Metrics	Number of States that have implemented an Action Plan for data exchange systems.		
Goals	Complete all the documentation needed by States before 31/12/13.		

Strategy	Project activities will be coordinated among project members, the project coordinator, and the programme coordinator, mainly through teleconferences (GoToMeeting application). Seminars/meetings are scheduled in accordance with work programme activities. The project coordinator will coordinate with the programme coordinator for the inclusion of additional experts, if warranted by the tasks and work to be performed. Coordination will take place between the CAR and SAM Regions. The results of the work done will be submitted to the consideration and review of State experts in the form of a final consolidated document for analysis, review, and approval, and for presentation to the GREPECAS PPRC by the programme coordinator.				
Rationale	Integrate aeronautical information so as to permit the interoperability of ATM systems while preserving safety, applying the information exchange models.				
Related projects	This project is related to Project G3 “Implementation of the Quality Management Systems in the AIM units in SAM States”.				
Project deliverables	Relationship with the performance-based regional plan (PFF)	Responsible party	Status of implementation*	Delivery date	Comments
Survey of the provision of IAIP, using a table.	PFF: SAM AIM/02	ICAO coordinator		16/03/12	Finalised on schedule at the SAM/AIM meeting.
Circulation of IAIP survey to States.	PFF: SAM AIM/02	ICAO coordinator		16/03/12	Finalised on schedule at the SAM/AIM meeting.
Collection and updating.	PFF: SAM AIM/02	ICAO coordinator		16/03/12	Finalised on schedule at the SAM/AIM meeting.
Collection of experiences in SAM States with the electronic AIP.	PFF: SAM AIM/02	ICAO coordinator		16/03/12	Finalised on schedule at the SAM/AIM meeting.

Analyse related Eurocontrol specifications for their incorporation.	PFF: SAM AIM/02	ICAO coordinator		01/10/14	
Organise AIXM seminar.	PFF: SAM AIM/02	ICAO coordinator		03/07/14	
Develop guidance material.		ICAO coordinator		28/11/14	
Develop AIXM action plan for the States.	PFF: SAM AIM/02	ICAO coordinator		03/03/15	
Resources required	Designation of experts in the execution of some of the deliverables. Commitment by States to support the coordinators and experts.				

**Grey Task not started*

Green Activity underway as scheduled

Yellow Activity started with some delay but expected to be completed on time

Red It has not been possible to implement this activity as scheduled; mitigating measures are required

Timetable in MS Project with the tasks, sub-tasks, deliverables, and responsible parties

Agenda Item 3: Implementation of the Quality Management System in AIM Units

3.1 Regarding Project G3 “*Implementation of the Quality Management System in AIM Units*” whose description and GANTT appear in **Appendix A** to this part of the Report, the Meeting took note of the significant progress made, and that all project deliverables had been completed.

3.2 The Meeting took note that 5 States had obtained the QMS certification in the SAM Region: **Brazil, Chile, Ecuador, French Guiana, and Paraguay.**

3.3 Several States of the Region informed about their quality implementation activities, as described below:

3.4 The Meeting took note that the Aeronautical Information Service of Argentina, within the “Preparation” phase, had provided training to the personnel responsible for the implementation, and that the *Instituto Argentino de Normalización y Certificación* (IRAM) had been selected based on its high prestige in this field.

3.5 In this regard, Argentina informed that two groups, made up by four people each, had attended the following courses provided by IRAM in 2010 and 2011, respectively:

- a) GC-04 Quality Management System Implementation Planning, in accordance with IRAM-ISO standard 9001;
- b) GC-05 Quality Management System Documentation.

3.6 Likewise, as part of the “Planning” phase, a master list of documents had been defined as follows:

- a) Quality manual;
- b) AIS data processing manual (PDA);
- c) Procedures manuals: nineteen for static data and one for dynamic data (NOTAM);
- d) Support process manuals on competence management and internal auditing;
- e) Technical instructions for product development (documents, charts, and data).

3.7 For the definition of procedures, Argentina has adopted a role-based approach. The main advantage of this approach is that it is not affected by changes in the organisational structure of the Administration, and enables a more clear and defined competence management. The manuals define the competencies required for a given role, as well as incompatibilities. When a role is assigned, it is documented in the records. The adoption of technical instructions facilitates the description of specifications, the documentation of work instructions, and serves as a reference for the establishment of Service Level Agreements (SLAs) with data providers. Currently, the “Communication” and “Application” phases are underway, with the development of the aforementioned manuals, and the conduction of tests and reviews where applicable.

3.8 The foreseen implementation date (certification) is March 2014.

3.9 Panama informed that 90% progress had been made in the drafting of a Quality Management System implementation plan, including not only the development and review of technical procedures, but also the development of support procedures and capabilities for the personnel involved in this implementation.

3.10 The Meeting also took note that 95% of the personnel of the Directorate of Air Navigation had been trained in the basics, interpretation, and application of ISO 9001-2008, and in the general and technical procedures of the system, including AIS. The work programme included two internal audits, which have permitted the identification of issues and the adoption of corrective and preventive action on the established procedures. Furthermore, customer surveys were carried out to measure satisfaction with the products and services of AIS/MAP units.

3.11 Panama estimated that the review and certification of the system would be completed on the first quarter of 2014. This would require a budget of USD 80,000.

3.12 Colombia is planning the certification of the Quality Management System for its Aeronautical Information Services by July 2013. However, it will not be possible to meet this date, because the AIS relies on various working groups that must be certified before certifying the AIS.

3.13 Colombia is considering a new proposed certification date no later than July 2014, based on an action plan involving the various process stakeholders.

3.14 Regarding service level agreements (SLAs), Brazil informed that, in order to ensure the quality of the data received by the AIS, a document entitled "CIRCEA 53-2 – Aeronautical data collection methodology" had been prepared to regulate the methods used for collecting, verifying, and validating aeronautical information and data.

3.15 For the formal establishment of service level agreements between originators and the AIS, document "CIRCEA 53-3 – Service Level Agreement (SLA)" was being prepared to regulate such agreements between data originators and the AIS. The SLA model used as an example for this job was that presented by Uruguay at the SAM/AIM/04 meeting. Based on CIRCEA 53-2 and CIRCEA 53-3, service level agreements would be established between the AIS and the aeronautical data originators.

3.16 Guyana informed the Meeting that draft documents were in place and awaiting approval, and that action plans were in progress. Audits were being carried out, and Guyana was working on the recommendations to implement quality in AIS.

3.17 Guyana was also planning to make the e-AIP available on the Internet before the end of 2013.

3.18 The Meeting was informed that Peru had prepared in 2009 the documented processes for the Integrated Aeronautical Information Documentation, which may be found in: <http://www.corpac.gob.pe>.

3.19 That same year, training had been provided on this topic and on internal auditing for the performance of such task. At present, the Quality Management System Implementation Action Plan of Peru was awaiting approval by the general manager, who would in turn designate a representative of Top Management to head and facilitate QMS implementation, responding to budgetary and other requirements.

3.20 The Meeting also took note that since CORPAC S.A. had purchased the Integrated Aeronautical Information System (SIIA) in 2013, it needed to review the documented procedures, which would be automated upon incorporation into a single database. In addition to this specific characteristic, the SIIA had a process called “QUALITY CONTROLLER” that took place prior to publication, which would contribute to QMS implementation.

3.21 The SIIA should be 100% operational this year, which would facilitate QMS implementation.

3.22 Peru informed that Service Level Agreements (SLAs) with terrain and obstacle data providers had not been signed yet, and that was expected to take place in August 2014.

3.23 Uruguay already had its first audit, has resolved problems and is waiting for the budgetary authorization to get the certification.

APPENDIX A

SAM Region	PROJECT DESCRIPTION (DP)	DP N° G3	
<i>Programme</i>	Title of the Project	Start	End
AIM (ICAO Programme Coordinator: Roberto Arca Jáurena)	Assessment and development of QMS applied to AIM in SAM States Project Coordinator: Oscar Dioses (Peru) Experts contributing to the Project: SAM/AIM IG David Díaz (Peru)	03/10/11	01/09/14
Objective	Implement guides applicable to the quality management system in a digital/electronic AIM environment in the SAM Region, based on the regional performance objectives of the SAM performance-based implementation plan.		
Scope	The scope of the project contemplates the assessment and identification of implementation levels associated to quality management in AIM services in the Region. Drafting of an action plan and guides for the implementation of QMS in a digital/electronic AIM environment.		
Metrics	Percentage of States with ISO 9001:2008 QMS certification.		
Goals	50% of States with the ISO standard 9001:2008 implemented by 2013, and certified by 2014.		
Strategy	<p>Project activities will be coordinated among project members, the Project Coordinator, and the Programme Coordinator, mainly through teleconferences (GoToMeeting application) and meetings that may be held within other scheduled events, based on the activities of the work programme. The Project Coordinator will coordinate with the Programme Coordinator for the inclusion of additional experts, if warranted by the tasks and work to be performed.</p> <p>The results of the work done will be submitted to the consideration and review of State experts in the form of a final consolidated document for analysis, review, and approval, and for presentation to the GREPECAS PPRC by the Programme Coordinator.</p>		

Rationale	The quality management system in AIM services must provide users the required guarantee and assurance that the aeronautical information/data distributed meets quality requirements in terms of accuracy, resolution and integrity. There needs to be a close relationship with other projects in order to collect the operational requirements of the aforementioned applications and their respective tentative dates of implementation.				
Related projects	This project is related to Projects G1 “Implementation of the provision of electronic terrain and obstacle data e-TOD” and G2 “Implementation of Aeronautical Information Exchange Systems (AIXM)”.				
Project deliverables	Relationship with the performance-based regional plan (PFF)	Responsible party	Status of implementation*	Delivery date	Comments
Prepare surveys to establish the levels of compliance and implementation of AIM-QMS based on ICAO guides	PFF: SAM AIM/01	ICAO coordinator		25/11/11	Finalised as scheduled.
Circulate surveys to the States	PFF: SAM AIM/01	ICAO coordinator		17/02/12	Finalised as scheduled.
Collect and tabulate the information of the States	PFF: SAM AIM/01	ICAO coordinator		13/04/12	Finalised on 30/03/12.
Description of steps for QMS implementation.	PFF: SAM AIM/01	SAM/AIM/WG		30/03/12	Finalised as scheduled.

QMS self-assessment questionnaire	PFF: SAM AIM/01	David Diaz RLA/06/901		30/03/12	Finalised as scheduled.
Template with QMS assessment results	PFF: SAM AIM/01	David Diaz RLA/06/901		30/03/12	Finalised as scheduled.
QMS implementation plan	PFF: SAM AIM/01	David Diaz RLA/06/901		19/10/12	Finalised as scheduled.
QMS procedures and preventive actions.	PFF: SAM AIM/01	Oscar Dioses Peru		19/10/12	Finalised as scheduled.
QMS internal audit procedure.	PFF: SAM AIM/01	Oscar Dioses Peru		19/10/12	Finalised as scheduled.
Procedure for controlling AIS service management system records	PFF: SAM AIM/01	Oscar Dioses Peru		19/10/12	Finalised as scheduled.
Procedure for drafting QMS documents.	PFF: SAM AIM/01	Oscar Dioses Peru		19/10/12	Finalised as scheduled.
Service control procedure – QMS non-conforming products.	PFF: SAM AIM/01	Oscar Dioses Peru		19/10/12	Finalised as scheduled.
Procedures for controlling the documents of the AIS service management system.	PFF: SAM AIM/01	Oscar Dioses Peru		19/10/12	Finalised as scheduled.
SLA with service providers to ensure the quality of the information and the AIM data exchange.	PFF: SAM AIM/01	Juan J. González Uruguay		19/10/12	Finalised as scheduled.

Collect certifications and produce report on the status of ISO 9001:2008 certifications in the SAM Region	PFF: SAM AIM/01	ICAO coordinator		01/09/14	
Resources required	Designation of experts in the execution of some of the deliverables. More commitment by States to support the designated coordinators and experts.				

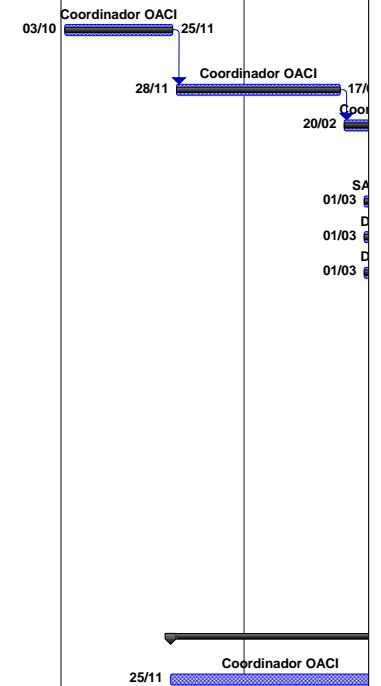
- **Grey* *Task not started*
- Green* *Activity underway as scheduled*
- Yellow* *Activity started with some delay but expected to be completed on time*
- Red* *It has not been possible to implement this activity as scheduled; mitigating measures are required*

Timetable in MS Project with the tasks, sub-tasks, deliverables, and responsible parties

EVALUACION Y DESARROLLO DEL QMS APLICADO A LA AIM DE LOS ESTADOS DE LA REGION SAM/
EVALUATION AND DEVELOPMENT OF QMS APPLIED TO AIM IN THE SAM REGION

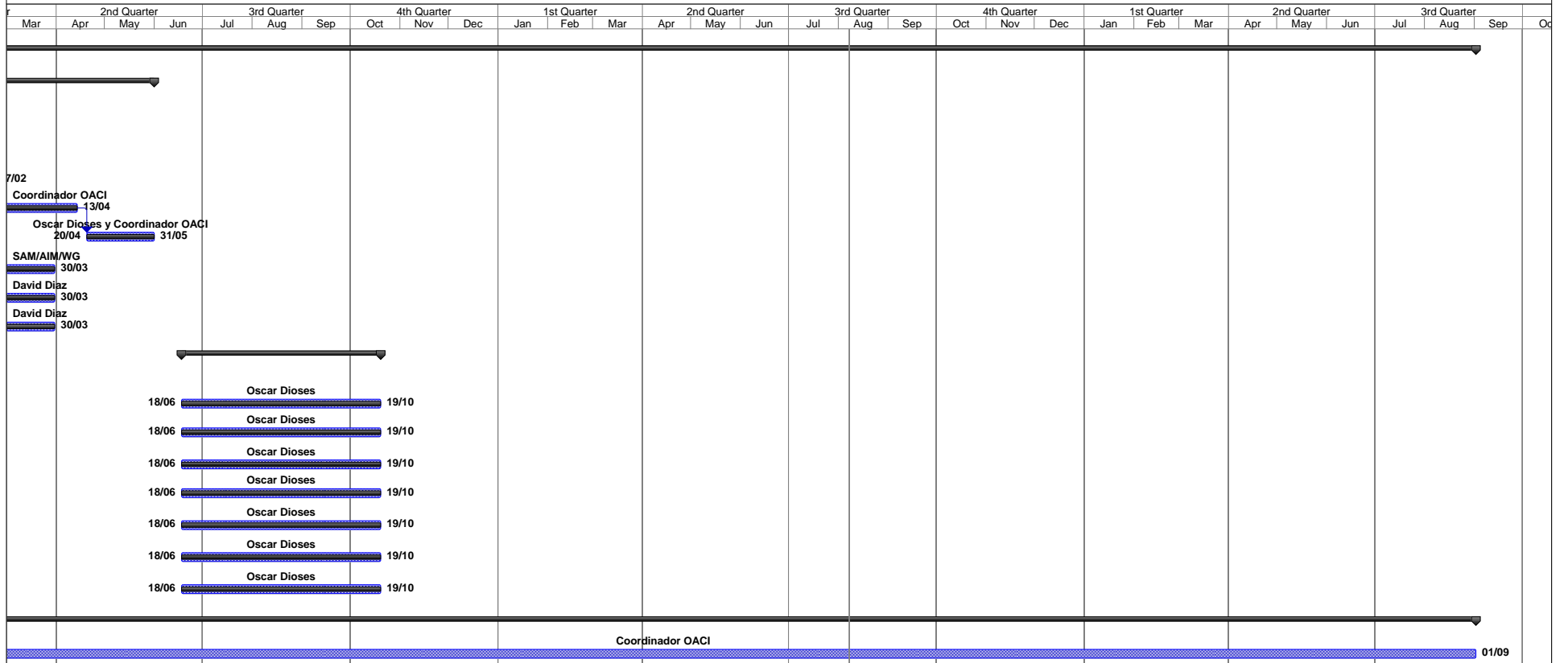
SAM/AIM/5

ID	Nombre de tarea	Duration	Start	Finish	1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			1st Quarter	
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
1	IMPLANTACIÓN DEL QMS EN LAS DEPENDENCIAS AIM DE LOS ESTADOS DE LA REGION SAM/IMPLEMENTATION OF QMS IN AIM UNITS IN THE SAM REGION	761 days?	Mon 03/10/11	Mon 01/09/14														
2	Identificar el nivel de implantación del QMS para la transición del AIS hacia la AIM en los Estados SAM/ Identify the level of QMS implementation for the AIS-AIM transition in the SAM Region	174 days	Mon 03/10/11	Thu 31/05/12														
3	Preparar encuestas para establecer niveles de cumplimiento e implantación del QMS-AIM basados en las guías OACI/Develop surveys to determine status of QMS in AIM transition roadmap based on ICAO guidelines	40 days	Mon 03/10/11	Fri 25/11/11														
4	Circular las encuestas a los Estados/ Deliver the questionnaires to the States	60 days	Mon 28/11/11	Fri 17/02/12														
5	Recopilar y tabular la información de los Estados/collect data from States	40 days	Mon 20/02/12	Fri 13/04/12														
6	Generar Informe de Implantación/Implementation Report	30 days	Fri 20/04/12	Thu 31/05/12														
7	Descripción de pasos para implantar el QMS/ Step description to implement QMS	22 days	Thu 01/03/12	Fri 30/03/12														
8	Cuestionario de auto evaluación QMS/ QMS Self evaluation Questionaire	22 days	Thu 01/03/12	Fri 30/03/12														
9	Planilla con Resultado de evaluación QMS/ evaluation Results Template	22 days	Thu 01/03/12	Fri 30/03/12														
10	Desarrollar Plan de Acción en implantación del QMS -AIM SAM incluyendo cumplimiento del sistema AIRAC /Develop a SAM Action Plan to ensure QMS implementation in SAM Region, including compliance with AIRAC system	90 days?	Mon 18/06/12	Fri 19/10/12														
11	Plan de Implantación del sistema QMS/Plan of Implementation of the QMS system	90 days?	Mon 18/06/12	Fri 19/10/12														
12	Procedimientos de Acciones y preventivas del QMS/QMS CORRECTIVE AND PREVENTIVE ACTION PROCEDURE	90 days?	Mon 18/06/12	Fri 19/10/12														
13	Procedimiento de auditoría interna del QMS/QMS INTERNAL AUDIT	90 days?	Mon 18/06/12	Fri 19/10/12														
14	Procedimiento para el control de registro del Sistema de gestión del servicio AIS/CONTROL OF DOCUMENTS OF THE MANAGEMENT SYSTEM OF THE AIR	90 days?	Mon 18/06/12	Fri 19/10/12														
15	Procedimiento de elaboración de documentos del QMS/PROCEDURE FOR DRAFTING QUALITY MANAGEMENT SYSTEM	90 days?	Mon 18/06/12	Fri 19/10/12														
16	Procedimiento de control de servicios-Productos no conformes del QMS/PROCEDURE FOR CONTROLLING QMS NON-CONFORMING	90 days?	Mon 18/06/12	Fri 19/10/12														
17	Procedimientos para el Control de Documentos del Sistema de gestión de los Servicios AIS/CONTROL OF RECORDS OF THE AIS MANAGEMENT SYSTEM	90 days	Mon 18/06/12	Fri 19/10/12														
18	Control sobre la certificación AIM-QMS obtenida por los diferentes estados / Control of the AIM/QMS Certification obtained by the States	722 days	Fri 25/11/11	Mon 01/09/14														
19	Recopilar las certificaciones QMS-AIM ISO9001-2008/Collect ISO9001-2008 QMS/AIM Certifications	722 days	Fri 25/11/11	Mon 01/09/14														



EVALUACION Y DESARROLLO DEL QMS APLICADO A LA AIM DE LOS ESTADOS DE LA REGION SAM/
 EVALUATION AND DEVELOPMENT OF QMS APPLIED TO AIM IN THE SAM REGION

SAM/AIM/5



Agenda Item 4: NOTAM Contingency Plan

4.1 The Meeting noted that the requirements for the implementation of PBN and autonomous navigation systems introduced the need for new AIS requirements to ensure the quality and timely distribution of information, so as to reduce or eliminate the possible impact of labour conflicts and natural disasters on the continuous provision of the NOTAM service, providing the necessary technical and administrative measures and cooperation and operational procedures to be adopted before, during, and after any contingency phase.

4.2 The Meeting updated the information contained in **Appendices A and B** to this part of the Report concerning NOTAM Contingency Plans for the Region.

4.3 With regard to this item, Colombia informed the Meeting that it was planning to acquire a new NOTAM Data Bank, which included digital NOTAMs, which would start operating by July 2014. In addition to the minimum functions required by ICAO, the data bank should also guarantee support to contingency plans with other States.

4.4 Colombia coordinated with Peru to develop a draft NOTAM Contingency Agreement between the two States.

4.5 Suriname and Guyana developed a draft NOTAM Contingency Agreement, subject to the approval and signature by the respective authorities.

4.6 Appendices A and B to this part of the report show the Catalogue of NOTAM Contingency Plans in the SAM Region and the status of implementation of Contingency NOTAM Plans in the SAM Region, respectively, updated to 26 July 2013.

APÉNDICE / APPENDIX A

**Catálogo de los Planes de contingencia NOTAM de la Región SAM
 Catalogue of NOTAM Contingency Plans in the SAM Region**

**Fecha: 26 de julio 2013
 Date: 26 July 2013**

Estado/ State	Estado de respaldo/ Backup State	Situación / Status		Punto de Contacto/ Contact Point	Descripción general de facilidades y servicios que garantizan la continuidad / General description of facilities and services available which ensure continuity	Observaciones / Remarks
		Borrador Draft	Final			
1	2	3	4	5	6	7
Argentina	Uruguay		X	NOF Ezeiza Tel: 541 4480 2260 Fax: 541 4480 2211/19 (Int. 57572, 57294) Email: nofezeiza@anac.gov.ar NOF Montevideo Tel: 5982 6040067 Email: ais@adinet.com.uy	AFS, Tel/Fax, REDDIG, Internet	
Bolivia				NOF La Paz Tel: 5912 231 6686 (Int. 140) 5912 235 1305 (Int. 152) Email: ais@asana.gob.bo www.asana.bo	REDDIG, AFS, AFTN, Internet	
Brasil/Brazil				NOF Brasil Tel/Fax: 5561 3364 8353 Email: nofbrazil@cindacta1.aer.mil.br	AFS, Tel/Fax, REDDIG, Internet	

Estado/ State	Estado de respaldo/ Backup State	Situación / Status		Punto de Contacto/ Contact Point	Descripción general de facilidades y servicios que garantizan la continuidad / General description of facilities and services available which ensure continuity	Observaciones / Remarks
		Borrador Draft	Final			
1	2	3	4	5	6	7
Chile	Ecuador		X	NOF Chile Tel: 562 2836 4033 Email: nofchile@dgac.cl NOF Guayaquil Tel: 5934 228 5661 5934 228 2017 Email: nof_ecuador@dgac.gob.ec	AFS, Tel, REDDIG, Internet	
Colombia	Perú	X		NOF Bogotá Tel: 571 296 2991 Email: ais@aerocivil.gov.co notam@aerocivil.gov.co	AFS, Tel, REDDIG, Internet	Fecha estimada de Implantación: año 2013/ Estimated implementation date: 2013.
Ecuador	Chile		X	NOF Guayaquil Tel: 5934 228 5661 5934 228 2017 Email: nof_ecuador@dgac.gob.ec NOF Chile Tel: 562 2840 4033 Email: nofchile@dgac.cl	AFS, Tel, REDDIG, Internet	Se iniciarán conversaciones con Colombia y Panamá / Conversations will be initiated with Colombia and Panama.
Guyana	Suriname	X		NOF Guyana Telefax: 592 261 2279 Tel: 592 261 2269 AFS: SYCJYNYX Cable: TIMAIRPORT GUYANA Email: ais@gcaa-gy.org	AFS, Tel/Fax, REDDIG, Internet, AMHS	Está en implementación desde 2013 / Under implementation since 2013.

Estado/ State	Estado de respaldo/ Backup State	Situación / Status		Punto de Contacto/ Contact Point	Descripción general de facilidades y servicios que garantizan la continuidad / General description of facilities and services available which ensure continuity	Observaciones / Remarks
		Borrador Draft	Final			
1	2	3	4	5	6	7
Guyana Francesa/ French Guiana						Información no disponible / Information not available.
Panamá	Ecuador			NOF Panamá Tel: 2382 615 2616 Email: nof@aeronautica.gob.pa aisnof@aeronautica.gob.pa	AFS, Tel/Fax, REDDIG, Internet	Se iniciarán las coordinaciones / Coordinations will be started.
Paraguay	Chile			NOF Asunción Tel: 59521 645 952	AFS, Tel/Fax, REDDIG, Internet, AMHS	Inicio de coordinaciones / Coordination initiation.
Perú	Colombia	X		NOF Lima Tel: 511 230 1288 511 230 1172 Email: nofperu@corpac.gob.pe aisperu@corpac.gob.pe	AFS, Tel/Fax, REDDIG, Internet, AMHS	Fecha estimada de implantación: año 2013 / Estimated implementation date: 2013.
Suriname	Guyana	X		NOF Suriname Tel: 597 0325103 Email: ais.sur@hotmail.com Email: ais@cadsur.sr	AFS, Tel/Fax, REDDIG, Internet, AMHS	Está en implementación desde 2013 / Under implementation since 2013.
Uruguay	Argentina		X	NOF Montevideo Tel: 5982 604 0067 Email: ais@adinet.com.uy NOF Ezeiza Tel: 5414 480 2294 Fax : 5414 480 2260 Email: notamezeiza@yahoo.com.ar	AFS, Tel/Fax, REDDIG, Internet	

Estado/ State	Estado de respaldo/ Backup State	Situación / Status		Punto de Contacto/ Contact Point	Descripción general de facilidades y servicios que garantizan la continuidad / General description of facilities and services available which ensure continuity	Observaciones / Remarks
		Borrador Draft	Final			
1	2	3	4	5	6	7
Venezuela						Información no disponible / Information not available.

Nota/Note:

- Columna 1: Indicar Estado, Territorio u Organismo Internacional / Indicate State, Territory or International Organization
- Columna 2: Indicar Estado, Territorio u Organismo Internacional con quien debe coordinarse el Plan de Contingencia del Estado citado en la Columna 1/ Indicate State, Territory or International Organization with whom the contingency plan of the State mentioned in column 1 should be coordinated.
- Columna 3: Marcar con X en el caso que el plan de contingencia se encuentre en proceso para su armonización con el Estado en cuestión / Mark with an X in case the contingency plan is in process for its harmonization with the referred State.
- Columna 4: Marcar con X en el caso que el plan de contingencia se encuentre armonizado con el Estado en cuestión / Mark with an X in case the contingency plan is in process for its harmonization with the referred State.
- Columna 5: Indicar Cargo del Punto de Contacto y medio de comunicación a utilizar en caso de ser necesario / Indicate position of the point of contact and communications means to be used, if necessary.
- Columna 6: Indicar cuáles son, en general, las facilidades y los servicios disponibles mientras el plan de contingencia se encuentra activado / Indicate which are, in general, the facilities, available services while the contingency plan is activated.
- Columna 7: Comentarios adicionales, si los hubiera / Additional comments, if any.

APÉNDICE / APPENDIX B

ESTADO DE IMPLANTACIÓN DE PLANES DE CONTINGENCIA NOTAM EN LA REGIÓN SAM STATUS OF IMPLEMENTATION OF CONTINGENCY NOTAM PLANS IN THE SAM REGION			
PLANES EN GESTIÓN ONGOING PLANS	PLANES VIGENTES VALID PLANS	ESTADOS NO INICIADOS STATES WHICH HAVE NOT INITIATED	BANCO NOTAM NOTAM BANK
	ARGENTINA/URUGUAY		AMHS
		BRAZIL	SISNOTAM
COLOMBIA			AMHS
PERÚ			ACTUAL BANCO WEB / CURRENT WEB BANK AMHS Sep/2010
	CHILE/ECUADOR		IAT-WIN
	ECUADOR/CHILE		AMHS
		PARAGUAY	AMHS
PANAMÁ			AMHS
		BOLIVIA	AMHS
	URUGUAY/ARGENTINA		SISNOTAM
GUYANA			AMHS
SURINAME			AMHS

Fecha de actualización: 26 de julio 2013
Updating date: 26 July 2013

Agenda Item 5: Other business**Status of implementation of the transition from AIS to AIM**

5.1 The Meeting noted that the Region was focused on completing Phase 1 of the AIS-to-AIM transition roadmap in order to start the next phase and meet the requirements of the ATM Operational Concept, through the provision of data/information that suit the current needs of users.

5.2 The Meeting took note of the progress reported by several States of the Region and the modernization plans for AIS units of their respective Administrations.

5.3 The Meeting updated the status of implementation of AIS-to-AIM transition, as shown in **Appendices A, B, C, D and E** to this part of the Report.

5.4 Concerning the exchange of integrated information (IAIP), Chile informed that the use of the two physical distribution media (CD, DVD) implied the need for an annual budget for its preparation and production, which also entailed a distribution cost.

5.5 Chile proposed that the Internet be considered as the means for electronic exchange of aeronautical information among SAM States, since most of them had a web site, thus:

- a) Obtaining updated data/information in real time;
- b) Reducing the number of paper publications;
- c) Contributing to environment protection by reducing the use of paper.

5.6 The Meeting deemed it necessary to maintain the exchange of at least one (1) copy in paper format with those States of the SAM Region that had not yet implemented the AIP, SUP AIP and AIC in digital format, awaiting that those who had not done so yet would materialize it as soon as possible.

5.7 The Secretariat noted the importance of following up the status of implementation of AIS-to-AIM transition by the States, since this information was sent directly to Headquarters for updating global information.

Meeting Website

5.8 The Meeting deemed it important to post Amendment 37 to Annex 15 on the Meeting website. The Secretariat took due note and would post it on the website, along with the final Report.

5.9 Likewise, the Secretariat asked the Industry and International Organizations for a copy of the presentations they had made at the Meeting, in order to post them on the Meeting website along with the final Report.

APÉNDICE / APPENDIX A

SEGUIMIENTO DE LA IMPLANTACIÓN WGS-84 EN LA REGIÓN SAM /
FOLLOW UP WGS-84 IMPLEMENTATION – SAM REGION

ESTADOS /STATES	ARG	BOL	BRA	CHI	COL	ECU	GUY	FGU	PAN	PAR	PER	SUR	URU	VEN
Parte I – Información General / Part I – General Information														
1. ¿Actualmente su Administración dispone de una base de datos nacional que incluya información de coordenadas WGS-84? / Does your administration currently have a national database including information on WGS-84 coordinates?	Y	N	Y*	Y	Y	*	Y	S/R	P*	Y	Y*	P*	Y	N
2. ¿El método de levantamiento topográfico utilizado para calcular las coordenadas geográficas WGS-84 que garantice la precisión e integridad requerida se realizó con por lo menos tres estaciones de control para determinar los parámetros de referencia entre el marco de referencia local y el WGS-84? / Was the topographic method used to estimate WGS-84 coordinates to ensure accurateness and integrity required, made with at least three control stations to determine referential parameters in the local referential framework and the WGS-84?	Y	Y	N*	Y*	Y	Y	Y	S/R	Y	Y*	Y*	Y	Y*	Y
Parte II – Coordenadas WGS-84 de interés para la navegación aérea / Part II – WGS-84 coordinates of interest for air navigation														
Coordenadas de zonas/en ruta / Area coordinates/en-route														
1. Puntos en ruta ATS/RNAV. / ATS/RNAV en-route fix.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y	Y	Y	Y	Y
2. Puntos de referencia en ruta. /en-route reference fix.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y	Y	Y	Y	Y
Puntos de espera; y / Holding pattern Fixed; and	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	N/A	Y	Y	Y	Y
puntos STAR/SID. / STAR/SID fixed.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	P	Y	N/A	Y	
3. Radioayuda para la navegación en ruta. / en-route radio navigation aids.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y	Y	Y	Y	Y*
4. Zonas restringidas/prohibidas/peligrosas. / Restricted/prohibited/dangerous areas.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	N	Y	Y	Y	Y

Apéndice A al Informe sobre la Cuestión 5 del Orden del Día
Appendix A to the Report on Agenda Item 5

5A-2

SAM/AIM/5

ESTADOS /STATES	ARG	BOL	BRA	CHI	COL	ECU	GUY	FGU	PAN	PAR	PER	SUR	URU	VEN
5. Obstáculos en ruta. / En-route obstacles.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	N/A	N	N	Y	Y
6. Límites de la FIR. / FIR boundaries.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y	Y	Y	Y	Y
7. Límites de CTR/CTA. / CTR/CTA boundaries.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y	Y	Y	Y	Y
8. Otros puntos significativos que tengan relación con zonas en ruta. / Other significant points having relationship with en-route áreas.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y	Y	Y	N	Y
Coordenadas de aeródromos/heliuerto / Aerodromes/heliport coordinates														
1. Puntos de referencia de aeródromo/ heliuerto. / Aerodrome-heliport reference points.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y*	Y	Y	Y	Y
2. Umbrales de pista. / Runway thresholds.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y	Y	Y	Y	Y
3. Extremo de pista (punto de alineación de la trayectoria de vuelo). / Runway end (flight trajectory alignment fix).	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y	Y	Y	Y	Y
4. Área de aproximación final y de despegue (FATO)./ Approach and departure final area (FATO).	N/A	Y	Y*	N/A	Y	Y	Y	S/R	*	N	Y	Y	N/A	N/A
Umbrales de la FATO. / FATO thresholds.	Y	Y	Y*	N/A	Y	Y	Y	S/R	*	N	Y	N	N/A	N/A
5. Radioayuda para la navegación en el área terminal./ Radio navigation aids in terminal areas.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y	Y	Y	Y	Y
6. Radioayuda situada en el aeródromo/heliuerto. / Radio navigation aids located in the aerodrome/ heliport.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y	Y	Y	Y	Y
7. Puntos FAF; / Fixed FAF;	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y*	Y	Y	Y	Y
FAP; y / FAP; and	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y*	Y	Y	Y	Y
otros IAP esenciales. / Other essential IAP.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y*	Y	Y	Y	Y
8. Puntos en el eje de pista./ Runway centreline points.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y	Y	N	Y	Y
9. Puntos de eje de calle de rodaje. / Taxiway centreline points.	Y	Y	Y*	Y	Y	N	Y	S/R	Y	Y	Y	N	Y	N
10. Puntos de rodaje aéreo. / Air taxiing.	Y	Y	Y*	N/A	Y	N	N/A	S/R	Y	N	Y	N/A	N	N
11. Puntos de vías de tránsito aéreo. /Air Transit points.	Y	Y	Y*	N/A	Y	N	Y	S/R	Y	N/A	N	N/A	Y	Y
12. Puestos de estacionamiento de aeronaves./Aircraft parking position.	Y	P	Y*	Y	Y	Y	Y	S/R	Y	Y	Y	Y	Y	Y*
13. Punto de verificación INS. / INS checking fix.	Y	N	Y*	Y	Y	N	Y	S/R	Y	N	N	Y	N	N

ESTADOS /STATES	ARG	BOL	BRA	CHI	COL	ECU	GUY	FGU	PAN	PAR	PER	SUR	URU	VEN
14. Obstáculos en el área de circuito y en el aeródromo/heliporto. / Obstacles in the circuit area and in the aerodrome-heliport.	Y	Y	Y*	Y	Y	Y	Y	S/R	Y*	Y*	Y	Y	Y	Y
15. Puntos de referencia y otros puntos esenciales para la aproximación final comprendido el procedimiento de aproximación por instrumentos. / Reference points and other Essentials fixes for final approach including instrument approach procedure	Y	Y	Y*	Y	Y	Y	Y	S/R	Y	Y	Y	Y	Y	Y

Y = SI / Yes
 * = Ver comentarios / See comments
 N = No
 P = Parcialmente / Partially
 N/A = No aplicable / Not applicable
 S/R = Sin respuesta / Without answer

COMENTARIOS DE LOS ESTADOS / COMMENTS BY STATES

ESTADOS / STATES	COMENTARIOS / COMMENTS
ARGENTINA	9, 10 y 11: Estos datos no están aun incorporados a las publicaciones. / 9, 10 and 11: This data is not incorporated yet into the publications.
BOLIVIA	La información está en WGS-84; aún no existe una base de datos consolidada y está en proceso. / The information is in WGS-84, but it doesn't exist a consolidated data base yet and it is in process.
BRAZIL	*En las operaciones topográficas es utilizada una estación única de control para determinar los criterios de referencia entre ARP y WGS-84. Se realizan las encuestas con rastreador GPS (doble frecuencia). La resolución n° 5, del IBGE (Instituto Brasileño de Geografía y Estadística, que es la agencia brasileña encargada de cartografía nacional), adoptada en estas operaciones topográficas, asegura la precisión de las coordenadas, de acuerdo con los SARPS de OACI. / *At topographic surveying a single control station is used to determine the referential parameters between ARP and WGS-84. A dual frequency GPS tracker is used in these surveys. The resolution #5 of IBGE (Brazilian Institute of Geography and Statistics, which is the Brazilian agency responsible for national mapping) is followed in these surveys and ensures the accuracy of the coordinates, in accordance with ICAO SARPs.
COLOMBIA	Sin comentarios. La Base de Datos no es centralizada. / No comments. Data base is not centralized.
ECUADOR	*Tenemos la información del levantamiento topográfico en WGS-84 de aeródromos, radio-ayudas, obstáculos, rutas, etc., los mismos que se encuentran almacenados en un archivo digital e impreso. / We have the information of the topographical rising in WGS-84 for aerodromes, radio-navaids, obstacles, routes, etc., same ones that are stored in a digital file and form. *En los helipuertos nacionales, la información que se publica en el AIP, no ha sido verificado su levantamiento en WGS-84. / For the national heliports, its rising has not been verified in WGS-84, regarding the information that is published in the AIP.
GUYANA	La encuesta sobre WGS-8 se completó en el 2005 para las FIRs SYGC y SYCJ Aerop. Intl. Los puntos de control establecidos en el aeropuerto SYCJ bajo la asistencia de un experto de la OACI. Todos los puntos/fijos nuevos están siendo supervisados de acuerdo con el método WGS-84. / WGS-84 Survey was completed in 2005 for SYGC FIR and SYCJ International airport. Control points established at the SYCJ airport under the guidance of ICAO specialist. All new points/fixes are surveyed in accordance with WGS-84 method.
FRENCH GUYANA	S/R
PANAMA	*Se efectuó el relevamiento, pero no se cuenta con base de datos electrónicos. / Survey was made but there is no electronic data base available.
PARAGUAY	1. Levantamiento topográfico realizado por la DISERGEMIL. / Topographic study made by DISERGEMIL. 2. Las coordenadas se obtuvieron con GPS diferencial. / Coordinates were obtained with differential GPS. 1. DISERGEMIL: Dirección del Servicio Geográfico Militar. / Geographical Military Service Direction – DISERGEMIL. 2. Puntos obtenidos mediante programa IOPA 83. / Obtained with IOPA 83 Programm.
PERU	1. No se dispone de una base de datos estructurada a nivel nacional que incluya coordenadas en WGS-84, sin embargo se cuenta con información topográfica de las áreas correspondientes a los principales aeródromos. / There is no structured data base at a national level which includes coordinates in WGS-84; however, there is topographical information in the areas corresponding to the main aerodromes. 2. El levantamiento se hace en función a una red geodésica nacional de Orden 0 en WGS-84. / Survey made in function of national geodetic in “zero” basis WGS-84.
SURINAME	Base de datos parcial. / Partially Data Base.

ESTADOS / STATES	COMENTARIOS / COMMENTS
URUGUAY	Por los ajustes en la red Sudamericana SIRGAS, se entiende conveniente actualizar los datos para la verificación. / In view of adjustments in SIRGAS, South American network it is pertinent to update data for verification.
VENEZUELA	Radioayudas para la navegación en rutas: las radioayudas dentro de los aeródromos han sido levantadas a excepción de las que están fuera de los mismos. Puestos de estacionamiento de aeronaves: de los diez aeropuertos INTL de la Republica Bolivariana de Venezuela sólo se han publicado dos de estos.(Maiquetía – SVMI y Valencia Arturo Michelena – SVVA). / En-route Radio navigation aids within aerodromes have been removed with exception of those which are outside. Aircraft parking positions of 10 airports in República Bolivariana de Venezuela only two of these (Maiquetía – SVMI and Valencia Arturo Michelena SVVA) have been published.
Fecha de Actualización / Updated:	26/07/2013

APÉNDICE / APPENDIX B

ESTADO DE IMPLANTACIÓN DEL QMS EN LA REGIÓN SAM / STATUS OF QMS IMPLEMENTATION IN THE SAM REGION

ESTADO/ STATE	EN PROCESO/ IN PROCESS	IMPLANTADO/ IMPLEMENTED	AUDITADO/ AUDITED	CERTIFICADO/ CERTIFIED	% DE EJECUCIÓN/ % OF EXECUTION	FECHA FINAL/ FINAL DATE	OBSERVACIONES/ REMARKS
Argentina	X				50	MAR 2014	Se están identificando y describiendo procesos. / Processes are being identified and described. ARO/AIS Sep 2014.
Bolivia	X				30	2013	
Brasil/ Brazil	X	X	X	X	100	-----	NOTAM, AIP Y MAP certificado / certified y ARO en proceso / in process. 85% completado / completed. 2014.
Colombia	X	X	X		90	JUL 2014	Actualmente se efectúan auditorías internas de control de la implantación y se ajustan los procedimientos y registros inherentes al proceso AIM. / Currently internal control audits are carried out to control implementation and registrations inherent to AIM are adjusted.
Chile		X	X	X	100	-----	ISO 9001:2008
Ecuador		X	X	X	100		ISO 9001:2008
Guyana	X				25	DIC / DEC 2015	Algo de entrenamiento recibido. / Some training received. Personal temporal. / Temporary Staff.
Guayana Francesa /							Sin información. / No information.

ESTADO/ STATE	EN PROCESO/ IN PROCESS	IMPLANTADO/ IMPLEMENTED	AUDITADO/ AUDITED	CERTIFICADO/ CERTIFIED	% DE EJECUCIÓN/ % OF EXECUTION	FECHA FINAL/ FINAL DATE	OBSERVACIONES/ REMARKS
French Guiana							
Panamá / Panama	X				90	AGO / AUG 2014	
Paraguay		X	X	X	100	-----	ISO 9001:2008. Paraguay Re- Certificado 2013 / Paraguay Re- certificated 2013.
Perú / Peru	X				60	MAR/2014	
Suriname	X				45	AGO / AUG 2014	
Uruguay	X				95	DIC / DEC 2013	
Venezuela	X				50	DIC / DEC 2012	Información por correo electrónico. / Information through e-mail.
Fecha de actualización / Date updated:			26/07/2013				

APÉNDICE / APPENDIX C

Estado de cumplimiento de la Reglamentación y Control de la Información Aeronáutica (AIRAC) en la Región SAM
Status of compliance of Standards and Control of Aeronautical Information (AIRAC) in the SAM Region

Requisito / Requirement	Argentina	Bolivia	Brazil	Chile	Colombia	Ecuador	F. Guyana	Guyana	Panamá	Paraguay	Perú	Suriname	Uruguay	Venezuela	COMENTARIOS/ COMMENTS
1. ¿Dispone de un programa de publicaciones? / Do you have a publication programme?	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SI YES	SÍ YES	SI YES	SÍ YES	SÍ YES	SI YES	SÍ YES	SI YES	SÍ YES	SÍ YES	
2. ¿Publica una vez al año una AIC que incluya las fechas AIRAC de entrada en vigor del paquete de documentación integrada de información aeronáutica, las fechas de publicación y las fechas límite que los textos han de llegar al AIS? / Publishes an AIC once a year with the AIRAC dates of effectiveness of the integrated aeronautical information package, the dates of publication and the deadline in which the texts must reach the AIS?	SI YES	SÍ YES	SÍ YES	SÍ YES	SI YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SI YES	SÍ YES	SÍ YES	
3. La información AIRAC, ¿se distribuye por lo menos con 42 días de antelación respecto a la fecha de entrada en vigor? / Is the AIRAC information distributed at least 42 days before the effective date?	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SI YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SI YES	SÍ YES	SÍ YES	
4. ¿Las fechas de entrada en vigor AIRAC se basan en un intervalo de 28 días? / Are AIRAC effective dates based on a 28-day interval?	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SI YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SI YES	SÍ YES	SÍ YES	

Requisito / Requirement	Argentina	Bolivia	Brazil	Chile	Colombia	Ecuador	F. Guyana	Guyana	Panamá	Paraguay	Perú	Suriname	Uruguay	Venezuela	COMENTARIOS/ COMMENTS
8. ¿Se utiliza el Calendario de fechas de entrada en vigor AIRAC? / Is the calendar of AIRAC effective dates used?	SÍ YES	SÍ YES	SI YES	SÍ YES	SI YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SI YES	SÍ YES	SÍ YES	
9. ¿Se ha coordinado con las distintas fuentes originadoras de la información las fechas límites para la información que originen? / Have deadlines for information originating at the various information sources been coordinated with them?	SÍ YES	SÍ YES	SI YES	SÍ YES	SI YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SI YES	SÍ YES	SÍ YES	
¿Se utiliza el formato de aviso de promulgación de información aeronáutica tal como se propone en el Manual para los servicios de información aeronáutica (Doc.8126) o similar? / Is the aeronautical information publication notice form used as proposed in the Aeronautical Information Services Manual (Doc 8126) or similar?	SÍ YES	SÍ YES	SI YES	SÍ YES	SI YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SI YES	SÍ YES	SÍ YES	
10. ¿Se contempla que las fechas del ciclo AIRAC, que ocurran dentro del periodo de 28 días desde el 21 de diciembre al 17 de enero inclusive no se utilicen para la entrada en vigor de cambios operacionales de importancia? / Has it been contemplated that AIRAC dates that fall within the 28-day period between 21 December and 17 January inclusive shall not be used for the entry into effect of significant operational changes?	SÍ YES	SÍ YES	SI YES	SÍ YES	SI YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SI YES	SÍ YES	SÍ YES	

Requisito / Requirement	Argentina	Bolivia	Brazil	Chile	Colombia	Ecuador	F. Guyana	Guyana	Panamá	Paraguay	Perú	Suriname	Uruguay	Venezuela	COMENTARIOS/ COMMENTS
11. ¿Se suministra a los usuarios la información AIRAC en forma electrónica? / Is the AIRAC information provided to users via electronic means?	SÍ YES	NO	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	NO	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	Bolivia y Panamá están haciendo gestiones para suministrar la información en forma electrónica. / Bolivia and Panama are taking actions to submit the information in electronic form.
12. ¿Se continúa proporcionando la información AIRAC en forma impresa también? / The AIRAC information is still provided in hard copy too?	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	SÍ YES	VEN: A quien la solicita. / Upon request.
13. Si las respuestas a las preguntas 2 a 5 anteriores son NO. ¿Existen planes para cumplirlo? / If the answer to questions 2 to 5 is NO, are there any plans to comply?	N/A	N/A	NA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
FECHA DE ACTUALIZACIÓN: UPDATED:	26/07/2013														

APÉNDICE / APPENDIX D

SEGUIMIENTO NIVEL DE IMPLANTACIÓN DE LA NORMA PARA LA PROVISIÓN DE
DATOS ELECTRÓNICOS SOBRE EL TERRENO (E-TOD) PARA EL ÁREA 1 (Ref.: Anexo 15, 10.1.3)*FOLLOW-UP LEVEL OF IMPLEMENTATION OF THE STANDARD FOR THE PROVISION OF
ELECTRONIC TERRAIN OBSTACLE DATA (E-TOD) FOR THE AREA 1 (Ref.: Annex 15, 10.1.3)*

ESTADOS /STATES	ARG	BOL	BRA	CHI	COL	ECU	GUY	FGU	PAN	PAR	PER	SUR	URU	VEN
Modelo digital – DIGITAL MODEL														
¿Dispone la Oficina de un Modelo Digital del terreno (MDT) o de un Modelo digital de elevación (MDE) u otro? (Especifique) / Does the Office have a model digital terrain (MDT) or a Model for Digital Elevation (MDE) or other? (Specify).	N	N ¹	Y ¹	N	Y ¹	N	N	Y ¹	N	N	N ¹	N	N	Y
¿De dónde los obtuvo? (¿de la propia organización, de organización externa –¿cuál?) / Where did you obtain it? (from your organisation, an external organization – which?).	-	-	Y ²	N	Y ²	N	-	Y ²	-	N	N	N	N	* ₁
¿Qué precisión tiene dicho modelo? / Which accurateness does this model have?	-	-	Y ³	N	Y ³	N	-	Y ³	-	N	N	N	N	* ₂
¿Cumple con Tabla A8-1; requisitos de los datos sobre el terreno para el Área 1 del Anexo 15? / Does it comply with Table A8-1; data requirements for Annex 15 Area 1?	-	N/A	N ⁴	N	N	N	N/A	Y ⁴	-	N	N	N	N	Y
¿Dicho modelo cumple con la serie de Normas ISO 19110? (Sí/No) / Does such model comply with the series of ISO Standard 19110? (Yes/No)	-	N ⁴	N ⁵	N	Y ⁴	N	N/A	Y ⁵	-	N	N	-	N	Y
¿Qué precisión tiene dicho modelo? / Which is the accurateness of such model?	-	-	-	-	-	-	N/A	-	-	-	N	-	-	* ₃

ESTADOS /STATES	ARG	BOL	BRA	CHI	COL	ECU	GUY	FGU	PAN	PAR	PER	SUR	URU	VEN
Obstáculos – OBSTACLES														
¿Dispone de una base de datos de obstáculos que abarque todo el territorio de su país? (Sí/No) / Is there an obstacle data base covering all territory in your country? (Yes/No).	Y ¹	N	Y ⁶	N	Y ⁵	N	N	Y ⁶	-	N	N ²	N	N ¹	N ⁴
¿Cómo los obtuvo? (¿de la propia organización, de organización externa? –¿cuál?) / How did you get them (from your organization? From an external organization? – which?	Y ²	N	Y ⁷	N	Y ⁶	N	N/A	Y ⁷	-	N	Y ³	-	N ²	* ⁵
¿Dichos datos cumplen con la serie de Normas ISO 19110? (Sí/No) / Does the data comply with the series of ISO Standard 19110? (Yes/No).	Y ³	N	N ⁸	N	N	N	N/A	N ⁸	-	N	N	-	N ³	N
¿Cumple con Tabla A8-2; requisitos de los datos sobre obstáculos para el Área 1 del Anexo 15? / Does it comply with Table A8-1; data requirements on terrain for Annex 15 Area 1?	-	N	N ⁹	N	N	N	N/A	N ⁹	-	N	N	N	Y	Y
Planificación – PLANNING														
¿Ha establecido la Oficina un plan detallado con las tareas, plazos, análisis de riesgos, aspectos económicos y demás para la ejecución del proyecto de implantación del e-TOD para el Área 1? (Si/No) (Si la respuesta es Si, indicar plan y fechas de cumplimiento). / Has your office established a detailed plan with tasks, risk analysis, economical aspects, etc, for the execution of the e-TOD implementation project for Area 1 (Yes/No) (if answer is yes, indicate plan and dates of compliance).	Y ⁴	N	N ¹⁰	Y ¹	N	Y ¹	N	Y ¹⁰	-	N	N	N	Y ⁴	N

ESTADOS /STATES	ARG	BOL	BRA	CHI	COL	ECU	GUY	FGU	PAN	PAR	PER	SUR	URU	VEN
<p>¿Ha definido la Oficina un manual de especificaciones técnicas para dicha implantación? (Sí/No). (Consultar si se puede acceder al mismo). / Has the office defined a manual with technical specifications for such implementation? (Yes/No). (Ask if there is easy access to the same).</p>	Y ⁵	Y	Y ¹¹	Y	Y	Y	N	Y ¹¹	Y	Y	Y	Y	Y ⁵	N
<p>¿Ha definido y firmado Acuerdos de Nivel de Servicio (SLA) con los proveedores de datos? (Sí/No). (Consultar si se puede obtener una copia modelo de los mismos). / Has your office defined and signed service level agreements (SLA) with data providers? (Yes/No). (Ask if there is an available copy of the same).</p>	Y ⁶	N	N	N	N	N	N	N ¹²	-	N	N	N	Y ⁶	N
<p>¿Dispone de un programa de capacitación para aquellas personas que tengan que operar con los datos del e-TOD en la dependencia AIS? (Sí/No). (Consultar si se puede acceder al mismo). / Is there a training programme for those persons that have to operate with E-TOD data in AIS unit? (Yes/No). (Ask if the same may be accessed).</p>	N	N	N ¹²	N	Y	Y ²	N	Y ¹³	-	N	N	N	N	N
<p>¿Se han tenido en cuenta los conceptos operacionales en este proyecto? (Sí/No). (Comentar el plan). / Have operational concepts been taken into account? (Yes/No). (Comments on the plan).</p>	N	N	N	N	Y	Y ³	N	N ¹⁴	-	N	N	N	N	-
<p>¿La Oficina dispone de equipamiento y programas para la gestión de la información referida a e-TOD? (Sí/No). (En caso de respuesta Sí, indicar característica de los equipos y programas). / Does the office have equipment and programmes for information management referred to e-TOD (Yes/No). (In case answer is Yes, indicate the characteristic of equipment and programmes).</p>	N	N	Y ¹³	N	Y ⁷	Y ⁴	N	N ¹⁵	-	N	Y ⁴	N	Y ⁷	N

ESTADOS /STATES	ARG	BOL	BRA	CHI	COL	ECU	GUY	FGU	PAN	PAR	PER	SUR	URU	VEN
<p>¿Se han definido cronogramas y especificaciones para la carga y verificación de los datos referidos al e-TOD? (Sí/No). (En caso de respuesta Sí, indicar tiempos y formas de la verificación). / Have schedules and specifications been defined for the load and data verification referred to e-TOD? (Yes/No). (In case answer is Yes, indicate times and ways to check).</p>	N ⁷	N	Y ¹⁴	N	N	Y ⁵	N	N ¹⁶	-	N	N	N	Y ⁸	N

Y = SI / Yes
^{1, 2, ...} = Ver comentarios / See comments
N = No
P = Parcialmente / Partially
N/A = No aplicable / Not applicable
S/R = Sin respuesta / Without answer

COMENTARIOS DE LOS ESTADOS / COMMENTS BY STATES

ESTADOS/ STATES	COMENTARIOS / COMMENTS
ARG	<p>¹ Se dispone de datos de obstáculos que se están incorporando a una base de datos./ Obstacle data available, data incorporated in a data base.</p> <p>² El proveedor es el departamento de aeródromos. / Aerodrome Department is the provider.</p> <p>³ Se está evaluando. / Under assessment.</p> <p>⁴ Está en proceso de elaboración. / In process of preparation.</p> <p>⁵ Está en proceso de elaboración. / In process of preparation.</p> <p>⁶ Está en proceso de elaboración. / In process of preparation.</p> <p>⁷ En proceso de realización con el proveedor. / Under process of implementation by the provider.</p>
BOL	<p>¹ Las elevaciones de los obstáculos están en base a las elevaciones proporcionadas por el Estado Plurinacional de Bolivia. / Obstacles are in base to elevations provided by Bolivia.</p> <p>² Del Instituto Geográfico Militar/IGM. / From the IGM.</p> <p>³ Las elevaciones del IGM tiene una precisión de 1×10^{-4}. / IGM elevations have a precision of 1×10^{-4}.</p> <p>⁴ No se tiene implantado el Sistema de Gestión de la Calidad. / Quality assurance system is not implemented.</p>
BRA	<p>¹ Brasil tiene un modelo digital para terreno (MDT) para el área e-TOD 1 (todo el territorio nacional). Para las otras áreas Brasil adoptará modelo digital de superficie (MDS). / Brazil has the digital terrain model (DTM) for the e-TOD area 1 (all national territory). For the other areas, Brazil will adopt the digital surface model (DSM).</p> <p>² El modelo digital de terreno para el área 1 e-TOD comprende líneas de contorno y puntos ploteados en 3D obtenidos de las cartas aeronáuticas con una escala de 1:250,000 y cartas topográficas con escalas de 1:100,000 y 1:50,000. Las Cartas Aeronáuticas se producen por el ICA y las cartas topográficas se producen por agencias federales encargadas de la cartografía del territorio nacional. Para áreas del territorio nacional en que no existen los productos mencionados, se usa el modelo digital de terreno derivado del SRTM y disponible libre de cargo por el gobierno de EEUU. El modelo digital de superficie para las otras áreas se encuentra en preparación por parte de ICA (Instituto de la Cartografía Aeronáutica, la agencia brasileña responsable de la preparación de cartas aeronáuticas, publicaciones AIS e e-TOD), y se obtiene por medio de fotografías aéreas. / The digital terrain model for the e-TOD area 1 comprises contour lines and points plotted in 3D obtained from the aeronautical charts with a scale of 1:250,000 and topographical charts with scales of 1:100,000 and 1:50,000. Aeronautical charts are produced in the Air Force Institute of Cartography (ICA) and topographical charts are produced by federal agencies that have the allocation of mapping the national territory. For areas of national territory where the mentioned products do not exist, it is used the digital terrain model derived from the Shuttle Radar Topography Mission (SRTM) and available free of charge by the U.S. Government. The digital surface model for the other e-TOD areas is being made by ICA (Aeronautical Cartography Institute, the Brazilian agency responsible for the aeronautical charts, AIS publications and e-TOD) through aerophotogrammetry.</p> <p>³ La precisión del modelo digital de terreno para un área particular geográfica dependerá de la información utilizada, de acuerdo a los siguientes valores:/ The accurateness of the model digital terrain for a particular geographic area will depend on the input used, according to the following values:</p> <ul style="list-style-type: none"> • Cartas aeronáuticas a escala/aeronautical charts at scale of 1:250,000 = altimetry (± 50 m to 70 m) and planimetry (± 125m to 250 m); • Cartas topográficas a escala/topographical charts at scale of 1:100,000 = altimetry (± 25 m to 37.5 m) and planimetry (± 50m to 100 m); • Cartas topográficas a escala/topographical charts at scale of 1:50,000 = altimetry (± 10 m to 15 m) and planimetry (± 25m to 50 m); • SRTM ± 20m en altimetría, pero hay discrepancias en áreas que presentan valores de altitud/SRTM ± 20m in altimetry, but there are

ESTADOS/ STATES	COMENTARIOS / COMMENTS
	<p>discrepancias in areas that present altitude values. Se obtiene la precisión del modelo digital de superficie con el fin de cumplir con las recomendaciones de la OACI. / The accurateness of the digital surface model will be obtained in order to comply with the recommendations of the ICAO.</p> <p>⁴ Todos los ítems cumplen con los requerimientos, con la excepción de la precisión vertical y precisión horizontal, cuando el modelo digital de terreno se obtiene por la carta a escala 1:250,000, carta a escala 1:100,000 y por SRTM debido a que dichos datos comprenden valores menos exactos que aquellos definidos en la Tabla A8-1. / All items comply with the requirements with the exception of vertical accuracy and horizontal accuracy, when the digital terrain model is obtained by aeronautical chart at scale of 1:250,000, topographical chart at scale of 1:100,000 and by SRTM because such data comprises values less accurate than those defined in Table A8-1.</p> <p>⁵ Las series de la norma ISO 19110 todavía serán estudiadas e implantadas. / The series of ISO Standard 19110 will still be studied and implemented.</p> <p>⁶ Hay una base de datos nacional, pero no se asegura que el 100% de obstáculos de más de 100 metros sean registrados en la base de datos, tal como se requiere en el Anexo 15 para el área 1 e-TOD, debido a regulaciones recientes que son efectivas desde el 2011 (Orden No.256/GM5). / There is a national database, but it is not assured that 100% of obstacles of more than 100 meters are registered in the database, as required by Annex 15 for the e-TOD area 1, due to the recent regulations that are effective as of 2011 (order N.256/GM5).</p> <p>⁷ Los obstáculos se obtienen a través de estudios topográficos llevados a cabo por el ICA o a través de diversas organizaciones nacionales responsables del control regional de los obstáculos y la navegación. / Obstacles are obtained through topographic survey conducted by the air force institute of cartography (ICA) or through the other organizations that are responsible for the regional control of obstacles and air navigation.</p> <p>⁸ Las series ISO 19110 aún serán estudiadas e implantadas. / The series of ISO standard 19110 will still be studied and implemented.</p> <p>⁹ Los datos obtenidos por el ICA cumplen con la Tabla A8-2. Los datos procedentes de fuentes externas sólo se incluirán en la base de datos de obstáculos si cumplen con los requisitos de la Tabla A8-2, debido a la nueva legislación (CIRCEA 53-2), que entró en vigor en 2013. Sin embargo, no es posible garantizar el cumplimiento de estos requisitos para los datos existentes en la base de datos antes de que la legislación citada. / Data from external sources will only be included in the database of obstacles if they comply with the requirements of Table A8-2, due to new legislation (CIRCEA 53-2), which entered into force in 2013. However, it is not possible to ensure compliance with these requirements for existing data in the database before the cited legislation.</p> <p>¹⁰ El plan de desarrollo está en marcha (Fecha: DIC/13). / The plan is on going (deadline: DEC/13).</p> <p>¹¹ Brasil estableció un manual de especificaciones técnicas que definen el proceso de recolección, procesamiento, distribución y almacenamiento de los datos recogidos por fotogrametría. Sin embargo, se está evaluando la posibilidad de adoptar otros métodos de recolección de datos, así como la adición de mejoras en el proceso que se utiliza en la actualidad, por lo que este manual está en proceso de revisión. / Brazil established a technical specification manual defining the process of collecting, processing, distribution and storage of the data collected through photogrammetry. However, other methods of data collection are being considered, as well as adding improvements to the process that is used today, so this manual is under revision.</p>

ESTADOS/ STATES	COMENTARIOS / COMMENTS
	<p>¹² Los técnicos que trabajan con la adquisición y tratamiento de datos Aerofotogramétricos tenían formación adecuada, sin embargo, no existe un plan formal para el mantenimiento de la capacitación. El establecimiento de este plan es parte del Proyecto AIM-BR, creado para gestionar la transición del AIS a AIM. / Technicians working with the acquisition and processing of photogrammetric data has proper training, however, there is no formal plan for continuous training. The establishment of this plan is part of AIM-BR Project, created to manage the transition from AIS to AIM.</p> <p>¹³ El sector responsable de e-TOD está equipado con 4 estaciones de trabajo con ajuste apropiado para la actividad, incluidos los monitores y ratones 3D y almacenamiento de datos de alta capacidad. Los programas más utilizados son ArcGIS, ERDAS LPS y Global Mapper. / The sector responsible for e-TOD is equipped with 4 workstations appropriate for the activity, including monitors and mice 3D and high data storage capacity. The most used programs are ArcGIS, ERDAS LPS and Global Mapper.</p> <p>¹⁴ Se establecieron las especificaciones de carga y verificación de datos e-TOD, formalizado en una guía de instrucciones para los operadores. El cronograma establecido se está revisando, y será parte del plan del proyecto e-TOD (véase la respuesta 10). / Load and e-TOD data verification specifications were established, formalized in an instruction guide for operators. The schedules are being revised, and will be part of the e-TOD project plan (see item 10).</p>
CHI	<p>¹ Hay establecido un grupo de trabajo que ha definido un Proyecto de Plan con tareas, plazos, análisis de riesgos y aspectos económicos para la implantación de la áreas 1, 2, 3 y 4. El citado Proyecto de Plan está en una etapa de evaluación, por lo cual aún no se ha definido un calendario de ejecución. / There is a work group which has defined a Plan Project with tasks, deadlines, risk analysis and economical aspects for the implementation of áreas 1, 2, 3 and 4. The mentioned Plan Project is under assessment, and for this reason an implementation calendar has not been defined yet.</p>
COL	<p>¹ Se dispone de un DTM. / There is a DTM. ² Instituto Geográfico Agustín Codazzi. IGAC. ³ 30 metros. / 30 mts. ⁴ Es producido con estándares IPGH. / Produced with IPGH standards. ⁵ Base de datos Programa FEAMAN, GFEAMAN, ARGIS, MICROESTATION / Data Base Programme FEAMAN, GFEAMAN, ARGIS, MICROESTATION. ⁶ Diversas fuentes externas / Different external sources ⁷ Programas FEAMAN, GFEAMAN, ARGIS, MICROESTATION / Programmes FEAMAN, GFEAMAN, ARGIS, MICROESTATION.</p>
ECU	<p>¹ El Plan de implementación ETOD – SIG se lo realizará desde el segundo semestre del 2012. / e-TOD. / SIG plan implementation plan will be carried out starting the second half of 2012. ² Dentro del proyecto de implantación del SIG y ETOD, se contempla la capacitación del personal AIM responsable del mismo. / Training of AIM personnel responsible for the SIG and e-TOD Project is contemplated within its implementation. ³ El plan contempla los nuevos requisitos que emanan del concepto operacional de ATM mundial, los servicios de información aeronáutica deben integrarse en un concepto más amplio de gestión de la Información aeronáutica centrada en los datos y también se tiene en cuenta lo establecido en la hoja de ruta de transición del AIS al AIM de Ecuador. / The plan contemplates new requirements which emanate from the global ATM operational concept, the aeronautical information services must be integrated within an ample concept of aeronautical information management centered in data and</p>

ESTADOS/ STATES	COMENTARIOS / COMMENTS
	<p>also what is established in the roadmap for transition from AIS to AIM of Ecuador.</p> <p>⁴ Personal AIS/MAP con experiencia y conocimientos básicos de GIS. / AIS/MAP personnel with experience and basic knowledge of GIS. Equipos Intel Core 2 Duo 3 GHZ, Memoria RAM 4 GB. / Intel Core 2 Duo 3 GHZ, Equipment RAM 4 GB Memory. Software Microstation 95, ArcGIS 9 (En proceso de compra de licencias). / Microstation 95, ArcGIS 9 software (under process of licenses acquisition).</p> <p>⁵ El cronograma estará basado en tiempo establecido para el desarrollo del proyecto, seguimiento a través de Indicadores de cumplimiento de cada etapa./ The Schedule is based in time established for the development of the project, follow-up through indicators of compliance in each stage.</p>
GUY	<p>Estamos en el proceso de entrenar al personal para establecer una dependencia MAP para el AIS. / We are in the process of of training personnel to establish a MAP unit for the AIS.</p>
FGU	<p>¹ Modelo Terreno Digital (DTM). / Digital Terrain Model (DTM).</p> <p>² Organización externa: Institut Geographique National (the French National Geodetic and Mapping Agency) – ver AIC A 2008_31 (https://www.sia.aviation---civile.gouv.fr/dossier%5Caicfrancea%5CAIC_A_2008_31_EN.pdf). Las condiciones para adquirir estos datos (licencias) se encuentran en el catálogo IGN. / External organization: Institut Geographique National (the French National Geodetic and Mapping Agency) – see AIC A 2008_31 (https://www.sia.aviation---civile.gouv.fr/dossier%5Caicfrancea%5CAIC_A_2008_31_EN.pdf). The conditions relating to acquisition of these datasets (licensing) are provided in the IGN catalogue.</p> <p>³ El producto IGN BD ALTI® es una descripción de referencia terrestre del territorio Francés. Los Modelos DTM (Modelos Terrestres Digital) y contornos describiendo el terreno a diferentes escalas (de 1:50 000 a 1:1 000 000) se derivan del BD ALTI®. El BD ALTI® consiste en archivos de vector estructurados del escaneo de contronos del terreno francés. El intervalo de contorno puede variar de 5 a 40 m. Los datos se ingresan en mapas IGN a 1:25 000 a 1:50 000 y de fotografías adicionales a 1:20 000; 1:30.000 y 1:60 000. / IGN BD ALTI® product is a terrain reference description of French territory. DTM (Digital Terrain Models) and contours describing the terrain at different scales (from 1:50 000 to 1:1 000 000) are derived from the BD ALTI®. The BD ALTI® consists of structured vector files from scanning all the contours of French terrain. The contour interval can range from 5 to 40 m. Data is entered on IGN maps at 1:25 000 at 1:50 000 and from additional aerial photographs at 1:20 000; 1:30.000 and 1:60 000.</p> <p>⁴ Excepto en áreas escarpadas donde el IGN-F recolecta datos adicionales para mejorar la precisión. / Except in very steep areas where IGN-F is collecting additional data to improve accuracy.</p> <p>⁵ Los metadatos se pueden obtener gratuitamente en el website de IGN-F, en francés. / Metadata is provided free on IGN-F website, in French.</p> <p>⁶ La recolección y evaluación de los datos existentes está en proceso. Nuevos estudios se realizan cada año (por ejemplo en Guyana Francesa en 2011 y en el Caribe en 2012). / Gathering and assessments of existing data are on going. New surveys are scheduled every year (e.g. in French Guiana in 2011 and the Caribbean in 2012).</p> <p>Obstrucciones aisladas artificiales aparecen en el AIP francés. / Artificial Isolated Obstructions are listed in French AIP; (see/ver: https://www.sia.aviation-civile.gouv.fr/aip/enligne/uk/..%5CPDF_AIPparSSection%5CAIP%20FRANCE%5CENR%5C5%5C1201_ENR---5.4.pdf).</p> <p>⁷ De nuestra organización con apoyo de IGN-F. / From our organization with IGN-F support.</p> <p>⁸ En proceso, con apoyo de IGN-F. / On going with IGN-F support.</p> <p>⁹ La evaluación de datos existentes está en proceso, con apoyo de IGN-F. Los datos nuevos serán compatibles de conformidad con los acuerdos de nivel servicios (SLA) con los proveedores de datos. / Assessments of existing data are on going with IGN-F support. New data will be compliant according to service level agreements (SLA) with data providers.</p>

ESTADOS/ STATES	COMENTARIOS / COMMENTS
	<p>¹⁰ En proceso, con apoyo de IGN-F. / On going with IGN-F support.</p> <p>¹¹ EUROCONTROL está escribiendo un Manual de Datos de Obstáculos del Terreno, un material de guía de datos de obstáculo en el terreno, de acuerdo al Anexo 15 de la OACI. La primera edición del Manual de Datos de Obstáculos del Terreno ha sido evaluado por un Estudio de Pilotos Suizo-Francés para poner el e-TOD en práctica. / EUROCONTROL (European organisation for the safety of air navigation) is writing a "Terrain and Obstacle Data Manual", a guidance material on the provision of Terrain and Obstacle Data (TOD) in accordance with ICAO Annex 15. First release of "Terrain and Obstacle Data Manual" has been evaluated through a Swiss-French Pilot Study in view of putting eTOD into practice.</p> <p>¹² En proceso. / On going.</p> <p>¹³ El entrenamiento en todas las ediciones geodéticas y de cartas. / The training is global on all the geodetic and charting issues.</p> <p>¹⁴ En proceso. / On going.</p> <p>¹⁵ Varios Sistemas de Información Geográfica (GIS) como ESRI ArcGIS. / Various Geographic Information Systems (GIS) such as ESRI ArcGIS.</p> <p>¹⁶ En proceso. / On going.</p>
PER	<p>¹ Solo se cuenta con hojas topográficas a escala 1:100 000 en formato analógico (papel) que fue adquirido al Instituto Geográfico Nacional. / Only available topographic sheets scale 1:100 000 in analogic format (paper) acquired to the IGN.</p> <p>² Sólo se dispone de información gráfica aislada de obstáculos de algunos aeródromos y que aparecen en algunas cartas aeronáuticas, no se encuentra en una base de datos. / Only isolated obstacle graphical information available of some aerodromes and shown in some aeronautical charts, not found in a data base.</p> <p>³ De levantamientos topográficos realizados por la propia organización. / Topographical surveying by same organization.</p> <p>⁴ Se cuenta con equipos de medición GPS R8 diferencial y estación total TOPOCON 7500, 02 estaciones de trabajo HP Z800, software de diseño CAD. / GPS R8 differential measuring equipment available and total station TOPOCON 7500, 02 workstations HP Z800, CAD design software.</p>
URU	<p>¹ En proceso. / Ongoing.</p> <p>² En proceso. De la propia Organización y externa. IGM – Instituto Geográfico Militar. / Ongoing. From the organisation and outised source. IGM.</p> <p>³ En proceso. / Ongoing.</p> <p>⁴ 2011 - 2015</p> <p>⁵ En proceso. / Ongoing.</p> <p>⁶ En proceso. / Ongoing.</p> <p>⁷ Sistema de Información Geográfica ARC-GIS ESRI. / Geographical Information System ARC-GIS ESRI.</p> <p>⁸ 2011 – 2015.</p>

ESTADOS/ STATES	COMENTARIOS / COMMENTS
VEN	<p>*¹ De organización externa. / Outside sources. Southe Radar Topography Mission-National Geospatial Intelligence Agency (NGA) y/and National Aeronautics and Space Administration (NASA).</p> <p>*² 90 metros. / 90 mts.</p> <p>*³ 90 metros. / 90 mts.</p> <p>*⁴ Se tiene archivos de trabajos geodésicos para los Aeropuertos Internacionales de Venezuela, donde hay obstáculos en el alrededor y aprox del aeropuerto. / There are geodetic work files for International Airports in Venezuela, where there are obstacles around and approx to the airport.</p> <p>*⁵ Los archivos mencionados anteriormente se obtuvieron por trabajos de la propia organización. / The files previously mentioned were obtained by Works of the same organisation.</p>

APÉNDICE / APPENDIX E

SUMINISTRO DE LA DOCUMENTACIÓN INTEGRADA DE INFORMACIÓN AERONÁUTICA (IAIP) EN LA REGION SAM / INTEGRATED AERONAUTICAL INFORMATION PROVISION DOCUMENTATION IN THE SAM REGION								
Estado / State	Documentos disponibles / Available documents	Medios electrónicos / Electronic Means		Idiomas / Languages				Observaciones / Remarks
		Internet	CD/DV D	Español / Spanish	Inglés / English	Portugués	Francés	
Argentina	AIP & AIP AMDT	Y	N	Y	Y ⁽¹⁾			(1) eAIP en implementación, uso de carácter experimental. / e-AIP in experimental implementation process.
	SUPP	Y	N	Y	Y			
	AIC	Y	N	Y	Y			
	NOTAM/PIB	Y	-	Y	Y			
Bolivia	AIP & AIP AMDT	N	N	Y	N			Se utiliza producción en papel. Sólo NOTAM de distribución internacional en inglés. / Paper production. Only international NOTAM dissemination in English language.
	SUPP	N	N	Y	N			
	AIC	N	N	Y	N			
	NOTAM/PIB	Y	-	Y	Y			
Brasil / Brazil	AIP & AIP AMDT	Y	N	N	Y	Y		Se utiliza producción en papel. / Printed production.
	SUPP	Y	N	N	Y	Y		
	AIC	Y	N	N	Y	Y		
	NOTAM/PIB	Y	N	N	Y	Y		
Chile	AIP & AIP AMDT	Y	N	Y	Y ⁽¹⁾			⁽¹⁾ Algunas partes en inglés. Sólo NOTAM de distribución internacional en inglés. / Some parts available in English. Only international NOTAM dissemination in English language.
	SUPP	Y	N	Y	Y			
	AIC	Y	N	Y	Y			
	NOTAM/PIB	Y	-	Y	Y			
Colombia	AIP & AIP AMDT	Y	Y	Y	N			Inconvenientes temporarios para suministrar la iAIP en medio impreso. / Temporary inconveniences to provide i-AIP in printed format.
	SUPP	Y	Y	Y	Y			
	AIC	Y	Y	Y	Y			
	NOTAM/PIB	Y	-	Y	Y			
Ecuador	AIP & AIP AMDT	Y	N	Y	N ⁽¹⁾			⁽¹⁾ AIP en inglés estimado para fines 2014. / English AIP estimated by the end of 2014.
	SUPP	Y	N	Y	N			
	AIC	Y	N	Y	N			
	NOTAM/PIB		-	Y	Y			
Guyana	AIP & AIP AMDT	Y			Y			El AIP completo está disponible al momento en copia electrónica. Todas las demás publicaciones están disponibles en copia electrónica. Encriptada, protegida. / The complete AIP available at this time in E-copy. Encrypted protected.
	SUPP	Y			Y			
	AIC	Y			Y			
	NOTAM/PIB	Y			Y			

SUMINISTRO DE LA DOCUMENTACIÓN INTEGRADA DE INFORMACIÓN AERONÁUTICA (IAIP) EN LA REGION SAM / INTEGRATED AERONAUTICAL INFORMATION PROVISION DOCUMENTATION IN THE SAM REGION								
Estado / State	Documentos disponibles / Available documents	Medios electrónicos / Electronic Means		Idiomas / Languages				Observaciones / Remarks
		Internet	CD/DV D	Español / Spanish	Inglés / English	Portugués	Francés	
Guyana Francesa / French Guiana	AIP & AIP AMDT		Y		Y		Y	
	SUPP		Y		Y		Y	
	AIC		Y		Y		Y	
	NOTAM/PIB		-		Y		Y	
Panamá / Panama	AIP & AIP AMDT	N	N	Y	Y			Se utiliza producción en papel. / Printed production.
	SUPP	N	N	Y	Y			
	AIC	N	N	Y	Y			
	NOTAM/PIB	N	-	Y	Y			
Paraguay	AIP & AIP AMDT	Y	Y	Y	N			
	SUPP	Y	Y	Y	N			
	AIC	Y	Y	Y	N			
	NOTAM/PIB	N	-	Y	Y			
Perú / Peru	AIP & AIP AMDT	N ⁽¹⁾	N	Y	N ⁽³⁾			⁽¹⁾ En internet en 2013. / In internet 2013. ⁽²⁾ Para usuarios registrados. / For users only. ⁽³⁾ Parte en inglés en 2013. / Partially in English 2013. ⁽⁴⁾ En inglés en 2013. / English 2013.
	SUPP	N ⁽¹⁾	N	Y	Y			
	AIC	N ⁽¹⁾	N	Y	N ⁽⁴⁾			
	NOTAM/PIB	Y ⁽²⁾	-	Y	Y			
Suriname	AIP & AIP AMDT	N ⁽¹⁾	N	N	Y			⁽¹⁾ En internet el 1Q del 2013. / Internet 1Q of 2013. Producción en papel. / Printed production.
	SUPP	N ⁽¹⁾	N	N	Y			
	AIC	N ⁽¹⁾	N	N	Y			
	NOTAM/PIB	N ⁽¹⁾	-	N	Y			
Uruguay	AIP & AIP AMDT	N ⁽¹⁾	Y	Y	Y			⁽¹⁾ En internet el 1Q del 2014. / Internet 1Q of 2014. ⁽²⁾ 1Q del 2014. / 1Q of 2014.
	SUPP	N ⁽¹⁾	Y	Y	Y			
	AIC	Y ⁽¹⁾	Y	Y	Y			
	NOTAM/PIB	Y ⁽¹⁾	-	Y	Y ⁽²⁾			
Venezuela	AIP & AIP AMDT	N ⁽¹⁾	N ⁽¹⁾	Y	Y			⁽¹⁾ Internet/CD 2012. Actualmente los suplementos, AIC y resumen NOTAM son enviados a usuarios vía e-mail. / AIC and NOTAM Summary are currently sent via e-mail.
	SUPP	N ⁽¹⁾	N	Y	Y			
	AIC	N ⁽¹⁾	N	Y	Y			
	NOTAM/PIB	N ⁽¹⁾	N	Y	Y			
FECHA DE ACTUALIZACIÓN/ UPDATED:		26/07/2013						