International Civil Aviation Organization
South American Regional Office
Fourteenth Meeting of Civil Aviation Authorities of the South American Region (RAAC/14)
(Santiago, Chile, 27, 28 and 30 October 2015)

Agenda Item 4: Follow-up to the Declaration of Bogota:

b) Prioritising the implementation of air navigation improvements

STATUS OF IMPLEMENTATION OF AIR NAVIGATION IMPROVEMENT PRIORITIES

(Presented by the Secretariat)

SUMMARY

This working paper presents the progress made during the period 2014-2015 to date in the implementation of priorities concerning air navigation improvements set forth in the Declaration of Bogota.

References:

- Report of the Meeting of Air Navigation and Safety Directors (Lima, Peru, 21-22 October 2013).
- Report of the Thirteenth Meeting of Air Navigation Authorities (RAAC/13 - Bogota, Colombia, 4-6 December 2013).
- Report of the Second Meeting of Air Navigation and Safety Directors of the SAM Region (Lima, Peru, 14-16 September 2015).

ICAO Strategic Objectives	*A – Safety* *C – Security and facilitation* *E – Environmental protection*

1 Introduction

1.1 In the last few years, the South American Region has shown a high rate of growth in the air transport sector. In order to accompany this growth, the need was felt to introduce capacity and efficiency improvements to the air traffic management system within the framework of safety.

1.2 In this regard, the First Meeting of Air Navigation and Safety Directors of the SAM Region (AN&FS/1) analysed the situation in the Region in terms of both safety and air navigation, and selected five (5) indicators to monitor safety objectives, which focused on safety oversight, accidents and serious incidents, runway excursions and incursions, aerodrome certification, and SSP and SMS implementation. For air navigation objectives, ten (10) indicators were established, focusing on terminal PBN, en-route PBN, CDO, CCO, fuel savings/reduction of CO2 emissions, ATFM, AIM, AMHS interconnection, interconnection of automated systems (AIDC), and implementation of national IP networks.

1.3 After defining the indicators, the AN&FS/1 proposed regional goals that required a commitment at the highest level. Accordingly, the Air Navigation and Safety Directors reviewed a draft Declaration containing regional goals entitled Declaration of Bogota, which was based on the indicators established for monitoring implementation by the PIRG and RASG of the Region.

1.4 The Thirteenth Meeting of Civil Aviation Authorities (RAAC 13) reviewed the content of the Declaration of Bogota and gave its endorsement and approval through Conclusion RAAC/13-8 – *Implementation of air navigation and safety priorities.* Likewise, IATA, ACI-LAC, CANSO, and ALTA welcomed the ICAO initiative and supported the Declaration. Furthermore, the representative of the United States supported the Declaration of Bogota.

1.5 In the Declaration of Bogota, SAM States agree to adopt air navigation and safety implementation priorities in accordance with the regional goals agreed for the period 2014-2016 with the support of international organisations.

2. Discussion

2.1 The implementation of air navigation improvement priorities set forth in the Declaration of Bogota shows significant progress in the implementation of PBN SIDs/STARs at international aerodromes, exceeding the goal established for 2016. Likewise, the goal established for 2014 on reduction of annual emissions, which were based on PBN implementation, has been met. But regarding the implementation of CDO, CCO, ATFM, the interconnection of AMHS and AIDC, the progress has been minimal.

PBN implementation

2.2 The progress made in the implementation of PBN en-route and in terminal area, SIDs and STARs, and PBN approach procedures, compared with the goals of the Declaration of Bogota, as well as progress made in fuel savings during the period 2014 and 2015, are described below.

PBN en-route

2.3 The implementation of RNAV routes in upper airspace has been 20%, totalling 60%, reaching the 60% goal established in the Declaration of Bogota.

PBN in TMA

2.4 PBN implementation in terminal areas continues at a good pace in Brazil, Chile, Panama, and Peru. Out of a selection of 34 candidate TMAs, 6 terminal areas have already been implemented with PBN, expecting to complete the other 6 areas before the end of 2016.

Implementation of SIDs, STARs and PBN approach procedures

2.5 To date, the implementation of SIDs/ STARs amounts to 11% with respect to SIDs and 5% with respect to STARs. The current figure for PBN SIDs/STARs is 64.29%, exceeding the = 60% established in the Declaration of Bogota for this implementation.

2.6 Progress made to date in the application of CDO and CCO operational techniques amounts to 4.52%, which represents only 10% of the goal set forth in the Declaration of Bogota, which is 40%.

2.7 Regarding PBN approaches (APV or RNP AR or LNAV) contemplated in Assembly Resolution A 37/11, implementation reached 65.88% of PBN approaches. For 2016, 100% implementation must be achieved.

Reduction of CO_2 emissions

2.8 As a result of the optimisation of the SAM route network in 2014, the annual goal of 40,000 tonnes of the Declaration of Bogota was exceeded by more than 11,000 tonnes of CO2 reduction, attaining 51,132 tonnes of CO2 reduction.

2.9 Regarding the above, the annual goal of 40,000 tonnes of CO2 reduction has been negatively impacted in 2015 by delays in the PBN redesign of terminal areas (TMA) in several States, which has prevented a timely supply of the new entry and exit points to connect the optimised routes that generate such savings. So far in 2015, annual savings of 2,133 tonnes of fuel have been obtained, equivalent to a reduction of 6,738 tonnes of CO2.

2.10 **Appendix A** to this working paper describes in detail the implementation of PBN en route, in terminal area, SIDs and STARs, and PBN approach procedures, as well as fuel savings achieved during the period 2014-2015.

ATFM implementation

2.11 The progress made in this implementation has not been as expected, despite efforts made by Project RLA/06/901--which prepared and developed guidance material and facilitated ATFM training courses--and the States themselves--which used this material for the implementation of ATFM and the training received. To date, only 42% of the States of the Region have implemented ATFM, and 58% is still pending in order to meet the Declaration of Bogota goal. Appendix A to this working paper contains more information on ATFM implementation to date.

AIS-to-AIM transition

Implementation of Quality Management

2.12 For AIS-to-AIM transition, the commitment set forth in the Declaration of Bogota is 100% implementation in Phase 1, which entails quality management implementation.

2.13 AIM quality management implementation has shown progress in terms of pre-certification activities. To date, 6 SAM States have certified their AIM quality system: Brazil, Chile, Ecuador, French Guiana, Paraguay, and Uruguay. Regarding implementation in the remaining States, in accordance with the information provided: Argentina shows 80% implementation progress, Bolivia 30%, Colombia 90%, Guyana 25%, Panama 70%, Peru 100%, Suriname 45%, and Venezuela 70%. Detailed information on quality management appears in **Appendix B** to this working paper.

AMHS interconnection

2.14 None of the AMHS interconnections contemplated in the Declaration of Bogota have been implemented to date. Out of the 26 interconnections that should have been implemented by the end of 2016, only Peru-Colombia, Peru–Ecuador, Guyana-Suriname, and Argentina-Paraguay were established prior to the Declaration of Bogota, between 2010 and 2013.

2.15 AMHS interconnection trials have been conducted between Brazil-Peru, Brazil-Argentina, with positive results for the exchange of AMHS messages, and they are expected to become operational before the end of 2015. **Appendix C** to this working paper presents a table with the implementation dates for AMHS interconnections foreseen for 2016 as revised by air

navigation directors at the AN&FS/2 meeting. The table shows that there is still the commitment to implement all AMHS interconnections during the remainder of 2015-2016.

AIDC interconnection

2.16 Out of the 15 interconnections contemplated in the Declaration of Bogota, only the AIDC between the Lima ACC and the Guayaquil ACC is operational since the beginning of August 2015. Concerning the remaining AIDC interconnections, 2 are in the pre-operational phase between the Lima ACC and the Bogota ACC, and between the Guayaquil ACC and the Bogota ACC since the beginning of May 2015, expecting to become operational by the last quarter of 2015.

2.17 Positive interconnection trials have been conducted between the Asunción ACC and the Ezeiza ACC, the Bogota ACC and the Panama ACC, and between the new Iquique ACC and the Lima ACC. Regarding the AIDC interconnection between Brazil and adjacent States, it would be completed by the second quarter of 2016 and those between Venezuela and its adjacent States might be implemented after 2016, since a modernisation process was being started at the Maiquetia ACC, to be completed probably after 2016. **Appendix D** contains a table with the implementation dates of AIDC interconnections for the period 2014-2016 as revised by air navigation directors at the AN&FS/2 meeting.

Implementation of national IP networks

2.18 Regarding the implementation of national IP networks, these have been already installed in Argentina, Brazil, Chile, Ecuador, Paraguay, and Uruguay. This represents 55% of total implementation scheduled by the end of 2016. According to the Declaration of Bogota, 80% of the States of the Region should have implemented IP networks by the end of the period 2014-2016, and 100% by 2018. The implementation of national IP networks by State is shown in **Appendix E** to this working paper.

3. **Suggested action**

3.1 The Meeting is invited to:

a) take note of the information presented herein;

b) review the progress made in the implementation of air navigation improvement priorities as shown in section 2 of this working paper and in Appendices A, B, C, D and E, and inform on the action required to meet the goals established in the Declaration of Bogota; and

c) discuss other related matters it may deem appropriate.

-END-

APPENDIX A

Current status of implementation of air navigation improvements in the ATM area

1. **PBN**

National PBN plans and Action Plans update

1.1 In reference with SAM/IG/14-5 Conclusion "*National PBN implementation plans"*, SAM States should present their updated National PBN plans in the SAM/IG meetings. The National PBN Plans submission updated status is shown under **Table 01**. Since GREPECAS/17 meeting (July 2014), the Regional progress in the PBN National plans has been 42%. The goal to achieve in 2015 is 50% and in 2016, 100%.

	ARG	BOL	BRA	CHI	COL	FGY	ECU	GUY	PAN	PAR	PER	SUR	URU	VEN
2015 42%	YES	NO	YES	YES	NO	NO	YES	NO	NO	YES	YES	NO	NO	NO

Table 01 - States that have presented their updated National PBN Plans to date

1.2 Complementing the PBN Plans, SAM Region States should present their Action Plan for PBN-based redesign of their selected airspaces using the Action Plan model approved for that purpose. The status of updated Action Plans is shown under **Table 02**.

	ARG	BOL	BRA	CHI	COL	FGY	ECU	GUY	PAN	PAR	PER	SUR	URU	VEN
2015 78.5%	YES	YES	YES	YES	NO	NO	YES	YES	YES	YES	YES	NO	YES	YES

Table 02 - States that have presented their Action Plans updated for PBN-based redesign in selected airspaces to date

1.3 Since GREPECAS/17, the progress on action plans development for selected airspaces redesign applying PBN has been of 78.5%. Goal of 50% by 2015 has been exceeded and by 2016, the goal is 100% of PBN action plans development.

PBN en-route

1.4 PBN en-route implementation is discussed in the ATS/RO meetings, grounded on the route network versions concept. The usage of the route network versions reflects the need of a periodical review, in a comprehensive manner, in order to guarantee the best possible airspace structure within a comprehensive development concept.

1.5 In this regard, the implementation of Route Network Version 03 depends on a consistent and harmonized implementation in the SAM TMAs and any delay on projects of one or more States affects the rest of the States and the Regional Project as a whole.

1.6 Considering that the complete redesign process of the main SAM TMAs has not yet achieved the required maturity level for a comprehensive implementation, SAM Region States have decided to split the implementation of SAM Routes Network Version 03 in two stages. Stage 1 includes realignment and removal of routes proposals, as well as new RNAV routes implementation based on the current main South American TMAs design. Stage 2 of Routes Network Version 03 includes routes depending on PBN redesigns of main TMAs, which establish the new gateways. This implementation process is being performed in the SAM PBN workshops.

1.7 Since GREPECAS/17 up-to-date, the progress on RNAV routes implementation in the upper airspace has been 20%, reaching 60% and achieving the goal of 60% established in the Bogota Declaration. For a clearer display, **Table 03** below shows the number of upper airspace conventional and PBN regional routes, as well as the percentage of PBN routes achieved.

Upper airspace total ATS routes	Conventional routes	PBN routes	% of PBN routes implemented	Bogota Declaration indicator: % PBN ROUTES
165	66	99	**60%**	**60%**

Table 03 - Upper airspace ATS routes (conventional and PBN)

PBN in TMA

1.8 The processes of complete redesign with PBN application in the main South American TMAs are being performed through PBN workshops, under the support of Regional Project RLA/06/901. Since GREPECAS/17 meeting, four PBN workshops were already carried out, focusing on Planning, Design, Validation and Implementation phases, respectively.

1.9 These workshops were focused on Design phases and Validation of required processes for effective implementation.

1.10 Considering the PBN optimisation impact in the east-west flows among Argentina, Brazil and Uruguay, a series of teleconferences have been started with the Regional Office support and it is expected to carry out a trilateral coordination meeting to establish requirements and procedures that will be applied taking into account the new design. These activities have required longer time in coordination for PBN implementation in said airspaces.

1.11 In the PBN workshops, it has been recognized that one or more leader operators' participation in diverse PBN implementation phases helps collaborative decision-making processes and improves planning, design and validation phases' results. This has been demonstrated, in a practical way, in the projects presented by Chile, Panama and Peru.

1.12 Another positive aspect was the investment, in personnel training mainly in the PANS-OPS area, example PANS-OPS Basic course and PBN held in Ecuador, and PANS-OPS PBN and RNP

AR courses held in Argentina, as well as Peru strategy in sending their experts to the ENAC, France courses. Additionally, Guyana strategy has been distinguished in sending an expert to Airspace Planning training at Singapur's Academy. Procedures design sectors structuring, including the acquisition of logic support for procedures design in Argentina and Peru, as well as currently existent structure in Brazil, also were highlighted during the workshops.

1.13 PBN implementation methodology feasibility proposed during PBN workshops, since initial workshop held in Miami, March 2013, was confirmed by the successful implementations in TMAs Lima and Santiago with PROESA and PAMPA projects, respectively.

1.14 SMS appropriate application was observed by several States, in order to carry out safety validation process of proposed PBN designs.

1.15 It was also verified that Flight Operations Quality Assurance (FOQA) data usage is a resourceful tool for design, and mainly for post-implementation PBN airspace concept assessment, because it offers real data on achieved benefits.

1.16 PBN implementation in terminal areas continues well under way in Brazil, Chile, Panama and Peru and out of 34 selected TMAs, there are already 6 terminal areas with PBN application implemented. In order to progress in this application, major commitment and support from air navigation authorities is needed to complete on time the tasks required for the implementation.

SID, STAR and PBN Approach Procedures implementation

1.17 Bogota Declaration urges States to implement PBN, SID and STAR in international airports, in order to achieve established goals, based on CDO and CCO techniques. Additionally, said Declaration encourages States to implement APV approach procedures, to attend A37-11 Resolution. The data that support the presented information up-to-date on SID, STAR and PBN IAC implementation status in shown in **Table 04**. Following aspects need to be highlighted:

a) Data highlighted in yellow shows participation of each State to achieve Bogota Declaration goals. Red information shows SAM Region status, which is the main indicator to be considered, taking into account that the goal to be achieved is Regional.

b) IAP APV or RNP AR or LNAV columns consider that the apron counts with an APV procedure, with an IAC APV based in RNP APCH with VNAV or by IAC RNP APCH AR. It is also considered that the apron attends to Bogota Declaration requirements and has a LNAV procedure, in accordance with ICAO 37th. Assembly Resolution A37-11. Nevertheless, it is expected that States implement APV procedures.

c) Information was submitted by SAM States and their AIPs. For Colombia, Guyana, French Guiana and Suriname data was collected only from AIP, respectively, taking into account that no direct information from these States has been received up-to-date.

d) SID and STAR RNAV for which no navigation specification was indicated were considered as SID and STAR PBN.

e) Only CDO and CCO airports were considered and followed a complete validation process, considering, among other aspects, controllers training, required changes in Letters of Operational Agreement and operational procedures that avoid aircrafts to unnecessary level during climbing or descent, etc.

Note: SAM States should notify on airports that have followed the implementation process with recommended CDO and CCO.

f) Airports that have at least one apron with IFR operation, in accordance with FASID AOP-1 Table were considered.

g) Aprons operating IFR, in accordance with FASID AOP-1 Table were only considered.

ESTADO/ STATE	IAC							SID		STAR		SID O STAR PBN AIRPORT	CCO	CDO
	APV/LNAV													
	IAP APV	IAP RNPAR	IAP APV o RNP AR	IAP APV o RNP AR AIPORT	IAP RNPAR "ONLY" AIRPORT	IAP LNAV	IAP APV o RNP AR o LNAV	SID PBN AIRPORT	SID PBN	STAR PBN AIRPORT	STAR PBN			
Argentina	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	31,25%	20,83%	31,25%	0,00%	0,00%
Bolivia	20,00%	0,00%	20,00%	33,33%	0,00%	40,00%	40,00%	33,33%	20,00%	0,00%	0,00%	33,33%	0,00%	0,00%
Brasil	82,76%	5,17%	82,76%	85,19%	11,11%	89,66%	89,66%	85,19%	86,21%	33,33%	39,66%	85,19%	10,42%	10,42%
Chile	60,00%	30,00%	75,00%	75,00%	50,00%	85,00%	85,00%	75,00%	61,11%	87,50%	80,00%	87,50%	5,88%	5,88%
Colombia	0,00%	8,33%	8,33%	9,09%	9,09%	75,00%	75,00%	81,82%	83,33%	66,67%	66,67%	83,33%	0,00%	0,00%
Ecuador	0,00%	25,00%	25,00%	25,00%	25,00%	25,00%	25,00%	25,00%	25,00%	25,00%	25,00%	25,00%	0,00%	0,00%
Guyana Francesa /Frc. Guy.	0,00%	0,00%	0,00%	0,00%	0,00%	100,00%	100,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Guyana	0,00%	0,00%	0,00%	0,00%	0,00%	75,00%	75,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Panamá	28,57%	57,14%	57,14%	50,00%	40,00%	57,14%	71,43%	20,00%	28,57%	20,00%	28,57%	20,00%	0,00%	0,00%
Paraguay	100,00%	0,00%	100,00%	100,00%	0,00%	100,00%	100,00%	50,00%	50,00%	0,00%	0,00%	50,00%	0,00%	0,00%
Peru	0,00%	33,33%	33,33%	37,50%	37,50%	11,11%	44,44%	12,50%	22,22%	87,50%	77,78%	87,50%	12,50%	12,50%
Suriname	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Uruguay	0,00%	0,00%	0,00%	0,00%	0,00%	62,50%	62,50%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%
Venezuela	100,00%	0,00%	100,00%	100,00%	0,00%	100,00%	100,00%	100,00%	100,00%	0,00%	0,00%	100,00%	0,00%	0,00%
Región SAM/SAM Region	43,53%	11,18%	50,00%	47,92%	14,43%	63,53%	65,88%	51,55%	51,79%	38,78%	37,06%	64.29%	4,52%	4,52%

Table 04 - Status of implementation of SID, STAR and IAC PBN

1.18 SIDs/STARs implementation progress since GREPECAS/17 up-to-date is 11% in accordance with SIDs and 5% in accordance with STARs. The total current PBN SIDs/STARs is 64.29% and the Bogota Declaration goal of 60% has been exceeded.

1.19 Regarding CDO and CCO operations techniques application progress, since GREPECAS/17 up-to-date same is 4.52%, representing only 10% of the Bogota Declaration, which goal is 40%.

Reduction in CO_2 emissions resulting from airspace optimization in the SAM Region

1.20 As a result of teleconferences held for the implementation of Stage 1 of Version 03, route optimisation network was developed through Amendment SAM 15/01-ATM. In such sense, 13 RNAV routes were added, 7 RNAV routes and 3 conventional routes were aligned as well as 6 conventional and one RNAV routes were removed. During 2014 the goal of 40.000 Tons. established by the Bogota Declaration was exceeded by more than 11.000 Tons. CO_2 reduction. 51.132 Tons. CO_2 reduction was achieved in the South American Region.

1.21 With reference to the above, the annual goal of 40.000 Tons. CO_2 reduction has been negatively impacted during 2015 by the delay of several States in the PBN redesign of their terminal areas (TMA), not allowing them to provide timely new entry and exit points to connect the optimised routes that generate such savings. Moreover, some States have not attended the routes optimisation meetings and PBN design workshops where such issues are treated.

1.22 During 2015 up-to-date, annual savings calculated using the IFSET tool were 2.133 Tons fuel, equivalent to a reduction of only 6.738 Tons. CO_2.

2. **ATFM**

2.1 Implementation has not yet produced the expected results despite efforts made by both Project RLA/06/901, through the drafting and development of guidance material and facilitation of ATFM training courses, and the States themselves, through the use of such material for ATFM implementation and the training received.

2.2 Upon analysing the reasons for delayed effective implementation of air traffic flow management units/positions (FMUs/FMPs), it has been noted that some States are of the opinion that they have not yet reached traffic levels at their airports and ATC sectors that warrant the implementation of elements and functions of an air traffic flow management system. Other States recognise that they have reached full capacity but, due to budgetary, staffing, organisational, and other reasons, they have not been able to start or proceed with their ATFM system.

2.3 Some States that have not yet implemented a minimum ATFM service issue a large amount of messages and NOTAMs, establishing flow control with entry and exit restrictions at different points of FIR boundaries due to the domino effect of the measure.

2.4 Actions thus taken, without any strategic planning, not only impact capacity but also generate a safety risk, especially for transcontinental flows affected by the measures, and affect flight and fuel planning. In some cases, the measures adopted have been disproportionate to the situation at hand.

2.5 The adequate solution to avoid these situations is to implement at least one flow control position or one flow control unit, depending on the level of complexity, at each Area Control Centre (ACC). These positions or units could initially provide services during a selective schedule, based on peak hours. Likewise, a supervisor could cover a flow management position during low traffic hours.

2.6 This implementation is urgently required in order to establish a strategic ATFM measures plan that provides security to users in terms of operational predictability and timely connectivity, since the absence of ATFM units affects all hubs in the Region, causing unnecessary congestion in the parking apron and huge losses to the industry.

2.7 Regarding safety, some inter-regional operations with long-haul flights carrying strict amounts of fuel may have to divert to alternate aerodromes in other States, destabilising normal air traffic flow and congesting airports, thus increasing operational expenditure by users.

2.8 To date, 85% of the States in the Region have conducted runway and ATC sector capacity calculations in preparation to implementation, as shown in the following table:

Percentage of States that have conducted runway and ATC sector calculations

September 2015 85%	ARG	BOL	BRA	CHI	COL	ECU	FGY	GUY	PAN	PAR	PER	SUR	URU	VEN
	YES	YES	YES	YES	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES

2.9 To date, only 42% of the States in the Region have implemented ATFM, subtracting 58% to meet with the Bogota Declaration, as shown in the following table:

Percentage of States that have implemented ATFM in flow management units (FMUs) or flow management positions (FMPs)

September 2015 42%	ARG	BOL	BRA	CHI	COL	FGY	ECU	GUY	PAN	PAR	PER	SUR	URU	VEN
	NO	NO	YES	YES	YES	NO	NO	NO	NO	YES	NO	NO	YES	YES

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APPENDIX B

Current status of implementation of air navigation improvements in the AIM area

1. **AIM**

Implementation of Quality Management Systems in the aeronautical information services (AIM)

1.1 The Project for the implementation of the Quality Management System in AIM processes has made progress in terms of the activities that need to be carried out prior to certification. In this regard, **Uruguay** has certified quality with ISO 9001:2008 standard on 31 August 2015. **Peru** estimates to obtain its certification in October 2015. **Panama** expects to complete the processes and obtain its certification by January/February 2016. **Argentina** expects to certify in February 2016.

1.2 **Colombia** and **Venezuela** still cannot certify their AIM systems, but the most disturbing delays in quality implementation are those of **Bolivia, Guyana,** and **Suriname**.

1.3 In this regard, **Bolivia** reported at the SAM/AIM/8 meeting that the Civil Aviation Authority of Bolivia had requested the top management of the service provider, AASANA, to give more priority to, and take urgent steps to expedite the implementation of quality systems in AIM units and their subsequent certification.

1.4 In order to advance with the AIS-to-AIM Transition Plan, it is necessary to request those States that have not certified their QMS in AIM services and that are below 80% implementation, to submit an Action Plan. In this Action Plan, the experts responsible for implementation in AIM units must provide a detailed description of tasks.

1.5 The main articulating factor for advancing in the certification of quality management systems in the States is top management. Top management, when committed to obtaining the quality certification of systems and processes, helps remove managerial barriers that hinder implementation.

1.6 The Bogota Declaration entails a regional commitment by top management to quality certification of AIM processes. This commitment must be replicated at national level in order to achieve certification as scheduled.

1.7 The latest update on progress in quality implementation is shown in the following table:

STATE	% OF IMPLEMENTATION MARCH 2015	IMPLEMENTATION DATE	% PROGRESS	REMARKS
Argentina	80%	FEB/2016	10%	
Bolivia	30%	TBD	0%	The provider AASANA has trained two experts for quality implementation.
Brazil	**CERTIFIED**	----------	----------	

STATE	% OF IMPLEMENTATION MARCH 2015	IMPLEMENTATION DATE	% PROGRESS	REMARKS
Chile	**CERTIFIED**	----------	----------	
Colombia	90%	FEB/MAR 2016	0%	Information provided on 15/09/2015
Ecuador	**CERTIFIED**	----------	----------	
French Guiana	**CERTIFIED**	----------	----------	
Guyana	25%	DEC/2015	25%	No progress informed
Panama	70%	JAN/FEB 2016	20%	Information provided on 15/09/2015.
Paraguay	**CERTIFIED**	----------	----------	
Peru	100%	OCT/2015	20%	Internal audit conducted.
Suriname	45%	AUG/2014	0%	No progress informed
Uruguay	**CERTIFIED**	AUG/2015	----------	
Venezuela	70%	NOV/2014	0%	No progress informed

Supplementary AIM activities related to the second phase of Roadmap for the transition from AIS to AIM

Status of implementation of eTOD

1.8 Considering that some States have already certified in quality and are entering the second phase of Roadmap for the transition from AIS to AIM, some progress has been made in eTOD implementation in accordance with the standards contained in Annex 15. This is part of the electronic provision of data in the digital phase of AIM, and is of extreme importance for the systems described in paragraph 1.4 above.

Note: *The coverage areas and requirements for the provision of eTOD, as well as the terrain and obstacle data set for these areas are specified in Chapter 10 and its respective appendices, in Annex 15, 14th edition.*

1.9 The status of implementation in the Region of electronic terrain and obstacle data related to the different areas described in Annex 15 is as follows:

AREA 1 - Terrain

1.10 Information was collected on compliance with Area 1 terrain surveying requirements, with the following results:

a) Regarding digital terrain and/or elevation models, the SAM/AIM/7 meeting was presented with a model guide for developing a digital terrain model (MDT) or a digital elevation model (MDE) for AIS. Regarding this implementation, **Argentina, Brazil, Chile, Colombia, French Guiana, Panama, Peru**, and **Venezuela** have a digital terrain and/or elevation or surface model for the development of Area 1. The current percentage of implementation is 56% of States in the Region with digital models. **44% remains to be completed before November 2016. 50% progress achieved since December 2013.**

b) Regarding compliance with Table 8-1 of Annex 15 on terrain requirements for Area 1, the States that meet the requirements are **Argentina, Chile, French Guiana, Panama, Peru**, and **Venezuela.** The current percentage of implementation is 42%. **58% remains to be completed before November 2016. 51% progress achieved since December 2013.**

c) Regarding compliance with ISO standard 19110 for the digital model, **Argentina, Brazil, Chile, Colombia, French Guiana, Panama, Peru**, and **Venezuela** report compliance, reaching 56% of SAM States. **44% remains to be completed before November 2016. 14% progress achieved since December 2013.**

AREA 1 - Obstacles

1.11 Information was collected on compliance with Area 1 obstacle surveying requirements, with the following results:

a) Regarding the availability of an obstacle database covering Area 1, **Argentina, Brazil, Colombia, Peru, French Guiana**, and **Uruguay** meet the requirement, reaching a percentage of compliance in the Region of 42%. **Chile** only complies partially and thus is not considered as completed. **58% remains to be completed by November 2016. 51% progress achieved since December 2013.**

b) **Argentina, Brazil, Chile, Panama, Peru, Uruguay**, and **Venezuela** meet the obstacle requirements established in Table 8-1 for Area 1. The level of compliance in the Region reaches 42%. **58% remains to be completed by November 2016. 51% progress achieved since December 2013.**

AREA 2 - Terrain

1.12 Regarding action plans to obtain electronic terrain data in Area 2a, **Argentina, Bolivia, Brazil, Chile, Panama, Paraguay, Peru**, and **Uruguay** account for **56% of compliance. 44% remains to be completed in 2015. 56% progress achieved since December 2013.**

1.13 Upon analysing compliance with the supply of terrain data corresponding to the take-off path, the States that reported having developed an action plan were **Argentina, Brazil, Chile, Panama, Paraguay, Peru**, and **Uruguay**. The Region has achieved 49% compliance. **51% remains to be completed in 2015. 35% progress achieved since December 2013.**

1.14 Regarding the provision of electronic terrain data corresponding to the area delimited by the lateral extension of the obstacle limiting surfaces of the aerodrome, **Argentina, Brazil**, **Chile**, **Panama**, **Paraguay**, and **Peru** account for **35% of implementation. 65% remains to be completed in 2015. 35% progress achieved achieved since December 2013.**

AREA 2 - Obstacles

1.15 **Argentina, Bolivia, Brazil, Chile, Panama, Paraguay**, and **Peru** have developed action plans for the collection of data for Area 2a regarding obstacles that penetrate the obstacle limiting surface, in accordance with Appendix 8 to Annex 15, reaching 49% compliance. **51% remains to be completed in 2015. 42% progress achieved since December 2013.**

1.16 Likewise, **Argentina, Bolivia, Brazil, Chile, Panama, Paraguay**, and **Peru** reported progress in their action plans for the provision of electronic data on objects protruding from the flat slope of 1.2% with respect to the take-off path. **58% remains to be completed in 2015. 51% progress achieved since December 2013.**

1.17 Regarding the provision of electronic data on penetration of obstacle limiting surfaces at aerodromes, **Argentina, Bolivia, Brazil, Chile, Panama, Paraguay**, and **Peru** have developed action plans to meet this requirement. The percentage of compliance is 49%. **51% remains to be completed in 2016. 42% progress achieved since December 2013.**

1.18 Likewise, **Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, French Guiana, Panama, Paraguay, Peru, Suriname**, and **Uruguay** have adopted the Manual on technical specifications for the implementation of eTOD. **84% progress achieved since December 2013.**

eTOD training in the SAM Region

1.19 Regarding eTOD training in the Region, **Argentina, Brazil, Chile, Colombia, Ecuador, French Guiana, Panama**, and **Uruguay** have eTOD training programmes, **accounting for 56% of States**. **44% remains to be completed in 2015. 51% progress achieved since December 2013.**

1.20 As to the inclusion of operational concepts in training, **the Region has achieved a level of implementation of 72%. 28% remains to be completed in 2015. 72% progress achieved since December 2013.**

1.21 Regarding the equipment and programmes required for managing eTOD information, the Region has achieved a level of compliance of 56% on this requirement. **44% remains to be completed in 2015. 51% progress achieved since December 2013.**

Service Level Agreements (SLAs) and geographic information systems (GIS)

1.22 Regarding the signing of Service Level Agreements (SLAs) between AIM units and data providers, Brazil has issued regulations requiring data providers to meet numerical and quality data requirements. Providers in Chile are both from within and from outside the quality system of the Administration. It is deemed important that an AIC be published containing the numerical requirements in order to keep pace with the relevant changes made to the amendments to Annex 15. **Current SLA implementation can be considered 35%. 35% progress achieved since December 2013.**

1.23 Another achievement related to this Project is the implementation of **Geographic Information Systems (GIS), with a percentage of implementation of 63%** by the States of the Region. **51% progress achieved since December 2013.**

1.24 The following table illustrates the status of implementation of GIS and SLAs:

2015 State	States with automated systems or GIS = 63%	States that establish SLAs = 35%
ARG	**YES**	**YES**
BOL	NO	NO
BRA	**YES**	**YES** (standard)
CHI	**YES**	**YES** within the Integrated Quality System
COL	**YES**	NO
ECU	NO	NO
FGY	**YES**	NO
GUY	NO	NO
PAN	**YES**	NO
PAR	**YES**	NO
PER	**YES**	**YES**
SUR	NO	NO
URU	**YES**	**YES**
VEN	NO	NO

Status of implementation of AIXM

1.25 For this implementation, Peru helped with the coordination and Uruguay provided XML expert knowledge. These experts are currently performing the tasks needed to guide the implementation. Likewise, documents produced by EUROCONTROL and needed as guidance for States have been translated into Spanish.

- END -

APPENDIX C

AMHS INTERCONNECTION REQUIREMENT AND DATE OF IMPLEMENTATION

STATE	AMHS INTERCONNECTION REQUIREMENT/	DATE OF IMPLEMENTATION/	REMARKS
Argentina	Bolivia	Mar 2016	
	Brazil	Dec 2015	Operational implementation pending.
	Chile	Dec 2015	
	Paraguay	Mar 2012	Implemented
	Peru	Nov 2015	
	Uruguay	Dec 2015	
Bolivia	Argentina	Mar 2016	
	Brazil	Apr 2016	
	Peru	May 2016	
Brazil	Argentina	Sep 2015	Operational implementation pending
	Bolivia	Apr 2016	
	Colombia	Dec 2015	
	Guyana	Mar 2016	
	French Guiana	TBD	AMHS implementation pending.
	Paraguay	Dec 2015	
	Peru	Nov 2015	
	Suriname	Mar 2016	
	Uruguay	Dec 2015	
	Venezuela	Dec 2015	Reschedule date of implementation
Chile	Argentina	Dec 2015	
	Peru	Dec 2015	
Colombia	Brazil	Dec 2015	
	Ecuador	Dec 2015	
	Panama	Dec 2015	
	Peru	Sep 2010	Implemented
	Venezuela	Jun 2016	
Ecuador	Colombia	Dec 2015	
	Peru	Jul 2012	Implemented
	Venezuela	May 2016	
French Guiana (France)	Brazil	TBD	AMHS implementation pending
	Venezuela	TBD	AMHS implementation pending
Guyana	Brazil	Mar 2016	

STATE	AMHS INTERCONNECTION REQUIREMENT/	DATE OF IMPLEMENTATION/	REMARKS
	Suriname	Jun 2011	Implemented
	Venezuela	Dec 2016	
Panama	Colombia	Dec 2015	
Paraguay	Argentina	Mar 2012	Implemented
	Brazil	Dec 2015	
Peru	Argentina	Nov 2015	
	Bolivia	May 2016	
	Brazil	Jul 2014	Operational implementation pending.
	Chile	Dec 2015	
	Colombia	Sep 2010	Implemented
	Ecuador	Jul 2012	Implemented
	Venezuela	Dec 2016	
Suriname	Brazil	Dec 2016	
	Guyana	Jun 2011	Implemented
	Venezuela	Jun 2016	
Uruguay	Argentina	Dec 2015	
	Brazil	Dec 2015	
Venezuela	Brazil	Dec 2015	
	Colombia	Jun 2016	
	Ecuador	May 2016	
	Guyana	Dec 2016	
	French Guiana	TBD	AMHS implementation pending.
	Peru	Jun 2016	
	Suriname	Jun 2016	

APPENDIX D/ APÉNDICE D

INTERCONNECTION OF AIDC SYSTEM INTERCONEXIÓN SISTEMAS AIDC

State/ Estado	AIDC interconnection requirement/ Requerimiento de interconexión AIDC	Implementation date/ Fecha de implantación	Remarks / Observaciones
Argentina	Bolivia	TBD (2017-2019)	Bolivia does not count with automated systems. Bolivia no cuenta con sistemas automatizados
	Brazil/Brasil (1)	Second Semester /Segundo semestre 2016	MoU implemented/ MoU implantado Brazil reported that will be ready for AIDC operation interconnection for the second semester of 2016. Brasil reportó que la interconexión operacional AIDC será para el segundo semestre de 2016.
	Chile (2)	First quarter 2016 Primer trimestre 2016	MoU implemented/ MoU implantado Positive AIDC trials were made between ACC Iquique and ACC Cordoba.
	Paraguay (3)	First Quarter / Primer trimestre 2016	Positive trial was made between ACC Asuncion and ACC Ezeiza. Pruebas positivas se realizaron entre el ACC de Asunción y el ACC de Ezeiza. The AIDC operational requirement is between ACC Asuncion and ACC Resistencia. The AIDC in Resistencia ACC is under installation process and will be in operation by the end of 2015. El requerimiento operacional de AIDC es entre el ACC de Ezeiza y el ACC de Resitencia. El ACC de Resistencia está en proceso de instalación y su operación está prevista para finales del 2015.
	Uruguay (4)	First Quarter / Primer trimestre 2016	MoU implemented/ MoU implantado Initial AIDC coordination was made between Argentina and Uruguay.

State/ Estado	AIDC interconnection requirement/ Requerimiento de interconexión AIDC	Implementation date/ Fecha de implantación	Remarks / Observaciones
			Coordinaciones AIC iniciales se realizaron entre Argentina y Uruguay
Bolivia	Argentina	TBD (2017-2019)	Bolivia does not count with automated systems / Bolivia no cuenta con sistemas automatizados
	Brazil/Brasil	TBD (2017-2019)	
	Paraguay	TBD (2017-2019)	
	Peru	TBD (2017-2019)	
Brazil/Brasil	Argentina	Second Semester /Segundo semestre 2016	MoU implemented/ MoU implantado Brazil reported that will be ready for AIDC operation interconnection for the second semester of 2016. Brasil reportó que la interconexión operacional AIDC será para el segundo semestre de 2016.
	Bolivia	TBD (2017-2019)	Bolivia does not count with automated systems/ Bolivia no cuenta con sistemas automatizados.
	Colombia (5)	Second Semester /Segundo semestre 2016	Brazil reported that will be ready for AIDC operation interconnection for the second semester of 2016. Brasil reportó que la interconexión operacional AIDC será para el segundo semestre de 2016.
	Guyana	TBD (2017-2018)	Guyana does not count with AIDC. Guyana no cuenta con AIDC.
	French Guiana (France)/ Guyana Francesa (Francia)	TBD (2017-2018)	French Guiana does not count with AIDC. Guyana Francesa no cuenta con AIDC.
	Paraguay (6)	Second Semester /Segundo semestre 2016	Brazil reported that will be ready for AIDC operation interconnection for the second semester of 2016. Brasil reportó que la interconexión operacional AIDC será para el segundo semestre de 2016.
	Peru (7)	Second Semester /Segundo semestre 2016	MoU implemented/ MoU implantado Initial AIDC trial was made between ACC Lima and ATECH AIDC system in Brazil.

State/ Estado	AIDC interconnection requirement/ Requerimiento de interconexión AIDC	Implementation date/ Fecha de implantación	Remarks / Observaciones
			Pruebas AIDC iniciales se realizaron entre el ACC Lima con el AIDC ATECH en Brasil. Brazil reported that will be ready for AIDC operation interconnection for the second semester of 2016. Brasil reportó que la interconexión operacional AIDC será para el segundo semestre del 2016.
	Suriname/Surinam	TBD (2017-2019)	Suriname does not count with AIDC implemented. Surinam no cuenta con AIDC implantado.
	Uruguay (8)	Second Semester /Segundo semestre 2016	MoU implemented/ MoU implantado Brazil reported that will be ready for AIDC operation interconnection for the second semester of 2016. Brasil reportó que la interconexión operacional AIDC será para el segundo semestre de 2016.
	Venezuela (9)	Second Semester /Segundo semestre 2016	MoU implemented/ MoU implantado Venezuela does not count with AIDC they start a process to modernize the automation system in Maiquetia ACC. Venezuela informed that probably the interconnection of AIDC between ACC Bogotá and ACC Maiquetía will be made in the period 2017-2019. Venezuela no cuenta con AIDC están iniciando un proceso de modernización del ACC de Maiquetía. Venezuela informó que probablemente la interconexión AIDC entre el ACC de Bogotá y Maiquetía será para el periodo 2017-2019.

State/ Estado	AIDC interconnection requirement/ Requerimiento de interconexión AIDC	Implementation date/ Fecha de implantación	Remarks / Observaciones
Chile	Argentina	First quarter 2016 Primer trimestre 2016	MoU implemented/ MoU implantado Positive AIDC trials were made between ACC Iquique and ACC Cordoba. Pruebas positivas AIDC se realizaron entre ACC de Iquique y ACC de Córdoba.
	Peru (10)	First quarter 2016 Primer trimester 2016	Positive AIDC trials were made between ACC Iquique and ACC Lima. Pruebas positivas AIDC se realizaron entre ACC de Iquique y ACC de Lima.
Colombia	Brazil/Brasil	Second Semester /Segundo semestre 2016	Brazil reported that will be ready for AIDC operation interconnection for the second semester of 2016. Brasil reportó que la interconexión operacional AIDC será para el segundo semestre de 2016.
	Ecuador (11)	End 2015/Finales 2015	Positive AIDC trials were made between ACC Bogotá and ACC Guayaquil. AIDC in pre operational phase. Pruebas positivas AIDC se realizaron entre el ACC de Bogotá y el ACC de Guayaquil. AIDC en fase pre operacional.
	Panamá (12)	End 2015/Finales 2015	Positive AIDC trials were made between ACC Bogotá and ACC Panama. AIDC in pre operational phase. Pruebas positivas AIDC se realizaron entre el ACC de Bogotá y el ACC de Panamá. AIDC en fase pre operacional
	Peru (13)	End 2015/Finales 2015	Positive AIDC trials were made between ACC Bogotá and ACC Lima. AIDC in pre operational phase.

State/ Estado	AIDC interconnection requirement/ Requerimiento de interconexión AIDC	Implementation date/ Fecha de implantación	Remarks / Observaciones
			Pruebas positivas AIDC se realizaron entre el ACC de Bogotá y el ACC de Lima. AIDC en fase pre operacional.
	Venezuela (14)	Second Semester /Segundo semestre 2016	Venezuela does not count with AIDC they start a process to modernize the automation system in Maiquetia ACC. Venezuela informed that probably the interconnection of AIDC between ACC Bogotá and ACC Maiquetía will be made in the period 2017-2019. Venezuela no cuenta con AIDC están iniciando un proceso de modernización del ACC de Maiquetía. Venezuela informó que probablemente la interconexión AIDC entre el ACC de Bogotá y Maiquetía será para el periodo 2017-2019.
Ecuador	Colombia	End 2015/Finales 2015	Positive AIDC trials were made between ACC Bogotá and ACC Guayaquil. AIDC in pre operational phase. Pruebas positivas AIDC se realizaron entre el ACC de Bogotá y el ACC de Guayaquil. AIDC en fase pre operacional.
	Peru (15)	August /Agosto 2015	AIDC between ACC Guayaquil and ACC Lima in operational phase since August 2015. AIDC entre el ACC de Guayaquil y el ACC de Lima en fase operacional desde agosto 2015.
French Guiana (France)/ Guyana Francesa (Francia)	Brazil/Brasil	TBD (2017-2018)	French Guiana does not count with AIDC Guyana Francesa no cuenta con AIDC.
	Suriname/Surinam	TBD (2017-2018)	French Guiana and Suriname do not count with AIDC.

State/ Estado	AIDC interconnection requirement/ Requerimiento de interconexión AIDC	Implementation date/ Fecha de implantación	Remarks / Observaciones
			Guyana Francesa y Surinam no cuentan con AIDC.
Guyana	Brazil/Brasil	TBD (2017-2018)	Guyana does not count with AIDC. Guyana no cuenta con AIDC.
	Surinam	TBD (2017-2018)	Guyana does not count with AIDC. Guyana no cuenta con AIDC.
	Venezuela	TBD (2017-2018)	Guyana and Venezuela do not count with AIDC. Guyana y Venezuela no cuentan con AIDC
Panama	Colombia	End 2015/Finales 2015	Positive AIDC trials were made between ACC Bogotá and ACC Panama. AIDC in pre operational phase. Pruebas positivas AIDC se realizaron entre el ACC de Bogotá y el ACC de Panamá. AIDC en fase pre operacional
Paraguay	Argentina	First Quarter / Primer trimestre 2016	Positive trial was made between ACC Asuncion and ACC Ezeiza. Pruebas positivas se realizaron entre el ACC de Asunción y el ACC de Ezeiza. The AIDC operational requirement is between ACC Asuncion and ACC Resistencia. The AIDC in Resistencia ACC is under installation process and will be in operation by the end of 2015. El requerimiento operacional de AIDC es entre el ACC de Ezeiza y el ACC de Resitencia. El ACC de Resistencia está en proceso de instalación y su operación está prevista para finales de 2015.
	Bolivia	TBD (2017-2019)	Bolivia does not count with automated systems. Bolivia no cuenta con sistemas automatizados.
	Brazil/Brasil	Second Semester /Segundo semestre 2016	Brazil reported that will be ready for AIDC operation interconnection for the second semester of 2016. Brasil reportó que la interconexión operacional AIDC será para el

State/ Estado	AIDC interconnection requirement/ Requerimiento de interconexión AIDC	Implementation date/ Fecha de implantación	Remarks / Observaciones
			segundo semestre de 2016.
Peru	Bolivia	TBD (2017-2019)	Bolivia does not count with automated systems. Bolivia no cuenta con sistemas automatizados.
	Brazil/Brasil	Second Semester /Segundo semestre 2016	MoU implemented/ MoU implantado Initial AIDC trial was made between ACC Lima and TECH AIDC system in Brazil. Pruebas AIDC iniciales se realizaron entre el ACC Lima con el AIDC ATECH en Brasil. Brazil reported that will be ready for AIDC operation interconnection for the second semester of 2016. Brasil reportó que la interconexión operacional AIDC será para el segundo semestre de 2016.
	Colombia	End 2015/Finales 2015	Positive AIDC trials were made between ACC Bogotá and ACC Lima. AIDC in pre operational phase. Pruebas positivas AIDC se realizaron entre el ACC de Bogotá y el ACC de Lima AIDC en fase pre operacional
	Chile	First quarter 2016 Primer trimestre 2016	Positive AIDC trials were made between ACC Iquique and ACC Lima. Pruebas positivas AIDC se realizaron entre ACC de Iquique y ACC de Lima.
	Ecuador	August /Agosto 2015	AIDC between ACC Guayaquil and ACC Lima in operational phase since August 2015. AIDC entre el ACC de Guayaquil y el ACC de Lima en fase operacional desde agosto 2015.
Surinam	Brazil/Brasil	TBD (2017-2019)	Suriname does not count with AIDC implemented. Surinam no cuenta con AIDC implantado.

State/ Estado	AIDC interconnection requirement/ Requerimiento de interconexión AIDC	Implementation date/ Fecha de implantación	Remarks / Observaciones
	French Guiana (France)/ Guyana Francesa (Francia)	TBD (2017-2019)	Suriname and French Guiana have not AIDC implemented. Surinam y Guyana Francesa no cuentan con AIDC implantado
	Guyana	TBD (2017-2019)	Suriname and Guyana not have AIDC implemented. Surinam y Guyana no cuentan con AIDC implantado.
Uruguay	Argentina	First Quarter /Primer trimestre 2016	MoU implemented/ MoU implantado Initial AIDC coordination was made between Argentina and Uruguay. Coordinaciones AIDC iniciales se realizaron entre Argentina y Uruguay.
	Brazil/Brasil	Second Semester /Segundo semestre 2016	MoU implemented/ MoU implantado Brazil reported that will be ready for AIDC operation interconnection for the second semester of 2016. Brasil reportó que la interconexión operacional AIDC será para el segundo semestre de 2016.
Venezuela	Brazil/Brasil	Second semester /Segundo semestre 2016	MoU implemented/ MoU implantado Venezuela does not count with AIDC they start a process to modernize the automation system in Maiquetia ACC. Venezuela informed that probably the interconnection of AIDC between ACC Bogota and ACC Maiquetia will be made in the period 2017-2019. Venezuela no cuenta con AIDC están iniciando un proceso de modernización del ACC de Maiquetía. Venezuela informó que probablemente la interconexión AIDC entre el ACC de Bogotá y Maiquetía será para el periodo 2017-

State/ Estado	AIDC interconnection requirement/ Requerimiento de interconexión AIDC	Implementation date/ Fecha de implantación	Remarks / Observaciones
			2019.
	Colombia	Second Semester /Segundo semestre 2016	Venezuela does not count with AIDC they start a process to modernize the automation system in Maiquetia ACC. Venezuela informed that probably the interconnection of AIDC between ACC Bogota and ACC Maiquetía will be made in the period 2017-2019. Venezuela no cuenta con AIDC están iniciando un proceso de modernización el ACC de Maiquetía. Venezuela informó que probablemente la interconexión AIDC entre el ACC de Bogotá y Maiquetía será para el periodo 2017-2019.
	Guyana	TBD (2017-2019)	Guyana and Venezuela do not count with AIDC. Guyana y Venezuela no cuentan con AIDC.

APPENDIX E / APENDICE E

IMPLEMENTATION OF DOMESTIC IP NETWORKS /
IMPLANTACION DE REDES IP NACIONALES

STATE/ESTADO	IP APPLICATIONS IMPLEMENTED/ APLICACIONES IP IMPLANTADAS	IMPLEMENTATION DATE OF DOMESTIC IP NETWORK FOR ALL IP APPLICATIONS/ FECHA DE IMPLANTACION DE RED IP NACIONAL PARA TODAS LAS APLICACIONES EN IP
Argentina	AMHS, DATA RADAR, IP VOICE/VOZ IP	2005
Bolivia	AMHS	2016
Brazil/Brasil	AMHS, DATA RADAR, IP VOICE/VOZ IP	2015
Chile	AMHS	2015
Colombia	AMHS, RADAR	2016
Ecuador	AMHS, RADAR	2014
French Guiana (France) / Guyana Francesa (Francia)	No	2018
Guyana	AMHS	2018
Panamá	AMHS, RADAR	2016
Paraguay	AMHS	2014
Perú	AMHS, RADAR	2016
Suriname/Surinam	AMHS	2018
Uruguay	AMHS RADAR	2014
Venezuela	AMHS	2015

Green = Implemented
Verde = Implantada

- END / FIN -