International Civil Aviation Organization
CAR/SAM Regional Planning and Implementation Group (GREPECAS)
Second Meeting of the Programmes and Projects Review Committee (PPRC/2)
(Lima, Peru, 15-19 2013)

Agenda Item 3: Review of the GREPEAS Programmes and Projects

3.7 Projects under the MET Programme

(Presented by the Secretariat)

SUMMARY

This working paper presents the status of regional activities for the implementation of the *"Aeronautical Meteorology"* Programme and its associated projects, approved by the Eleventh Meeting of the Aeronautical Meteorology Subgroup (AERMETSG/11)*"*.

REFERENCES

- Report of the Sixteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/16), Punta Cana, Dominican Republic, 28 March to 1 April 2011;
- Report of the Eleventh Meeting of the Aeronautical Meteorology Subgroup (AERMETSG/11), Lima, Peru, 28-30 November 2011; and
- Report of the First Meeting of the Programmes and Projects Review Committee (PPRC/1) of GREPECAS, Mexico City, Mexico, 25-29 April 2012.

ICAO Strategic Objectives:	*A – Safety* *C- Environmental protection and sustainable development of air transport*

1. **Introduction**

1.1 The Sixteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/16) approved Decision 16/47, whereby the work of the AERMET Subgroup, *inter alia*, and their respective Task Forces, would be carried out through programmes and projects.

2. **Discussion**

2.1 Pursuant to GREPECAS Decision 16/47, the Eleventh Meeting of the Aeronautical Meteorology Subgroup (AERMETSG/11), held on 28-30 November 2011, approved Draft Decision 11/06 through the "fast-track" procedure of GREPECAS. In this regard, the aforementioned decision turned the AERMET Subgroup into the MET Programme for the CAR and SAM Regions, covering the following projects:

- WAFS implementation project (CAR/SAM)
- IAVW implementation project;
- QMS/MET implementation project; and
- OPMET exchange optimisation project, including SIGMETs (WS, WV, and WC)

2.2 The meeting should take note that the projects approved by GREPECAS are closely related to the tasks that the AERMETSG was performing in collaboration with the Secretariat, and that the tasks of several projects were already being advanced.

3. CAR Region

3.1 In 2012, two of the four projects in the CAR Region were cancelled for the reasons described below:

3.2 *Cancellation of the QMS-MET implementation project for the CAR Region*

3.2.1 Unfortunately, the meteorological information quality management implementation project (QMS-MET) in the CAR Region had to be cancelled due to lack of interest and disregard of requests by focal points in the States. The letter to CAR States was coordinated with the coordinator of that project. Despite the many attempts made through e-mail and phone calls, not even one response was received to the request for information about the status of implementation of this system. Therefore, the cancellation of this project is submitted to the consideration of the Meeting.

3.2.2 However, through the official missions conducted to several CAR States and, subsequently, through the assistance of the World Meteorological Organization (WMO), valuable information was collected on the status of QMS-MET implementation in most States and, based on these assistance visits to several of them, ICAO could confirm the implementation of the system in those States.

3.3 *OPMET exchange optimisation project, including SIGMETs (WS, WV, and WC)*

3.3.1 One of the main meteorological objectives of the Global Air Navigation Plan is to ensure the immediate availability of high-quality OPMET data (METAR/SPECI, TAF, SIGMET, etc.) to support air traffic management (ATM) and international air navigation operations, which is also the main purpose of this project.

3.3.2 The project coordinator informed that he had taken on the task of verifying the availability of the aforementioned OPMET data by accessing the Washington and Brasilia OPMET data banks. During the last exchange of OPMET data conducted on 4-7 June 2013, it was seen that METAR/SPECI and TAF reports were available in more than 90% of the main aerodromes of the CAR Region, which is a very positive result of this exchange. At present, the data banks contain these OPMET data, which can be accessed by the States through the aeronautical fixed telecommunication network (AFTN) or, ultimately, through the Internet.

3.3.3 Based on the availability of SIGMET messages, all meteorological watch offices (MWOs) in the CAR Region are preparing and disseminating SIGMET messages. However, based on an analysis of these messages in January 2013, it was noted that, when some volcanic eruptions occurred at night, the MWOs involved had not been able to broadcast the respective SIGMETs. The problem lies on the fact that, due to budget limitations, some volcano observatories do not operate 24 hours, thus preventing MWOs from having the basic information for preparing and disseminating SIGMET messages to the Washington volcanic ash advisory centre (VAAC).

3.4 ***Cancellation of the CAR IAVW implementation project***

3.4.1 Regarding the project for the implementation of the international airways volcano watch (IAVW) in the CAR Region, the coordinator originally designated for this project was not authorised by his State to take over this task due to work overload. Utmost efforts were made to contact several candidates that might be able to coordinate this project, to no avail. Consequently, the cancellation of this project is submitted to the consideration of the Meeting, since there was insufficient information to follow-up on project requirements.

3.5 ***Termination of the WAFS implementation project in the CAR/SAM Regions***

3.5.1 The United States, as WAFS provider State, informed through the project coordinator that the project had been successfully completed and its goals achieved. The WAFS internet file service (WIFS) is the operational service of the Washington World Area Forecast Centre (WAFC) that provides access to all WAFS products and OPMET data in accordance with ICAO Annex 3 and annexes 1 and 4 to the satellite distribution system for information relating to air navigation (SADIS) user guide (SUG). As you may recall, the WIFS replaces the International Satellite Communications System (ISCS) since 30 June 2012.

4. **SAM Region**

4.1 The MET Programme consists of one project for the CAR/SAM Regions and three projects for the SAM Region:

4.1.1 Project MET H1 (CAR/SAM), Implementation of the World Area Forecast System (WAFS) – this project was completed in 2012. Several meetings with the project coordinator and the WIFS (WAFS internet file service) focal points of SAM States were held through the GoToMeeting tool to support implementation. All SAM States made the transition from the ISCS (global satellite telecommunications system) to the WIFS.

4.1.2 Project MET H2, Implementation of the International Airways Volcano Watch (IAVW) – the tasks *Regional contingency plan in case of volcanic activity* and *Regional contingency plan in case of accidental release of radioactive material* related to this project were transferred to the ATM area. With the support of the coordinator of this project, a Protocol was prepared for the volcanic ash SIGMET exercise, which was conducted on 1-2 December 2012. Likewise, an update was made of the SIGMET Guide, which is constantly under review.

4.1.3 Project MET H3, QMS/MET Implementation – by the end of 2012, 100% of SAM States had established the QMS/MET system in accordance with ISO standard 9001:2008. Five of the States that have established the QMS/MET system to date have had their QMS/MET system certified by an approved organisation, in accordance with ISO standard 9001:2008, and nine States have a documentary scheme in place and are in the process of certification.

4.1.4 Project MET H4, OPMET Exchange Optimisation, including SIGMETs (WS, WV, WC, and WR), meteorological warnings and alerts – the COM/MET meeting, held in August 2012, took note that SAM States were not having operational difficulties due to lack of OPMET data and, when required, they used the Brasilia international OPMET data bank without any problem. Consequently, it was agreed that, starting in 2014, it would not be necessary to continue with the coordinated control of OPMET exchange in the SAM Region. Likewise, the Brasilia OPMET data bank will apply its controls 4 times a year only in CAR and SAM States, only taking into account AOP aerodromes listed in the CAR/SAM

FASID Table MET 1A. To date, 85% of OPMET data is received at the Brasilia IODB and in each of the States.

4.1.5 **Appendices A, B, C, D, E, F, G,** and **H** contain a description of the projects and a GANTT diagram of each of the two projects for the CAR Region and four projects for the SAM Region under the MET Programme, respectively.

4.1.6 In terms of conflict management, the Meeting should take note that problems are inevitable in any project, including scarce resources, timetable priorities, and personal work styles, thus the need to minimise difficulties.

4.1.7 In this regard, and pursuant to GREPECAS Conclusion 16/49, with a view to the proper development of the projects under the MET Programme, it is absolutely necessary to have the necessary human resources. Accordingly, the commitment undertaken by project directors and members regarding the conduction of activities must be supported by their respective Administration. This means allowing them to participate in the GoToMeeting, since obstacles encountered in this regard have been a matter of great concern, and as a result, two projects had to be cancelled.

5. **Suggested action**

4.1 The Meeting is invited to:

a) take note of the information presented in this working paper;

b) review and approve the information contained in Appendices A, B, C, D, E, F, G and H; and

c) agree on any other action it may deem appropriate.

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APPENDIX A

CAR/SAM PROJECT FOR THE IMPLEMENTATION OF THE WORLD AREA FORECAST SYSTEM (WAFS)

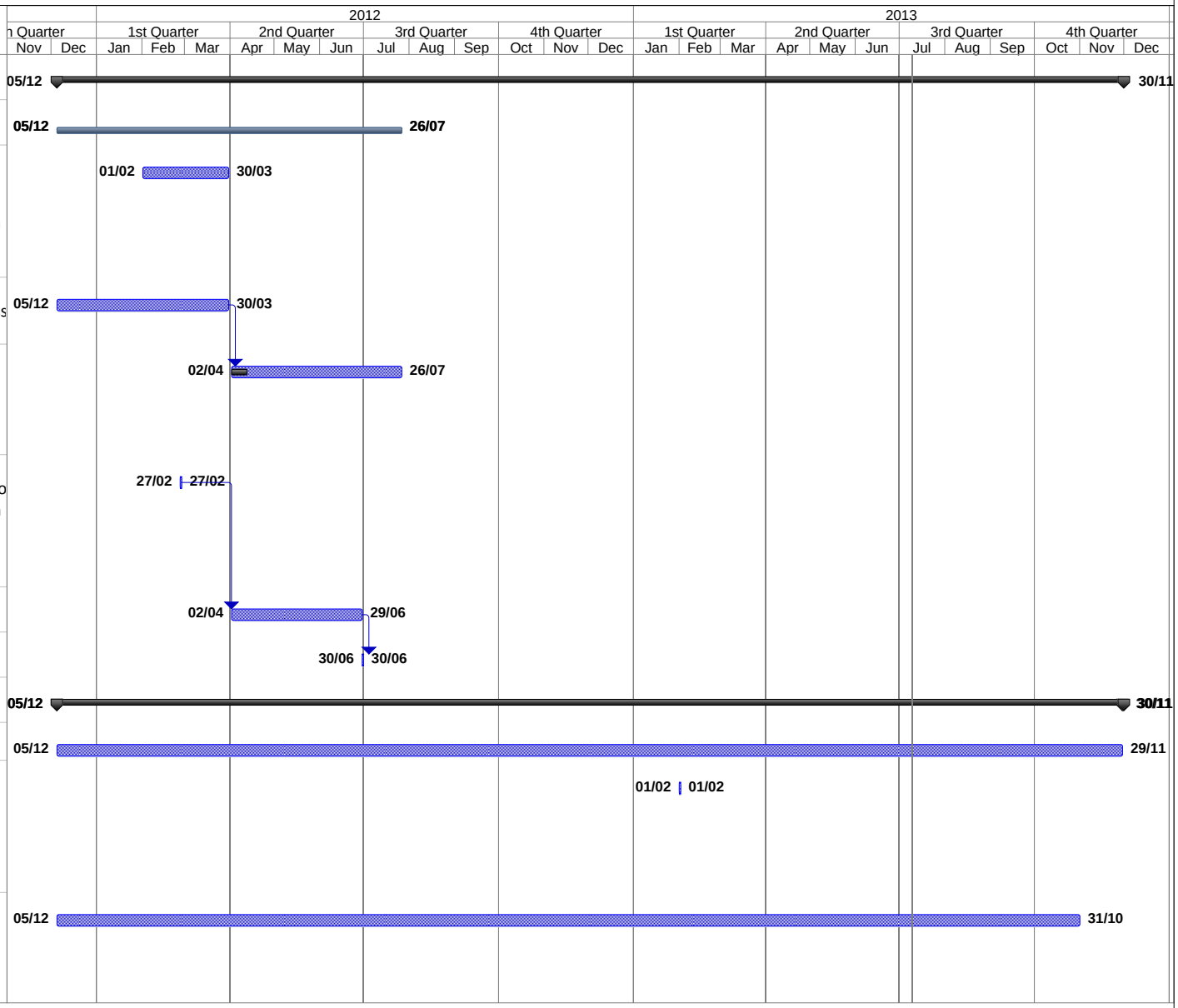
SAM Region	**PROJECT DESCRIPTION (DP)**	**DP N° H1**	
Programme	**Title of the Project**	**Start**	**End**
Aeronautical Meteorology *(Programme coordinator: Nohora Arias)*	Implementation of the world area forecast system (WAFS) *Project coordinator: Steven Albersheim (USA)* *Experts contributing to the project: Dulce Roses (United States) and Matt Strahan (United States)*	December 2011	November 2013
Objective	Assist States in the implementation of the WAFS and of the standards and recommended practices of Annex 3 and Part VI – MET of the CAR/SAM ANP, Basic and FASID, with regard to the use of WAFS products, and in the transition from the international satellite communications system (ISCS) to the WAFS Internet File Service (WIFS).		
Scope	The project will comprise all aerodrome offices of the SAM Region listed in Table MET 1A of the CAR/SAM FASID.		
Metrics	Number of States that receive WAFS products through the WIFS on 30 June 2012. (20 States)		
Strategy	All tasks will be carried out by experts nominated by SAM States participating in the project, led by the Project Coordinator and under the supervision of the MET Programme Coordinator through the "GoTo Meeting" tool. Upon completion of the tasks, the results will be sent to the MET Programme Coordinator as a final document for submission to, and if necessary approval by, the GREPECAS CRPP through the GREPECAS fast-track procedure. For the purpose of collaborative decision-making, meetings will be held with the areas involved.		
Rationale	The introduction of the new WAFS forecasts is an improvement to the WAFS in terms of improved accuracy, timely distribution, and usefulness of forecasts to facilitate airspace optimisation.		
Related projects	➢ Optimisation of the en-route airspace structure ➢ Improvement of ATM situational awareness ➢ Implementation of ATFM ➢ Implementation of the new flight plan format (FPL) ➢ Aeronautical mobile service in the SAM Region		

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation[1]	Date of Delivery	Comments
Updated WIFS user's guide	PFF SAM MET 04	MET programme coordinator and project director		November 2013	The guide was developed by the United States as the WAFS provider State. However, it shall be updated by the project.
Operational use of the WIFS	PFF SAM MET 04	MET programme coordinator and project director		30 June 2012	The ISCS will continue to operate until 30 June 2012.
Training for CAR/SAM States on the details and use of the new WAFS forecasts of convective clouds, icing, and turbulence derived from GRIB 2 data	PFF SAM MET 04	MET programme coordinator and project director		November 2012	GREPECAS Conclusion 15/5 requested that the Washington WAFC be invited to provide training to CAR/SAM States, in coordination with WMO. This project has been completed. Implemented.
Resources needed	Funds to conduct the seminar and to keep the WIFS user's guide up to date in English and Spanish. Likewise, the project coordinator and the experts must be provided with the equipment and time necessary to participate in GoTo Meetings.				

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

GRUPO REGIONAL CAR/SAM DE PLANIFICACIÓN Y EJECUCIÓN / CAR/SAM REGIONAL PLANNING AND IMPLEMENTATION GROUP (GREPECAS)
IMPLANTACION DEL WAFS EN LA REGION SAM / WAFS IMPLEMENTATION IN THE SAM REGION

ID	Task Name
1	**Implantación del WAFS - Región CAR/WAFS Implementation - CAR Region**
2	**Transición del ISCS al WIFS/Transition from ISCS to WIFS**
3	Estados evalúan/adquieren ancho de banda dedicada para recibir productos del WAFS a través del WIFS, basados en datos a descargar/States evaluate/acquire dedicated bandwidth to receive WAFS products through WIFS based on data to be downloaded
4	Disponer del paquete de software Wget para acceder al WIFS/Have the Wget software package available to acess WIFS
5	Registro al WIFS en linea de todos los usuarios del ISCS (http//www.aviationweather.gov/wifs)/WIFS on-line registration of all ISCS users (http//www.aviationweather.gov/wifs)
6	Se solicitó a Estados informar el estado de registro del WIFS y proporcionar un solo POC para informar al Estado Proveedor del WIFS/States were requested to inform on their WIFS registration status and to provide only one POC to inform WIFS Provider State
7	Pruebas finales de la operación del WIFS por parte del Estado proveedor del WAFS
8	El servicio ISCS-G2 deja de operar/ISCS-G2 stops operations
9	**Servicio de apoyo para los Productos del WAFS/Support service for WAFS products**
10	Los Estados participar en el chat/CDM SIGWX
11	Entrenamiento basado en la web para la utilización de pronósticos reticulares del WAFS para nubes convectivas, engelamiento y turbulencia/Web-based training to use WAFS gridded forecasts for convective, icing and turbulence
12	Los usuarios de los productos del WAFS requieren utilizar solo GRIB2 ya que GRIB1 termina con la Enmienda 76/WAFS products users require to use only GRIB2 since GRIB 1 ends with Amendment 76



APPENDIX B

PROJECT FOR THE IMPLEMENTATION OF THE INTERNATIONAL AIRWAYS VOLCANO WATCH (IAVW)

CAR Region	**PROJECT DESCRIPTION (DP)**	**DP N° H2**	
Programme	**Title of the project**	**Start**	**End**
Aeronautical meteorology *(Programme coordinator: Guillermo Vega)*	Implementation of the international airways volcano watch (IAVW) *Project coordinator:* ***Has not been appointed*** *Experts contributing to the project:* *This project was cancelled, explanation is contained in the respective working paper to the PPCR/2*	December 2011	November 2013
Objective	Ensure that States implement the IAVW and the standards and recommended practices of Annex 3 and Part VI – MET of the CAR/SAM ANP, Basic and FASID, concerning the issuance and distribution of the reports of en-route weather phenomena likely to affect the safety of aircraft operations, and the evolution of such phenomena in time and space (SIGMET WS, WV, WC, and WR).		
Scope	The project will comprise all meteorological watch offices (MWO) of the CAR Region listed in Table MET 1B of the CAR/SAM FASID, in coordination with the ACCs/FICs/NOFs, and Volcanic Ash Advisory Centre (VAAC) Washington. Procedures for the issuance of reports and coordination among the affected areas should be defined, as well as transfer of responsibilities between one MWO and others. Procedures will be defined for the transfer of responsibilities and assistance among the CMRE and the MWOs.		
Metrics	Testing of volcanic ash SIGMETs shall result in continuous improvements once project deliverables are available to the States.		
Goals	a) 100% of acceptance of SIGMET tests, regarding transmission and reception of SIGMET WV; and b) No aircraft encounters with volcanic ash clouds in the CAR Region in 2012 and 2013.		
Strategy	All tasks will be carried out by experts nominated by CAR States participating in the project, led by the Project Coordinator and under the supervision of the MET Programme Coordinator through the "GoToMeeting" tool. Upon completion of the tasks, the results will be sent to the MET Programme Coordinator as a final document for submission to, and if necessary approval by, the GREPECAS CRPP through the GREPECAS fast-track procedure. For the purpose of collaborative decision-making, meetings will be held with the areas involved.		
Rationale	The severity, persistence, and increased frequency of volcanic events with ash dispersion in the CAR Region and their repercussions on the provision of air navigation services call for tools to allow the personnel involved in the different air navigation areas to receive, properly use, and disseminate quality information related to such events. Likewise, based on Japan's experience, contingency plans are needed not only for this type of events but also for radioactive clouds when more than one FIR in the Region is involved.		
Related projects	➢ Optimisation of the en-route airspace structure ➢ Implementation of the new flight plan format (FPL)		

	➢ Implementation of ATFM

Project Deliverables	Relationship with the performance-based regional plan (PFF)	Responsible Party	Status of Implementation [1]	Date of Delivery	Comments
SIGMET guide revised and updated	PFF CAR MET 03	MET programme coordinator and project director		November 2012	The guide will include MWO responsibility handover procedures.
Regional contingency plan for volcanic activity events	PFF CAR MET 03	MET programme coordinator and project director		November 2012	Prior to its approval by GREPECAS, the ATM, MET, and AIM personnel of the Region shall approve the plan, for which a meeting will be held.
Regional contingency plan for accidental release of radioactive material.	PFF CAR MET 03	MET programme coordinator and project director		November 2013	Prior to its approval by GREPECAS, the ATM, MET, and AIM personnel of the Region shall approve the plan, for which a meeting will be held.
Protocol for the volcanic ash SIGMET exercise	PFF CAR MET 03	MET programme coordinator and project director		November 2012	The protocol for the volcanic ash SIGMET exercise reviewed and updated.
Results of the exercise	PFF CAR MET 03	MET programme coordinator and project director		November 2012	Based on the results, values may be assigned to the quality of SIGMETs and their exchange as compared with previous exercises.
Resources needed	Funds to conduct the meetings and to translate the regional volcanic ash contingency plan and the regional contingency plan in case of accidental release of radioactive material. Likewise, participants must be given facilities to participate in GoTo Meeting.				

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

APPENDIX C

PROJECT FOR THE IMPLEMENTATION OF THE MET INFORMATION QUALITY MANAGEMENT SYSTEM (QMS/MET)

CAR Region	**PROJECT DESCRIPTION (DP)**	**DP N° H3**	
Programme	**Title of the Project**	**Start**	**End**
Aeronautical Meteorology *(Programme coordinator: Guillermo Vega)*	Implementation of the QMS/MET *Project coordinator:* ***Juan Ayón*** *(Cuba)* *Experts contributing to the project:* *This project was cancelled, explanation is contained in the respective working paper to the PPCR/2 Meeting*	December 2011	December 2013
Objective	Assist States in the implementation of the QMS/MET and certification where applicable. Update and improve the QMS/MET guide to assist States in the production of MET documentation under ISO 9001: 2008, the implementation of Annex 3 and Part VI – MET of the CAR/SAM ANP, and the conduction of audit trials.		
Scope	Establishment and application of a duly organised MET service quality system at each MET unit of all CAR aerodromes listed in the CAR/SAM ANP, and compliance with the standards and recommended practices of Annex 3 and the CAR/SAM ANP, Vol. I, Basic, and Vol. II, FASID, Part VI – MET.		
Metrics	Number of AOP aerodromes certified under ISO 9000: 2008, and list of aerodromes and their status of implementation of QMS/MET in each of their units.		
Goals	a) 100% of CAR States have established QMS/MET system in accordance with standard ISO 9001:2008 on 31 October 2012; b) 70% of CAR States apply QMS/MET system in accordance with standard ISO 9001:2008 on 31 October 2012; c) 50% of CAR States have QMS/MET system certified by an organization in accordance with standard ISO 9001:2008 on 31 October 2012; and d) 100% of CAR States have QMS/MET system certified by an organization in accordance with standard ISO 9001:2008 on 31 October 2013.		
Strategy	All tasks will be carried out by experts nominated by CAR States participating in the project, led by the Project Coordinator and under the supervision of the MET Programme Coordinator through the "GoToMeeting" tool. Upon completion of the tasks, the results will be sent to the MET Programme Coordinator as a final document for submission to, and if necessary, approval by, the GREPECAS CRPP through the GREPECAS fast-track procedure. For the purpose of collaborative decision-making, meetings will be held with the areas involved.		

Rationale	More accurate and timely meteorological information will optimise flight path planning and prediction, thus improving ATM safety and efficiency; improved aerodrome reports and forecasts will optimise the use of available aerodrome capacity; and meteorological information will minimise the environmental impact of air traffic. Performance management will be an important part of meteorological information quality assurance.
Related projects	➢ Automation ➢ Improved ATM situational awareness

Project Deliverables	Relationship with the regional performance -based plan (PFF)	Responsible Party	Status of Implementation [1]	Date of Delivery	Comments
Revised and updated QMS/MET guide.	PFF CAR MET 02, 03, and 04	MET programme coordinator and project director		November 2013	The practical guide will facilitate the drafting of ISO 9000: 2008 documentation by MET service provider States.
Development of a State survey on MET personnel	PFF CAR MET 02, 03, and 04	MET programme coordinator and project director		November 2012	One of the main problems facing MET service provider States is the lack of personnel with the competencies required by WMO and ICAO. State requirements will be officially communicated to ICAO contracting States.
Table of compliance with Annex 3 standards and MET procedures	PFF CAR MET 02, 03, and 04	MET programme coordinator and project director		August 2012	In the first instance, strict compliance with ICAO standards related to the provision of MET services will be monitored.
Table of compliance with the CAR/SAM ANP, Part VI - MET.	PFF CAR MET 02, 03, and 04	MET programme coordinator and project director		August 2012	Close monitoring of strict compliance with Part VI– MET of the CAR/SAM ANP.
Audit trials	PFF CAR MET 02, 03, and 04	MET programme coordinator and project director		November 2013	Audit trials will be conducted to identify QMS/MET implementation issues and to propose strategies for their resolution.
Resources needed	Funds to conduct audit trials. States could cover the cost of trials by their lead auditors, since the experience obtained will contribute to improve the system. Likewise, participants must be given facilities to participate in GoTo Meeting.				

[1] *Grey* *Task not started yet*
Green *Activity being implemented as scheduled*
Yellow *Activity started with some delay, but will be implemented on time*
Red *Activity not implemented on time; mitigation measures are required*

APPENDIX D

PROJECT FOR THE OPTIMISATION OF OPMET EXCHANGE, INCLUDING SIGMETs (WS, WV, WC, AND WR), WARNINGS AND METEOROLOGICAL ALERTS

CAR Region	PROJECT DESCRIPTION (DP)	DP N° H4	
Programme	**Title of the project**	**Start**	**End**
Aeronautical meteorology *(Programme coordinator: Guillermo Vega)*	*Optimisation of OPMET exchange, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts* *Project Coordinator:* ***Dr. Enrique Camarillo*** *(Mexico)* *Experts contributing to the project:* Werner Stolz (Costa Rica), Danilo Ramírez (El Salvador)	December 2011	November 2013
Objective	Achieve at least 95% efficiency in the preparation and dissemination of OPMET information to CAR States by 31 November 2013		
Scope	Correct preparation and timely dissemination of OPMET information involves all MET service units [(EMA(s), OMA(s), MWO(s) and OPMET data banks] of all CAR aerodromes listed in the CAR/SAM ANP.		
Metrics	The percentage of OPMET messages received on time at the Brasilia International OPMET Data Bank (according to Annex 3, Appendix 10, OPMET control considers as messages received those OPMET messages with transit times of 10 minutes) and verification of proper and standard production (quality) of OPMET information at MET services [(EMA(s), OMA(s), and MWO(s)] (Annex 3, in Appendices 3, 4, 5, and 6, contains the (OPMET) message planning tables.		
Goals	a) Reach 85% in the reception of OPMET data of the CAR Region in the Brasilia on 31/12/12; and 95% on 31/10/13 b) Reach 85% in the reception of OPMET data in each CAR State on 31/12/12; and 95% on 31/10/13		
Strategy	All tasks will be carried out by experts nominated by CAR States (Points of Contact – POC) and by experts contributing to the project, led by the Project Coordinator and under the supervision of the MET Programme Coordinator through State letters sent by the ICAO Mexico Office, by e-mail, and the "GoToMeeting" tool. Upon completion of the tasks, the results will be sent to the MET Programme Coordinator as a final document for submission to, and if necessary approval by, the GREPECAS CRPP through the GREPECAS fast-track procedure. For the purpose of collaborative decision-making, meetings will be held with the areas involved.		
Rationale	More timely meteorological information will optimise flight path planning and prediction, thus improving ATM system safety and efficiency, pursuant to GREPECAS Conclusion 12/64 (CAR/SAM OPMET EXCHANGE CONTROLS). Meteorological information will also minimise the environmental impact of air traffic.		
Related projects	➢ Automation ➢ Implementation of ATFM ➢ Installation of AMHS at MET units having an international OPMET requirement ➢ Implementation of the MET information quality management system (QMS/MET) ➢ Enhanced ATM situational awareness ➢ Implementation of the new flight plan format (FPL)		

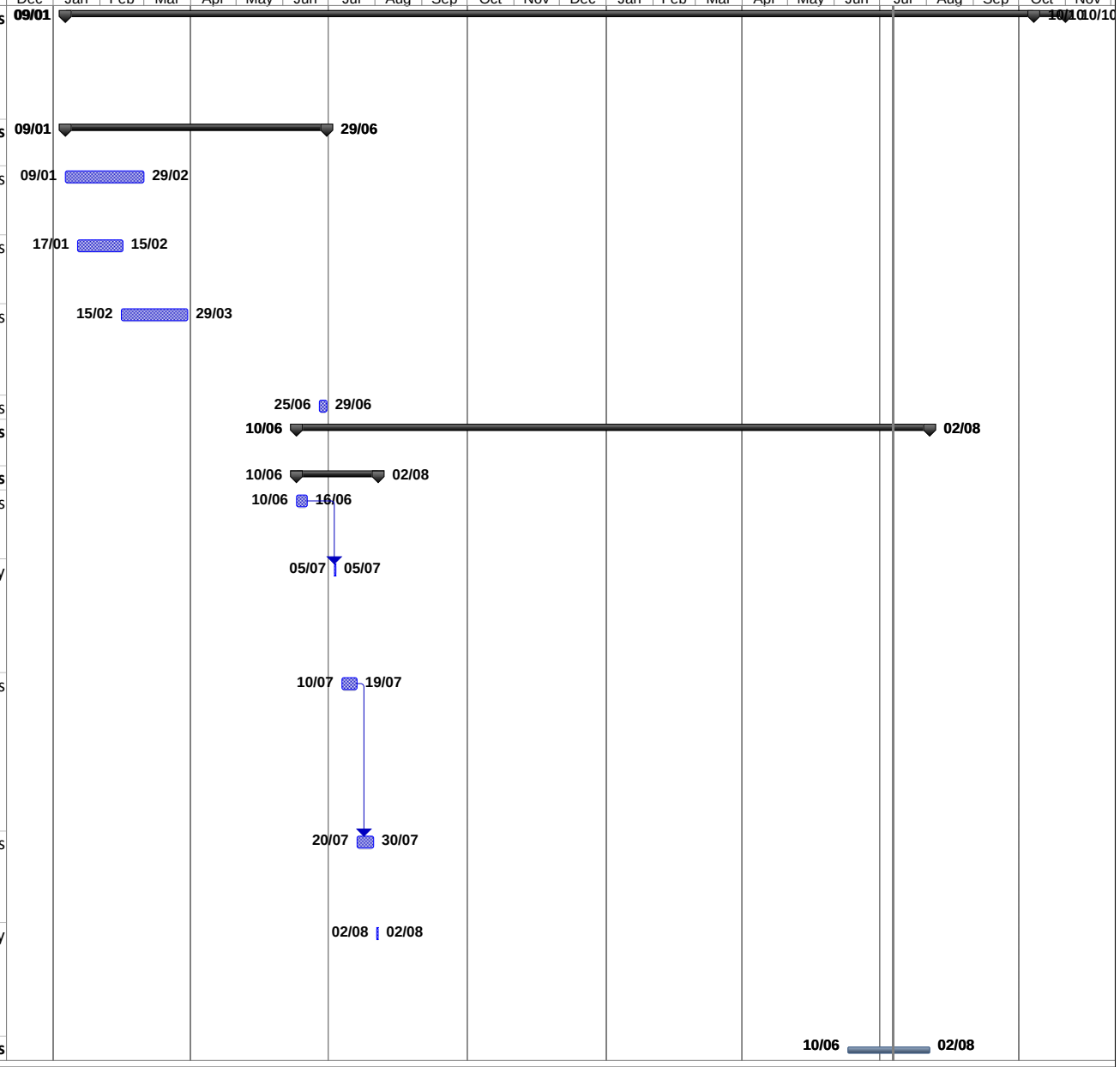
Project Deliverables	Relationship with the performance-based regional plan (PFF)[1]	Responsible Party	Status of Implementation [2]	Date of Delivery	Comments
OPMET guide revised and updated	PFF CAR MET 02	MET programme coordinator and project coordinator		September 2013	The OPMET guide prepared by the SAM Office will include procedures for preparing OPMET data and tables containing the AFTN addresses to which OPMET information must be sent worldwide in accordance with the CAR/SAM FASID, thus facilitating the preparation and issuance of MET messages.
Results of coordinated controls of annual SIGMET WV tests	PFF CAR MET 02	POC and BR OPMET data bank		February 2013	The measurement of SIGMET WV messages received on time at the Brasilia International OPMET Data Bank will give the actual percentage of OPMET data, and the verification of the proper preparation of SIGMET WV messages at MWO(s) will permit an assessment of OPMET information quality.
Results of the analysis of coordinated controls of annual SIGMET WV tests	PFF CAR MET 02	MET programme coordinator and project coordinator		May 2013	The results obtained from the coordinated controls of annual SIGMET WV tests will allow programme and project coordinators to adopt, if necessary, corrective action for subsequent coordinated controls of OPMET information, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts.
Results of coordinated controls of OPMET information, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts	PFF CAR MET 02	POC and BR OPMET data bank		August 2013	Timely measurements at the Brasilia International OPMET data bank will provide the actual percentage of OPMET data received, and the verification of the proper preparation of OPMET information at MET services [(EMA(s), OMA(s), and MWO(s)] will permit to assess the quality of OPMET information.
Results of the analysis of coordinated controls of OPMET information, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts	PFF CAR MET 02	MET programme coordinator and project coordinator		August 2013	The results obtained from coordinated controls of OPMET information, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts will give programme and project coordinators an idea of project results.

Project Deliverables	Relationship with the performance-based regional plan (PFF)[1]	Responsible Party	Status of Implementation [2]	Date of Delivery	Comments
Final project report	PFF CAR MET 02	MET programme coordinator and project coordinator		November 2013	The purpose of the final project report to be submitted by the programme coordinator is to enable the NACC Office, Mexico to check the achievements of the project and propose to the States future measures to maintain the level attained through OPMET controls.
Resources needed	Funds for meetings with project members in order to assess the results and propose corrective actions. States could use their human resources to conduct the foreseen OPMET tests and controls, and, if necessary, cover the financial costs, since the experience gained will result in an improvement of their own systems. Likewise, participants must be given facilities to participate in GoToMeeting.				

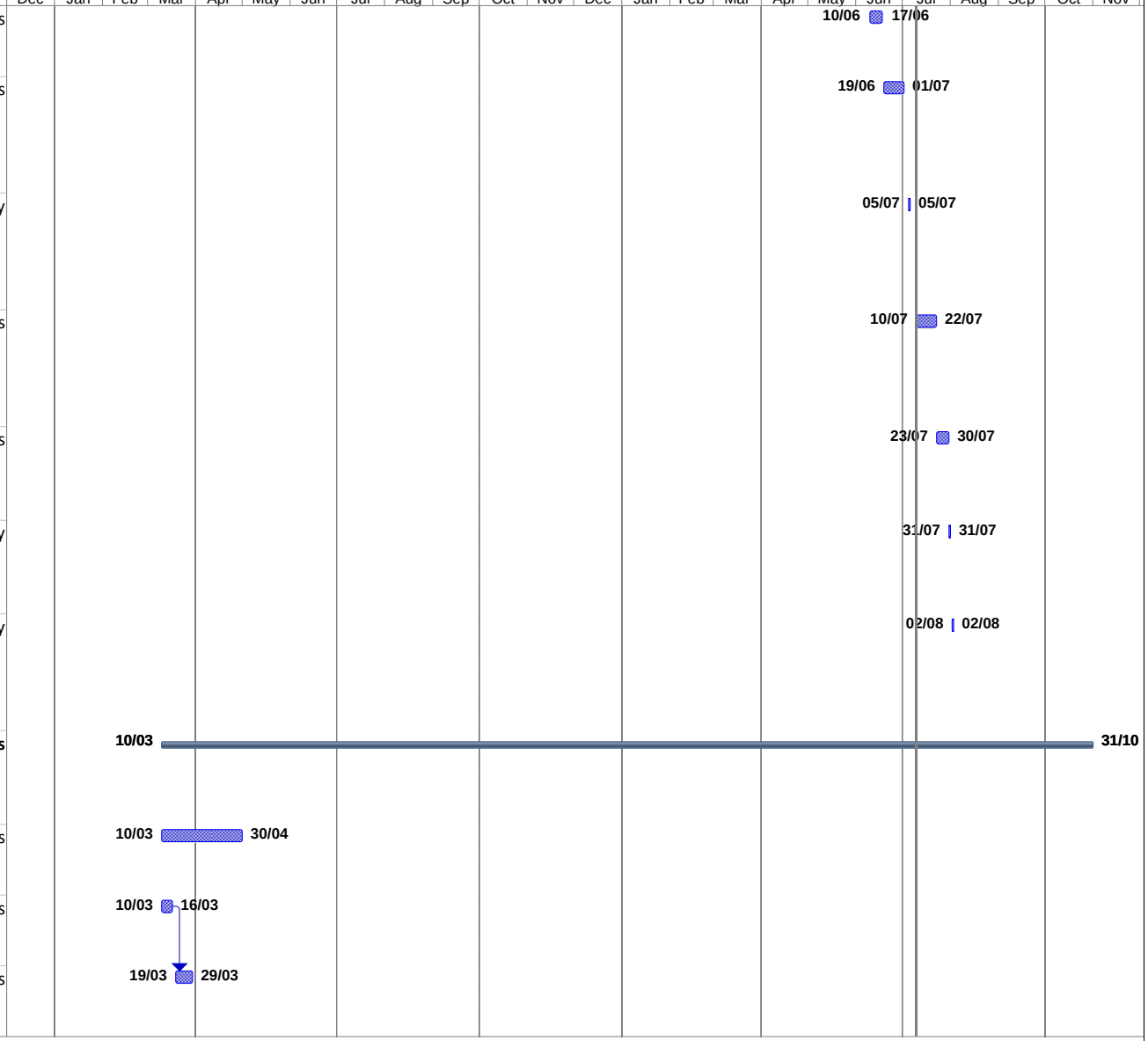
1 Air navigation system Performance-Based Implementation Plan for the CAR Region

2 *Grey* *Task not started yet*
Green *Activity being implemented as scheduled*
Yellow *Activity started with some delay, but will be implemented on time*
Red *Activity not implemented on time; mitigation measures are required*

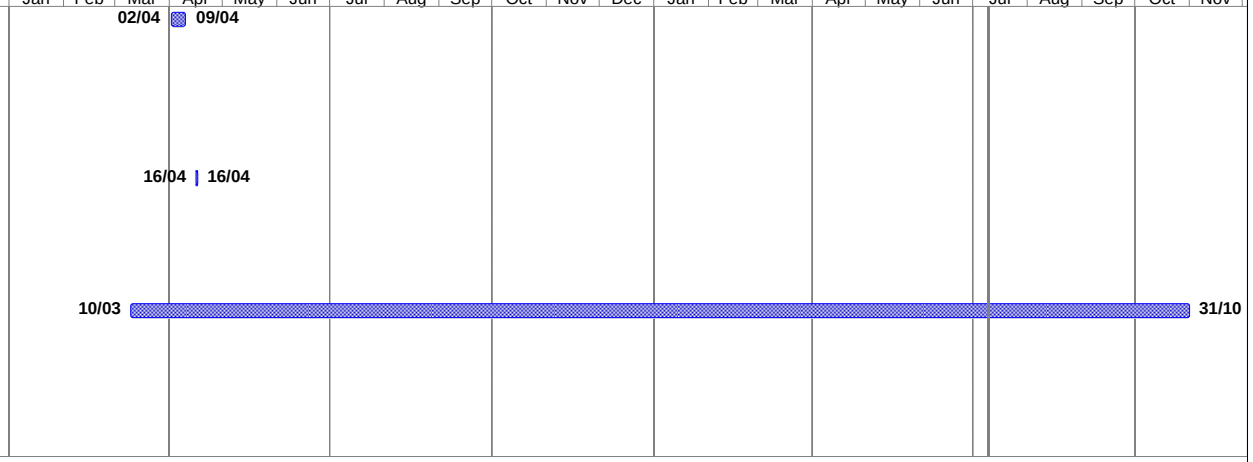
ID	Task Name	Duration
1	**Optimización del intercambio OPMET, incluyendo SIGMET (WS, WV, WC y WR), avisos y alertas Meteorológicas/Optimization of OPMET exchange, incluidng SIGMETs (WS, WV, WC and WR), meteorological warning and alerts**	**465 days**
2	**Revisar y actualizar la Guía OPMET/Revew and update the OPMET Guide**	**129 days**
3	Revisar la Guía OPMET y proponer mejoras de ser necesario/Review the OPMET Guide and propose improvements if necessary	38 days
4	Actualizar la lista de puntos de contacto operativos OPMET (POC)/Update the list of OPMET operational points of contact (POC)	22 days
5	Revisar y, de ser necesario, proponer mejoras a la tabla para el control OPMET/Review and, if necessary, propose improvements to the table for OPMET control	33 days
6	Consolidar la Guía/Consolidate the Guide	5 days
7	**Controles de intercambio OPMET de los Estados CAR/CAR States' OPMET exchange controls**	**305 days**
8	**Control OPMET 2012/OPMET Control 2012**	**43 days**
9	Los Estados CAR llevan a cabo el control OPMET/CAR States carry out the OPMET control	7 days
10	Cada Estado envía los resultados del control y de la evaluación al director del Proyecto/Each State submits the results of the control and the evaluation to the Project director	1 day
11	El director del Proyecto analiza y envía al coordinador del Programa MET los resultados del control y de la evaluación/The Project director analyzes and submits to the MET Programme coordinator the results of the control and evaluation	8 days
12	El coordinador del Programa MET analiza los resultados de las tareas realizadas/The MET Programme coordinator analyzes and results of the tasks performed	7 days
13	La Oficina CAR envia a los Estados los resultados del control con acciones de mejora, si fuera el caso/CAR Office submits to States the results of the control with improvement actions, if necessary	1 day
14	**Control OPMET 2013/OPMET Control 2013**	**41 days**



ID	Task Name	Duration
15	Los Estados CAR llevan a cabo el control OPMET/CAR States carry out the OPMET control	7 days
16	Cada Estado evalúa los resultados del control OPMET y lo envía a los demás Estados/Each State evaluates the results of OPMET control and sends it to the other States	9 days
17	Cada Estado evalúa los resultados del control OPMET y lo envía a los demás Estados/Each State evaluates the results of OPMET control and sends it to the other States	1 day
18	Cada Estado envía los resultados del control y de la evaluación al director del Proyecto/Each State submits the results of the control and the evaluation to the Project director	9 days
19	El coordinador del Programa MET analiza los resultados de las tareas realizadas/The MET Programme coordinator analyzes and results of the tasks performed	6 days
20	GoToMeeting para revisar los resultados generales del control OPMET/GoToMeeting to review general results of OPMET control	1 day
21	La Oficina CAR envia a los Estados los resultados del control con acciones de mejora, si fuera el caso/CAR Office submits to States the results of the control with improvement actions, if necessary	1 day
22	**Control de datos OPMET recibidos en el Banco internacional de datos OPMET (IODB) de Washington/OPMET Data Control received in the Washington International OPMET databank (IODB)**	**435 days**
23	Primer control OPMET del IODB de Washington en 2012/First OPMET control of the Washington IODB in 2012	37 days
24	El Banco lleva a cabo el control de datos OPMET recibidos/The Bank carries out the control of the OPMET data received	6 days
25	El Banco analiza y evalúa el primer control/The Bank analyzes and evaluates the first control	9 days



ID	Task Name	Duration
26	El director del Proyecto analiza y envía al coordinador del Programa MET los resultados del control y de la evaluación/The Project director analyzes and submits to the MET Programme coordinator the results of the control and evaluation	6 days
27	La Oficina CAR envia a los Estados los resultados del control con acciones de mejora, si fuera el caso/CAR Office submits to States the results of the control with improvement actions, if necessary	1 day
28	Finalización del Proyecto 31 de octubre de 2013 (Estos controles se realizan anualmente en marzo, junio, septiembre, diciembre)/End of Project 31 October 2013 (These controls are carried out annually in March, June, September & December)	435 days



APPENDIX E

CAR/SAM PROJECT FOR THE IMPLEMENTATION OF THE WORLD AREA FORECAST SYSTEM (WAFS)

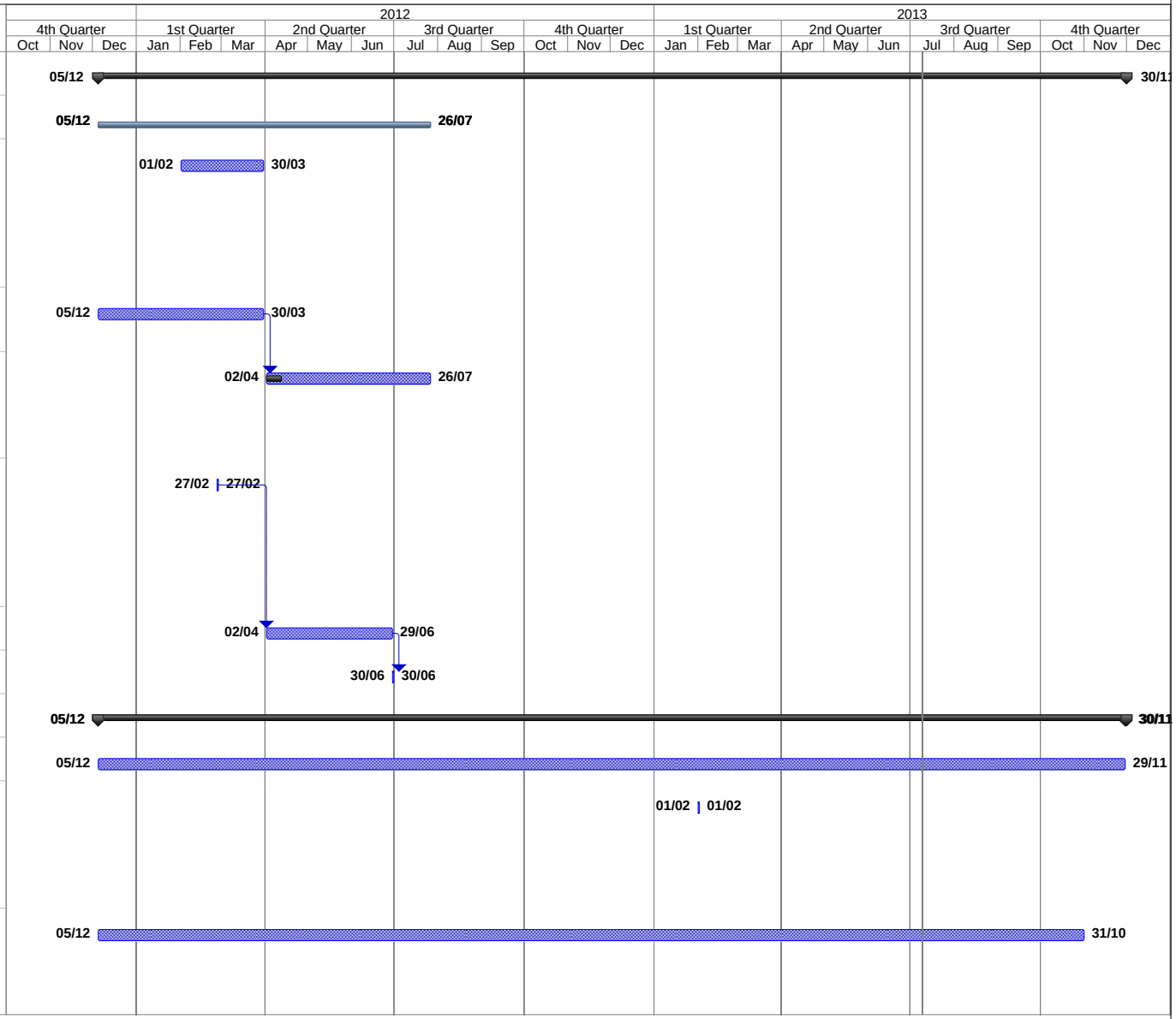
SAM Region	**PROJECT DESCRIPTION (DP)**		**DP N° H1**	
Programme	**Title of the Project**		**Start**	**End**
Aeronautical Meteorology *(Programme coordinator: Nohora Arias)*	Implementation of the world area forecast system (WAFS) *Project coordinator:* *Experts supporting to the project:*	***Steven Albersheim** (USA)* *Alfred Moosakanian (United States)* *Matt Strahan (United States)*	December 2011	November 2013
Objective	Assist States in the implementation of the WAFS and of the standards and recommended practices of Annex 3 and Part VI – MET of the CAR/SAM ANP, Basic and FASID, with regard to the use of WAFS products, and in the transition from the international satellite communications system (ISCS) to the WAFS Internet File Service (WIFS).			
Scope	The project will comprise all aerodrome offices of the SAM Region listed in Table MET 1A of the CAR/SAM FASID.			
Metrics	Number of States that receive WAFS products through the WIFS on 30 June 2012. (13 States)			
Strategy	All tasks will be carried out by experts nominated by SAM States participating in the project, led by the Project Coordinator and under the supervision of the MET Programme Coordinator through the "GoTo Meeting" tool. Upon completion of the tasks, the results will be sent to the MET Programme Coordinator as a final document for submission to, and if necessary approval by, the GREPECAS CRPP through the GREPECAS fast-track procedure. For the purpose of collaborative decision-making, meetings will be held with the areas involved.			
Goals	a) 85.7% of SAM States receive WAFS products through WIFS on 30 March 2012; b) 100% of SAM States receive WAFS products through WIFS on 3 August 2012			
Rationale	The introduction of the new WAFS forecasts is an improvement to the WAFS in terms of improved accuracy, timely distribution, and usefulness of forecasts to facilitate airspace optimisation.			
Related projects	➢ Optimisation of the en-route airspace structure ➢ Improvement of ATM situational awareness ➢ Implementation of ATFM ➢ Implementation of the new flight plan format (FPL) ➢ Aeronautical mobile service in the SAM Region			

Project Deliverables	Relationship with the regional performance-based plan (PFF)	Responsible Party	Status of Implementation[1]	Date of Delivery	Comments
Updated WIFS user's guide	PFF SAM MET 04	MET programme coordinator and project director		November 2013	The guide was developed by the United States as the WAFS provider State. However, it shall be updated by the project.
Operational use of the WIFS	PFF SAM MET 04	MET programme coordinator and project director		30 June 2012	The ISCS broadcast shuttered. Access to WAFS services only available via WIFS. 100% of SAM States made the transition from ISCS to WIFS.
Training for CAR/SAM States on the details and use of the new WAFS forecasts of convective clouds, icing, and turbulence derived from GRIB 2 data	PFF SAM MET 04	MET programme coordinator and project director		November 2012	GREPECAS Conclusion 15/5 requested that the Washington WAFC be invited to provide computer-based training to CAR/SAM States, in coordination with WMO.
Resources needed	Funds to conduct the seminar and to keep the WIFS user's guide up to date in English and Spanish. Likewise, the project coordinator and the experts must be provided with the equipment and time necessary to participate in GoToMeetings.				

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

GRUPO REGIONAL CAR/SAM DE PLANIFICACIÓN Y EJECUCIÓN / CAR/SAM REGIONAL PLANNING AND IMPLEMENTATION GROUP (GREPECAS)
IMPLANTACION DEL WAFS EN LA REGION SAM / WAFS IMPLEMENTATION IN THE SAM REGION

ID	Task Name	Duration
1	**Implantación del WAFS - Región SAM/WAFS Implementation - SAM Region**	**521 days**
2	**Transición del ISCS al WIFS/Transition from ISCS to WIFS**	**170 days**
3	Estados evalúan/adquieren ancho de banda dedicada para recibir productos del WAFS a través del WIFS, basados en datos a descargar/States evaluate/acquire dedicated bandwidth to receive WAFS products through WIFS based on data to be downloaded	42.5 days
4	Disponer del paquete de software Wget para acceder al WIFS/Have the Wget software package available to acess WIFS	85 days
5	Registro al WIFS en linea de todos los usuarios del ISCS (http//www.aviationweather.gov/wifs)/WIFS on-line registration of all ISCS users (http//www.aviationweather.gov/wifs)	85 days
6	Se solicitó a Estados informar el estado de registro del WIFS y proporcionar un solo POC para informar al Estado Proveedor del WIFS/States were requested to inform on their WIFS registration status and to provide only one POC to inform WIFS Provider State	1 day
7	Pruebas finales de la operación del WIFS por parte del Estado proveedor del WAFS	65 days
8	El servicio ISCS-G2 deja de operar/ISCS-G2 stops operations	1 day
9	**Servicio de apoyo para los Productos del WAFS/Support service for WAFS products**	**522 days**
10	Los Estados participar en el chat/CDM SIGWX	521 days
11	Entrenamiento basado en la web para la utilización de pronósticos reticulares del WAFS para nubes convectivas, engelamiento y turbulencia/Web-based training to use WAFS gridded forecasts for convective, icing and turbulence	1 day
12	Los usuarios de los productos del WAFS requieren utilizar solo GRIB2 ya que GRIB1 termina con la Enmienda 76/WAFS products users require to use only GRIB2 since GRIB 1 ends with Amendment 76	500 days



APPENDIX F

PROJECT FOR THE IMPLEMENTATION OF THE INTERNATIONAL AIRWAYS VOLCANO WATCH (IAVW)

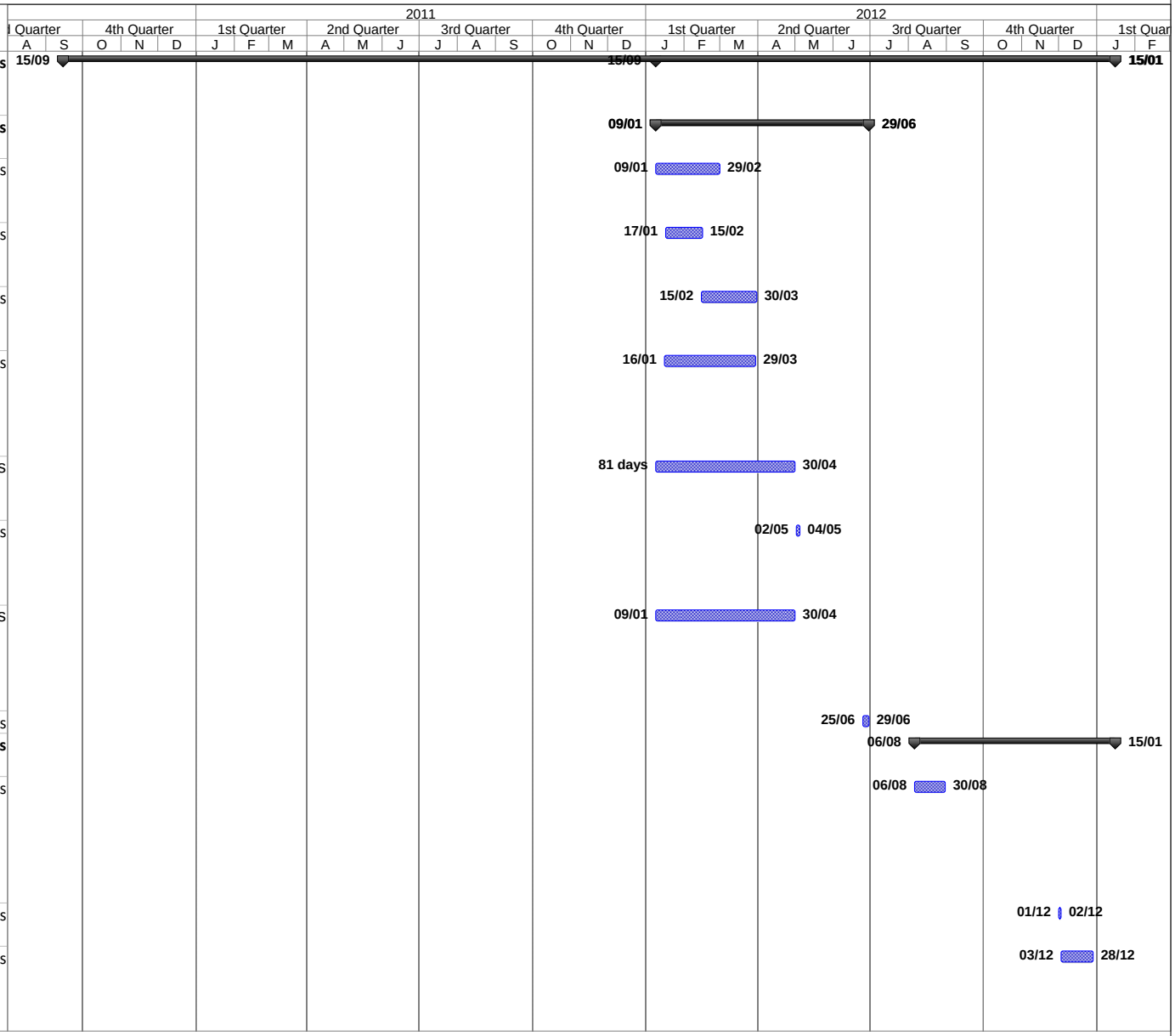
SAM Region	**PROJECT DESCRIPTION (DP)**		**DP N° H2**	
Programme	**Title of the project**		**Start**	**End**
Aeronautical meteorology *(Programme coordinator: Nohora Arias)*	Implementation of the international airways volcano watch (IAVW) *Project coordinator:* *Experts contributing to the project:*	***Jorge Oscar Leguizamón** (Argentina):* *Olver Boolsen (Argentina)* *Walter Ríos (Bolivia)* *Oscar Bermudez (Colombia)* *Jorge Armoa (Paraguay)* *Lourdes Martínez (Peru)*	December 2011	November 2013
Objective	Ensure that States in the implement the IAVW and the standards and recommended practices of Annex 3 and Part VI – MET of the CAR/SAM ANP, Basic and FASID, concerning the issuance and distribution of the reports of en-route weather phenomena likely to affect the safety of aircraft operations, and the evolution of such phenomena in time and space (SIGMET WS, WV, WC, and WR).			
Scope	The project will comprise all meteorological watch offices (MWO) of the SAM Region listed in Table MET 1B of the CAR/SAM FASID, in coordination with the ACCs/FICs/NOFs, and Volcanic Ash Advisory Centres (VAAC) Buenos Aires and Wellington (New Zealand). Procedures for the issuance of reports and coordination among the affected areas should be defined, as well as transfer of responsibilities between one MWO and others. Procedures will be defined for the transfer of responsibilities and assistance among the CMRE and the MWOs.			
Metrics	Testing of volcanic ash SIGMETs shall result in continuous improvements once project deliverables are available to the States.			
Strategy	All tasks will be carried out by experts nominated by SAM States participating in the project, led by the Project Coordinator and under the supervision of the MET Programme Coordinator through the "GoToMeeting" tool. Upon completion of the tasks, the results will be sent to the MET Programme Coordinator as a final document for submission to, and if necessary approval by, the GREPECAS CRPP through the GREPECAS fast-track procedure. For the purpose of collaborative decision-making, meetings will be held with the areas involved.			
Goals	a) 100% of acceptance of SIGMET tests, regarding transmission and reception of SIGMET WV; and b) No aircraft encounters with volcanic ash clouds in the SAM Region in 2012 and 2013.			
Rationale	The severity, persistence, and increased frequency of volcanic events with ash dispersion in the SAM Region and their repercussions on the provision of air navigation services call for tools to allow the personnel involved in the different air navigation areas to receive, properly use, and disseminate quality information related to such events. Likewise, based on Japan's experience, contingency plans are needed not only for this type of events but also for radioactive clouds when more than one FIR in the Region is involved.			
Related projects	➢ Optimisation of the en-route airspace structure ➢ Implementation of the new flight plan format (FPL) ➢ Implementation of ATFM			

Project Deliverables	Relationship with the performance-based regional plan (PFF)	Responsible Party	Status of Implementation [1]	Date of Delivery	Comments
SIGMET guide revised and updated	PFF SAM MET 03	MET programme coordinator and project director		January 2013	The guide will include MWO responsibility handover procedures. The guide is in continuous revision
Regional contingency plan for volcanic activity events	PFF SAM MET 03	MET programme coordinator and project director		November 2012	Prior to its approval by GREPECAS, the ATM, MET, and AIM personnel of the Region shall approve the plan, for which a meeting will be held. This task has been passed to the ATM responsibility
Regional contingency plan for accidental release of radioactive material.	PFF SAM MET 03	MET programme coordinator and project director		November 2013	Prior to its approval by GREPECAS, the ATM, MET, and AIM personnel of the Region shall approve the plan, for which a meeting will be held. This task has been passed to the ATM responsibility
Protocol for the volcanic ash SIGMET exercise	PFF SAM MET 03	MET programme coordinator and project director		December 2012	The protocol for the volcanic ash SIGMET exercise reviewed and updated. On 1 and 2 December 2012 the test was carried out
Results of the exercise	PFF SAM MET 03	MET programme coordinator and project director		December 2012	Based on the results, values may be assigned to the quality of SIGMETs and their exchange as compared with previous exercises.
Resources needed	Funds to conduct the meetings and to translate the regional volcanic ash contingency plan and the regional contingency plan in case of accidental release of radioactive material. Likewise, participants must be given facilities to participate in GoTo Meetings.				

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

GRUPO REGIONAL CAR/SAM DE PLANIFICACIÓN Y EJECUCIÓN / CAR/SAM REGIONAL PLANNING AND IMPLEMENTATION GROUP (GREPECAS)
IMPLEMENTACION DE LA VIGILANCIA DE LOS VOLCANES EN LAS AEROVIAS INTERNACIONAES / IMPLEMENTATION OF INTERNATIONAL AIRWAYS VOLCANO WATCH

ID	Task Name	Duration
1	**Implantación de la Vigilancia en Aerovías Internacionales (IAVW)/Implementation of International Airways Volcano Watch (IAVW)**	**612 days**
2	**Revisar y actualizar la Guía SIGMET/Review and update SIGMET Guide**	**125 days**
3	Revisar la Guía SIGMET y proponer mejoras de ser necesario/Review SIGMET Guide and propose improvements as necessary	38 days
4	Crear la lista de puntos de contacto operativos (POC)/Create the list of points of contact (POCs)	22 days
5	Desarrollar los procedimientos de traspaso de responsabilidades de las MWOs/Develop MWO handover procedures	33 days
6	Revisar y mejorar, de ser necesario, el protocolo para el ejercicio SIGMET sobre cenizas volcánicas/Review and improve, as applicable, the protocol for the volcanic ash SIGMET exercise	54 days
7	Definir procedimientos de coordinación entre las áreas afectadas/Define procedures for coordination between affected areas	81 days
8	GoTo Meeting para revisar con la coordinadora del Prrograma MET las tareas/Go-to-Meeting to review tasks with the MET Programme coordinator	3 days
9	Definir procedimientos de transferencia de responsabilidades y de asesoramiento entre el CMRE, las MWO y los ACC/Define procedures for handover and advisory activities between CMRE, MWOs and ACCs	81 days
10	Consolidar la Guía /Consolidate the Guide	5 days
11	**Ejercicio sobre cenizas volcánicas/Volcanic ash exercise**	**119 days**
12	Adaptar el protocolo para el ejercicio sobre ceniza volcánica de los Estados SAM en coordinación con los VAAC de Buenos Aires y Washington/Adjust the volcanic ash protocol for SAM States, in coordination with VAAC Buenos Aires and Washington	19 days
13	Llevar a cabo el ejercicio/Carry out the exercise	2 days
14	Analizar los resultados del ejercicio y enviarlo a los miembros del proyecto/Analyse the results of the exercise and submit them to project members	20 days



GRUPO REGIONAL CAR/SAM DE PLANIFICACIÓN Y EJECUCIÓN / CAR/SAM REGIONAL PLANNING AND IMPLEMENTATION GROUP (GREPECAS)
IMPLEMENTACION DE LA VIGILANCIA DE LOS VOLCANES EN LAS AEROVIAS INTERNACIONAES / IMPLEMENTATION OF INTERNATIONAL AIRWAYS VOLCANO WATCH

ID	Task Name	Duration	2011																2012												
			l Quarter		4th Quarter			1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			1st Quarter			2nd Quarter			3rd Quarter			4th Quarter			1st Quar	
			A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F
15	Preparar una teleconferencia para revisión y aprobación de la Guía SIGMET/Prepare a meeting to review and approve the SIGMET Guide	4 days																												**07/01**		**10/01**	
16	Llevar a cabo una teleconferencia para revisión y aprobación de la Guía SIGMET/Carry out a meeting to review and approve the SIGMET Guide	2 days																												**14/01**		**15/01**	

APPENDIX G

PROJECT FOR THE IMPLEMENTATION OF THE MET INFORMATION QUALITY MANAGEMENT SYSTEM (QMS/MET)

SAM Region	**PROJECT DESCRIPTION (DP)**		**DP N° H3**	
Programme	**Title of the Project**		**Start**	**End**
Aeronautical Meteorology *(Programme coordinator: Nohora Arias)*	Implementation of the QMS/MET *Project coordinator:* *Experts contributing to the project:*	***Ricardo Reyes** (Peru)* *Olver Boolsen (Argentina)* *Fernando de Abreu Pinto (Brazil)* *Xenia Guardia (Panama)* *Roberto Salinas (Paraguay)* *Lourdes Martínez (Peru)*	December 2011	December 2013
Objective	Assist States in the implementation of the QMS/MET and certification where applicable. Update and improve the QMS/MET guide to assist States in the production of MET documentation under ISO 9001: 2008, the implementation of Annex 3 and Part VI – MET of the CAR/SAM ANP, and the conduction of audit trials.			
Scope	Establishment and application of a duly organised MET service quality system at each MET unit of all SAM aerodromes listed in CAR/SAM ANP, and compliance with the standards and recommended practices of Annex 3 and the CAR/SAM ANP, Vol. I, Basic, and Vol. II, FASID, Part VI – MET.			
Metrics	Number of AOP aerodromes certified under ISO 9000: 2008, and list of aerodromes and their status of implementation of QMS/MET in each of their units.			
Strategy	All tasks will be carried out by experts nominated by SAM States participating in the project, led by the Project Coordinator and under the supervision of the MET Programme Coordinator through the "GoToMeeting" tool. Upon completion of the tasks, the results will be sent to the MET Programme Coordinator as a final document for submission to, and if necessary approval by, the GREPECAS CRPP through the GREPECAS fast-track procedure. For the purpose of collaborative decision-making, meetings will be held with the areas involved.			
Goals	a) 100% of SAM States have established QMS/MET system in accordance with standard ISO 9001:2008 on 31 October 2012; b) 70% of SAM States apply QMS/MET system in accordance with standard ISO 9001:2008 on 31 October 2012; c) 50% of SAM States have QMS/MET system certified by an organization in accordance with standard ISO 9001:2008 on 31 October 2012; and d) 100% of SAM States have QMS/MET system certified by an organization in accordance with standard ISO 9001:2008 on 31 October 2013.			

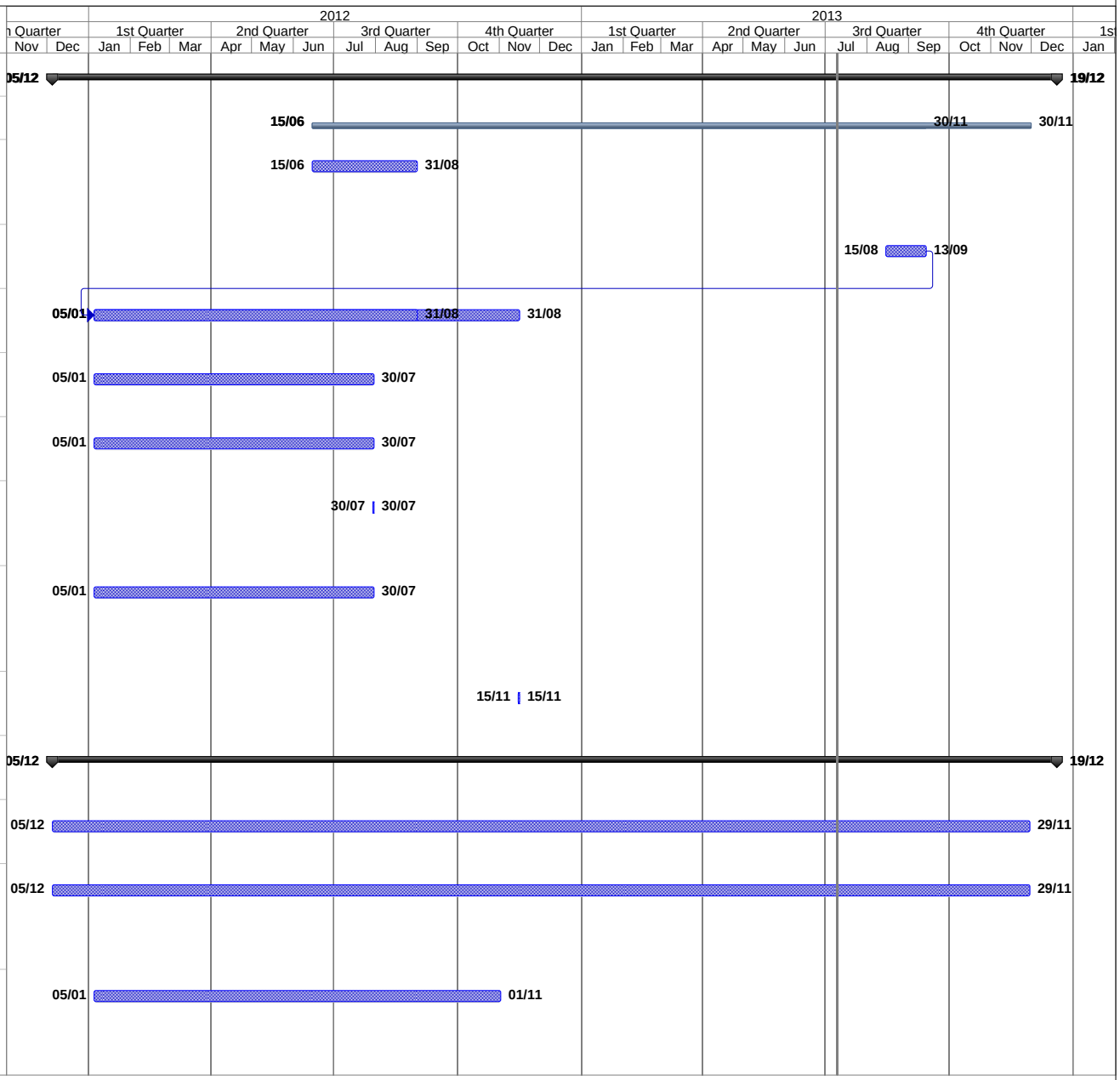
Rationale	More accurate and timely meteorological information will optimise flight path planning and prediction, thus improving ATM safety and efficiency; improved aerodrome reports and forecasts will optimise the use of available aerodrome capacity; and meteorological information will minimise the environmental impact of air traffic. Performance management will be an important part of meteorological information quality assurance.
Related projects	➢ Automation ➢ Improved ATM situational awareness

Project Deliverables	Relationship with the regional performance -based plan (PFF)	Responsible Party	Status of Implementation [1]	Date of Delivery	Comments
Revised and updated QMS/MET guide.	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		November 2013	The practical guide will facilitate the drafting of ISO 9000: 2008 documentation by MET service provider States.
Development of a State survey on MET personnel	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		November 2012	One of the main problems facing MET service provider States is the lack of personnel with the competencies required by WMO and ICAO. State requirements will be officially communicated to ICAO contracting States.
Table of compliance with Annex 3 standards and MET procedures	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		August 2012	In the first instance, strict compliance with ICAO standards related to the provision of MET services will be monitored.
Table of compliance with the CAR/SAM ANP, Part VI - MET.	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		August 2012	Close monitoring of strict compliance with Part VI– MET of the CAR/SAM ANP.
Audit trials	PFF SAM MET 02, 03, and 04	MET programme coordinator and project director		November 2013	Audit trials will be conducted to identify QMS/MET implementation issues and to propose strategies for their resolution.
Resources needed	Funds to conduct audit trials. States could cover the cost of trials by their lead auditors, since the experience obtained will contribute to improve the system. Likewise, participants must be given facilities to participate in GoTo Meetings.				

[1] *Grey* *Task not started yet*
Green *Activity being implemented as scheduled*
Yellow *Activity started with some delay, but will be implemented on time*
Red *Activity not implemented on time; mitigation measures are required*

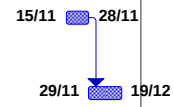
GRUPO REGIONAL CAR/SAM DE PLANIFICACIÓN Y EJECUCIÓN / CAR/SAM REGIONAL PLANNING AND IMPLEMENTATION GROUP (GREPECAS)
IMPLANTACION DEL QMS/MET EN LA REGION SAM / QMS/MET IMPLEMENTATION IN THE SAM REGION

ID	Task Name	Duration
1	**Implantación del QMS/MET - Región SAM/QMS/MET Implementation - SAM Region**	**535 days**
2	**Actualización de la Guía QMS/MET/Update of QMS/MET Guide**	**383 days**
3	Actualización de la Guía con respecto a las competencias del personal MET/Update of the Guide with regard to MET personnel competencies	57 days
4	Actualización de la Guía con respecto a la Enmienda 76 del Anexo 3/Update of the Guide with respect to Amendment 76 to Annex 3	22 days
5	**Requisitos para la implantación del QMS/MET/QMS/MET implementation requirements**	**173 days**
6	Tabla de cumplimiento a las normas del Anexo 3 de cada uno de los Estados/Table of compliance to Annex 3 standards in each State	149 days
7	Tablas de cumplimiento (3) de la Parte VI - MET del ANP CAR/SAM/Tables of complience (3) of Part VI - MET of CAR/SAM ANP	149 days
8	Plan de implantación del QMS/MET en los aeródromos SAM del ANP CAR/SAM/QMS/MET implementation plan in CAR/SAM ANP SAM aerodromes	1 day
9	Esquema documentario MET aprobado por la alta dirección de la Norma ISO 9001:2008/Documentation scheme approved by the senior management of Standard ISO 9001:2008	149 days
10	Fecha límite de implantación del QMS/MET/Target date of QMS/MET implementation	1 day
11	**Tareas de seguimiento en apoyo a la implantación edel QMS/MET/Follow up tasks in support of QMS/MET implementation**	**535 days**
12	Actualización permanente del punto de contacto (POC) QMS/MET/Pemanent update of QMS/MET points of contact	521 days
13	GoTo Meetings para apoyar a los Estados que requieran apoyo adicional al suministrado hasta la fecha/GoToMeetings to support States requiring additional support to the one so far provided	521 days
14	Supervisión y revisión contínua del QMS/MET en los aeródromos SAM del ANP CAR/SAM/Continuous supervision and revision of QMS/MET in SAM aerodromes of CAR/SAM ANP	217 days



GRUPO REGIONAL CAR/SAM DE PLANIFICACIÓN Y EJECUCIÓN / CAR/SAM REGIONAL PLANNING AND IMPLEMENTATION GROUP (GREPECAS)
IMPLANTACION DEL QMS/MET EN LA REGION SAM / QMS/MET IMPLEMENTATION IN THE SAM REGION

ID	Task Name	Duration
15	Ensayos de auditoría a tres (3) Estados de la Región/Audit trials to three (3) States of the Region	10 days
16	Reporte de problemas para análisis y estrategias de solución/Report of problems for analysis and solution strategies	15 days



APPENDIX H

PROJECT FOR THE OPTIMISATION OF OPMET EXCHANGE, INCLUDING SIGMETs (WS, WV, WC, AND WR), WARNINGS AND METEOROLOGICAL ALERTS

SAM Region	PROJECT DESCRIPTION (DP)		DP N° H4	
Programme	**Title of the project**		**Start**	**End**
Aeronautical meteorology *(Programme coordinator: Nohora Arias)*	*Optimisation of OPMET exchange, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts* *Project coordinator:* ***Cleber Souza Correa*** *(Brazil)* *Experts contributing to the project:* *Aníbal Castro Cárdenas (Bolivia)* *Valdeci Donizeti Juliar da Franca (Brazil)* *Domingo Torres (Ecuador)* *Celestino Lamboglia (Panama)* *Miguel Vara (Peru)* *Warsodikromo Truusje Soetinie (Surinam)* *Tjiettra Akloe (Surinam)* *José Ramón Pereira Bastida (Venezuela)*		December 2011	November 2013
Objective	Achieve at least 95% efficiency in the preparation and dissemination of OPMET information to SAM States by 31 November 2013			
Scope	Correct preparation and timely dissemination of OPMET information involves all MET service units [(EMA(s), OMA(s), MWO(s) and OPMET data banks] of all SAM aerodromes listed in the CAR/SAM ANP.			
Metrics	The percentage of OPMET messages received on time at the Brasilia International OPMET Data Bank (according to Annex 3, Appendix 10, OPMET control considers as messages received those OPMET messages with transit times of 10 minutes) and verification of proper and standard production (quality) of OPMET information at MET services [(EMA(s), OMA(s), and MWO(s)] (Annex 3, in Appendices 3, 4, 5, and 6, contains the (OPMET) message planning tables.			
Strategy	All tasks will be carried out by experts nominated by SAM States (Points of Contact – POC) and by experts contributing to the project, led by the Project Coordinator and under the supervision of the MET Programme Coordinator through State letters sent by the ICAO Lima Office, by e-mail, and the "GoToMeeting" tool. Upon completion of the tasks, the results will be sent to the MET Programme Coordinator as a final document for submission to, and if necessary approval by, the GREPECAS CRPP through the GREPECAS fast-track procedure. For the purpose of collaborative decision-making, meetings will be held with the areas involved.			
Goals	a) Reach 85% in the reception of OPMET data of the SAM Region in the Brasilia on 31/12/12; and 95% on 31/10/13 b) Reach 85% in the reception of OPMET data in each SAM State on 31/12/12; and 95% on 31/10/13			
Rationale	More timely meteorological information will optimise flight path planning and prediction, thus improving ATM system safety and efficiency, pursuant to GREPECAS Conclusion 12/64 (CAR/SAM OPMET EXCHANGE CONTROLS). Meteorological information will also minimise the environmental impact of air traffic.			
Related projects	➢ Automation ➢ Implementation of ATFM ➢ Installation of AMHS at MET units having an international OPMET requirement ➢ Implementation of the MET information quality management system (QMS/MET) ➢ Enhanced ATM situational awareness ➢ Implementation of the new flight plan format (FPL)			

Project Deliverables	Relationship with the performance-based regional plan (PFF)[1]	Responsible Party	Status of Implementation [2]	Date of Delivery	Comments
OPMET guide revised and updated	PFF SAM MET 02	MET programme coordinator and project coordinator		September 2012	The OPMET guide prepared by the SAM Office will include procedures for preparing OPMET data and tables containing the AFTN addresses to which OPMET information must be sent worldwide in accordance with the CAR/SAM FASID, thus facilitating the preparation and issuance of MET messages.
Results of coordinated controls of annual SIGMET WV tests	PFF SAM MET 02	POC and BR OPMET data bank		February 2013	The measurement of SIGMET WV messages received on time at the Brasilia International OPMET Data Bank will give the actual percentage of OPMET data, and the verification of the proper preparation of SIGMET WV messages at MWO(s) will permit an assessment of OPMET information quality.
Results of the analysis of coordinated controls of annual SIGMET WV tests	PFF SAM MET 02	MET programme coordinator and project coordinator		May 2013	The results obtained from the coordinated controls of annual SIGMET WV tests will allow programme and project coordinators to adopt, if necessary, corrective action for subsequent coordinated controls of OPMET information, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts.
Results of coordinated controls of OPMET information, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts	PFF SAM MET 02	POC and BR OPMET data bank		August 2013	Timely measurements at the Brasilia International OPMET data bank will provide the actual percentage of OPMET data received, and the verification of the proper preparation of OPMET information at MET services [(EMA(s), OMA(s), and MWO(s)] will permit to assess the quality of OPMET information.
Results of the analysis of coordinated controls of OPMET information, including SIGMETs (WS, WV, WC, and WR),	PFF SAM MET 02	MET programme coordinator and project		August 2013	The results obtained from coordinated controls of OPMET information, including SIGMETs (WS, WV, WC, and WR), warnings and meteorological alerts will give programme and project

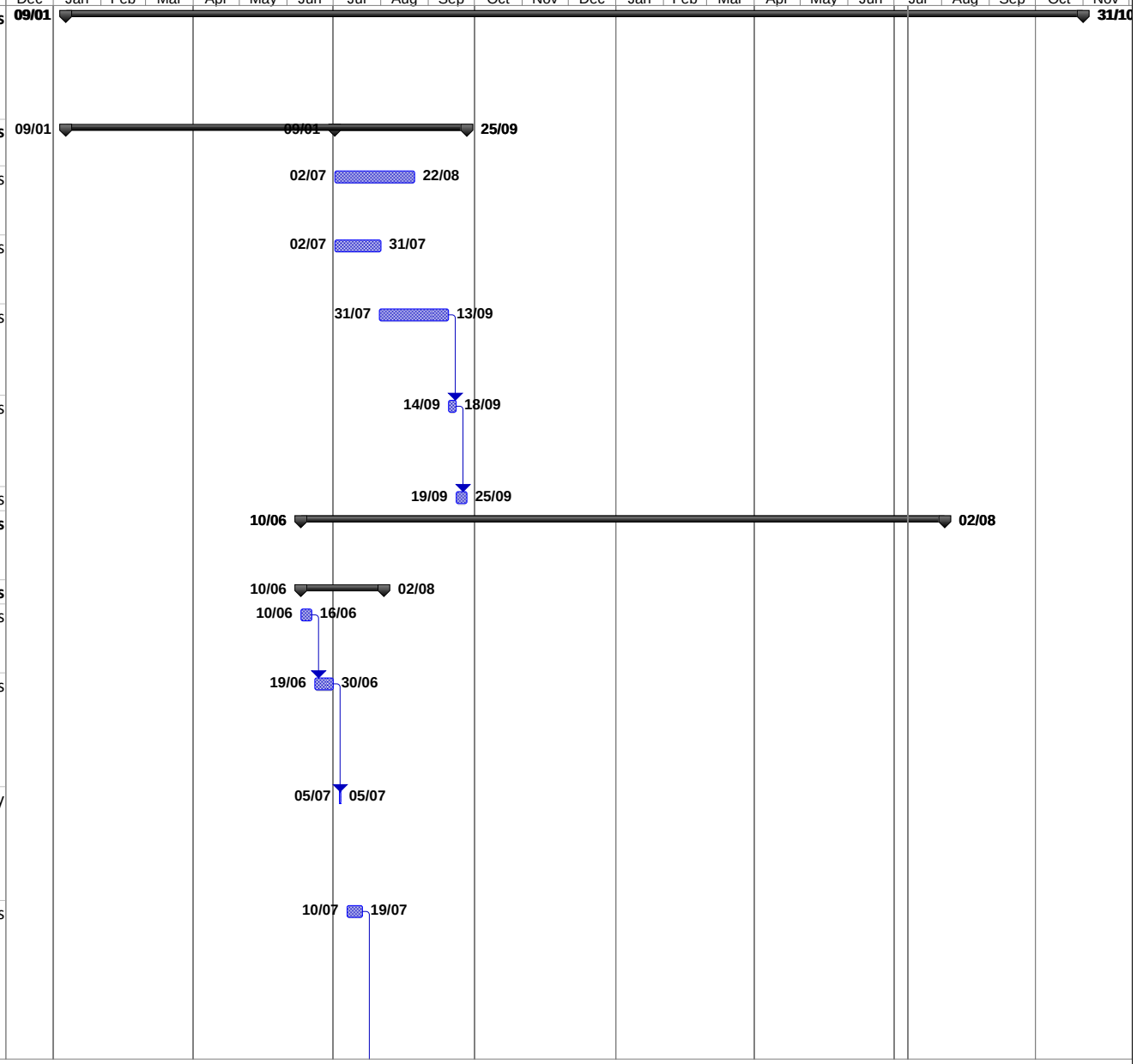
Project Deliverables	Relationship with the performance-based regional plan (PFF)[1]	Responsible Party	Status of Implementation [2]	Date of Delivery	Comments
warnings and meteorological alerts		coordinator			coordinators an idea of project results.
Final project report	PFF SAM MET 02	MET programme coordinator and project coordinator		November 2013	The purpose of the final project report to be submitted by the programme coordinator is to enable the Lima SAM Office to check the achievements of the project and propose to the States future measures to maintain the level attained through OPMET controls.
Resources needed	Funds for meetings with project members in order to assess the results and propose corrective actions. States could use their human resources to conduct the foreseen OPMET tests and controls, and, if necessary, cover the financial costs, since the experience gained will result in an improvement of their own systems. Likewise, participants must be given facilities to participate in GoToMeetings.				

1 Air navigation system Performance-Based Implementation Plan for the SAM Region

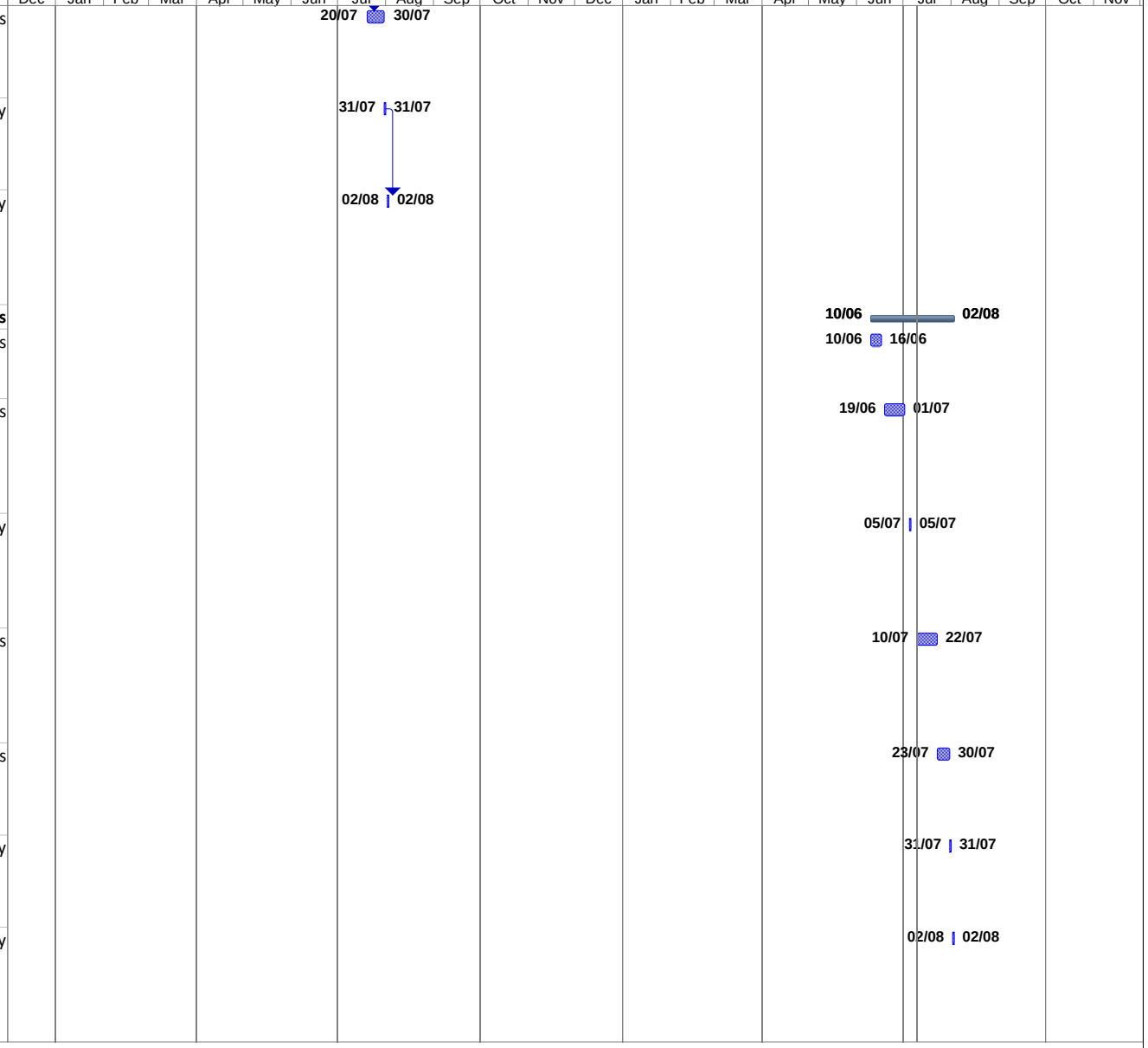
2 *Grey* *Task not started yet*
Green *Activity being implemented as scheduled*
Yellow *Activity started with some delay, but will be implemented on time*
Red *Activity not implemented on time; mitigation measures are required*

GRUPO REGIONAL CAR/SAM DE PLANIFICACIÓN Y EJECUCIÓN / CAR/SAM REGIONAL PLANNING AND IMPLEMENTATION GROUP (GREPECAS)
OPTIMIZACIÓN DEL INTERCAMBIO OPMET, SIGMET, AVISOS Y ALERTAS MET / OPTIMIZATION OF OPMET EXCHANGE , SIGMET, MET ADVISORIES AND WARNINGS

ID	Task Name	Duration
1	**Optimización del intercambio OPMET, incluyendo SIGMET (WS, WV, WC y WR), avisos y alertas Meteorológicas/Optimization of OPMET exchange, incluidng SIGMETs (WS, WV, WC and WR), meteorological warning and alerts**	**480 days**
2	**Revisar y actualizar la Guía OPMET/Revew and update the OPMET Guide**	**192 days**
3	Revisar la Guía OPMET y proponer mejoras de ser necesario/Review the OPMET Guide and propose improvements if necessary	38 days
4	Actualizar la lista de puntos de contacto operativos OPMET (POC)/Update the list of OPMET operational points of contact (POC)	22 days
5	Revisar y, de ser necesario, proponer mejoras a la tabla para el control OPMET/Review and, if necessary, propose improvements to the table for OPMET control	33 days
6	GoTo Meeting para revisar con la coordinadora del Programa MET las tareas/GoToMeeting for revision of the tasks with MET Programme Coordinator	3 days
7	Consolidar la Guía/Consolidate the Guide	5 days
8	**Controles de intercambio OPMET de los Estados SAM/SAM States' OPMET exchange controls**	**305 days**
9	**Control OPMET 2012/OPMET Control 2012**	**43 days**
10	Los Estados SAM llevan a cabo el control OPMET/SAM States carry out the OPMET control	7 days
11	Cada Estado evalúa los resultados del control OPMET y lo envía a los demás Estados/Each State evaluates the results of OPMET control and sends it to the other States	11 days
12	Cada Estado envía los resultados del control y de la evaluación al director del Proyecto/Each State submits the results of the control and the evaluation to the Project director	1 day
13	El director del Proyecto analiza y envía al coordinador del Programa MET los resultados del control y de la evaluación/The Project director analyzes and submits to the MET Programme coordinator the results of the control and evaluation	8 days



ID	Task Name	Duration
14	El coordinador del Programa MET analiza los resultados de las tareas realizadas/The MET Programme coordinator analyzes and results of the tasks performed	7 days
15	GoToMeeting para revisar los resultados generales del control OPMET/GoToMeeting to review general results of OPMET control	1 day
16	La Oficina SAM envia a los Estados los resultados del control con acciones de mejora, si fuera el caso/SAM Office submits to States the results of the control with improvement actions, if necessary	1 day
17	**Control OPMET 2013/OPMET Control 2013**	**41 days**
18	Los Estados SAM llevan a cabo el control OPMET/SAM States carry out the OPMET control	6 days
19	Cada Estado evalúa los resultados del control OPMET y lo envía a los demás Estados/Each State evaluates the results of OPMET control and sends it to the other States	9 days
20	Cada Estado evalúa los resultados del control OPMET y lo envía a los demás Estados/Each State evaluates the results of OPMET control and sends it to the other States	1 day
21	Cada Estado envía los resultados del control y de la evaluación al director del Proyecto/Each State submits the results of the control and the evaluation to the Project director	9 days
22	El coordinador del Programa MET analiza los resultados de las tareas realizadas/The MET Programme coordinator analyzes and results of the tasks performed	6 days
23	GoToMeeting para revisar los resultados generales del control OPMET/GoToMeeting to review general results of OPMET control	1 day
24	La Oficina SAM envia a los Estados los resultados del control con acciones de mejora, si fuera el caso/SAM Office submits to States the results of the control with improvement actions, if necessary	1 day



ID	Task Name	Duration
25	**Control de datos OPMET recibidos en el Banco internacional de datos OPMET (IODB) de Brasilia/OPMET Data Control received in the Brasilia International OPMET databank (IODB)**	**435 days**
26	Primer control OPMET del IODB de Brasilia en 2012/First OPMET control of the Brasilia IODB in 2012	37 days
27	El banco lleva a cabo el control de datos OPMET recibidos/The Bank carries out the control of the OPMET data received	6 days
28	El Banco analiza y evalúa el primer control/The Bank analyzes and evaluates the first control	9 days
29	El director del Proyecto analiza y envía al coordinador del Programa MET los resultados del control y de la evaluación/The Project director analyzes and submits to the MET Programme coordinator the results of the control and evaluation	6 days
30	La Oficina SAM envia a los Estados los resultados del control con acciones de mejora, si fuera el caso/SAM Office submits to States the results of the control with improvement actions, if necessary	1 day
31	Finalización del Proyecto 31 de octubre de 2013 (Estos controles se realizan anualmente en Marzo, Junio, Septiembre, Diciembre)/End of Project 31 October 2013 (These controls are carried out annually in March, June, September & December)	435 days