International Civil Aviation Organization 21/06/16

CAR/SAM Planning and Implementation Regional Group (GREPECAS)

Fourth Meeting of the Programmes and Projects Review Committee (PPRC/4)

Lima, Peru, 12 - 14 July 2016

Agenda Item 3: Review of GREPECAS Programmes and Projects

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

FOLLOW-UP OF THE AERODROME FIELD PROJECT ACTIVITIES

(Presented by the Secretariat)

SUMMARY

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 **Appendices A** and **B** for the CAR Region and in **Appendices C and D** for the SAM Region.

References:

- Report of the GREPECAS/17 meeting, July 2014
- Report of the CRPP/3 Meeting, July 2015

Strategic Objective(s)	*This working paper is related to Strategic Objective(s)* • Safety • Environmental Protection

1. Introduction

1.1 Under Programme F "Aerodromes", the following projects continue 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 Concerning proposals for amendment to the ICAO Standards and Recommended Practices (SARPs) under the aerodromes field, there are few States that review such proposals and therefore, a reduced input is received by ICAO on agreement or disagreement, which adversely affects the task of its implementation by States and their airports, mainly those having significant non-compliance issues with SARPs.

1.3 On the other hand, there are States that are pending to report to ICAO their differences between their national standards and regulations and ICAO's SARPS. Also, significant non-compliances with SARPS are pending to be published on State's AIP for the aeronautical community knowledge.

1.4 During the visits to States, it has been observed the existence of aerodromes personnel undertaking several functions at the same time: aerodrome inspectors, air traffic, instructors, and do not cover the aerodromes specialized technical areas. Also, there is personnel rotation in some areas and, therefore, the technical personnel assigned share their resources among other areas as well as aerodromes. The functions and responsibilities could be defined in a more clear way and usually lack of specific functions such as aerodromes certification and surveillance.

1.5 The Aerodromes programme and the projects' implementation by the States, according with the schedule of activities, has followed a gradual and slow process in its progress. It should be pointed out that the lack of experts that should be assigned by the States to assist the project coordinators was one of the main reasons for the delay in the accomplishment of the tasks and the progress of the activities, since the work fell only on the project coordinator and the AGA Officer. Also, the projects' activities have progressed slowly due to the challenges faced by the aviation authorities to follow up the resolution of deficiencies of the aerodromes and the implementation of mitigation measures or procedures that guarantee aircraft operations before any deviation of SARPs.

2. Analysis

2.1 In order to facilitate the review of the GREPECAS Aerodrome Programme projects, Appendices A and B present the follow-up and update of the activities of the CAR Region projects and Appendices C and D, the activities of the SAM Region projects.

2.2 For the development of GREPECAS projects tasks and activities, coordinators, and experts collaborating with the projects coordinated face-to-face meetings, teleconferences (GoToMeeting), phone calls and others. The progress reached in the Aerodromes Programme projects depended only in the coordination job between the project coordinator and the expert assigned to the project, there was limited availability of human resources for the achievement of the times established due to the limited support of the aeronautical authorities for the implementation of the referred projects.

2.3 Nonetheless, up to date the progress in the activities and proposed tasks in the projects of the Aerodrome Programme has been significant in comparison with the last review meeting of the Programme.

3. CAR Region Projects Progress

3.1 The Project F1 addresses the Aerodrome Certification related matters, which considers four main tasks:

- Training for Aerodrome Inspectors
- Establishment of the Aerodrome Certification process
- Preparation of Certification Manuals, and
- Issuance of Aerodrome Certification, publication in the AIP

3.2 As part of Project F1 tasks and activities, the following activities, technical assistance missions, and training workshops were carried out with the support of the RLA/09/801 Project and under the NACC Strategy "No Country Left Behind" (NCLB):

a) Technical assistance mission to Trinidad and Tobago, under the strategy of NCLB, 22 to 25 February 2016 with a multidisciplinary technical team.

b) ICAO/ACI follow-up technical assistance mission to Honduras on Aerodrome Certification Implementation (San Pedro Sula – 30 March to 1 April 2016) with the FAA. The first visit was made in June 2015.

c) ICAO/FAA Aerodrome Certification Inspectors Workshop, 24 to 26 May 2016, Kingston, Jamaica

d) ICAO/FAA Aerodrome Certification Inspectors Workshop, 14 to 16 June 2016 and Second follow-up (TEAM) on aerodrome certification implementation (17 June 2016), Dominican Republic

3.3 Regarding Project F1 – *Aerodrome Certification Improvements*, the number of certified aerodromes has increased in a 12% reaching now a 36%. It is expected to achieve the target of the *Port-of-Spain Declaration* to have at a regional level a 48% of certified aerodromes by the end of 2016, with the certification of 15 aerodromes under the charge of the Civil Aviation Authority of Mexico, three in Honduras, and one in Saint Lucia during this year.

3.4 Due to the current process of aerodrome certification, the need to continue with the training of aerodrome inspectors in charge of certification in matters related to the certification process and the elaboration of aerodrome manuals has been identified.

3.5 Following –up the agreement reached at the FAA Forum on the Caribbean Aviation Initiative, carried out in New Orleans, United States, in December 2015, on the joint efforts of ICAO and United States in the Caribbean in support of aerodrome certification, RST, and safety improvements, it was agreed to carry out several training events in the Caribbean and Central America, with the purpose that States that have not certified their aerodromes start the process with the inclusion of aeronautic studies, processes, procedures, and compatibility studies respectively with the new orientation guides specified in the document *Procedures for Air Navigation Services– Aerodromes* (Doc 9981).

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

a) Stage 1: inventory of 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: runway excursions mitigation actions through the prevision 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: mitigation actions due to the damage caused to aircrafts that climb from the runway through provision and compliance of the runway strip leveled portion and free of objects, and compliance with Runway End Safety Area (RESA) supply. For insufficient and incorrigible RESAs, the project provided guidance material including the declared distance calculation.

3.7 These three stages are interconnected and understand the situations of land operation, landing, properly said, and runway excursions. The task was executed between Project Coordinator and Programme Coordinator and there was no support from the experts of the States.

3.8 Regarding Project F2 – *Improve Runway Safety*, the analysis of the results of the survey conducted to airports was done to determine the grade of compliance with ICAO SARPS in regards to signage, signs, RESA, and the measures to prevent runway incursions. It was observed that some airports have implemented improvements to avoid runway incursions; however, there are still airports that have a high level of non-compliance with the signage, visual aids, lighting, runway strips, and RESAs, among others. Very few airports count with incidents reports due to runway incursions and therefore do not have a proper statistical control.

3.9 To improve the analysis of the situation in the CAR Region, a Workshop on the Best Practices to Prevent Runway Incursions/Excursions was held from 11 to 14 August 2015, at the ICAO NACC Regional Office, where the best practices of some States as United States were presented, to avoid and/or improve the design of taxiways to avoid runway incursions, it was also addressed the issue of the declared distance determination with practical exercises and mitigation measures to avoid runway excursions.

3.10 Project F2 – *Improve Runway Safety*, is oriented to improve the safe operation of aircrafts in the aerodromes, preventing runway incursions and excursions due to the non-compliance of the requirements of runway strips, RESAS, and visual aids among others. This project supports the aerodromes certification with operational and SARPS compliance issues, up to date all its activities have been completed. Similarly, it has been possible to review and update the current AGA deficiencies their significant reduction. With the retirement of the project coordinator, Mr. George Legarreta from United States, the Project F2 activities will continue as assistance visits in the implementation of RST in the airports. As part of this project, and upon Cuba request, a mission to assess the RST implementation was carried out at the Jose Marti (MUHA) airport, jointly with FAA in the month of October 2015. Assistance missions are scheduled to Antigua and Barbuda in the second semester of 2016. Also, the Fourteenth CAR/SAM Regional Bird/Wildlife Hazard Prevention Committee Meeting and Conference (CARSAMPAF/14) will be held in San Pedro Sula, Honduras, 24 to 28 October 2016 and the XIII Latin American and Caribbean Association of Airfield Pavements Seminar of Airport Pavements (ALACPA/12) will be carried out from 28 November to 2 December 2016.

3.11 To understand the lack of AGA experts in these Projects, an AGA PoC list is being done, as well as a planning of joint work of ICAO, FAA and ACI to support their execution.

4. Status of implementation in the SAM Region

4.1 Project SAM AGA F1 – *Aerodrome Certification*. The first 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, LAR 155 – Heliports, the Aerodromes Inspector Manual (MIAGA), the Aerodromes Procedures Manual based on Document 9981 - PANS Aerodromes (MAPROAGA) and related Advisory Circulars, 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 member States their harmonization/adoption with their national regulations and, in this way, take advantage of the services of continuous updating, training and guidance material offered by the Regional System.

4.2 At the moment, there is a proposal on the aerodromes experts panel to update the LAR AGA set, to incorporate the recent Annex 14, Vol I and Vol II amendments, and the introduction of provisions included in Document 9981 (PANS AGA), that will facilitate the aerodrome certification processes.

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, besides other issues. Since 2010, the following activities have been developed:

a) Aerodromes Inspector Courses (GSI AGA) – seven (7);
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);
o) Seminar/workshop on Airport Collaborative Decision Making (A-CDM);
p) Audit techniques based on ISO 19011 course.

4.4 The activities mentioned 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 May 2016 are 17 (16%), from the 8 (eight) originally registered, 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 the Aerodrome Procedures Manual and the latest LAR's amendments that include provisions of Doc 9981 and Annex 14 amendments, it is expected that States will be able to significantly increase the percentage of certification. For this purpose, guidance material is being prepared and regional regulations are being updated in order to facilitate the process.

4.6 Under this scope, the Regional Office had prepared a survey on Aerodrome Certification, to facilitate the identification of the main challenges of the States of the region to aerodrome certification under the new regulations provisions. This survey is being done in coordination with ACI-LAC, to emulate such to the main aerodrome operators and at the end cross check the data to increase the activities that achieve the objective of aerodrome certification. The intention of this survey is to re-focus the strategy to make the efforts more efficient in achieving the objective of airport certification.

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). In the same way, through LAR AGA activities, sponsored by the SRVSOP, the review of regulations and the AGA Inspector Manual is being conducted, to incorporate elements related to RST, due to its relationship with CMA's Protocol Questions (PQ).

4.8 4.8 As part of the activities of Projects F1 and F2, close collaboration with Airport Pavements AGA committees (ALACPA) and wildlife control (CARSAMPAF) is maintained, in order to transfer the results and inputs to both groups towards the progress of the deliverables of the project. Pavement condition is a factor that could contribute to the reduction of runway excursions and to the accomplishment of SARPs in the certification process. In addition, the appropriate wildlife control is an important issue of the airport certification processes. In a related working paper, the progress of both groups' contributions is presented.

4.9 In view of the progress of the States in Latin American Regulations (LAR) harmonization or adoption processes, and aimed at having a more direct scope in the international aerodromes certification objective, it is proposed to annex to Project F1 Aerodrome Certification, the development of sub-tasks, by State, in which through common bases (to be prepared), the States could report the progress by aerodrome to the different certification processes to the Project Coordinator and ICAO Programme Coordinator, identifying specific requirements, so as to generate efficiencies in the activities to be carried out and more directly follow airport certification goals.

4.10 Under these sub-tasks or sub-projects, each State is requested to propose an AGA representative (in case of the States adhered to SRVSOP, could be AGA focal points) so that this representative distributes at the same time sub-projects to each aerodrome, in order to generate an information flow under a same scheme, set out by the project coordination. The results and progress of these sub-projects would be presented annually in the corresponding PPRC meeting.

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.

- - - - - -

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**
Aerodromes (ICAO Programme Coordinator: Jaime Calderon)	Aerodrome Certification Improvements **Project Coordinator: Norberto Cabrera (Cuba)** **Experts contributing to the project: Jorge Puquirre (El Salvador)**	October 2011	December 2018
Objective	Aerodrome certification will ensure compliance with ICAO SARPs, providing operational services, equipment and facilities according to the operations intended at the aerodrome and facilitating safe and efficient aircraft operations.		
Scope	• Identify the level of implementation of the aerodrome certification process in the CAR Region • Identify training needs and develop relevant training programmes • Provide training to aerodrome inspectors with regards to aerodrome related documentation • Prepare the corresponding certification documentation • Implementation of SMS at aerodromes • Aerodrome certification inspection by the aeronautical authority • Issuance of the aerodrome certificate		
Metrics	• Number of certified aerodromes • Number of reported deficiencies in the GANDD		
Strategy	• Provide training to aerodrome inspectors in the aerodrome certification process, its implementation, the content of the aerodrome manual, SMS implementation, and exemptions. • 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. • Provide training to aerodrome inspectors in their operational oversight duties including the various related disciplines. All tasks are performed by some 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.		
Goals:	With this project it is expected to assist States in the following implementation goals: • Achieve 48% of aerodrome certification in the CAR Region • Diminish 50% of the GANDD reported deficiencies in the CAR Region		

Rationale	• 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 • Aerodromes that were built a long time ago with no consideration of ICAO SARPs This project contributes to the implementation of CAR PFF 07 of the CAR Performance-based Air Navigation Plan (RPBANIP)
Related Projects	The following project was defined in the last meeting of the AGA/AOP/SG/8 and is related to the objective of this DP: • Improvement of runway safety

Project Deliverables	**Relationship with the regional performance-based plan (PFF)**	**Responsible**	**Status of Implementation[1]**	**Date of Delivery**	**Comments**
• To identify the level of implementation of the aerodrome certification process in the CAR Region. • To develop an action plan focused on common aerodrome certification issues in the CAR Region.	PFF CAR 07	Norberto Cabrera		December 2012	Completed • The Regional Workshop on Overcoming the Challenges Faced by States with Aerodrome Certification was held at the ICAO NACC Regional Office, Mexico City, Mexico from 20 to 23 September 2011, to identify the level of aerodrome certification implementation in the CAR Region • Some common issues were identified in the CAR Region with regards to aerodrome certification and an action plan was developed for aerodrome inspectors according to States requirements.

[1] **Gray* *Task not initiated*
Green *Activity in progress according with the schedule*
Yellow *Activity initiated with some delay, but implementation will reach its deadline*
Red *The implementation of the activity has not been fulfilled in the estimated time it is required to adopt mitigation measures*

Project Deliverables	Relationship with the regional performance -based plan (PFF)	Responsible	Status of Implementation[1]	Date of Delivery	Comments
• Identify training needs and develop the relevant training related programmes. • Provide training to aerodrome inspectors in aerodrome related documentation	PFF CAR 07	Norberto Cabrera		December 2012	Completed Two workshops were carried out for aerodrome inspectors and one on the use of aeronautical studies. • Saint Maarten, 11-15 June 2012, in English • NACC Regional Office, 1-4 October 2012, in Spanish • ICAO NAM/CAR Workshop on the use of Aeronautical Studies in the Aerodrome Certification Process, 21-24 August 2012.
Development of the aerodrome certification related documentation	PFF CAR 07	Norberto Cabrera		December 2014	Completed Two workshops related to GREPECAS Project F1 - Aerodrome Certification Improvements, were held at the ICAO NACC Regional Office, Mexico City, Mexico, from 14 to 18 October 2013 and the Aerodrome Inspectors Workshop - in Port of Spain, Trinidad and Tobago, from 9 to 13 June 2014.
SMS Implementation at aerodromes	PFF CAR 07	Norberto Cabrera		December 2014	Completed The Aerodromes SMS Implementation Workshop (SMS) was held at the ICAO NACC Regional Office, from 18 to 21 March 2014, the status of implementation of SMS in the CAR Region was determined.

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	Norberto Cabrera		December 2016	In the FAA Caribbean Aviation Forum (New Orleans, United States, December 2015) on the ICAO and United States joint efforts in the Caribbean in favour of the aerodrome certification, implementation of the Runway Safety Team (RST) and safety improvements, it was agreed to carry out several related training events in the Caribbean and Central America. Therefore, it was agreed to extend the events up to 2018, aerodrome inspection training events and certification documents.

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible	Status of Implementation[1]	Date of Delivery	Comments
Issuance of the aerodrome certificate.	PFF CAR 07	Norberto Cabrera		December 2016	The following events were carried out: - Technical assistance mission TEAM ICAO/ACI on aerodrome certification implementation in San Pedro Sula, Honduras, 30 March to 1 April 2016 - Phase 1 was completed and formalized the beginning of phase 2 with the official delivery of the aerodrome manual - ICAO/FAA Workshop for Aerodrome Certification Inspectors, Kingston, Jamaica, 14 to 16 May 2016 - ICAO/FAA Workshop for Aerodrome Certification Inspectors, Santo Domingo, Dominican Republic, 14 – 16 June 2016 - Training for aerodrome inspectors on the elaboration of aerodrome manuals, plans, procedures, SMS and surveillance tasks. The following event is planned: - ICAO/FAA Workshop on Best Practices for the Development of Aerodrome Manuals and the Use of Procedures for Air Navigation Services – Aerodromes (PANS-AGA) for the CAR Region, Port of Spain, Trinidad and Tobago, 14 – 17 November 2016 -
Issuance of Aerodrome Certificate	PFF CAR 07	Joint Project ICAO/FAA/ ACI		December 2018	Once all the previous steps are fulfilled the airports will be able to be certified.

Project Deliverables	Relationship with the regional performance -based plan (PFF)	Responsible	Status of Implementation[1]	Date of Delivery	Comments
	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**	
Programme	**Title of the Project**	**Start**	**End**
Aerodromes (ICAO Programme Coordinator: Jaime Calderon)	Improve runway safety **Project coordinator: George Legarreta (USA)** **Experts contributing to the project: None**	October 2011	December 2015
Objective	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.		
Scope	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.		
Metrics	• Number of aerodromes certified • Reduce the number of reported deficiencies in the GANDD that affect the 3 parts of this project. • Number of events regarding runway incursions and excursions.		
Strategy	For the purpose of the project implementation, the following three stages are considered: • 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. • 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.		

	• 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. 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. 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.
Goals	With this project it is expected to assist States in their main implementation goals as follows: • Achieve 48% of aerodrome certification in the CAR Region • Diminish 50% of the GANDD reported deficiencies in the CAR Region that affect the 3 parts of this project
Rationale	• 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 • There is lack of best practices for mitigating runway excursions; the project will provide guidelines on mitigating measures • There is a high rate of runway excursions, and the establishment of runway safety teams (RSTs) is deemed essential • 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 This project contributes to the implementation of PFF CAR 07 of the CAR Performance-Based Air Navigation Plan (RPBANIP).
Related projects	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: • Aerodrome certification

Project Deliverables	Relationship with the regional performance -based plan (PFF)	Responsible	Status of Implementation[1]	Date of Delivery	Comments
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	Completed • The formulary was developed and circulated to States on 5 July 2012 (EMX0375), having received approximately 15% of response from the international aerodromes included in the ANP. Based on the survey results a Workshop on Best practices to prevent Runway Incursion/Runway Excursions – GREPECAS – Project F2, was conducted in Mexico City, Mexico, from 11 to 14 August 2015 to allow participants to identify runway incursion issues at their airports and promote the resolution of deficiencies involving markings, signage and lighting.
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	Completed The Workshop on Best practices to prevent Runway Incursion/Runway Excursions – GREPECAS – Project F2, conducted in Mexico City, Mexico, from 11 to 14 August 2015 provided guidelines on mitigating actions for runway excursions and inspection to assure the airport provides good surface conditions through maintenance plans.

[1] *Gray Tarea no iniciada
Green Activity in progress according with the schedule
Yellow Activity initiated with some delay, but implementation will reach its deadline
Red The implementation of the activity has not been fulfilled in the estimated time it is required to adopt mitigation measures

Project Deliverables	Relationship with the regional performance -based plan (PFF)	Responsible	Status of Implementation[1]	Date of Delivery	Comments
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 2015	Completed For insufficient RESAs and cannot be fully adjusted, the project provided guidance material on the use of the declared distances and the installation of proven arrestor systems such as the EMAS, during the Workshop on Best practices to prevent Runway Incursion/Runway Excursions – GREPECAS – Project F2, conducted in Mexico City, Mexico, from 11 to 14 August 2015.
RST implementation, assistance visits	PFF CAR 07	RO/AGA	In process	December 2018	- RLA/09/801 TEAM misión with FAA to asses Cuba in the implementation of runway safety teams, La Habana, Cuba, 13 – 15 de octubre de 2015 - Assistance visit for RST implementation in Antigua and Barbuda (SIP Project), 8-11 November 2016. - Assistance visit for RST implementation in Aruba (on request by the State) 20-23 September 2016
Resources needed	Designation of experts by States for the assistance visits				

APPENDIX C

PROJECT ON AERODROME CERTIFICATION

SAM Region	PROJECT DESCRIPTION (DP)	DP N° F1	
Programme	**Title of the Project**	**Start**	**End**
Aerodromes *(ICAO programme coordinator: Fabio Salvatierra)*	Aerodrome Certification *Project coordinator:* *Ricardo Aguirre (Colombia)* *Experts contributing to the project:* *Alejandro Álvarez /José Martinez 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
Objective	Improvement in the efficiency, capacity and safety of airport operations.		
Scope	• CDM at the airport • Implementation of aeronautical data quality and availability • Aerodrome certification at regional level • Airport planning • Airport capacity calculation of international airports • Heliport safe operations		
Metrics	• Percentage of international aerodromes with A-CDM implemented • Percentage of deficiencies eliminated regarding the non-compliance of the CAR/SAM Air Navigation Plan • Percentage of international aerodromes with updated obstacle data • Percentage of certified international aerodromes • Percentage of trained AGA inspectors • Percentage of international aerodromes with master plans • Percentage of international aerodromes with calculated aerodrome capacity • Percentage of heliports with operational approval		

Strategy	• Develop guidelines for A-CDM implementation at the airports • Develop a regional action plan ensuring the provision of aeronautical data by the airport operator to the AIM, with the corresponding quality requirements • Update the aerodrome obstacle data in WGS-84 system • Harmonise State regulations with the AGA LAR set • Identify most common non-conformities at the airports of the region related with ICAO SARPs • Develop guidance for safety assessment of the non-conformities related with ICAO SARPs • Train regional aerodrome inspectors with the MIAGA • Establish an aerodrome internal audit process for operators, based on the SMS • Validate the existing regional international aerodrome certification with the AGA LAR set • Certification process oversight • Develop airport planning guidance manuals • Develop environmental management procedures in coordination with Regional Committees • Calculate the existing capacity of main international airports of the Region • Develop and apply procedures for aerodrome capacity optimization • Develop regulations to ensure safe operations at heliports
Rationale	• 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. • The new commercial aircraft fleet has more requirements than the critical aircraft that were used at the time of the original design. • Difficulties in the adjustment and updating of State aeronautical legislation related to aerodromes to facilitate aerodrome certification. • Difficulties for safety and risk assessment required for each non-conformity • Lack of trained personnel within State civil aviation authorities to conduct safety risk assessment; aerodrome certification and oversight. • 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 • It is foreseen that the new generation of wide-body aircraft will be operating at the main airports of the region • Improving aerodrome infrastructure takes time, thus the need to optimise aerodrome existing capacity • 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, *Air Navigation System Performance-Based Implementation Plan for the SAM Region (SAM PBIP)*
Related projects	• Improvement of runway safety

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation[1]	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. On June 2016, a survey to measure the level of implementation of master plans on the main international aerodromes was submitted to 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. Thru the SRVSOP, there is work to publish an Advisory Circular on Data Quality.
Survey of aerodrome obstacles based on WGS-84 system	PFF SAM AGA 01 and ANRF B0 AIXM	States/ Aerodromes	**0%**	2017	Requires AIM collaboration.

[1] *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*

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation[1]	Date of Delivery	Comments
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.
Amendment 1 to AGA LAR set	PFF SAM AGA 02 and ANRF B0 A-CDM	Carlos Garcia Pepe	**100%**	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	**100%**	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	**100%**	2015	Amendment 3 to AGA LAR was approved in the SRVSOP General Board-JG/28 , October 2015.
Harmonization / Adoption of AGA LAR set	PFF SAM AGA 02 and ANRF B0 A-CDM	States	**31%**	2017	After the approval of the LAR AGA set third amendment, its being reach a 31% of regulations adoption/harmonization, which includes 4 States that had adopted/harmonized to 100% 3 of the 4 approved regulations.
Development of the MIAGA	PFF SAM AGA 02 and ANRF B0 A-CDM	Carlos Garcia Pepe / Alejandro Alvarez	**100%**	2014	The first edition of the AGA Inspector Manual (MIAGA) was approved in December 2014. The manual's second edition its being developed and will include references to solve related CMA's PQ.
List of the most common non-conformities in the Region	PFF SAM AGA 03 and ANRF B0 A-CDM	Carlos Garcia Pepe / Alejandro Alvarez	**100%**	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.

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation[1]	Date of Delivery	Comments
Guidance manual on the certification of aerodromes with non-conformities	PFF SAM AGA 03 and ANRF B0 A-CDM	Alejandro Alvarez	**100%**	2015	The CA-AGA-001 LAR 139 – SAFETY ASSESMENT / 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.
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	**65%**	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. In September 2016, will be held a short course on obstacles evaluation and obstacles limitations surfaces.
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%**		

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation[1]	Date of Delivery	Comments
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%**		
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. The AGA SRVSOP experts panel is working to update LAR155 with new AN14 Vol II amendment 7
Resources needed	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**	
Programme	**Title of the Project**	**Start**	**End**
Aerodromes *(ICAO programme coordinator: Fabio Salvatierra)*	Improve Runway Safety *Project coordinator:* *Augusto Díaz Albuja (DGAC - Ecuador)* *Experts contributing to the project:* *Roque Florentín (DINAC - Paraguay)* *Carlos García Pepe (DINACIA – Uruguay)*	2011	2018
Objective	Reduce runway incursions/excursions at aerodromes in order to improve runway safety.		
Scope	Regulations and documentation to support the implementation of ICAO SARPs in order to improve runway safety at aerodromes in the Region: • Strategy to prevent and mitigate accidents and incidents due to runway incursions/excursions from the AGA perspective • AGA assistance to aerodrome safety committees (RSTs) in their runway safety tasks • Guides on aerodrome safety oversight		
Metrics	• Percentage of reduction in runway incursions/excursions in the aerodromes of the Region. • Percentage of aerodromes in the Region that have aerodrome safety teams (RSTs).		
Strategy	• In coordination with other bodies engaged in runway safety, analyse runway incursion/excursion statistics and prioritise AGA responsibilities • Establish a work relationship with regional AGA committees: ALACPA (pavement) and CARSAMPAF (wildlife hazard prevention) • Assist aerodrome safety committees (RSTs) in the Region and ensure the participation of the AGA component • Support the creation of Runway Safety Go Teams • Develop a safety management plan to prevent and mitigate runway incursions/excursions based on the analysis mentioned in the previous paragraph • Develop guides on oversight of the implementation of safety management plans in the aerodromes of the Region • Implement the safety management plan 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. 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.		

Rationale	• Runway safety is a problem that affects all areas of air navigation • 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 form the point of view of AGA • 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.
Related projects	• Aerodrome Certification

Project Deliverables	**Relationship with the regional performance-based plan (PFF)**	**Responsible Party**	**Status of Implementation** [1]	**Date of Delivery**	**Comments**
Regional safety management plan for runway incursions/excursions	PFF SAM AGA 01, 02, 03, 04, 05	TBD	**10%**	2018	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. On June 2016, a survey was release to States to measure the level of implementation of RST's on the region.
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.

[1] *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*

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation [1]	Date of Delivery	Comments
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.
Timetable of implementation of mitigation measures at aerodromes	PFF SAM AGA 05	States/ Aerodromes	**10%**	2018	Assist RSTs in their safety prevention and mitigation tasks from the AGA perspective.
Resources needed	Designation of experts in the execution of some of the deliverables, financial resources for organising training courses and meetings.				