



**Agenda Item 3: Review of GREPECAS Programmes and Projects**

**3.5 Projects of the Aerodromes Programme (B0-SURF and B0-ACDM)**

**FOLLOW-UP OF AERODROME PROJECT ACTIVITIES**

(Presented by the Secretariat)

<b>SUMMARY</b>	
This working paper presents to the meeting the progress of the activities carried out by the aerodromes programme projects, and information on the status of implementation of the activities and tasks of said mentioned projects. The updated implementation dates of each project are shown in <b>Appendices A and B</b> for the CAR Region and in <b>Appendices C and D</b> for the SAM Region.	
<b>References:</b>	
<ul style="list-style-type: none"><li>• Report of the GREPECAS/17 meeting, July 2014</li><li>• Report of the PPRC/2 Meeting, July 2013</li></ul>	
<i>Strategic Objectives:</i>	<i>A – Safety</i> <i>B – Environmental Protection</i>

**1. Introduction**

1.1 In the Seventeenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/17) it was informed upon the approval of the Meeting of the Second Programmes and Projects Review Committee (PPRC/2) on the fusion of several projects under Programme F, maintaining the following projects under development according to their tasks and activities:

- *Project CAR AGA F1 – Aerodrome certification improvements*
- *Project CAR AGA F2 – Improve Runway Safety*
- *Project SAM AGA F1 – Aerodrome certification*
- *Project SAM AGA F2 - Runway safety improvement*

1.2 During the GREPECAS/17 Meeting it was reiterated the scarce participation of States in the review process and its comments to new proposed amendments for ICAO Standards and Recommended Practices (SARPs) in Annex 14, accepting or refusing them which in turn affect adversely the hard task of its implementation by States and their airports, mainly those having significant non-compliance issues with SARPs.

1.3 The lack of State's experts available to assist the project coordinators was also mentioned during GREPECAS/17 Meeting, which is still one of the main reasons for the delay in the tasks and activities and is reflected in the progress achieved by these aerodrome projects.

## **2. Analysis**

2.1 In order to facilitate the review of the GREPECAS projects, **Appendices A** and **B** lists the activities of the CAR Region projects and **Appendices C** and **D**, the activities of the SAM Region projects.

2.2 In compliance with GREPECAS Conclusion 16/49, coordinators and experts collaborating with the projects should receive the support of their respective Civil Aviation Authorities through face-to-face meetings, teleconferences (GoToMeeting), etc. The success of the objectives of the projects of the Aerodromes Programme will depend on the availability of human resources, necessary for the achievement of the times assigned to such projects. If the necessary human resources, supported by their CAA, are not available, the development of the AGA projects would be interrupted, falling the workload on the programme coordinator.

2.3 However, up-to-date the Aerodrome Programme projects objectives had significant progress in comparison with the previous review meeting, although the coordinators in each of the projects were the same and not having the support of the specialists requested from States.

## **3. Status of implementation of CAR projects**

3.1 The Project F1 addresses the Aerodrome Certification related matters, which considers 4 main tasks: Training for Aerodrome Inspectors, Establishment of the Aerodrome Certification process, Preparation of Certification Manuals and Issuance of Aerodrome Certification.

3.2 The second Project F2 - *Improvements of runway safety*, is related with aspects that are under aerodrome operator's control and not related to Air traffic Control factors. For this project execution, three stages are considered:

- a) Stage 1: is found in an inventory for each taxiway that enters the runway, taxiway geometry at runway entrance, also signage, signs and lightning in the taxiway wait point for entrance to the runway (stop bars, runway security lights), and runway wait point location
- b) Stage 2: it is focused on runway excursions mitigation actions through the provision of good conditions in the runway Surface, avoid surface pollution, and repainting dim signs, such as the replacement of runway lights that are not functioning, as well as daily inspections
- c) Stage 3: it is focused on mitigation actions due to the damage caused to aircrafts that climb from the runway through provision and compliance of the runway strip leveled portion, objects free, and compliance with RESA supply. For insufficient and incorrigible RESAs, the project will provide material in accordance with Annex 14, Volume 1

3.3 These three stages are interconnected and understand the situations of land operation, landing, properly said, and runway climb. This task has been executed between Project Coordinator and Programme Coordinator. State's experts support is not taken into account.

3.4 As part of Project F1 tasks and activities, the following technical assistance missions were carried out:

- a) Assistance Mission (TEAM) to Dominican Republic on Aerodrome Certification Implementation (November 2014) to start with the certification process (has 8 international aerodromes), with Mexico and COCESNA/ACSA experts participation;
- b) Technical Mission to Saint Lucia (June 2015) to start aerodrome certification (Hewanorra Intl.); and
- c) Assistance Mission (TEAM) to Honduras on Aerodrome Certification Implementation (San Pedro Sula – July 2015).

3.5 Regarding the first phase of the project F2 – *Improve Runway Safety*, information was gathered from several international airports in the CAR Region to verify SARPs compliance. In accordance with the analysis performed to some CAR Region States several improvements have been implemented in order to avoid Runway incursions, however, still exists a high level of non-compliance in signage, visual aids, lightning, runway strips and RESAs, among others. There are no practices to mitigate Runway excursions, to this end, the project will provide mitigation measures guideline. Likewise, with this project is intended that airport operators comply with Annex 14, Volume 1 requirements and meet aerodrome operation stakeholders and service providers in order to take corrective actions that allow runway safety.

3.6 For major analysis in the CAR Region situation, it is planned to carry out the Workshop on Best practices to prevent Runway Incursion/Runway Excursions, from 11 to 14 August 2015, to discuss the analysis made to the survey and to propose better practices of some States to avoid and/or improve taxiway designs to prevent runway incursions with the corresponding visual aids complement.

3.7 Regarding the two projects currently in execution in the CAR Region, Project F1 – *Aerodrome Certification Improvements* it has increased the number of certified aerodromes in 10% achieving up-to-date 35% and, as consequence, it has reduced the number of deficiencies reported in the GANDD. It has been foreseen to reach 40% by the end of 2015, and achieve the goal expected in the *Port-of-Spain Declaration*, which is 48% by the end of 2016. Project F2 – *Improve Runway Safety* intends to improve aircraft safe operations in aerodromes reducing the number of events related to runway incursions and excursions, as well as the number of deficiencies reported in the GANDD, which high rate is related with the runway strips requirements, RESA and visual aids non-compliance, among others. This project contributes to the aerodrome certification progress with operational aspects and SARPs compliance. However, due to lack of State's experts' participation this project has not achieved significant progress at this time.

#### 4. **Status of implementation in the SAM Region**

4.1 “Project SAM AGA F1 – Aerodrome Certification”. The first and most difficult task in F1 has been the development of the Latin American Regulations for Aerodromes (LAR AGA). The LAR AGA set: LAR 139 – Aerodromes Certification, LAR 153 – Aerodromes Operation, LAR154 – Aerodromes Design, the Aerodromes Inspector Manual (MIAGA) and related Advisory Circulars is a task that is being developed thanks to the financing provided by RLA/99/901 Project – SRVSOP (*Sistema Regional de Cooperación para la Vigilancia de la Seguridad Operacional*). The purpose of developing aerodromes regional regulations is due to the need of the Region to have regulations applicable to our reality, always in achievement of ICAO SARPs, which enable their harmonization/adoption by member States, with their national regulations and use the services of Aerodromes Multinational Inspectors when necessary.

4.2 On the other hand, the experts' panel has proposed the approval of LAR 155 – Heliports and PANS LAR AGA, based on the adoption of the recent document published by ICAO, Doc 9188. The PANS LAR AGA includes, inter alia, procedures that will allow the granting of an initial certification to the aerodromes, and that will become an important part of the regional regulations.

4.3 The second task refers to the training of aerodromes specialists/inspectors. Since PPRC/1, under the umbrella of regional projects (RLA/99/901 and RLA/06/901), the training of aerodromes inspectors on the new LAR AGA regulations and the Aerodromes Inspector Manual (MIAGA) has been developed. Since 2010, the following activities have been developed:

- a) Aerodromes Inspector Courses (GSI AGA) – six (6);
- b) Course for the Formation of Internal Auditor for Aerodrome Government Inspectors;
- c) Aerodromes Inspector Course for Instructors;
- d) Seminar on LAR AGA set – three (3);
- e) Seminar on Aerodromes Planning;
- f) Seminar on Aerodromes Certification;
- g) Seminar on Aircraft Operation in Aerodromes of minor category;
- h) Seminars/workshops on Aeronautical Studies and Risk Assessment – four (4);
- i) Seminar/workshop on SMS implementation in aerodromes;
- j) Seminar/workshop on Emergency Plans (Volcanic Ash);
- k) Seminar on Aerodromes Data Quality;
- l) Seminar on PANS-Aerodromes;
- m) Workshop on Heliports Operation – two (2);
- n) Multinational activities, Aerodrome Certification Trials: 1) Carrasco International Airport in Uruguay (Phase 3); and 2) Jorge Chávez International Airport in Peru (Phase 1).

4.4 The activities mentioned in 4.2 above have been part of the training plan of Aerodromes Multinational Inspectors. AGA Inspectors complying with all the requirements established by SRVSOP at the moment are 11 of 8 SRVSOP member States, who are trained to provide assistance to States that so require under the agreements specified in the SRVSOP in the different AGA specialties.

4.5 Currently, SAM certified international airports to January 2015 are 12 (12%) from the 8 originally registered, that is an increase of 50%, but still below the proposed goal for December 2016 in the Declaration of Bogota, of 20% certified aerodromes from the 104 international airports of the Region. With the introduction of PANS LAR AGA, it is expected that States will be able to significantly increase the percentage of certification.

4.6 Considering that the activities concerning this project are related to the amendments of ICAO SARPs (Annex 14), especially the introduction of amendment 12 presenting PANS Aerodromes, it was deemed appropriate to extend the duration of the project for a period of three years (until 2018), so that the standards and their harmonization are adequately introduced in the regional regulations.

4.7 “Project SAM AGA F2 – Runway safety improvement”. This project has proposed a strategy of non-duplication of efforts, but to support national and international initiatives from the AGA point of view. Since PRCC/1 a workshop on Visual Aids – New Technologies was carried out in Lima, from 7 to 11 May 2012, being one of the objectives the reduction of runway incursions with appropriate marking. It also supported the organization of the Runway Safety Seminar for the SAM Region carried out in Quito, Ecuador from 16 to 19 July 2012, and is assisting States/Aerodromes in the creation of the RST (Runway Safety Teams).

4.8 On the other hand, in view that GREPECAS programmes and projects have suffered changes and adjustments to improve the scope of the objectives, projects have been adapted to ASBU requirements in BO-SURF and B0-ACDM. However, it should be noted that both projects are outlined within the safety programme and not exactly defined in the ASBU.

5. **Suggested action**

5.1 The meeting is invited to:

- a) take note of the information provided in this working paper;
- b) analyze the document and Appendices A, B, C and D respectively, with a view to approving the corresponding planning, progress and implementation;
- c) consider the progress achieved in AGA projects, the human resources required for good and efficient project development, and the implementation of ASBU methodology;
- d) agree on other actions that are deemed appropriate.

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## APPENDIX A

## PROJECT ON AERODROME CERTIFICATION IMPROVEMENTS IN THE CAR REGION

CAR Region	PROJECT DESCRIPTION (PD)	PD N° F1	
Programme	Title of the Project	Start	End
<i>Aerodromes</i>  (ICAO Programme Coordinator: Jaime Calderon)	Aerodrome Certification Improvements  <b>Project Coordinator: Norberto Cabrera (Cuba)</b>  <b>Experts contributing to the project: Jorge Puquirre (El Salvador)</b>	October 2011	December 2016
<b>Objective</b>	Aerodrome certification will ensure compliance with ICAO SARPs, providing operational services, equipment and installations according to the operations intended at the aerodrome and facilitating safe and efficient aircraft operations.		
<b>Scope</b>	<ul style="list-style-type: none"> <li>Identify the level of implementation of the aerodrome certification process in the CAR Region</li> <li>Identify training needs and develop relevant training programmes</li> <li>Provide training to aerodrome inspectors with regards to aerodrome related documentation</li> <li>Prepare the corresponding certification documentation</li> <li>Implementation of SMS at aerodromes</li> <li>Aerodrome certification inspection by the aeronautical authority</li> <li>Issuance of the aerodrome certificate</li> </ul>		
<b>Metrics</b>	<ul style="list-style-type: none"> <li>Number of aerodromes certified</li> <li>Number of reported deficiencies in the GANDD</li> </ul>		
<b>Strategy</b>	<ul style="list-style-type: none"> <li>Provide training to aerodrome inspectors in the aerodrome certification process, its implementation, the content of the aerodrome manual, SMS implementation, and exemptions.</li> <li>Conduct an aeronautical study when aerodrome standards cannot be met and a technical analysis that will provide justification on the grounds, that an equivalent level of safety can be attained by other means when specifically recommended in Annex 14, Volume I.</li> <li>Provide training to aerodrome inspectors in their operational oversight duties including the various related disciplines.</li> </ul> <p>All tasks are performed by experts nominated by CAR States under the discretion of the project coordinator. Communications among project members and between the project coordinator and the programme coordinator are done via teleconference and internet.</p>		
<b>Goals:</b>	<p>With this project it is expected to assist States in their main implementation goals as follows:</p> <ul style="list-style-type: none"> <li>Achieve 48% of aerodrome certification in the CAR Region.</li> <li>Diminish 50% of the GANDD reported deficiencies in the CAR Region.</li> </ul>		

<b>Rationale</b>	<ul style="list-style-type: none"> <li>• ICAO USOAP audits reveal a large number of aerodromes that have not been certified because of lack of qualified personnel in highly specialized areas, and lack of knowledge of relevant regulations</li> <li>• Aerodromes that were built a long time ago with no consideration of ICAO SARPs</li> </ul> <p>This project contributes to the implementation of CAR PFF 07 of the CAR Performance-based Air Navigation Plan (RPBANIP)</p>
<b>Related Projects</b>	<p>The following project was defined in the last meeting of the AGA/AOP/SG/8 and is related to the objective of this DP:</p> <ul style="list-style-type: none"> <li>• Improvement of runway safety</li> </ul>

<b>Project Deliverables</b>	<b>Relationship with the regional performance-based plan (PFF)</b>	<b>Responsible</b>	<b>Status of Implementation 1</b>	<b>Date of Delivery</b>	<b>Comments</b>
<ul style="list-style-type: none"> <li>• Identify the level of implementation of the aerodrome certification process in the CAR Region.</li> <li>• Develop an action plan focused on common aerodrome certification issues in the CAR Region.</li> </ul>	PFF CAR 07	Norberto Cabrera		December 2012	<p>Finalized.</p> <p>The Regional Workshop on Overcoming the Challenges faced by States with Aerodrome Certification was held in the NACC Office, Mexico, 20-23 September 2011, to identify the level of aerodrome certification implementation in the CAR Region.</p> <ul style="list-style-type: none"> <li>• Some common issues were identified in the CAR Region with regards to aerodrome certification and a training programme was developed for aerodrome inspectors according to States requirements.</li> </ul>
<ul style="list-style-type: none"> <li>• Identify training needs and develop the relevant training related programmes.</li> <li>• Provide training to aerodrome inspectors in aerodrome related documentation</li> </ul>	PFF CAR 07	Norberto Cabrera		December 2012	<p>Finalized.</p> <p>Two workshops were carried out for aerodrome inspectors and one on the use of aeronautical studies.</p> <ul style="list-style-type: none"> <li>• Saint Maarten, 11-15 June 2012, in English</li> <li>• NACC Regional Office, 1-4 October 2012, in Spanish</li> <li>• ICAO NAM/CAR Workshop on the use of Aeronautical Studies in the Aerodrome Certification Process, 21-24 August 2012.</li> </ul>

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible	Status of Implementation <sup>1</sup>	Date of Delivery	Comments
Development of the aerodrome certification related documentation	PFF CAR 07	Norberto Cabrera		December 2014	<p>Finalized</p> <p>The Regional Workshop on GREPECAS Project F1 - Aerodrome Certification Improvements, was held in the ICAO NACC Regional Office, Mexico City, from 14 to 18 October 2013 focused on the content of the aerodrome manual.</p> <p>In addition, the Aerodrome Inspectors Workshop - GREPECAS Project F1 CAR Activity was held in Port-of-Spain, Trinidad and Tobago, from 9 to 13 June 2014.</p>
SMS Implementation at aerodromes	PFF CAR 07	Norberto Cabrera		December 2014	<p>Finalized</p> <p>The Aerodromes SMS Implementation Workshop (SMS) – GREPECAS Project F12 Activity was held in the ICAO NACC Office, from 18 to 21 March 2014 for Spanish speaking States to determine the status of implementation of SMS in the CAR Region.</p>

Project Deliverables	Relationship with the regional performance -based plan (PFF)	Responsible	Status of Implementation 1	Date of Delivery	Comments
Aerodrome Certification inspection by the Civil Aviation Authority.	PFF CAR 07	Jaime Calderon		December 2016	<p>To be finalized by Dec 2016.            Previous to the issuance of an Aerodrome Certificate, the regulatory body should carry out audits and continuous surveillance.            As part of activity, the following technical assistance missions were carried out:</p> <ul style="list-style-type: none"> <li>- Assistance Mission (TEAM) to Dominican Republic on Aerodrome Certification Implementation (November 2014) to start with the certification process (has 8 international aerodromes), with Mexico and COCESNA/ACSA experts participation;</li> <li>- Technical Mission to Saint Lucia (June 2015) to start aerodrome certification (Hewanorra Intl.); and</li> <li>- Assistance Mission (TEAM) to Honduras on Aerodrome Certification Implementation (San Pedro Sula – July 2015).</li> </ul>
Issuance of the aerodrome certificate.	PFF CAR 07	TBD		December 2016	Once all the previous steps are implemented the aerodromes can be certified.
<b>Resources needed</b>	Designation of experts by States are needed in the execution of some of the deliverables				

## APPENDIX B

## PROJECT ON IMPROVE RUNWAY SAFETY IN THE CAR REGION

CAR Region	PROJECT DESCRIPTION (DP)	DP N° F2	
<i>Programme</i>	Title of the Project	Start	End
<i>Aerodromes</i>  (ICAO Programme Coordinator: Jaime Calderon)	Improve runway safety  <b>Project coordinator: George Legarreta (USA)</b>  <b>Experts contributing to the project: None</b>	October 2011	December 2015
<b>Objective</b>	The objective of the project is to examine aerodromes in the CAR Region to verify Annex 14 compliance mainly on the provision of markings, signage, lighting, runway strips and runway end safety areas in order to reduce the number of runway incursions and excursions related events. In addition the Project will provide guidelines to aerodrome operations personnel, to avoid and reduce the number of related incidents and provide mitigation measures.		
<b>Scope</b>	The runway safety project is aimed at aerodromes rather than at factors related to air traffic control (ATC). This project has three parts including: mitigation actions for runway incursions (RI) and runway excursions (RE) and the compliance of standards and recommended practices for the runway strip and the runway end safety area (RESA). These 3 parts are interrelated, taking into account the phase before landing on the runway principally the landing surface of the runway, taxiways for aircraft entering the runway, and the areas prepared for runway excursion.		
<b>Metrics</b>	<ul style="list-style-type: none"> <li>• Number of aerodromes certified</li> <li>• Reduce the number of reported deficiencies in the GANDD that affect the 3 parts of this project.</li> <li>• Number of events regarding runway incursions and excursions.</li> </ul>		
<b>Strategy</b>	<p>For the purpose of the project implementation, the following three stages are considered:</p> <ul style="list-style-type: none"> <li>• Stage 1: Focuses on an inventory of each taxiway into the runway, the geometry of the taxiway into the runway, as well as markings, signs and lighting at the taxi-holding position (stop bars, runway safety lights), and the location of the runway holding position. This part also includes daily inspections of the movement area at the taxiway entry points, markings, signs, and lighting.</li> <li>• Stage 2: Focuses on actions to mitigate runway excursions by ensuring good runway surface conditions, avoiding contamination, and replacing inoperative runway lights, as well as through daily inspections. One of the main problems in runway excursions is the accumulation of water or rubber under wet runway surface conditions. In this regard, the project will provide guidance material that includes procedures for identifying excursions due to ponding of water on the runway and rubber accumulation and for its removal.</li> <li>• Stage 3: Focuses on actions to mitigate damage caused to aircraft exiting the runway, through provision and compliance with a levelled and object free runway strip portion, and compliance with the provision of runway end safety areas (RESA) in accordance with Annex 14, Vol. 1. In order to determine if facilities meet the standards, the GANDD will be used to gather information on specific deficiencies related to the runway strip and the RESA. The GANDD will enable grouping in deficiency type and, based on that, definition of action plans.</li> </ul>		

	<p>For RESAs that are insufficient and that cannot be corrected, the project will provide guidance material on the use of declared distances and possible placement of proven arrestor system per Annex 14, Volume I.</p> <p>All tasks are carried out between the project coordinator and programme coordinator respectively. There is no support by States experts. Communication between project coordinator and the programme coordinators are done through teleconference and the Internet.</p>
<b>Goals</b>	<p>With this project it is expected to assist States in their main implementation goals as follows:</p> <ul style="list-style-type: none"> <li>• Achieve 48% of aerodrome certification in the CAR Region.</li> <li>• Diminish 50% of the GANDD reported deficiencies in the CAR Region that affect the 3 parts of this project.</li> </ul>
<b>Rationale</b>	<ul style="list-style-type: none"> <li>• Some States in the CAR Region have implemented best practices to avoid runway incursions however there is a high ratio of noncompliance with surface markings, visual aids, lighting, runway strips and RESAs among others.</li> <li>• There is lack of best practices for mitigating runway excursions; the project will provide guidelines on mitigating measures.</li> <li>• There is a high rate of runway excursions, and the establishment of runway safety teams (RSTs) is deemed essential.</li> <li>• With the project it is expected from the airport operators compliance with Annex 14 Volume I and to bring together all involved in aerodrome operations and service providers in order to take written corrective actions for improving runway safety.</li> </ul> <p>This project contributes to the implementation of PFF CAR 07 of the CAR Performance-Based Air Navigation Plan (RPBANIP)</p>
<b>Related projects</b>	<p>The following project was defined in the last meeting of the AGA/AOP/SG/8, and is related to the project described in this DP:</p> <ul style="list-style-type: none"> <li>• Aerodrome certification</li> </ul>

<b>Project Deliverables</b>	<b>Relationship with the regional performance-based plan (PFF)</b>	<b>Responsible</b>	<b>Status of Implementation 1</b>	<b>Date of Delivery</b>	<b>Comments</b>
Development of a formulaire to carry out an inventory of each taxiway entering onto the runway, including the geometry of the taxiway entering onto the runway, as well as markings, signage, and lighting of the taxi-holding position (stop bars, runway safety lights), and the location of the runway-holding position.	PFF CAR 07	George Legarreta		July 2015	<p>Activities were initiated and will extend to December 2013.</p> <ul style="list-style-type: none"> <li>• The formulaire was developed and circulated to States on 5 July 2012 (EMX0375), having received approximately 15% of the aerodromes included in the ANP.</li> <li>• During the workshop planned for first semester 2015 the final results of the survey will be presented and will require participants to provide information.</li> </ul>

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible	Status of Implementation <sup>1</sup>	Date of Delivery	Comments
Implementation of mitigating actions for runway excursions by providing good runway surface conditions, avoiding surface contamination, and provide changes and the recommended longitudinal slopes, repainting faded markings, and replacement of inoperative runway lights, as well as carrying out daily inspections.	PFF CAR 07	George Legarreta		July 2015	The project will provide guidance material including procedures for identifying runway excursions due to rubber buildup and removal. These topics will be discussed during the workshop planned for first semester 2015.
Implementation of mitigating actions due to damage caused to aircraft overrunning the runway through compliance with the graded portion of the runway strip and runway end safety area (RESA) with Annex 14, Vol. 1. The GANDD will enable grouping by type of deficiency and thus determining action plans.	PFF CAR 07	George Legarreta		December 2016	For insufficient RESAs and cannot be fully adjusted, the project will provide guidance material on the use of the declared distances and the installation of proven arrestor systems such as the EMAS.
<b>Resources needed</b>	Designation of experts by States for the execution of some of the deliverables				

## APPENDIX C

## PROJECT ON AERODROME CERTIFICATION

SAM Region	PROJECT DESCRIPTION (DP)	DP N° F1	
<i>Programme</i>	Title of the Project	Start	End
Aerodromes (ICAO programme coordinator: Lia Ricalde)	Aerodrome Certification  <i>Project coordinator:</i> Ricardo Aguirre (Colombia)  <i>Experts contributing to the project:</i> Alejandro Álvarez / José Martínez Cal (ANAC – Argentina) René Delgado (DGAC – Bolivia) Marcos Pecanha / Edwilson Sena dos Santos (DECEA – Brazil) Rodrigo Silva / Renzi Jara (DGAC - Chile) Aldemar Pinzón (AEROCIVIL - Colombia) Augusto Diaz (DGAC – Ecuador) Hugo Mendoza / Roque Florentín (DINAC – Paraguay) Adolfo Medina / Juan Flor / Carlos Luque (DGAC – Peru) Carlos García Pepe (DINACIA – Uruguay)	2010	2018
<b>Objective</b>	Improvement in the efficiency, capacity and safety of airport operations.		
<b>Scope</b>	<ul style="list-style-type: none"> <li>• CDM at the airport</li> <li>• Implementation of aeronautical data quality and availability</li> <li>• Aerodrome certification at regional level</li> <li>• Airport planning</li> <li>• Airport capacity calculation of international airports</li> <li>• Heliport safe operations</li> </ul>		
<b>Metrics</b>	<ul style="list-style-type: none"> <li>• Percentage of international aerodromes with A-CDM implemented</li> <li>• Percentage of deficiencies eliminated regarding the non-compliance of the CAR/SAM Air Navigation Plan</li> <li>• Percentage of international aerodromes with updated obstacle data</li> <li>• Percentage of certified international aerodromes</li> <li>• Percentage of trained AGA inspectors</li> <li>• Percentage of international aerodromes with master plans</li> <li>• Percentage of international aerodromes with calculated aerodrome capacity</li> <li>• Percentage of heliports with operational approval</li> </ul>		

<p><b>Strategy</b></p>	<ul style="list-style-type: none"> <li>• Develop guidelines for A-CDM implementation at the airports</li> <li>• Develop a regional action plan ensuring the provision of aeronautical data by the airport operator to the AIM, with the corresponding quality requirements</li> <li>• Update the aerodrome obstacle data in WGS-84 system</li> <li>• Harmonise State regulations with the AGA LAR set</li> <li>• Identify most common non-conformities at the airports of the region related with ICAO SARPs</li> <li>• Develop guidance for safety assessment of the non-conformities related with ICAO SARPs</li> <li>• Train regional aerodrome inspectors with the MIAGA</li> <li>• Establish an aerodrome internal audit process for operators, based on the SMS</li> <li>• Validate the existing regional international aerodrome certification with the AGA LAR set</li> <li>• Certification process oversight</li> <li>• Develop airport planning guidance manuals</li> <li>• Develop environmental management procedures in coordination with Regional Committees</li> <li>• Calculate the existing capacity of main international airports of the Region</li> <li>• Develop and apply procedures for aerodrome capacity optimization</li> <li>• Develop regulations to ensure safe operations at heliports</li> </ul>
<p><b>Rationale</b></p>	<ul style="list-style-type: none"> <li>• Airport certification difficulties in the Region are mainly due to the fact that most existing airports were built before the issuance of the ICAO SARPs that establish certification requirements.</li> <li>• The new commercial aircraft fleet has more requirements than the critical aircraft that were used at the time of the original design.</li> <li>• Difficulties in the adjustment and updating of State aeronautical legislation related to aerodromes to facilitate aerodrome certification.</li> <li>• Difficulties for safety and risk assessment required for each non-conformity</li> <li>• Lack of trained personnel within State civil aviation authorities to conduct safety risk assessment; aerodrome certification and oversight.</li> <li>• The region shows an unexpected increase in the volume of passenger and cargo operations, as a result of which the main airports of the region are almost or already saturated</li> <li>• It is foreseen that the new generation of wide-body aircraft will be operating at the main airports of the region</li> <li>• Improving aerodrome infrastructure takes time, thus the need to optimise aerodrome existing capacity</li> <li>• This project contributes to the implementation of modules ASBU B0 ACDM, B0 A-SMGCS, B0 AIXM and B0 AMAN/DMAN and PFF SAM AGA 02, AGA 03, AGA 04, AGA 05, ATM 05, CNS 02, CNS 04, MET 02, MET 04, AIM 01 and AIM 02, <i>Air Navigation System Performance-Based Implementation Plan for the SAM Region (SAM PBIP)</i></li> </ul>
<p><b>Related projects</b></p>	<ul style="list-style-type: none"> <li>• Improvement of runway safety</li> </ul>

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation <sup>1</sup>	Date of Delivery	Comments
Updating of FASID Table AOP1, Doc 8733 CAR/SAM ANP	PFF SAM AGA 01 and ANRF B0 AIXM	AGA RO	95%	2015	The information contained in the list of aerodromes and Table AOP1 of all the States of the SAM Region in the CAR/SAM ANP, Vol. I Basic and Vol. II FASID is being updated, through amendments coordinated with the States of the SAM Region reducing, inter alia, aerodromes deficiencies related to non-compliance with CAR/SAM ANP. Two amendments have been made this year that would complete the adjustment of the information contained in the ANP.
Master plans	PFF SAM AGA 01 and ANRF B0 A-CDM	States/ Aerodromes	25%	2018	Training in master plans and national airport development was carried out in 2013, with the purpose that the States update their master plans if available or develop them for the airports of the States.
Regional strategy for quality implementation and availability of aerodrome aeronautical data	PFF SAM AGA 01 and ANRF B0 AIXM	Ricardo Aguirre	25%	2017	A Seminar/workshop on Aeronautical Data was carried out in April 2015. It is necessary to coordinate with the AIM area the implementation of the requirements established on aeronautical data quality regarding aerodromes.
Survey of aerodrome obstacles based on WGS-84 system	PFF SAM AGA 01 and ANRF B0 AIXM	States/ Aerodromes	0%	2017	Requires AIM collaboration.
Development and approval of the AGA LAR set	PFF SAM AGA 02 and ANRF B0 A-CDM	Carlos Garcia Pepe	100%	2012	The texts of the AGA LAR set (LAR 139, LAR 153, and LAR 154) were developed by the SRVSOP AGA Experts Panel and approved by the General Board.

<sup>1</sup> *Grey* Task not started yet  
*Green* Activity being implemented as scheduled  
*Yellow* Activity started with some delay, but expected to be implemented on time  
*Red* Activity not implemented on time; mitigation measures are required

<b>Project Deliverables</b>	<b>Relationship with the regional performance-based plan (PFF)</b>	<b>Responsible Party</b>	<b>Status of Implementation<sup>1</sup></b>	<b>Date of Delivery</b>	<b>Comments</b>
Amendment 1 to AGA LAR set	PFF SAM AGA 02 and ANRF B0 A- CDM	Carlos Garcia Pepe	<b>100%</b>	2013	Amendment 1 to AGA LAR set included amendment 11 to Annex 14, Vol I.
Amendment 2 to AGA LAR set	PFF SAM AGA 02 and ANRF B0 A- CDM	Alejandro Alvarez	<b>100%</b>	2015	Amendment 2 to AGA LAR set was approved by the fast track mechanism in January 2015.
Amendment 3 to AGA LAR set	PFF SAM AGA 02 and ANRF B0 A- CDM	Alejandro Alvarez	<b>90%</b>	2015	Amendment 3 to AGA LAR set will be proposed for approval in the SRVSOP General Board-JG/28 IN October 2015.
Harmonization / Adoption of AGA LAR set	PFF SAM AGA 02 and ANRF B0 A- CDM	States	<b>0%</b>	2016	SRVSOP Member States will initiate harmonization/adoption of the AGA LAR set after approval of Amendment 3 to AGA LAR set.
Development of the MIAGA	PFF SAM AGA 02 and ANRF B0 A- CDM	Carlos Garcia Pepe / Alejandro Alvarez	<b>100%</b>	2014	The first edition of the AGA Inspector Manual (MIAGA) was approved in December 2014.
List of the most common non-conformities in the Region	PFF SAM AGA 03 and ANRF B0 A-CDM	Carlos Garcia Pepe / Alejandro Alvarez	<b>100%</b>	2014	A survey was conducted amongst the States on the most common non-conformities that prevent the certification of international aerodromes, which was presented during the Seminar on Airports Certification and Aerodromes Security Assessment in November 2014. A list of most common non-conformities in the Region was consolidated.
Guidance manual on the certification of aerodromes with non-conformities	PFF SAM AGA 03 and ANRF B0 A-CDM	Alejandro Alvarez	<b>100%</b>	2015	The CA-AGA-001 LAR 139 – SAFETY ASSESSMENT / AERONAUTICAL STUDY (AS) was developed to assess safety of most common non-conformities in the Region and what cases qualify for assessment for the purpose of obtaining the certification with deviations.

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation <sup>1</sup>	Date of Delivery	Comments
Training programme for inspectors on the certification of aerodromes with non-conformities	PFF SAM AGA 01, 03, 04, 05 and PFF SAM AGA 03 and ANRF B0 A-CDM	AGA RO	60%	2018	Since 2011 several trainings related with most common non-conformities in aerodromes certification are being developed. Special attention was given to the development of a methodology for obstacle assessment in SLO.
Harmonisation of the AGA LARs	PFF SAM AGA 02 and ANRF B0 A-CDM	States - Regional System	0%	2017	It is expected that the harmonisation between the States and the AGA LARs will be carried out in accordance with the strategy proposed by the AGA experts panel approved by the General Board.
Guide on aerodrome internal audits	PFF SAM AGA 02 and ANRF B0 A-CDM	TBD	0%		
Regional aerodrome certification programme	PFF SAM AGA 01, 03, 04, 05 and ANRF B0 A-CDM	TBD	0%		
Certification validation of existing aerodromes based on the AGA LARs	PFF SAM AGA 01, 03, 04, 05 and ANRF B0 A-CDM	TBD	0%		
Oversight of the certification process	PFF SAM AGA 01, 03, 04, 05 and ANRF B0 A-CDM	TBD	0%		
Calculation of capacity of the main international aerodromes of the Region	PFF SAM AGA 01, 03, 04, 05 and ANRF B0 AMAN/DMAN, B0 A-SMGCS	TBD	0%		

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation <sup>1</sup>	Date of Delivery	Comments
Guidance Manual for runway and apron capacity optimization	PFF SAM AGA 01, 03, 04, 05 and ANRF B0 AMAN/DMAN, B0 A-SMGCS	TBD	0%		
Guidance Manual for heliport operations	ANRF B0 A-CDM	Carlos García Pepe / Alejandro Alvarez	100%	2015	The Aerodromes Experts' Panel has proposed the approval of LAR 155 – Heliports Operation in the JG/28, the regulations include Amendment 6 to Annex 14, Vol II.
<b>Resources needed</b>	Designation of experts for the execution of some of the deliverables; financial resources for organising training courses, aerodrome certification trials, including aerodromes with non-conformities to ICAO SARPs, and meetings				

## APPENDIX D

## PROJECT ON IMPROVEMENT OF RUNWAY SAFETY

SAM Region	PROJECT DESCRIPTION (DP)	DP N° F2	
<i>Programme</i>	Title of the Project	Start	End
<i>Aerodromes</i>  (ICAO programme coordinator: Lia Ricalde)	Improve Runway Safety  <i>Project coordinator:</i> Augusto Díaz Albuja (DGAC - Ecuador)  <i>Experts contributing to the project:</i> Roque Florentín (DINAC - Paraguay) Carlos García Pepe (DINACIA – Uruguay)	2011	2018
<b>Objective</b>	Reduce runway incursions/excursions at aerodromes in order to improve runway safety.		
<b>Scope</b>	Regulations and documentation to support the implementation of ICAO SARPs in order to improve runway safety at aerodromes in the Region: <ul style="list-style-type: none"> <li>• Strategy to prevent and mitigate accidents and incidents due to runway incursions/excursions from the AGA perspective</li> <li>• AGA assistance to aerodrome safety committees (RSTs) in their runway safety tasks</li> <li>• Guides on aerodrome safety oversight</li> </ul>		
<b>Metrics</b>	<ul style="list-style-type: none"> <li>• Percentage of reduction in runway incursions/excursions in the aerodromes of the Region.</li> <li>• Percentage of aerodromes in the Region that have aerodrome safety teams (RSTs).</li> </ul>		
<b>Strategy</b>	<ul style="list-style-type: none"> <li>• In coordination with other bodies engaged in runway safety, analyse runway incursion/excursion statistics and prioritise AGA responsibilities</li> <li>• Establish a work relationship with regional AGA committees: ALACPA (pavement) and CARSAMPAF (wildlife hazard prevention)</li> <li>• Assist aerodrome safety committees (RSTs) in the Region and ensure the participation of the AGA component</li> <li>• Develop a safety management plan to prevent and mitigate runway incursions/excursions based on the analysis mentioned in the previous paragraph</li> <li>• Develop guides on oversight of the implementation of safety management plans in the aerodromes of the Region</li> <li>• Implement the safety management plan</li> </ul> <p>All tasks will be carried out by experts nominated by CAR States and organisations, under the leadership of the project coordinator. Communication amongst project members and between the project and programme coordinators shall be via teleconference and the Internet.</p> <p>Upon completion of the studies, the results will be sent to the ICAO programme coordinator as a final consolidated document for its analysis, revision, and approval, and for submission to the GREPECAS PPRC.</p>		

<b>Rationale</b>	<ul style="list-style-type: none"> <li>Runway safety is a problem that affects all areas of air navigation</li> <li>Different bodies are working to improve runway safety from different perspectives. The purpose of this project is to support the existing initiatives and to work in a coordinated manner, contributing from the point of view of AGA</li> <li>Although there are better practices in SAM States, there is no harmonisation to expedite their implementation in the airports of the Region. The purpose of this project is to develop a strategy to be used by States to reduce runway incursions/excursions in their airports.</li> </ul>
<b>Related projects</b>	<ul style="list-style-type: none"> <li>Aerodrome Certification</li> </ul>

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation <sup>1</sup>	Date of Delivery	Comments
Regional safety management plan for runway incursions/excursions	PFF SAM AGA 01, 02, 03, 04, 05	TBD	0%	2013	Analyse existing statistics and prioritise the main AGA factors that cause runway incursions/excursions, and develop a runway safety prevention and mitigation plan from the AGA perspective.
Training programme to improve runway safety	PFF SAM AGA 05	SAM RO	100%	2013	SMS/PAF workshop on 13-17 June 2011 in Panama to prevent runway incursions. Workshop on air navigation visual aids on 7-11 May in Lima, Peru to prevent runway incursions. Also, in July 2012 the RRSS Seminar was held in Quito, Ecuador and annual meetings (March 2013, Lima) on RST implementation in the airports of the Region are being held.
Guidance Manual on runway safety team (RST) implementation at aerodromes	PFF SAM AGA 05	GREPECAS	100%	2013	ICAO HQ has developed a guidance manual for RSTs.

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Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation <sup>1</sup>	Date of Delivery	Comments
Timetable of implementation of mitigation measures at aerodromes	PFF SAM AGA 05	States/ Aerodromes	10%	2015	Assist RSTs in their safety prevention and mitigation tasks from the AGA perspective.
<b>Resources needed</b>	Designation of experts in the execution of some of the deliverables, financial resources for organising training courses and meetings.				