



AERMETSG/9 REPORT

INTERNATIONAL CIVIL AVIATION ORGANIZATION

**CAR/SAM REGIONAL PLANNING AND
IMPLEMENTATION GROUP (GREPECAS)**

**REPORT OF THE
NINTH MEETING OF THE AERONAUTICAL
METEOROLOGY SUBGROUP
(AERMETSG/9)**

LIMA, PERU, 23 TO 27 JUNE 2008

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HISTORICAL

ii.1 Place and Date of the Meeting

The Ninth Meeting of the GREPECAS Aeronautical Meteorology Subgroup (AERMETSG/9) was held at the Conference Room of the ICAO South American Regional Office, Lima, Peru, from 23 to 27 June 2008.

ii.2 Opening Ceremony

Mr. José Miguel Ceppi, Regional Director of ICAO South American Office and Secretary of GREPECAS, welcomed the participants on behalf of the Organization and thanked the Administration of the United States for sponsoring the Ninth Meeting of the AERMET Subgroup. Also, he thanked the attendance of MET experts provided by CAR/SAM States/Territories and international organizations. In addition, Mr. Ernesto López Mareovich, Director General of Civil Aviation of Peru, welcomed the participants on behalf of the Government of Peru, emphasized the importance of the issues to be discussed and opened the meeting.

ii.3 Organization of the Meeting

The meeting was chaired by Mr. Carlos Roberto Salinas (Paraguay), who was elected President of the AERMET Subgroup.

The Secretariat was in charge of Mrs. Nohora Arias, AERMET Subgroup Secretary and Aeronautical Meteorology Regional Officer of the ICAO SAM Office, assisted by Mr. Raul Romero, Aeronautical Meteorology Technical Officer, ICAO, Montreal and Dr. Enrique Camarillo, Aeronautical Meteorology Regional Officer of the ICAO NACC Office, Mexico.

ii.4 Working Languages

The working languages of the meeting were Spanish and English. The Working Papers and Summary of Discussions of the meeting were available to participants in both languages.

ii.5 Agenda

The meeting adopted the following agenda:

Agenda Item 1: Review follow-up actions on:

- a) reports of AERMETSG/8 and GREPECAS/14 Meetings; and
- b) GREPECAS Conclusions in the MET field pending of implementation.

- Agenda Item 2: Implementation of the World Area Forecast System (WAFS):**
- a) review the outcome of WAFSOPSG/3 and WAFSOPSG/4 Meetings;
 - b) review the status of implementation of ISCS; and
 - c) review the status of implementation and utilization of the WAFS products
- Agenda Item 3: Implementation of the International Airways Volcano Watch (IAVW)**
- a) review the outcome of IAVWOPSG/3 Meeting; and
 - b) review the status of implementation of IAVW
- Agenda Item 4: Implementation of SIGMET**
- a) review of the outcome of the METWSG/1 Meeting; and
 - b) implementation issues
- Agenda Item 5: Exchange of OPMET information**
- Agenda Item 6: Review of the CAR/SAM ANP/FASID, Part VI – MET**
- Agenda Item 7: Regional MET requirements for ATM**
- Agenda Item 8: Implementation of MET quality system**
- Agenda Item 9: Status of MET deficiencies (GREPECAS List of MET Deficiencies)**
- Agenda Item 10: Future Work Programme**
- Agenda Item 11: Any other business**

ii.6 **Schedule and working method**

The Meeting agreed to hold its daily sessions from 09:00 to 14:30 hours, with adequate breaks.

ii.7 **Attendance**

The meeting was attended by three States of the CAR Region, ten States of the SAM Region, and France representing French Antilles and French Guiana, as well as IATA and United Kingdom, totaling 27 participants. The meeting regretted the absence of the experts of the Subgroup provided by the States of Costa Rica and Spain, and of COCESNA. A list of participants is shown in pages iii-1 to iii-6.

ii.8 In accordance with paragraph 1.3.5.1.4 of GREPECAS Procedural Handbook and considering that Spain has not participated in this meeting nor in the eight previous meetings of the subgroup, the Eighth Meeting of the GREPECAS Administration Coordination Group (ACG/8) will be informed in order to decide whether this State should be removed from the AERMET Subgroup composition.

ii. 9 **Conclusions and Decisions**

The AERMETSG records its activities in the form of Draft Conclusions, Draft Decisions and Decisions as follows: *Note:*

<i>Draft Conclusions:</i>	<i>Conclusions that require approval by GREPECAS prior to their implementation.</i>
<i>Draft Decisions:</i>	<i>Decisions that require approval and adoption by GREPECAS prior to their implementation</i>
<i>Decisions:</i>	<i>Decisions that deal with matters of concern to the Contributory Body.</i>

ii.10 **List of Draft Conclusions and Decisions**

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ii.11 **List of Working, Information and Discussion Papers**

WORKING PAPERS

Number	Agenda Item	Title	Date	Presented by
WP/00	---	Tentative Calendar and working method	19/06/08	Secretariat
WP/01	--	Tentative Agenda and Explanatory Notes	25/07/06	Secretariat
	1	Review follow-up actions on:	08/04/08	Secretariat
		a) reports on AERMETSG/8 and GREPECAS/14 Meetings; and		
WP/02		b) GREPECAS Conclusions in the MET field pending of implementation		
WP/03	2	Implementation of the World Area Forecast System (WAFS)	07/04/08	Secretariat
WP/04	3	Implementation of the International Airways Volcano Watch (IAVW)	14/04/08	Secretariat
WP/05	4	SIGMET Implementation	21/04/08	Secretariat
WP/06	5	Exchange of OPMET Information	24/04/08	Secretariat
WP/07	6	Review of the CAR/SAM ANP/FASID, Part VI – MET	13/05/08	Secretariat
WP/08	7	Regional MET requirements for ATM	26/05/08	Secretariat
WP/09	8	Implementation of MET quality system	29/05/08	Secretariat
WP/10	9	Status of MET deficiencies (GREPECAS List of MET Deficiencies)	05/06/08	Secretariat
WP/11	10	Future Work Programme	19/06/08	Secretariat
WP/12	5	Exchange of OPMET Information	27/05/08	Brazil
WP/13	8	Implementation of MET quality system	05/06/08	Peru
WP/14	2	Implementation of the World Area Forecast System (WAFS) “Changes and Improvements to WAFS Forecasts”	09/06/08	United States
WP/15	5	Exchange of OPMET Information “Test bed for 30-HR Aerodrome Forecast”	09/06/08	United States
WP/16	3	Implementation of the International Airways Volcano Watch	09/06/08	United States

Number	Agenda Item	Title	Date	Presented by
		(IAVW)		
		b) Review of the status of implementation of the IAVW		
		“Implementation of the Notification Message of Volcanic Activity by Volcano Observatories”		
WP/17	2	Implementation of the World Area Forecast System (WAFS)	12/06/08	United States
		b) Review of the status of implementation of the ISCS		
WP/18	2	Implementation of the World Area Forecast System (WAFS)	09/06/08	United States
		b) Review of the status of implementation of the ISCS		
		“Report on the Efficacy of the International Satellite Broadcast System for CAR/SAM		
WP/19	2	Implementation of the World Area Forecast System (WAFS)	09/06/08	United States
		b) Review of the status of implementation of the ISCS		
		“Harmonization of the ISCS Broadcast with SADIS”		
WP/20	11	Any other business	17/06/08	IATA
		“Aeronautical Climatological Information”		

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Presented by
IP/01	--	General Information	31/01/08	Secretariat
IP/02	--	List of Working and Information Papers	09/04/08	Secretariat
IP/03	11	Two many Accidents with the same cause	10/06/08	Secretariat
IP/04	11	Network Enabled Operations (NEO) in weather (<i>English only</i>)	09/06/08	United States
IP/05	11	Changes in the operations at the National Weather Service Telecommunication Gateway (<i>English only</i>)	09/06/08	United States
NI/06	3	Actividades desarrolladas durante la Erupción del Volcán Chaitén (<i>Spanish only</i>)	12/06/08	Argentina
NI/07	3	Vigilancia y monitoreo del Volcán Chaitén, Duodécima Región, Chile(<i>Spanish only</i>)	20/06/08	Chile

DISCUSSION PAPERS

Number	Agenda Item	Title	Date	Presented by
DP/01	2	Report of the MET/ATM/OP Task Force on MET in the CNS/ATM Concept	23/06/08	Rapporteur of the MET/ATM/OP TF
DP/02	5	Report of the COM/MET Task Force		Rapporteur of the COM/MET TF
DP/03	4	Report of the Volcanic Ash Task Force		Rapporteur of the VA TF

Lista de Participantes / List of Participants

Argentina

Carlos Manuel Benítez

Bolivia

Aníbal Castro Cárdenas

Brasil / Brazil

Carlos Roberto Henriques
Valdeci Donizeti Juliar da Franca

Chile

Fernando Ramírez
Reinaldo Gutiérrez

Colombia

Oscar Bermúdez Gracia

Cuba

Juan Ayon Alfonso

Ecuador

René Játiva
Bolívar Pérez

Estados Unidos / United States

Steven R. Albersheim
Larry E. Burch
Robert Gillespie
Marianne Guffanti

Francia (Guyana Francesa/French Guiana)

Philippe Livenais

Panamá / Panama

Xenia Gabriela Guardia

Paraguay

Roberto Salinas R.

Perú / Peru

Julio Quezada Pacheco
Lilia Nieto Menéndez
Ricardo Reyes Távara
Wilfredo Meza Aramburú
José Castillo Espinoza

Reino Unido / United Kingdom

Nigel Gait

República Dominicana / Dominican Republic

Yhony Gómez

Uruguay

Raúl García
Haydeé Beatriz Lesa Rey

IATA

Mauricio Morán

LISTA DE PARTICIPANTES – INFORMACIÓN GENERAL

NOMBRE/NAME TÍTULO/ POSITION	DATOS/ADDRESS
ARGENTINA	
Carlos Manuel Benítez Jefe Departamento Meteorología Aeronáutica y Director Operativo VAAC Buenos Aires Servicio Meteorológico Nacional	Av. 25 de mayo 658, Capital Federal CP 1002 Buenos Aires, República Argentina Tel. +5411 5167-6707 / 5167 6767 int. 18235 Fax +5411 5167-6709 / 5167 6705/21 int. 18103 Oper. Satélite E-mail cbenitez@smn.gov.ar
BOLIVIA	
Aníbal Castro Cárdenas Jefe de la Unidad de Meteorología Aeronáutica Dirección General de Aeronáutica Civil	Av. Mcal. Santa Cruz 1278 Casilla 9360, La Paz, Bolivia Tel. +5912 2379060, Int. 2621 Fax +5912 2116405 E-mail ancastro@dgac.gov.bo anibalc_2000@yahoo.es
BRASIL / BRAZIL	
Carlos Roberto Henriques Jefe de Sección de control OPMET Divisao de Meteorologia Aeronáutica Directoria de Electronica e Protecao ao Voo (DEPV)	Av. General Justo 160, 2º Andar Rio de Janeiro CEP 20021-130 Brasil Tel. +5521 2101 6288 Fax +5521 2101 6283 E-mail henriquescarlos@ig.com.br cco3@decea.gov.br
Valdeci Donizeti Juliar da Franca Jefe del centro Meteorológico de Figilancia de Brasilia	QI 05 Area Especial 12, Lago Sul Brasilia, DF CEP 71615-600 Brasil Tel. +061 3364 8385 / 8386 Fax +061 3364 8737 E-mail juliarvdf@gmail.com
CHILE	
Fernando Ramírez Valdés Asesor de Meteorología Aeronáutica Departamento de Planificación	Dirección General de Aeronáutica Civil - DGAC Miguel Claro No. 1314 – 6º Piso Providencia, Santiago, Chile Tel. +562 439 2514 Fax +562 439 2454 E-mail ferram@dgac.cl

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List of Participants

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NOMBRE/NAME TÍTULO/ POSITION	DATOS/ADDRESS
Reinaldo Alex Gutiérrez Jefe Sección de Meteorología Aeronáutica	Dirección General de Aeronáutica Civil – DGAC Av. Portales No. 3450, Comuna Estación Central Santiago, Chile Tel. +562 436 4541 Fax +562 437 8212 E-mail rgutierrez@meteochile.cl
COLOMBIA	
Oscar Bermúdez G. Jefe Grupo Meteorología Aeronáutica Unidad Administrativa Especial de Aeronáutica Civil	Aeropuerto El Dorado Dirección de Servicios a la Navegación Aérea Grupo de Meteorología Aeronáutica Apartado Aéreo 151413 Bogotá, Colombia Tel. (571) 1 266 2257 Fax (571) 413 9646 E-mail meteoro@aerocivil.gov.co obermud@aerocivil.gov.co
CUBA	
Ing. Juan Ayón Alfonso Especialista Principal Meteorología Aeronáutica Instituto de Aeronáutica Civil de Cuba IACC	Calle 23 No. 64, Vedado Plaza de la Revolución Ciudad Habana, Cuba Tel. +537 838 1146 / 838 1121 Fax +537 834 4571 E-mail juan.ayon@iacc.avianet.cu dan@iacc.avianet.cu
ECUADOR	
René Játiva Montalvo Jefe Meteorología Aeronáutica Dirección General de Aviación Civil (DGAC)	Av. Buenos Aires 149 y Av. 10 de Agosto Quito, Ecuador Tel. +5932 239 075 Fax +5932 239 075 Email meteorologia@dgac.gov.ec
Bolívar Neptalí Pérez Mármol Jefe Meteorología Aeropuerto Mariscal Sucre	Aeropuerto Mariscal Sucre Quito, Ecuador Tel. +5932 330 1515 Fax +5932 330 1515 Email meteorologia@dgac.gov.ec perezm47@latinmail.com
ESTADOS UNIDOS / UNITED STATES	
Steven R. Albersheim Meteorologist Federal Aviation Administration Aviation Weather Policy and Standards	800 Independence Ave. SW Washington, D.C. 20591, United States Tel. +1 202 385 7185 Fax +1 202 385 7240 E-mail steven.albersheim@faa.gov

AERMETSG/9
List of Participants

iii - 3

NOMBRE/NAME TÍTULO/ POSITION	DATOS/ADDRESS
Larry E. Burch Deputy Director National Weather Service Aviation Weather Center	7220 NW 101 st . Terrace, Room 101 Kansas City, Missouri 64153-2371 USA Tel. +1 816 584 7203 Fax +1 816 880 0650 E-mail larry.burch@noaa.gov
Robert Gillespie Program Manager International Satellite Communications Systems (ISCS) National Weather Service	1325 East West Highway SSMC2 Building, Room 3396 Silver Spring, Maryland 20910-3283 United States Tel. +1 301 713 9478 – 140 Fax +1 301 713 1128 E-mail Robert.Gillespie@noaa.gov
Marianne Guffanti Volcanic Ash Coordinator U. S. Geological Survey	926A National Center Reston, VA 20192, United States Tel. +1 703 648 6708 Fax +1 703 648 5483 E-mail guffanti@usgs.gov
FRANCIA / FRANCE	
Philippe Livenais Head of Meteorological Center	Meteo France Rochambeau Airport Aéroport de Rochambeau 97351 Matoury, French Guyana Tel. +594 594-353530 Fax +594 594-353545 E-mail philippe.livenais@meteo.fr
PANAMÁ / PANAMA	
Xenia Gabriela Guardia Jefa del Departamento de Meteorología Aeronáutica	Autoridad Aeronáutica Civil Edificio #805 Apartado 03073-03187, Zona 0816 Panamá, Rep. de Panamá Tel. +507 501 9815 Fax +507 501 9809 E-mail xguardia@aeronautica.gob.pa gabisinia@hotmail.com
PARAGUAY	
Carlos Roberto Salinas Rojas Gerente de Pronósticos Meteorológicos	Mcal. López e/Vice Pte. Sánchez y 22 de septiembre Ministerio de Defensa Nacional, Tercer Piso, Asunción, Paraguay Tel. +595 21 222139 Fax +595 21 222139 E-mail gpm_dmh@dinac.gov.py salinasr@mixmail.com

AERMETSG/9
List of Participants

iii - 4

NOMBRE/NAME TÍTULO/ POSITION	DATOS/ADDRESS
PERÚ / PERU	
Julio Quezada Pacheco Jefe de Equipo de Pronósticos y Climatología	Corporación Peruana de Aeropuertos y Aviación Comercial CORPAC S. A. Aeropuerto Internacional Jorge Chavez Apartado Postal 680 Callao, Perú Tel. +511 708 1179 Fax +511 708 1182 E-mail jquezada@corpac.gob.pe
Lilia Nieto Menéndez Supervisora de Servicios Meteorológicos	Corporación Peruana de Aeropuertos y Aviación Comercial CORPAC S. A. Aeropuerto Internacional Jorge Chavez Apartado Postal 680 Callao, Perú Tel. +511 708 1182 Fax +511 708 1182 E-mail lnieto@corpac.gob.pe
Ricardo Reyes Távara Meteorólogo – Área de Gestión de la Calidad ATS	Corporación Peruana de Aeropuertos y Aviación Comercial CORPAC S. A. Aeropuerto Internacional Jorge Chavez Apartado Postal 680 Callao, Perú Tel. +511 708 1024 Fax +511 414 1440 E-mail rreyes@corpac.gob.pe rreyest05@hotmail.com
Wilfredo Meza Aramburú Especialista Comunicaciones Aeronáutica	Corporación Peruana de Aeropuertos y Aviación Comercial CORPAC S. A. Aeropuerto Internacional Jorge Chavez Apartado Postal 680 Callao, Perú Tel. +511 708 1024 / 997382144 / 995744858 Fax +511 708 1165 E-mail wmeza@corpac.gob.pe wilmeza2007@hotmail.com
José Castillo Espinoza Supervisor Estación Meteorológica	Corporación Peruana de Aeropuertos y Aviación Comercial CORPAC S. A. Aeropuerto Internacional Jorge Chavez Apartado Postal 680 Callao, Perú Tel. +511 708 1184 Fax +511 708 1183 E-mail jcastillo@corpac.gob.pe
REINO UNIDO / UNITED KINGDOM	
Nigel Gait International Aviation Manager UK Meteorological Office	Fitzroy Road, Exeter Ex13PB, United Kindgom Tel. +44 1392 886268 E-mail nigel.gait@metoffice.gov.uk

NOMBRE/NAME TÍTULO/ POSITION	DATOS/ADDRESS
REPÚBLICA DOMINICANA / DOMINICAN REPUBLIC	
Yhony Gómez Director Departamento de Meteorología Aeronáutica - ONAMET	Apartado Postal 1153 Santo Domingo, República Dominicana Tel. +809 788 1122 Ext. 223 Fax +809 549 0256 E-mail yogome2005@yahoo.com
URUGUAY	
Raúl L. García Igorra Director del Servicio Meteorológico de la Fuerza Aérea Uruguaya y Asesor en Meteorología Aeronáutica de la DINACIA	Cno. Mendoza 5553 Casilla Postal 12400 Montevideo, Uruguay Tel: +5982 222 3385 Fax: +5982 222 4303 E-mail: rgarcia@fau.gub.uy
Haydeé Beatriz Lesa Rey Quenón Encargada de Despacho de la Dirección de Meteorología Aeronáutica	Dirección Nacional de Meteorología Barrios Amorín 1488 Tel: +5982 400 0675 / 400 5655 Fax: +5982 409 7391 E-mail: beatrizlesa@adinet.com.uy
IATA	
Mauricio Morán Manager Security, Operations & Infrastructure LATAM/CAR International Air Transport Association	703 Waterford Way, Suite 600 Miami, Fl. 33126, USA Tel. +305 779 9839 Fax +305 266 7718 Email moranm@iata.org
ICAO/OACI	
Nohora Arias Oficial Regional de Meteorología Aeronáutica / Regional Officer, Aeronautical Meteorology	Oficina Regional Sudamericana Víctor Andrés Belaúnde 147, Centro Empresarial Real, Vía Principal No. 102 Edificio Real 4, Piso 4 San Isidro, Lima 27, Perú Apartado 4127 Lima 100, Perú Tel: +51 1 611-8686/103 Fax: +51 1 611-8689 E-mail: na@lima.icao.int Web: www.lima.icao.int
Raul Romero Technical Officer, Meteorology Section Air Navigation Bureau	International Civil Aviation Organization (ICAO) 999 University St., Montreal, Quebec Canada H3C 5H7 Tel: +1 514 954 8219, ext. 7079 Fax: +1 514 954 6759 E-mail: rromero@icao.int

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NOMBRE/NAME TÍTULO/ POSITION	DATOS/ADDRESS
Enrique Camarillo Cruz Oficial Regional de Meteorología Aeronáutica / / Regional Officer, Aeronautical Meteorology	Oficina Regional Norte América, Centro América y Caribe Av. Presidente Masaryk No. 29, 3er piso Col. Chapultepec Morales C. P. 11570 México D. F., México Apartado Postal 5-377 C. P. 06500 México D. F., México Tel: +52 55 5250 3211 Fax: +52 55 5203 2757 E-mail: ecamarillo@mexico.icao.int camarillo_enrique@yahoo.com.mx Web: www.icao.int/nacc

Agenda Item 1: Review of the actions taken in respect of the reports of MET Meetings

a) review of follow up actions in respect of the AERMETSG/8 and GREPECAS/14 Meetings

1.1 Under this Agenda Item, the Meeting examined the actions taken by the Air Navigation Commission (ANC), by CAR/SAM States/Territories/International Organizations and/or by ICAO Secretariat, regarding Draft Conclusions/Decisions formulated by the Eighth Meeting of the Aeronautical Meteorology Subgroup (AERMETSG/8) held in Santiago, Chile, from 9 to 13 October 2006, and the respective Conclusions/Decisions adopted by GREPECAS/14 (San Jose, Costa Rica, 16-20 April 2007). The result of the analysis is included in **Appendix A** to this part of the report.

b) Review of GREPECAS Conclusions in the MET field pending of implementation

1.2 Additionally, the Subgroup reviewed the actions taken with regard to Conclusions/Decisions adopted by GREPECAS in the MET field in previous meetings, pending implementation. **Appendix B** to this part of the report presents the results of this analysis.

1.3 With regard to GREPECAS Conclusion 12/54, the meeting took note that Peru has great limitations to participate at the meetings of the WAFS Operations Group (WAFSOPSG), therefore, the subgroup was agreed that Chile will replace Peru and formulated the following draft conclusion:

DRAFT
CONCLUSION 9/1 - ACTIVE PARTICIPATION OF CAR/SAM STATES THAT PROVIDE MEMBERS TO THE WAFSOPSG

That, Brazil and Chile should actively participate in the work of the World Area Forecast System Operations Group (WAFSOPSG), as members of the group, in order to guarantee that the specific interest of the CAR/SAM Regions be duly considered in future WAFS planning.

1.4 Regarding GREPECAS Decision 7/1 – Study to determine the need for VOLMET services in the CAR/SAM Regions, following RAN CAR/SAM/3 Conclusion 5/18 (Buenos Aires, Argentina, 1999), the AERMETSG work programme was modified to include the referred study. In this regard, and after completing the study, which concluded in the need to include this requirement, the meeting, aware that this requirement will involve costs to the airlines, formulated the following draft conclusion:

DRAFT

CONCLUSION 9/2 -

**D-VOLMET AERONAUTICAL DATA LINK REQUIREMENTS
IN THE CAR/SAM REGIONS**

That Part VII – ATS of the ANP be amended in order to reflect the requirement for aeronautical data link D-VOLMET in the CAR/SAM Regions.

ACTIONS TAKEN ON CONCLUSIONS OF AERMETSG/8 AND GREPECAS/14 MEETINGS IN THE MET FIELD

Reference Report		Conclusions/Decisions	Action by ANC	Subsequent actions taken by ICAO and/or States/Territories/International Organizations
Conc./Dec. AERMET SG/8	Corresponding Conc./Dec. Adopted by GREPECAS/14			
Proyecto Conc.8/1	Conc. 14/15	Review of agreements between civil aviation administrations and MET authorities in CAR States/Territories That CAR States/Territories that have delegated the provision of aeronautical meteorological services to the national meteorological service review their agreements with the meteorological authorities in order to improve the service and the rate of response to aeronautical meteorology communications received from the NACC Regional Office.		Completed Letter to States from Mexico Office – EMX0920 of 26/09/07 Depending on the States’ response and the information to be completed during the meeting, the rate of implementation of CAR States will be known. The Secretariat will make the follow-up until obtaining the highest implementation rate.
Proyecto Conc. 8/2	Conc. 14/16	Call plan diagram of the aerodrome volcanic ash emergency committee That CAR/SAM States/Territories use the call plan diagram, which includes contact information (name, position, telephone and cellular phone) of all members of the Aerodrome Volcanic Ash Emergency Committee, as shown in Appendix I to this part of the Report		Completed Letter to States from Lima Office - LT 2/8.0.14-SA515 of 20/07/07 Depending on the States’ response and the information to be completed during the meeting, the rate of implementation of CAR and SAM States will be known. The Secretariat will make the follow-up until obtaining the highest implementation rate.

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Reference Report		Conclusions/Decisions	Action by ANC	Subsequent actions taken by ICAO and/or States/Territories/International Organizations
Conc./Dec. AERMET SG/8	Corresponding Conc./Dec. Adopted by GREPECAS/14			
Proyecto Conc. 8/3	Conc. 14/17	Post-flight recording and reporting in the CAR/SAM Regions That IATA request airlines operating on CAR/SAM air routes to record and report special aircraft observations of pre-eruption volcanic activity, volcanic activity, or volcanic ash clouds on the special volcanic activity air-report (VAR) form, as specified in Annex 3 and PANS ATM, Doc 4444.		Valid Letter to IATA – LT 2/8.0.14 -SA514 of 20/07/07
Proyecto Conc. 8/4	Conc. 14/18	Use of the template for SIGMET and AIRMET messages and special air-reports (uplink) That CAR/SAM States/Territories update their procedures in order to make strict use of the template for SIGMET and AIRMET messages and special air-reports (uplink), particularly regarding the location indicator and the name of the FIR/CTA for which the SIGMET is being issued, at the beginning of the second line of the message.		Completed Letter to States from Lima Office - LT 2/8.0.14-SA515 of 20/07/07 Depending on the States' response and the information to be completed during the meeting, the rate of implementation of CAR and SAM States will be known. The Secretariat will make the follow-up until obtaining the highest implementation rate.
Proyecto Conc. 8/5	Conc. 14/19	OPMET EXCHANGE CONTROLS IN THE CAR/SAM REGIONS That, in order to improve the quality and availability of OPMET information in the CAR/SAM Regions: a) the Brasilia International OPMET Data Bank submit the results of OPMET studies and controls directly to those responsible for OPMET control in the CAR/SAM States/Territories; and	Request certain States to take part in periodic tests related to the correct issuance and dissemination of SIGMETs, volcanic ash advisories, and NOTAMs for volcanic ash (or ASHTAMS).	Completed Letter to States from Lima Office - LT 2/8.0.14-SA515 of 20/07/07 Letter to States from Mexico Office – EMX0708 of 01/08/07 Depending on the States' response and the information to be completed during the meeting, the rate of implementation of CAR and SAM States will be known.

Reference Report		Conclusions/Decisions	Action by ANC	Subsequent actions taken by ICAO and/or States/Territories/International Organizations
Conc./Dec. AERMET SG/8	Corresponding Conc./Dec. Adopted by GREPECAS/14			
		b) the States/Territories establish procedures for controlling the quality and availability of OPMET data in their aerodromes.		The Secretariat will make the follow-up until obtaining the highest implementation rate.
Proyecto Conc. 8/6	Conc. 14/20	Global OPMET data controls That in order to improve the reliability of global periodic assessments of OPMET data availability, the SADISOPSG consider the possibility of identifying in Annex 1 to the SADIS User's Guide those aerodromes that issue OPMET data 24 hours a day.		Completed In column 7 (Remarks) of the Global Database (GODB) corresponding to Annex 1 of SUG and to global Table MET 2A, includes information on the functionality of the aerodrome.
Proyecto Conc. 8/7	Conc. 14/21	Review of the transition to the BUFR code That ICAO, in order to reduce the possible adverse impact of the transition from the traditional alphanumeric codes to BUFR-coded OPMET messages on the aeronautical community, invite WMO to review, as a matter of urgency, its plans to use BUFR-coded OPMET information.	The Commission (AN Min. 176-4) made a review of this issue and the Secretariat suspended the related work, depending on the results of the work of the Group Experts of WMO on the use of XML.	Pending decision regarding BUFR from WMO CBS (expected by 2009)
Proyecto Conc. 8/8	Conc. 14/22	CAR/SAM FASID Table MET 1A That Table MET 1A of the CAR/SAM FASID be amended, deleting column 6 (Areas of Coverage of Charts) and column 7 (AFTN Routing Areas).	N/A	Completed

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Reference Report		Conclusions/Decisions	Action by ANC	Subsequent actions taken by ICAO and/or States/Territories/International Organizations
Conc./Dec. AERMET SG/8	Corresponding Conc./Dec. Adopted by GREPECAS/14			
Proyecto Conc. 8/9	Conc. 14/23	Amendment procedures for TAF and TREND requirements That in order to ensure the currency of information related to the provision of TAF and TREND forecasts to be included in the global database, as of March 2007: a) annual consultations with CAR/SAM States/Territories be carried out in March concerning the issuance of TAFs and TRENDS; b) changes be submitted to the AERMETSG and GREPECAS; c) formal consultations and amendments to the CAR/SAM FASID be made annually by November; and d) the Lima and Mexico Offices forward the amendments to the ICAO MET Section for the updating of the global database annually in December, as appropriate.	N/A	Completed
Proyecto Conc. 8/10	Conc. 14/24	CAR/SAM FASID Table MET 2A That: a) CAR/SAM FASID Table MET 2A be amended to only include a URL link to the global database with "Availability of OPMET information (METAR/SPECI and TAF) required in ISCS and SADIS," placed below the title; and b) a new table with OPMET exchange requirements (METAR/SPECI and TAF) in CAR/SAM States/Territories be included in the CAR/SAM ANP.		Completed

Reference Report		Conclusions/Decisions	Action by ANC	Subsequent actions taken by ICAO and/or States/Territories/International Organizations
Conc./Dec. AERMET SG/8	Corresponding Conc./Dec. Adopted by GREPECAS/14			
Proyecto Conc. 8/11	Conc. 14/25	Currency of the information contained in the OPMET database (METAR/SPECI and TAF) That in order to ensure the currency of the OPMET database (METAR/SPECI and TAF) that needs to be available in ISCS and SADIS, as of March 2007, the Lima and Mexico Offices, on an annual basis, reconfirm with the relevant States/Territories their agreements for the provision of OPMET data contained in Annex 1 to the SADIS User's Guide (SUG) on aerodromes not included in Table AOP of the CAR/SAM FASID.		Completed
Proyecto Conc. 8/12	Conc. 14/26	CAR/SAM FASID Table MET 2B That, a) table MET 2B of the CAR/SAM FASID be eliminated; and b) an operational table listing SIGMET exchange requirements in CAR/SAM States/Territories be included as an Appendix to the CAR/SAM SIGMET Guide.		Completed
Proyecto Conc. 8/14	Paragraph	Implementation of the requirements concerning the certification and training of MET personnel a) in close coordination with MET authorities, take actions to implement standard 2.1.5 of Annex 3 in order to meet the requirements concerning the		GREPECAS/14 considered that this issue could be discussed in a separate a paragraph and not as a Conclusion.

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Reference Report		Conclusions/Decisions	Action by ANC	Subsequent actions taken by ICAO and/or States/Territories/International Organizations
Conc./Dec. AERMET SG/8	Corresponding Conc./Dec. Adopted by GREPECAS/14			
		certification and training of MET personnel; and b) study the possibility of implementing distance learning.		
Proyecto Conc. 8/15	Conc. 14/27	ATS/AIS/MET/PILOT Coordination Seminar That ICAO, in coordination with WMO, organise an ATS/AIS/MET/Pilot Coordination Seminar for the CAR/SAM Regions.	Took note	Valid ICAO Secretary General sent letter Ref: SWG 16/1-AN 10/16.21 of 26 February 2007 to WMO Secretary General with regard to this Conclusion and requesting to support ICAO in the development of this seminar.
Proyecto Conc. 8/16	Conc. 14/28	Special Implementation Project (SIP) for the CAR REGION That ICAO consider the need of establishing a MET Special Implementation Project (SIP) for the CAR Region, in order to study and recommend measures for various CAR States/Territories with the purpose of specifically solving the problems affecting MET services. <i>Note: In order to join efforts for proposing solutions to aeronautical meteorology deficiencies, consideration could be given to the possibility of implementing the SIP in coordination with WMO.</i>	Took note and requested the Secretariat to review the proposal in accordance with the established practices.	Completed ICAO Council approved the SIP for the CAR Region on 19 March 2008, in the tenth meeting of its Session 183, which will be initiated this year.

CONCLUSIONS/DECISIONS IN THE MET FIELD OF GREPECAS PREVIOUS MEETINGS

Reference Report Conc./Dec.	Conclusions/Decisions	Subsequent Action by ICAO and/or by States/Territories International Organizations
Conc. 10/39	Training of Aeronautical Meteorological personnel That ICAO develop and implement a joint project with the WMO to provide short and long term solutions to the lack of trained personnel in the aeronautical meteorological field faced by most of the States in the CAR/SAM Regions.	Valid
Conc. 11/60	Second CAR/SAM Regional Workshop on Aeronautical Meteorology services costs recovery That ICAO, in close coordination with the WMO, organizes and holds, as soon as possible, the Second Regional Workshop on aeronautical meteorology services costs recovery.	Completed The seminar was carried out from 13 to 15 December 2006 in Dominican Republic.
Conc. 12/54	Active participation of Peru and Brazil in the WAFSOPSG That Brazil and Peru, as members of the WAFSOPSG, participate actively in the tasks of the Group in order to make sure that specific interests of the CAR/SAM Regions are duly taken into account in the future planning of the WAFS.	Valid The member of Perú has only participated in one (WAFSOPSG/1, Lima, Peru, 10 – 13 November 2003), of the four meetings carried out to date. RMKS: It is considered valid in order to keep a record of assistance.
Conc. 12/56	Updating of the International Airways Volcano Watch contact list in CAR/SAM States/Territories/International Organizations That CAR/SAM States/Territories/International Organizations notify the Lima and Mexico Offices of any changes in the International Airways Volcano Watch (IAVW) contact list.	Valid Problems for the States to inform ICAO Regional Offices of the changes in the contact information still persist.
Conc. 12/57	Implementation of SIGMET requirements That the Lima and Mexico Regional Offices: a) conduct surveys in the CAR/SAM Regions on the issuance of SIGMET messages, particularly those for volcanic ash, in coordination with WMO, and issue a list of deficiencies for follow-up measures; and b) starting in 2004 until 2007, conduct periodical tests on the issuance and reception of SIGMET messages for volcanic ash, during the first week of March and September.	Completed

Reference Report Conc./Dec.	Conclusions/Decisions	Subsequent Action by ICAO and/or by States/Territories International Organizations
Conc. 12/58	Active participation of Argentina as member of the IAVWOPSG That Argentina, as Member of the IAVWOPSG, participate actively in the work of the group to ensure that the specific interests of the CAR/SAM Regions are taken into account in the future planning of the IAVW.	Valid The member of Argentina has only participated in two of the three meetings carried out to date. RMKS: It is considered valid, in order to keep a record of assistance.
Conc. 12/66	Training on quality management of MET services in the CAR/SAM Regions That WMO organize, in coordination with ICAO, a series of training activities on quality management of meteorological services provided to support international air navigation in the CAR/SAM Regions.	Completed The seminar was carried out from 13 to 15 December 2006 in Dominican Republic.
Conc. 12/67	Quality assurance systems for Meteorological services in the CAR/SAM Regions That CAR/SAM States/Territories/International Organizations make utmost efforts to establish quality assurance systems for meteorological services provided in support of international air navigation in the CAR/SAM Regions.	Valid
Conc. 13/16	Cost recovery of MET services in the CAR/SAM Regions That the States/Territories/International Organizations, in coordination with the aeronautical meteorological authorities: a) establish a method for recovering the costs of aeronautical meteorological services provided in their territory, through the application of charges for air navigation services; and b) include the cost related to the reception and provision of WAFS products, especially charges for the replacement or improvement of workstations and the WAFS software required for receiving these products in GRIB and BUFR codes, and maintenance of the ISCS1 (VSAT) workstation.	Valid
Conc. 13/17	Survey on ISCS efficacy That ICAO a) consult with CAR/SAM States/Territories in order to develop a list of ISCS focal points; and b) in coordination with the WAFS provider State, develop and send to the focal points a survey on ISCS efficacy.	Completed

Reference Report Conc./Dec.	Conclusions/Decisions	Subsequent Action by ICAO and/or by States/Territories International Organizations
Conc. 13/19	Provision of results of GFS model runs by the Washington WAFC That the WAFSOPSG consider the possibility for the Washington WAFC to disseminate the analysis of the Global Forecast System (GFS) model run to user States concerned.	Completed The WAFOPSG in its Fourth Meeting considered that, in accordance with the <i>Working Arrangements between the ICAO and WMO</i> (Doc 7475), analysis of model runs not be disseminated on ICAO AFS satellite Broadcast, which was reflected in Conclusion 3/10.
Conc. 13/20	Periodic tests on volcanic ash SIGMETs, volcanic ash advisories, and volcanic ash ASHTAMs or NOTAMs That ICAO invite the Washington and Buenos Aires VAACs and the CAR/SAM NOFs and MWOs to take active part in periodic tests of SIGMETs (WV), volcanic ash advisories, and volcanic ash ASHTAMs or NOTAMs to be carried out according to the procedures agreed by the AERMET Subgroup.	Completed
Dec. 13/23	Development of a Guide for the drafting of emergency plans for aerodromes that might be affected by volcanic ash in the CAR/SAM Regions That the AERMET Subgroup, in coordination with the Secretariat, develops a guide for the drafting of emergency plans for aerodromes that might be affected by volcanic ash in the CAR/SAM Regions.	Valid
Conc. 13/24	Development of a system for early detection of volcanic activity using remote sensors That the IAVWOPSG member from the Buenos Aires VAAC include information on the development of a system for early detection of volcanic activity using remote sensors in the executive report to be presented to the IAVWOPSG/2 meeting.	Completed
Dec. 13/28	Guide for the exchange of OPMET information in the CAR/SAM Regions That the AERMETSG Subgroup, in coordination with the Secretariat, develops a Guide for the exchange of OPMET information in the CAR/SAM Regions.	Valid

Agenda Item 2: WAFS Implementation in the CAR/SAM Regions

a) Review the outcome of WAFSOPSG/3 and WAFSOPSG/4 Meetings

2.1 Under this Agenda Item, the Meeting took note of the executive summaries of the Third (WAFSOPSG/3) and Fourth (WAFSOPSG/4) Meetings of the WAFS Operations Group, carried out from 26 to 29 September 2006 in Paris, France, and from 26 to 28 February 2008, in Cairo, Egypt, respectively, which are presented in **Appendix A** to this part of the report. Note was also taken that the complete reports of these meetings is available at the WAFSOPSG website: <http://www.icao.int/anb/wafsopsg>.

2.2 The meeting recalled that with regard to the conclusions formulated by the WAFSOPSG in its third meeting as a response to Conclusion 3/2 – Amendment to WAFS-related regional procedures in the ANP/FASID, which would render them compatible with Annex 3 – *Meteorological Service for International Air Navigation* provisions, ICAO SAM Office consolidated and processed the corresponding amendments (SAM 07/3-MET, FASID and SAM 07/2-MET, ANP Basic) in accordance with the procedures approved by ICAO Council, and their approval was communicated to the States on 28 September and 11 October 2007, respectively.

2.3 Furthermore, the subgroup took note that the group formulated Conclusion 4/2 – Amendment to WAFS-related regional procedures in the ANP/FASID, to introduce a reference to the new gridded forecasts of cumulonimbus clouds, icing and turbulence and proposed amendments to Basic ANP and to FASID Tables MET 5 and MET 6.

2.4 When the WAFSOPSG during its third and fourth meetings reviewed the matter related to WAFS operation, the group agreed that to deal with errors in significant weather (SIGWX) forecasts in the BUFR code and the portable network graphics (PNG) chart forms, an administrative message should be issued by the world area forecast centre (WAFC) Provider States (Decision 4/5), since the introduction of such message does not require software changes by the users.

2.5 The WAFSOPSG also reviewed during its last two meetings an Agenda Item related to WAFS development, and agreed to improve the spatial and temporal resolution of WAFS upper-air and other upper-air forecasts in the GRIB code.

2.6 The group also considered that the migration from GRIB 1 code form to GRIB 2 code form was essential since it would enable the operational implementation of the new WAFS forecasts for icing, turbulence and convective clouds (ICE/TURB/CB), allowing also more data to be transmitted at a fixed bandwidth.

2.7 The AERMETSG noted with pleasure that WAFC London and Washington are producing ICE/TURB/CB global forecasts in gridded format more than a year ago, which are being operationally proved and are available at the SADIS FTP and at the website: <http://aviationweather.gov/testbed/globalgrids>.

Increased Temporal and Spatial Resolution of WAFS Forecasts

2.8 At the same time, the meeting took note that spatial resolution for all WAFS forecasts will increase from the current WAFS thinned grid scale to a resolution of 1.25 degree unthinned grid; WAFCs will also add three additional upper wind and temperature forecasts at flight levels (FL), FL 270 (350 hPa), FL 320 (275 hPa) and FL 360 (225 hPa); and the temporal resolution of WAFS forecast will increase from 6 to 3 hours.

2.9 The subgroup was aware that the greatest improvement in the new WAFS forecasts is the introduction of SIGWX forecasts of ICE/TURB/CB that will have a temporal resolution similar to that of upper air and temperature forecasts. This increase provides users with the latest forecasts valid for operations at all timescales, something which is not currently provided. New WAFS forecasts of ICE/TURB/CB will be valid at three hour time intervals, from T+6, 9, 12, 15, 18, 21, 24, 27, 30, 33 and 36 hours from model initialization time (T). See **Appendix B** for samples of the new products.

Format of New WAFS Forecasts

2.10 The new aforementioned forecasts described in section 2.2 will not be available in the current GRIB1 format. WAFS forecast will begin a transition to GRIB2 format beginning in September 2009. The forecasts described in section 2.2 are scheduled to be available in GRIB2 format beginning September 2009 via WAFS ftp service, and over ISCS and SADIS satellite broadcasts at a future date that will be determined at the Fifth Meeting of the WAFSOPSG (WAFSOPSG/5).

2.11 WAFS long-term plans are for all WAFS forecasts currently provided in GRIB1 format to continue in parallel with the new GRIB2 format until November 2013.

2.12 WAFS Provider States have been tasked by the WAFSOPSG to develop derivatives of the new SIGWX forecasts which will be suitable for Flight Documentation, and provide them to WAFSOPSG/5.

2.13 WAFS Provider States were also tasked by the WAFSOPSG to develop a web-based distribution of WAFS forecasts by December 2009. The web-based interface would be designed to be easily accessible, user friendly, and allow users the freedom to visualize a selection of products within the T+6 to T+36 time frames at 3-hourly intervals and would replace the provisions of WAFS SIGWX forecasts in portable network graphics (PNG) chart form.

2.14 The WAFSOPS agreed (Conclusion 3/13) that in order to foster the correct use of the new icing, turbulence and convective clouds forecasts in GRIB code form, it was necessary to convene regional training seminars and develop appropriate guidance material to be available for WAFS users through the WAFSOPSG website.

2.15 In this regard, the meeting took note that WAFS Washington Provider State considered that it will be more cost-effective to provide training in the form of computer based training, in that way a wide variety of users may have access to the material.

2.16 Considering the above, and after an extended discussion, the meeting formulated the following draft conclusion:

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CONCLUSION 9/3 -

**TRAINING FOR CAR/SAM STATES REGARDING THE
DETAILS AND USE OF NEW WAFS FORECASTS OF
CONVECTIVE CLOUDS, ICING AND TURBULENCE DERIVED
FROM GRIB 2 CODE FORM**

That WAFC Washington, in coordination with WMO, is invited to:

- a) starting 2010 or 2011, provide computer based training on the application and usage of new forecasts issued by the WAFS Provider States;
- b) assist the States, as needed in English; and
- c) evaluate the possibility of providing future training in the operation and use of the new WAFS products in English and Spanish.

Use of New WAFS SIGWX Forecast

2.17 The meeting reviewed the guidelines approved by WAFSOPSG/4 for the use of the new WAFS SIGWX forecasts, which are presented in **Appendix C** to this part of the report, extracted from Appendix E of the WAFSOPSG/4 Report).

2.18 Likewise, the subgroup was aware that according with the information provided in the WAFSOPSG/4, WMO would be ready to establish a trust fund in order to provide funding to assist the States under development in the migration to GRIB 2 code.

b) review the status of implementation of ISCS

Planned changes for the International Satellite Communication System

2.19 Under this Agenda Item, the AERMETSG recalled that the United States National Weather Service (NWS) International Satellite Communication System (ISCS) provides timely aviation-related weather information to over 80 States in support of International Civil Aviation Organization requirements for the World Area Forecast System (WAFS). The NWS in collaboration with the Federal Aviation Administration (FAA), the International Civil Aviation Organization (ICAO), and World Meteorological Organization (WMO) plans to expand and improve the telecommunications service for its area of responsibility.

2.20 It was also recalled that the ISCS is a satellite data distribution system operated by the NWS, providing support to the World Area Forecast System (WAFS) the Regional IV Meteorological Telecommunications Network (RMTN), which allows for a two-way exchange of meteorological information between the United States and States in the Caribbean and Central America, and that the funding support for ISCS/RMTN is from the NWS, which at the same time obtains funding support for ISCS/WAFS from the FAA.

2.21 The meeting took note that the existing contract with Verizon (MCI) expires 31 December 2009 and that the NWS is in the process of transitioning to ISCS-Generation 3 (G3) with a new service contract. There are no plans to provide a dual broadcast service of G2 and G3 once the NWS implements G3. This will be a turn key action and all users of WAFS workstations under the ISCS footprint will be required by 31 December 2009 to receive information using G3.

2.22 The NWS is planning to award a contract for ISCS-G3 by early 2009. The ISCS-G3 will provide improved performance compared to that of the current system. After award of the contract for the ISCS-G3, a detailed transition schedule will be posted on the ISCS web page (<http://www.weather.gov/iscs>). In addition, advisory bulletins will also be posted on this web page to keep ISCS users advised on the progress of the transition. Also, the U.S. will provide States updates to the transition at appropriate MET subgroups meeting of the PIRGs.

2.23 Also, the NWS is working with WAFS workstation providers to determine what changes are required to upgrade existing platforms to be compatible with the G3 protocol.

2.24 In this regard, the subgroup took note that in accordance with the NWS protocol, an implementation notice is issued at least 120 days in advance of making changes to products or data that are provided via the National Weather Service Telecommunication Gateway (NWSTG). The NWSTG is the source of data for the ISCS satellite broadcast. However, the meeting was aware that a review is underway to determine if 120 day notification is sufficient or whether a longer lead time is needed for States.

2.25 With the understanding that the WAFC Washington Provider State is planning to move forward with improvements with the ISCS broadcast and in order to keep States informed on the progress, the meeting formulated the following draft conclusion:

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CONCLUSION 9/4 -

**INFORMATION ON THE PROGRESS IN UPDATING THE ISCS
BROADCAST BY THE WAFC WASHINGTON PROVIDER
STATE**

That, the WAFC Washington provider State is invited to provide timely reports to States on planned changes to upgrade the ISCS broadcast to G3, taking into consideration the following:

- a) provision of resources by States that need to be acquired to switch over to G3; and
- b) provision of specifications of what is required by the States.

Note.- The WAFC Washington Provider State will use the ISCS List of contact points for keeping States informed, which is kept up-to-date by the Secretariat.

Report on the Efficacy of the International Satellite Broadcast System (ISCS) for CAR/SAM Regions

2.26 The meeting recalled from AERMETSG/8 that several States described the problems presented with the reception of the WAFS products using the ISCS, as well as their desire to improve the coordination with WAFS Washington.

2.27 In this regard, the subgroup was aware that the United States National Weather Service (NWS) Telecommunications Operations Center (TOC) operates the ISCS Help Desk 24 hours during the 7 days of the week. Also, note was taken that fifteen (15) requests for help from eight (8) user States were processed and resolved during the 12 months between September 2006 and August 2007. ISCS users can also find information on how to report problems related to the reception of WAFS products at: <http://www.weather.gov/iscs/trouble.htm>. This site also contains an installation and troubleshooting guide for the VSAT receiver, satellite modem and antenna. In addition, ISCS users without access to the Internet may report problems by calling the ISCS Help Desk at 1-303-713-0902 or by sending a FAX to 1-301-587-1773.

ISCS Operation Statistics

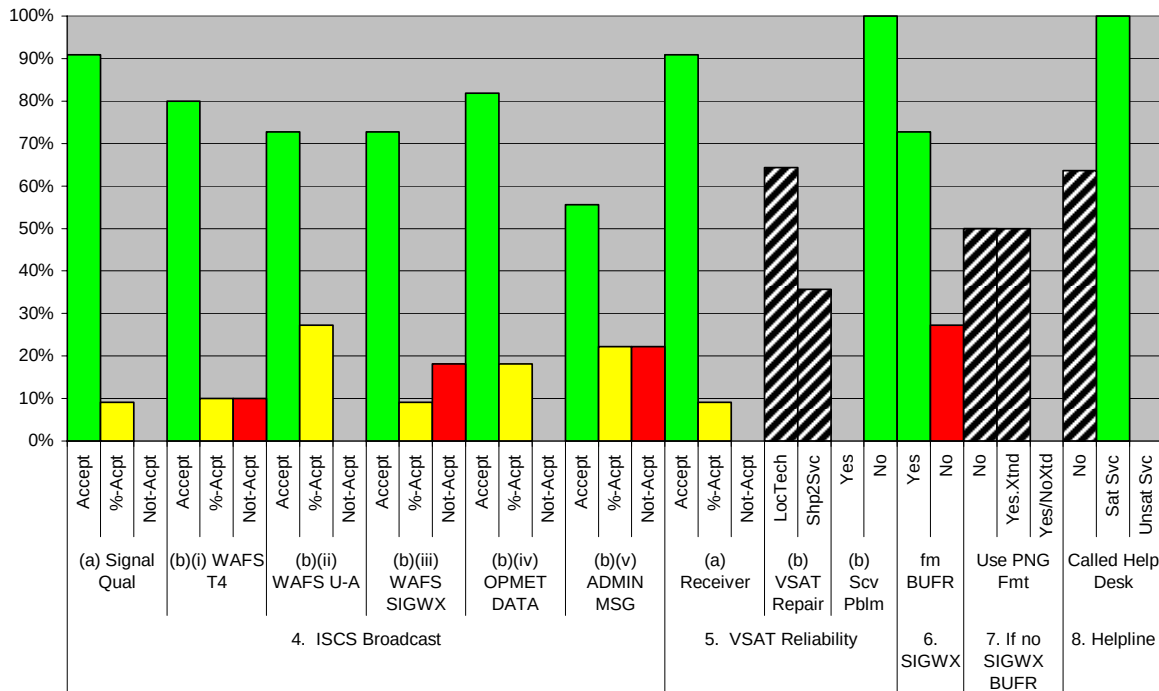
2.28 Under this Agenda Item, the meeting took note that during the 12 months from August 2006 through July 2007 the ISCS was available over 99.99% of the time, as shown in Figure 1 of **Appendix D**, and that the 99.9% availability requirement was exceeded in every month except May 2007. Furthermore, during the 12 months from August 2006 through July 2007 the ISCS fully met the ICAO Annex 3 requirement for timely broadcast of GRIB-1 products within 6 hours of the initial synoptic time, and BUFR SIGWX products no later than 12 hours before its validity time (Figure 2, Appendix C).

2.29 The meeting noted that following GREPECAS Conclusion 13/17, 9 of the 14 States of the SAM Region and 4 of the 26 States/Territories of the CAR Region responded the ISCS survey. The ISCS Provider State has reviewed and analyzed the completed questionnaires finding the following results, scored from best to worst as “Acceptable”, “Percentage Acceptable”, and “Not Acceptable”: Percentages have been rounded to the nearest 5%.

- 55% of States considered that the service administrative messages were acceptable;
- 70% of States reported acceptable availability of upper-air data in the GRIB code form;
- 70% of States reported acceptable availability of SIGWX data in the BUFR code form;
- 80% of States reported acceptable availability of OPMET messages;
- 70% of States reported that they are able to produce WAFS SIGWX charts from the BUFR code form;
- 90% of States reported acceptable VSAT signal quality;
- 90% of States reported an acceptable overall assessment of the VSAT;

- 100% of States reported no difficulties when VSAT receiving equipment was shipped back to the service provider for repairs;
- 100% of States contacting the Provider State Help Desk reported satisfactory technical support was provided.

2005-2006 ISCS-WAFS Survey Summary



2.30 One issue that stands out from the questionnaire which may require further discussion and evaluation is the ability of the State's to ingest and provide SIGWX charts from the BUFR code form. Some States have noted they have experienced problems in using the BUFR code form to provide the SIGWX charts. This same issue was also discussed at AERMETSG/8.

2.31 The meeting recalled that the questionnaire used was modeled after the questionnaire used by the Satellite Distribution System Operations Group (SADISOPSG), in order to harmonize the questions being asked to ISCS user States and SADIS user States to determine if there are any commonalities in issues or problems that have been identified by States under the ISCS and SADIS footprint. The responses to the survey for each State are summarized in **Appendix E**. The meeting took note that a positive response or yes to the question is designated as a '1' in the matrix table in of the referred Appendix.

Harmonization of the ISCS broadcast with SADIS

2.32 The meeting noted that as a response to GREPECAS Conclusion 12/55, the WAFSOPSG approved the *International Satellite Communications System (ISCS) User Guide* (WAFSOPSG Conclusion 3/8 refers), which is available at the WAFSOPSG website and notice with satisfaction that Annexes 2 and 3 to the *ISCS User Guide* have been completed. The National Weather Service (NWS) is in process of validating the information of these Annexes to bring them in line, where possible, with Annexes 2 and 3 to the *SADIS User Guide*.

2.33 The meeting was aware that in accordance with the NWS protocol an implementation notice is issued before introducing any changes to products or data that are provided via the National Weather Service Telecommunication Gateway (NWSTG) which is the source of data for the ISCS satellite broadcast.

2.34 It should be noted that users of the ISCS workstations will have to update the ingest database of allowable products in the workstations; otherwise the data will be discarded by the system. The transition to harmonize the ISCS broadcast with SADIS will be a turn-key action. Furthermore, the existing service vendor support for maintenance for the WAFS workstations should enable vendors to provide the necessary support to update the ingest database management program.

2.35 With the exception of U.S. bulletins, the majority of ISCS and SADIS OPMET information is to be harmonized the 31st August 2008. To achieve this, the subgroup formulated the following draft conclusion:

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CONCLUSION 9/5 -

DATA MANAGEMENT NOTICES

That, the WAFS Provider State should continue providing data management notices over their circuits on the planned cut over date and scope of the product changes for all ICAO Regions.

*Note: An example of a DM is provided in **Appendix F**.*

2.36 The NWS change documents will also be posted for information on the ISCS web page at the following URLs:

http://www.weather.gov/iscs/RC/Harmniz_AsiaPac.pdf
http://www.weather.gov/iscs/RC/Harmniz_EUR.pdf
http://www.weather.gov/iscs/RC/Harmniz_AFI-1.pdf
http://www.weather.gov/iscs/RC/Harmniz_MID.pdf
http://www.weather.gov/iscs/RC/Harmniz_NAM.pdf
http://www.weather.gov/iscs/RC/Harmniz_NAT.pdf
http://www.weather.gov/iscs/RC/Harmniz_NAM_Drf.pdf
http://www.weather.gov/iscs/RC/Harmniz_CARSAM.pdf

2.37 In the WAFC Washington, workstations will be required to be updated to accommodate the changes for the new OPMET data. In this regard, the meeting formulated the following draft conclusion:

DRAFT

CONCLUSION 9/6 -

**UPDATE TO WAFC WORKSTATIONS TO INGEST OPMET
DATA CHANGES**

That:

- a) the WAFC Washington Provider State will provide States and workstation vendors with the necessary information on the changes to the data products broadcast over the ISCS;
- b) the States take the necessary actions to update their workstations for the cut over planned for 31st August 2008 to ingest the global set of OPMET data; and
- c) the States may choose to exercise the existing maintenance service contract for their WAFS workstations, which should provide the necessary support to update the ingest database management program.

Note.- Necessary action by the WAFC Washington Provider State and the ICAO Regional Offices have been taken in August 2008 in order to minimize the impact of these changes on ISCS users.

2.38 Based on the implementation plan for the transition from GRIB 1 code form to GRIB 2 code form adopted (Decision 4/18) by the WAFSOPSG, the meeting convened that in order to ensure the reception of the new WAFS forecasts for icing, turbulence and convective clouds and the migration from GRIB 1 code form to GRIB 2 code form without difficulties, CAR/SAM States should take the required actions for the training and upgrading of WAFS workstations, consequently, the following draft conclusion was formulated:

DRAFT

CONCLUSION 9/7 -

**IMPLEMENTATION PLAN FOR THE TRANSITION FROM
GRIB 1 TO GRIB 2 CODE FORM**

That, States take note and appropriate action concerning the transition plan for the implementation of GRIB 2 code form adopted by the WAFSOPSG/4 Meeting, presented as **Appendix G** to this part of the report.

THIRD MEETING

**WORLD AREA FORECAST SYSTEM OPERATIONS GROUP
(Paris, France, 26 to 29 September 2006)**

EXECUTIVE SUMMARY¹

1. INTRODUCTION

1.1 The third meeting of the World Area Forecast System Operations Group (WAFSOPSG/3) was held in the European/North Atlantic (EUR/NAT) Regional Office, Paris, 26 to 29 September 2006. The meeting was attended by twenty-eight experts from fourteen States and four international organizations (the Agency for the Safety of Aerial Navigation in Africa and Madagascar (ASECNA), the International Air Transport Association (IATA), the International Federation of Air Line Pilots' Associations (IFALPA) and the World Meteorological Organization (WMO)).

1.2 The Chairman, Mr. D. Visoiu, presided over the meeting throughout its duration.

2. FOLLOW-UP OF WAFSOPSG/2 CONCLUSIONS

2.1 With regard to the follow-up of the conclusions, the group noted that action had been completed on all the issues except for Conclusions 2/7 b), and 2/21, which were re-addressed under Agenda Items 5.2 and 6.6 (Decision 3/1 refers).

3. REVIEW OF ICAO PROVISIONS RELATED TO WAFS

3.1 Under this agenda item, the group reviewed the regional procedures related to world area forecast system (WAFS) and proposed amendments which would render them compatible with Annex 3 — *Meteorological Service for International Air Navigation* provisions by eliminating the formal requirement for significant weather (SIGWX) forecasts in T4 chart form. In view of the continuation of the provision of SIGWX forecasts in the PNG chart form (endorsed under Agenda Item 5), as a back-up, it was agreed that this should be reflected in a note to the regional procedures (Conclusion 3/2 refers).

3.2 Regarding Appendix 1 to Annex 3, the group endorsed proposals made by the world area forecast centre (WAFC) Provider States concerning, inter alia, the removal of thunderstorm symbols from the model charts and chart legends, and the systematic indication of limiting flight levels for jet-streams and tropopause heights (Conclusion 3/3 refers).

3.3 The group re-assessed the provision related to satellite broadcasts contained in Annex 10 — *Aeronautical Telecommunications* and agreed that it continued to be relevant in view of the essential role of the international satellite communications system (ISCS) and the satellite distribution system for information relating to air navigation (SADIS) broadcasts. The provision was proposed to be upgraded to a Standard, with an addition of a reference to the second important function of these broadcasts, i.e. the dissemination of OPMET data (Conclusion 3/4 refers).

¹The full report is available at the following website: www.icao.int/anb/wafsopsg

3.4 Concerning the development of guidance on the use of fixed-time WAFS forecasts in flight documentation called for by Conclusion 16/42 of the ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG), the group agreed that the development of such guidance by the Secretariat would be of assistance to States and users (Conclusion 3/5 refers).

4. OPERATION OF THE WAFS

4.1 The group took note of the WAFS management report which had been prepared by the WAFC Provider States and placed on the WAFSOPSG website. The group reviewed the management report, noted its content and expressed satisfaction with the scope of information provided.

4.2 With regard to back-up procedures at the WAFCs, it was noted that the WAFC Provider States had re-assessed the need by WAFC London to establish a bulletin monitoring facility for supporting a back-up data service to the ISCS. The group concurred with the findings by the WAFC Provider States, i.e. there was no need to establish such a facility (Decision 3/6 refers).

4.3 Concerning the performance of the WAFS, the group reviewed the output performance indicators developed for this purpose and used during operational trials by the WAFC Provider States. It agreed that the indicators met the operational requirements and should therefore be implemented on a permanent basis (Conclusion 3/7 refers).

4.4 The group was pleased to note that the WAFC Washington Provider State had developed a draft International Satellite Communications System (ISCS) User Guide. It was noted that the WAFC Washington Provider State would make the ISCS User Guide available through its file server to all States and users under the ISCS 1/2 broadcast area. The group agreed that the ISCS User Guide should also be included in appropriate ICAO websites, similar to the SADIS User Guide. Regular updates to the ISCS User Guide would be prepared for consideration by future WAFSOPSG meetings (Decision 3/8 refers).

4.5 In order to assess the need for WAFS forecasts in chart form beyond 30 November 2006, the Secretariat had undertaken a survey on the implementation of BUFR-coded SIGWX forecasts by States through the Regional Offices. The results of the survey indicated that currently some 60 per cent of States (out of 72 which had replied) were in a position to receive BUFR-coded SIGWX forecasts and that by the end of 2006, the percentage was expected to rise to 79 per cent. The group reiterated the view that the use of the BUFR code form for SIGWX forecasts should remain the primary means of receiving SIGWX forecasts within WAFS since it was the only method compatible with the objective of the WAFS spelled out in Annex 3, 3.1. However, in view of the slower-than-expected pace of implementation, the group agreed that SIGWX forecasts in the PNG chart form should continue to be provided as a back-up to the BUFR-coded forecasts at least until 2010 (Conclusion 3/9 refers).

4.6 Concerning the dissemination of the analysis of the global forecasts to WAFS user States called for by Conclusion 13/19 of the CAR/SAM Regional Planning and Implementation Group (GREPECAS), the group concluded that the inclusion of such basic synoptic analyses in ICAO satellite broadcasts would not be appropriate since it would be in conflict with the *Working Arrangements between the International Civil Aviation Organization and the World Meteorological Organization* (Doc 7475) (Decision 3/10 refers).

5. DEVELOPMENT OF THE WAFS

5.1 The group addressed the possibility of improving the temporal and spatial resolutions of WAFS upper wind and other upper-air forecasts in the GRIB code form based on a study undertaken by

the WAFC Provider States. The results showed that while the costs of distributing 40-km horizontal resolution data over the satellite broadcast would be substantial, two additional vertical levels between FL 300 and FL 400, and forecasts with a temporal resolution of 3 hours could be provided at a reasonable cost and accommodated within the existing SADIS and ISCS broadcasts. Since the benefits of higher resolution data were not yet fully known, the group agreed that a further study should be undertaken in this area, before proposing amendments to Annex 3 provisions (Conclusion 3/11 refers).

5.2 Concerning the development of an objective icing index, the group noted the progress report by the WAFC Provider States. It dealt with the development of a metrics for the reporting and forecasting of icing which would link an icing intensity index to meteorological variables and which would be an aircraft-independent and objective measure of icing based on the rate at which icing accumulates on an airframe. Due to the close relation between the icing index and the development of improved WAFS forecasts for icing in the GRIB code form, it was agreed that future work related to the objective icing index should be undertaken in connection with the development of the improved forecasts for icing, turbulence and convective clouds (Decision 3/12 refers). Regarding the status of the development of such forecasts, the group noted that considerable progress had been made by the WAFC London Provider State. Trial forecasts were now being generated routinely four times per day; the new products were expected to be available soon through the SADIS FTP Service. The group agreed that the utility of the trial forecasts should be evaluated by users through a formal feedback mechanism. In order to promote the appropriate use of the new forecasts of icing, turbulence and convective clouds in the GRIB code form, it was considered desirable to convene regional training seminars and to develop appropriate guidance, to be made available to WAFS users through the WAFSOPSG website (Conclusion 3/13 refers).

5.3 The feasibility of advancing the time of issuance of SIGWX forecasts to meet the needs for long-haul flights was confirmed by investigations undertaken by the WAFC Provider States. It transpired that both WAFCs could issue high-level (SWH) and medium-level SIGWX (SWM) forecasts 17 and 16 hours before the validity time, respectively. The group agreed that the SIGWX forecasts for high levels (SWH) in the BUFR code form were the most time critical for flight planning of long-haul operations and agreed therefore that the lead time of these forecasts should be the longest (Conclusion 3/14 refers).

5.4 With regard to the migration to the GRIB 2 code form, it was considered that the replacement of the GRIB 1 code form by the GRIB 2 code form was essential since it would enable the operational implementation of new WAFS forecasts for icing, turbulence and convective clouds and would allow more data to be transmitted at a fixed bandwidth. To achieve this, the group agreed that a detailed implementation plan of the GRIB 2 code form should be elaborated (Conclusion 3/15 refers).

6. LONG-TERM PLANNING OF THE WAFS IMPLEMENTATION

6.1 In response to Conclusion 16/41 of the APANPIRG calling for the WAFSOPSG to consider the development of a long-term plan for the WAFS, the group concurred that such a plan would be warranted and that the WAFC Provider States should elaborate a concise roadmap covering a period of five years for the endorsement by the WAFSOPSG/4 Meeting (Conclusion 3/16 refers).

7. FUTURE WORK PROGRAMME

7.1 The group reviewed the work programme and proposed additional changes based on the discussions during the meeting (Decision 3/17).

8. **ANY OTHER BUSINESS**

8.1 The group considered that there would be a need to provide a correction to WAFS SIGWX forecasts in the BUFR code form, should an error be found following transmission of the product and that WMO standards should, in principle, be adopted for this purpose. Since the proposed change could have an impact on user software, the group felt that the WAFS Provider States should undertake a study to assess its implications on WAFS users (Conclusion 3/18 refers).

8.2 A proposal to join any two subsequent fixed time WAFS charts of the same product and level to provide information relevant to long-haul flights was considered in order to eliminate the need to provide more than one WAFS forecast for the same product and level for different fixed valid time. This approach was not currently envisaged in Annex 3 and the inclusion of such provisions in Annex 3 could have considerable financial implications for States and users, since substantial modifications to visualization software would have to be made. Therefore, the group considered that this proposal should be subject to a careful assessment by an ad-hoc group (Conclusion 3/19 refers).

— END —

FOURTH MEETING

WORLD AREA FORECAST SYSTEM OPERATIONS GROUP (Cairo, Egypt, 26 to 28 February 2008)

EXECUTIVE SUMMARY¹

1. INTRODUCTION

1.1 The fourth meeting of the World Area Forecast System Operations Group (WAFSOPSG/4) was held in the Middle East (MID) Regional Office, Cairo, 26 to 28 February 2008. The meeting was attended by twenty-nine experts from fifteen States and four international organizations (the Agency for the Safety of Aerial Navigation in Africa and Madagascar (ASECNA), the International Air Transport Association (IATA), the International Federation of Air Line Pilots' Associations (IFALPA) and the World Meteorological Organization (WMO)).

1.2 The Vice Chairman, Mr. A. Al Harty, presided over the meeting throughout its duration.

2. FOLLOW-UP OF WAFSOPSG/3 CONCLUSIONS

2.1 With regard to the follow-up of the conclusions, the group noted that action had been completed on all the issues except for Conclusion 3/13 b) 2), which was re-addressed under Agenda Item 6.3 (Decision 4/1 refers).

3. REVIEW OF ICAO PROVISIONS RELATED TO WAFS

3.1 Under this agenda item, the group reviewed the regional procedures related to world area forecast system (WAFS) and proposed amendments which would introduce a reference to the new gridded forecasts of cumulonimbus (CB) clouds, icing and turbulence (Conclusion 4/2 refers).

3.2 The group also reviewed and endorsed the draft Amendment 75 to Annex 3 which would:

- a) improve the spatial and temporal resolution of WAFS forecasts in the GRIB code form;
- b) increase the lead time for issuance of significant weather (SIGWX) forecasts;
- c) allow the introduction of WAFS forecasts for CB clouds, icing and turbulence in the GRIB code form;
- d) simplify the content of SIGWX forecasts by eliminating elements that have never been included in such forecasts issued within the WAFS;

¹The full report is available at the following website: www.icao.int/anb/wafsopsg

- e) eliminate the requirement to indicate, subject to regional air navigation agreement, the areas of flight documentation available at international aerodromes; and
- f) eliminate amendments to WAFS forecasts. (Conclusion 4/3 refers).

4. OPERATION OF THE WAFS

4.1 The group took note of the WAFS management report which had been prepared by the WAFC Provider States and placed on the WAFSOPSG website. The group reviewed the management report, noted its content and expressed satisfaction with the scope of information provided.

4.2 The group noted that the OPMET bulletins were not identical in the international satellite communications system (ISCS) and the satellite distribution system for information relating to air navigation (SADIS) broadcasts and concurred that the format of ISCS and SADIS OPMET bulletins should be harmonized by the end of summer 2008 (Conclusion 4/4 refers).

4.3 To deal with errors in significant weather (SIGWX) forecasts in the BUFR code and the portable network graphics (PNG) chart forms, the group agreed that an administrative message should be issued by the world area forecast centre (WAFC) Provider States (Decision 4/5 refers). The introduction of such administrative messages would not require costly software changes by WAFS users.

4.4 In view of differences that existed between WAFC in the provision of height coordinates for forecasts of tropopause and maximum wind, the group agreed that the height coordinates should be harmonized. To minimize the impact on users, no changes should be made to the current GRIB 1-formatted forecasts; such changes should only be applied to the future GRIB 2-formatted forecasts. (Conclusion 4/6 refers).

4.5 In order to improve information on tropical cyclones (TC) and volcanic ash (VA) in the SIGWX forecasts, the group agreed that:

- a) indication of non-named TC should be clarified by eliminating the term “NIL” used hitherto (Decision 4/7 refers);
- b) feasibility of establishing coordination between WAFC and tropical cyclone advisory centres (TCAC) should be assessed as called for by the eighteenth meeting of the ASIA/PAC Air Navigation Planning and Implementation Regional Group (APANPIRG/18) (Conclusion 4/8 refers); and
- c) tropical cyclone advisories from non-TCAC could be used when adequate advisory guidance from the designated TCAC was not available (Decision 4/9 refers).

4.6 Regarding transparency during times of WAFC backup, the group noted that if the WAFC back-up were entirely transparent for end users as called for by the Satellite Distribution System Operations Group (SADISOPSG), WAFC production suites and vendors workstation software would require adjustments. Therefore, the group agreed that WAFC back-up should continue to be seamless, but not necessarily transparent, for end-users (Decision 4/10 refers).

4.7 To address the APANPIRG Conclusion 17/36 related to WAFS output performance indicators, the group concurred that their extension and the possibility of producing more operationally oriented output performance indicators should be studied (Conclusion 4/11 refers).

5. DEVELOPMENT OF THE WAFS

5.1 The group endorsed the results of the study undertaken by IATA which called for the

- a) introduction of two additional levels at FL 320 (275 hPa) and at FL 360 (225 hPa);
- b) replacement of the thinned grid with a regular grid with a resolution of 1.25; and
- c) improvement in the temporal resolution from 6 to 3 hours (Conclusion 4/12 refers).

The use of finer resolutions as suggested under a) to c) above was expected to lead to improvements in the WAFS upper-air forecasts, which would contribute to increase the user confidence in such forecasts and could subsequently result in a reduced demand for additional fuel, thus in reduced fuel burn and in a genuine cost savings for airlines. To address the APANPIRG Conclusion 18/41, the group agreed that the requirements of polar operations should be further studied by the WAFCs (Conclusion 4/12 refers). The group called for the WAFC Provider States to develop the higher resolution upper air forecasts, in time for the WAFSOPSG/5 Meeting in order to ensure their timely implementation (Conclusion 4/13 refers).

5.2 Concerning the gridded WAFS forecasts for icing, turbulence and CB clouds in the GRIB 2 code form, the WAFSOPSG Members from IATA, IFALPA and user States had evaluated the trial products available from the SADIS FTP service and the WAFC Provider States had developed guidelines for the visualization of these gridded forecasts. Concerning the evaluation undertaken by users, the group concurred with their views that the advantages of the new gridded forecasts included their high consistency, their compatibility with wind and temperature forecasts, and their relevance to flight operations irrespective of the duration of the flight. The group further agreed that the following issues should be addressed:

- a) *Overlapping period.* To minimize confusion, the overlap of the existing SIGWX forecasts with the new gridded forecasts be short; during the overlapping period, the gridded test forecasts should be clearly labelled as such;
- b) *Ease of use.* The visualization of the new gridded forecasts should be such that it would combine the high “at a glance” value of existing SIGWX forecasts with greater detail inherent to gridded forecasts;
- c) *Use of terminology.* All the qualifiers used to describe icing, turbulence and CB clouds in the gridded forecasts should relate to terms well-known to the user; and
- d) *Accuracy of the gridded forecasts.* It was considered important that the accuracy of the new gridded forecasts be assessed in order to ensure that their accuracy is similar, or superior, to that of the existing SIGWX forecasts (Conclusion 4/14 refers).

With regard to guidance related to gridded forecasts, the group endorsed the guidelines developed by the WAFC Provider States (Decision 4/15 refers) and called for the WAFC Provider States to develop comprehensive guidance in time for the WAFSOPSG/5 Meeting (Conclusion 4/16 refers). Finally, the group identified some outstanding issues related to the gridded forecasts and agreed that the WAFC

Provider States should undertake a systematic comparisons of these forecasts in order to establish their characteristics and limitations, in time of the WAFSOPSG/5 Meeting (Conclusion 4/17 refers).

5.3 The group considered the migration to the GRIB 2 code form and endorsed the implementation plan developed by the WAFC Provider States, in close coordination with WMO, based on IATA user requirements (Decision 4/18 refers).

5.4 With regard to the visualization of WAFS forecasts in flight documentation, the group considered two issues:

- a) *Use of concatenated WAFS forecasts for long-haul flights.* Based on the results of a study undertaken by an ad hoc group, it was agreed that the Secretariat should develop Annex 3 provisions to enable the provision of concatenated route-specific wind/temperature forecasts generated from interpolating data from consecutive forecast times, for review by the WAFSOPSG/6 Meeting. Furthermore, the ad hoc group was tasked to study if the interpolation could similarly be applied to the new gridded forecasts (Conclusion 4/19 refers); and
- b) *Establishment of a web-based distribution of WAFS forecasts.* In view of the complexity of software required for the visualization of the new gridded forecasts, it was agreed that WAFC Provider States should develop a web-based interface for the provision of a minimum set of WAFS charts. The web-based interface would be easily accessible and user friendly, and allow users to visualize a selection of products; it would replace the provision of WAFS SIGWX forecasts in the PNG chart form (Conclusion 4/20 refers).

5.5 With regard to the quality control of meteorological information included in the automatic dependent surveillance (ADS) messages, the group agreed that, in view of the explosive growth of WMO aircraft meteorological data relay (AMDAR) reports, there was no need to pursue work on the quality control of MET information contained in ADS reports (Decision 4/21 refers).

6. LONG-TERM PLANNING OF THE WAFS IMPLEMENTATION

6.1 The group reviewed and endorsed the WAFS 5-year plan, covering years 2008 to 2012, developed by the WAFC Provider States (Decision 4/22 refers).

7. FUTURE WORK PROGRAMME

7.1 The group reviewed the work programme based on the discussions during the meeting (Decision 4/23).

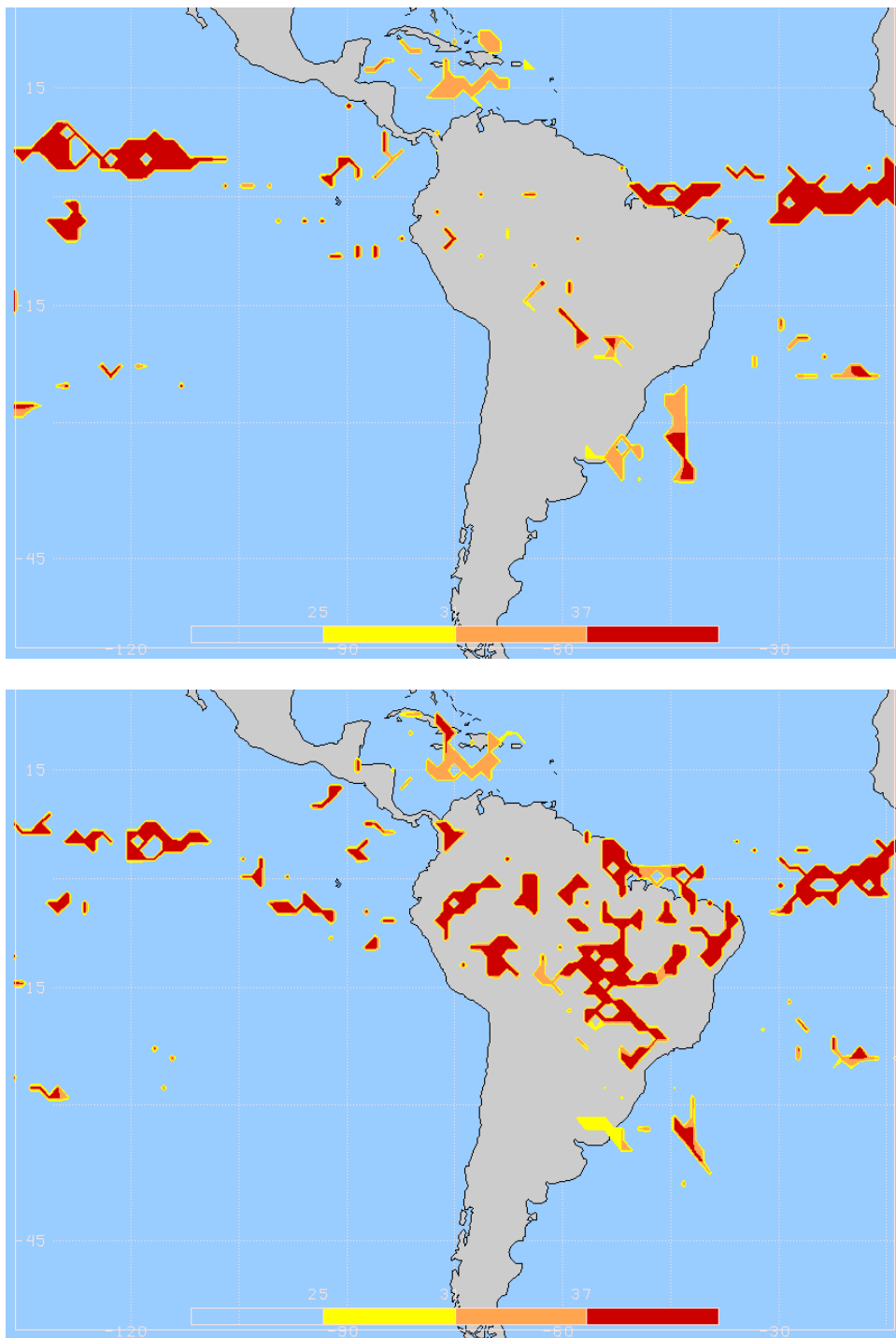
8. ANY OTHER BUSINESS

8.1 In order to facilitate the implementation of the new gridded WAFS forecasts of CB clouds, icing and turbulence, and in particular their visualization, the group considered that it would be essential to convene a workshop involving the WAFC Provider States, and WAFS user States and users. In view of the planned implementation of the gridded forecasts in 2010 and of the plans to convene a series of regional seminars on these forecasts during 2010, it was considered that the proposed

workshop should be held during 2009. Since the workshop would involve some WAFSOPSG members and could facilitate discussions at the WAFSOPSG/5 Meeting, it was agreed that a two-day workshop should be convened during the week of the WAFSOPSG/5 Meeting (Conclusion 4/24 refers).

— END —

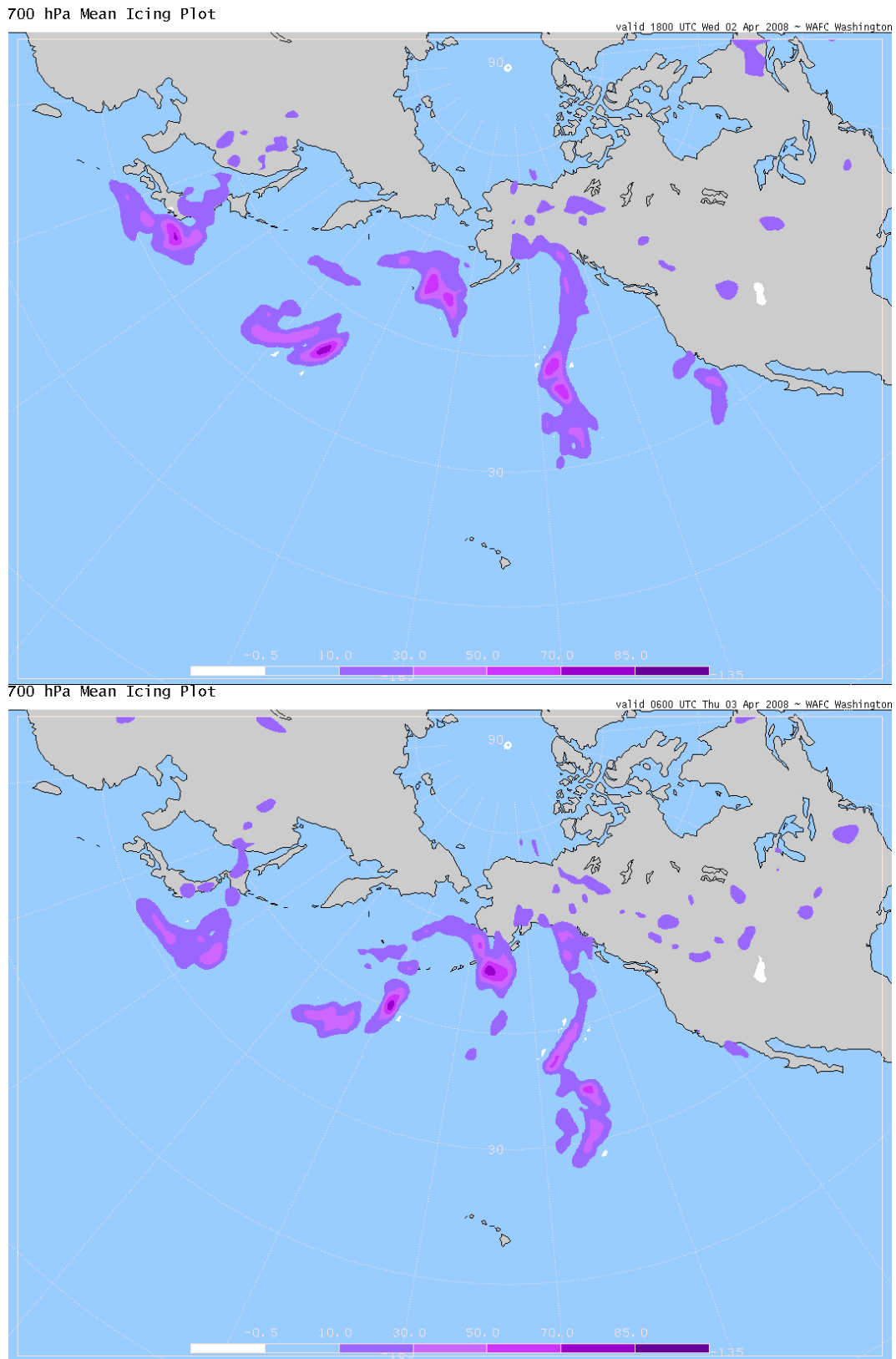
The following are examples of trial products of convection, icing potential, and clear-air-turbulence. These trials do not represent any final visualization scheme of the WAFS SIGWX forecast; rather they are first version trials.



Samples SIGWX forecast of convection, contoured with heights of CB tops, valid at 6 and 12 after model time.

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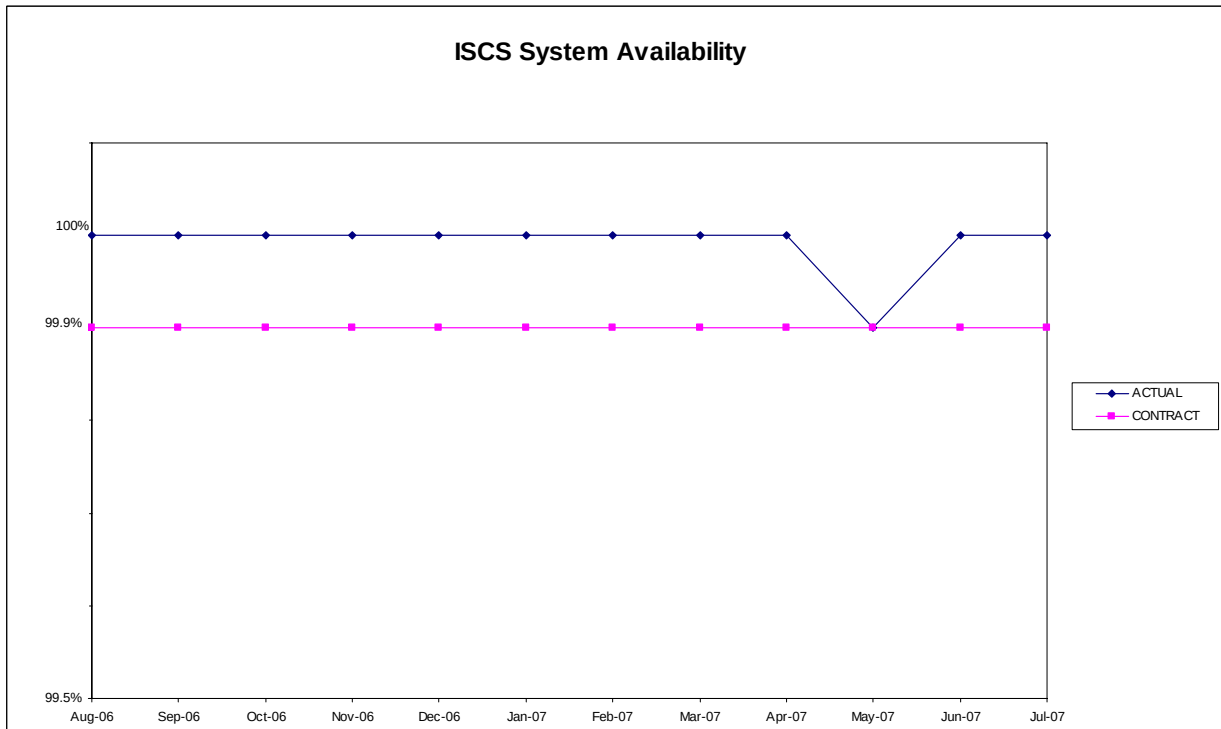
Sample SIGWX forecasts of icing at 700 hPa (FL100) valid at 12 hours (above) and 24 hours (below) after model time.

Guidelines for the Use of Gridded Forecasts of Turbulence, Icing, and CB Clouds (taken from WAFSOPSG/4 Final Report Appendix E)

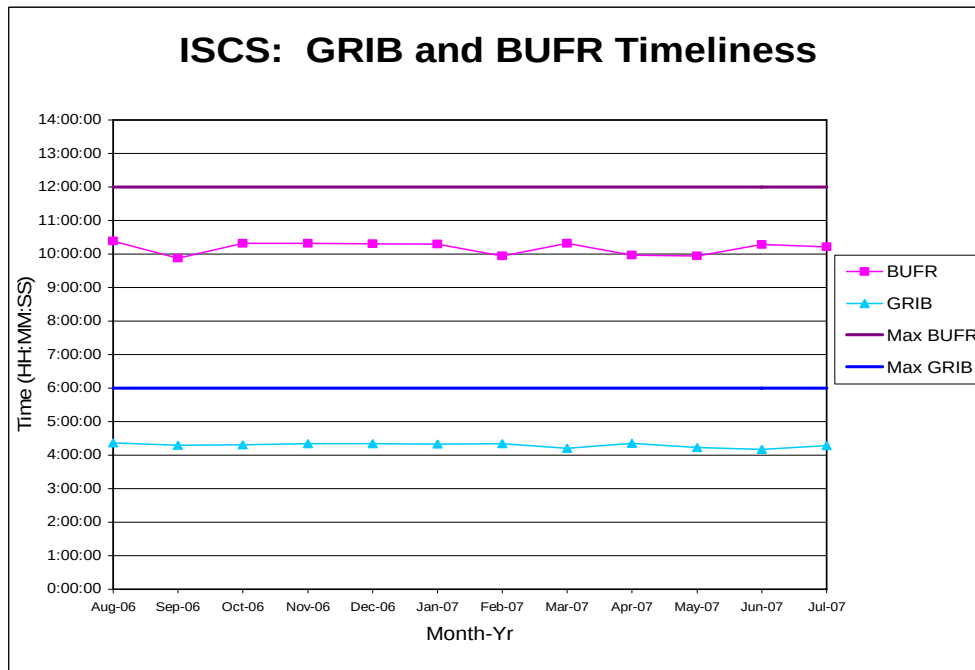
- 1) Gridded ICE/TURB/CB will be stand alone products similar to today's WAFS upper wind and air temperature forecasts.
- 2) All gridded ICE/TURB/CB should be considered as flight planning information for flight documentation.
- 3) Gridded ICE/TURB/CB valid at T+6 hours are not advisories or warnings such as SIGMETs or AIRMETs, and are not to be considered as a replacement or amendment to any such advisories or warnings.
- 4) Gridded ICE/TURB/CB will be available in 3 hour time steps, from T+6 to T+36. The recommended period of use will be 1 hour 30 minutes before and after each time step. For example, a 0000UTC T+15 hour gridded ICE/TURB/CB product valid at 1500 UTC would be appropriately used for flight information from 1330 UTC to 1630 UTC. Flight documentation for 1700 UTC would be provided in the 0000UTC T+18 hour gridded ICE/TURB/CB product.
- 5) With respect to flight documentation, newly issued gridded ICE/TURB/CB automatically updates and cancels the corresponding forecast issued six hours earlier.

Note. - Users may continue to use forecaster-produced SIGWX for flight documentation, but should be advised that only the most recently issued T+24 hour SIGWX was produced using the latest computer model run, and that SIGWX forecasts issued six hours earlier were produced from an earlier computer model run.

ISCS Operation Statistics



(Figure 1)



(Figure 2)

State	No. VSAT	Loc	Type	4. ISCS Broadcast																			
				(a) Signal Qual			(b)(i) WAFS T4			(b)(ii) WAFS U-A			(b)(iii) WAFS SIGWX			(b)(iv) OPMET DATA			(b)(v) ADMIN MSG				
				Accept	%-Acpt	Not-Acpt	Accept	%-Acpt	Not-Acpt	Accept	%-Acpt	Not-Acpt	Accept	%-Acpt	Not-Acpt	Accept	%-Acpt	Not-Acpt	Accept	%-Acpt	Not-Acpt		
Argentina		Serv Met	Corbor	1						1				1				1					
Chile	1	Santiago		Morcom		1					1					1				1			1
		Aero. El Dorado	Meteostar													1							
Columbia	2	Bogota			1			1			1				1			1				1	
		Aero. Intl. Jose Marti	InfoSystem																				
Cuba	2	La Habana			1			1			1				1			1					
		MET APTO, Mariscal	NETSYS																				
Ecuador	1	Sucre			1			1			1				1				1				
French		Rochambea	Synergie																				
Guiana	1	u Airport				1				1				1				1				1	
		CTIAL	Corbor																				
Guyana	1	Airport			1			1			1				1	1							1
			Morcom																				
Mexico		Aero. Intl. de la Ciudad																					
Trinidad and Tobago	1	PIARCO	Corbor					1				1											
		Puerto Rico and US Virgin Is.	GST Metlab																				
Rico and US Virgin Is.	1	WFO San Juan			1			1			1				1						1		
		Aero. Intl. Simon Bolivar	UNKNOWN					1				1					1						1
			Avg	0.9091	0.0909	0	0.8	0.1	0.1	0.7273	0.2727	0	0.7273	0.0909	0.18182	0.8182	0.1818	0	0.5556	0.2222	0.22222		
			Green	0.9091			0.8			0.7273			0.7273			0.8182			0.5556				
			Yellow		0.0909			0.1			0.2727			0.0909			0.1818				0.2222		
			Red			0			0.1			0			0.18182			0				0.22222	
			Neutral																				

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State	No. VSAT	Loc	Type	5. VSAT Reliability						6. SIGWX		7. If no SIGWX BUFR			8. Helpline			
				(a) Receiver			(b) VSAT Repair		Scv Pb		fm BUFR		Use PNG Fmt		Called Help Desk			
				Accept	%-Acpt	Not-Acpt	LocTech	Shp2Svc	Yes	No	Yes	No	No	Yes.Xtnd	Yes/NoXtd	No	Sat Svc	Unsat Svc
Argentina	1	Serv Met NAC	Corbor	1							1					1		
Chile	1	Santiago	Morcom		1				1	1		1	1			1		
		Aero. El Dorado																
Columbia	2	Bogota	Meteostar	1				1			1		1			1	1	
		Aero. Intl. Jose Marti																
Cuba	2	La Habana	InfoSystem	1								1		1			1	
		MET APTO, Mariscal																
Ecuador	1	Sucre	NETSYS	1				1			1					1		
French Guiana	1	Rochambeau Airport	Synergie	1				1			1			1			1	
		CIAL																
Guyana	1	Airport	Corbor	1				1	1	1	1			1			1	
Mexico	1	Aero. Intl. de la Ciudad de Mexico	Morcom	1					1	1	1					1		
Trinidad and Tobago	1	PIARCO	Corbor	1							1						1	
Puerto Rico and US Virgin Is.	1	WFO San Juan	GST Metlab	1				1			1					1		
		Aero. Intl. Simon Bolivar																
Venezuela	1	Bolivar	UNKNOWN	1								1	1			1		
			Avg	0.9091	0.0909	0	0.64286	0.35714	0	1	0.7273	0.2727	0.5	0.5		0	1	0
			Green	0.9091						1	0.7273						1	
			Yellow		0.0909													
			Red			0			0			0.2727	0.5					0
			Neutral				0.64286	0.35714					0.5	0.5		0	1	

EXAMPLE OF DATA MANAGEMENT NOTICE (DM)

NOXX10 KWBC 221925
DATA MGT MESSAGE 05-08.13

TO AWIPS/NOAAPORT USERS.. FAMILY OF SERVICES/FOS/SUBSCRIBERS...
EMERGENCY MANAGERS WEATHER INFORMATION NETWORK /EMWIN/
NATIONAL WEATHER SERVICE /NWS/ CUSTOMERS... WAFS USERS...
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FROM RTH WASHINGTON DATA MANAGEMENT

CHANGE NOTICE NO 0007
EFFECTIVE DATE AUGUST 31 2008

[0007] ON THE ABOVE EFFECTIVE DATE THE FOLLOWING COLLECTIVES
WILL BE ADDED TO THE ISCS DATASTREAM.

PATRICK GILLIS [301] 713-1743 EXTENSION 104 IS THE COGNIZANT
TECHNICAL INDIVIDUAL. ROBERT GILLESPIE [301] 713-9478
EXTENSION 140 IS THE DRG FOCAL POINT FOR THIS ITEM.

ISCS/WAFS BROADCAST WILL CONTAIN ONLY UNALTERED/UNEDITED
AVIATION WEATHER BULLETINS AS THEY WERE RECEIVED FROM THE
ORIGINATING ICAO AERODROME, AFTER 31 AUGUST 2008. THE EDITED
COLLECTIVES CONSTRUCTED FROM BULLETINS RECEIVED AT
WAFSC-WASHINGTON FROM INTERNATIONAL AERODROME SOURCES WILL
CONTINUE TO BE AVAILABLE ON BOTH THE GLOBAL TELECOMMUNICATION
SYSTEM (GTS) AND THE NWS PUBLIC FTP SERVER.

THE FOLLOWING PRODUCT(S) WILL BE DELETED FROM THE ISCS
DATASTREAM:

*Note the listing of all the WMO headers that are being changed have not been reproduced in this example
for the purpose of conserving space in reproduction of the paper.*

**DETAILED IMPLEMENTATION PLAN FOR THE TRANSITION FROM
GRIB 1 TO GRIB 2 CODE FORM WITHIN THE WAFS**

GRIB 2 MIGRATION MILESTONES	WAFSOPSG Meeting Schedule	ICAO Annex 3 Amendment Cycle
February 2008: - WAFCs update implementation plan - WAFSOPSG/4 endorses implementation plan	WAFSOPSG/4	
April 2008 to September 2009: WAFCs develop and test WAFS forecasts in the GRIB 2 code form, encompassing higher-resolution data, as well as gridded icing, turbulence and cumulonimbus cloud forecasts.		
September 2009: - GRIB 2 available on ISCS and SADIS FTP services, in parallel with GRIB 1 - Workshop on the new gridded forecasts of cumulonimbus clouds, icing and turbulence	WAFSOPSG/5	
September 2009 to November 2011: WAFS workstation vendors develop GRIB 2 decoders and software to enable the visualisation of WAFS upper-air forecasts (including higher-resolution fields and gridded icing, turbulence and cumulonimbus cloud forecasts).		
November 2010: Applicability of enabling clauses in Annex 3 for the use of gridded WAFS forecasts for icing, turbulence and cumulonimbus clouds.		Amendment 75
February 2011: Confirm date for the cessation of satellite broadcast of forecasts in the GRIB 1 code form	WAFSOPSG/6	
November 2011 to November 2013: WAFS end-user workstations upgraded to accept GRIB 2 code form.	(September 2012: WAFSOPSG/7)	
November 2013: Cessation of WAFS forecasts in the GRIB 1 code form		(Amendment 76)

Agenda Item 3: Implementation of the International Airways Volcano Watch (IAVW)

3.1 For the dealing of this part of the Agenda, the meeting recalled that the International Airways Volcano Watch Operations Group IAVWOPSG was established in response to Recommendation 1/22 of the Meteorology (MET) Divisional Meeting (2002), to ensure that the operation and development of the IAVW continue, in order to meet current and future operational requirements in a cost effective manner. According to the terms of reference adopted by the ICAO Air Navigation Commission, the IAVWOPSG should review at a global level the procedures of the IAVW contained in the regional air navigation plans Basic/Documents for the implementation of the regional facilities and services (Basic ANP/FASID). In such sense, the Air Navigation Planning and Implementation Groups (PIRGs) should review the results of the IAVWOPSG meetings and identify any necessary follow-up action at regional level.

a) Review the outcome of IAVWOPSG/3 Meeting

3.2 The meeting reviewed the results of the Third Meeting of the International Airways Volcano Watch Operations Group (IAVWOPSG/3), carried out from 19 to 23 March 2007 in Thailand, Bangkok, which formulated 29 Conclusions and 4 Decisions. In order that the meeting is aware of the discussions, agreements and decisions of this group, the executive summary of the IAVWOPSG/3 is presented as **Appendix A** to this part of the report.

3.3 With regard to Conclusion 3/2 – Amendment to the IAVW-related regional procedures in the ANP/FASID, it was considered necessary to amend Table MET 3B in order to group it by States and to render it compatible with Annex 3 - *Meteorological Service for International Air Navigation*. It was also agreed the deletion of the requirement for an outlook giving information for an additional period of up to 12 hours in the special cases of SIGMET messages for volcanic ash cloud and tropical cyclones. In such sense, the meeting recalled that the SAM Regional Office consolidated and processed these amendments (SAM07/3-MET, FASID and SAM 07/2-MET, ANP Basic), which included amendments to CAR/SAM FASID Tables MET 3B and MET 3C and to ANP Basic, with regard to International Airways Volcanic Watch (IAVW) and that the approval of same was sent to the States on 28 September and 11 October 2007, respectively.

3.4 The meeting also noted that as follow-up of Conclusion 3/3 of IAVWOPSG, the Secretariat proceeded to update Doc 9766-AN/968, *Handbook on the International Airways Volcano Watch (IAVW) — Operational Procedures and Contact List* and Doc 9691-AN/954, *Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds*, which were updated to align them with Amendment 74 to Annex 3 - *Meteorological Service for International Air Navigation*.

b) Review the status of implementation of IAVW

3.5 When reviewing the updates to Doc 9766-AN/968, *Handbook on the International Airways Volcano Watch (IAVW) - Operational Procedures and Contact List*, based on IAVWOPSG Conclusions 2/15 and 3/9, and following GREPECAS Conclusions 12/59 and 13/22, the meeting noted that these updates included, among others:

- a) the new level of alert colour code (page 4-4);
- b) the template proposed format of volcano observatory notice for aviation – VONA (Appendix E); and
- c) a sample of letter of agreement presented in Appendix A to the referred document.

3.6 In this regard, the subgroup noted that Doc 9766-AN/968, *Handbook on the International Airways Volcano Watch (IAVW) - Operational Procedures and Contact List*, includes the operational procedures and necessary guidelines for the dissemination of information on volcanic eruptions and associated volcanic ash clouds, which could affect routes used by international flights, and necessary pre-eruption measures. Therefore, it was agreed that the full use of this document by meteorological authorities is required, as well as the need to draw up letters of agreement between parties involved. Consequently, the subgroup formulated the following draft conclusion:

DRAFT

CONCLUSION 9/8 -

**LETTERS OF AGREEMENT BETWEEN THE CIVIL AVIATION
AND METEOROLOGICAL AUTHORITIES AND THE
VULCANOLOGICAL AGENCY**

That, in order to notify with the necessary speed, all the parties involved and mitigate the hazard to air operations within the first few hours following an eruption:

- a) the States make full use of Doc 9766-AN/968, *Handbook on the International Airways Volcano Watch (IAVW) - Operational Procedures and Contact List*; and
- b) draw up letters of agreement between the parties involved, in particular, the civil aviation and meteorological authorities and the volcano agency, to record the agreed responsibilities of each party.

Note: a sample of letter of agreement is presented in Appendix A to Doc 9766-AN/968.

3.7 The meeting took note of the report of the Volcanic Ash Task Force. In this regard, when reviewing the results of Task 5, the need to increase the development of periodic SIGMET WV tests to a biannual frequency was agreed in order to improve implementation of SIGMET provisions. In this respect, the subgroup formulated the following draft conclusion:

DRAFT

CONCLUSION 9/9 -

**INCREASE OF THE FREQUENCY OF PERIODIC SIGMET WV
TESTS**

That, in order to keep a constant feedback and efficiency in the issuance of volcanic ash SIGMET, the States, in coordination with the corresponding VAACs, carries out periodic tests with a biannual frequency, during the months of May and November. The practices should be of 48 hours.

Implementation of the notification message of volcanic activity by volcano observatories

3.8 Under the same part of the Agenda, the subgroup noted that according to Amendment 74 to Annex 3 – *Meteorological Service for International Air Navigation* – the volcano observatories (VO) should send information about significant pre-eruption volcanic activity, volcanic eruptions, and/or volcanic ash in the atmosphere directly to the appropriate Area Control Centers (ACC), Meteorological Watch Offices, and Volcanic Ash Advisory Centers (VAAC). Consequently, ICAO has amended Regional Air Navigation Plans (RANP) to include the selected VO in Table MET 3C for purposes of supporting international air navigation.

3.9 The subgroup was aware that the information provided by VO is used by ACC/NOF in the preparation of an ASHTAM or NOTAM on the status of a volcano (including both precursory unrest and eruptive activity), and by MWO in the preparation of SIGMET when volcanic ash is present in the atmosphere. Likewise it was taken into account that VO information also is shared with the VAAC so the VAAC can begin to monitor the volcano using satellite imagery, issue advisories as required and forecast ash-cloud movement. Given how quickly ash from an explosive eruption can reach the stratosphere (within 5 minutes) and the speed with which aircraft can travel toward ash-contaminated airspace (~12 kilometers per minute), the subgroup was also aware that the timely notification of the location and movement of an ash cloud is of the greatest importance to ensure that en- route aircraft avoid volcanic-ash clouds.

3.10 The subgroup took note of a format for a structured message issued by the United States volcano observatory (VO) to provide information to ACC, MWO, and VAAC which was developed and included in the U.S. National Volcanic Ash Operating Plan for Aviation. The referred message format was adopted by the Third IAVWOPSG Meeting and was included in the Handbook on the International Airways Volcano Watch: Operational Procedures and Contact List (Document 9766-AN/968).

3.11 The Volcano Observatory Notice for Aviation format (VONA) incorporates a volcanic alert level system for aviation that uses colour codes to succinctly describe conditions at or near a volcano. Use of aviation colour codes by VO was adopted by ICAO as a standard in Annex 15 of Aeronautical Information Services. Likewise, it was noted that aviation colour codes and VONA are designed to be used by VO worldwide, and the World Organization of Volcano Observatories is looking at ways to foster their implementation by VO within the framework of the International Airways Volcano Watch (IAVW).

3.12 The effective implementation of the IAVW by any State requires that different agencies understand the services to be provided, which may entail formal agreements and/or documentation of protocols among those agencies through a letter of agreement.

3.13 Likewise, the subgroup noted that the U.S. National Volcanic Ash Operating Plan for Aviation, completed in 2007, defines the roles and responsibilities of the U.S. federal agencies involved in the observing, monitoring, and reporting of airborne volcanic ash and documents the basic practices needed for coordinated exchange and dissemination of ash-hazard information.

3.14 The meeting emphasized that VONA provides volcanic ash hazard information and that it is a key part of the IAVW. The structured format and concise text of the VONA is intended to help non-volcanologists – such as controllers at the ACC or meteorologists at MWO – more easily incorporate volcanic ash clouds information directly into Volcanic Ash NOTAM and WV SIGMET.

3.15 In such regard, the subgroup agreed to recommend that meteorological authorities, air-traffic services authorities, and VO within States coordinate their activities related to the provision and exchange of information about volcanic ash, using established guidance in Annex 3, Annex 15, RANP and the Handbook on the International Airways Volcano Watch. Therefore, the subgroup adopted following draft conclusion:

DRAFT

CONCLUSION 9/10

**IMPLEMENTATION OF THE VOLCANO OBSERVATORY
NOTICE FOR AVIATION (VONA) FORMAT**

That, ICAO encourages States to implement the VONA format to:

- a) improve communication of information on volcanic activity to ACC/FIC, VAAC, and MWO; and
- b) provide feedback on the utility of the VONA and refinements that should be considered by the International Airways Volcano Watch Operations Group.

THIRD MEETING

IAVW OPERATIONS GROUP
(Bangkok, Thailand, 19 to 23 March 2007)

EXECUTIVE SUMMARY¹

1. INTRODUCTION

1.1 The third meeting of the International Airways Volcano Watch Operations Group (IAVWOPSG/3), held in the ICAO Asia and Pacific Office, 19 to 23 March 2007, was attended by eighteen experts from the seven volcanic ash advisory centres (VAAC) Provider States, International Air Transport Association (IATA), International Federation of Air Line Pilots' Associations (IFALPA), International Union of Geodesy and Geophysics (IUGG) and the World Meteorological Organization (WMO).

1.2 Mr. P. Lechner, the Chairman of the IAVWOPSG, presided over the meeting throughout its duration. Mr. R. Romero from ICAO Headquarters, Montreal, was Secretary of the meeting, assisted by Mr. Dimitar Ivanov, Regional Officer, Meteorology from the Asia and Pacific Regional Office.

2. FOLLOW-UP IAVWOPSG/2 CONCLUSIONS

2.1 Regarding the follow-up action of IAVWOPSG/2 conclusions, the group noted that action was completed on all issues except for Conclusions 2/6 and 2/23 (Decision 3/1 refers). Regarding the proposal developed by the group at its second meeting for the inclusion of the smell of sulphur as a condition prompting the issuance of special air-reports, the group noted that the Air Navigation Commission had withdrawn the proposal from Amendment 74 to Annex 3 — *Meteorological Service for International Air Navigation* for further study by the group.

3. REVIEW OF ICAO PROVISIONS RELATED TO IAVW

3.1 The group reviewed the IAVW-related regional procedures contained in the air navigation plan (ANP)/facilities and services implementation document (FASID) which would render them compatible with Annex 3. The amended procedures would be referred to the ICAO Regional Offices for processing (Conclusion 3/2 refers).

3.2 With regard to the *Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds* (Doc 9691) and the *Handbook on the International Airways Volcano Watch (IAVW) — Operational Procedures and Contact List* (Doc 9766), the group noted that the manual was compatible to Amendment 73 to Annex 3. The group considered it essential that both documents be aligned with Amendment 74 to Annex 3 (applicable in November 2007) and that the draft amendment be sent to the group for comments (Conclusion 3/3 refers). Also, due to the perishable nature of the data contained in

¹ The full report is available in English at the following open website: www.icao.int/anb/IAVWOPSG.

the handbook, the group requested that the Secretariat seek approval to maintain the handbook as an on-line publication only (Conclusion 3/4 refers).

3.3 Regarding the distribution of volcanic ash SIGMETs and volcanic ash advisories originating outside the EUR Region to volcanic ash advisory centres (VAAC), the group agreed with the European Air Navigation Planning Group (EANPG) that there was a problem, largely of a communication nature. In order to alleviate this problem, the addressing used should be defined in the ANPs concerned (Conclusion 3/5 refers).

4. OPERATION OF THE IAVW

4.1 The group reviewed the management reports prepared by the VAAC Provider States, noted their contents and expressed satisfaction with the scope of the information provided.

4.2 The group reviewed the report of the ad hoc working group on the evaluation of the usefulness and appropriateness of the information provided by the volcanic activity form (Model VAR). The group concluded that the information contained in the model was complete and that only an item indicating “fumes” should be further examined in view of its inclusion therein (Conclusion 3/6 refers). In view of the increased availability of electronic communications and the existence of alternative ways to file post-flight reports, the group felt that there was a need to further involve pilots and airlines in increasing the use of the Model VAR and felt that the issues related to the dissemination of information contained in the Model VAR should be further studied (Conclusion 3/7 refers).

4.3 The group felt that, in order to improve the efficiency of the IAVW with regard to the provision of special air-reports for volcanic ash to VAACs and MWOs, that the Secretariat should develop guidance material for inclusion in the *Handbook on the International Airways Volcano Watch (IAVW) — Operational Procedures and Contact List* (Doc 9766) to reemphasize the importance of timely reporting of volcanic activity by IATA and IFALPA using special air-reports and Model VAR as part of post-flight reporting (Conclusion 3/8 refers).

4.4 The group endorsed a template developed jointly by the IUGG and the Secretariat for inclusion in the *Handbook on the International Airways Volcano Watch (IAVW) — Operational Procedures and Contact List* (Doc 9766) for the provision of information by volcanological observatories on significant pre-eruption volcanic activity, a volcanic eruption and/or volcanic ash in the atmosphere to ACCs, MWOs and VAACs (Conclusion 3/9 refers). In order to foster implementation of the template, the group agreed that guidance material regarding its use (including cost recovery) be developed for review at its next meeting (Conclusion 3/10 refers). In order to assess the degree of implementation of the volcanic observatory reporting template, the group agreed that the VAACs include in their management reports information about its use (Conclusion 3/11 refers).

4.5 The group agreed that the PNG format should be used for the transmission of volcanic ash graphical advisories and that all VAACs should make available their advisories in PNG format for distribution via the satellite distribution system for information relating to air navigation (SADIS) and the international satellite communications system (ISCS) broadcasts. A proposal for the use of the PNG chart form should be prepared (Conclusion 3/12 refers).

4.6 With reference to the format of volcanic ash advisories, the group felt that in order to address the lack of definition of observation and other minor related issues, appropriate guidance material should be developed (Conclusion 3/13 refers). With regard to the need for a uniform approach related to the cessation of a volcanic ash advisory when significant volcanic ash clouds were almost unidentifiable

from satellite data, the group agreed that this issue should be further studied and guidance material developed (Conclusion 3/14 refers).

4.7 With respect to a proposal for amendment to Annex 3 for improving the description of winds contained in the volcanic ash advisory, in particular, in lower latitudes and in the refining of the direction of movement, the group agreed that it should be further studied and a proposal prepared for consideration at the next meeting (Conclusion 3/15 refers).

4.8 With regard to SIGMET implementation issues, the group requested the Secretariat to assess the value of the inclusion of movement in graphical SIGMETs for volcanic ash (Conclusion 3/16 refers). In a related issue, the group felt that the revision of SIGMET provisions could increase the efficiency of the IAVW and contribute to the safety of air navigation and requested the Secretariat to evaluate the feasibility and desirability of rationalizing the issuance of volcanic ash warnings and advisories (Conclusion 3/17 refers).

4.9 Regarding the need to have a harmonized presentation of aviation products on the VAAC websites, the group requested the Secretariat to develop guidance to facilitate user's access to the information (Conclusion 3/18 refers).

4.10 With regard to the development of a new daily volcano status product aimed for users to provide a coherent picture of the status of all the volcanoes in a particular region, the group concurred that it was necessary to explore further this concept and evaluate its operational benefits (Conclusion 3/19 refers).

4.11 The group reviewed a concept discussed by the CAR/SAM Regional Planning and Implementation Group (GREPECAS) for the development of a call-down list to be used in case of volcanic eruption affecting aviation. It was concurred that there was a need to further study the matter (Conclusion 3/20 refers).

4.12 With regard to the assessment of the use of the smell of sulphur as an indicator of the presence of volcanic ash in the atmosphere, the group was of the opinion that the addition of a special AIREP for SO₂ would not resolve the shortfall in detecting volcanic ash clouds. The group agreed, however, that additional guidance material was needed for flight crews so that they will understand better the importance of the smell of SO₂ as an indicator of the possibility of volcanic ash (Conclusion 3/21 refers).

4.13 With regard to the updating of the worldwide ash encounter database, in view of the operational routine arrangements already in place, the group agreed that there was no need to develop additional provisions (Decision 3/22 refers). With regard to the accuracy of the database, the group agreed that the updates received between meetings should be presented at each IAVWOPSG meeting (Conclusion 3/23 refers).

5. DEVELOPMENT OF THE IAVW

5.1 With regard to the detection of volcanic ash using satellite data, the group noted that the National Aeronautics and Space Administration (NASA) and the European Space Agency (ESA) were funding projects to develop near real-time data products related to sulphur dioxide to identify volcanic ash clouds for use by VAACs. The group concurred that these projects would provide highly useful data.

5.2 With regard to the assessment of the usefulness of seismic and infrasonic data from the Comprehensive Nuclear Test-Ban Treaty Organization (CTBTO) observing networks to the IAVW, the group requested that ICAO invite CTBTO Provisional Technical Secretariat to finalize the assessment and to consider granting access of the International Monitoring System (IMS) data to VAAC Provider States (Conclusion 3/24 refers). The group reviewed one example on the use of infrasound data to detect eruptions that was operating in Ecuador since late 2005 (Canada – USA Acoustic Surveillance for Hazardous Eruptions (ASHE) Project) and agreed that VAACs Members from Canada and the United States to evaluate the results (Conclusion 3/25 refers).

5.3 With regard to volcanic ash deposition at aerodromes, the group agreed that amendment proposal to Annexes 3 and 15 — *Aeronautical Information Services* be developed which would require the inclusion of this information in aerodrome warnings and NOTAMs (Conclusion 3/26 refers).

5.4 Concerning the development of eruption source parameters (ESP), the group was pleased to accept the offer from the Volcano Hazards Program of the U.S. Geological Survey (USGS) to support a volcano scientist to produce analysis of ESP for use in atmospheric volcanic ash transport and dispersion models and that a dataset of 20 to 30 well-studied cases of volcanic eruptions of various cases should be used for that purpose (Conclusion 3/27 refers).

6. MATTERS RELATED TO THE MONITORING AND PROVISION OF WARNINGS TO AIRCRAFT OF RADIOACTIVE DEBRIS AND TOXIC CHEMICAL CLOUDS

6.1 Regarding the current operational procedures and notification practices on the accidental release of radioactive material into the atmosphere the group noted that the database linking geographical coordinates to a FIR, provided by ICAO to VAAC London, had been tested in trials during 2006 and worked satisfactorily. The group agreed to invite VAAC London to be designated as a focal point for forwarding the direct notification received from the International Atomic Energy Agency (IAEA) to the ACC concerned related to the accidental release of radioactive material, to fine-tuning details and procedures and that a draft amendment be developed for inclusion in Annex 3 (Conclusion 3/28 refers).

6.2 With regard to the development of international arrangements related to the accidental release of toxic chemicals into the atmosphere, the group agreed with the view of the WMO Expert Team on non-nuclear aspects of the Emergency Response Activities Programme in the sense that it was a local issue. Regarding the message format, the group agreed that an aerodrome warning would be the most appropriate message and therefore agreed that a draft amendment be prepared for inclusion in Annex 3 (Conclusion 3/29 refers).

6.3 Regarding the message format for the provision to aircraft of information on radioactive and hazardous materials accidentally released into the atmosphere, the group concurred that with the inclusion of radioactive clouds in SIGMETs and toxic chemicals in aerodrome warnings, this sub-task was considered completed (Decision 3/30 refers).

6.4 With regard to the assessment of the need to provide information on solar radiation storms and other bio-hazards, the group recognized that there was a need to establish a future course of action and that a proposal be prepared by the United States member for consideration at the next meeting (Conclusion 3/31 refers).

7. FUTURE WORK PROGRAMME

7.1 The group noted the new format for the follow-up table compatible with the ICAO Business Plan, reviewed the work programme and proposed additional changes based on the discussions under Agenda Items 5, 6, 7 and 9 (Decision 3/32 refers).

8. ANY OTHER BUSINESS

8.1 Under this agenda item, the group agreed that the secure website used by New Zealand was a useful tool to be maintained for the time being. Regarding the sponsored workshops on scientific development of the volcanic ash in the atmosphere organized by the World Meteorological Organization (WMO), the group agreed that its frequency should be formalized by WMO in consultation with ICAO (Conclusion 3/33 refers).

— END —

Agenda Item 4: Implementation of SIGMET

a) Review of the outcome of the METWSG/1 Meeting

4.1 Under this Agenda Item, the meeting took note that the study groups, established by the Air Navigation Commission (ANC), are small groups of experts made available by States and international organizations to assist the ICAO Secretariat, to progress technical tasks of ICAO. The results of the work accomplished with the help of a study groups are submitted to the Air Navigation Commission and their work may involve the development of initial proposals for the amendment of ICAO Annexes and Procedures for Air Navigation Services (PANS) for consideration by the Air Navigation Commission.

4.2 In this regard, the Air Navigation Commission tasked the Secretariat to develop the following issues with the assistance of the Meteorological Warning Study Group (METWSG):

- a) development of a draft Annex 3 provisions in view of resolving the persistent implementation problems with the availability of SIGMET by considering the consolidation of their issuance to a limited number of regional centres;
- b) address the issues listed in the Air Navigation Integrated Programme (ANIP) under: “Improvement of the content and issuance of SIGMET to meet evolving needs of flight operations”; and
- c) address residual issues listed in the ANIP under “Enhancements of wind shear warnings and alerts”.

4.3 The subgroup took into consideration that the First Meeting of the Meteorological Warning Study Group (METWSG/1) was carried out from 20 to 22 November 2007 in Montreal, Canada, in which it was recalled that the MET Divisional Meeting (Montreal 2002), approved Recommendations 1/11, 1/12 and 1/13 to encourage the organization of Special Implementation Projects (SIP), assess the level of implementation through regional surveys, update regional SIGMET Guides and assess the feasibility of the upgrade of volcanic ash advisories and tropical cyclones to “warnings”. In this regard, the METWSG reviewed the actions taken for their implementation, and noted that in spite of the above efforts, problems persisted, as noted by regional and global meetings and international organizations.

4.4 In this respect, the METWSG agreed short term solutions that include amendments to Annex 3 provisions, in order to improve the implementation of SIGMET and agreed, among others, that the establishment of the MWOs (FASID Tables MET 1B), in accordance with a regional air navigation agreement, should be reflected in Annex 3. The subgroup also noted Action 1/1, proposing amendments to the SIGMET template of Annex 3, in order to, inter alia, include the time of forecasts, as an optional field to clarify the time of occurrence or commencement of the phenomenon and the identification of each phenomenon occurring or expected to occur in one FIR or CTA with a separate letter.

4.5 The METWSG agreed that to improve the implementation of provisions for the issuance of SIGMET in longer term, a thorough assessment of the current system based on meteorological watch offices (MWO) was necessary, and that in this context, regional and operations groups had proposed approaches that include:

- a) the possibility of the volcanic ash and tropical cyclone advisory centres, rather than MWOs, issuing volcanic ash and tropical cyclone SIGMETs for multiple FIRs or for their area of responsibility; or
- b) that the VAAC and TCAC prepare the corresponding SIGMET and pass them to the MWO for their formal issue.

4.6 In this respect, the subgroup noted that the METWSG agreed that due to the complexity of this issue it should be addressed by an ad-hoc working group and it is expected that final results be tabled for consideration by a worldwide conjoint ICAO/WMO MET Divisional Meeting. In this regard, the METWSG formulated Actions Agreed 1/2 and 1/3, which results will be presented in the METWSG/2 Meeting (May 2009).

4.7 The meeting took note that complete information on the First Meeting of the Meteorological Warning Study Group (METWSG/1) at the following website: <http://www.icao.int/anb/sg/metwsg>.

b) Implementation issues

4.8 The AERMETSG recalled that following Recommendations of the MET Divisional Meeting, in order to assist States/Members of the CAR/SAM Regions to implement SIGMET provisions of Annex 3/Technical Standards [C3.1], the following actions have been taken:

- a) SIGMET Special Implementation Projects (SIP) have been carried out for the CAR/Sam Regions during 2002 and 2005;
- b) the corresponding updates to the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions have been made; and
- c) SIGMET tests have been developed in February 2007 and 2008, and the results will be presented to the meeting by the Task Force on volcanic ash.

4.9 In addition, the subgroup recalled that in the CAR/SAM Regions MWO implementation problems had been detected, and that the temporary delegation of responsibilities from one MWO to another has been a complicated issue, since it requires an assessment and a consultation to the States in order to assume these responsibilities and also the addressing of the related cost recovery. Also, the meeting considered that if an MWO is temporarily out of service, another should assume its functions in the shortest possible time, therefore, agreed that in order to ensure the provision of the back-up service without further delays, the designation of the back-up MWO(s) should be shown in the Regional SIGMET Guide. Consequently, the subgroup formulated the following draft conclusion:

DRAFT

CONCLUSION 9/11 -

BACK-UP MWOs IN CAR/SAM STATES

That, in order to improve the implementation of a MWO, in case of absence of service or service failure, the Regional Office compiles a list of back-up MWOs to be included in the CAR/SAM Regional SIGMET Guide.

4.10 Furthermore, the meeting noted that during the update of the SIGMET Guide, it was observed that the States have not informed, in due course, the changes in the contact information of the ACC, MWO and NOTAM International Offices (NOF) under the responsibility of VAAC Buenos Aires and Washington, (Part 5 of *Doc 9766-AN969 – Handbook on the International Airways Volcano Watch (IAVW) — Operational Procedures and Contact List*). In this regard, the subgroup updated the corresponding information, shown in Appendices K and L of the referred Guide and presented as **Appendices A and B** to this part of the report.

4.11 Considering the above, the meeting took note that meteorological authorities should review their procedures, in particular those regarding meteorological watch offices, in order to inform Lima and Mexico regional offices about changes in the contact information of the area control centres (ACC), NOTAM international offices (NOF), volcano observatories or in meteorological watch offices (MWO), in order to update the information of the Regional SIGMET Guide, as well as the International Airways Volcano Watch Operations Group (IAVWOPSG) Contact List.

4.12 The subgroup observed that it was necessary to reduce the problems that persist with the format, issuance and dissemination of SIGMET messages, and that this could be obtained through the development of a seminar/workshop in order to assist States of the CAR/SAM Regions in their efforts towards the elimination of this deficiency. In this regard, the meeting concurred in this requirement and formulated the following draft conclusion:

DRAFT

CONCLUSION 9/12 -

SEMINAR/WORKSHOP ON SIGMET INFORMATION

That ICAO, in coordination with WMO and VAAC Provider States, organizes a seminar on the preparation issuance and dissemination of SIGMET information.

(Appendix K of CAR/SAM SIGMET Guide, Eighth Edition)

Contact information of the ACC, MWO, NOF and Volcano Observatories of CAR/SAM States under the responsibility of VAAC Buenos Aires

VAAC BUENOS AIRES:

AFTN: SAZZMAMX Tel. (5411) 5167 6767 Ext. 18238/18233

Telefax: (5411) 5167 6705 / 5167 6709

Fax Opcional/Optional fax: (5411) 5167 6709

Website: <http://www.ssd.noaa.gov/VAAC/OTH/AG/messages.html>

E-mail: sovaacbue@smn.gov.ar (Mr. Carlos Severo Iglesias, VAAC Supervisor)

E-mail Opcional: metaer@smn.gov.ar / cbenitez@smn.gov.ar

STATE	Name	ICAO Location Indicator	AFTN	Telephone (24 hours)	Fax (24 hours)	E-mail
ARGENTINA						
Observatorio u Organismo de Vulcanología	Servicio Geológico y Minero Argentino (SEGEMAR)	N/A	N/A	(5411) 4349 - 3176	(5411) 4349 - 3176	olapid@secind.mecon.gov.ar
FIR EZEIZA						
ACC	Ezeiza	SAEF	SAEZZRZX	(5411) 4480 - 2203	(54 11) 4480 - 2203	
MWO	Aeroparque	SABE	SABEYMYX SAZZMAMX	(5411) 4514 - 1612	(54 11) 4514 - 1612	omaaer@meteofa.mil.ar
FIR CORDOBA						
ACC	Córdoba	SACF	SACOZRZX	(54351) 4335 - 350	(54351) 4335 - 350	accba@hotmail.com
MWO	Córdoba	SACO	SACOYMYX SAZZMAMX	(54351) 4341 - 479	(54 351) 4756 - 427	omacba@meteofa.mil.ar
FIR MENDOZA						
ACC	Mendoza	SAMF	SAMEZRZX	(54261) 4487 - 486	(54261) 4487 - 486	apelplumerillo@ciudad.com.ar
MWO	Mendoza	SAME	SAMEYMYX SAZZMAMX	(54261) 4487 - 468	(54 261) 4487 - 468	omadoz@meteofa.mil.ar
FIR COMODORO RIVADAVIA						
ACC	Comodoro Rivadavia	SAVF	SAVCZRZX	(54297) 4548 - 375		
MWO	Comodoro Rivadavia	SAVC	SAVCYMYX SAZZMAMX	(54297) 4548 - 018	(54297) 4548 - 018	omacr@meteofa.mil.ar
FIR RESISTENCIA						
ACC	Resistencia	SARR	SAREZRZX	(54372) 2440 - 939	(54372) 2440 - 939	
MWO	Resistencia	SARE	SAREYMYX SAZZMAMX	(54372) 2436 - 278	(54372) 2436 - 285	omasis@meteofa.mil.ar
NOF	Ezeiza	SAEZ	SAEZYNYX	(5411) 4480 - 2260	(54 11) 4480 - 2260	notamezeiza@yahoo.com.ar

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STATE	Name	ICAO Location Indicator	AFTN	Telephone (24 hours)	Fax (24 hours)	E-mail
BOLIVIA						
FIR LA PAZ						
ACC	La Paz	SLLP	SLLPZRZX	(5912) 2810 - 203	(5912) 2810 - 203	
MWO MWO con VAAC Bs As.	La Paz	SLLP	SLLPYMYX	(5912) 2114 - 232 (5912) 2124 - 129	(5912) 2316 - 686	ovmbolivia@yahoo.es
NOF	La Paz	SLLP	SLLPYNYX	(5912) 2351 - 305 int. 152	(5912) 2370 - 341	aisbolivia@yahoo.es
BRASIL/BRAZIL						
FIR AMAZONICA						
ACC	Amazónico	SBAZ	SBAZZRZX	(5592) 3652 - 5318	(5592) 3625 - 5425	
MWO	Amazónico	SBAZ	SBMUYFTH	(5592) 3652 - 5375		cmvmanaus@bol.com.br
FIR BRASILIA						
ACC	Brasilia	SBBS	SBBRZRZX	(5561) 3364 - 8404	(55 61) 3365-4432	
MWO	Brasilia	SBBS	SBBSYMYX	(5561) 3364 - 8358		cmvbrasilia@ig.com.br
FIR RECIFE						
ACC	Recife	SBRE	SBRFZRZX	(55 81) 3462 - 2742	(55 81) 3462 - 4927	
MWO	Recife	SBRE	SBREYMYX	(55 81) 2129 - 8093 (55 81) 2129 - 8094		cmvre@ig.com.br
FIR ATLANTICO						
ACC	Atlántico	SBAO	SBAOZRZX	(55 81) 3322- 4107		
MWO	Recife	SBRE	SBREYMYX	(55 81) 2129 - 8093 (55 81) 2129 - 8094		cmvre@ig.com.br
FIR CURITIBA						
ACC	Curitiba	SBCW	SBCWZRZX	(55 41) 3356 - 3475 (5541) 3356 - 5509	(5541) 3251 - 5484	
MWO	Curitiba	SBCW	SBCWYMYX	(55 41) 3356 - 6216 (5541) 3356 - 5367		cmvct@softone.com.br
NOF	Brasilia	SBBR	SBBRYNYX	(55 61) 3364 - 8353		nofbrazil@cindacta1.aer.mil.br
CHILE						
Observatorio u Organismo de Vulcanología	Southern Andes Volcano Observatory (SAVO)	N/A	N/A	(5645) 270 - 700 Cel.: (5645) 09 643 0245	(5592) 625 0371	dvasualto@sernageomin.cl hmoreno@sernageomin.cl
	SERNAGEOMIN, Santiago	N/A	N/A	(562) 737 - 5050 Cel.: (56 45) 09 649 5377	(562) 737 9253	jnaranzo@sernageomin.cl josénaranzo@manquehue.net
FIR ANTOFAGASTA						
ACC	Antofagasta	SCFA	SCFAZRZX	(5655) 227 944 Anexo 1425	N/A	appantofagasta@dgac.cl
MWO	Antofagasta	SCFA	SCFAYMYX SCZZMAMX	(5655) 227 - 944 Anexos 1421, 1460, 1466	(5655) 225 - 022	cmnorte@dgac.cl jaravena@dgac.cl Página Web: www.dimetchi.cl
FIR SANTIAGO						
ACC	Santiago	SCEL	SCELZRZX	(252) 767 - 2001 (562) 436 - 3004	(562) 7671 - 636	cta.accu@dgac.cl cta_acol@dgac.cl
MWO	Santiago	SCEL	SELYMYX SCZZMAMX	(562) 601 - 9214 (562) 436 - 3224	(562) 6019 - 214	metaer@meteoehile.cl bcoopmet@meteoehile.cl

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STATE	Name	ICAO Location Indicator	AFTN	Telephone (24 hours)	Fax (24 hours)	E-mail
NOF	Santiago	SCEL	SCELZPZX	(562) 436 - 3435 (562) 436 - 3227	(562) 601 - 9366	operaciones_amb@dgac.cl
FIR PUERTO MONTT						
ACC	Puerto Montt	SCTE	SCTEZRZX	(5665) 486 - 234 (5665) 486 - 236	(5665) 486 - 298	evasquez@dgac.cl
MWO	Puerto Montt	SCTE	SCTEYMYX SCZZMAMX	(5665) 486 - 225 (5665) 486 - 226	(5665) 486 - 226	meteozonasur@dgac.cl
FIR PUNTA ARENAS						
ACC	Punta Arenas	SCCI	SCCIZRZX	(5661) 219 - 131 Anexo 5414, 5474	(5661) 219 - 131	fortiz@dgac.cl
MWO	Punta Arenas	SCCI	SCCIYMYX SCZZMAMX	(5661) 219 - 131 Anexos 5464 y 5423	(5661) 219 - 131 Anexo 5464	meteoparenas@dgac.cl
PARAGUAY						
FIR ASUNCION						
ACC	Asunción	SGFA	SGASZRZX SGZZMAMX	(59521) 646 - 082	(59521) 646 - 082	acc_sgac@dinac.gov.py
MWO	Asunción	SGAS	SGASYMYX SGZZMAMX	(59521) 646 - 095	(59521) 646 - 095	aeronautica_dmh@dinac.gov.py
NOF	Asunción	SGAS	SGASYNYX SGZZMAMX	(59521) 646 - 952	(59521) 646 - 952	ais.ad_nof@hotmail.com
PERU						
Observatorio u Organismo de Vulcanología	Instituto Geofísico del Perú Arequipa	N/A	N/A	(5154) 251 - 373	(5154) 251 - 373	Orlando Macedo omacedo@geo.igp.gob.pe
	Instituto Geofísico del Perú Lima	N/A	N/A	(511) 317 - 2325	(511) 317 - 2321	Edmundo Norabuena enorab@nazca.igp.gob.pe
FIR LIMA-CALLAO						
ACC	Lima-Callao	SPIM	SPIMZQZX	(511) 708 1157 (511) 708 1158 (511) 575 0886 (511) 575 1995		acclima@corpac.gob.pe jmontalvo@corpac.gob.pe
MWO	Lima-Callao	SPIM	SPIMYMYX SPZZMAMX	(511) 708 1181 (511) 708 1180	(511) 708 - 1180	pronostico@corpac.gob.pe
NOF	Lima-Callao	SPIM	SPIMYNYX SPIMYOYX	(511) 708 1173 (511) 708 1172 (511) 414 1435	(511) 414 - 1435	aisaro@corpac.gob.pe
URUGUAY						
FIR MONTEVIDEO						
ACC	Montevideo	SUEO	SUEOZQZX	(5982) 6040 - 295	(5982) 6040 - 298	jopdta@adinet.com.uy
MWO	Montevideo	SUMU	SUMUYMYX	(5982) 2001 - 807	(5982) 6040 - 242	dmae@adinet.com.uy
NOF	Montevideo	SUMU	SUMUYNYX	(5982) 6040 - 067	(5982) 6040 - 067	ais@adinet.com.uy

(Appendix L of CAR/SAM SIGMET Guide, Eighth Edition)

Contact information of the ACC, MWO, NOF and Volcano Observatories of CAR/SAM States under the responsibility of VAAC Washington

VAAC WASHINGTON:

AFTN: KWBCYMYX

Tel.: 1 301 763 8444/8298 Fax: 1 301 763 8333/8592

Sitio web: <http://www.ssd.noaa.gov/VAAC/washington.html>

E-mail: w-vaac@noaa.gov Grace.Swanson@noaa.gov

STATE	Name	ICAO Loc. Indicator	AFTN	Telephone (24 hours)	Fax (24 hours)	E-mail
ANTIGUA Y BARBUDA/ANTIGUA AND BARBUDA						
FIR PIARCO						
ACC	Porto f Spain	TTZP	TTZPZQZX	(1 868) 6694 - 852	(1 868) 6694 - 259	
MWO	Port of Spain	TTPP	TTPPYMYX	(1 868) 6694 - 392	(1 868) 6694 - 727	
NOF	Port of Spain	TTPP	TTPPYNYX	(1 868) 6694 - 128 (1 868) 6259 - 843	(1 868) 6691 - 716	
ANTILLAS FRANCESAS/FRENCH ANTILLES						
Observatorio u Organismo de Vulcanología	GADELOUPE Observatoire volcanologique de la Soufriere	N/A	N/A	(590) 9911 - 33	(590) 991 - 134	komorow@ipgp.jussieu.fr
	MARTINIQUE Observatoire volcanologique de la Montagne Pelée	N/A	N/A	(596) 7841 - 41	(596) 558 - 080	viode@ipgp.jussieu.fr
FIR PIARCO						
ACC	Port of Spain	TTZP	TTZPZQZX	(1 868) 669 4852	(1 868) 6694 - 259	
MWO	Port of Spain	TTPP	TTPPYMYX	(1 868) 669 4392	(1 868) 6694 - 727	
NOF	Port of Spain	TTPP	TTPPYNYX	(1 868) 669 4128 (1 868) 625 9843	(1 868) 6691 - 716	
BRASIL/BRAZIL						
FIR AMAZONICA						
ACC	Amazónico	SBAZ	SBAZZRZX	(5592) 3652 - 5318	(5592) 3652 - 5425	
MWO	Amazónico	SBAZ	SBMUYFTH	(5592) 3652 - 5375 (5592) 3652 - 5384		cmvmanaus@bol.com.br
FIR BRASILIA						
ACC	Brasilia	SBBS	SBBRZRZX	(5561) 3364 - 8404	(5561) 3654 - 4432	
MWO	Brasilia	SBBS	SBBSYMYX	(5561) 3364 - 8358		cmvbrasil@ig.com.br

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STATE	Name	ICAO Loc. Indicator	AFTN	Telephone (24 hours)	Fax (24 hours)	E-mail
FIR RECIFE						
ACC	Recife	SBRE	SBRFZRZX	(55 81) 3462 - 2742	(55 81) 3462 - 4927	
MWO	Recife	SBRE	SBREYMYX	(55 81) 2129 - 8093 (55 81) 2129 - 8094		cmvre@ig.com.br
FIR ATLANTICO						
ACC	Atlántico	SBAO	SBAOZRZX	(55 81) 3322 - 4107		
MWO	Recife	SBRE	SBREYMYX	(55 81) 2129 - 8093 (55 81) 2129 - 8094		cmvre@ig.com.br
FIR CURITIBA						
ACC	Curitiba	SBCW	SBCWZRZX	(5541) 3356 - 3475	(5541) 3251 - 5484	
MWO	Curitiba	SBCW	SBCWYMYX	(5541) 3356 - 6216 (5541) 3356 - 5367		cmvct@softone.com.br
NOF	Brasilia	SBBR	SBBRYNYX	(55 61) 3468 - 8353		nofbrazil@cindacta1.aer.mil.br
COLOMBIA						
Observatorio u Organismo de Vulcanología	Manizales	N/A	N/A	(5768) 843 - 020	(5768) 843 - 018	ovsm@ingeominas.gov.co
	Pasto	N/A	N/A	(5727) 314 - 752 (5727) 310 - 514 (5727) 312 - 595	(5727) 310 - 514	ovt@ingeominas.gov.co
	Popayan	N/A	N/A	(5728) 242 - 341 (5728) 242 - 057 (5728) 240 - 210	(5728) 241 - 255	
FIR BARRANQUILLA						
ACC	Barranquilla	SKBQ	SKBQZQZX	(575) 3348 - 075 (575) 3348 - 503	(575) 3348 - 503	Maritza.lopez@aerocivil.gov.co
MWO	Bogotá	SKBQ	SKBQYMYX	(571) 4138 - 792 (571) 2662 - 481	(571) 4138 - 440	
FIR BOGOTA						
ACC	Bogotá	SKBO	SKBOZQZX	(571) 4139 - 998 (571) 2663 - 460 (571) 4135 - 445	(571) 4135 - 376	jcramirez@aerocivil.gov.co
MWO	Bogotá	SKBO	SKBOYMYX	(571) 4138 - 792 (571) 2662 - 481	(571) 4138 - 440	fhidalgo@ideam.gov.co
NOF	Bogotá	SKBO	SKBOYNYX	(571) 2662 - 552	(517) 4138 - 631	ais@aerocivil.gov.co
COSTA RICA						
Observatorio u Organismo de Vulcanología	Observatorio Vulcanológico y Sismológico de Costa Rica (OVSICORI-UNA) Heredia	N/A	N/A	(506) 2610 - 781 (506) 2610 - 611 (506) 2773 - 304 (506) 2773 - 306	(506) 2610 - 303	ovsicori@una.ac.cr

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STATE	Name	ICAO Loc. Indicator	AFTN	Telephone (24 hours)	Fax (24 hours)	E-mail
FIR CENTROAMERICANA						
ACC	Tegucigalpa	MHTG	MHTGZQZX	(504) 2331 - 503	(504) 2331 - 219	
FIC	Alajuela	MROC		(506) 4438 - 965	(506) 4438 - 961	rfic@dgac.go.cr
OMA	Alajuela	MROC	MROCYMYX	(506) 4412 - 398	(506) 4427 - 036	
MWO* ¹	Tegucigalpa	MHTG	MHTGYMYX	(504) 2349 - 499 (504) 2331 - 111 (504) 2337 - 114	(504) 2338 - 075 (504) 2349 - 500	
*Via National ATS/MET units of Alajuela/Intl. Juan Santamaría Airport	Meteorological Office	MROC	MROCYMYX	(506) 4412 - 398	(506) 4427 - 036	
	AIS	MROC	MROCYOYX	(506) 4433 - 170	(506) 4414 - 781	
NOF	Tegucigalpa	MHTG	MHTGYNXX	(504) 2331 - 141/42 /43 (504) 2331 - 349 (504) 2342 - 407	(504) 2331 - 141 (504) 2331 - 349	
CUBA						
Observatorio u Organismo de Vulcanología	---	---	---	---	---	
FIR HAVANA						
ACC	La Habana	MUHA	MUFHZQZX	(537) 642-1185	(537) 642-1185	superacc@aeronav.ecasa.avianet.cu
MWO	La Habana	MUHA	MUHAYMYX	(537) 642 6168	(537) 642 6168	aduran@aeronav.ecasa.avianet.cu
NOF	La Habana	MUHA	MUHAYNYX	(537) 266 4497	(537) 266 4497	notam@aeronav.ecasa.avianet.cu
ECUADOR						
Observatorio u Organismo de Vulcanología	Instituto Geofísico, Quito	N/A	N/A	(5932) 2225 - 655 (5932) 2225 - 627	(5932) 2567 - 847	geofisico@igepn.edu.ec geofisico@accessinter.net http://www.igepn.edu.ec
FIR GUAYAQUIL						
ACC	Guayaquil	SEGU	SEGUZQZX	(5934) 2282 - 851	(5934) 2396 - 073	accgye@dgac.gov.ec
MWO	Guayaquil	SEGU	SEGUYYMYX	(5934) 2392 - 712	(5934) 2283 - 748	meteorologiagye@dgac.gov.ec fmancero@dgac.gov.ec
NOF	Guayaquil	SEGU	SEGUYYNYX	(5934) 2285 - 661	(5934) 2285 - 661	notam_intl_gye@hotmail.com
EL SALVADOR						
Observatorio u Organismo de Vulcanología	Servicio Nacional de Estudios Territoriales (SNST)/Servicio Geológico Ministerio de Medio Ambiente y Recursos Naturales (MARN)	N/A	N/A	(503) 2267-9566	(503) 2267-9537 –	descobar@snet.gob.sv www.snet.gob.sv
FIR CENTROAMERICANA						
ACC	Tegucigalpa	MHTG	MHTGZQZX	(504) 2331 - 503	(504) 2331 - 219	
FIC	El Salvador	MSLP	MSLPZTZX	(503) 2366-2491	(503) 2366-2451	usuario.radar@cepa.gob.sv

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STATE	Name	ICAO Loc. Indicator	AFTN	Telephone (24 hours)	Fax (24 hours)	E-mail
OMA	El Salvador	MSLP	MSLPYMYX	(503) 2366-2291	(503) 2366-2287	meteorología.aeropuerto@cepa.gob.sv www.aeropuertoelsalvador.gob.sv/meteorologia.php
MWO* ¹	Tegucigalpa	MHTG	MHTGYMYX	(504) 2349 - 499 (504) 2331 - 111 (504) 2337 - 114	(504) 2338 - 075 (504) 2349 - 500	
*Via national ATS/MET units of San Salvador/Ilopango Intl.	OMA	MSSS	MSLPYMYX	(503) 2295-4327	(503) 2295-4322	meteorologia.aeropuerto@cepa.gob.sv
	AIS	MSSS	MSSSZPZX	(503) 2296-6662	(503) 2296-6662	ais.ilopango@cepa.gob.sv
San Salvador/El Salvador Intl.	OMA	MSLP	MSLPYMYX	(503) 2366-2291 (503) 2366-2551	(503) 2366-2287	meteorología.aeropuerto@cepa.gob.sv danilo.ramirez@cepa.gob.sv
	AIS	MSLP	MSLPZPZX	(503) 2366-2290 (503) 2366-2281	(503) 2366-2464	oficiales.ais@cepa.gob.sv
NOF	Tegucigalpa	MHTG	MHTGYNYX	(504) 2331 - 141/42/43 (504) 2331 - 349 (504) 2342 - 407	(504) 2331 - 141 (504) 2331 - 349	
GUATEMALA						
Observatorio u Organismo de Vulcanología	INSIVUMEH Sección Vulcanología Ciudad de Guatemala			(502) 3314 - 967 (502) 3319 - 183 (502) 3324 - 741	(502) 3315 - 005	
FIR CENTROAMERICANA						
ACC	Tegucigalpa	MHTG	MHTGZQZX	(504) 2331 - 503	(504) 2331 - 219	
FIC						
OMA						
MWO* ¹	Tegucigalpa	MHTG	MHTGYMYX	(504) 2349 - 499 (504) 2331 - 111 (504) 2337 - 114	(504) 2338 - 075 (504) 2349 - 500	
*Via national ATS/MET units of Guatemala/La Aurora Intl.	AIS			(502) 3315 - 484		
	OMA			(502) 3314 - 897		
NOF	Tegucigalpa	MHTG	MHTGYNYX	(504) 2331 - 141/42 /43 (504) 2331 - 349 (504) 2342 - 407	(504) 2331 - 141 (504) 2331 - 349	
GUYANA						
Observatorio u Organismo de Vulcanología	Guyana Geology and Mines Comisión			(5922) 53047	(5922) 53047	ggmc@sdnp.org.gy
FIR GEORGETOWN						
ACC	Georgetown	SYCJ	SYCJZQZX	(592) 2612 - 245	(592) 2612 - 279	
MWO	Timehri	SYCJ	SYCJYMYX	(592) 2612 - 216	(592) 2612 - 284	s.h.williams@hydromet-gv
NOF	Timehri	SYCJ	SYCJYNYX	(592) 2612 - 269	(592) 2612 - 279	ais@gcaa-gy.org

STATE	Name	ICAO Loc. Indicator	AFTN	Telephone (24 hours)	Fax (24 hours)	E-mail
GUYANA FRANCESA/FRENCH GUIANA						
FIR ROCHAMBEAU						
ACC	Rochambeau	SOCA	SOOOZQZX	(594) 359 - 3 06	(594) 359 - 3 98	gilles.esser@aviation-civile.gouv.fr
MWO	CVM Rochambeau	SOCA	SOCAYMYX	(594) 353 - 5 35	(594) 356 - 0 89	philippe.livenais@meteo.fr
NOF	Rochambeau	SOCA	SOOYNYX	(594) 359 - 3 08	(594) 304 - 124	gilles.esser@aviation/civile.gouv.fr
HONDURAS						
FIR CENTROAMERICANA						
ACC	Tegucigalpa	MHTG	MHTGZQZX	(504) 2331 - 503	(504) 2331 - 219	
MWO* ¹	Tegucigalpa	MHTG	MHTGYMYX	(504) 2349 - 499 (504) 2331 - 111 (504) 2337 - 114	(504) 2338 - 075 (504) 2349 - 500	
NOF	Tegucigalpa	MHTG	MHTGYNIX	(504) 2331 - 141/42 /43 (504) 2331 - 349 (504) 2342 - 407	(504) 2331 - 141 (504) 2331 - 349	
MEXICO						
MÉXICO Observatorio u Organismo de Vulcanología FIR	Centro Nacional de Prevención de Desastres (CENAPRED)			+52 (55) 5606-8837 +52 (55) 5424-6100	+52 (55) 5606-1608	rqw@cenapred.unam.mx http://www.cenapred.unam.mx
	Centro Universitario de Investigación en Ciencias del Ambiente, Universidad de Colima			+52 (312) 3161-137 Ext. 51151	+52 (312) 3161-137 Ext. 31152	galindo@ucol.mx http://www.ucol.mx/volcan
	Instituto de Geofísica, UNAM Observatorio de volcanes, Universidad de Colima			+52 (312) 3161-134 Ext. 47208	+52 (312) 3161-134 Ext. 47208	tonatiuh@cgic.ucol.mx
FIR MAZATLÁN OCEANIC						
FIC	Radio Mexico	MMID	MMIDZQZX	+52 (999) 9461-347	+52 (999) 9461-237	centromerida@hotmail.com
MWO	México	MMMX	MMMXMYT	+52 (55) 5716-6678	+52 (55) 5802-8519	hvargast@sct.gob.mx
FIR MEXICO						
ACC	Centro Mexico Centro Merida Centro Mazatlan Centro Monterrey	MMEX MMID MMZT MMTY	MMEXZQZX MMIDZQZX MMZTZQZX MMTYZQZX	+52 (55) 5716 - 6655 +52 (999) 9461-347 +52 (669) 9181-092 +52 (81) 8369 - 0846	+52 (55) 5716-4199 +52 (999) 9461-237 +52 (669) 9822-820 +52 (81) 8369- 0884	centro_mexico@yahoo.com centromerida@hotmail.com josegalindo@hotmail.com felipe1822@yahoo.com.mx

¹ MWO Tegucigalpa should coordinate the preparation of SIGMET(s) (WS, WV y WC) with the Aerodrome Meteorological Offices of all the Central American States and Belize and send them to the corresponding Aerodrome Meteorological Office.

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STATE	Name	ICAO Loc. Indicator	AFTN	Telephone (24 hours)	Fax (24 hours)	E-mail
MWO	Centro de Análisis y Pronósticos Meteorológicos Aeronáuticos (CAPMA), SENEAM, SCT.	MMMX	MMMXMYT	+52 (55) 5716-6678	+52 (55) 5802-8519	hvargast@sct.gob.mx
NOF	México	MMMX	MMMXNYX	+52 (55) 5716-6615	+52 (55) 5716-6615	jvillanu@sct.gob.mx
MONTERRAT (U.K)						
Observatorio u Organismo de Vulcanología	Montserrat Volcano Observatory	N/A	N/A	1* 664** 491 5647 1 664 491 0002 * For Canada, USA and the Caribbean only ** Or 868	1 664 491 2423	mvo@candw.ag
	British Geological Survey	N/A	N/A	44 115 936 3100 44 115 936 3200		u.name@bgs.sc.uk
FIR PIARCO						
ACC	Porto f Spain	TTZP	TTZPZQZX	(1 868) 669 4852	(1 868) 6694 - 259	
MWO	Port of Spain	TTPP	TTPPYMYX	(1 868) 669 4392	(1 868) 6694 - 727	
NOF	Port of Spain	TTPP	TTPPYNYX	(1 868) 669 4128 (1 868) 625 9843	(1 868) 6691 - 716	
NICARAGUA						
Observatorio u Organismo de Vulcanología	Dirección General del Instituto Nicaragüense de Estudios Territoriales (INETER), Managua	N/A	N/A	505 2 492 757 505 2 492 759 505 2 496 986	505 2 491 890	ineter.disup@netport.com.ni
	Dirección de Meteorología	N/A	N/A	505 2 492 755	505 2 492 755	metineter@ibw.com.ni
	Dirección de Vulcanología	N/A	N/A	505 2 492 761 505 2 496 987	505 2 491082	
FIR CENTROAMERICANA						
ACC	Tegucigalpa	MHTG	MHTGZQZX	(504) 2331 - 503	(504) 2331 - 219	
FIC						
OMA						
MWO* ¹	Tegucigalpa	MHTG	MHTGYMYX	(504) 2349 - 499 (504) 2331 - 111 (504) 2337 - 114	(504) 2338 - 075 (504) 2349 - 500	
*Via national ATS/MET units of Managua/OMA				505 233 1925 505 233 1321	505 233 1610	
AIS (airport)					505 233 1765	
NOF	Tegucigalpa	MHTG	MHTGYNIX	(504) 2331 - 141/42 /43 (504) 2331 - 349 (504) 2342 - 407	(504) 2331 - 141 (504) 2331 - 349	

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STATE	Name	ICAO Loc. Indicator	AFTN	Telephone (24 hours)	Fax (24 hours)	E-mail
PANAMA						
Observatorio u Organismo de Vulcanología	Instituto de Geociencia			(507) 523 2071 (507) 523 2072 (507) 269 5744	(507) 2637671	igc2@ancon.up.ac.pa
FIR PANAMA						
ACC	Panamá	MPZL	MPZLZQZX MPPCICPX	(507) 5019807	(507) 5019849	mailto@aeronautica.gob.pa
MWO	Panamá	MPTO	MPTOYMYX	(507) 2382611 (507) 2382650	(507) 2384678	meteortoc@aeronautica.gob.pa
NOF	Panamá	MPTO	MPTOYNYX	(507) 2382615 (507) 2382616	(507) 2382617	aisnof@aeronautica.gob.pa
PERU						
Observatorio u Organismo de Vulcanología	Instituto Geofísico del Perú Arequipa	N/A	N/A	(5154) 251 - 373	(5154) 251 - 373	Orlando Macedo omacedo@geo.igp.gob.pe
	Instituto Geofísico del Perú Lima	N/A	N/A	(511) 317 – 2325	(511) 317 - 2321	Edmundo Norabuena enorab@nazca.igp.gob.pe
FIR LIMA-CALLAO						
ACC	Lima-Callao	SPIM	SPIMZQZX	(511) 708 1157 (511) 708 1158 (511) 575 0886 (511) 575 1995		acclima@corpac.gob.pe jmontalvo@corpac.gob.pe
MWO	Lima-Callao	SPIM	SPIMYMYX SPZZMAMX	(511) 708 1181 (511) 708 1180	(511) 708 - 1180	pronostico@corpac.gob.pe
NOF	Lima-Callao	SPIM	SPIMYNYX SPIMYOYX	(511) 708 1173 (511) 708 1172 (511) 414 1435	(511) 414 - 1435	aisaro@corpac.gob.pe
SAINT KITTS & NEVIS						
Observatorio u Organismo de Vulcanología						
FIR PIARCO						
ACC	Porto f Spain	TTZP	TTZPZQZX	(1 868) 669 4852	(1 868) 6694 - 259	
MWO	Port of Spain	TTPP	TTPPYMYX	(1 868) 669 4392	(1 868) 6694 - 727	
NOF	Port of Spain	TTPP	TTPPYNYX	(1 868) 669 4128 (1 868) 625 9843	(1 868) 6691 - 716	
SANTA LUCIA/SAINT LUCIA						
Observatorio u Organismo de Vulcanología						

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STATE	Name	ICAO Loc. Indicator	AFTN	Telephone (24 hours)	Fax (24 hours)	E-mail
FIR PIARCO						
ACC	Porto f Spain	TTZP	TTZPZQZX	(1 868) 669 4852	(1 868) 6694 - 259	
MWO	Port of Spain	TTPP	TTPPYMYX	(1 868) 669 4392	(1 868) 6694 - 727	
NOF	Port of Spain	TTPP	TTPPYNYX	(1 868) 669 4128 (1 868) 625 9843	(1 868) 6691 - 716	
SAN VICENTE Y LAS GRANADINAS/ST. VINCENT AND THE GRENADINES						
Observatorio u Organismo de Vulcanología						
FIR PIARCO						
ACC	Port of Spain	TTZP	TTZPZQZX	(1 868) 669 4852	(1 868) 6694 - 259	
MWO	Port of Spain	TTPP	TTPPYMYX	(1 868) 669 4392	(1 868) 6694 - 727	
NOF	Port of Spain	TTPP	TTPPYNYX	(1 868) 669 4128 (1 868) 625 9843	(1 868) 6691 - 716	
SURINAME						
FIR PARAMARIBO						
ACC	Paramaribo	SMPM	SMPMZRX	(597) 325 203	(597) 325 453	atssur@sr.net
MWO	Zandery	SMJP	SMZZMAMX	(597) 325 206	(597) 325 206	meteozean@yahoo.com
NOF	Zandery	SMJP	SMJPYNYX	(597) 325 270	(597) 325 270	ais@cadsur.sr
TRINIDAD Y TABAGO/TRINIDAD AND TOBAGO						
FIR PIARCO						
ACC	Porto f Spain	TTZP	TTZPZQZX	(1 868) 669 4852	(1 868) 6694 - 259	
MWO	Port of Spain	TTPP	TTPPYMYX	(1 868) 669 4392	(1 868) 6694 - 727	
NOF	Port of Spain	TTPP	TTPPYNYX	(1 868) 669 4128 (1 868) 625 9843	(1 868) 6691 - 716	
VENEZUELA						
FIR MAIQUETIA						
ACC	Maiquetía	SVZM	SVZMZQZX	(58212) 355 - 2216	(58212) 355 - 2216	acc@inac.gov.ve
MWO	Maiquetía	SVMI	SVMIYMYX	(58212) 303 - 1522	(58212) 303 - 1522	ovmmaiquetia@inac.gov.ve
NOF	Maiquetía	SVMI	SVMIYNYX	(58212) 355 - 1325	(58212) 355 - 1325	nofmaiquetia@inac.gov.ve notam.maiquetia@inac.gov.ve

Agenda Item 5: Exchange of OPMET information

5.1 Under this Agenda Item, the meeting was aware that the problems related with the exchange of OPMET information have been identified by GREPECAS, thanks to the analysis of the results obtained in the OPMET information exchange controls conducted by CAR/SAM States/Territories that participate in the control since 1996, in keeping with the procedures established by previous implementation meetings and by GREPECAS.

Status of implementation of the conclusions adopted by GREPECAS concerning OPMET information exchange

5.2 The AERMETSG recalled that OPMET exchange problems have been constantly analyzed by GREPECAS, and as a result several conclusions have been formulated including, among others, the development of Special Implementation Projects (SIP) in CAR/SAM States/Territories, and others aimed at assisting States to take actions for their solution.

5.3 During the development of the SIPs, it was noted that the lack of implementation of the AFTN network terminals in meteorological stations with international OPMET exchange requirements represents one of the main communications problems to be solved. The lack of implementation of this terminal is the reason of the delays and errors in the transmission of OPMET information, since these are because the meteorologist has to transmit the OPMET information by phone or handwritten to a communications operator, who reproduces it in his AFTN network terminal. For this reason, GREPECAS, through Conclusion 6/33 agreed the installation of AFTN network PC terminals in every meteorological station with international OPMET exchange requirements, in order to be operated directly by meteorological personnel.

5.4 The main actions suggested by GREPECAS and by the SIPs, as well as their current status of implementation are detailed hereunder:

- implementation of AFTN network PC terminals in aeronautical meteorology stations (GREPECAS Conclusion 6/33), which implementation status is presented in **Appendix A**;
- OPMET information national collecting centre (Recommendation SIP), which implementation status is presented in **Appendix B**;
- adoption of a unique address for OPMET exchange (Recommendation SIP), which implementation status is presented in **Appendix C** (implemented in the SAM Region);
- replacement of remote printers by PC terminals (GREPECAS Conclusion 10/20);
- appropriate communications means (GREPECAS Conclusion 11/42).

5.5 With respect to the last item, the meeting may note that both at a regional and at a national level in each State, modern digital networks have been implemented during the last years, which enable the increase of the capacity, availability and integrity of aeronautical information, in general, in the CAR/SAM Regions.

5.6 In this regard, the subgroup agreed that in order to solve problems still persisting in OPMET exchange, it is essential that the States/Territories of the CAR/SAM Regions, which have not done so, make the maximum efforts to implement the actions recommended in the COM/MET SIP and GREPECAS related conclusions.

OPMET information exchange controls in CAR/SAM States/Territories participating in the control

5.7 The meeting recalled that GREPECAS formulated Conclusion 12/64 – OPMET exchange controls for the CAR/SAM Regions, which establishes, among others, that until an optimum percentage of reception of OPMET data in the CAR/SAM Regions is achieved, OPMET exchange controls be carried out annually from 10 to 16 June. In this regard, the SAM COM/MET/2007 Meeting (August 2007) analyzed in detail the results of OPMET exchange controls corresponding to this period of the years 2006 and 2007 of the States/Territories that participate in the control, and of those from which information was received. Likewise, a thorough review of the results of a comparative study of METAR and TAF availability from 2000 to 2006 was also made based on the information resulting from the controls carried out by the bank 4 times a year.

5.8 The subgroup took note that the SAM COM/MET/2007 Meeting noted with concern that problems in the reception of OPMET data still persist. However, it was considered that this data is also being provided through the International Satellite Communications System (ISCS) and SADIS broadcast, and that with the implementation of the ISCS workstation in most CAR/SAM States/Territories, this alternate mean is being used to obtain the OPMET data required for the development of their respective functions.

5.9 In this regard the SAM COM/MET/2007 Meeting considered not necessary for the States to continue carrying out the controls, and that for an OPMET data control through the AFTN, the controls carried out by the Brasilia International OPMET Data Bank would be enough; consequently, Conclusion SAM COM/MET 07/04 was formulated, which, among others, requested the AERMETSG/9 to analyze the possibility of deactivating OPMET information controls by CAR/SAM States/Territories. In this respect, and after an extensive discussion, the subgroup convened that in view of the improvements in OPMET information exchange, as a result of the controls, it was not agreed to deactivate them.

Use of public Internet for OPMET information exchange

5.10 The subgroup recalled that ICAO published in 2005 Doc 9855 – *Guidelines on the Use of the Public Internet for Aeronautical Applications*. It also recalled proposal for amendment to Annex 3 – *Meteorological Service for international air navigation*, circulated to the States on 19 January 2007, with State Letter AN 7/11-15, AN 10/1 } -07/3, which seek to permit the operational use of the public Internet for the dissemination and exchange of non-time critical messages, with applicability proposed for 18 November 2010.

5.11 In accordance with the referred document and with the proposal for amendment to Annex 3, the category of the messages to be transmitted by Internet is that in which messages do not have immediate effect on an active flight; that is, non-time critical messages. For the exchange of meteorological information, the meeting recalled that the following message categories can be transmitted by public Internet (Doc 9855, Chap. 4):

- a) meteorological information related with TAF forecasts and with observations, such as METAR; and
- b) meteorological information provided by world area forecast centres (WAFc);

5.12 Those non-time critical meteorological messages for service operators and flight crew members may also be transmitted by Internet before the flights (for flight planning). These messages include:

- a) up to date and forecast information of upper wind and upper-air temperature and their corresponding amendments;
- b) up to date and forecast significant weather phenomena for en-route operations, jet stream information and the corresponding amendments;
- c) METAR and when available SPECI for the aerodromes of departure, take off and en-route alternate, the landing aerodrome and destination alternate specified in the regional air navigation plan;
- d) TAF or amended TAF for aerodromes of departure and intended landing, en-route and destination alternate aerodromes specified in the regional air navigation plan; and
- e) SIGMET information and appropriate special reports relevant to the whole routes determined in accordance with the regional air navigation agreements.

5.13 In this regard, the meeting was aware that the States that decide to implement the use of the public Internet for the above mentioned applications would have to proceed to the accreditation of the Internet service providers following the guidelines specified in Doc 9855. The accreditation would ensure the State that the information supplied by the Internet provider meets the reliability, integrity, authenticity and availability parameters.

5.14 Based in Doc 9855, the guidelines that the States should follow for the accreditation of the Internet service provider are:

- a) define a service plan in which the provider describes the Internet service to be supplied;
- b) the provider would present the possible risks that might occur offering the service and the actions to be implemented for their mitigation;
- c) the service provider would have to present the quality level of the service provided and develop a service plan to guarantee the level of the proposed service;
- d) the provider would obtain the State's approval once the previous steps have been approved;
- e) once the Internet service operator is functioning, the State would monitor the service provided, in order to verify that it is within the parameters specified in the service levels presented. The results of the monitoring would allow the State to assess the work of the provider in order to keep the certification.

5.15 Considering the above mentioned paragraphs regarding the use of public Internet as a mean for the transmission of OPMET information, the subgroup formulated the following draft conclusion:

DRAFT

CONCLUSION 9/13 – CONSIDERATIONS FOR THE USE OF THE PUBLIC INTERNET FOR OPMET EXCHANGE

That the States, when using the public Internet for OPMET information exchange take into account the guidelines specified in Doc. 9855 - *Guidelines on the use of the public Internet for aeronautical applications*.

Transition of OPMET information to BUFR code

5.16 The meeting recalled that GREPECAS formulated Conclusion 14/21 – Review of the Transition to the BUFR code, and that the Air Navigation Commission (AN Min. 176-4, 25 October 2007), made a review of this issue and the Secretariat suspended the related work, depending on the results of the work carried out by the WMO Expert Team on the use of a standard commercial format as the XML (Extensible Markup Language), which was designed by the WWW (World Wide Web) consortium for the treatment of documents by Internet and for data communications among documents.

5.17 In order to keep going the studies and tests of the use of XML format for the transmission of OPMET information, WMO, jointly with ICAO, convened in the development of the following actions:

- a) preparation of a formal answer by WMO to ICAO letter related to the concern expressed by some PIRGs (May/June);
- b) establishment by WMO Commission for Basic Systems, of an Expert Team (ET) in charge of developing XML standards for METAR/SPECI and TAF. The ET would include experts of the WMO Commission for Aeronautical Meteorology (CAeM) and ICAO;
- c) development of XML standards (including encoding/decoding software and the corresponding XML coding tables); and
- d) preparation of a pilot project for an exchange from end to end of METAR/SPECI and TAF in XML, from an aerodrome meteorological office to a final aeronautical user, in order to ensure the feasibility of the code in an operational context.

5.18 In this regard, the meeting took note that the establishment of the Expert Team is foreseen for 2008 and the final results about the middle of 2009.

5.19 The subgroup noted with concern that during the operational controls carried out by the International OPMET Data Bank from 2004 to 2008, a great number of omissions have been note in OPMET messages in the Brasilia Bank, which have a detrimental effect on the provision of MET information to support international air navigation.

5.20 The meeting took note with pleasure that in order to identify the deficiencies related with the availability of information in the Brasilia OPMET Bank, Brazil carried out a comparative study of the availability of OPMET messages in the periods contained in **Appendix D** to this part of the report. A table with a comparative study of METAR availability is presented in **Appendix E** and the graphics of the comparative study of the same is presented in **Appendix F**. Also, **Appendix G** to this part of the report presents a table a table with the comparative study of TAF availability.

New TAF requirements included in amendment 74

5.21 The subgroup recalled that amendment 74 to Annex 3 included the extension of TAF validity period to satisfy long haul flights. This amendment will be applicable on 5 November 2008. In this regard, and based on IATA requirements received by ICAO, which are included in **Appendix H** to this part of the report, there were no TAF requirements with 30-hour validity period in the CAR/SAM Regions.

Test Bed for 30-Hr Aerodrome Forecast

5.22 The subgroup took note with satisfaction that during the fourth meeting of World Area Forecast System Operations Group (WAFSOPSG/4), the United States and several other attending States agreed to populate a website with training material and sample 30 hour TAFs in order to provide users an opportunity to begin testing TAFs as early as possible.

5.23 In this regard, the United States is providing sample 30 hour TAFs, and basic training at the following link: http://www.weather.gov/os/aviation/taf_testbed.shtml, and invited the participants of this meeting to forward any ideas for training and/or improvement to this website. The contact person is Michael Graf of the National Weather Service (michael.graf@noaa.gov).

5.24 In addition, the AERMETSG noted with satisfaction that the Washington OPMET data bank plans on sending sample 30 hour TAFs at 1400 GMT, during the last Wednesday of each month through October. The WMO header will be under FTXX90 KWBC (subject to change). Likewise, note was taken that the Brasilia OPMET data Bank is already prepared to receive 30-hour TAF.

5.25 The meeting was aware that in view of the fact that a new TAF format will be introduced effective 5 November 2008, States should review existing procedures on the provision and processing of the new TAF. In that light, the subgroup agreed to encourage States to provide examples and use the test bed site as referenced above. In this regard, the following draft conclusion was formulated:

DRAFT

CONCLUSION 9/14 -

TRANSITION TO NEW TAF FORMAT

That States/Territories in the CAR/SAM Region are encouraged to visit the NWS web site to learn more about the format changes for the TAF and test their processors with the examples provided.

**IMPLEMENTATION OF PC TERMINALS IN NATIONAL MET STATIONS
WITH INTERNATIONAL OPMET EXCHANGE REQUIREMENT**

State	Implementation of PC terminals in MET stations	Operators	Comments
1	2	3	4
Argentina	Implemented	Communications and meteorology personnel	By the middle of 2006 the new AMHS system starts operation at a national level and PC terminals were installed in MET stations.
Bolivia	Partially implemented	Most terminals are operated by Communications personnel	The installation of an AMHS system is expected for the end of 2010, including terminals in MET stations.
Brazil	Implemented	Communications and meteorology personnel	In 2002 the AFTN system was modernized including PC implementation in MET stations. The implementation of AMHS systems is foreseen for the end of 2008 with the respective PC terminals in the MET stations.
Chile	Implemented	Meteorology personnel	For the end of this year the implementation of an AMHS system is foreseen including PC terminals in each MET station.
Colombia	Not implemented	Communications personnel	The implementation of an AMHS system and new PC terminals in MET stations is foreseen for 2008.
Ecuador	Implemented	Meteorology personnel	The implementation of an AMHS system and new PC terminals in MET stations is foreseen for 2009.
French Guiana	Implemented	Meteorology personnel	
Guiana	Not implemented	Communications personnel	
Panama	Partially implemented	Communications and meteorology personnel	The implementation of an AMHS system and PC terminals in MET stations is foreseen for the middle of 2008.
Paraguay	Implemented	Meteorology personnel	The implementation of an AMHS system including the installation of PC terminals in MET stations is foreseen for the end of this year.
Peru	Implemented	Communications and meteorology personnel	The implementation of an AMHS system and new PC terminals in MET stations is foreseen for 2008.
Suriname	Not implemented	Communications personnel	

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State	Implementation of PC terminals in MET stations	Operators	Comments
1	2	3	4
Uruguay	Partially implemented	Communications and meteorology personnel	
Venezuela	Partially implemented	Communications and meteorology personnel	With the implementation of the new AMHS system to be installed in 2008, all MET stations will have PC terminals. It is foreseen that all PC terminals will be operated by meteorology personnel.

OPMET INFORMATION NATIONAL COLLECTING CENTRE

State	Implementation Status
Argentina	Each MET station with International requirement transmits the information directly abroad
Bolivia	Carried out manually in a PC terminal
Brazil	Carried out through the OPMET Data Bank
Chile	Carried out through the OPMET Data Bank
Colombia	Carried out through the OPMET Data Bank
Ecuador	Carried out through the OPMET Data Bank
French Guiana	At an FEP level of the meteorological network
Guyana	There is only one PC terminal connected to Picarco CCAM at a national level
Panama	Carried out manually in a PC terminal
Paraguay	Carried out manually in a PC terminal
Peru	Carried out through the OPMET Data Bank
Suriname	Carried out manually in a PC terminal
Uruguay	Carried out manually in a PC terminal
Venezuela	Carried out manually in a PC terminal

AFTN ADDRESS FOR OPMET EXCHANGE

State	Address Transmission	Address Destination
Argentina	SAXXYMYX	SAZZMAMX
Bolivia	SLXXYMYX	SLZZMAMX
Brazil	SBBRYZYX	SBBRYZYX
Chile	SCXXYMYX	SCZZMAMX
Colombia	SKBOYZYX	SKZZMAMX
Ecuador	SEXXYMYX	SEZZMAMX
French Guiana	SOXXYMYX	SOZZMAMX
Guiana	SYXXYMYX	SYZZMAMX
Panama	MPXXYMYX	MPZZMAMX
Paraguay	SGXXYMYX	SGZZMAMX
Perú	SPXXYMYX	SPZZMAMX
Suriname	SMXXYMYX	SMZZMAMX
Uruguay	SUXXYMYX	SUZZMAMX
Venezuela	SVXXYMYX	SVZZMAMX

**Periods of the comparative study of the results of the availability of OPMET messages
in the Brasilia OPMET Bank**

- 10 al 16 de marzo de 2004
- 10 al 16 de junio de 2004
- 10 al 16 de noviembre de 2004
- 10 al 16 de marzo de 2005
- 10 al 16 de junio de 2005
- 10 al 16 de septiembre de 2005
- 10 al 16 de noviembre de 2005
- 10 al 16 de marzo de 2006
- 10 al 16 de junio de 2006
- 10 al 16 de septiembre de 2006
- 10 al 16 de noviembre de 2006
- 10 al 16 de marzo de 2007
- 10 al 16 de junio de 2007
- 03 al 09 de septiembre de 2007
- 10 al 16 de noviembre de 2007
- 10 al 16 de marzo de 2008

Table with METAR availability in the Brasilia OPMET Bank

Local	Horário de Func.	Prev.	2004			2005				2006				2007				2008
			Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar
Região SAM																		
Argentina																		
SAAR	H-24	168	0	1	0	0	0	0	2	2	1	3	1	2	1	0	3	164
SABE	H-24	168	155	159	165	164	156	101	158	157	133	163	159	143	160	138	134	116
SACO	H-24	168	151	165	161	143	159	100	151	167	141	167	167	162	167	167	162	167
SADD	0900/0000	112	89	76	90	5	37	88	79	0	0	0	0	0	0	0	0	0
SADF	H-24	168	109	88	7	81	99	57	118	2	0	0	0	1	0	0	2	131
SAEZ	H-24	168	160	165	164	166	165	167	162	167	141	166	166	161	165	2	126	165
SAME	H-24	168	164	167	166	166	155	102	166	164	142	166	166	160	167	163	160	165
SANT	H-24	168	0	2	162	159	154	99	154	164	136	156	153	152	163	167	162	166
SARE	H-24	168	159	165	163	164	157	101	162	166	144	163	168	165	168	168	162	167
SARF	H-24	168	160	167	166	161	156	98	167	167	142	168	168	161	168	168	162	167
SARI	H-24	168	158	165	166	159	158	97	166	161	145	168	167	161	165	166	161	167
SARP	H-24	168	159	163	165	159	155	100	165	167	143	166	167	162	168	168	162	167
SASA	H-24	168	155	161	132	160	156	99	160	163	137	164	164	156	166	166	162	163
SASJ	H-24	168	91	99	97	101	93	63	154	164	142	166	166	158	167	161	154	166
SAVC	H-24	168	0	2	167	160	157	98	166	165	138	165	164	160	166	39	144	166
SAWE	0900/2300	105	102	93	97	99	74	62	95	102	85	96	93	86	82	97	86	89
SAWG	H-24	168	166	168	165	162	0	102	166	161	141	152	158	154	167	167	158	166
SAWH	H-24	168	0	0	156	158	145	96	150	126	131	144	146	146	130	149	125	155
SAZM	H-24	168	154	52	0	0	0	0	0	1	134	149	154	147	155	151	133	154
SAZN	H-24	168	0	2	120	136	92	84	137	1	0	1	0	1	1	0	3	110
SAZS	H-24	168	110	87	30	114	98	77	118	2	0	3	0	0	2	2	4	99
Bolivia																		
SLCB	H-24	168	160	163	164	165	155	156	160	155	144	166	163	167	165	163	162	164
SLCO	H-24	168						0	0	2	2	2	0	3	0	4	1	2
SLET	1000/0000	105						1	1	0	3	1	0	3	1	2	0	0
SLLP	H-24	168	162	164	164	165	155	157	160	159	143	167	165	166	164	165	167	168
SLPO	H-24	168						0	0	0	3	1	0	1	0	1	1	2
SLPS	1100/2200	84						63	66	49	3	1	0	3	1	3	0	2

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Local	Horário de Func.	Prev.	2004			2005				2006				2007				2008
			Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	
Colômbia																		
SKBG	1100/0400	126						0	112	58	120	124	87	91	87	89	89	85
SKBO	H-24	168	152	154	152	149	138	163	159	165	161	164	161	165	158	163	165	162
SKBQ	H-24	168	164	157	154	148	144	162	158	165	161	160	154	164	158	166	165	159
SKCC	1000/0000	105	0	11	0	84	87	88	90	93	93	91	85	90	85	91	89	82
SKCG	H-24	168	162	148	149	151	131	158	149	163	163	155	164	163	158	159	162	157
SKCL	H-24	168	161	157	159	148	119	162	163	168	164	165	161	167	160	166	166	157
SKLT	1100/2300	84	56	46	63	61	94	62	66	69	62	85	85	84	81	89	86	80
SKPE	1100/0300	119						0	105	58	109	118	116	123	115	122	115	117
SKRG	H-24	168	164	158	155	151	135	164	163	166	165	166	164	166	161	164	167	161
SKSP	1100/0500	133	120	120	105	115	104	124	113	125	121	119	116	125	121	128	124	117
Equador																		
SEGU	H-24	168	157	157	163	162	158	157	160	160	157	160	162	153	159	160	165	157
SELT	1100/0500	133	120	129	129	130	131	129	132	129	132	126	128	131	131	131	133	123
SEMT	H-24	168	85	90	94	90	95	92	95	85	97	144	144	142	149	153	162	147
SEQU	H-24	168	159	156	167	160	166	161	166	167	163	163	167	161	163	166	166	163
Guiana																		
SYCJ	H-24	168	130	0	156	151	142	119	91	124	149	101	155	0	0	142	10	126
Guiana Francesa																		
SOCA	H-24	168	164	166	168	140	167	168	155	158	166	151	166	34	157	158	161	34
Panamá																		
MPBO	1100/2300	91	0	0	0	0	0	6	0	20	17	82	0	65	75	80	80	77
MPCH	1100/2300	91	0	0	0	0	0	6	0	23	19	80	0	67	74	82	80	86
MPDA	1100/2300	91	0	0	0	0	0	6	0	18	17	46	1	40	27	31	51	60
MPMG	1100/0100	105	0	0	0	0	0	10	1	49	53	82	5	75	73	68	65	84
MPTO	H-24	168	114	157	146	150	162	151	152	156	147	165	17	145	150	157	152	147
Paraguai																		
SGAS	H-24	168	159	164	166	156	0	168	166	166	153	163	163	156	166	168	151	157
SGES	0900/0000	112	106	108	109	100	0	110	111	93	98	106	109	107	111	112	107	129
Peru																		
SPHI	H-24	168	144	158	147	168	168	168	167	168	167	168	168	168	168	168	168	167
SPHO	1000/2300	98						0	0	0	0	2	0	0	0	2	1	96
SPHY	1000/1800	63						0	0	0	0	2	0	1	0	0	1	56
SPIM	H-24	168	144	158	153	168	168	168	168	168	167	168	168	168	168	168	168	167
SPJL	1100/0000	98						0	0	1	0	2	0	2	0	1	1	96
SPME	1200/2400	110						0	0	0	0	2	0	0	0	1	1	110
SPQT	H-24	168	145	158	149	168	168	168	168	168	166	168	168	168	168	168	165	166
SPQU	H-24	168	142	159	147	167	168	168	168	167	167	168	168	168	168	168	167	167
SPRU	H-24	168	88	80	86	90	91	98	105	104	103	91	91	91	91	91	91	156
SPSO	H-24	168	145	158	151	167	168	168	168	168	167	168	168	168	168	168	167	167
SPTN	H-24	168	102	109	105	119	119	119	119	119	118	119	119	117	119	119	118	118
SPTU	1100/2300	91						0	0	0	0	2	0	2	0	1	1	89
SPYL	1300/2100	63						0	0	0	0	3	0	2	0	2	3	53
SPZO	H-24	168	145	158	149	168	168	168	168	167	167	168	168	168	168	168	168	167

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Local	Horário de Func.	Prev.	2004			2005				2006				2007				2008
			Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar
Suriname																		
SMJP	H-24	168	101	98	0	160	0	153	155	143	156	141	151	86	0	130	118	119
SMNI	H-24	168	0	0	0	68	0	76	42	55	61	90	98	61	0	79	68	68
SMZO	0900/0000	112	0	0	0	0	0	94	100	94	97	88	97	61	0	89	78	79
Uruguai																		
SUAA	0700/2200	112	78	84	90	86	81	84	92	95	68	83	88	86	65	86	92	84
SUCA	1200/2300	84	70	57	73	75	76	61	34	42	37	49	27	32	23	20	22	22
SULS	1000/0300	126	112	113	116	120	115	122	123	119	98	121	120	122	87	124	122	150
SUMU	H-24	168	147	163	164	157	158	166	164	165	138	165	164	164	116	164	167	164
SURV	1000/2200	91	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
SUSO	1000/2200	91						0	0	1	0	0	0	0	0	0	0	0
Venezuela																		
SVAC	H-24	168						0	0	65	6	3	0	3	0	87	92	77
SVBC	H-24	168	113	126	123	126	126	151	143	164	138	148	146	163	62	0	153	146
SVBI	H-24	168						0	0	67	6	3	0	2	0	85	85	55
SVBM	1000/0400	133						0	0	67	6	3	0	1	0	126	125	117
SVCB	H-24	168						0	0	80	6	3	0	1	0	106	118	36
SVCL	H-24	168						0	0	64	5	3	1	2	0	38	85	14
SVCR	H-24	168						6	12	63	23	15	29	64	64	93	97	86
SVCU	H-24	168						0	0	0	0	0	0	1	2	0	0	12
SVFM	H-24	168						0	0	8	0	0	0	0	0	61	45	0
SVGI	H-24	168						0	0	0	0	0	0	0	0	62	57	0
SVGU	H-24	168						0	0	69	5	3	1	1	0	79	86	31
SVHG	H-24	168						0	0	0	0	0	0	0	0	0	0	0
SVJC	1000/2200	91	27	49	55	63	40	0	41	70	66	79	71	78	66	84	82	72
SVJM	H-24	168						0	0	64	4	2	1	1	0	60	62	1
SVMC	H-24	168	161	164	156	157	161	150	117	158	162	156	158	159	143	160	158	95
SVMD	H-24	168						7	19	72	22	22	14	22	22	74	93	42
SVMG	H-24	168	154	163	159	164	160	163	157	162	164	153	160	159	148	164	160	156
SVMI	H-24	168	166	167	162	166	166	165	164	164	164	161	164	162	150	163	164	165
SVMT	1000/0400	133						0	0	80	6	2	0	1	0	26	69	28
SVPA	H-24	168						0	0	0	3	3	1	1	0	76	76	0
SVSA	H-24	168	69	112	118	117	108	47	48	86	55	61	34	74	65	83	90	76
SVSO	H-24	168						0	0	1	0	2	0	1	0	32	18	35
SVSR	H-24	168						0	0	52	5	3	1	2	0	55	95	28
SVTM	H-24	168														0	0	0
SVVA	1000/0200	119	94	111	115	109	102	101	100	106	94	77	77	107	94	105	116	78
SVVP	H-24	168						0	0	0	0	1	0	2	0	26	28	9
Região CAR																		
Anguilla																		
TQPF	1100/2200	84	1	24	70	0	56	43	54	58	69	65	38	59	65	60	69	57
Antígua e Barbuda																		
TAPA	H-24	168	141	154	143	166	158	120	163	162	163	0	142	165	165	167	164	144
Antilhas Francesas																		
TFFF	H-24	168	165	168	166	130	168	167	168	155	165	166	167	166	168	167	168	167
TFFR	H-24	168	161	103	168	33	167	160	161	153	168	162	167	160	151	152	168	164

Granada

Local	Horário de Func.	Prev.	2004			2005				2006				2007				2008
			Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar
Guatemala																		
MGFL	H-24	168	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MGGT	H-24	168	119	138	167	168	162	157	164	167	161	168	158	165	166	166	168	168
MGPB	H-24	168	106	133	156	161	162	151	159	166	160	164	154	160	150	145	154	164
MGSJ	H-24	168	105	133	156	158	161	149	159	163	158	161	154	161	147	145	154	162
MGTK	H-24	168						151	157	164	160	166	154	161	150	146	155	161
Haiti																		
MTCH	1200/2300	84	0	0	7	0	0	30	30	44	0	0	0	0	0	0	0	0
MTTP	1100/0000	98	25	4	49	18	11	65	70	79	11	26	9	25	22	0	0	7
Honduras																		
MHLC	H-24	168	99	125	107	73	83	92	94	145	81	118	108	164	143	159	162	158
MHLM	H-24	168	94	140	115	87	97	100	92	96	72	119	127	128	133	143	149	151
MHRO	H-24	168	67	71	76	64	75	77	67	84	57	80	70	155	77	92	131	89
MHTG	H-24	168	115	153	120	117	130	122	131	154	102	137	136	154	143	141	161	163
Ilhas Bahamas																		
MYAM	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYAT	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYBS	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYEG	H-24	168	0	0	0	0	0	0	1	0	2	0	0	1	0	0	0	0
MYEH	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYEM	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYER	H-24	168						0	0	0	0	0	0	0	0	0	0	0
MYGF	H-24	168	0	0	2	0	0	0	2	2	3	0	0	0	0	0	0	2
MYGW	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYLS	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYNN	H-24	168	0	0	3	0	0	0	2	2	4	9	0	2	0	0	0	27
MYSM	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ilhas Cayman																		
MWCB	H-24	168	0	0	53	0	0	0	0	0	0	0	0	1	0	0	0	00
MWCR	1200/0300	112	81	91	96	0	0	0	0	0	0	0	0	4	0	0	0	0
Ilhas Turks and Caicos																		
MBGT	H-24	168	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
MBPV	H-24	168	0	0	2	0	0	0	0	1	1	0	0	0	0	0	0	0
MBSC	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ilhas Virgens (Inglaterra)																		
TUPJ	1200/0000	91	13	0	19	27	26	0	0	0	21	0	0	5	22	67	0	13
TUPW	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ilhas Virgens (Estados Unidos)																		
TIST	0700/2200	112	112	112	112	111	112	109	112	112	111	110	108	111	110	102	111	93
TISX	0600/2300	126	126	126	126	125	126	122	125	126	112	90	122	117	124	125	106	105
Jamaica																		
MKJP	H-24	168	160	161	158	162	157	131	159	164	158	147	156	154	152	133	148	157
MKJS	H-24	168	157	162	163	160	165	115	159	157	158	126	152	148	157	145	129	156

Montserrat

Local	Horário de Func.	Prev.	2004			2005				2006				2007				2008
			Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar
TRPM	1000/2300	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Nicarágua																		
MNMG	H-24	168	159	139	155	157	158	147	157	158	156	162	150	161	162	162	159	162
MNPC	H-24	168	62	42	27	62	55	28	64	57	45	42	53	49	47	61	51	55
Porto Rico																		
TJBQ	H-24	168	118	129	131	129	100	124	133	141	148	149	150	143	143	148	141	115
TJFA	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TJMZ	H-24	168						1	89	87	85	82	80	54	0	0	0	0
TJNR	H-24	168						0	165	166	168	168	165	167	165	168	165	0
TJPS	0800/1700	70	51	53	47	45	46	42	24	15	18	31	48	51	40	59	46	28
TJSJ	H-24	168	166	167	166	167	168	162	164	165	168	168	164	167	162	166	165	145
TJVQ	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
República Dominicana																		
MDBH	1200/0000	91	0	0	0	0	0	0	63	1	41	64	86	86	87	87	81	87
MDHE	1200/0000	91	51	46	47	71	73	75	74	1	2	0	0	0	0	0	0	0
MDLR	H-24	168	52	51	48	63	70	71	67	58	71	77	71	78	75	80	75	88
MDPC	1200/0000	91	59	61	60	64	60	23	76	86	88	85	88	89	89	91	89	90
MDPP	1200/0000	91	88	84	82	84	89	88	83	87	89	88	88	89	88	91	89	89
MDSD	H-24	168	155	147	160	158	154	143	156	157	162	164	165	159	165	168	162	166
MDST	1200/0000	91	88	75	79	80	88	84	87	85	90	86	87	88	88	91	90	89
Saint Kitts and Nevis																		
TKPK	1200/0100	98	78	80	74	92	0	0	90	3	0	0	87	76	0	0	0	89
TKPN	H-24	168	40	6	22	64	0	0	79	76	0	0	36	92	0	0	0	57
Santa Lúcia																		
TLPC	1000/0000	105	0	11	42	58	56	26	57	58	54	27	56	45	53	37	48	55
TLPL	H-24	168	0	160	134	158	159	133	154	162	134	55	162	140	148	154	136	145
San Vicente e Grenadinas																		
TVSB	1000/0100	112	0	1	0	0	0	0	0	0	0	18	25	32	29	2	0	4
TVSC	1200/2200	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TVSM	H-24	168	0	0	0	0	0	0	0	0	0	6	15	2	0	0	0	0
TVSU	H-24	168	0	2	0	0	0	0	0	0	0	17	25	32	37	0	0	0
TVSV	1000/0100	112	0	70	76	66	69	52	20	47	61	73	50	49	53	72	66	47
Trinidad e Tobago																		
TTCP	1000/0200	119	93	58	98	76	101	114	110	110	116	95	102	107	112	114	110	114
TPPP	H-24	168	157	104	166	110	158	160	163	164	167	165	168	167	165	166	168	166
Região NAM																		
Canadá																		
CYMX	H-24	168	166	168	167	168	168	161	165	168	168	168	164	168	167	168	168	168
CYOW	H-24	168	167	168	168	168	168	159	165	168	151	168	164	168	165	168	168	168
CYYZ	H-24	168	165	166	168	168	168	160	166	168	145	168	164	168	166	168	168	168
Estados Unidos																		
KATL	H-24	168	168	166	167	163	167	161	165	163	168	168	164	167	165	168	166	141
KBWI	H-24	168	168	164	167	163	167	161	160	165	165	168	164	167	164	167	165	141
KDFW	H-24	168	164	165	166	162	165	159	164	165	164	168	164	167	165	168	166	139

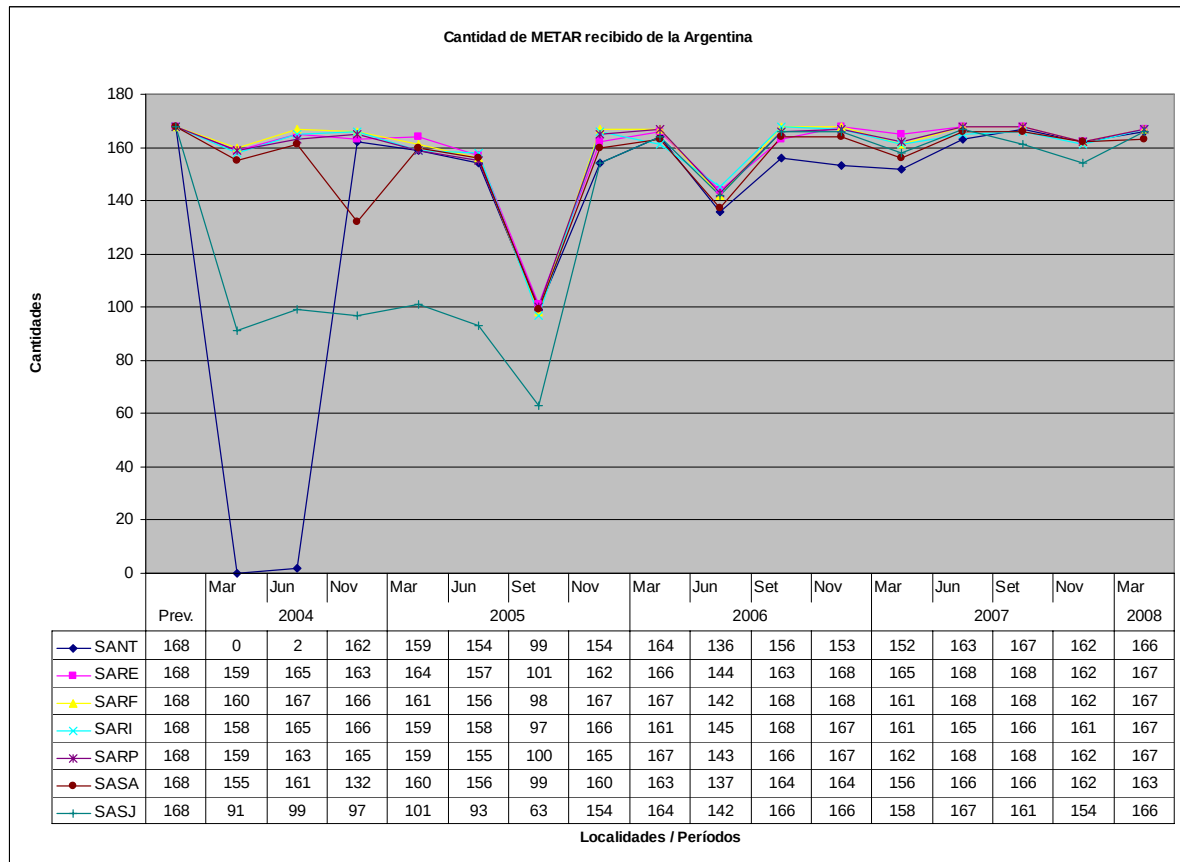
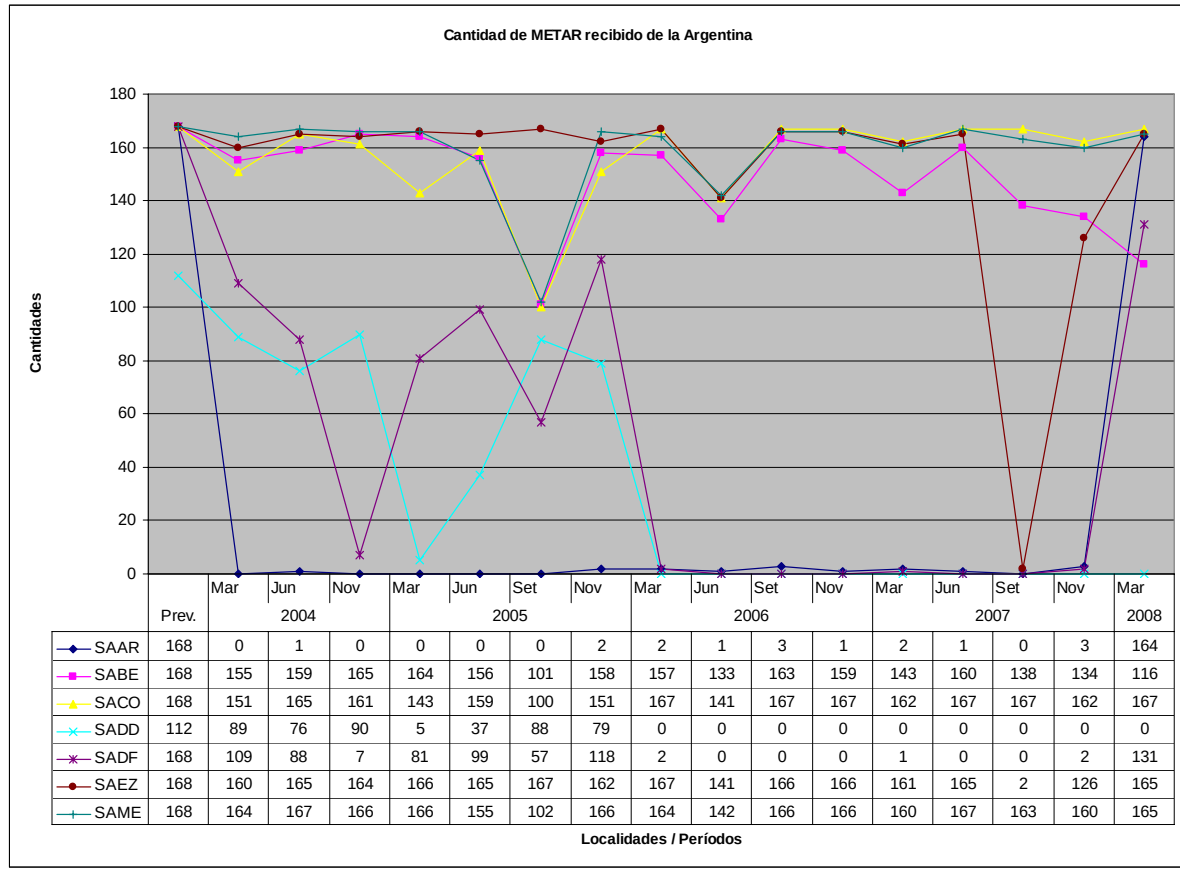
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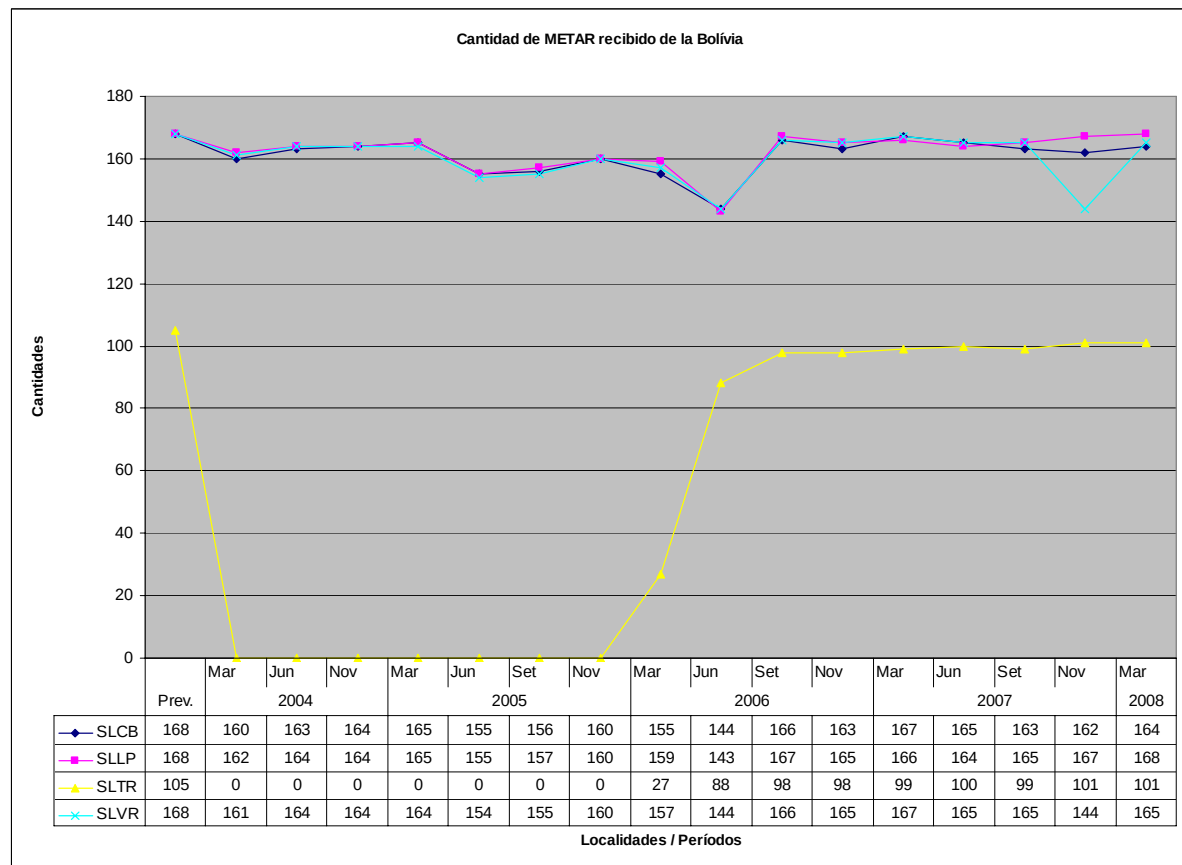
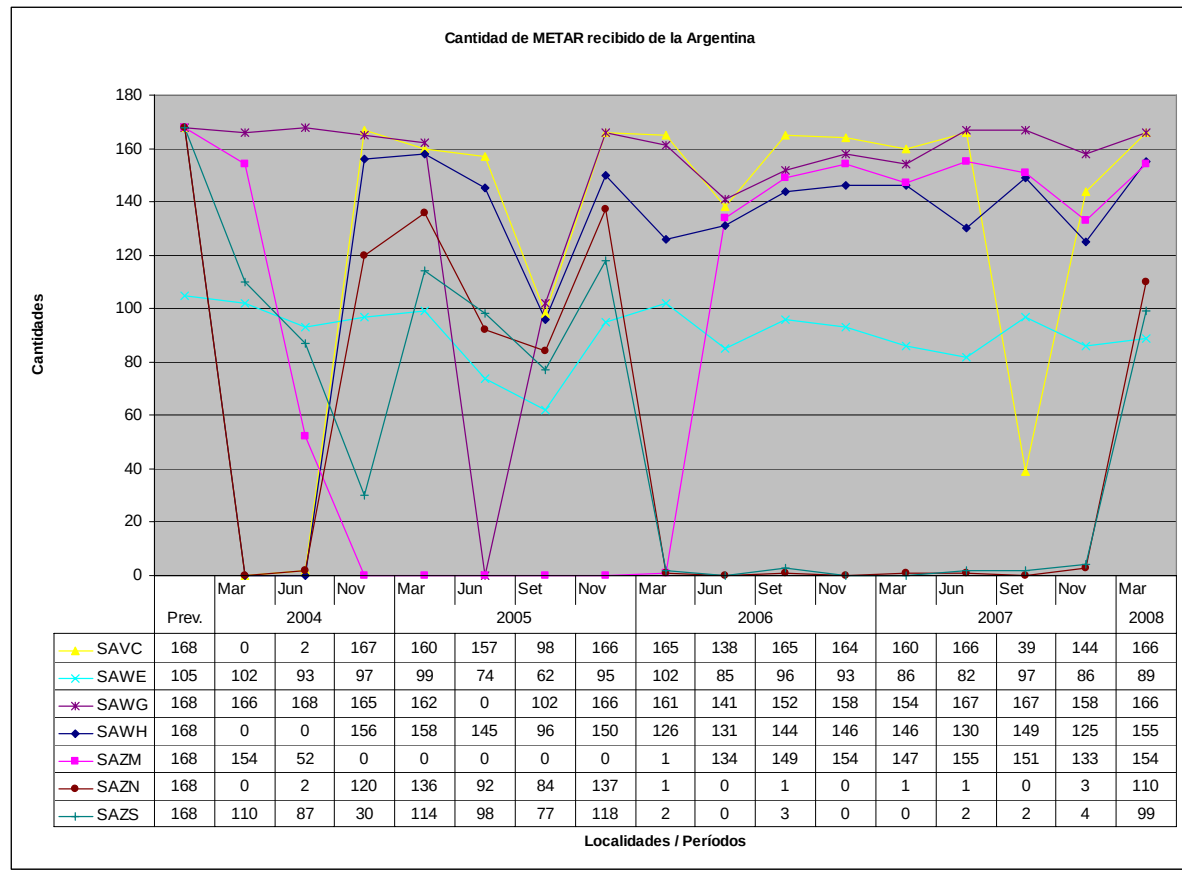
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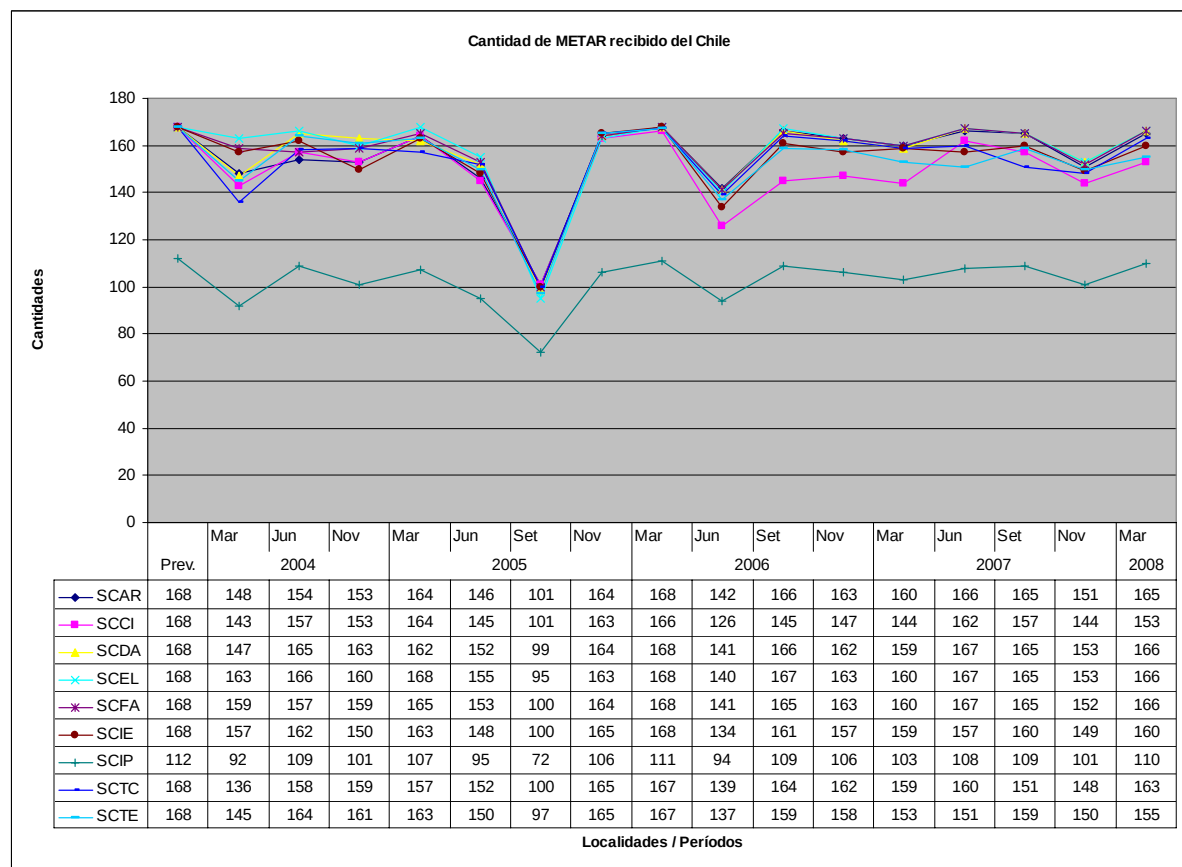
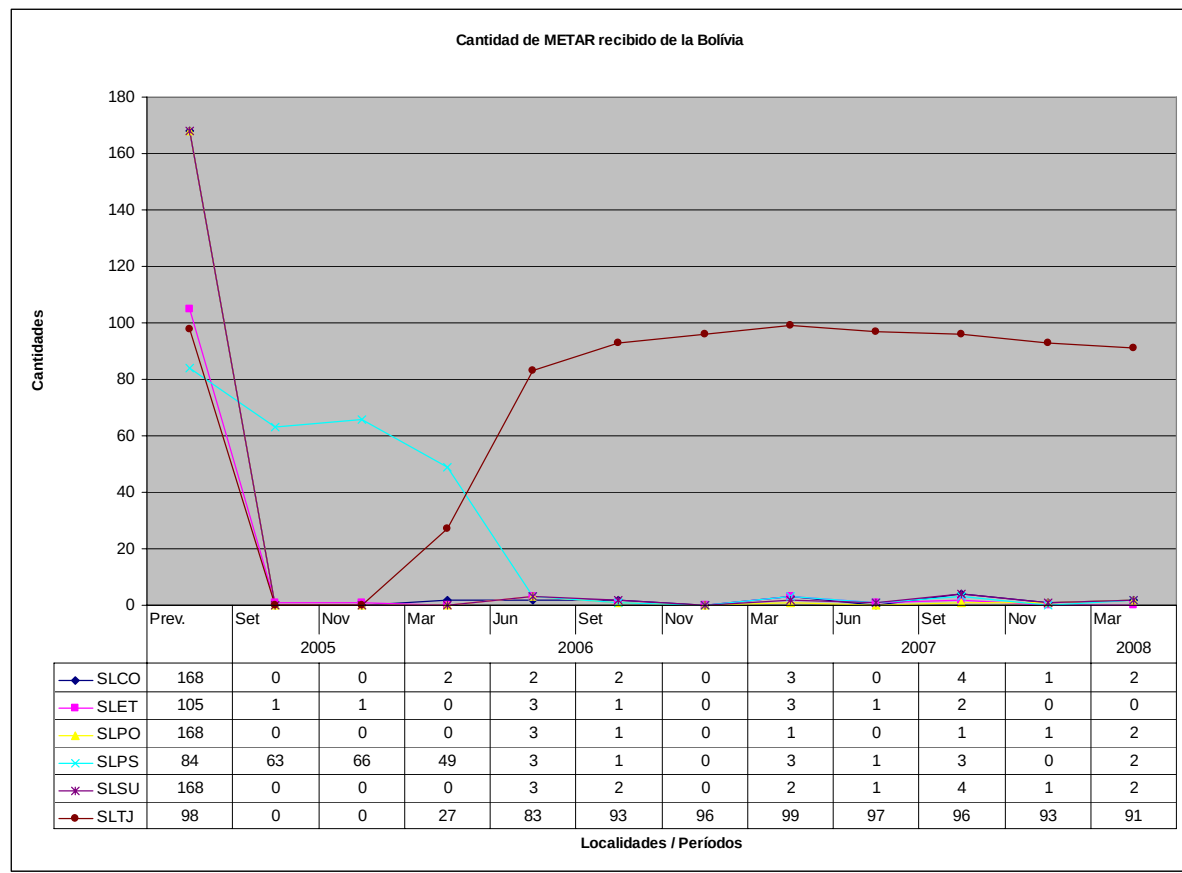
Local	Horário de Func.	Prev.	2004			2005				2006				2007				2008
			Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar
KDTW	H-24	168	167	166	167	161	166	159	163	164	164	168	163	167	165	168	165	139
KEWR	H-24	168	167	165	166	158	166	158	164	164	162	168	164	167	166	165	165	141
KFAT	H-24	168	0	0	0	0	0	0	0	1	0	2	0	0	1	3	0	0
KFLL	H-24	168	168	165	167	161	166	160	151	165	164	164	164	167	165	168	165	139
KIAH	H-24	168	168	163	167	161	165	160	164	165	162	168	162	167	165	162	163	139
KIND	H-24	168	167	165	167	161	166	160	162	165	162	168	164	167	165	168	165	140
KJFK	H-24	168	167	165	166	161	166	160	162	165	162	168	164	167	165	164	165	141
KLAS	H-24	168	168	164	166	159	166	160	162	163	161	168	164	167	165	168	164	140
KLAX	H-24	168	168	164	166	160	166	160	155	166	161	168	164	167	165	68	165	141
KMIA	H-24	168	168	161	160	150	160	154	157	166	164	164	164	156	163	164	161	136
KMKE	H-24	168	0	1	0	0	0	0	0	2	0	1	0	0	1	5	2	0
KMSY	H-24	168	168	159	157	146	157	150	151	164	167	168	164	140	157	163	153	125
KONT	H-24	168	168	156	163	162	161	152	153	166	168	168	164	126	148	150	129	102
KORD	H-24	168	168	164	167	165	165	159	165	166	167	168	164	127	148	152	126	100
KORL	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0
KPBI	H-24	168	168	168	168	165	165	100	165	165	166	164	164	124	148	151	124	98
KPHL	H-24	168	167	166	167	167	165	161	164	165	163	167	164	126	148	149	127	98
KPHX	H-24	168	168	167	167	167	164	161	165	164	165	168	164	126	148	152	127	99
KSAN	H-24	168	168	163	165	166	164	161	163	165	165	168	164	126	148	152	126	104
KSAT	H-24	168	1	0	0	0	0	0	0	4	0	2	0	0	0	6	0	0
KSFO	H-24	168	168	165	167	166	165	161	163	164	164	164	164	128	147	152	125	98
KTPA	H-24	168	168	163	167	165	162	160	162	164	165	167	164	126	148	149	128	98
KTUS	H-24	168	0	0	0	0	0	0	0	1	0	2	0	0	0	5	0	0
Região NAT																		
Bermudas																		
TXKF	H-24	168	167	165	168	166	166	161	164	164	166	168	163	166	157	82	167	165
Região AFI																		
Cabo Verde																		
GVAC	H-24	168	147	161	165	158	52	158	164	162	147	155	167	161	163	162	159	157
Costa do Marfim																		
DIAP	H-24	168	0	4	19	0	10	0	1	2	2	3	4	1	3	8	0	154
República do Guiné																		
GUCY	H-24	168	0	0	2	127	15	119	120	117	62	108	0	0	111	88	61	71
Senegal																		
GOOY	H-24	168	0	2	19	0	8	0	1	3	4	4	7	1	4	3	2	154
Serra Leoa																		
GFLI	H-24	168	0	3	20	90	35	90	102	91	66	91	0	0	87	73	84	99
Região PAC																		
Polinésia Francesa																		
NTAA	H-24	168	0	0	9	0	14	0	2	14	0	0	164	165	166	167	168	158
NTTG	H-24	168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

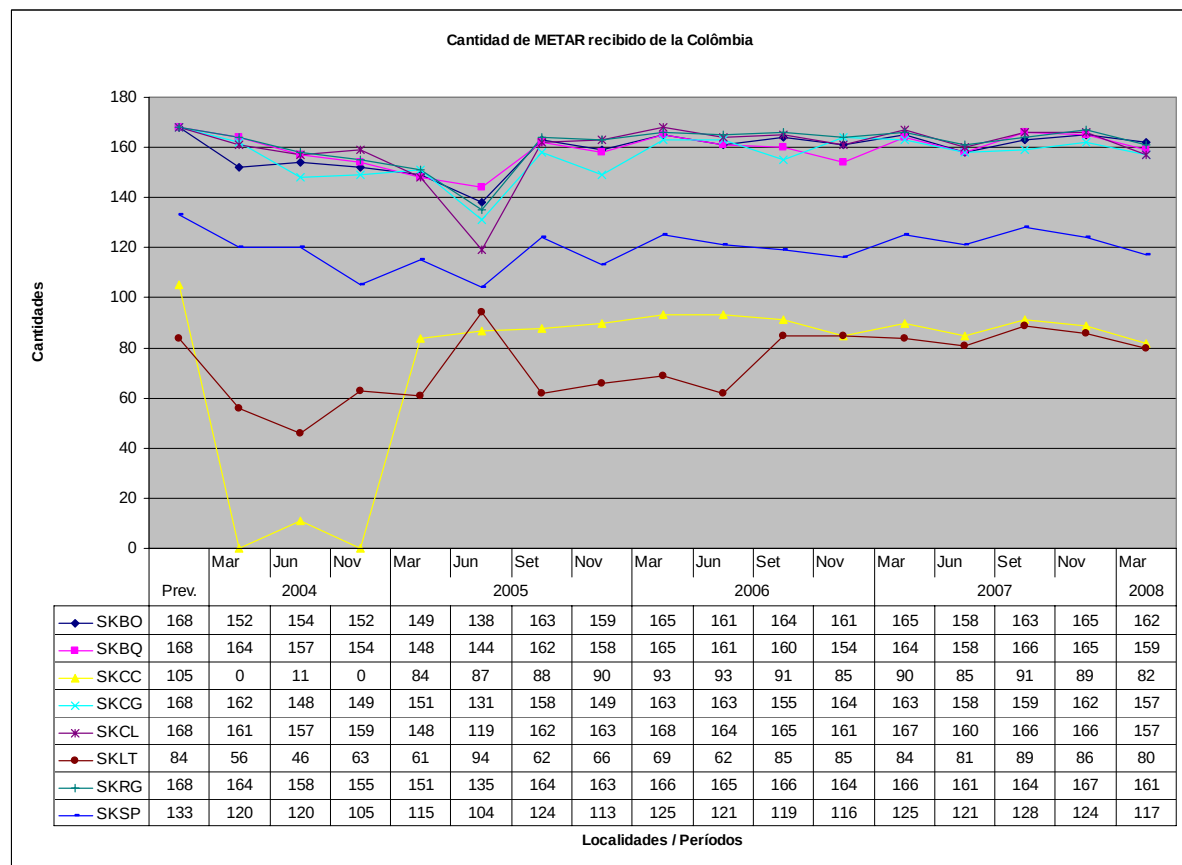
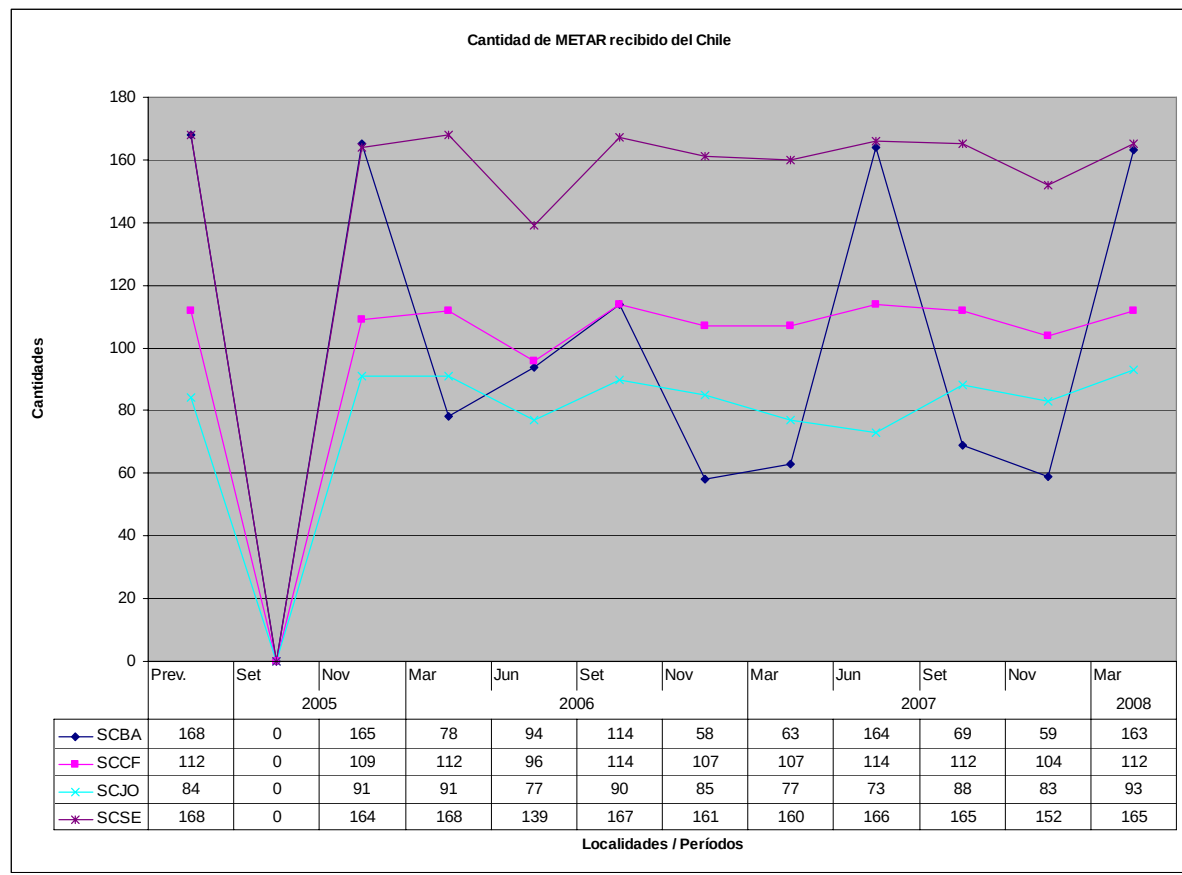
NOTA: 1) Os horários de funcionamento foram informados pela OACI.
2) Os horários de funcionamento em itálico foram obtidos nos AIP dos respectivos Estados.
3) No previsto Intercâmbio de METAR nesse período.

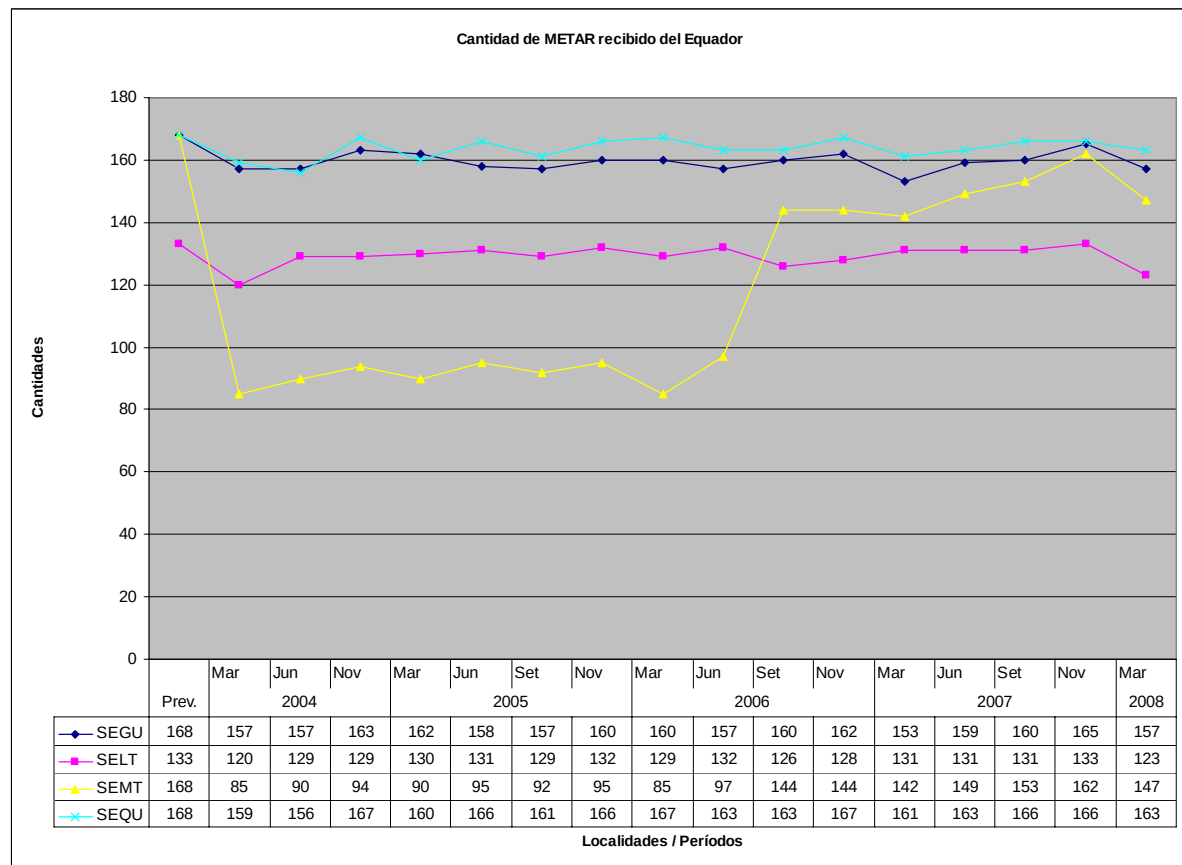
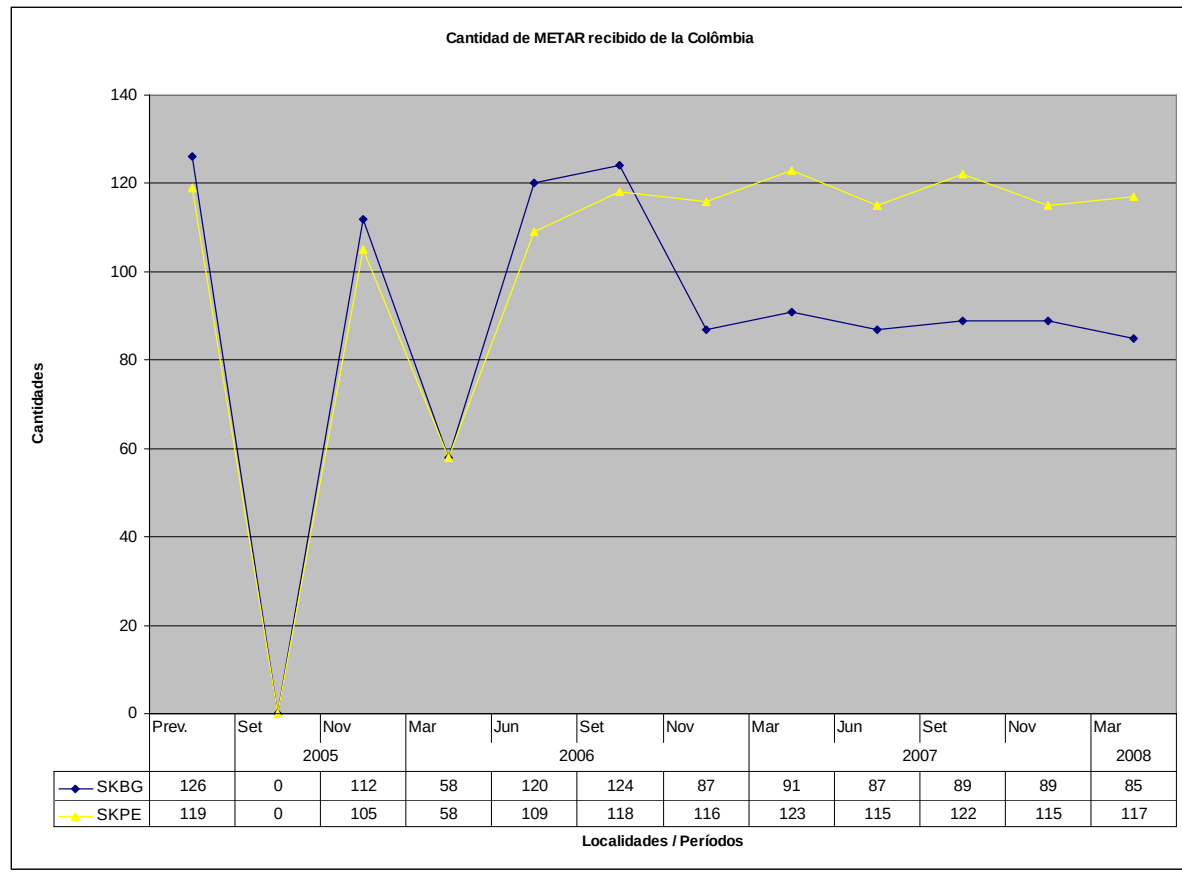
GRAPHICS OF THE COMPARATIVE STUDY OF METAR AVAILABILITY

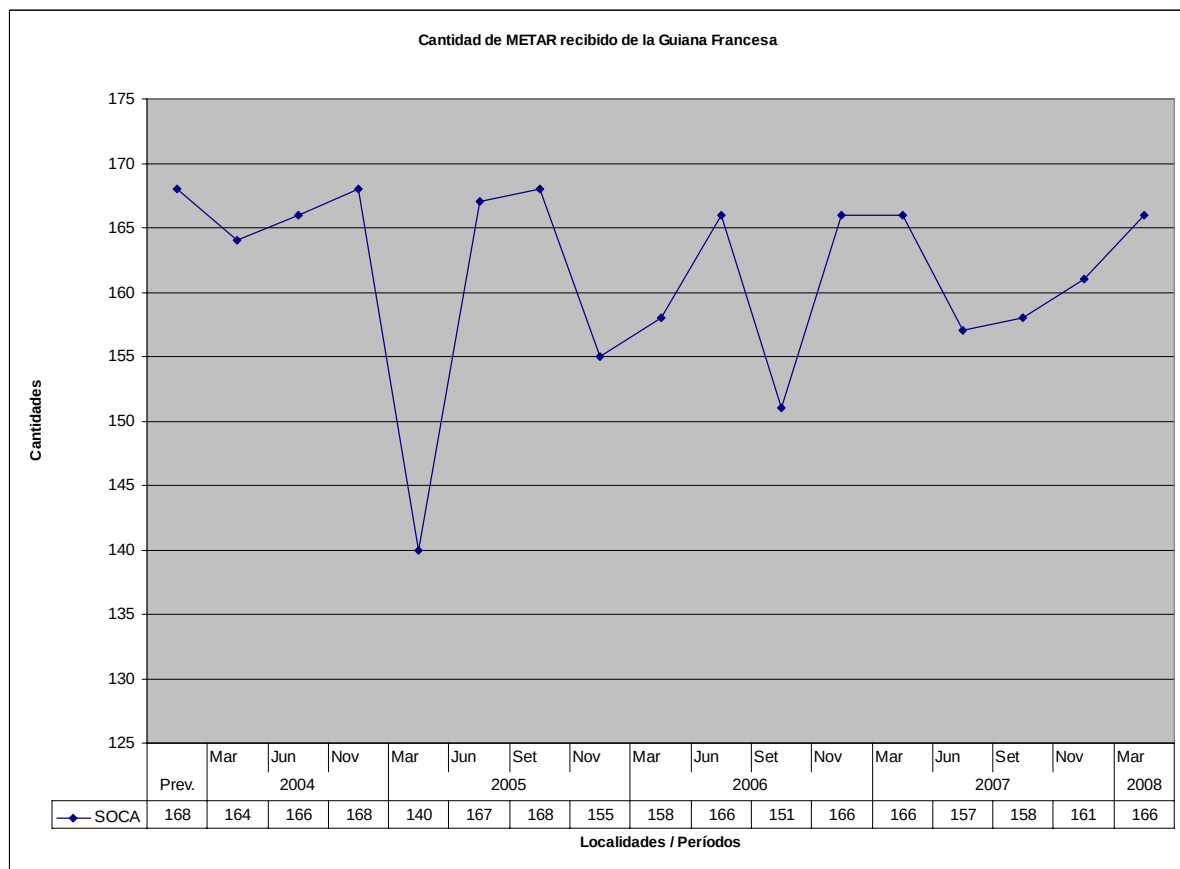
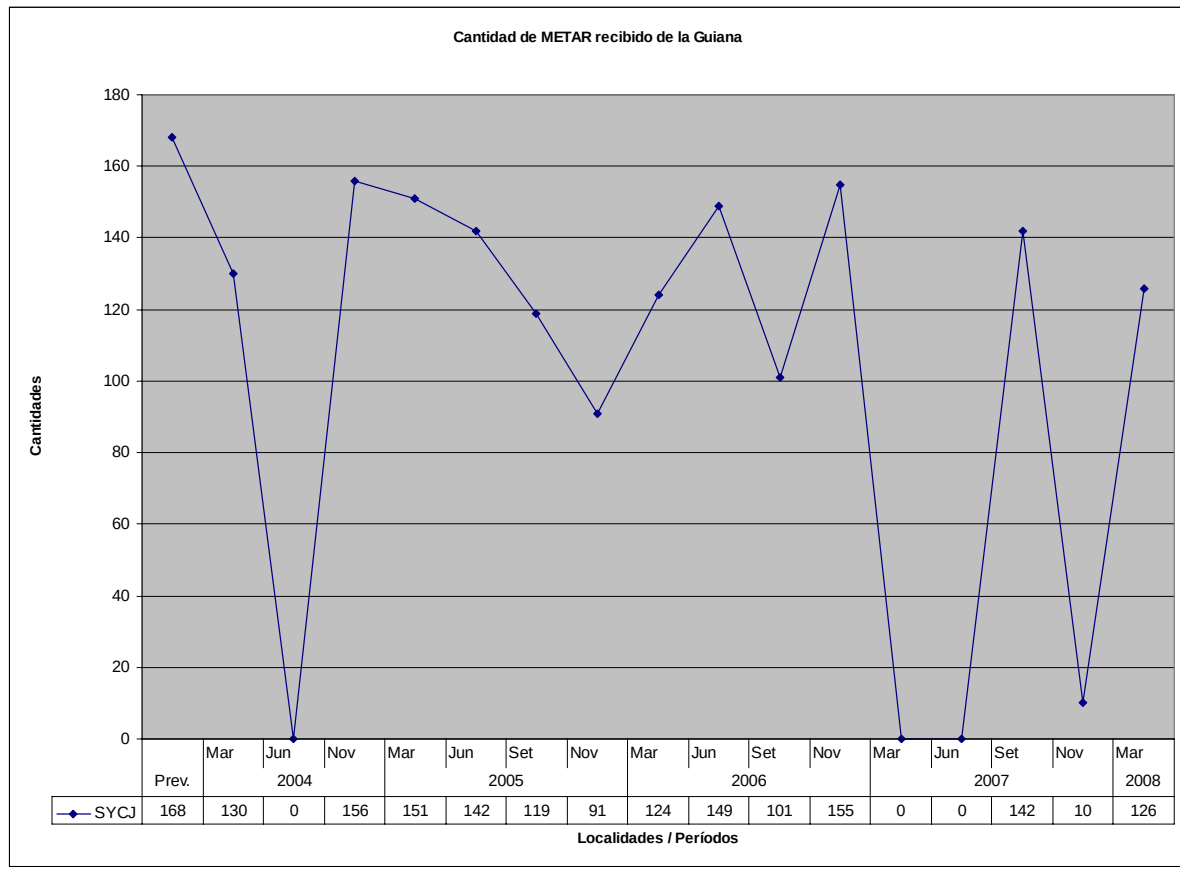


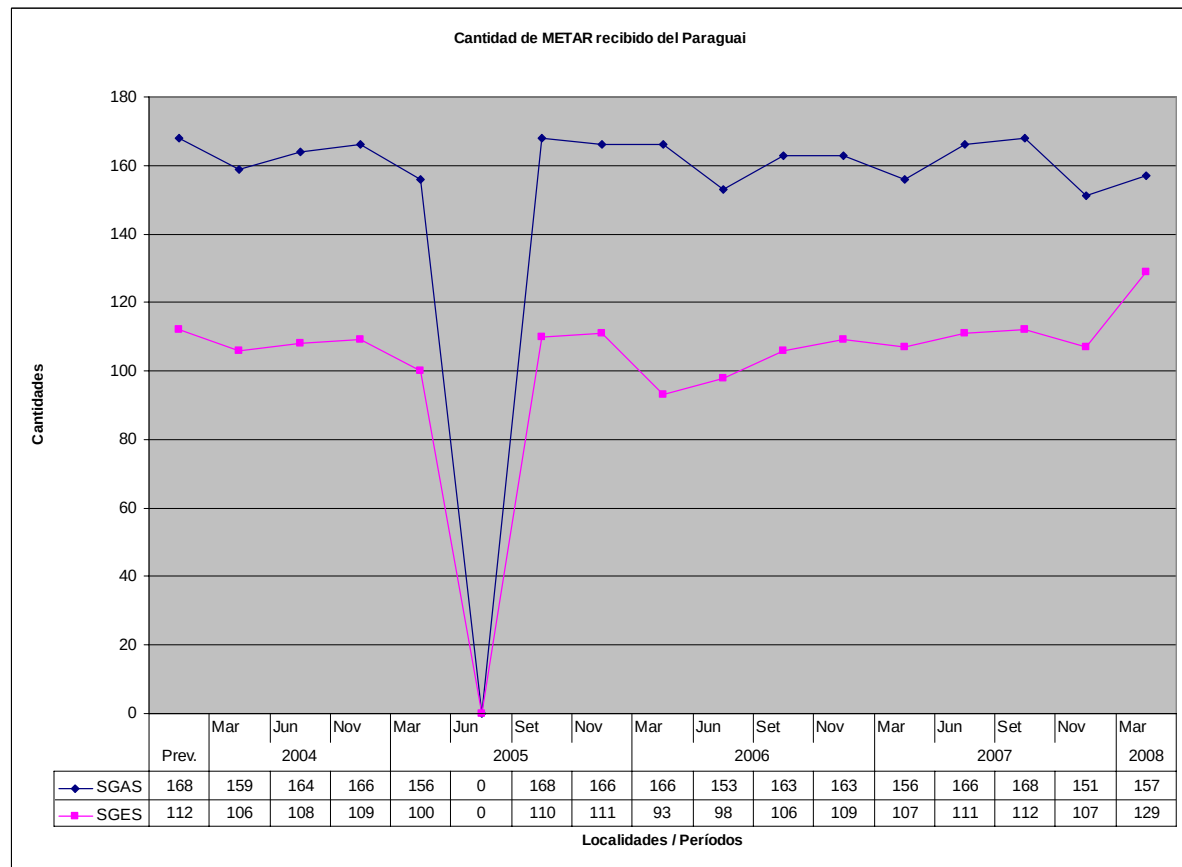
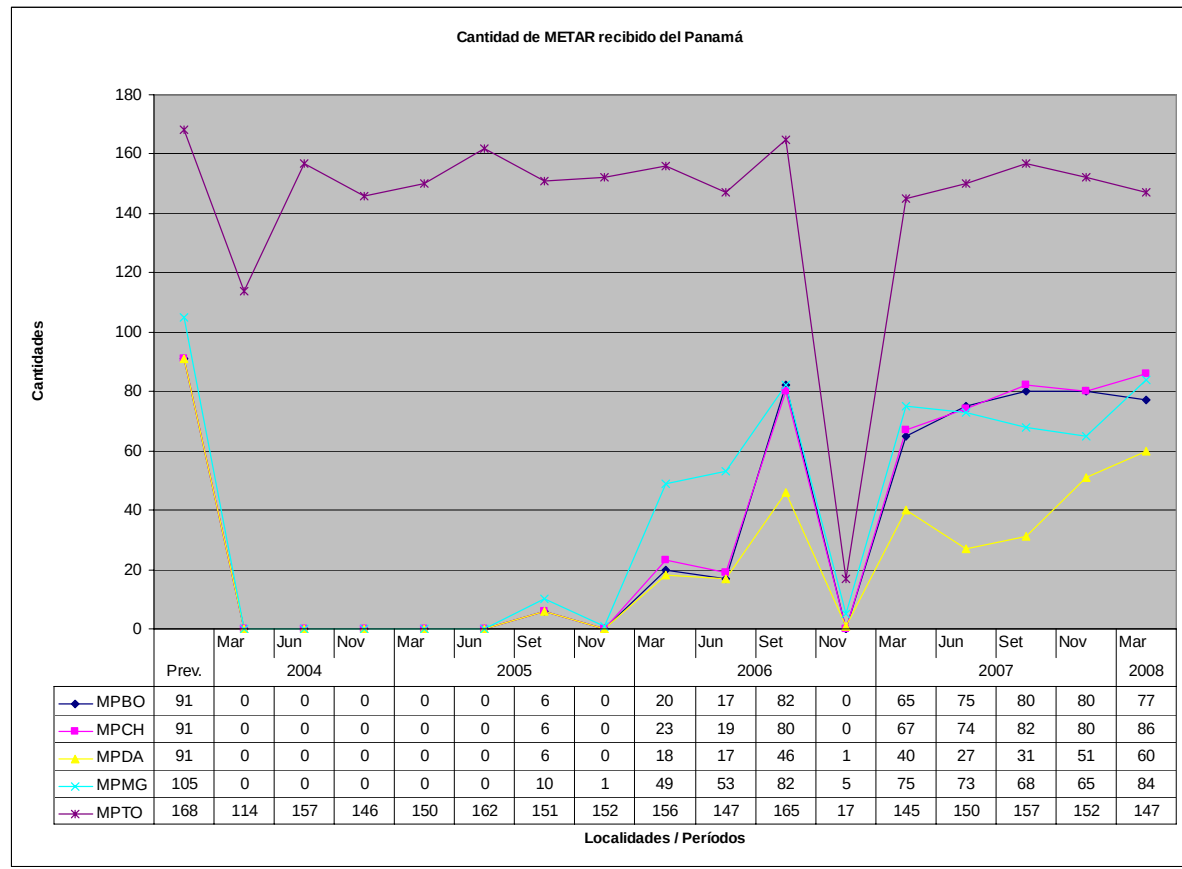


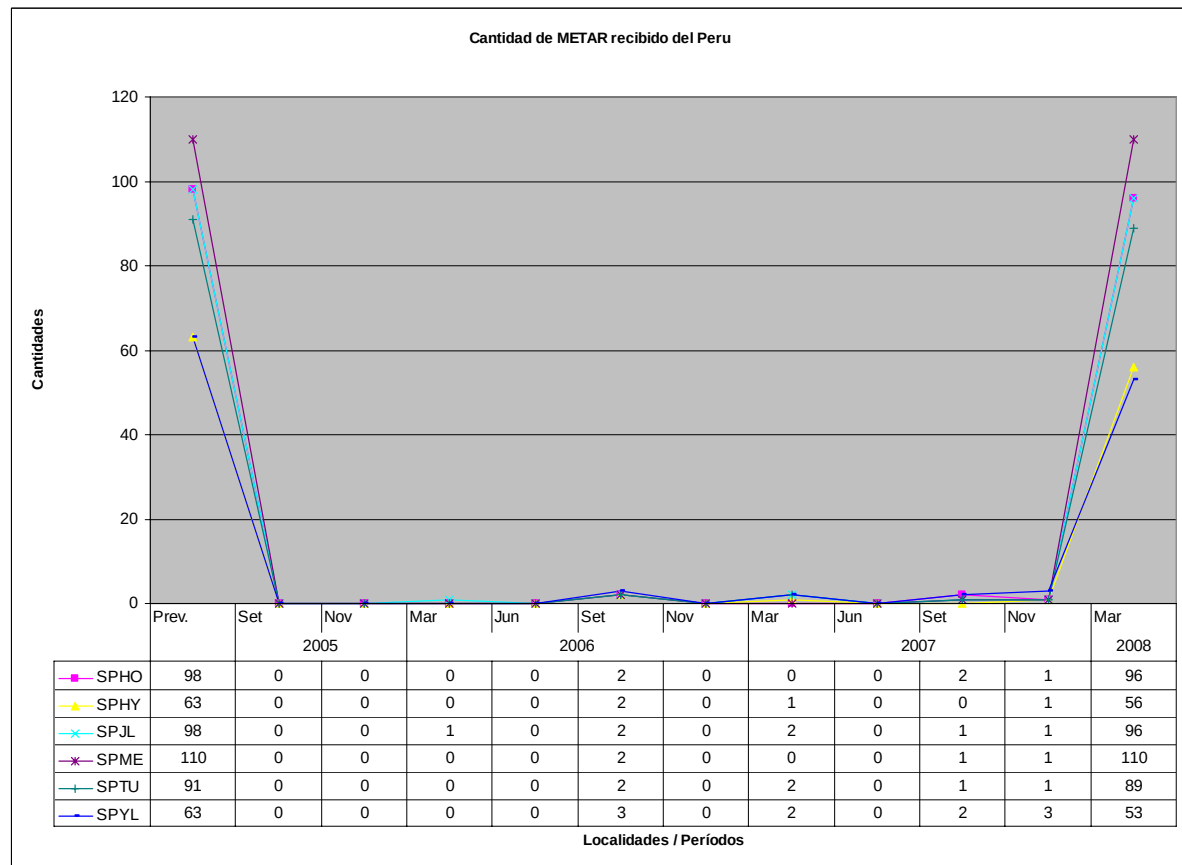
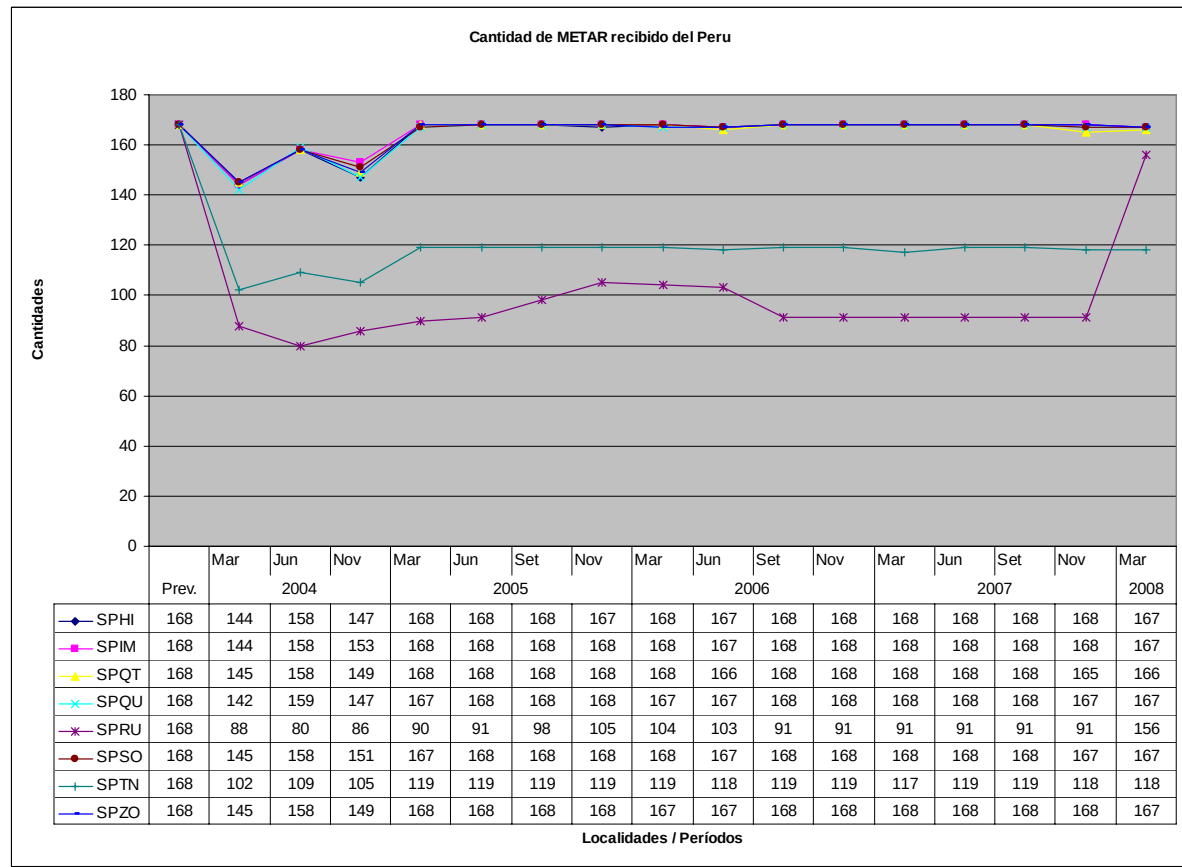


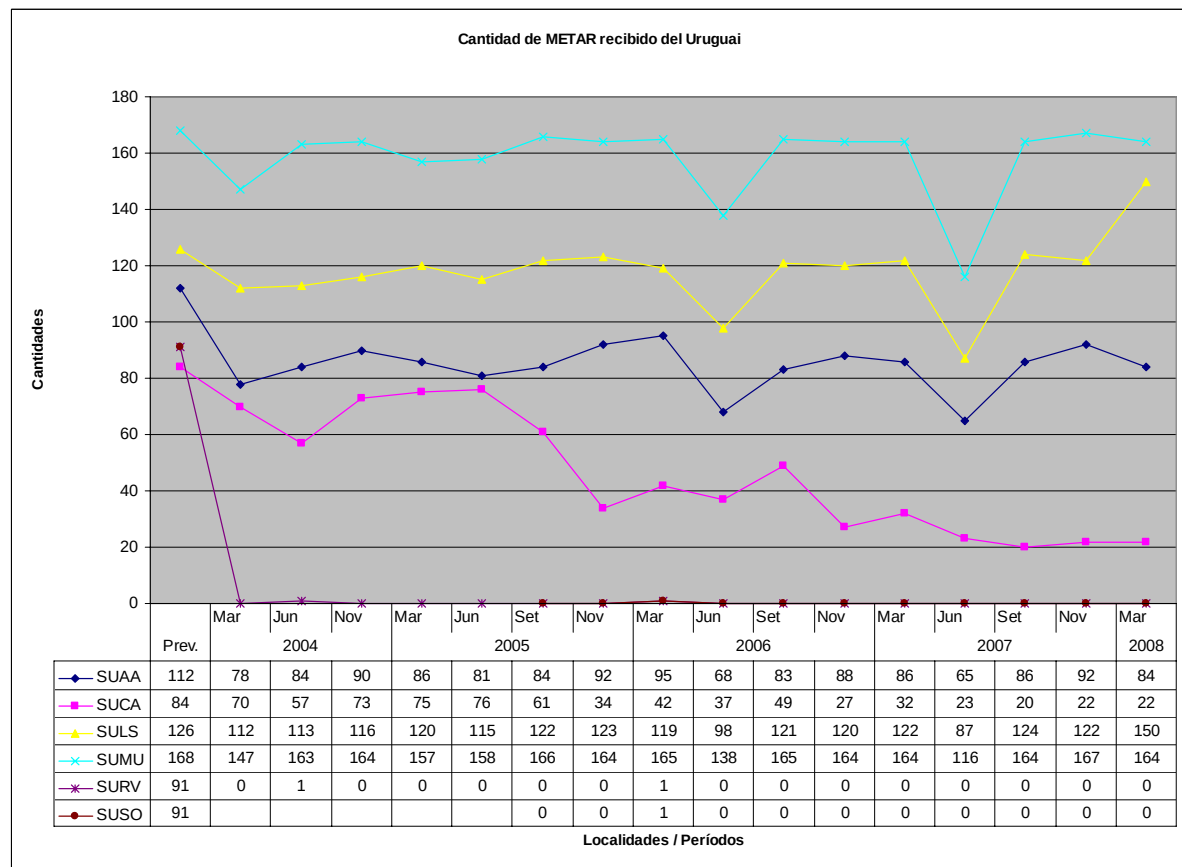
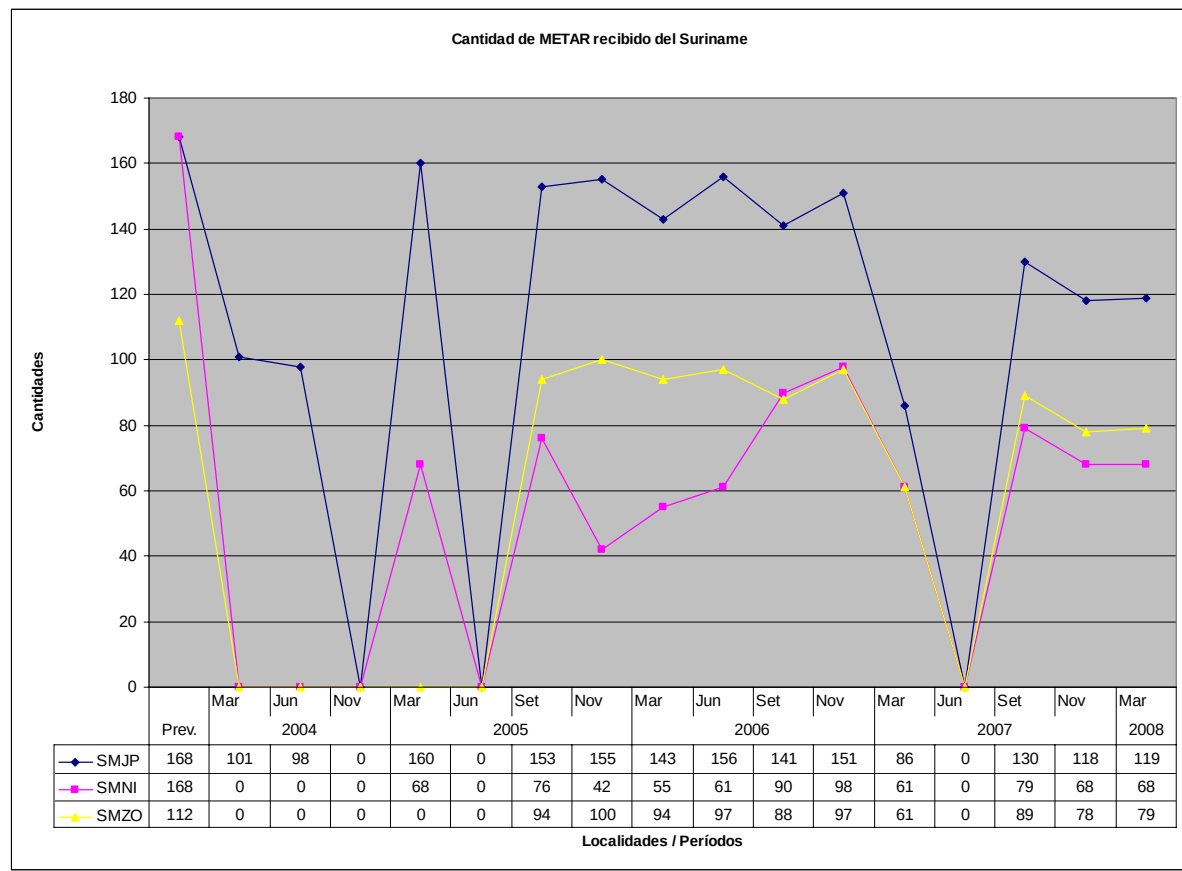


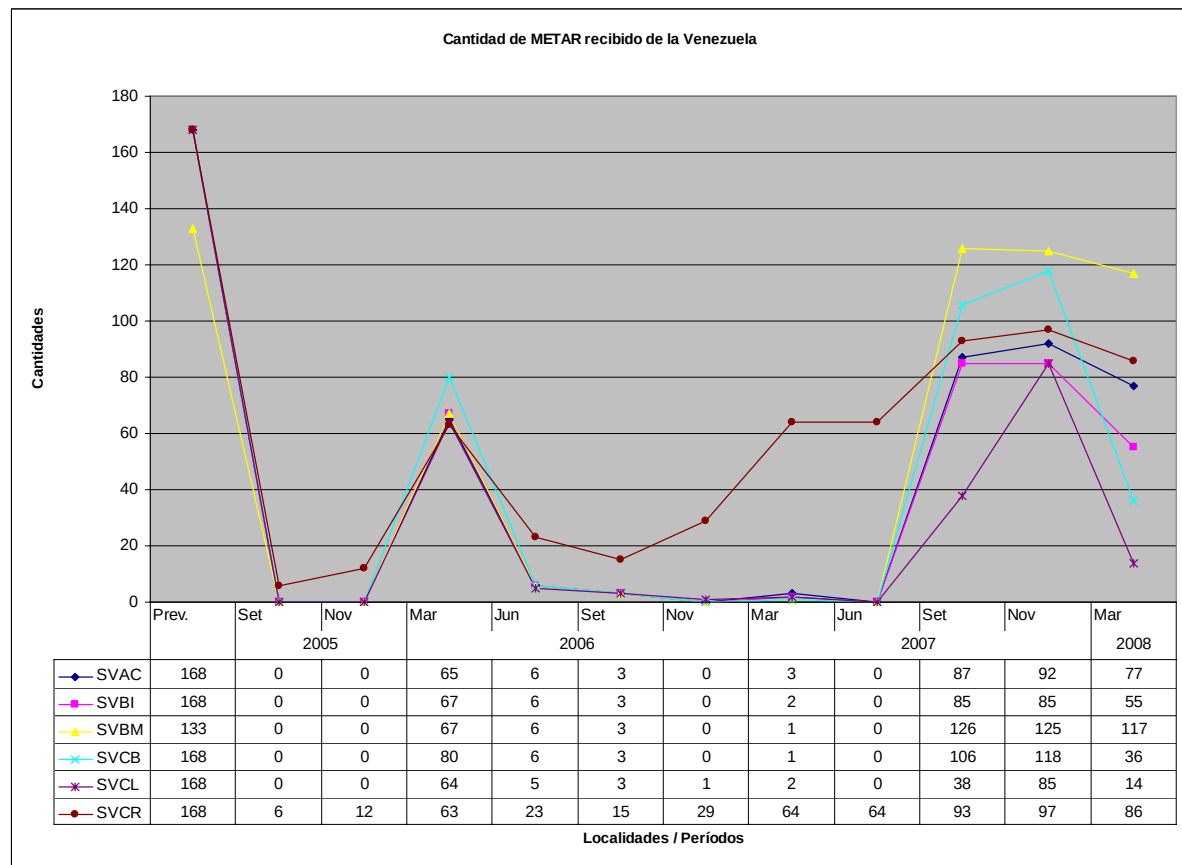
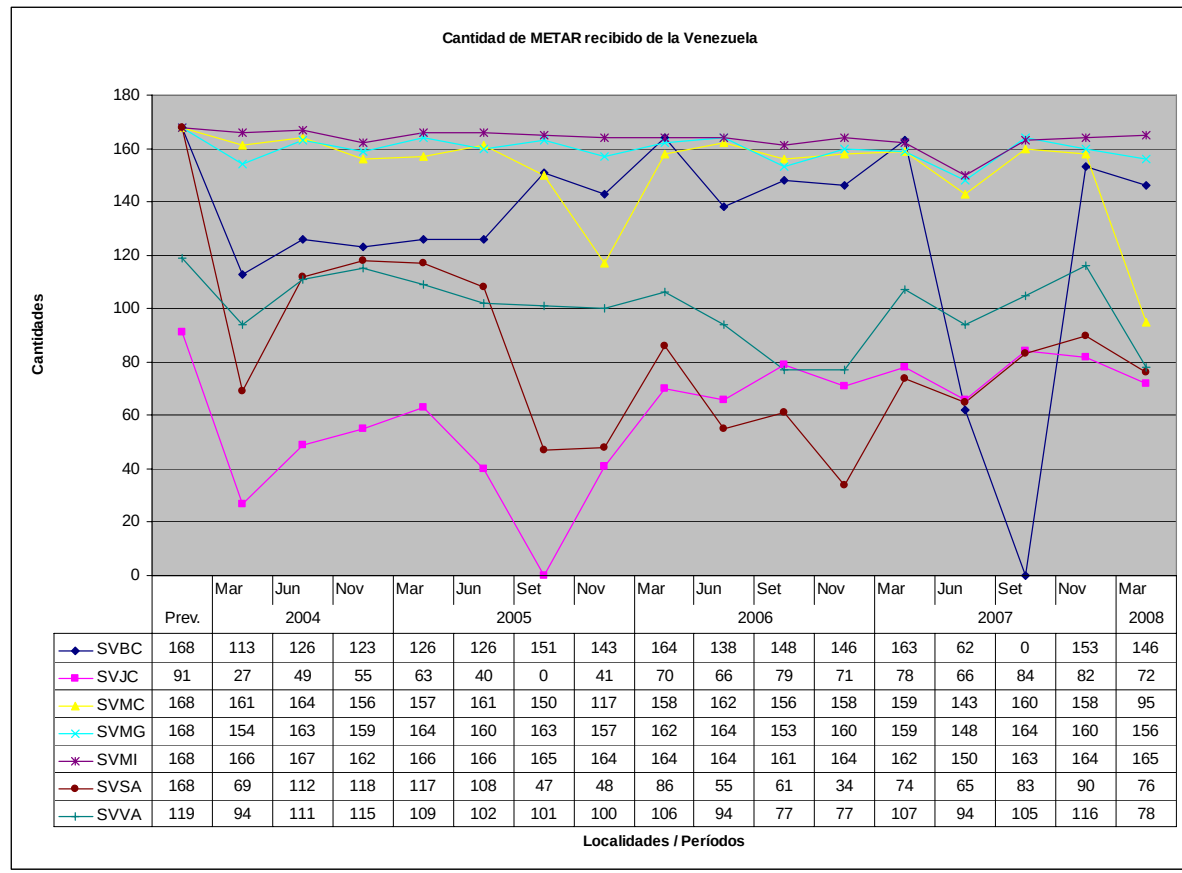


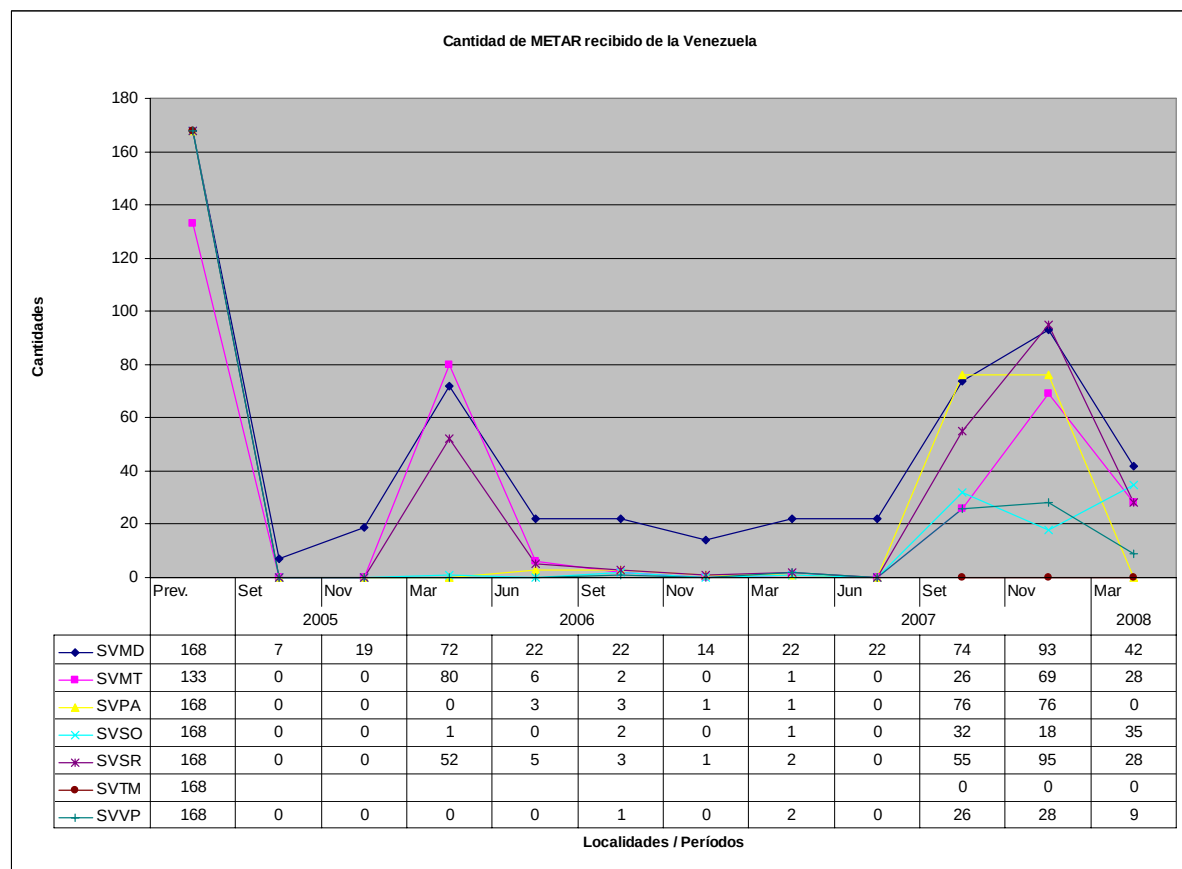
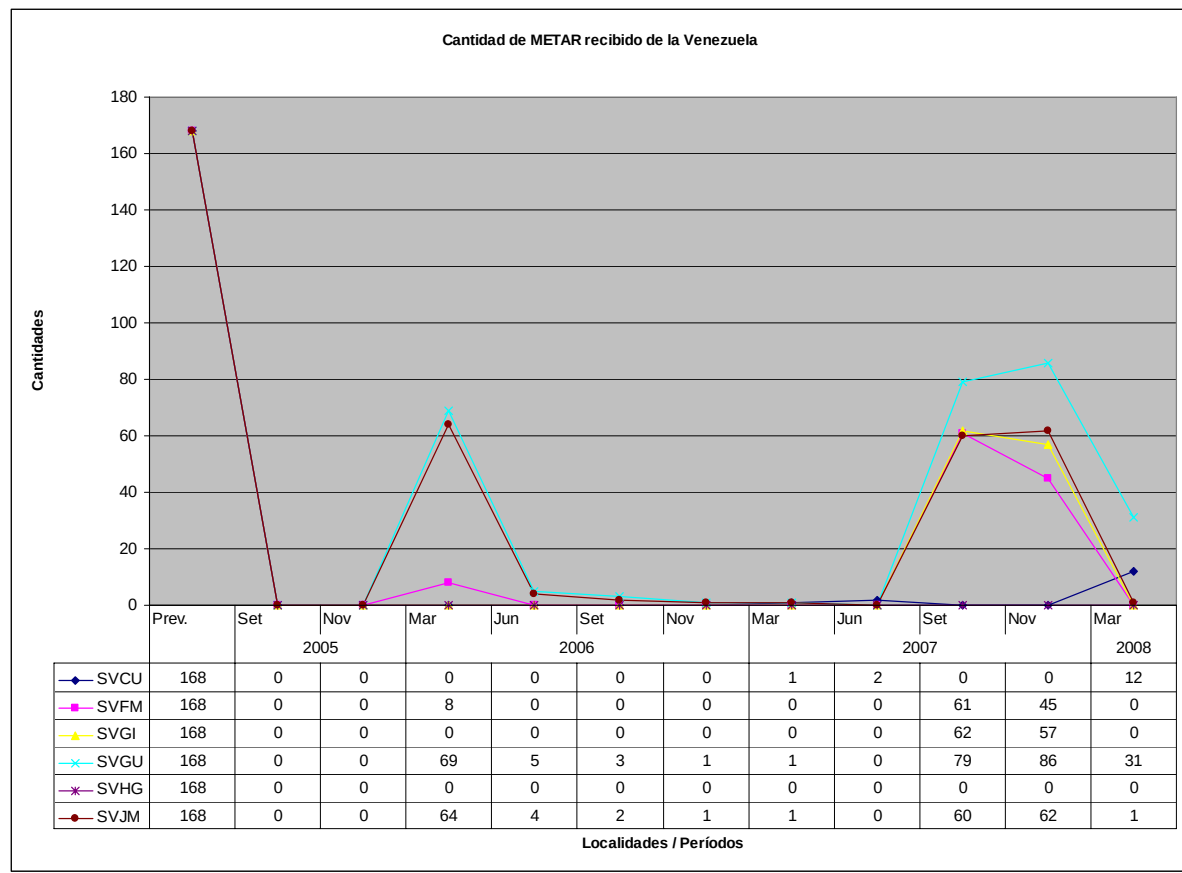


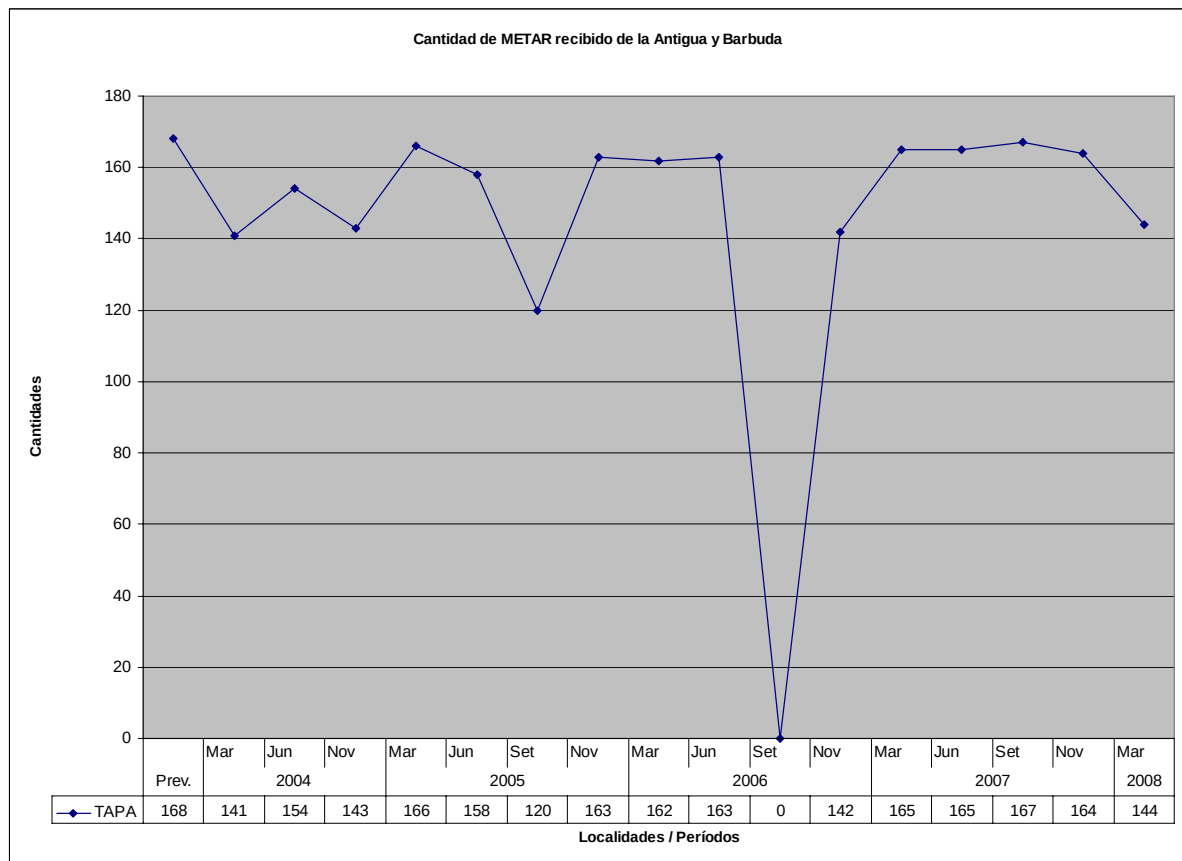
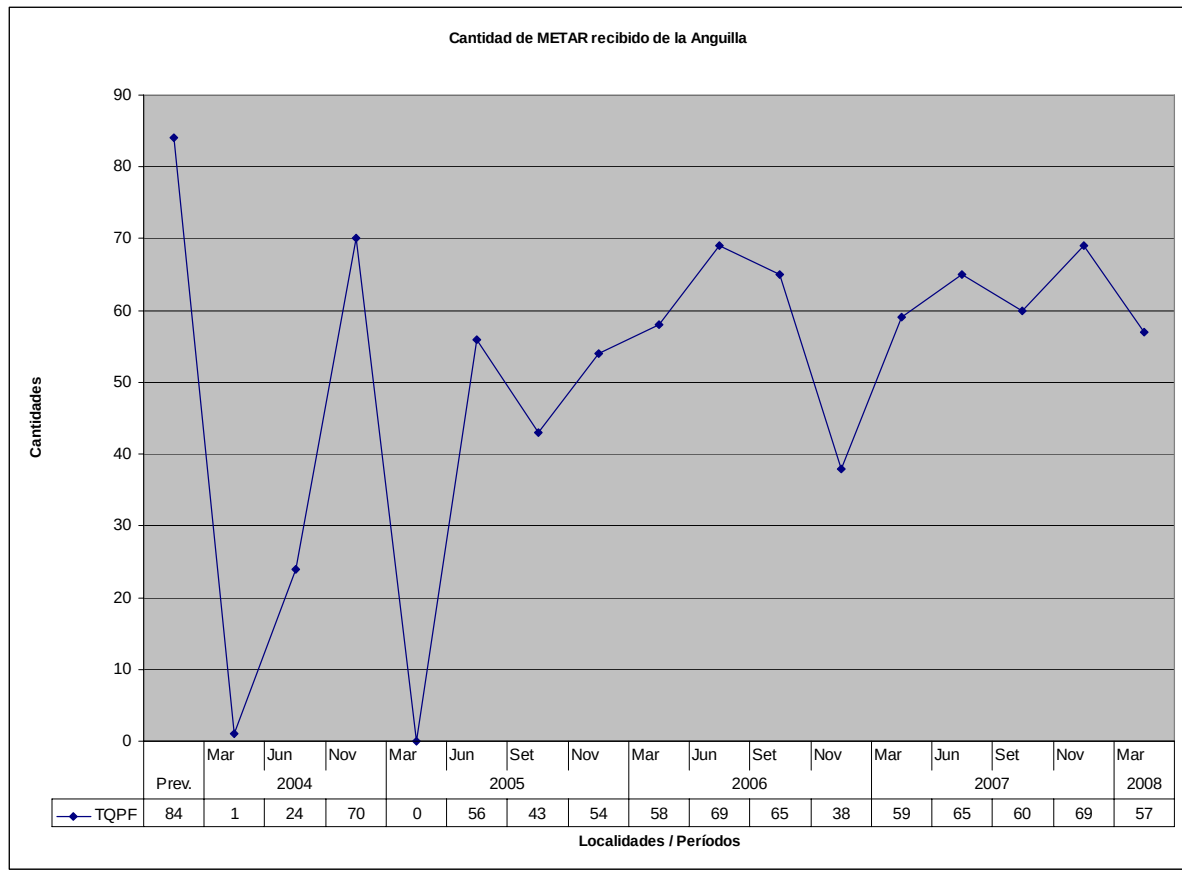


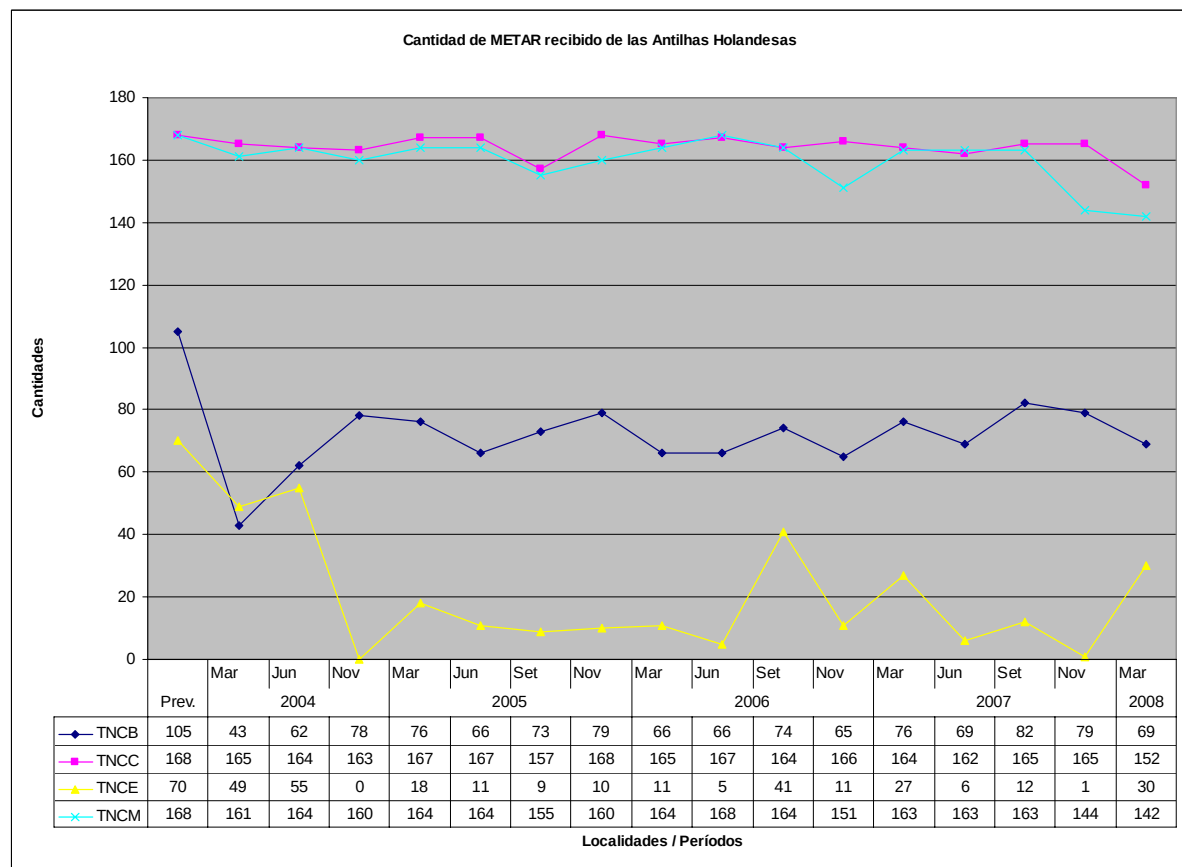
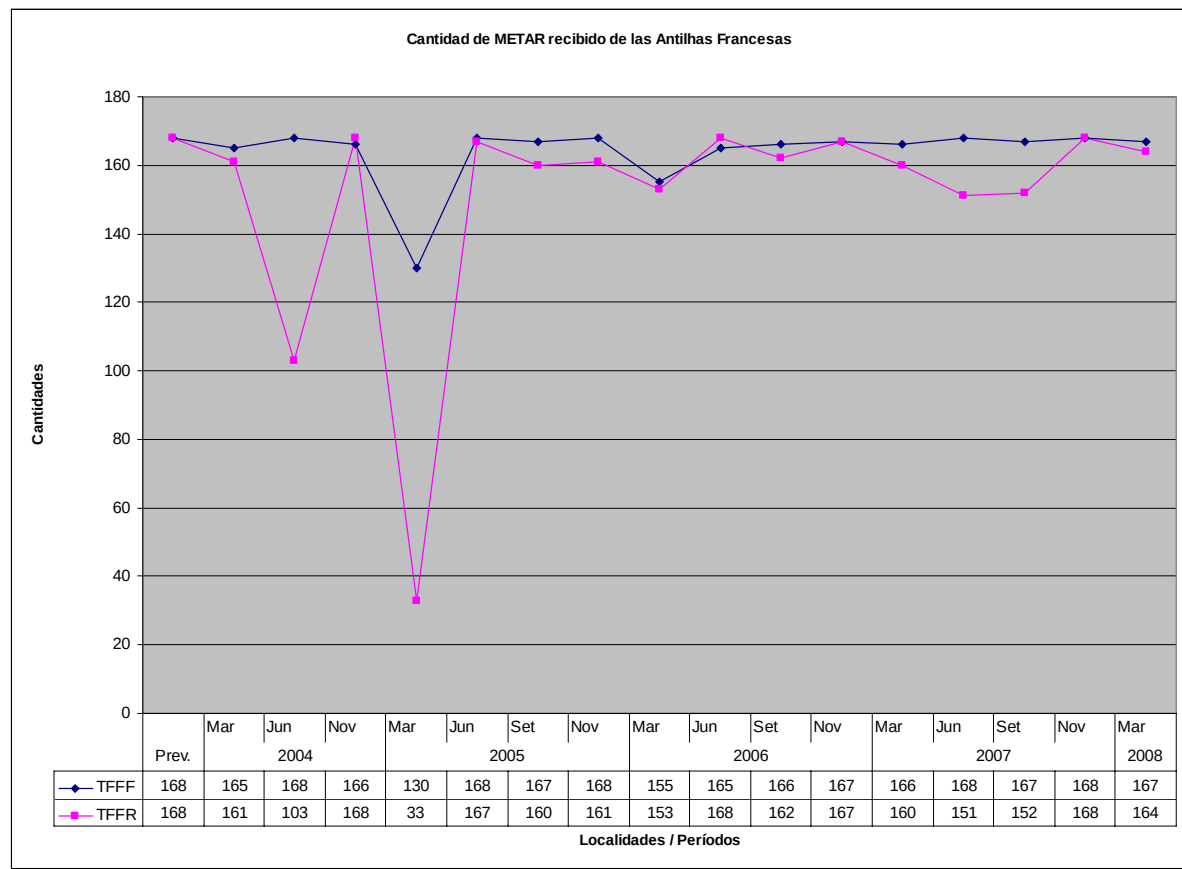


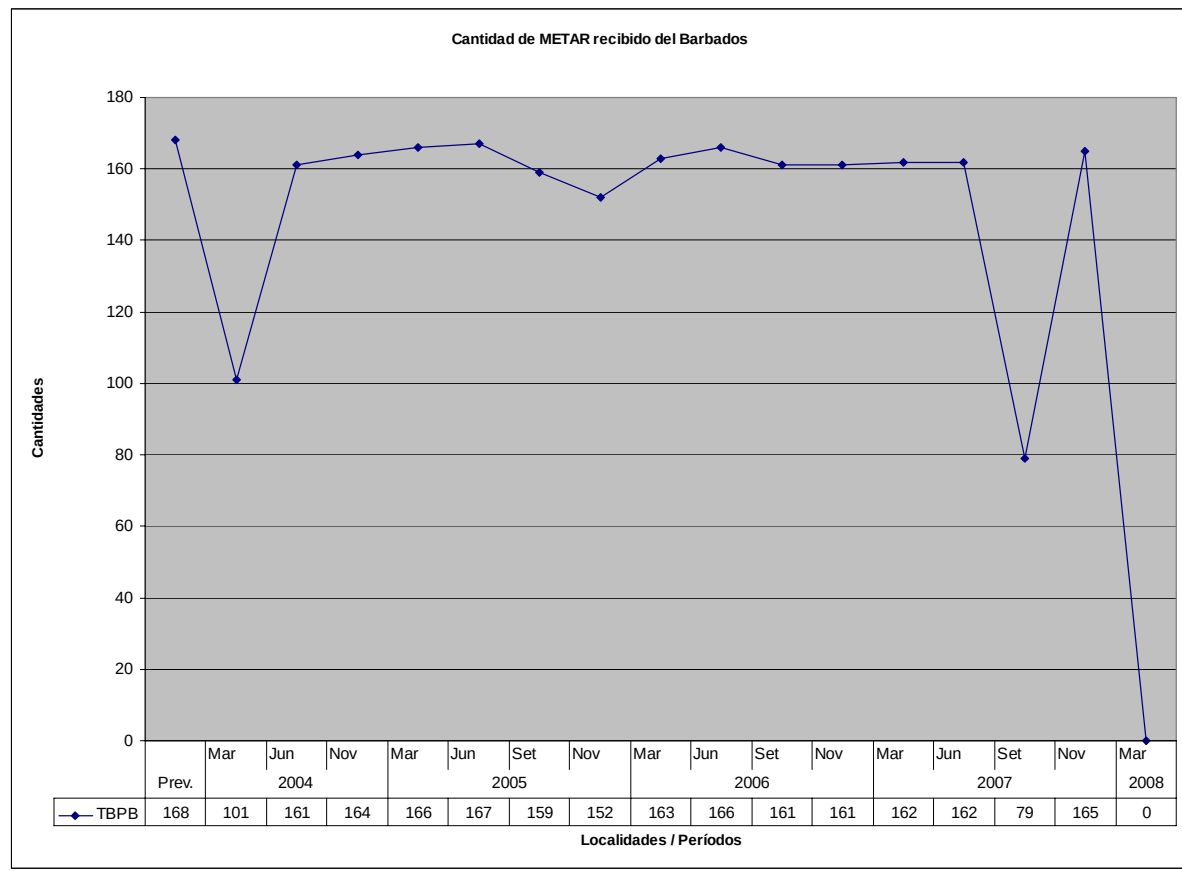
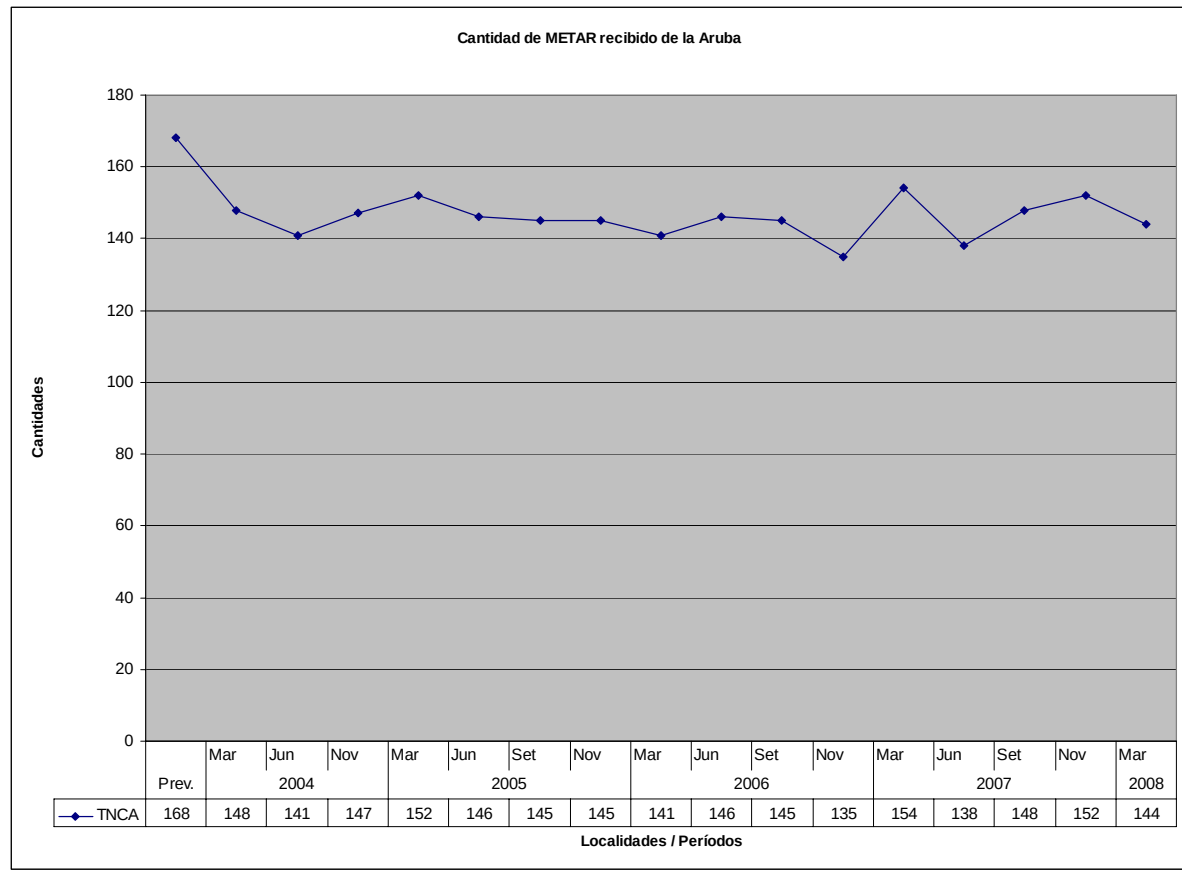


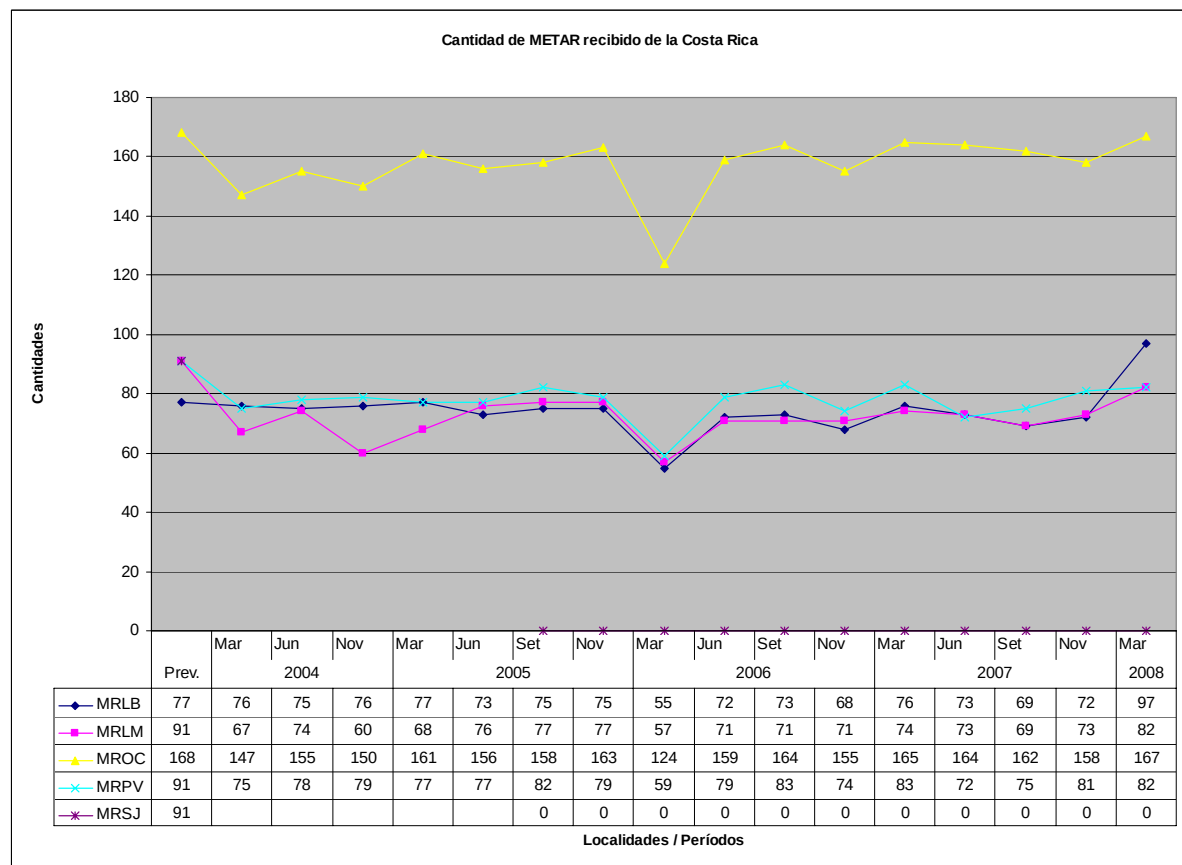
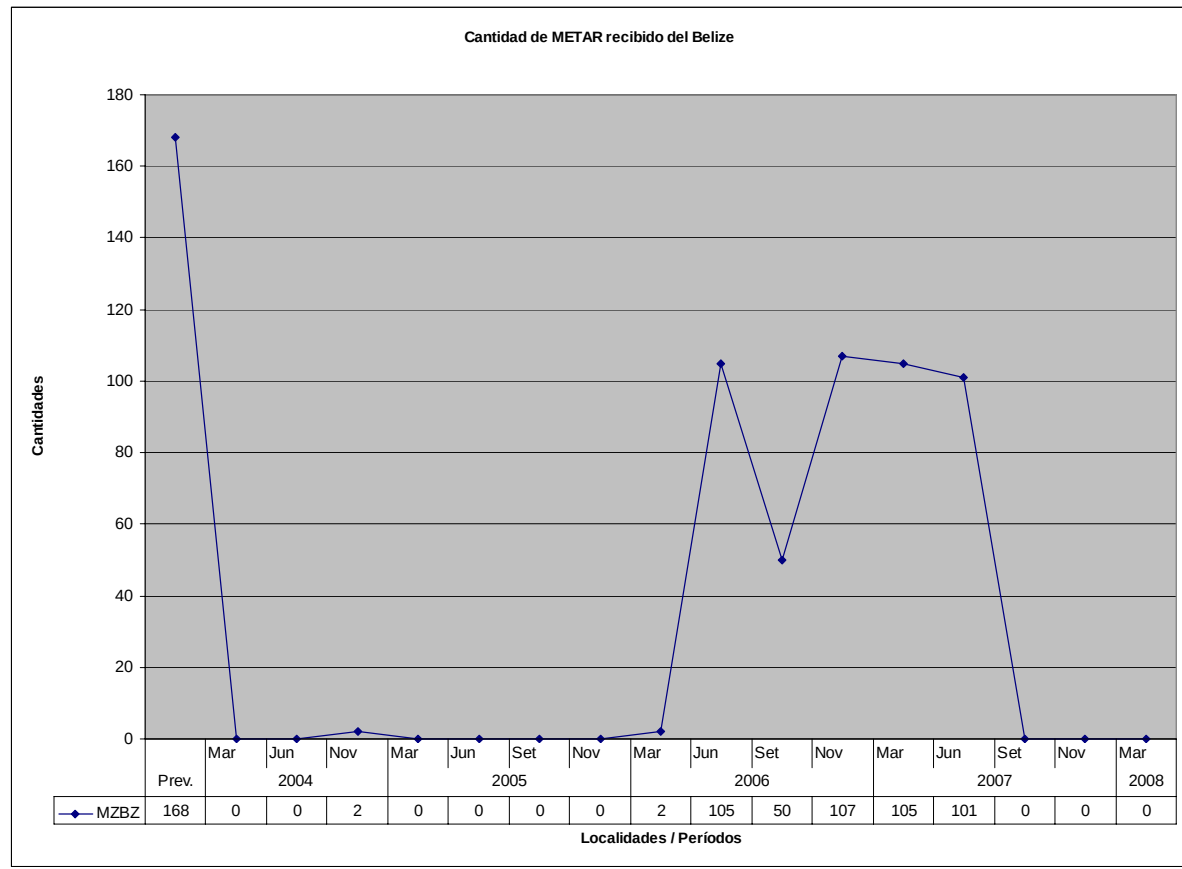


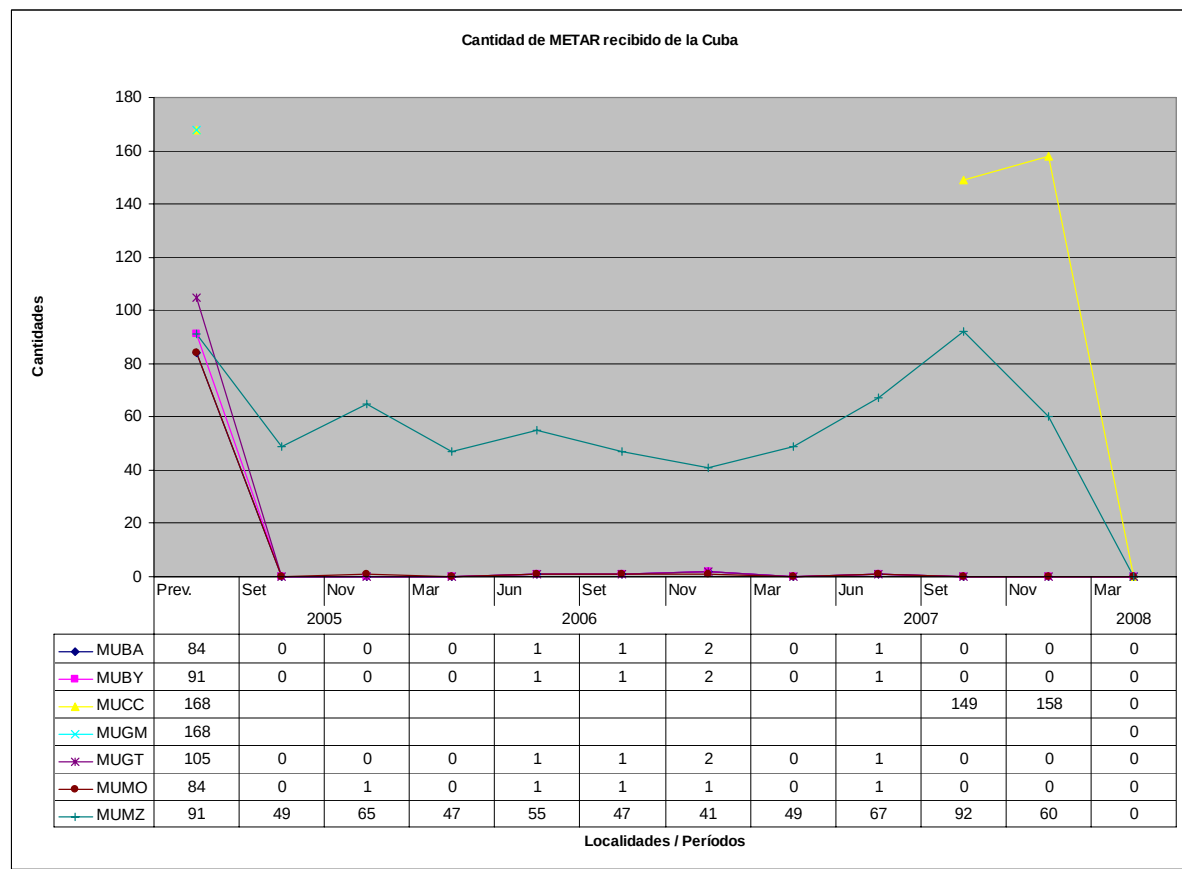
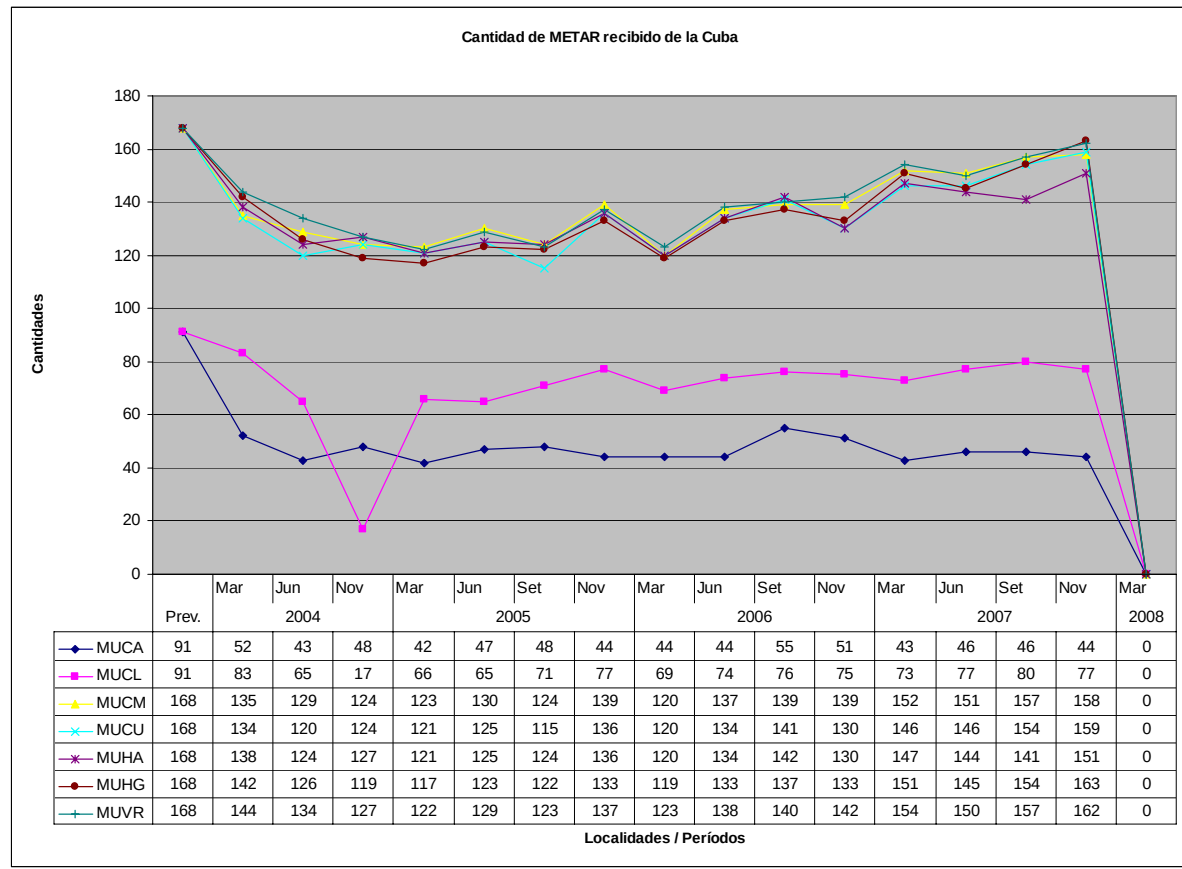


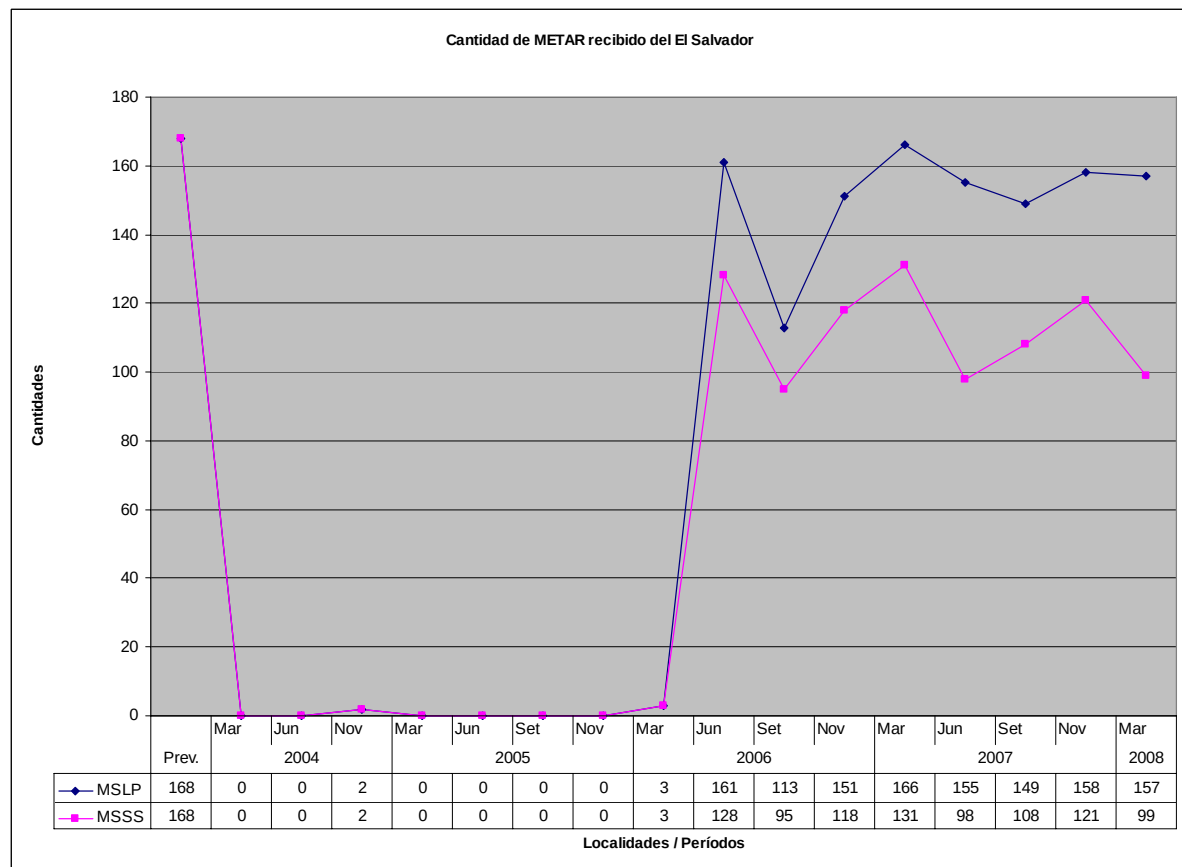
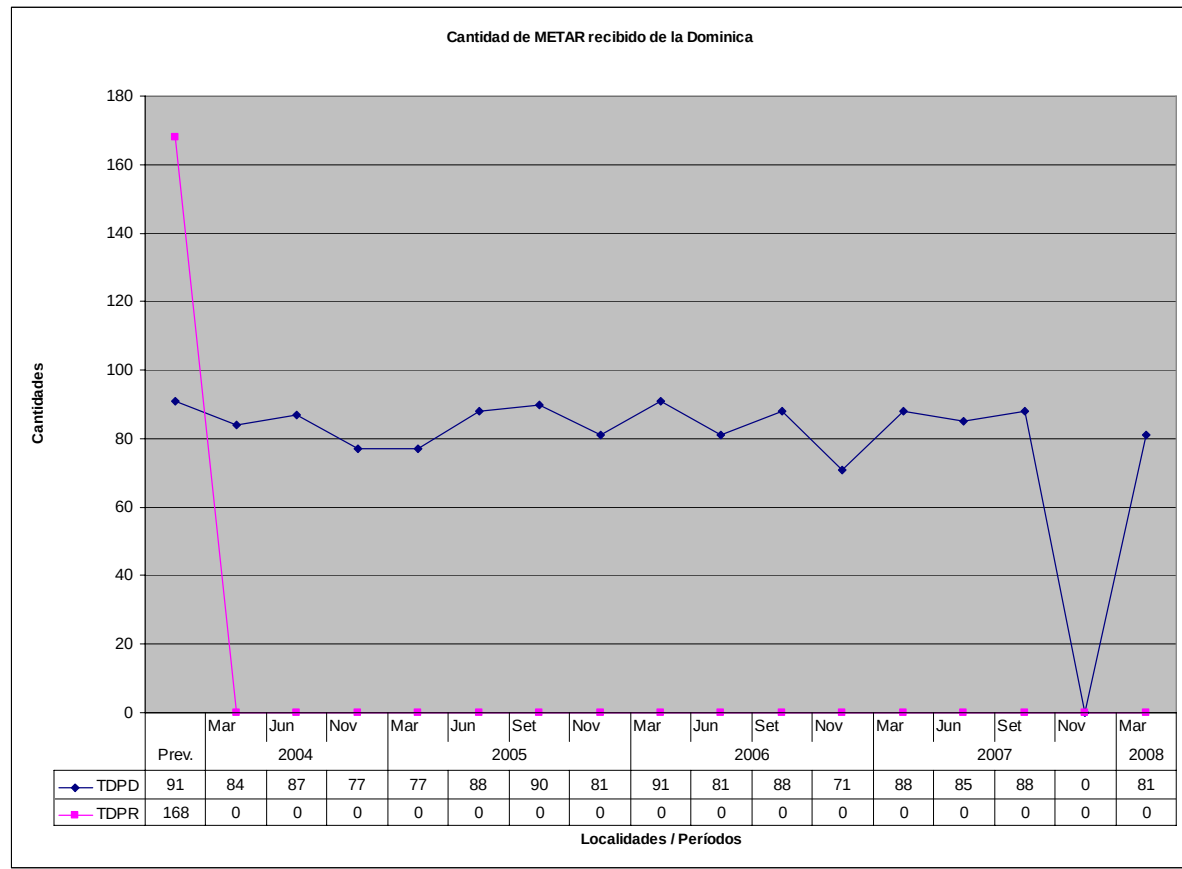


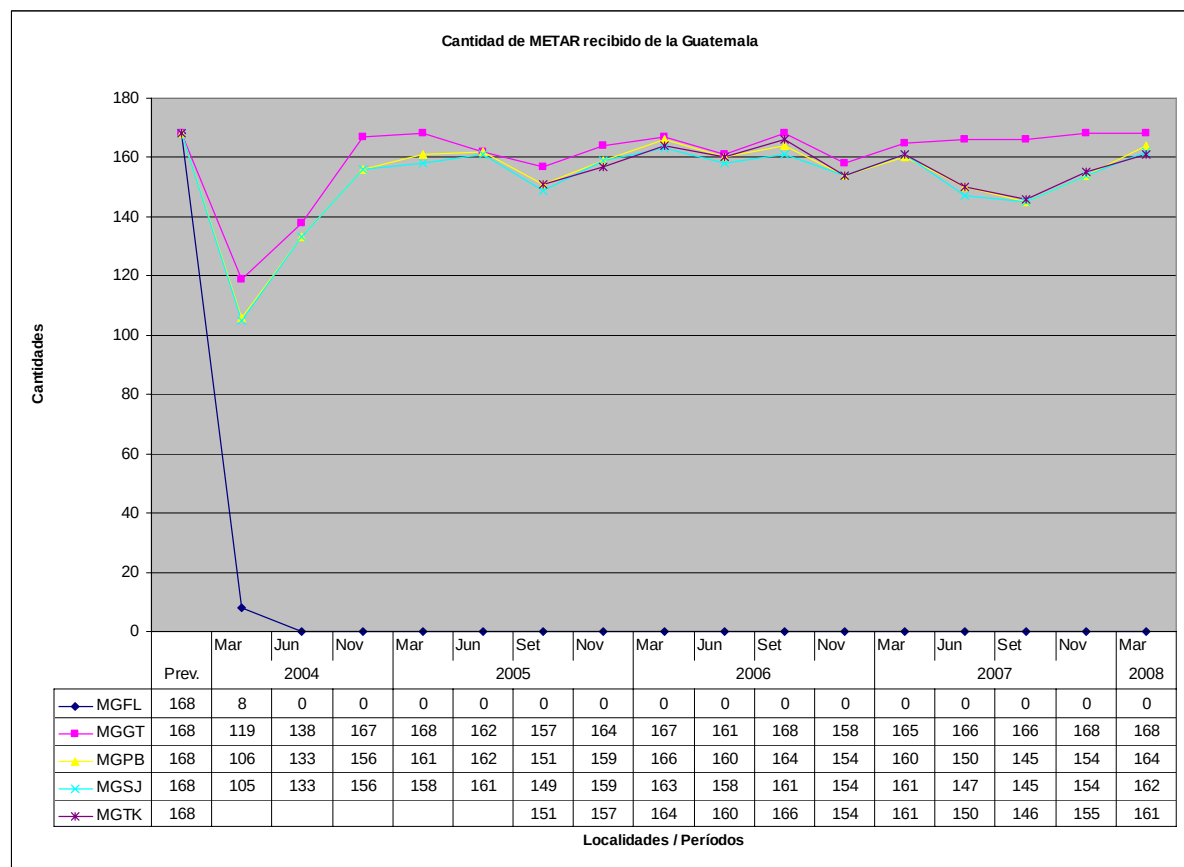
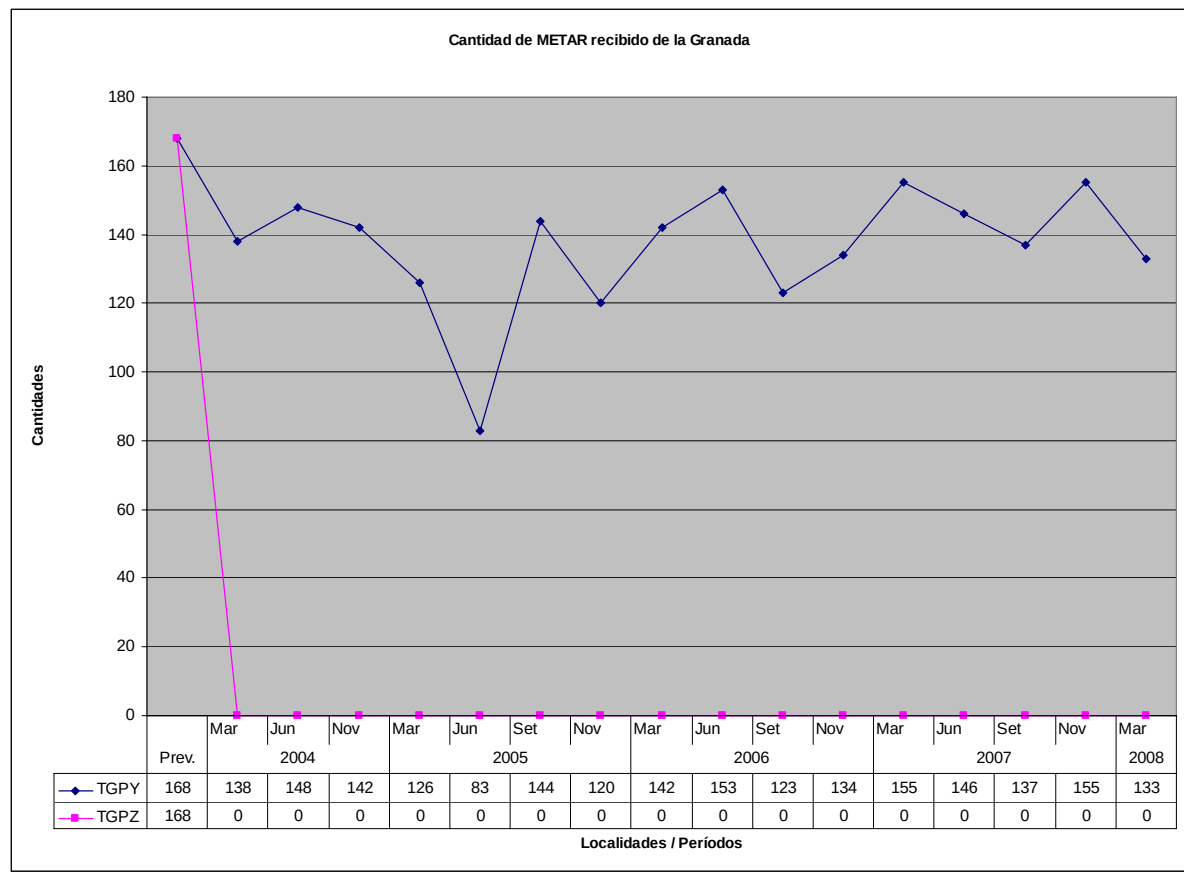


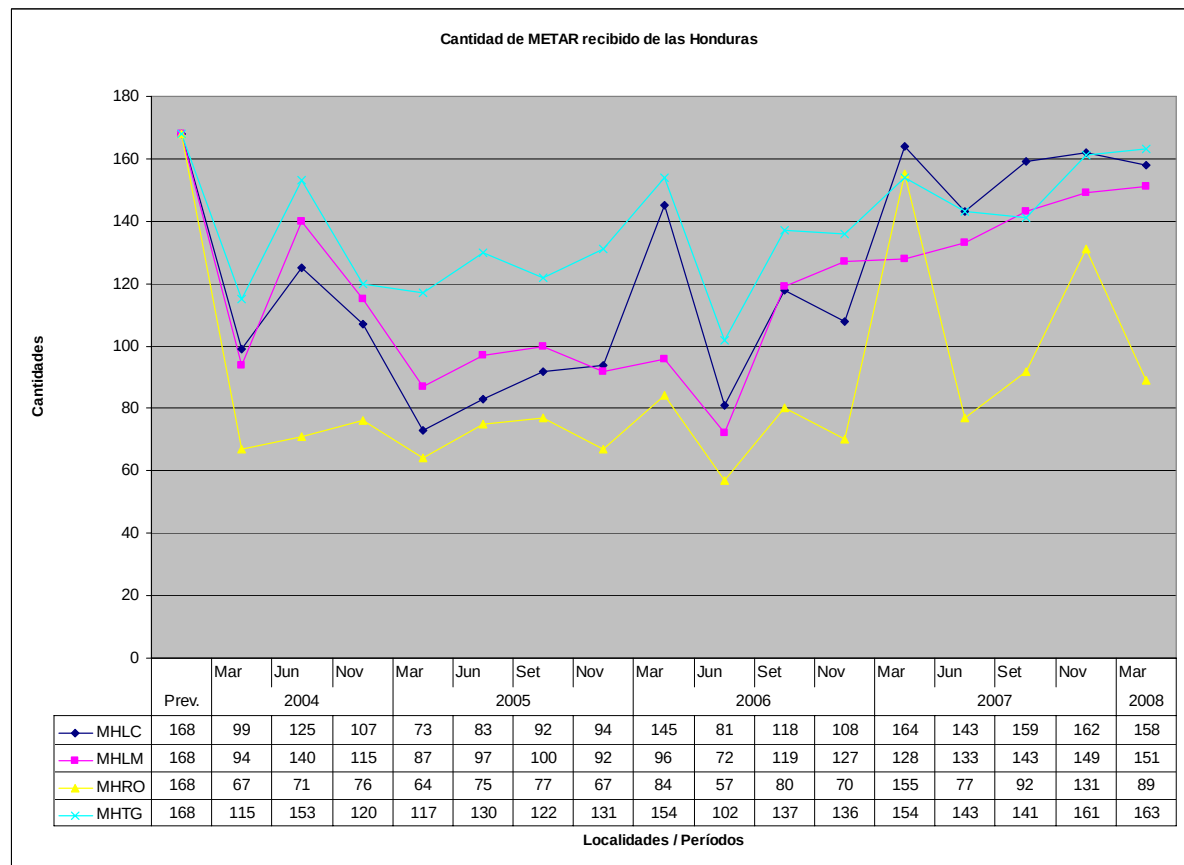
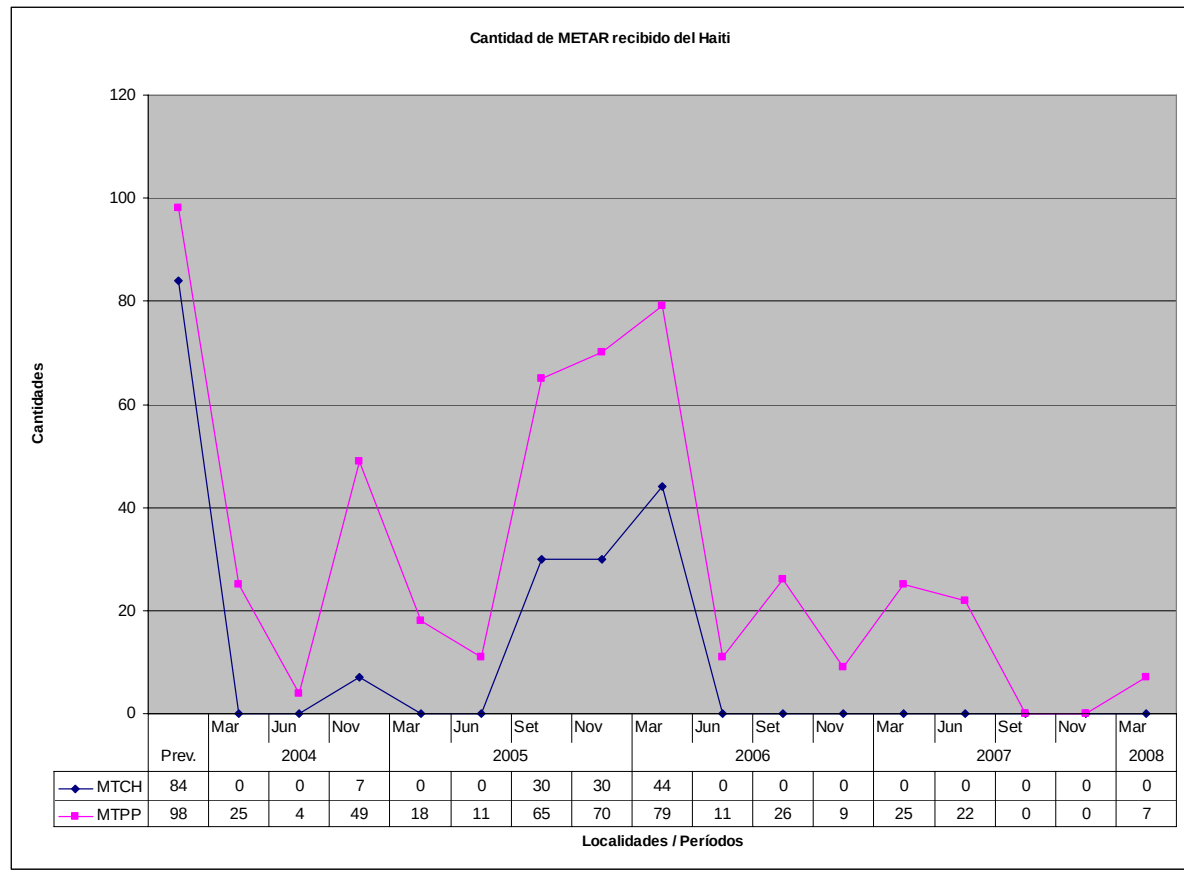


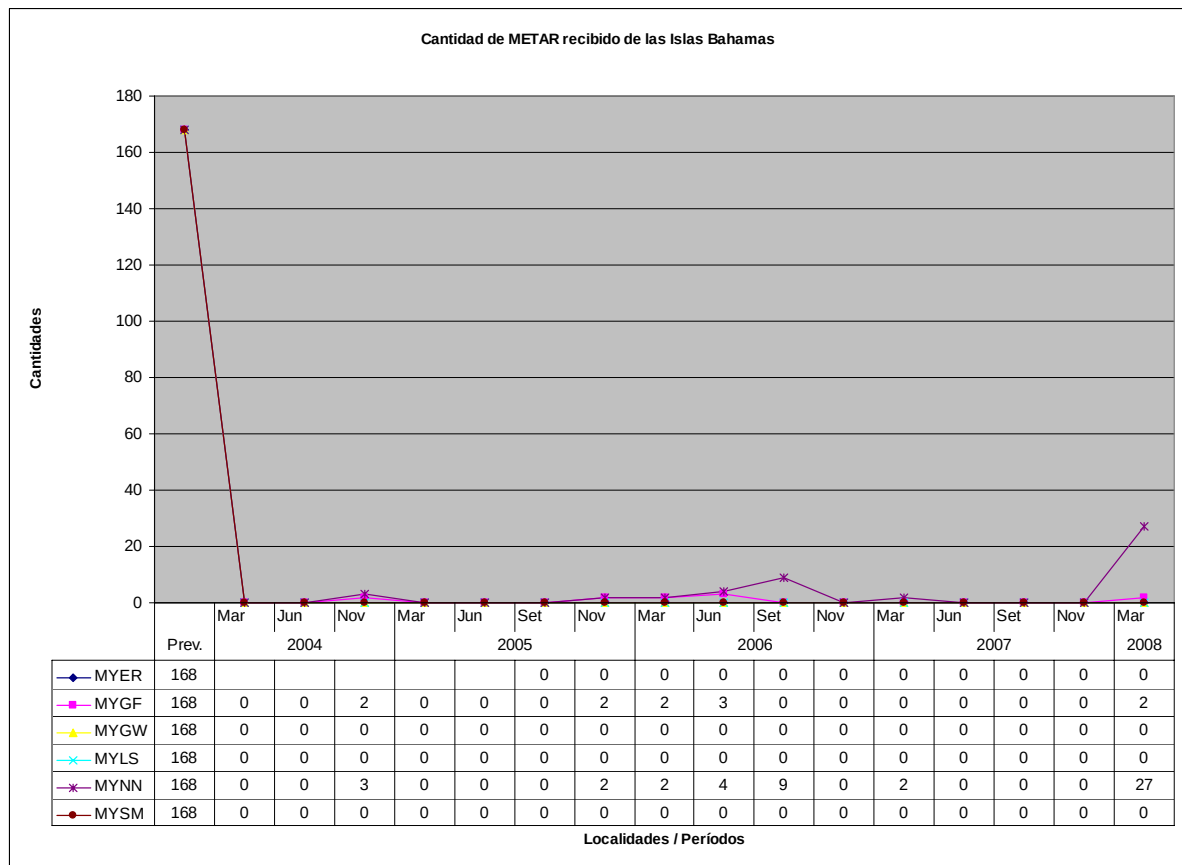
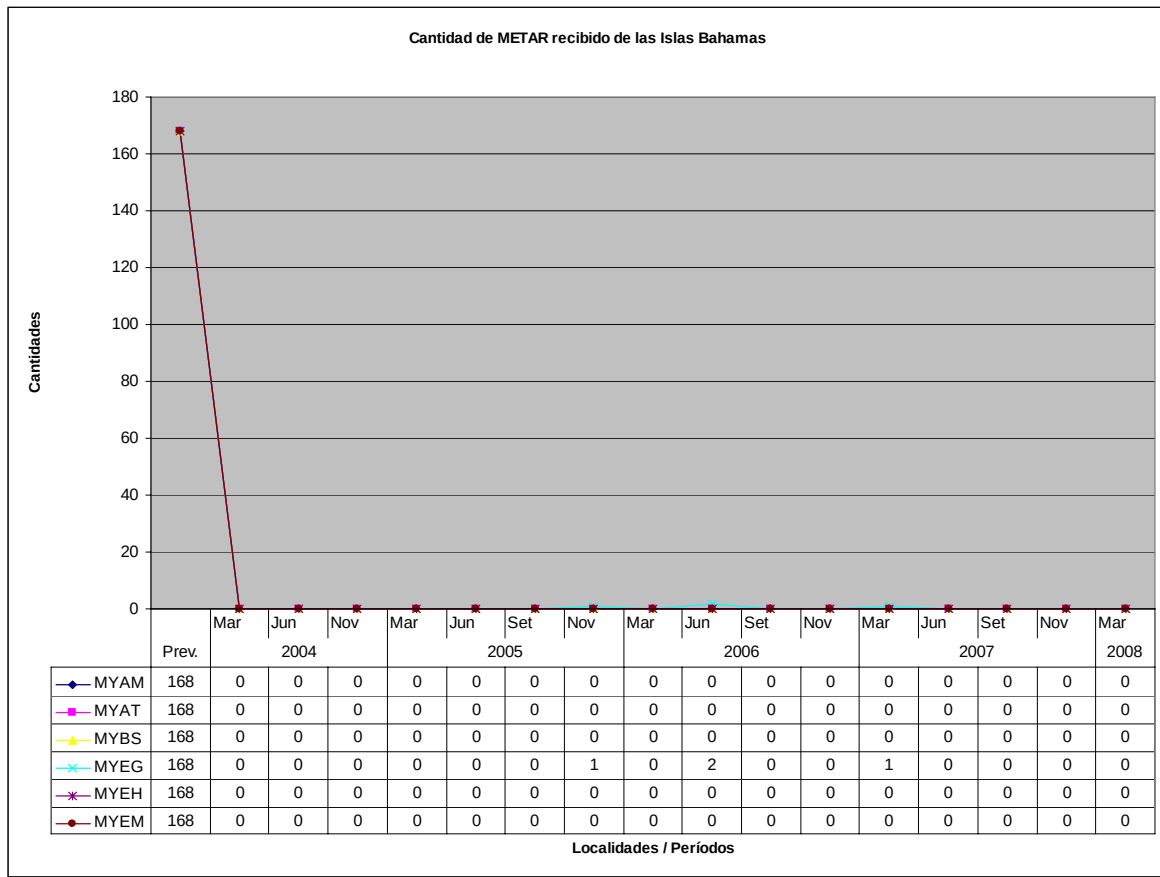


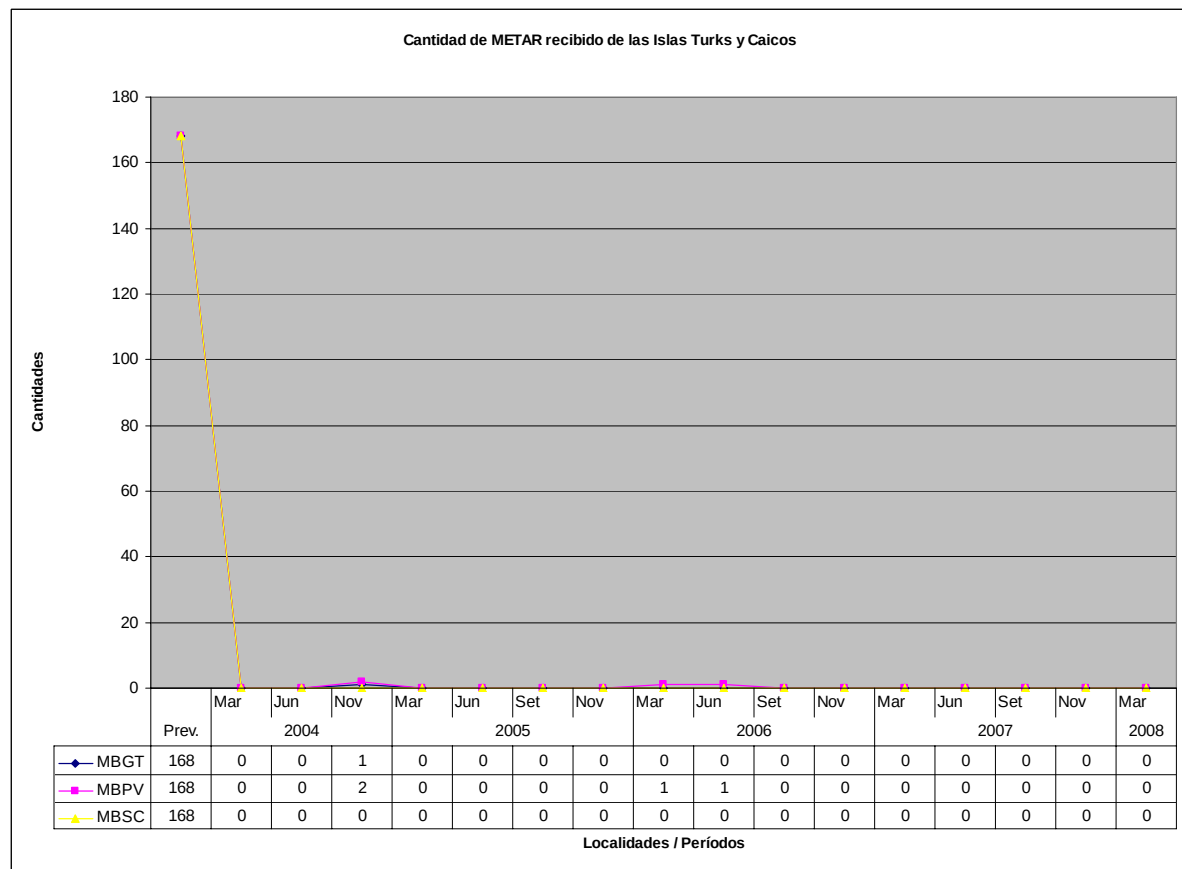
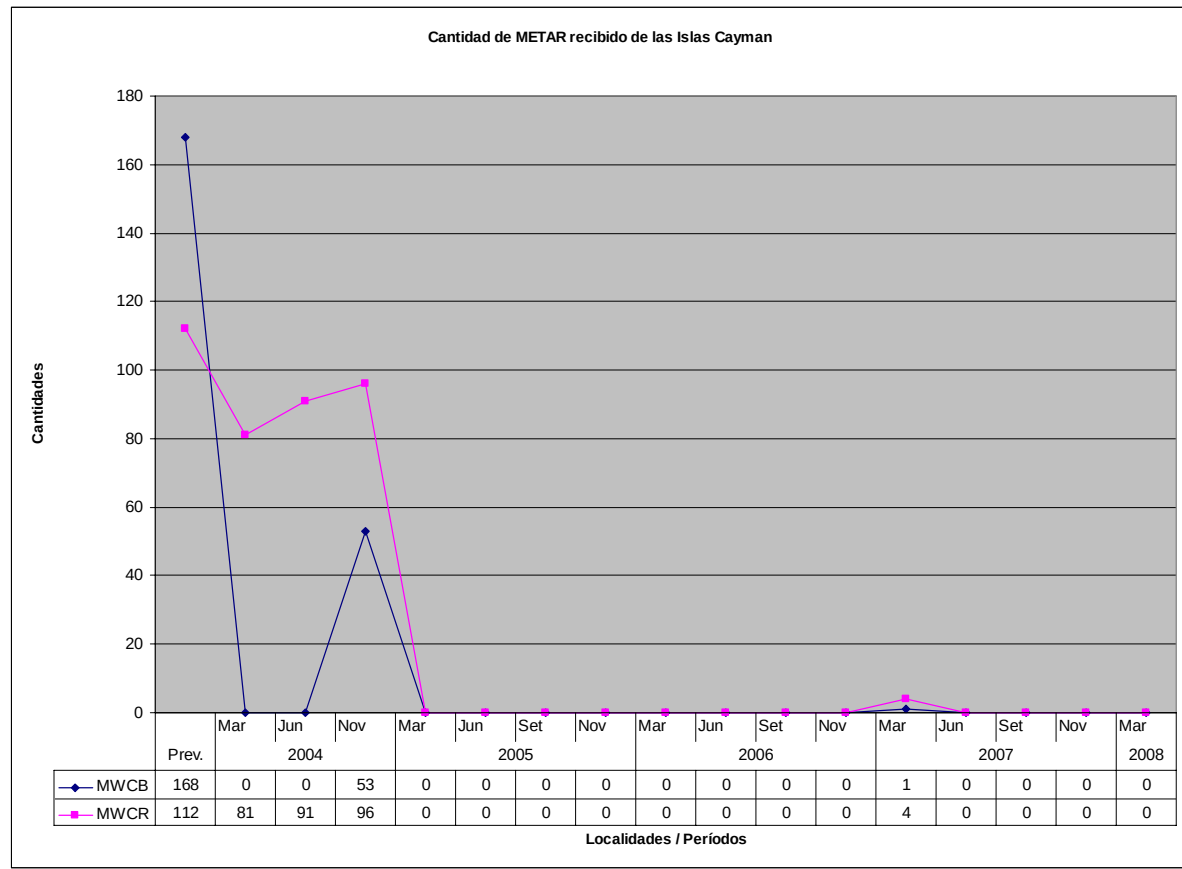


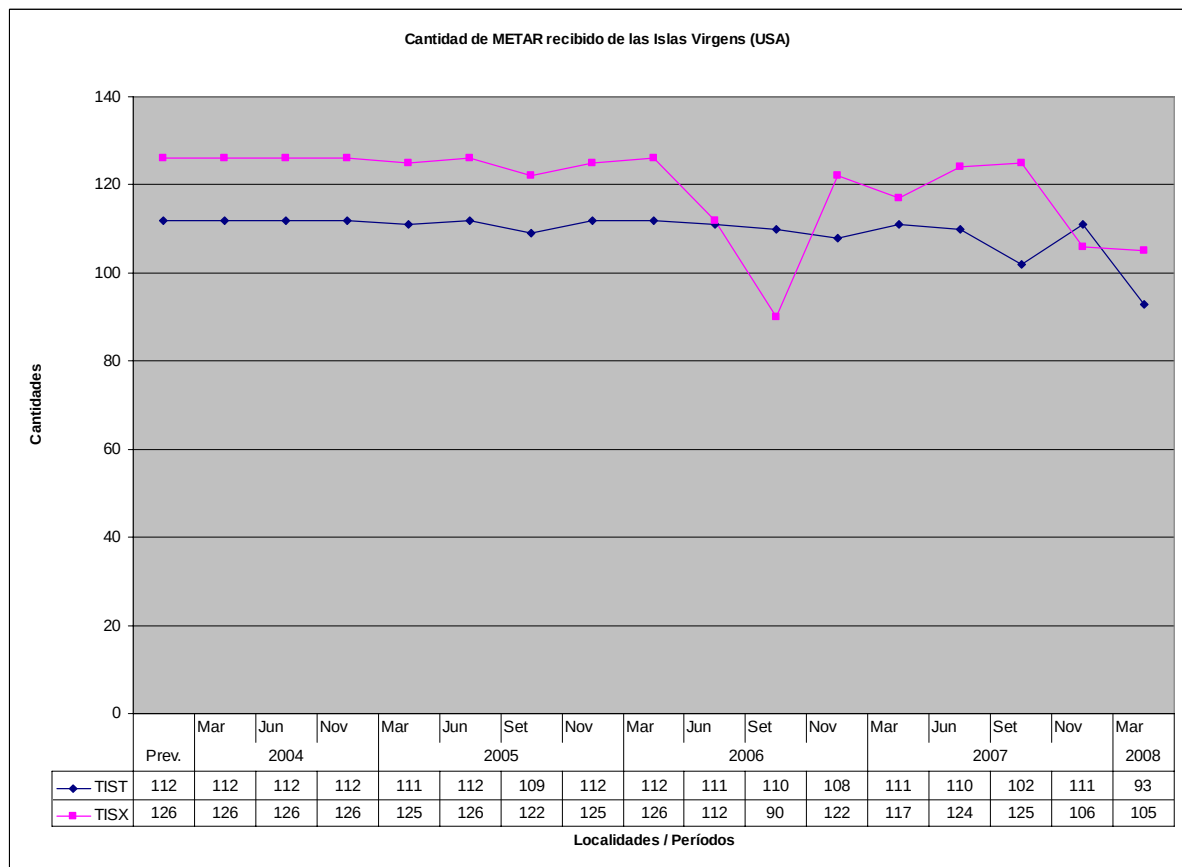
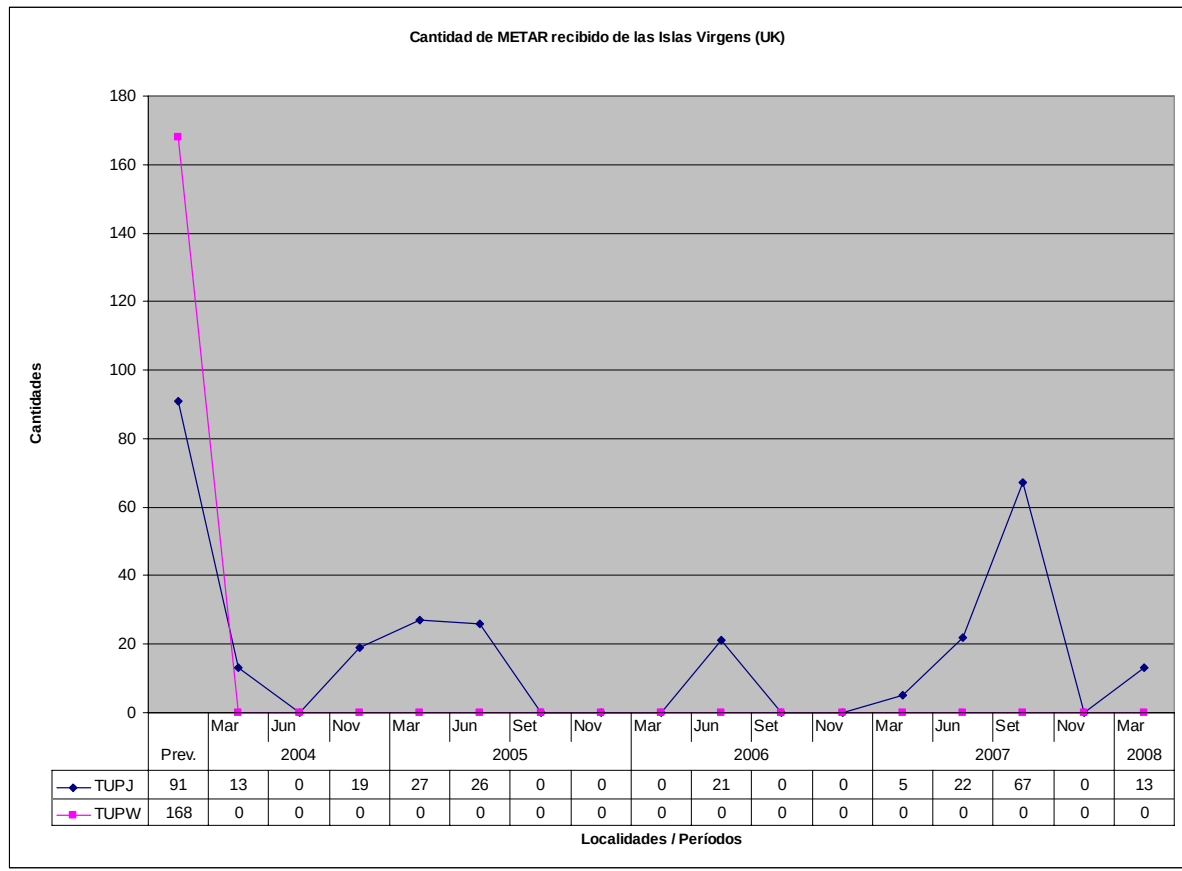


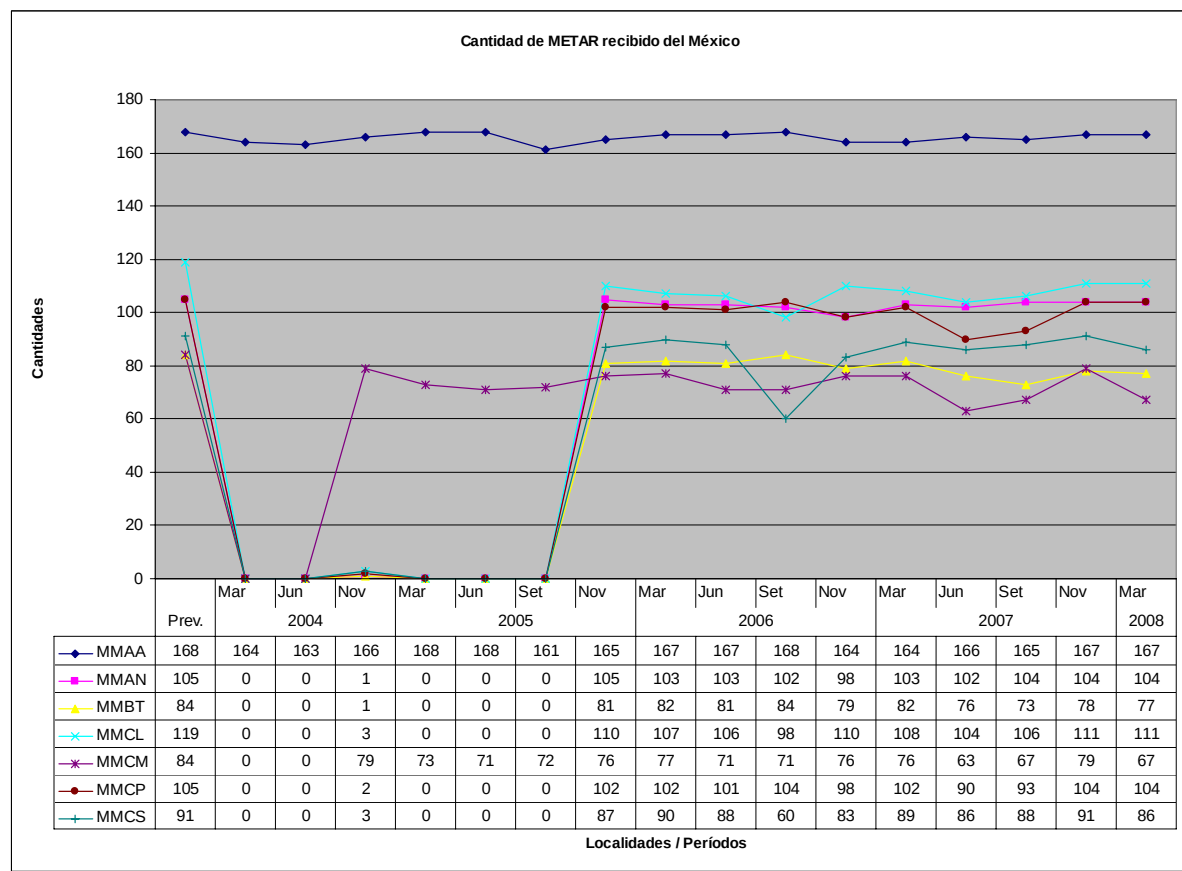
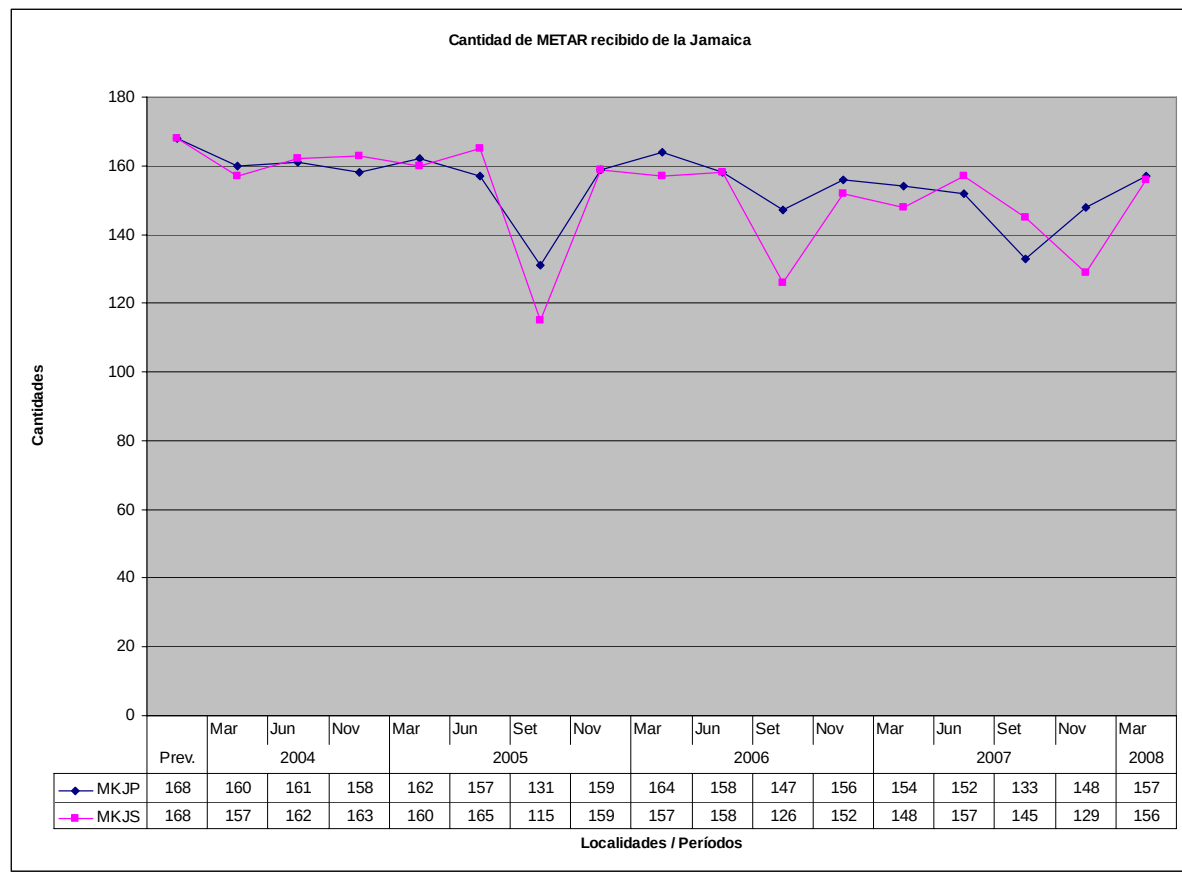


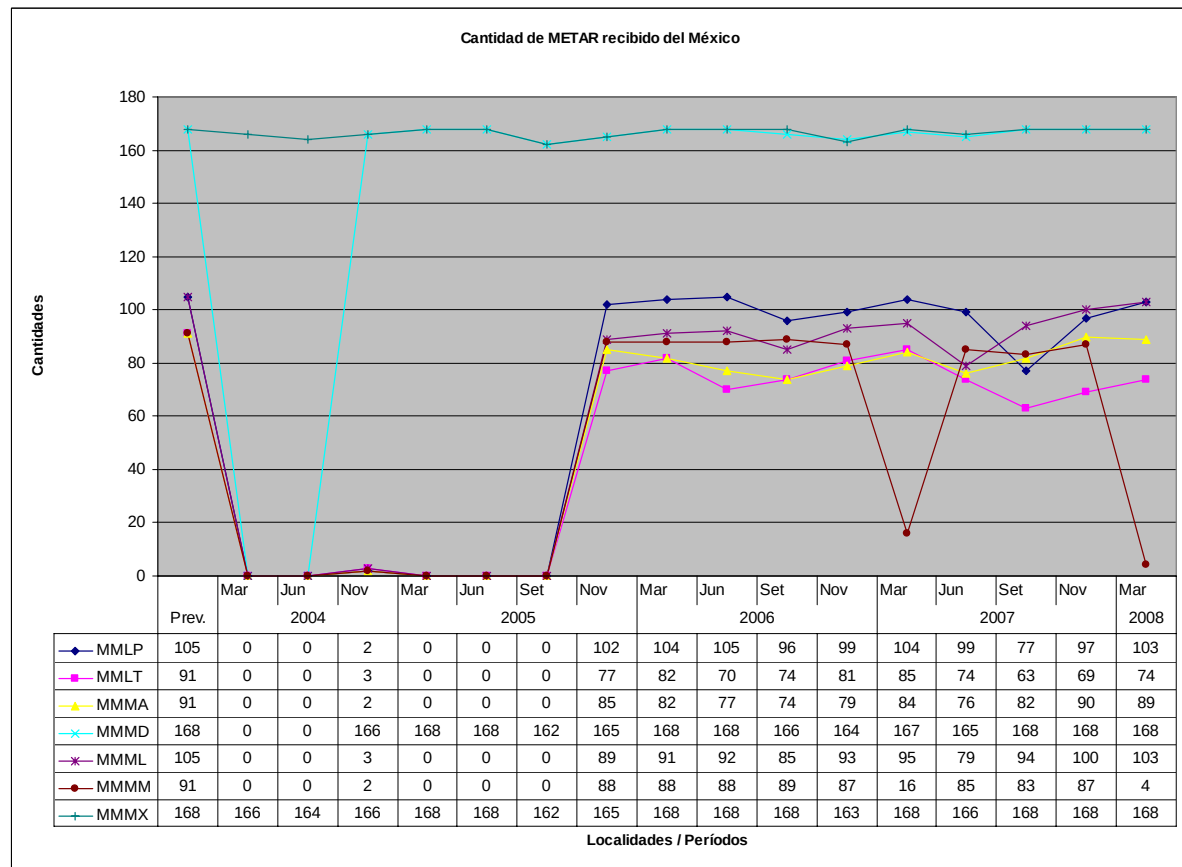
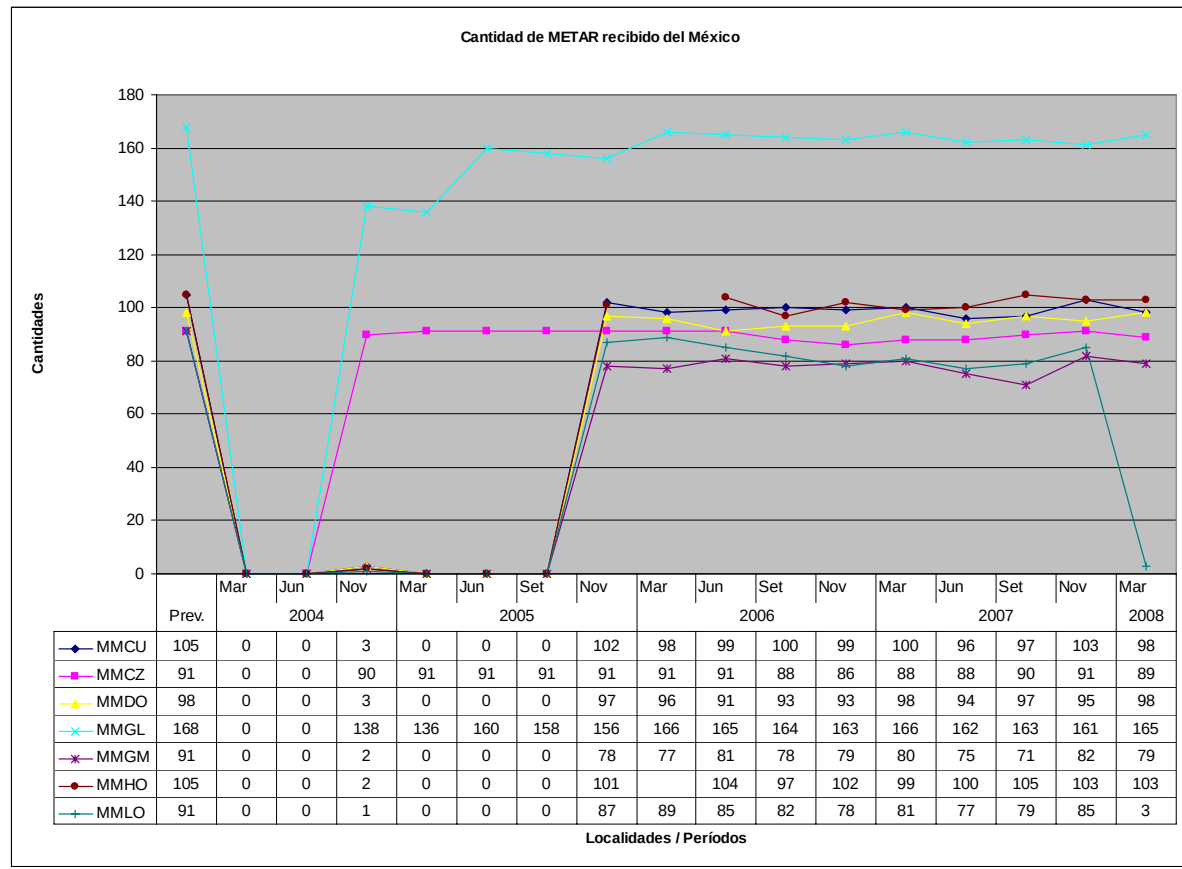


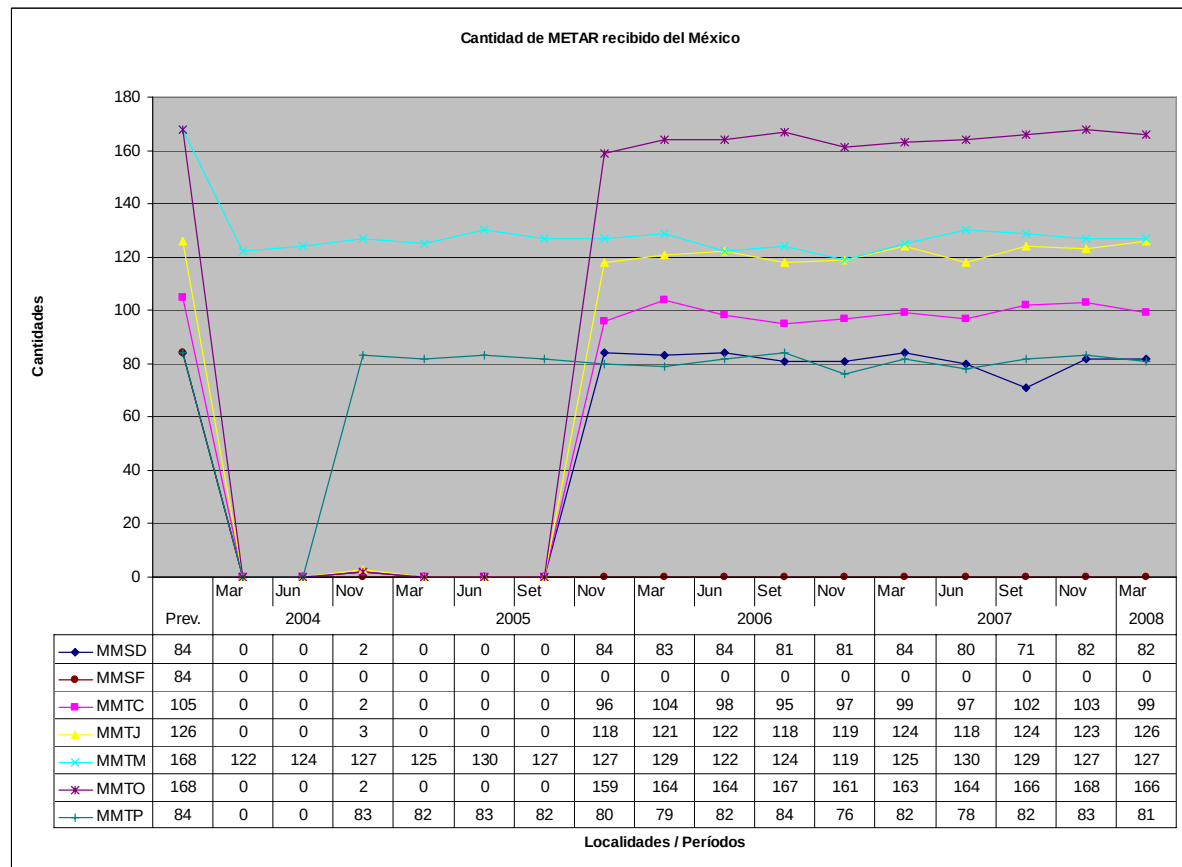
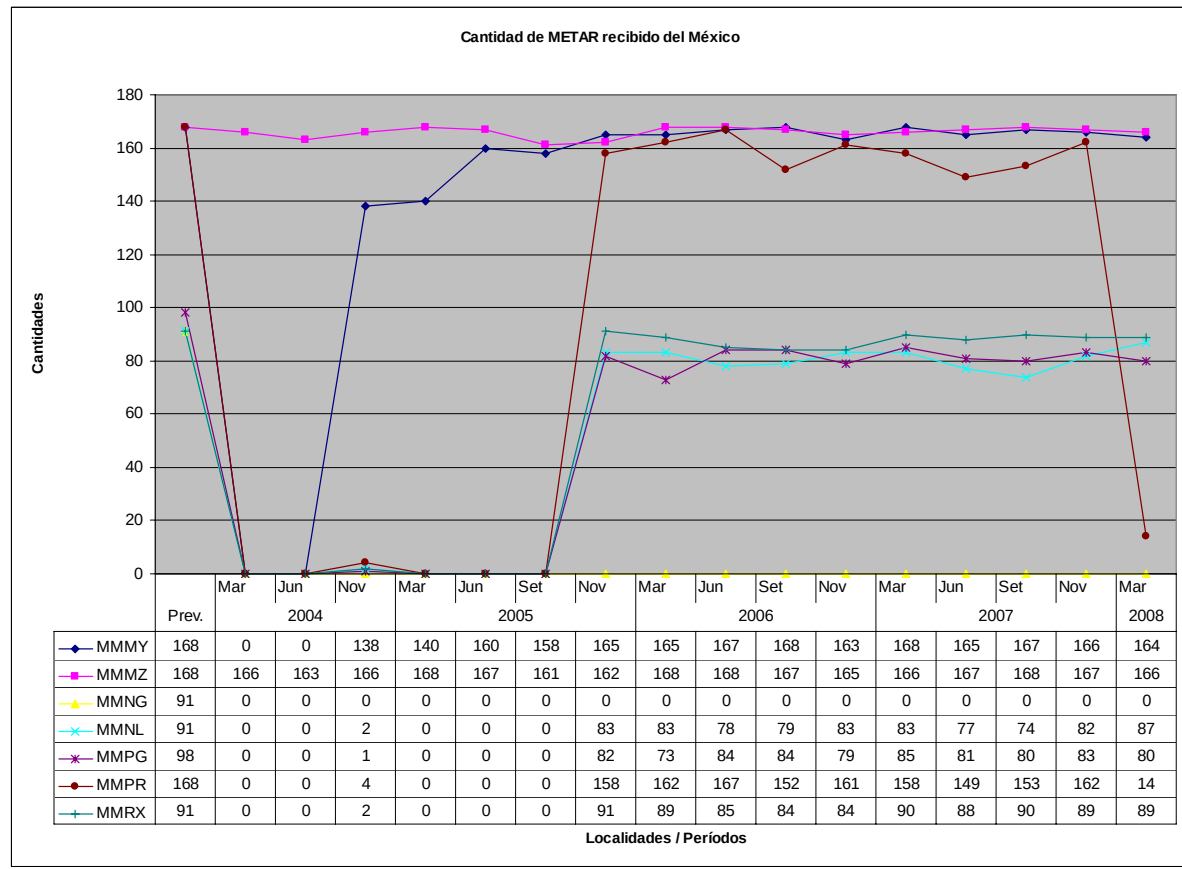


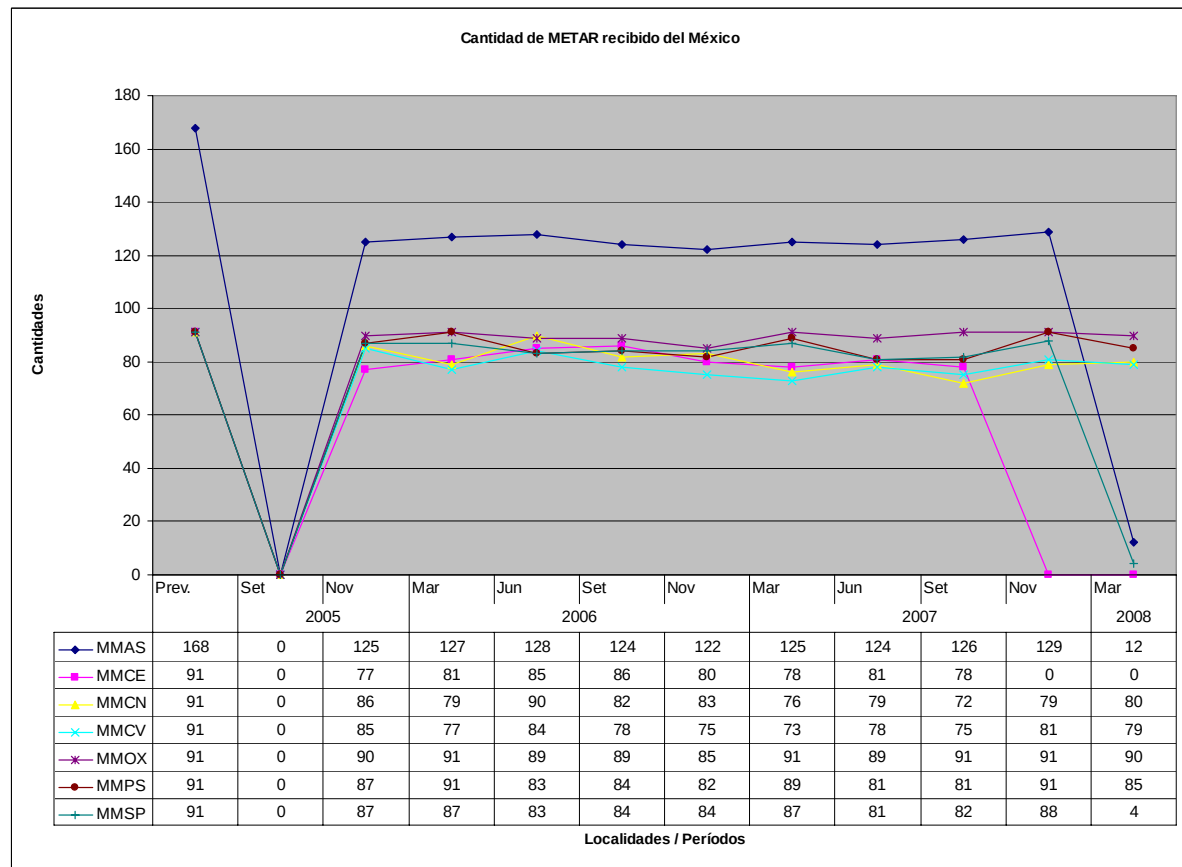
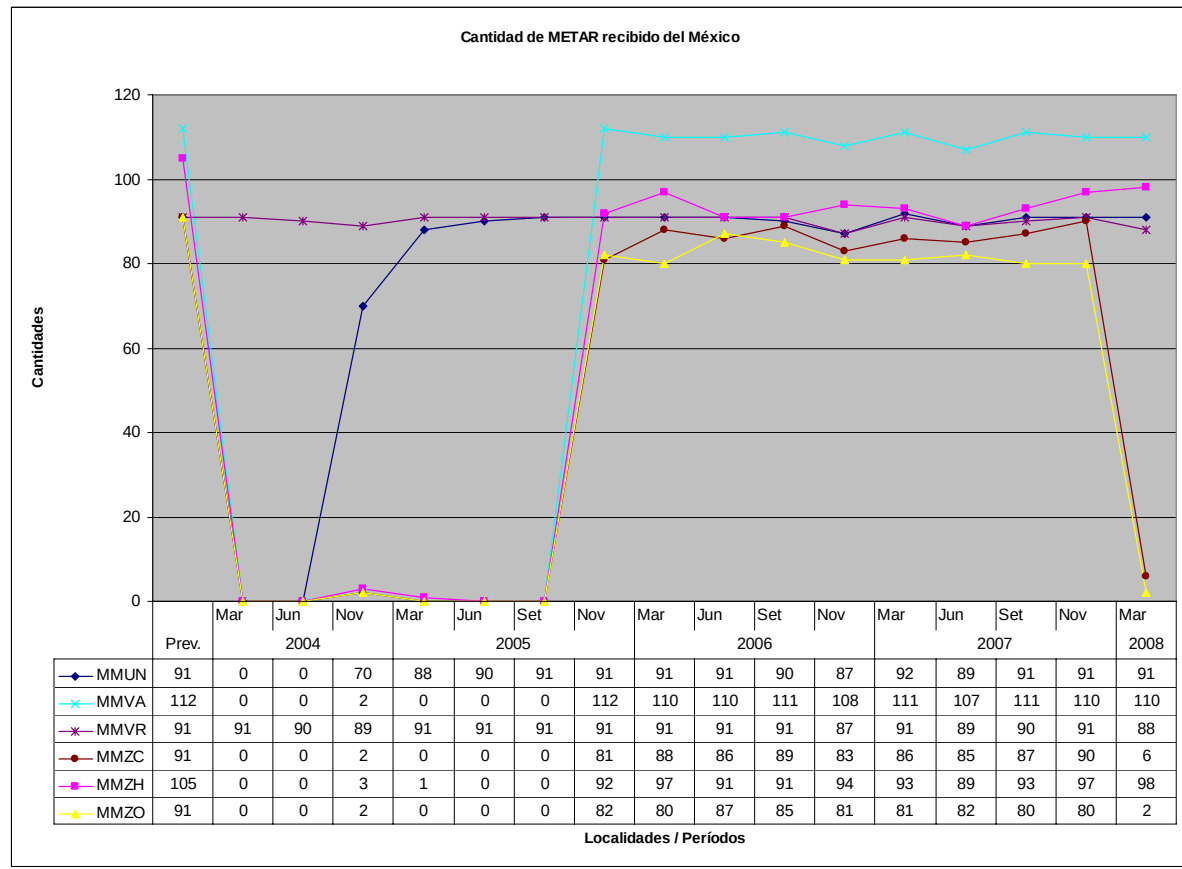


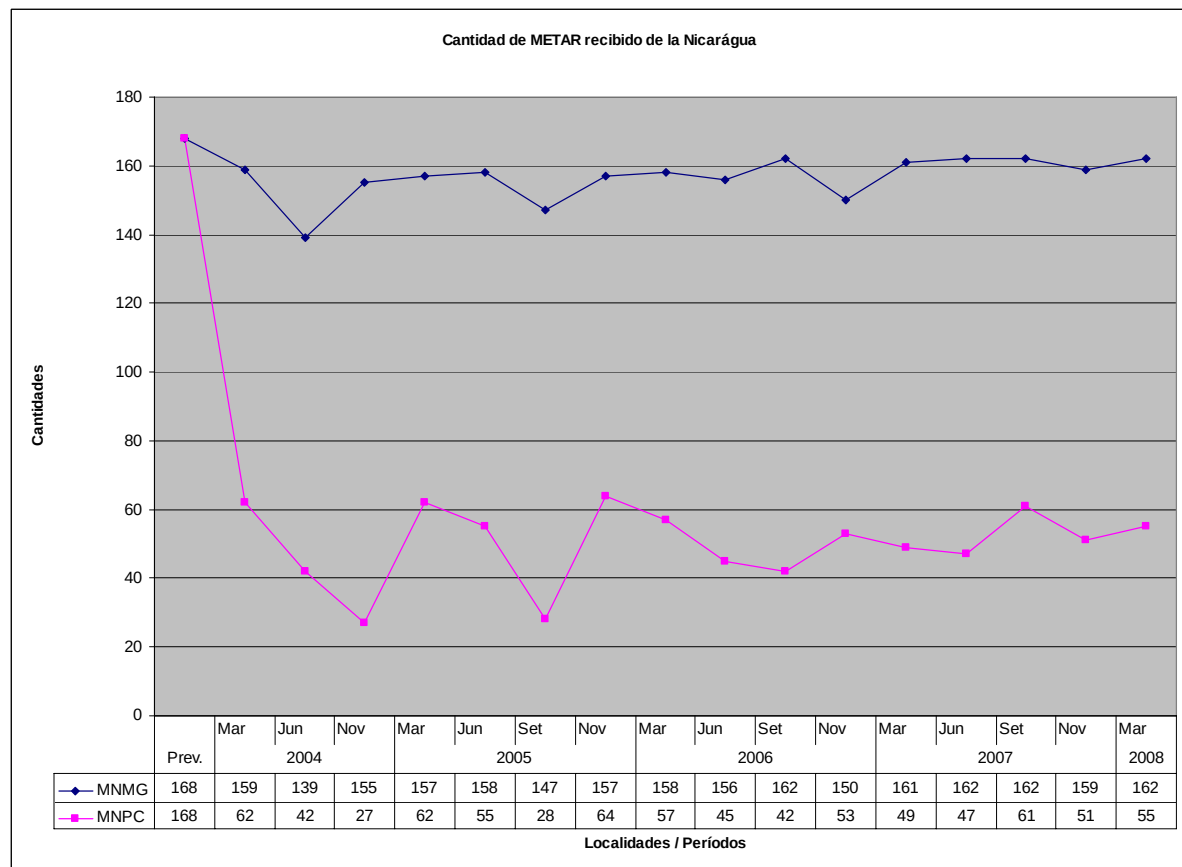
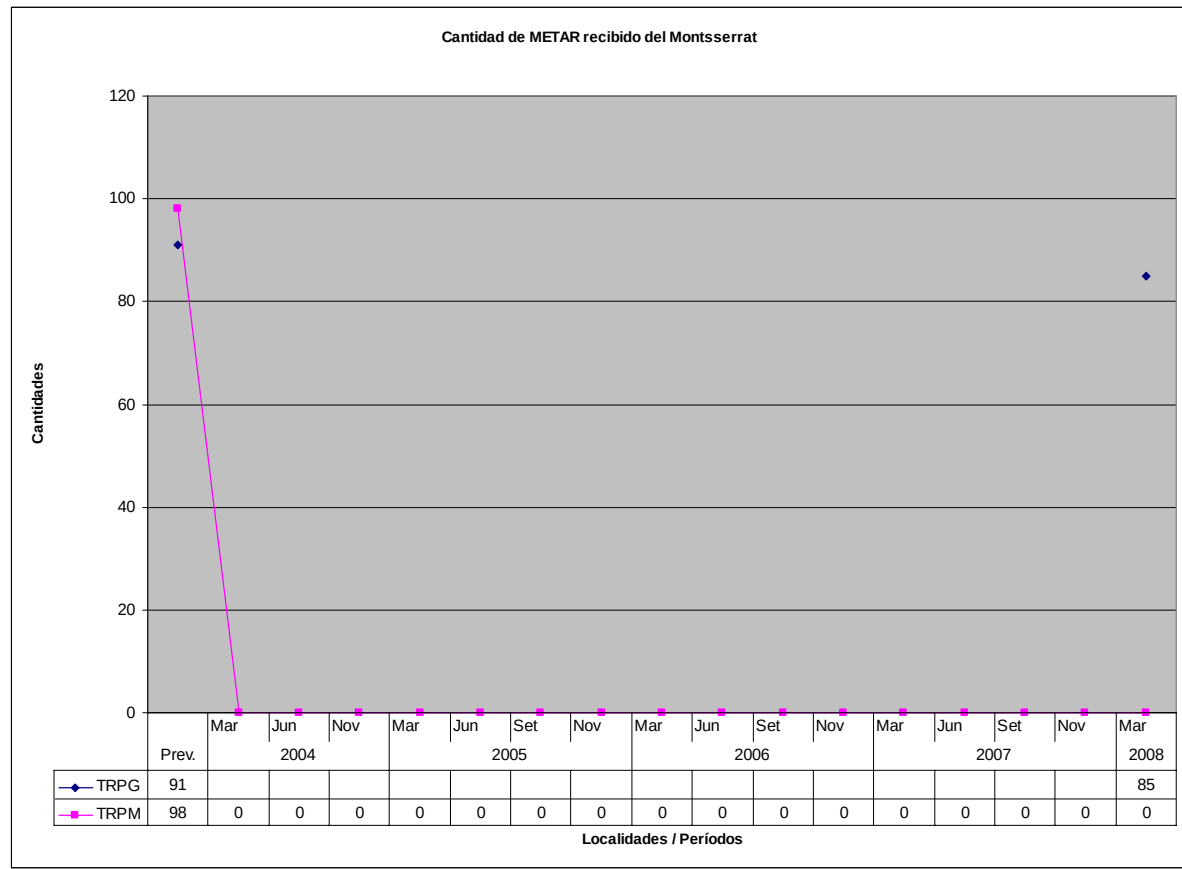


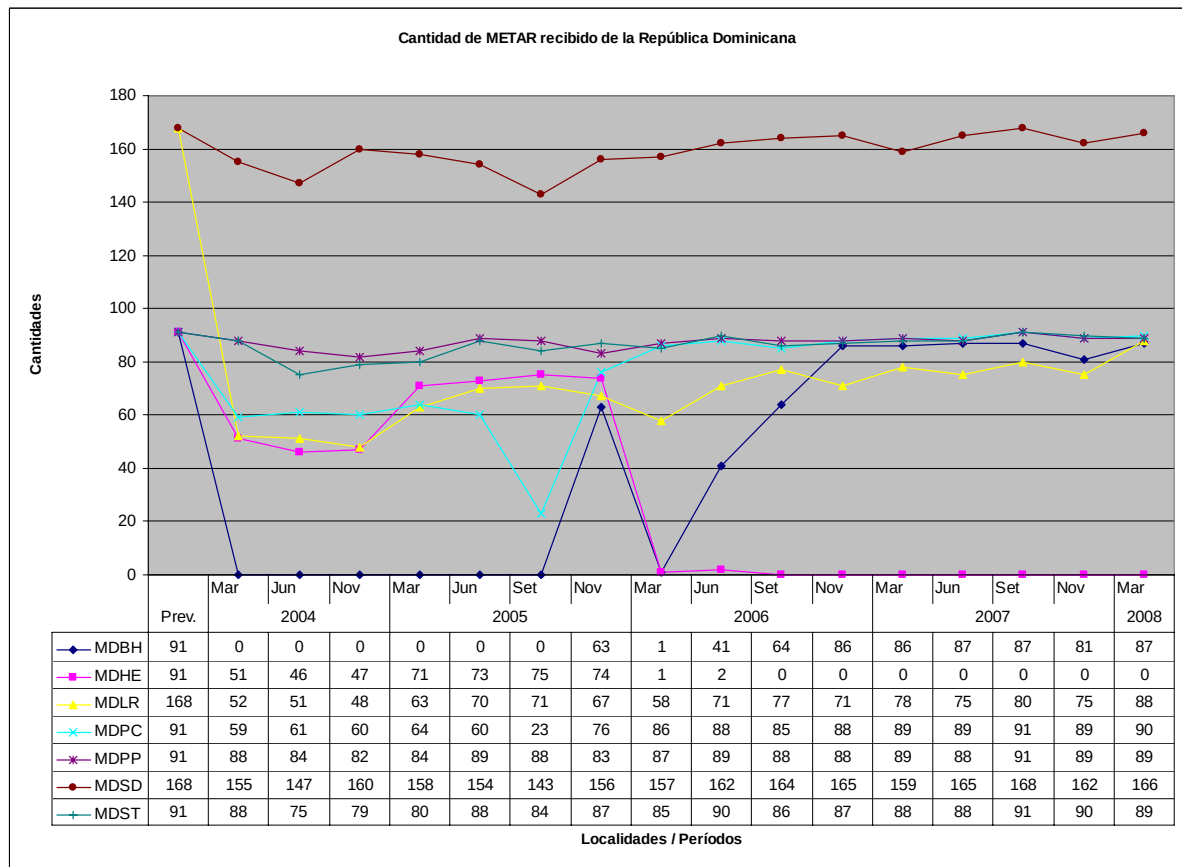
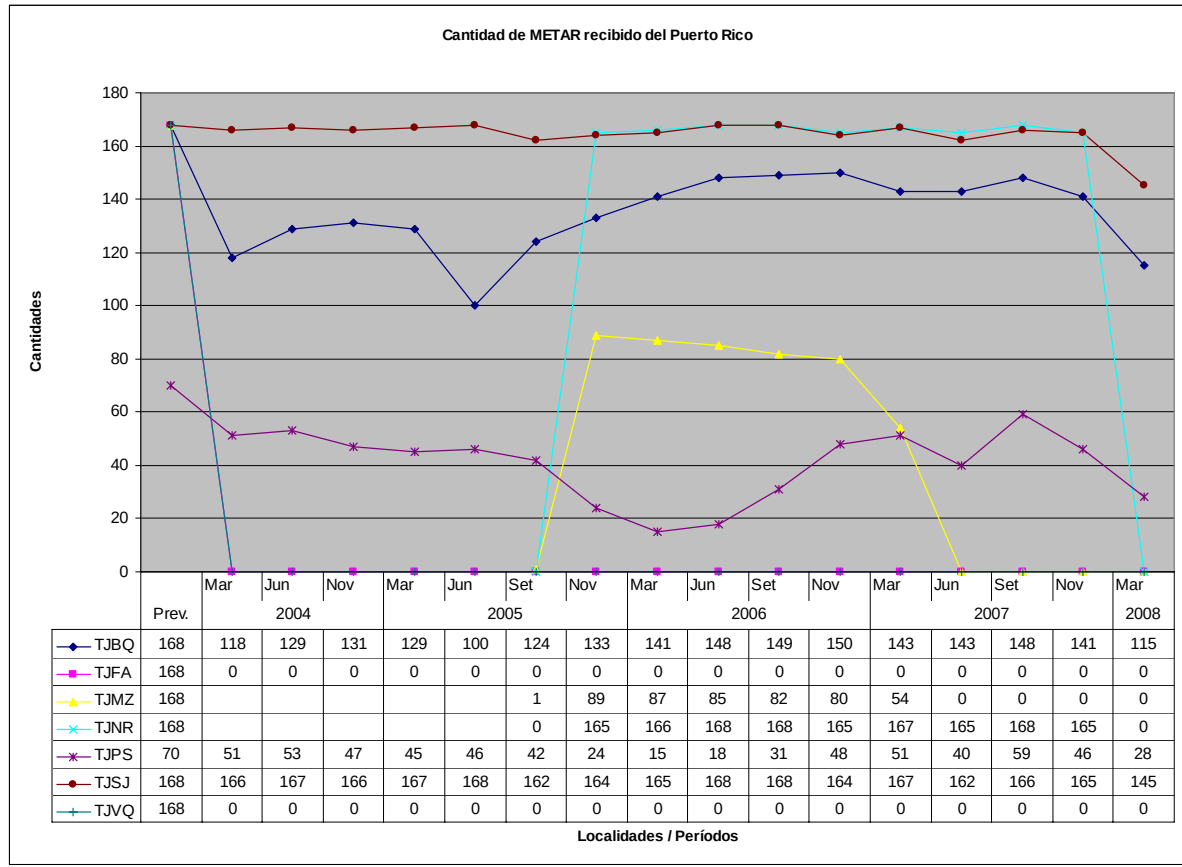


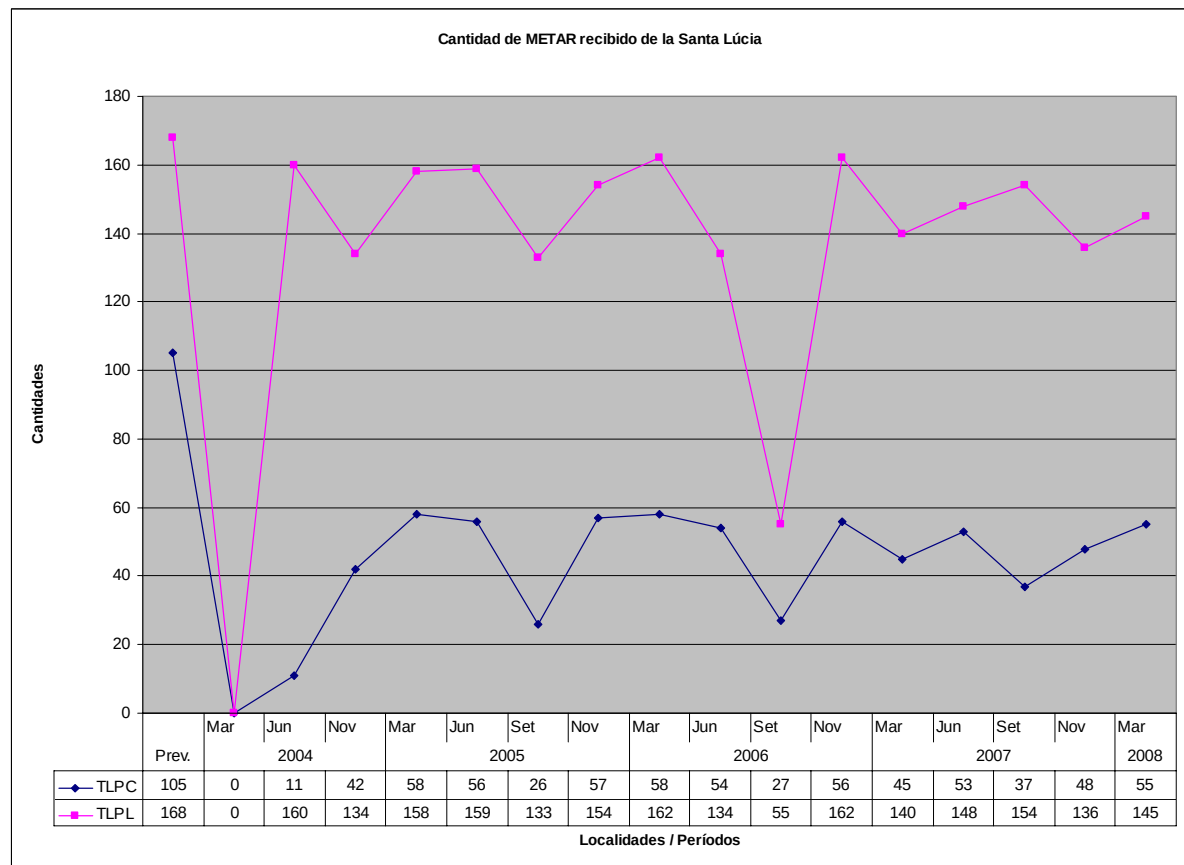
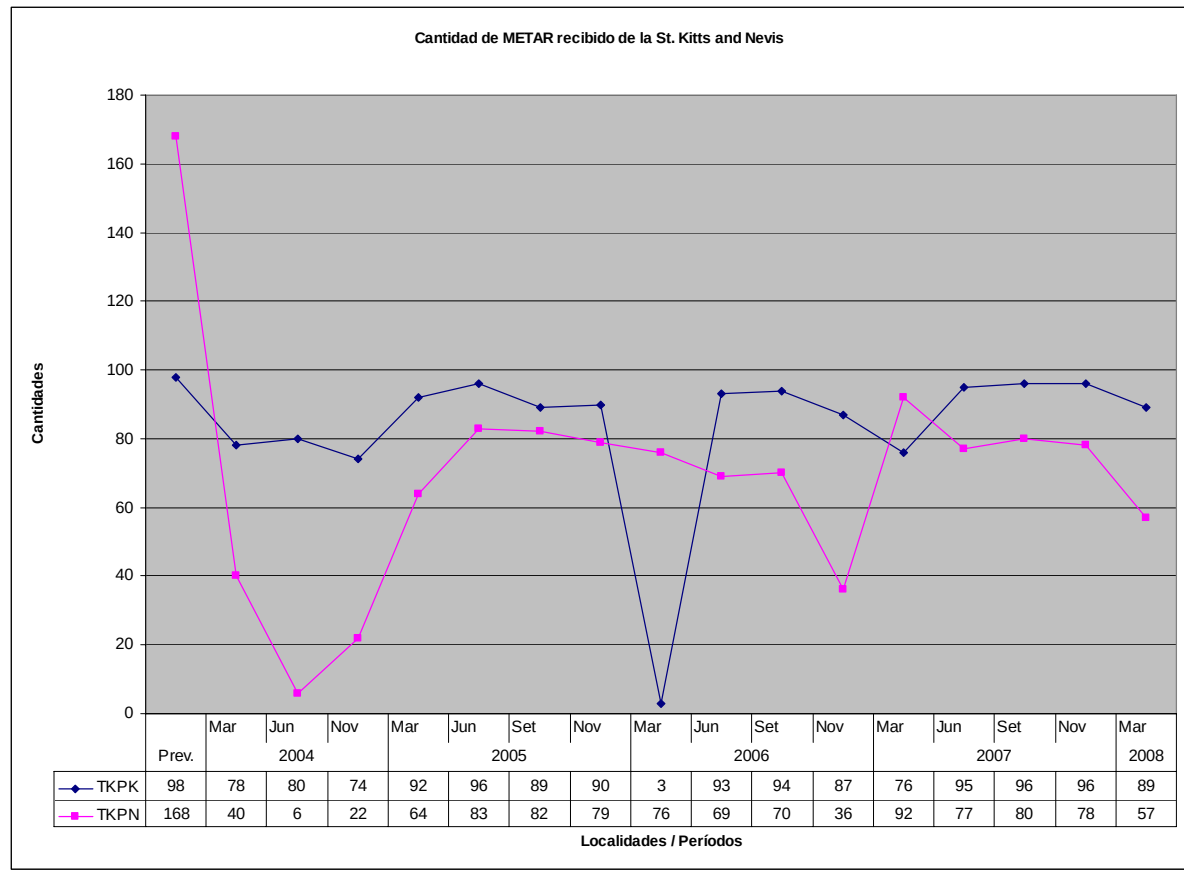


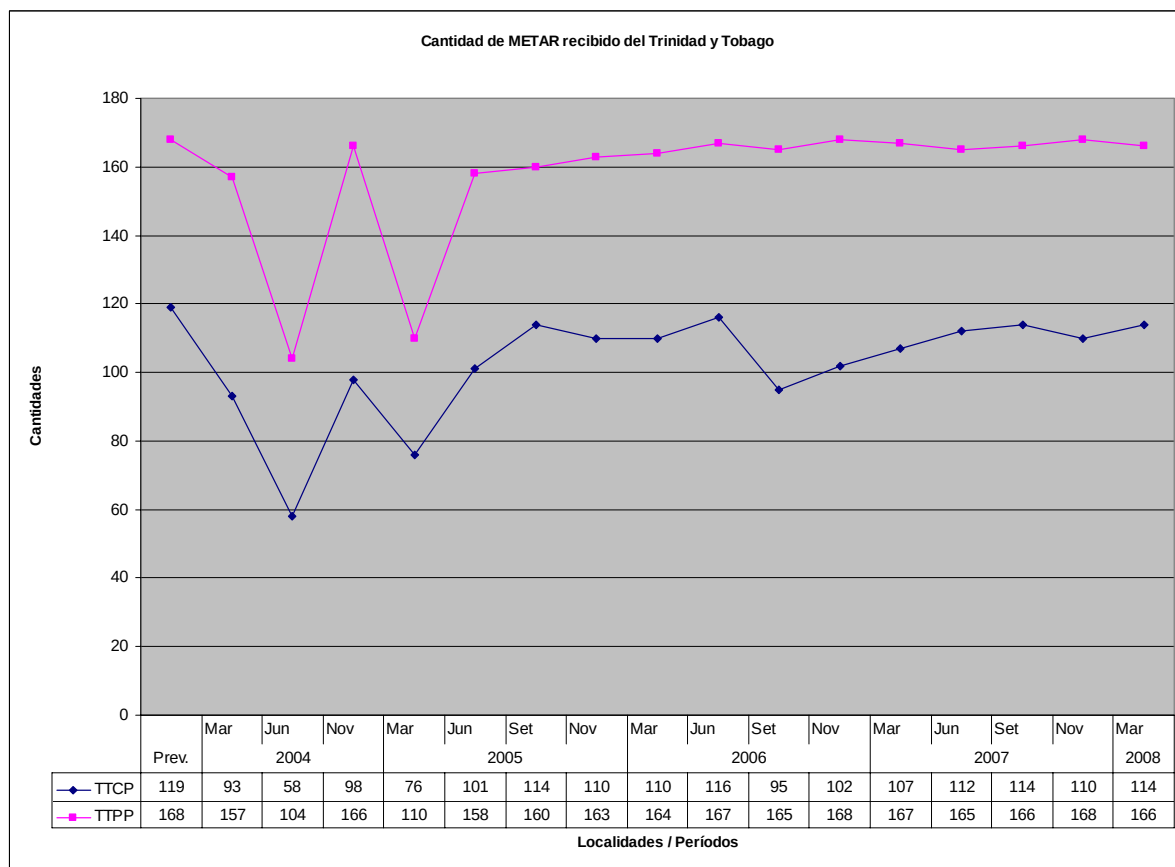
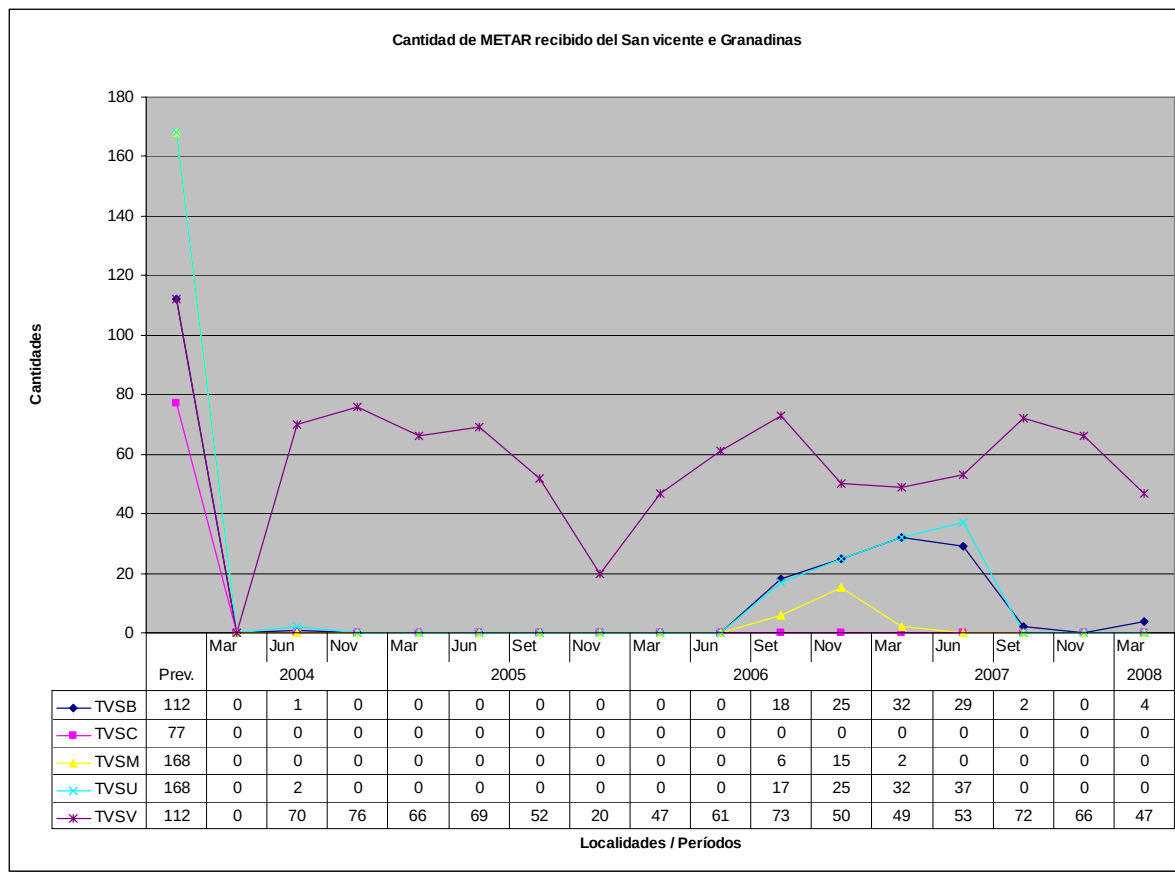


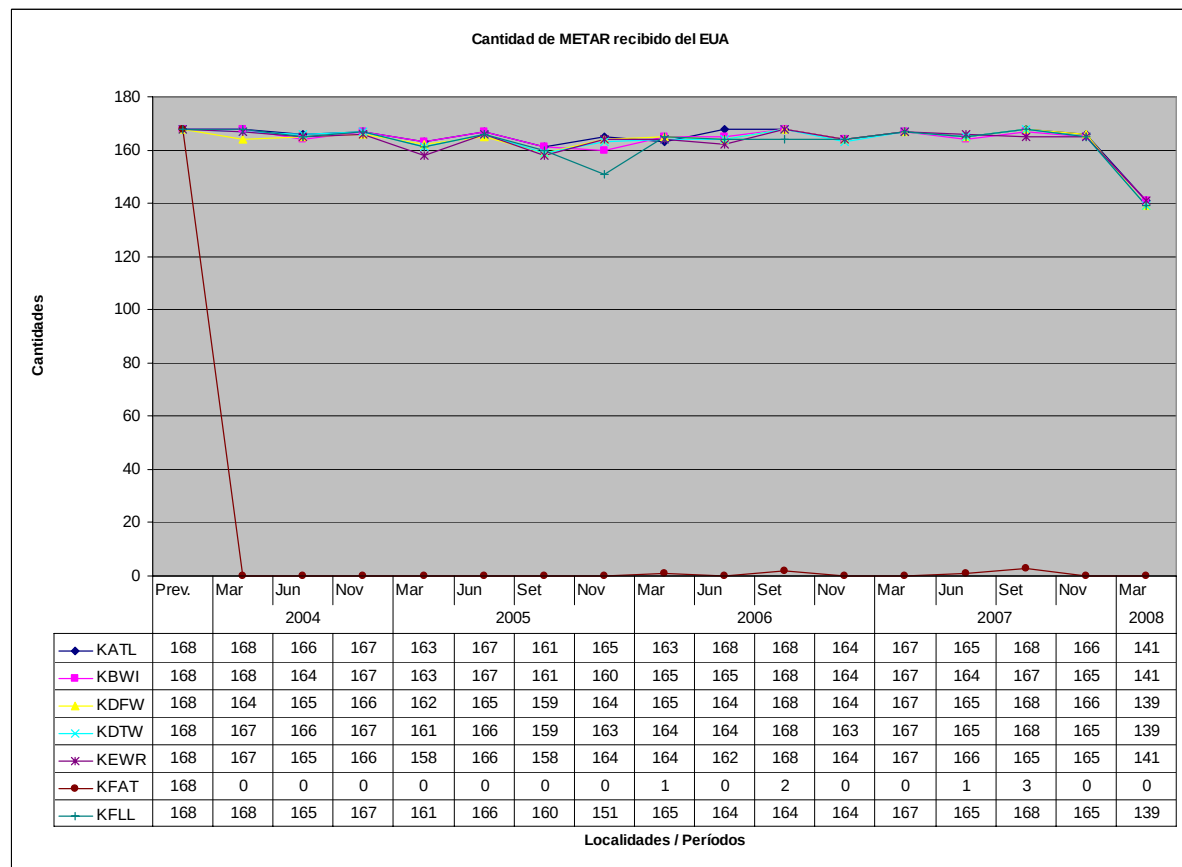
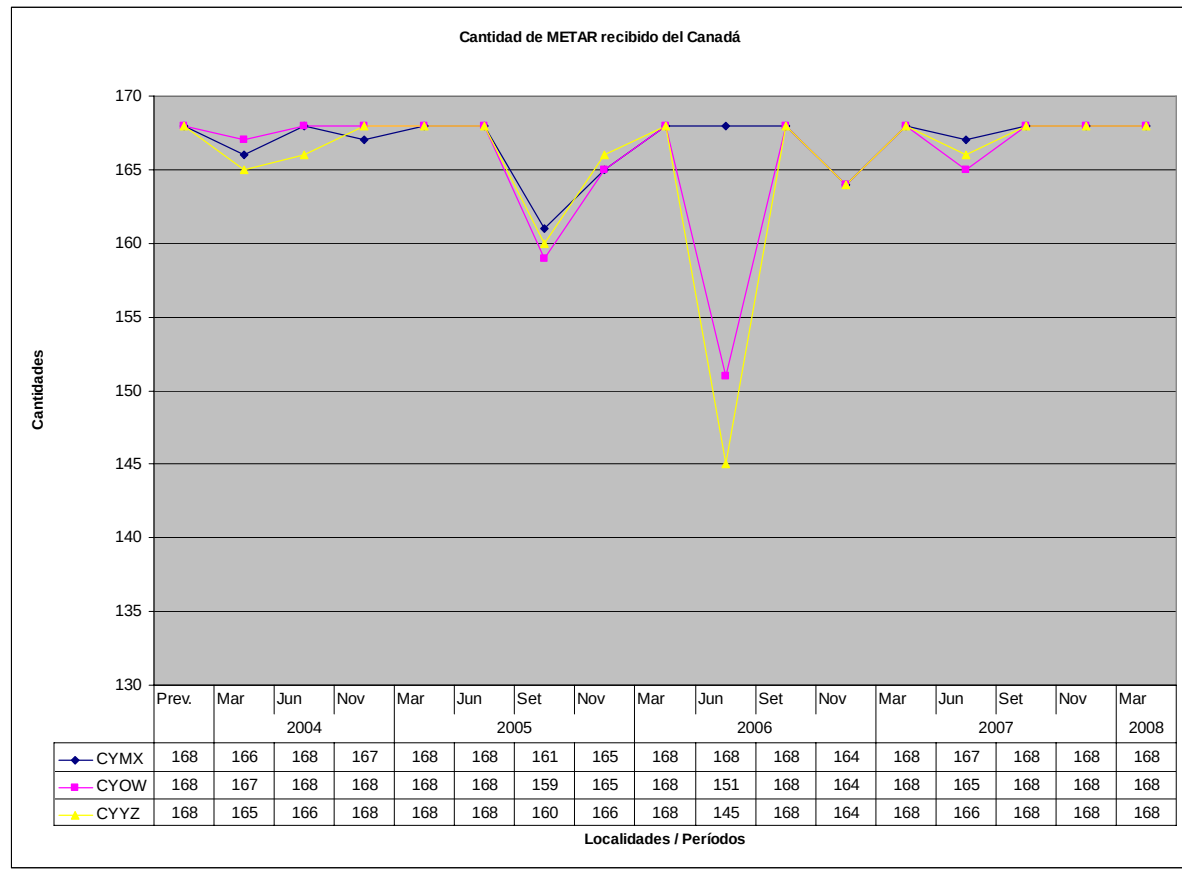


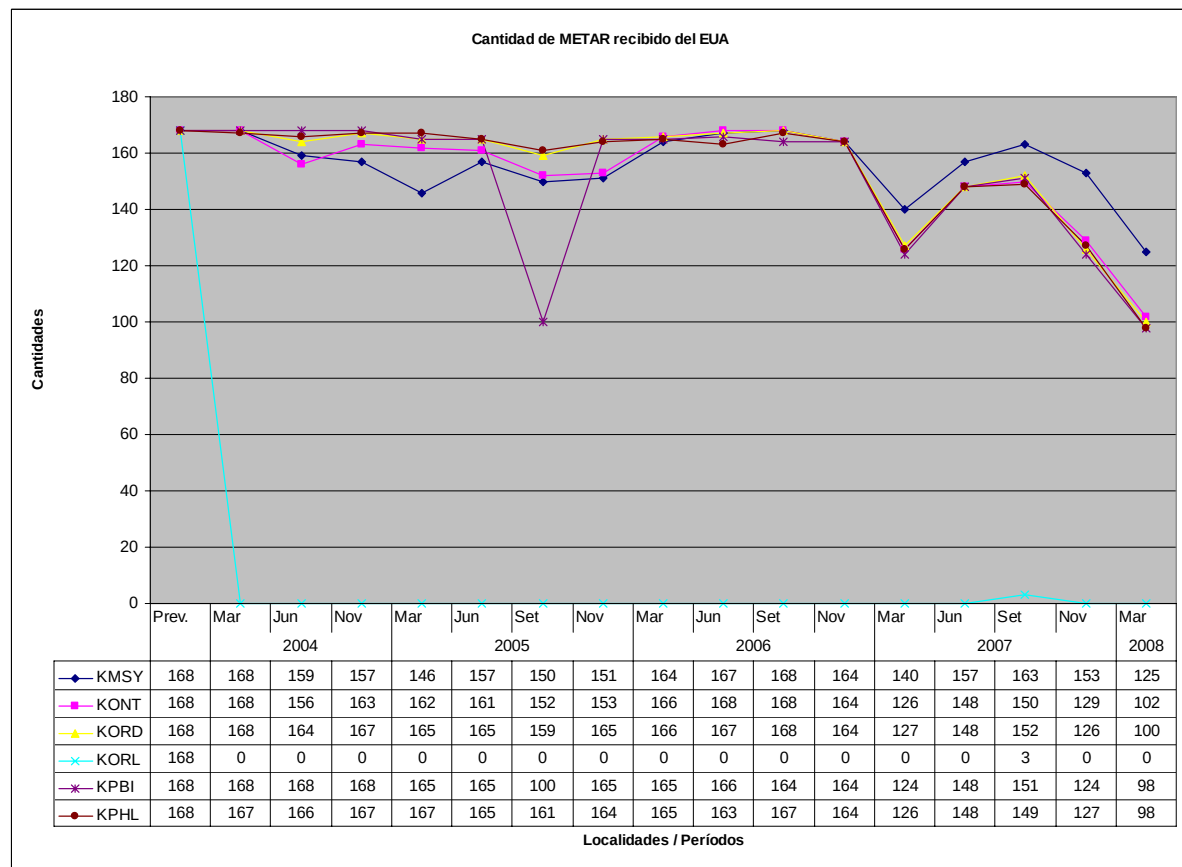
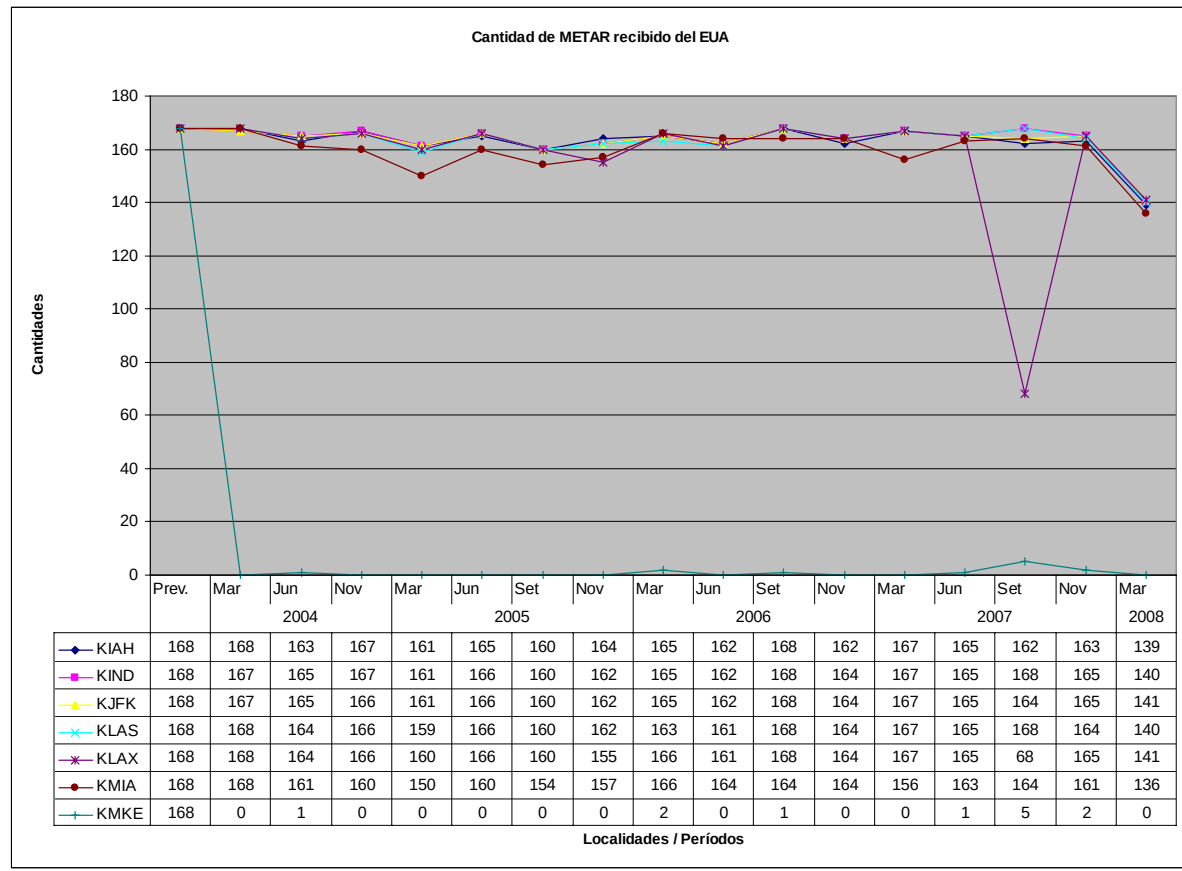


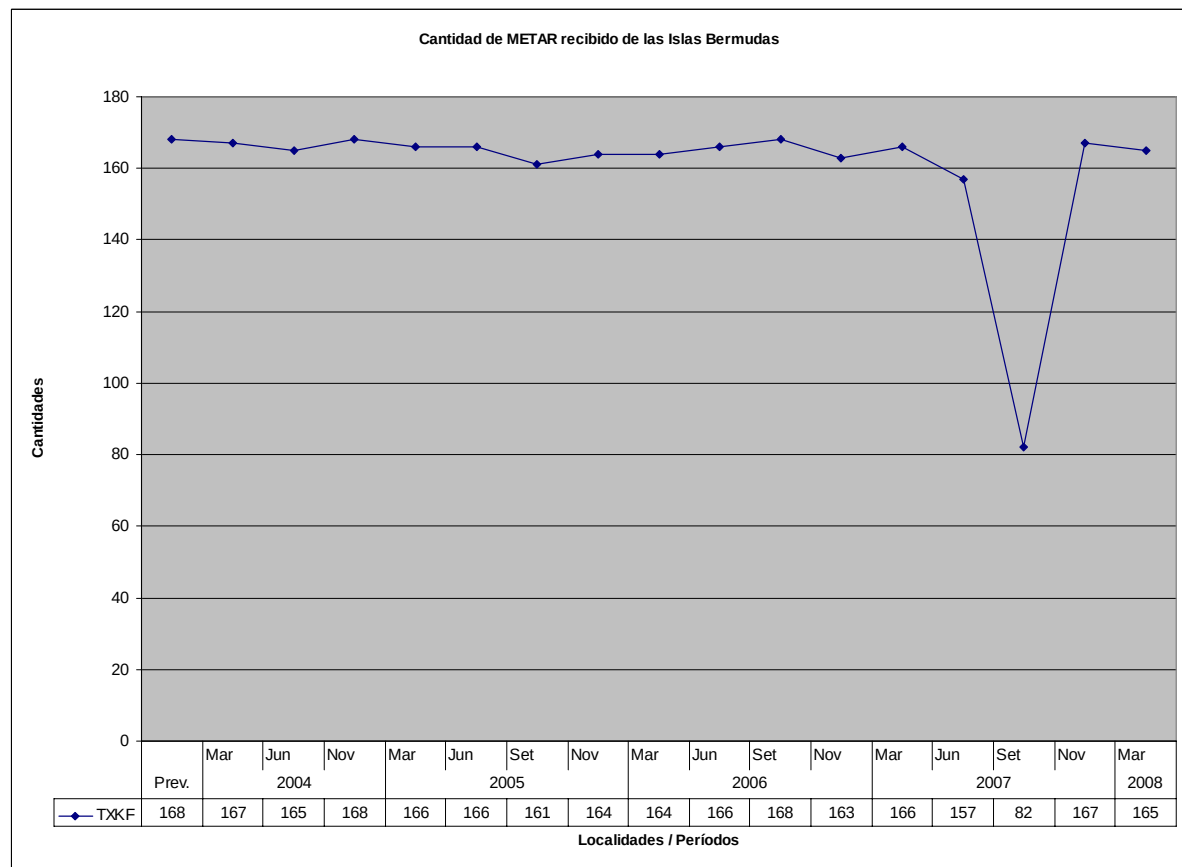
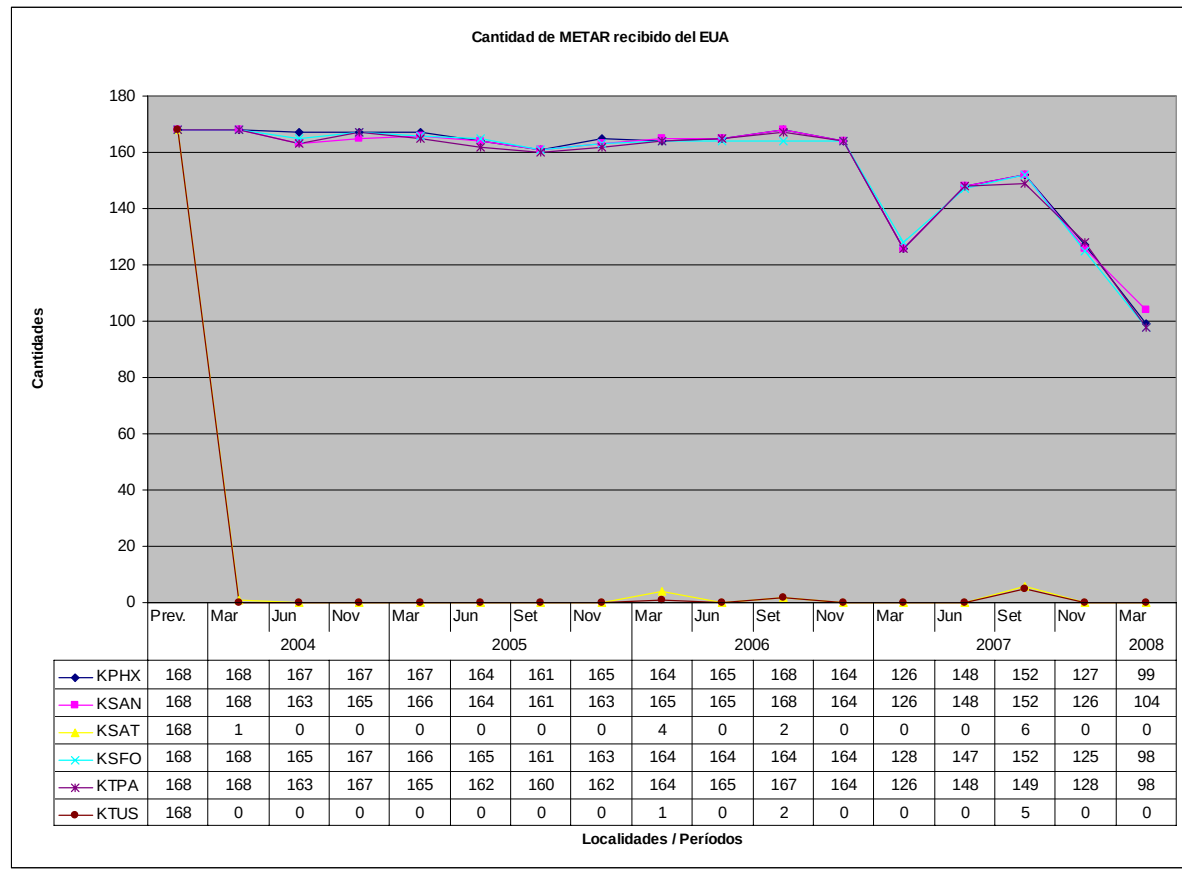


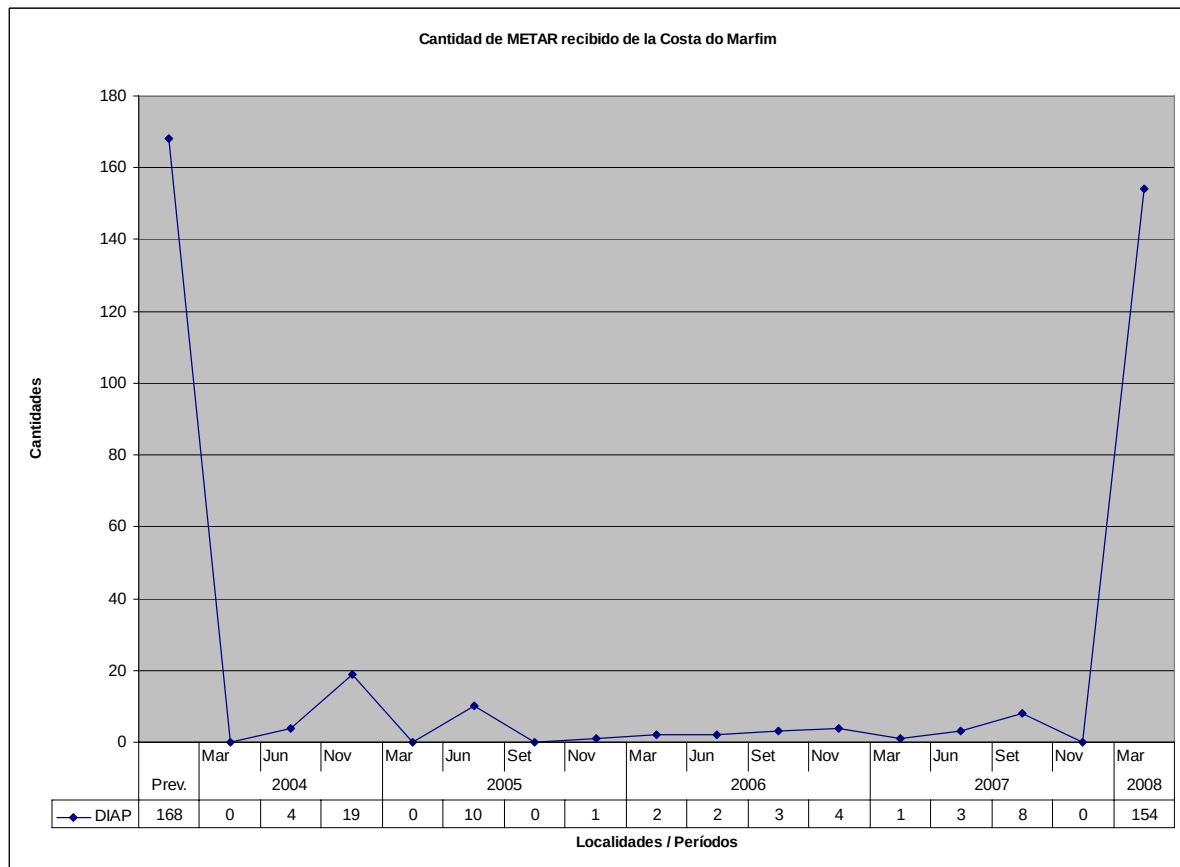
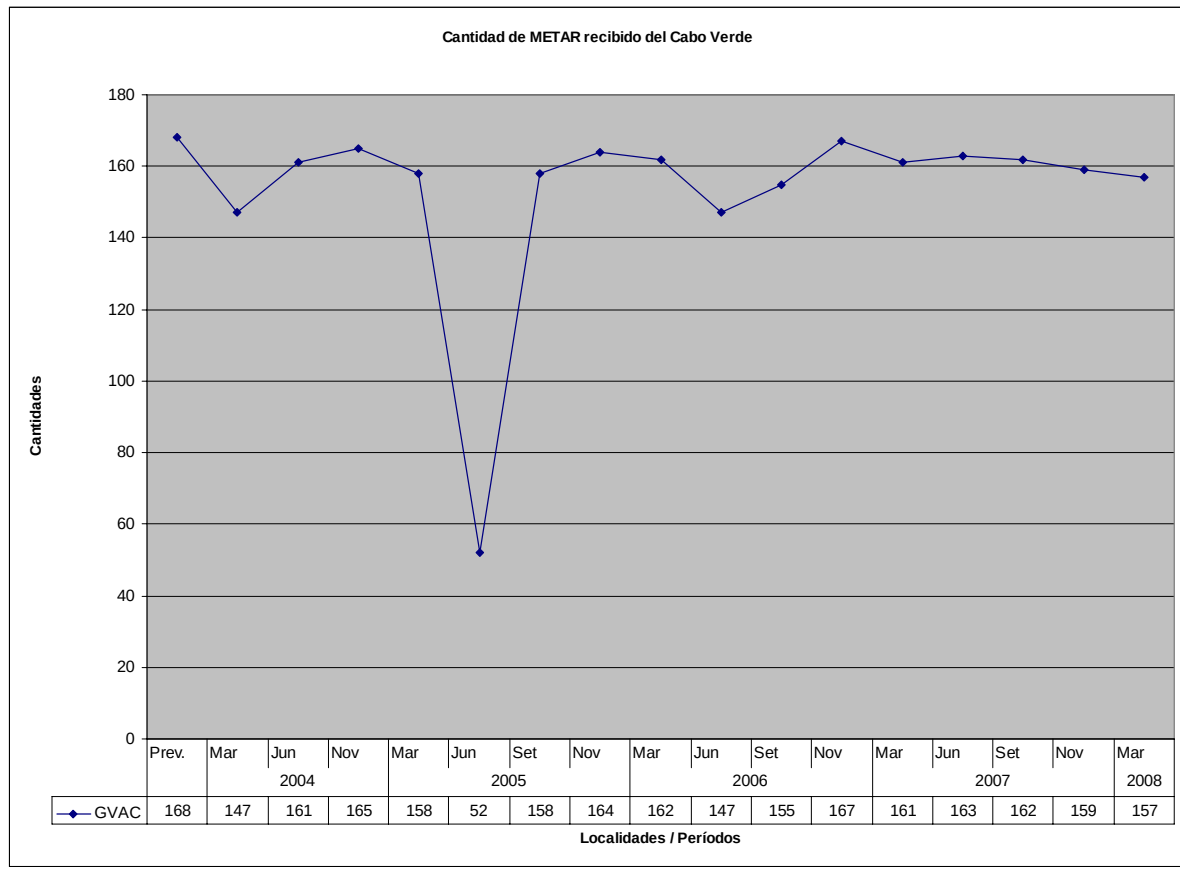


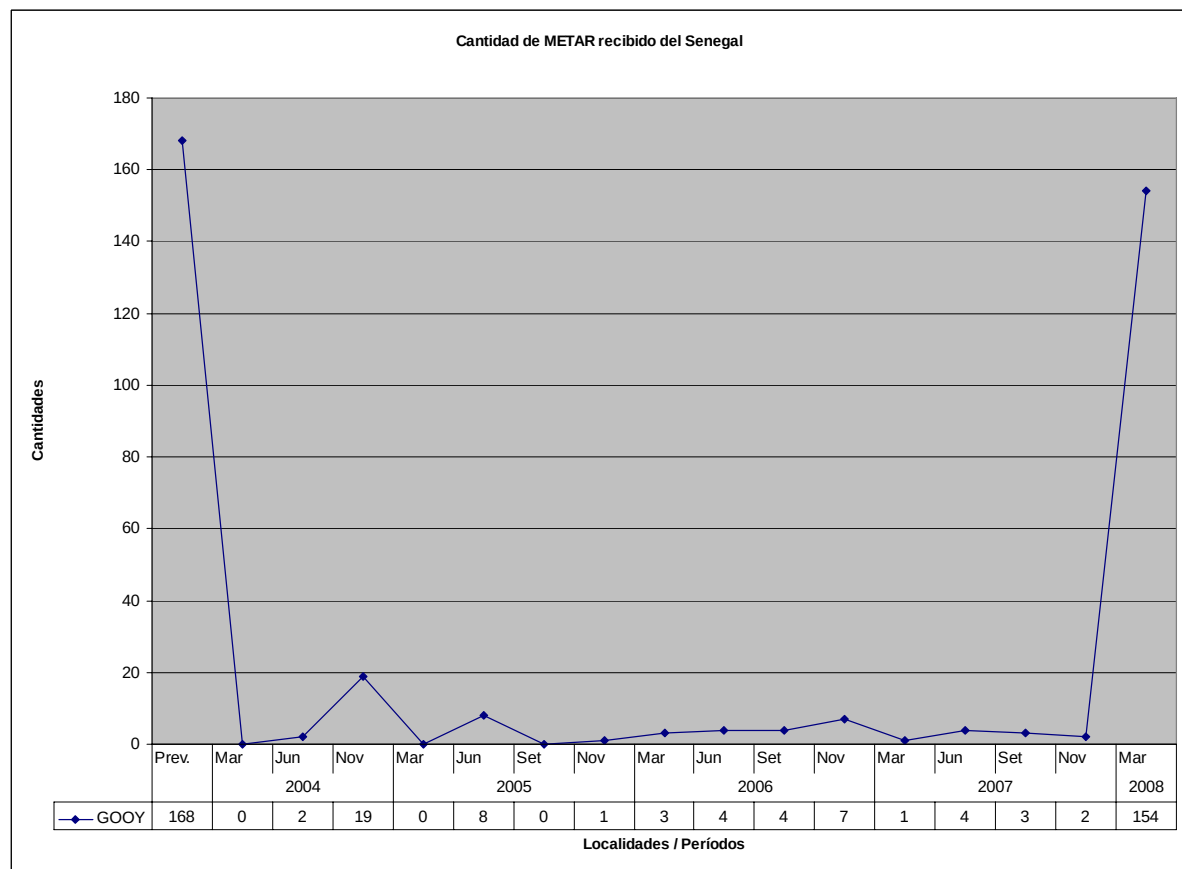
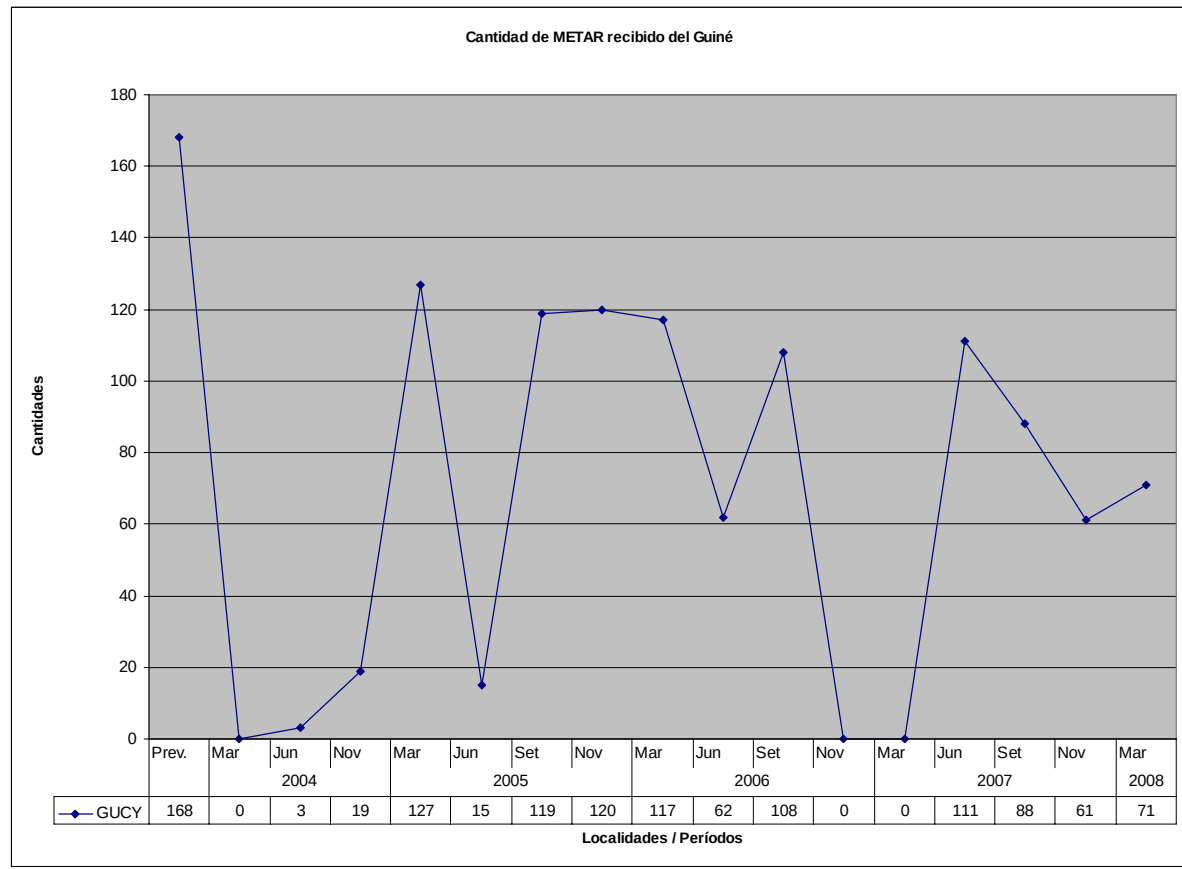












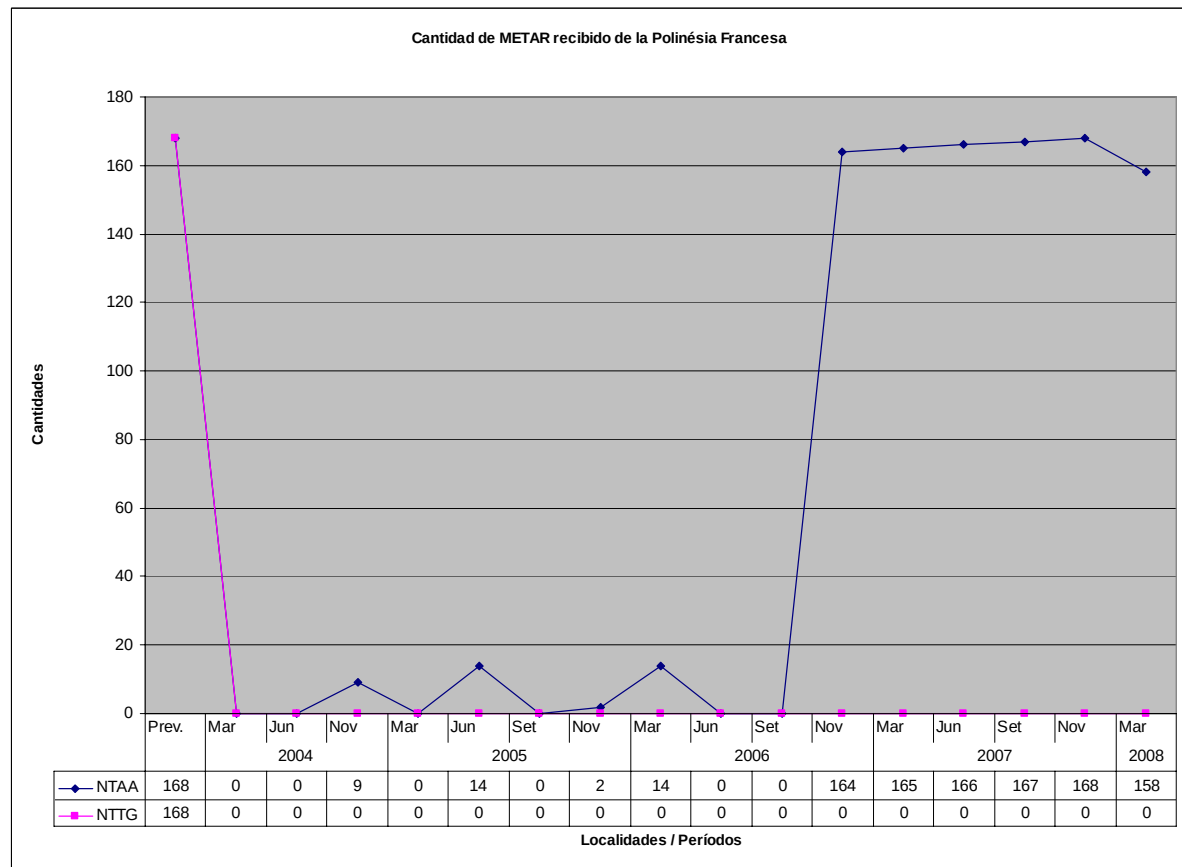
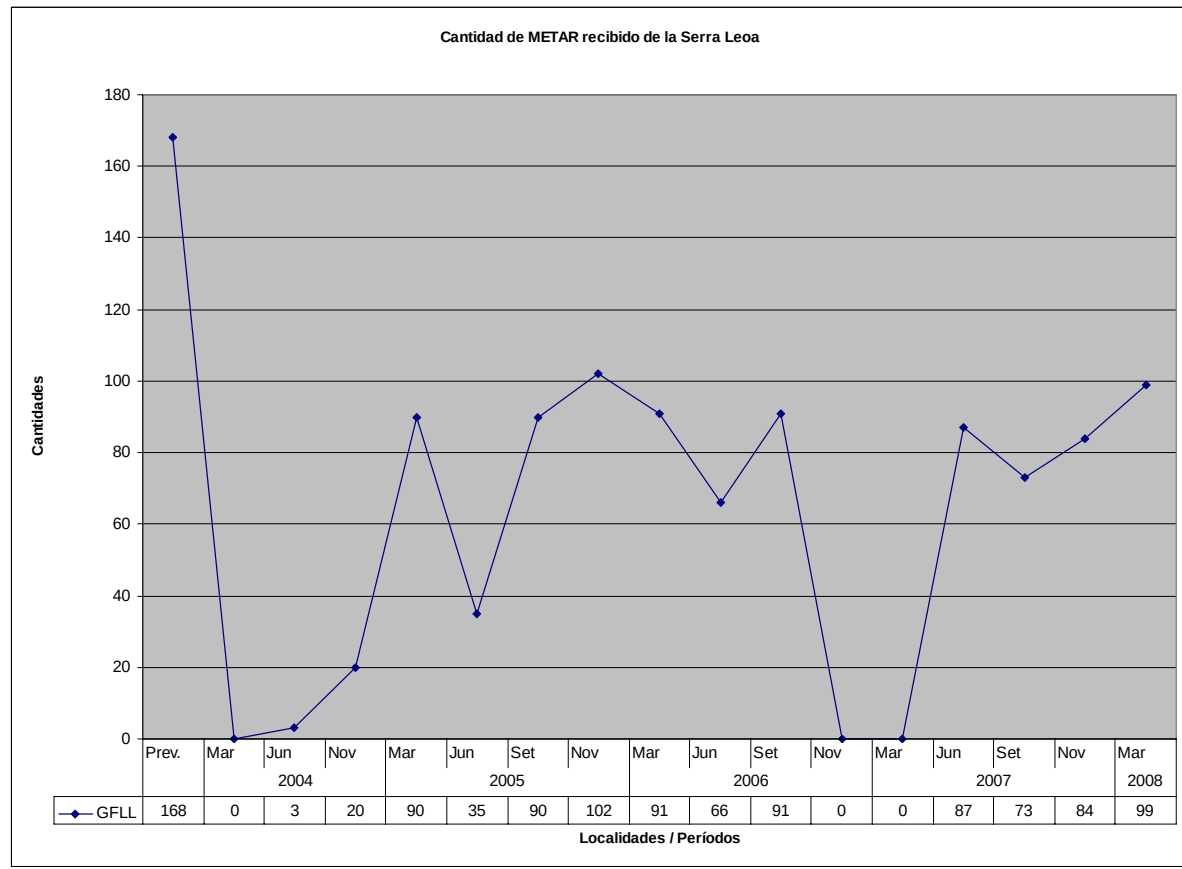


Table with the comparative study of TAF availability in the Brasilia OPMET Bank

Local	Prev.	2004			2005				2006				2007				2008
		Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar
Região SAM																	
Argentina																	
SAAR	28	21	11	23	12	23	12	18	18	15	22	20	26	27	26	27	24
SABE	28	28	27	28	27	27	27	25	23	24	27	28	26	28	28	27	26
SACO	28	25	23	24	23	22	14	25	26	21	28	23	25	19	19	49	23
SADD	28	23	12	23	12	23	12	18	0	0	0	0	0	0	0	0	0
SADF	28	20	27	27	25	27	25	28	27	25	25	27	23	28	28	27	26
SAEZ	28	27	28	28	26	25	17	26	27	21	27	27	25	27	25	24	27
SAME	28	27	28	26	28	26	17	26	28	24	28	28	26	28	28	27	27
SANT	28	21	23	27	22	21	11	25	25	20	24	21	23	15	18	13	14
SARE	28	27	28	28	28	26	16	0	28	23	28	28	22	28	21	26	28
SARF	28	27	28	28	28	26	15	0	27	23	24	28	25	28	21	26	28
SARI	28	26	28	28	28	26	16	0	28	23	24	28	24	27	21	25	28
SARP	28	26	28	20	28	26	14	0	28	22	24	28	25	28	21	26	28
SASA	28	25	23	23	23	23	14	23	26	21	28	24	25	19	19	16	23
SASJ	28	23	23	24	22	22	14	24	26	21	28	23	25	19	18	16	23
SAVC	28	2	1	26	27	26	17	27	27	21	25	26	26	26	18	21	28
SAWE	28	26	26	25	27	26	16	27	28	19	25	25	26	27	19	20	27
SAWG	28	23	24	26	27	25	17	27	28	20	25	26	26	26	16	21	28
SAWH	28	26	26	26	28	25	17	27	28	19	24	26	26	27	6	0	27
SAZM	28	22	12	23	12	23	12	17	20	16	21	19	26	27	28	25	27
SAZN	28	21	8	22	12	23	12	17	18	16	22	20	27	28	26	27	27
SAZS	28	21	11	23	12	23	12	18	19	16	21	19	26	28	27	25	26
Bolívia																	
SLCB	28	27	27	27	27	25	26	28	23	28	28	28	28	28	28	28	28
SLCO	28						2	4	4	0	2	1	2	0	0	0	2
SLET	28						0	0	0	0	0	0	0	0	1	0	0
SLLP	28	27	27	27	28	25	27	28	26	23	28	28	28	28	28	28	28
SLPO	28						0	0	0	0	0	0	0	0	0	0	0
SLPS	28						17	20	13	0	1	0	2	0	1	0	0
SLSU	28						0	0	0	0	1	0	2	0	0	0	0
SLTJ	21						0	0	0	17	21	21	21	24	20	21	21
SLTR	28	22	18	24	23	21	23	26	22	24	26	28	28	28	27	28	28
SLVR	28	27	18	26	27	25	26	27	26	28	28	28	28	28	27	27	28
Chile																	
SCAR	28	21	20	19	20	20	13	21	22	20	21	20	21	21	21	21	21
SCBA	28						0	28	27	14	28	27	27	23	28	26	26
SCCF	21						0	21	22	20	21	20	21	21	21	21	21
SCCI	28	27	27	26	28	26	17	28	27	19	28	27	27	27	28	27	27
SCDA	28	20	20	19	20	20	13	21	21	20	21	20	13	21	21	21	21
SCEL	28	28	27	26	28	26	17	28	28	24	27	27	27	28	28	27	28
SCFA	21	21	19	19	20	21	13	21	22	20	21	20	20	21	21	21	21
SCIE	28	26	27	26	28	26	17	28	28	22	28	27	27	28	28	27	28
SCIP	14	14	14	14	11	13	90	14	14	13	14	13	13	14	14	14	14
SCJO	28						0	28	28	22	28	27	27	14	14	14	13
SCSE	28						0	28	28	26	28	27	27	28	28	27	28
SCTC	28	21	26	26	28	27	17	28	28	22	28	27	27	27	28	27	28
SCTE	28	28	26	26	28	27	17	28	28	22	28	27	27	28	28	27	28

AERMETSG/9
Appendix G to the Report on Agenda Item 5

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Local	Prev.	2004			2005				2006				2007				2008
		Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar
Colômbia																	
SKBG	28						0	0	0	0	0	0	2	28	27	24	0
SKBO	28	25	23	24	25	22	26	26	26	28	28	24	27	27	28	27	0
SKBQ	28	25	23	24	25	22	26	26	26	28	27	23	27	25	28	28	0
SKCC	28	0	0	0	0	0	0	0	0	0	0	0	26	28	28	28	0
SKCG	28	24	23	24	25	21	25	23	26	28	28	23	26	27	28	28	0
SKCL	28	24	23	22	25	22	26	26	25	27	28	23	27	28	28	28	0
SKLT	28	16	18	19	25	17	21	19	26	28	28	23	27	28	28	26	0
SKPE	28						0	0	0	0	0	0	2	27	25	23	0
SKRG	28	20	20	19	19	17	18	16	24	28	28	24	27	25	23	26	0
SKSP	28	24	23	25	20	17	16	15	26	27	28	23	27	24	23	26	0
Equador																	
SEGU	28	20	18	25	23	25	25	27	26	22	26	22	24	27	23	24	24
SELT	21	20	19	25	23	25	25	27	26	22	26	23	21	27	23	24	23
SEMT	28	20	18	25	23	24	25	24	26	22	26	23	24	26	23	22	23
SEQU	28	20	18	25	23	25	25	24	26	22	26	23	24	27	23	24	23
Guiana																	
SYCJ	28	1	0	0	0	3	0	0	1	4	1	0	0	0	7	0	4
Guiana Francesa																	
SOCA	28	28	27	28	27	28	28	28	27	27	28	27	28	28	28	28	28
Panamá																	
MPBO	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MPCH	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MPDA	21	9	12	14	13	0	11	14	13	12	13	6	14	13	13	10	14
MPMG	21	9	13	14	14	0	13	13	13	13	14	6	14	14	12	12	14
MPTO	28	19	24	27	28	27	26	27	27	26	27	9	28	26	28	28	28
Paraguai																	
SGAS	28	25	27	27	25	1	26	27	27	25	26	24	25	28	28	15	28
SGES	28	23	27	27	24	1	26	27	27	25	26	24	25	27	28	14	27
Peru																	
SPHI	28	27	28	28	26	28	28	28	27	28	28	28	28	28	27	28	28
SPHO	21						0	0	0	0	1	0	1	0	0	0	21
SPHY	14						0	0	0	0	1	0	1	0	0	0	12
SPIM	28	21	26	28	27	28	28	28	27	28	28	28	28	28	27	28	28
SPJL	28						0	0	1	0	1	0	1	0	0	0	23
SPME	14						0	0	0	0	0	0	0	0	0	0	16
SPQT	28	22	26	28	27	28	28	27	28	28	28	28	28	28	27	28	28
SPQU	28	27	28	28	27	28	28	27	28	28	28	28	28	28	28	28	28
SPRU	28	26	28	28	26	28	28	28	27	28	28	28	28	28	27	28	28
SPSO	28	20	25	28	27	28	28	28	27	28	28	28	28	28	27	28	28
SPTN	28	21	25	28	27	28	28	28	27	27	28	28	28	28	27	28	28
SPTU	28						0	0	0	0	1	0	0	0	0	0	27
SPYL	28						0	0	0	0	1	0	1	0	0	0	23
SPZO	28	25	28	28	27	28	28	28	28	28	28	28	28	28	28	28	28
Suriname																	
SMJP	28	23	22	27	27	0	26	27	27	26	27	28	18	0	27	27	26
SMNI	28	0	0	0	25	0	26	27	27	28	27	27	16	0	26	25	24
SMZO	28	0	0	0	3	0	26	28	27	27	28	27	18	0	27	27	26

Local	Prev.	2004			2005				2006				2007				2008
		Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar
Uruguai																	
SUAA	28	22	14	28	28	27	27	26	28	20	27	26	28	17	26	25	25
SUCA	28	22	14	28	28	27	27	26	28	20	27	26	28	16	26	25	26
SULS	28	23	14	28	28	27	27	26	28	20	27	26	28	16	25	27	28
SUMU	28	25	25	28	28	27	28	26	28	20	27	26	28	11	25	27	28
SURV	28	0	1	3	0	1	5	25	28	20	26	26	28	13	26	25	26
SUSO	28						5	23	28	20	26	26	28	15	25	27	26
Venezuela																	
SVAC	28						0	0	0	0	0	0	0	0	0	0	0
SVBC	28	26	27	25	27	28	27	28	26	24	25	24	26	26	24	23	24
SVBI	28						0	0	0	0	0	0	0	0	0	0	0
SVBM	28						0	1	0	0	1	0	0	14	13	17	19
SVCB	28						0	0	0	0	0	0	0	0	0	0	0
SVCL	28						0	0	0	0	0	0	0	0	0	0	0
SVCR	28						0	0	0	0	0	0	0	0	0	0	0
SVCU	28						0	0	0	0	0	0	0	0	0	0	0
SVFM	28						0	0	0	0	0	0	0	0	0	0	0
SVGI	28						0	0	0	0	0	0	0	0	0	0	0
SVGU	28						0	0	0	0	0	0	0	0	0	0	0
SVHG	28						0	0	0	0	0	0	0	0	0	0	0
SVJC	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SVJM	28						0	0	0	0	0	0	0	0	0	0	0
SVMC	28	26	27	24	27	28	27	28	28	24	25	23	25	26	24	24	24
SVMD	28						0	0	0	0	0	0	0	0	0	0	0
SVMG	28	26	27	25	27	28	26	28	28	24	25	24	25	26	24	24	24
SVMI	28	26	27	25	27	28	27	28	28	24	25	24	25	26	24	24	24
SVMT	28						0	0	0	0	0	0	0	0	0	0	0
SVPA	28						0	0	0	0	0	0	0	0	0	0	0
SVSA	28	0	0	24	27	25	26	28	28	23	25	24	25	26	24	24	24
SVSO	28						0	0	0	0	0	0	0	0	0	0	0
SVSR	28						0	0	0	0	0	0	0	0	0	0	0
SVTM	28														0	0	0
SVVA	28	17	21	14	7	27	25	18	26	18	20	15	17	17	21	27	24
SVVP	28						0	0	0	0	0	0	0	0	2	0	0
Região CAR																	
Anguilla																	
TQPF	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
Antígua e Barbuda																	
TAPA	28	14	24	18	18	18	15	22	22	26	24	19	27	27	27	25	22
Antilhas Francesas																	
TFFF	28	25	0	18	23	0	28	27	27	28	28	28	28	28	28	26	25
TFFR	28	27	27	28	23	28	27	27	28	27	27	28	28	28	27	26	25
Antilhas Holandesas																	
TNCB	28	28	28	28	28	28	26	27	28	28	27	26	26	28	27	28	24
TNCC	28	28	27	28	28	28	26	28	28	28	28	26	26	28	27	28	25
TNCE	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TNCM	28	27	27	25	28	27	26	26	28	28	28	25	26	28	27	27	21
Aruba																	
TNCA	28	28	27	28	28	28	26	28	27	27	28	26	26	28	27	28	25

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Local	Prev.	2004			2005				2006				2007				2008
		Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar
Barbados																	
TBPB	28	18	28	28	26	26	27	27	28	27	28	27	28	28	15	25	25
Belize																	
MZBZ	28	0	0	0	0	0	0	0	1	16	8	15	21	20	0	0	0
Costa Rica																	
MRLB	28	25	26	27	27	28	25	28	21	27	28	27	26	25	23	26	27
MRLM	28	24	26	27	27	28	23	28	21	27	28	26	24	25	26	26	27
MROC	28	28	28	27	28	28	26	28	21	27	28	27	27	25	26	26	28
MRPV	28	24	26	27	28	28	25	28	21	27	28	26	25	25	26	26	27
MRSJ	28						0	0	0	0	0	0	0	0	0	0	0
Cuba																	
MUBA	28						0	1	0	0	0	0	1	0	0	0	0
MUBY	28						0	0	0	0	0	0	0	0	0	0	0
MUCA	21	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0
MUCC	28															28	28
MUCL	21	0	0	0	0	0	7	8	7	8	7	6	14	10	13	13	0
MUCM	21	28	28	27	28	27	26	28	27	28	28	28	28	28	0	28	28
MUCU	28	28	28	27	28	27	26	28	27	28	28	28	0	28	28	27	27
MUGM	28																0
MUGT	28						0	1	0	0	0	0	0	0	0	0	0
MUHA	28	28	26	16	28	27	26	28	28	28	28	28	28	28	28	28	28
MUHG	28	28	28	27	28	27	26	28	27	28	28	28	28	28	28	28	27
MUMO	28						0	2	0	0	0	0	0	0	0	0	0
MUMZ	28						0	0	0	0	0	0	0	0	0	0	0
MUVR	28	28	28	27	27	26	26	28	28	28	27	28	28	28	28	28	26
Dominica																	
TDPD	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TDPR	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
El Salvador																	
MSLP	28	0	0	0	0	0	0	0	1	27	27	25	27	26	27	27	28
MSSS	28	0	0	0	0	0	0	0	1	26	26	24	27	25	27	27	28
Granada																	
TGPY	28	13	4	10	14	1	11	9	7	13	15	14	17	17	14	19	17
TGPZ	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Guatemala																	
MGFL	28	5	0	0	2	7	7	9	3	8	7	8	10	9	0	11	4
MGGT	28	12	18	27	28	28	25	28	26	20	26	23	23	25	21	27	28
MGPB	28	12	10	28	28	23	19	28	26	19	27	21	22	24	21	26	28
MGSJ	28	13	10	21	21	22	19	28	26	19	26	21	23	25	21	25	27
MGTK	28						17	18	23	15	24	13	14	16	15	14	24
Haiti																	
MTCH	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MTPP	28	1	0	2	0	0	14	11	14	0	0	0	0	0	0	0	0

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Local	Prev.	2004			2005				2006				2007				2008
		Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar
Honduras																	
MHLC	28	22	28	27	27	23	17	22	25	19	27	27	28	25	26	26	27
MHLM	28	22	28	27	26	22	16	21	25	19	25	27	28	25	27	27	28
MHRO	28	21	28	27	26	24	16	21	21	19	26	27	28	26	27	26	28
MHTG	28	22	28	27	27	24	16	22	25	19	27	24	28	24	27	28	28
Ilhas Bahamas																	
MYAM	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYAT	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYBS	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYEG	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYEH	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYEM	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYER	28						0	0	0	0	0	0	0	0	0	0	0
MYGF	28	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1
MYGW	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYLS	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MYNN	28	0	24	11	20	10	25	27	13	22	28	27	24	28	18	16	23
MYSM	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ilhas Cayman																	
MWCB	28	20	0	25	0	0	0	0	0	0	0	0	1	0	0	0	0
MWCR	28	22	0	25	0	0	0	0	1	0	0	0	1	0	0	0	0
Ilhas Turks and Caicos																	
MBGT	28	0	8	7	3	8	11	17	6	10	18	11	9	16	14	5	13
MBPV	28	0	8	6	4	7	10	14	6	10	20	11	9	16	11	5	14
MBSC	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ilhas Virgens (Inglaterra)																	
TUPJ	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
TUPW	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ilhas Virgens (Estados Unidos)																	
TIST	28	28	28	25	28	28	27	27	28	28	28	27	28	28	23	27	24
TISX	28	28	28	26	28	28	27	27	28	28	24	27	28	28	28	25	24
Jamaica																	
MKJP	28	27	26	27	26	25	20	28	28	24	15	21	25	24	20	19	7
MKJS	28	28	25	27	22	28	20	27	28	24	13	21	26	24	20	19	15
México																	
MMAA	28	28	28	25	24	28	26	26	26	27	28	27	28	28	28	28	28
MMAN	28	0	0	0	0	0	0	0	1	14	13	14	14	14	14	14	14
MMAS	28						0	0	1	1	0	0	0	0	0	0	0
MMBT	28	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0
MMCE	28						0	0	0	1	0	0	0	0	0	0	0
MMCL	28				0	0	0	0	0	14	14	14	14	14	14	14	14
MMCM	28	0	0	0	0	0	0	0	1	14	14	14	14	14	14	14	14
MMCN	28						0	0	1	1	0	0	0	0	0	0	0
MMCP	28	0	0	0	0	0	0	0	0	14	14	13	14	14	14	14	14
MMCS	28	0	0	0	0	0	0	0	1	14	13	14	13	14	14	18	14
MMCU	28	0	0	0	0	0	0	0	1	14	13	14	13	14	14	14	14
MMCV	28						0	0	0	1	0	0	0	0	0	0	0
MMCZ	28	14	14	13	14	14	15	13	14	14	14	14	12	14	14	14	14

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Local	Prev.	2004			2005				2006				2007				2008
		Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar
República Dominicana																	
MDBH	28	7	2	2	2	7	6	6	3	12	23	24	23	22	4	5	5
MDHE	28	18	10	11	13	23	14	6	0	0	0	0	0	0	0	0	0
MDLR	28	27	26	24	25	27	25	24	24	26	28	27	27	25	28	27	26
MDPC	28	28	26	28	24	28	26	24	24	26	28	26	26	25	28	27	26
MDPP	28	28	26	26	25	28	26	24	24	25	28	27	25	25	28	27	25
MDSD	28	28	26	26	24	28	25	24	24	25	27	27	27	25	28	27	25
MDST	28	28	26	26	25	28	26	24	24	25	27	27	27	25	28	27	26
Saint Kitts and Nevis																	
TKPK	28	19	19	17	19	20	20	17	20	20	21	19	17	20	0	25	24
TKPN	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santa Lúcia																	
TLPC	28	1	25	23	22	28	22	27	25	21	24	23	24	28	26	23	22
TLPL	28	13	28	24	23	28	22	28	25	22	24	24	25	28	26	24	25
San Vicente e Grenadinas																	
TVSB	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TVSC	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TVSM	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TVSU	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TVSV	28	8	14	15	13	13	13	14	13	13	16	14	15	16	8	13	13
Trinidad e Tobago																	
TTCP	28	28	8	26	26	5	27	20	27	22	28	26	27	28	26	26	24
TPPP	28	28	9	27	26	28	27	20	27	22	28	27	27	28	27	26	24
Região NAM																	
Canadá																	
CYMX	28	26	28	28	28	27	27	27	28	28	28	26	28	28	28	28	28
CYOW	28	0	0	28	28	27	27	27	28	28	28	26	28	28	28	28	28
CYQG	28	0	0	28	28	27	27	27	28	28	28	26	28	28	28	28	28
CYQY	28	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
CYUL	28	27	28	28	28	27	27	27	28	28	28	26	28	28	28	28	28
CYVR	28	0	0	28	28	27	27	27	28	28	28	26	28	28	28	28	28
CYYZ	28	0	0	28	28	27	27	27	28	28	28	26	28	28	28	28	28
Estados Unidos																	
KATL	28	25	28	26	25	28	27	26	27	28	28	27	23	28	27	24	25
KBDL	28	26	27	18	26	27	24	24	27	28	28	27	25	27	27	26	21
KBOS	28	26	28	15	25	25	23	22	28	28	28	27	20	27	26	26	25
KBWI	28	28	27	18	25	27	23	25	28	28	28	27	27	28	25	26	25
KCLE	28	27	28	28	28	26	25	24	27	27	28	27	26	27	26	24	25
KDEN	28	25	28	27	26	26	23	26	26	27	28	27	27	28	26	24	25
KDFW	28	24	27	26	28	27	26	25	27	27	28	27	27	28	27	25	25
KDTW	28	27	27	28	27	27	23	23	28	27	28	27	25	28	27	26	23
KEWR	28	27	27	28	28	27	25	27	28	27	28	27	27	27	27	23	24
KFAT	28	23	26	27	25	27	25	25	26	28	28	27	23	28	28	26	22
KFLL	28	26	28	28	24	26	24	25	27	25	28	27	25	28	28	27	22
KIAD	28	26	28	27	26	26	27	26	28	26	28	27	26	28	26	25	24
KIAG	28	26	28	27	24	26	27	27	28	28	28	27	22	28	27	24	23
KIAH	28	27	27	26	25	24	23	27	28	27	28	27	22	27	27	24	25
KIND	28	25	26	27	26	27	23	26	28	28	28	27	26	28	27	27	26
KJFK	28	28	25	27	21	27	22	26	27	26	27	27	25	27	26	23	25

Local	Prev.	2004			2005				2006				2007				2008
		Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar
KLAS	28	26	28	27	26	27	23	27	27	28	28	27	25	28	25	26	22
KLAX	28	28	28	26	24	28	24	25	28	28	28	27	22	28	26	26	24
KMIA	28	24	28	25	26	28	27	27	28	27	28	27	24	28	27	26	24
KMKE	28	25	28	28	25	24	25	26	28	28	28	27	24	27	26	25	24
KMSY	28	26	28	27	24	26	26	25	26	26	28	27	21	26	25	23	25
KOAK	28	25	28	28	27	28	25	26	28	27	28	27	25	27	27	26	24
KONT	28	26	28	25	25	26	26	26	28	28	28	27	26	28	24	26	25
KORD	28	27	27	27	26	27	25	25	28	26	28	27	23	27	28	27	25
KORL	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KPBI	28	26	28	28	27	27	24	26	28	28	28	27	26	28	25	26	24
KPHL	28	25	25	28	25	28	25	25	28	27	28	26	27	28	26	26	25
KPHX	28	25	28	27	26	27	23	25	27	27	28	27	23	28	25	26	23
KPIT	28	26	27	27	28	28	26	26	28	28	28	27	25	27	26	24	24
KPUB	28	27	28	27	27	26	27	26	28	27	28	26	25	28	28	24	25
KSAN	28	25	28	26	28	27	26	27	28	28	28	27	26	28	27	27	26
KSAT	28	23	27	27	27	26	25	23	28	27	28	27	23	28	26	24	24
KSCK	28	26	28	27	27	27	26	26	28	25	27	27	20	26	27	24	24
KSEA	28	26	28	27	28	25	26	24	26	26	28	27	26	28	27	27	23
KSFO	28	26	26	26	24	27	27	26	28	27	28	27	26	27	27	26	25
KTPA	28	26	27	27	26	28	26	25	27	26	28	27	24	27	28	26	23
KTUS	28	26	26	25	28	24	27	25	28	28	28	27	0	28	27	24	22
Região NAT																	
Bermudas																	
TXKF	28	26	28	28	28	27	27	27	28	28	28	26	28	26	11	28	28
Região AFI																	
África do Sul																	
FABL	28	19	15	15	7	24	23	24	18	24	24	22	16	22	19	22	27
FACT	28	27	22	15	26	26	28	27	27	23	17	23	25	17	19	27	28
FADN	28	28	24	18	26	28	27	27	28	24	19	20	14	23	19	27	28
FAJS	28	28	24	18	28	27	27	28	26	24	25	25	18	23	23	23	28
Angola																	
ENLU	28	2	15	9	8	10	4	11	9	17	5	1	0	2	2	2	21
Cabo Verde																	
GVAC	28	27	28	28	28	25	28	28	28	25	28	27	26		26	27	28
Congo																	
FCBB	28	27	28	28	28	28	27	27	28	28	28	28	27	28	28	28	27
Costa do Marfim																	
DIAP	28	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	26
Gambia																	
GBYD	28	0	1	0	0	0	0	0	0	0	0	1	0	2	0	0	27
Ghana																	
DGAA	28	0	0	0	0	0	0	0	1	0	0	0	0	2	0	0	11
Guiné Bissau																	
GGOV	28	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	27

[illegible]

[illegible]

Local	Prev.	2004			2005				2006				2007				2008
		Mar	Jun	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar	Jun	Set	Nov	Mar
Portugal																	
LPAZ	28						28	27	28	28	26	22	28	27	28	28	28
LPFR	28	20	28	28	28	28	28	28	28	28	28	22	28	28	28	28	28
LPPR	28	20	28	28	28	28	28	28	28	28	27	22	28	28	28	28	25
LPPS	28	19	28	28	28	28	28	28	28	28	27	22	28	28	28	28	28
LPPT	28	20	28	28	28	28	28	28	28	28	28	22	28	28	28	28	28
República Tcheca																	
LKPR	28	0	0	0	0	0	28	28	28	28	28	28	28	28	28	28	28
Rússia																	
UUEE	28	28	28	28	26	28	28	28	28	28	28	28	28	28	28	28	28
Slováquia																	
LZIB		0	0	0	0	0	0	0	28	28	28	28	28	27	28	28	28
Suíça																	
LSGG	28	19	28	28	26	28	28	28	28	24	27	27	28	25	28	27	27
LSZH	28	21	25	28	26	28	28	27	27	24	27	28	28	28	27	27	27
Região ASIA																	
Austrália																	
YSSY	28	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
Nova Zelândia																	
NZAA	28	28	28	28	28	28	26	27	28	28	28	28	28	28	28	28	27
NZCH	28	28	28	28	28	28	26	27	28	28	28	28	0	28	28	28	27
NZWN	28	28	28	28	28	28	26	27	28	28	28	28	28	28	28	28	27
Região PAC																	
Polinésia Francesa																	
NTAA	28	27	27	28	27	28	28	25	28	28	28	27	28	28	28	27	24
NTTG	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Nota: No previsto Intercâmbio de TAF nesse período.

Apéndice H al Informe sobre la Cuestión 5 del Orden del Día / Appendix H to the Report on Agenda Item 5
Requerimientos TAF de IATA / IATA TAF Requirements - CAR

ICAO	Aerodrome name	Country	Region	SA	SP	FC	FT	SADIS Annex 1	AOP Aerodrome	IATA Table A	Remarks
AOP aerodromes 30H TAF SADIS											
Non-AOP aerodromes 30H TAF SADIS											
Non-AOP aerodromes 30H TAF Non-SADIS											
AOP aerodromes 24H TAF SADIS											
MBGT	GRAND TURK INTL	Turks and Caicos Islands (United Kingdom)	CAR	Y	Y		Y	Y	Y	MBGT	
MBPV	PROVIDENCIALES	Turks and Caicos Islands (United Kingdom)	CAR	Y	Y		Y	Y	Y	MBPV	
MBSC	SOUTH CAICOS	Turks and Caicos Islands (United Kingdom)	CAR	Y	Y		Y	Y	Y	MBSC	
MDBH	BARAHONA/MARIA MONTEZ	Dominican Republic	CAR	Y	Y		Y	Y	Y	MDBH	
MDHE	HERRERA INTL.	Dominican Republic	CAR	Y	Y		Y	Y	Y	MDHE	
MDLR	LA ROMANA INTL	Dominican Republic	CAR	Y	Y		Y	Y	Y	MDLR	
MDPC	PUNTA CANA	Dominican Republic	CAR	Y	Y		Y	Y	Y	MDPC	
MDPP	PUERTO PLATA/GREGORIO LUPERON	Dominican Republic	CAR	Y	Y		Y	Y	Y	MDPP	
MDSD	SANTO DOMINGO DE LAS AMERICAS	Dominican Republic	CAR	Y	Y		Y	Y	Y	MDSD	
MDST	SANTIAGO/CIBAO INTL	Dominican Republic	CAR	Y	Y		Y	Y	Y	MDST	
MGGT	GUATEMALA/LA AURORA	Guatemala	CAR	Y	Y		Y	Y	Y	MGGT	
MGPB	PUERTO BARRIOS	Guatemala	CAR	Y	Y		Y	Y	Y	MGPB	
MGSJ	SAN JOSE	Guatemala	CAR	Y	Y		Y	Y	Y	MGSJ	
MHLC	LA CEIBA/GOLOSON INTL	Honduras	CAR	Y	Y		Y	Y	Y	MHLC	
MHLM	LA MESA/SAN PEDRO SULA	Honduras	CAR	Y	Y		Y	Y	Y	MHLM	
MHRO	ROATAN	Honduras	CAR	Y	Y		Y	Y	Y	MHRO	
MHTG	TEGUCIGALPA/TONCONTIN	Honduras	CAR	Y	Y		Y	Y	Y	MHTG	
MKJP	KINGSTON / NORMAN MANLEY INTL	Jamaica	CAR	Y	Y		Y	Y	Y	MKJP	
MKJS	MONTEGO BAY / SANGSTER	Jamaica	CAR	Y	Y		Y	Y	Y	MKJS	
MMAA	ACAPULCO	Mexico	CAR	Y	Y		Y	Y	Y	MMAA	
MMAN	MONTERREY/AEROPORTE DEL NORTE	Mexico	CAR	Y	Y		Y	Y	Y	MMAN	
MMBT	BAHIAS DE HUATULCO	Mexico	CAR	Y	Y		Y	Y	Y	MMBT	
MMCC	CIUDAD ACUNA/CIUDAD ACUNA INTL	Mexico	CAR	Y	Y		Y	Y	Y	MMCC	
MMCL	CULIACAN	Mexico	CAR	Y	Y		Y	Y	Y	MMCL	
MMCM	CHETUMAL	Mexico	CAR	Y	Y		Y	Y	Y	MMCM	
MMCP	CAMPECHE	Mexico	CAR	Y	Y		Y	Y	Y	MMCP	
MMCS	CIUDAD JUAREZ INTL	Mexico	CAR	Y	Y		Y	Y	Y	MMCS	
MMCU	CHIHUAHUA	Mexico	CAR	Y	Y		Y	Y	Y	MMCU	
MMCZ	COZUMEL	Mexico	CAR	Y	Y		Y	Y	Y	MMCZ	
MMDO	DURANGO	Mexico	CAR	Y	Y		Y	Y	Y	MMDO	
MMGL	GUADALAJARA	Mexico	CAR	Y	Y		Y	Y	Y	MMGL	
MMGM	GUAYMAS	Mexico	CAR	Y	Y		Y	Y	Y	MMGM	

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Requerimientos TAF de IATA / IATA TAF Requirements - CAR

ICAO							SADIS	AOP	IATA	
Indicator	Aerodrome name						Annex 1	Aerodrome	Table A	
		Country	Region	SA	SP	FC	FT			Remarks
MMHO	HERMOSILLO	Mexico	CAR	Y	Y		Y	Y	MMHO	
MMLO	LEON GUANAJUATO / DEL BAJIO	Mexico	CAR	Y	Y		Y	Y	MMLO	
MMLP	LA PAZ	Mexico	CAR	Y	Y		Y	Y	MMLP	
MMLT	LORETO	Mexico	CAR	Y	Y		Y	Y	MMLT	
MMMA	MATAMOROS	Mexico	CAR	Y	Y		Y	Y	MMMA	
MMMD	MERIDA	Mexico	CAR	Y	Y		Y	Y	MMMD	
MMML	MEXICALI	Mexico	CAR	Y	Y		Y	Y	MMML	
MMMM	MORELIA	Mexico	CAR	Y	Y		Y	Y	MMMM	
MMMX	MEXICO	Mexico	CAR	Y	Y		Y	Y	MMMX	
MMMY	MONTERREY/G.M.ESCOBEDO	Mexico	CAR	Y	Y		Y	Y	MMMY	
MMMZ	MAZATLAN	Mexico	CAR	Y	Y		Y	Y	MMMZ	
MMNG	NOGALES	Mexico	CAR	Y	Y		Y	Y	MMNG	
MMNL	NUEVO LAREDO	Mexico	CAR	Y	Y		Y	Y	MMNL	
MMPG	PIEDRAS NEGRAS	Mexico	CAR	Y	Y		Y	Y	MMPG	
MMPR	PUERTO VALLARTA	Mexico	CAR	Y	Y		Y	Y	MMPR	
MMRX	REYNOSA	Mexico	CAR	Y	Y		Y	Y	MMRX	
MMSD	SAN JOSE DEL CABO	Mexico	CAR	Y	Y		Y	Y	MMSD	
MMSF	SAN FELIPE	Mexico	CAR	Y	Y		Y	Y	MMSF	
MMTJ	TORREON	Mexico	CAR	Y	Y		Y	Y	MMTJ	
MMTM	TIJUANA	Mexico	CAR	Y	Y		Y	Y	MMTM	
MMTO	TAMPICO	Mexico	CAR	Y	Y		Y	Y	MMTO	
MMTP	TOLUCA	Mexico	CAR	Y	Y		Y	Y	MMTP	
MMUN	TAPACHULA	Mexico	CAR	Y	Y		Y	Y	MMUN	
MMVA	CANCUN	Mexico	CAR	Y	Y		Y	Y	MMVA	
MMVR	VILLAHERMOSA	Mexico	CAR	Y	Y		Y	Y	MMVR	
MMZC	VERACRUZ	Mexico	CAR	Y	Y		Y	Y	MMZC	
MMZH	ZACATECAS	Mexico	CAR	Y	Y		Y	Y	MMZH	
MMZO	IXTAPA-ZIHUATANEJO	Mexico	CAR	Y	Y		Y	Y	MMZO	
MNMG	MANZANILLO	Mexico	CAR	Y	Y		Y	Y	MNMG	
MNPC	MANAGUA	Nicaragua	CAR	Y	Y		Y	Y	MNPC	
MPBO	PUERTO CABEZAS	Nicaragua	CAR	Y	Y		Y	Y	MPBO	
MPCH	BOCAS DEL TORO/BISIRA	Panama	CAR	Y	Y		Y	Y	MPCH	
MPDA	CHANGUINOLA/CAPT. MANUEL NINO	Panama	CAR	Y	Y		Y	Y	MPDA	
MPMG	DAVID/ENRIQUE MALEK	Panama	CAR	Y	Y		Y	Y	MPMG	
MPTO	PANAMA/MARCOS A.GELABERT	Panama	CAR	Y	Y		Y	Y	MPTO	
MRLB	PANAMA/TOCUMEN	Panama	CAR	Y	Y		Y	Y	MRLB	
MRLM	LIBERIA/DANIEL ODUBER QUIROS	Costa Rica	CAR	Y	Y		Y	Y	MRLM	
MROC	LIMON INTL	Costa Rica	CAR	Y	Y		Y	Y	MRLM	
	SAN JOSE/JUAN SANTAMARIA INTL	Costa Rica	CAR	Y	Y		Y	Y	MROC	

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ICAO Indicator	Aerodrome name							SADIS Annex 1	AOP Aerodrome	IATA Table A	Remarks
		Country	Region	SA	SP	FC	FT				
MRPV	SAN JOSE/TOBIAS BOLANOS INTL	Costa Rica	CAR	Y	Y	Y	Y	Y	Y	MRPV	
MSLP	SAN SALVADOR/EL SALVADOR INTL	El Salvador	CAR	Y	Y	Y	Y	Y	Y	MSLP	
MSSS	SAN SAVALDOR/ILOPANGO	El Salvador	CAR	Y	Y	Y	Y	Y	Y	MSSS	
MTCH	CAP HAITIEN	Haiti	CAR	Y	Y	Y	Y	Y	Y	MTCH	
MTPP	AÉROPORT TOUSSAINT LOUVERTURE	Haiti	CAR	Y	Y	Y	Y	Y	Y	MTPP	
MUCA	CIEGO DE AVILA/MAXIMO GOMEZ	Cuba	CAR	Y	Y	Y	Y	Y	Y	MUCA	FT: 12-hour validity
MUCL	CAYO LARGO DEL SUR/VILO ACUNA	Cuba	CAR	Y	Y	Y	Y	Y	Y	MUCL	
MUCM	CAMAGUEY	Cuba	CAR	Y	Y	Y	Y	Y	Y	MUCM	
MUCU	SANTIAGO DE CUBA/A. MACEO INTL	Cuba	CAR	Y	Y	Y	Y	Y	Y	MUCU	
MUHA	HAVANA/JOSE MARTI	Cuba	CAR	Y	Y	Y	Y	Y	Y	MUHA	
MUHG	HOLGUIN FRANK PAIS	Cuba	CAR	Y	Y	Y	Y	Y	Y	MUHG	
MUVR	VARADERO JUAN GUALBERTO GOMEZ	Cuba	CAR	Y	Y	Y	Y	Y	Y	MUVR	
MWCB	CAYMAN BRAC/GERRAD SMITH INTL	Cayman Islands (United Kingdom)	CAR	Y	Y	Y	Y	Y	Y	MWCB	
MWCR	GRAND CAYMAN/OWEN ROBERTS INTL	Cayman Islands (United Kingdom)	CAR	Y	Y	Y	Y	Y	Y	MWCR	
MYAM	MARSH HARBOUR	Bahamas	CAR	Y	Y	Y	Y	Y	Y	MYAM	
MYAT	TRAESURE CAY	Bahamas	CAR	Y	Y	Y	Y	Y	Y	MYAT	
MYBS	ALICE TOWN/SOUTH BEMINI	Bahamas	CAR	Y	Y	Y	Y	Y	Y	MYBS	
MYEG	GEORGETOWN	Bahamas	CAR	Y	Y	Y	Y	Y	Y	MYEG	
MYEH	NORTH ELEUTHERA	Bahamas	CAR	Y	Y	Y	Y	Y	Y	MYEH	
MYEM	GOVERNORS HARBOUR	Bahamas	CAR	Y	Y	Y	Y	Y	Y	MYEM	
MYGF	FREEPORT/GRAND BAHAMA	Bahamas	CAR	Y	Y	Y	Y	Y	Y	MYGF	
MYLS	STELLA MARIS/LONG ISLAND	Bahamas	CAR	Y	Y	Y	Y	Y	Y	MYLS	
MYNN	NASSAU	Bahamas	CAR	Y	Y	Y	Y	Y	Y	MYNN	
MYSM	COCKBURN TOWN/SAN SALVADOR I.	Bahamas	CAR	Y	Y	Y	Y	Y	Y	MYSM	
MZBZ	BELIZE/P.S.W GOLDSON INTL	Belize	CAR	Y	Y	Y	Y	Y	Y	MZBZ	
SMJP	PARAMARIBO/ZANDERY J.V.PENGEL	Suriname	CAR	Y	Y	Y	Y	Y	Y	SMJP	
SMNI	NIEUW NICKERIE/MAJ. FERNANDES	Suriname	CAR	Y	Y	Y	Y	Y	Y	SMNI	
SMZO	PARAMARIBO/ZORG EN HOOP	Suriname	CAR	Y	Y	Y	Y	Y	Y	SMZO	
SOCA	CAYENNE/ROCHAMBEAU	French Guiana (France)	CAR	Y	Y	Y	Y	Y	Y	SOCA	
SYCJ	TIMEHRI/CHEDDI JAGAN INTL/CJIA	Guyana	CAR	Y	Y	Y	Y	Y	Y	SYCJ	
TAPA	ANTIGUA/V.C. BIRD INTL.	Antigua and Barbuda	CAR	Y	Y	Y	Y	Y	Y	TAPA	
TBPB	BRIDGETOWN/GRANTLEY ADAMS INTL	Barbados	CAR	Y	Y	Y	Y	Y	Y	TBPB	
TDPD	ROSEAU/MELVILLE HALL-DOMINICA	Dominica	CAR	Y	Y	Y	Y	Y	Y	TDPD	
TDPR	ROSEAU/CANEFIELD	Dominica	CAR	Y	Y	Y	Y	Y	Y	TDPR	
TFFF	FORT DE FRANCE / LE LAMENTIN	French Antilles (France)	CAR	Y	Y	Y	Y	Y	Y	TFFF	
TFFG	SAINT MARTIN/GRAND CASE	French Antilles (France)	CAR	Y	Y	Y	Y	Y	Y	TFFG	
TFFJ	SAINT BARTHELEMY	French Antilles (France)	CAR	Y	Y	Y	Y	Y	Y	TFFJ	
TFFR	POINTE A PITRE / LE RAIZET	French Antilles (France)	CAR	Y	Y	Y	Y	Y	Y	TFFR	

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ICAO Indicator	Aerodrome name						SADIS Annex 1	AOP Aerodrome	IATA Table A	Remarks
		Country	Region	SA	SP	FC	FT			
TGPY	GRENADA/POINT SALINES	Grenada	CAR	Y	Y	Y	Y	Y	TGPY	
TGPZ	LAURISTON/CARRIACOU ISLAND	Grenada	CAR	Y	Y	Y	Y	Y	TGPZ	
TIST	ST. THOMAS	Virgin Islands (United States)	CAR	Y	Y	Y	Y	Y	TIST	
TISX	ST.CROIX/ROHLSSEN-CHRISTIANSTED	Virgin Islands (United States)	CAR	Y	Y	Y	Y	Y	TISX	
TJBQ	AGUADILLA/RAFAEL HERNANDEZ	Puerto Rico (United States)	CAR	Y	Y	Y	Y	Y	TJBQ	
TJFA	FAJARDO/DIEGO JIMENEZ TORRES	Puerto Rico (United States)	CAR	Y	Y	Y	Y	Y	TJFA	
TJPS	PONCE/MERCEDITA	Puerto Rico (United States)	CAR	Y	Y	Y	Y	Y	TJPS	
TJSJ	SAN JUAN / LUIS MUNOZ MARIN	Puerto Rico (United States)	CAR	Y	Y	Y	Y	Y	TJSJ	
TJVQ	VIEQUES/ANTONIO RIVERA	Puerto Rico (United States)	CAR	Y	Y	Y	Y	Y	TJVQ	
TKPK	ST.KITTS/ROBERT L. BRADSHAW	Saint Kitts and Nevis	CAR	Y	Y	Y	Y	Y	TKPK	
TKPN	VANCE WINKWORTH AMORY INTL.	Saint Kitts and Nevis	CAR	Y	Y	Y	Y	Y	TKPN	
TLPC	GEORGE F.L. CHARLES	Saint Lucia	CAR	Y	Y	Y	Y	Y	TLPC	
TLPL	ST. LUCIA HEWANORRA	Saint Lucia	CAR	Y	Y	Y	Y	Y	TLPL	
TNCA	ARUBA/REINA BEATRIX	Aruba (Netherlands)	CAR	Y	Y	Y	Y	Y	TNCA	
TNCB	BONAIRE,FLAMINGO	Netherlands Antilles (Netherlands)	CAR	Y	Y	Y	Y	Y	TNCB	
TNCC	CURACAO / HATO	Netherlands Antilles (Netherlands)	CAR	Y	Y	Y	Y	Y	TNCC	
TNCE	ORANJESTAD/ST.EUSTATIUS	Netherlands Antilles (Netherlands)	CAR	Y	Y	Y	Y	Y	TNCE	
TNCM	ST. MAARTEN / PRINCESS JULIANA	Netherlands Antilles (Netherlands)	CAR	Y	Y	Y	Y	Y	TNCM	
TQPF	THE VALLEY/WALLBLAKE	Anguilla (United Kingdom)	CAR	Y	Y	Y	Y	Y	TQPF	
TRPM	PLYMOUTH/W.H. BRAMBLE	Montserrat (United Kingdom)	CAR	Y	Y	Y	Y	Y	TRPM	
TTCP	SCARBOROUGH/CROWN POINT	Trinidad and Tobago	CAR	Y	Y	Y	Y	Y	TTCP	
TPPP	PORT OF SPAIN / PIARCO	Trinidad and Tobago	CAR	Y	Y	Y	Y	Y	TPPP	
TUPJ	ROAD TOWN/BEEF ISLAND	British Virgin Islands (United Kingdom)	CAR	Y	Y	Y	Y	Y	TUPJ	
TUPW	VIRGIN GORDA/VIRGIN GORDA Island	British Virgin Islands (United Kingdom)	CAR	Y	Y	Y	Y	Y	TUPW	
TVSB	BEQUIA/J.F.MITCHEL	Saint Vincent and the Grenadines	CAR	Y	Y	Y	Y	Y	TVSB	
TVSC	CANOUAN/CANOUAN	Saint Vincent and the Grenadines	CAR	Y	Y	Y	Y	Y	TVSC	
TVSM	MUSTIQUE	Saint Vincent and the Grenadines	CAR	Y	Y	Y	Y	Y	TVSM	
TVSU	UNION ISLAND	Saint Vincent and the Grenadines	CAR	Y	Y	Y	Y	Y	TVSU	
TVSV	KINGSTOWN/E.T. JOSHUA	Saint Vincent and the Grenadines	CAR	Y	Y	Y	Y	Y	TVSV	
TXKF	BERMUDA KINDLY FIELD	Bermuda (United Kingdom)	CAR	Y	Y	Y	Y	Y	TXKF	
Non-AOP aerodromes 24H TAF SADIS										
MGTK	TIKAL/ANACLETO M.CASTELLANOS	Guatemala	CAR	Y	Y	Y	Y		MGTK	
MMAS	AGUASCALIENTES	Mexico	CAR	Y	Y	Y	Y		MMAS	
MMCE	CIUDAD DEL CARMEN	Mexico	CAR	Y	Y	Y	Y		MMCE	
MMCN	CIUDAD OBREGON	Mexico	CAR	Y	Y	Y	Y		MMCN	
MMCV	CIUDAD VICTORIA	Mexico	CAR	Y	Y	Y	Y		MMCV	
MMOX	OAXACA	Mexico	CAR	Y	Y	Y	Y		MMOX	
MMPS	PUERTO ESCONDIDO	Mexico	CAR	Y	Y	Y	Y		MMPS	

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Requerimientos TAF de IATA / IATA TAF Requirements - CAR

ICAO								SADIS	AOP	IATA	Remarks
Indicator	Aerodrome name							Annex 1	Aerodrome	Table A	
		Country	Region	SA	SP	FC	FT				
MMSP	SAN LUIS POTOSI	Mexico	CAR	Y	Y		Y	Y		MMSP	
MUCC	CAYO COCO INTL/JARDINES D.REY	Cuba	CAR	Y	Y		Y	Y		MUCC	
MUGM	GUANTANAMO US-NAVAL AIR BASE	Cuba	CAR	Y	Y		Y	Y		MUGM	
TJMZ	MAYAGUEZ	Puerto Rico (United States)	CAR	Y	Y		Y	Y		TJMZ	
TJNR	ROOSEVELT ROADS	Puerto Rico (United States)	CAR	Y	Y		Y	Y		TJNR	

Non-AOP aerodormes 24H TAF Non-SADIS

ICAO Indicator	Aerodrome name						SADIS Annex 1	AOP Aerodrome	IATA Table A	
		Country	Region	SA	SP	FC	FT			Remarks
AOP aerodormes 30H TAF SADIS										
Non-AOP aerodormes 30H TAF SADIS										
Non-AOP aerodormes 30H TAF Non-SADIS										
AOP aerodormes 24H TAF SADIS										
SAAR	ROSARIO	Argentina	SAM	Y	Y	Y	Y	Y	SAAR	
SABE	BUENOS AIRES/JORGE NEWBERY	Argentina	SAM	Y	Y	Y	Y	Y	SABE	
SACO	CORDOBA	Argentina	SAM	Y	Y	Y	Y	Y	SACO	
SADF	SAN FERNANDO INTL	Argentina	SAM	Y	Y	Y	Y	Y	SADF	
SAEZ	BUENOS AIRES/EZEIZA	Argentina	SAM	Y	Y	Y	Y	Y	SAEZ	
SAME	MENDOZA/EL PLUMERILLO	Argentina	SAM	Y	Y	Y	Y	Y	SAME	
SARE	RESISTENCIA	Argentina	SAM	Y	Y	Y	Y	Y	SARE	
SARI	CATARATAS DEL IGUAZU	Argentina	SAM	Y	Y	Y	Y	Y	SARI	
SASA	SALTA	Argentina	SAM	Y	Y	Y	Y	Y	SASA	
SASJ	JUJUY/GDOR. GUZMAN	Argentina	SAM	Y	Y	Y	Y	Y	SASJ	
SAVC	COMODORO RIVADAVIA	Argentina	SAM	Y	Y	Y	Y	Y	SAVC	
SAWG	RIO GALLEGOS	Argentina	SAM	Y	Y	Y	Y	Y	SAWG	
SAWH	USHUAIA/MALVINAS ARGENTINAS	Argentina	SAM	Y	Y	Y	Y	Y	SAWH	
SAZM	MAR DEL PLATA	Argentina	SAM	Y	Y	Y	Y	Y	SAZM	
SAZN	NEUQUEN/PRESIDENTE PERON	Argentina	SAM	Y	Y	Y	Y	Y	SAZN	
SAZS	SAN CARLOS DE BARILOCHE	Argentina	SAM	Y	Y	Y	Y	Y	SAZS	
SBBE	BELEM/VAL DE CAES	Brazil	SAM	Y	Y	Y	Y	Y	SBBE	
SBBR	BRASILIA/PRES.J.KUBITSCHK	Brazil	SAM	Y	Y	Y	Y	Y	SBBR	
SBBV	BOA VISTA/INTL.	Brazil	SAM	Y	Y	Y	Y	Y	SBBV	
SBCF	BELO HORIZONTE/TANCREDO NEVES	Brazil	SAM	Y	Y	Y	Y	Y	SBCF	
SBCG	CAMPO GRANDE/INTL.	Brazil	SAM	Y	Y	Y	Y	Y	SBCG	
SBCR	CORUMBA/INTL.	Brazil	SAM	Y	Y	Y	Y	Y	SBCR	
SBCT	CURITIBA/AFONSO PENA	Brazil	SAM	Y	Y	Y	Y	Y	SBCT	
SBCY	CUIABA/MARECHAL RONDON INTL	Brazil	SAM	Y	Y	Y	Y	Y	SBCY	
SBCZ	CRUZEIRO DO SUL/INTL.	Brazil	SAM	Y	Y	Y	Y	Y	SBCZ	
SBEG	MANAUS/EDUARDO GOMES	Brazil	SAM	Y	Y	Y	Y	Y	SBEG	
SBFI	FOZ DO IGUAZU/CATARATAS INTL	Brazil	SAM	Y	Y	Y	Y	Y	SBFI	
SBFL	FLORIANOPOLIS/HERCILLO LUZ	Brazil	SAM	Y	Y	Y	Y	Y	SBFL	

AERMETSG/9

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 Requerimientos TAF de IATA / IATA TAF Requirements - SAM

5H-7

ICAO								SADIS	AOP	IATA	Remarks
Indicator	Aerodrome name	Country	Region	SA	SP	FC	FT	Annex 1	Aerodrome	Table A	
SBFZ	FORTALEZA/PINTO MARTINS	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBFZ	
SBGL	RIO DE JANEIRO/GALEAO-ANTONIO	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBGL	
SBGR	SAO PAULO/GUARULHOS	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBGR	
SBKP	SAO PAULO VIRACOPOS/CAMPINAS	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBKP	
SBMO	MACEIO/ZUMBI DOS PALMARES	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBMO	
SBMQ	MACAPA/INTL.	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBMQ	
SBNT	NATAL/AUGUSTO SEVERO	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBNT	
SBPA	PORTO ALEGRE/SALGADO FILHO	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBPA	
SBPP	PONTA PORÁ/INTL.	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBPP	
SBRF	RECIFE/GUARARAPES INTL	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBRF	
SBSL	SAO LUIS/MARECHAL C.MACHADO	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBSL	
SBSN	SANTAREM/SANTAREM	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBSN	
SBSV	SALVADOR/DEP.L.ED. MAGALHAES	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBSV	
SBTT	TABATINGA/INTL.	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBTT	
SBUG	URUGUAIANA/RUBEM BERTA	Brazil	SAM	Y	Y	Y	Y	Y	Y	SBUG	
SCAR	ARICA/CHACALLUTA	Chile	SAM	Y	Y	Y	Y	Y	Y	SCAR	FT: three times a day
SCCI	PUNTA ARENAS/CARLOS IBANEZ DEL	Chile	SAM	Y	Y	Y	Y	Y	Y	SCCI	
SCDA	IQUIQUE/DIEGO ARACENA	Chile	SAM	Y	Y	Y	Y	Y	Y	SCDA	FT: three times a day
SCEL	SANTIAGO/ART.MERINO BENITEZ	Chile	SAM	Y	Y	Y	Y	Y	Y	SCEL	
SCFA	ANTOFAGASTA/CERRO MORENO	Chile	SAM	Y	Y	Y	Y	Y	Y	SCFA	FT: three times a day
SCIE	CONCEPCION/CARRIEL SUR	Chile	SAM	Y	Y	Y	Y	Y	Y	SCIE	
SCTE	PUERTO MONTT/EL TEPUAL	Chile	SAM	Y	Y	Y	Y	Y	Y	SCTE	
SEGU	GUAYAQUIL/SIMON BOLIVAR	Ecuador	SAM	Y	Y	Y	Y	Y	Y	SEGU	
SELT	LATACUNGA/COTOPAXI	Ecuador	SAM	Y	Y	Y	Y	Y	Y	SELT	
SEMT	MANTA/ELOY ALFARO	Ecuador	SAM	Y	Y	Y	Y	Y	Y	SEMT	
SEQU	QUITO/MARISCAL SUCRE	Ecuador	SAM	Y	Y	Y	Y	Y	Y	SEQU	
SGAS	ASUNCION/SILVIO PETTIROSSI	Paraguay	SAM	Y	Y	Y	Y	Y	Y	SGAS	
SGES	CIUDAD DEL ESTE/GUARANI	Paraguay	SAM	Y	Y	Y	Y	Y	Y	SGES	
SKBO	BOGOTA SANTAFE DE/EL DORADO	Colombia	SAM	Y	Y	Y	Y	Y	Y	SKBO	
SKBQ	BARRANQUILLA/E. CORTISSOZ	Colombia	SAM	Y	Y	Y	Y	Y	Y	SKBQ	
SKCC	CUCUTA / CAMILO DAZA	Colombia	SAM	Y	Y	Y	Y	Y	Y	SKCC	
SKCG	CARTAGENA / RAFAEL NUNEZ	Colombia	SAM	Y	Y	Y	Y	Y	Y	SKCG	
SKCL	CALI/ALFONSO BONILLA ARAGON	Colombia	SAM	Y	Y	Y	Y	Y	Y	SKCL	
SKLT	LETITIA	Colombia	SAM	Y	Y	Y	Y	Y	Y	SKLT	
SKRG	MEDELLIN/RIONEGRO J.M.CORDOVA	Colombia	SAM	Y	Y	Y	Y	Y	Y	SKRG	

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ICAO Indicator	Aerodrome name						SADIS Annex 1	AOP Aerodrome	IATA Table A	
		Country	Region	SA	SP	FC	FT			Remarks
SKSP	SAN ANDRES/GUST. ROJAS PINILLA	Colombia	SAM	Y	Y	Y	Y	Y	SKSP	
SLCB	COCHABAMBA/JORGE WILSTERMAN	Bolivia	SAM	Y	Y	Y	Y	Y	SLCB	
SLLP	LA PAZ/EL ALTO INTL.	Bolivia	SAM	Y	Y	Y	Y	Y	SLLP	
SLTJ	TARIJA/CAP AV. ORIEL LEA PLAZA	Bolivia	SAM	Y	Y	Y	Y	Y	SLTJ	
SLTR	TRINIDAD/JORGE HENRICH	Bolivia	SAM	Y	Y	Y	Y	Y	SLTR	
SLVR	SANTA CRUZ/VIRU VIRU INTL	Bolivia	SAM	Y	Y	Y	Y	Y	SLVR	
SMJP	PARAMARIBO/ZANDERY J.V.PENGEL	Suriname	CAR	Y	Y	Y	Y	Y	SMJP	
SMNI	NIEUW NICKERIE/MAJ. FERNANDES	Suriname	CAR	Y	Y	Y	Y	Y	SMNI	
SMZO	PARAMARIBO/ZORG EN HOOP	Suriname	CAR	Y	Y	Y	Y	Y	SMZO	
SOCA	CAYENNE/ROCHAMBEAU	French Guiana (France)	CAR	Y	Y	Y	Y	Y	SOCA	
SPHI	CHICLAYO/JOSE A.Q.GONZALES	Peru	SAM	Y	Y	Y	Y	Y	SPHI	
SPIM	LIMA-CALLAO/INT JORGE CHAVEZ	Peru	SAM	Y	Y	Y	Y	Y	SPIM	
SPQT	IQUITOS/C.FRANCISCO SECADA VIG	Peru	SAM	Y	Y	Y	Y	Y	SPQT	
SPQU	AREQUIPA/RODRIGUEZ BALLON	Peru	SAM	Y	Y	Y	Y	Y	SPQU	
SPRU	TRUJILLO/INTL CAP.FAP C.M.DE P	Peru	SAM	Y	Y	Y	Y	Y	SPRU	
SPSO	PISCO	Peru	SAM	Y	Y	Y	Y	Y	SPSO	
SPTN	TACNA/CORONEL CARLOS S.R.	Peru	SAM	Y	Y	Y	Y	Y	SPTN	
SPZO	CUSCO/INTL TENIENTE FAP A.V.A.	Peru	SAM	Y	Y	Y	Y	Y	SPZO	
SUAA	MONTEVIDEO/ANGEL S. ADAMI	Uruguay	SAM	Y	Y	Y	Y	Y	SUAA	
SUCA	COLONIA	Uruguay	SAM	Y	Y	Y	Y	Y	SUCA	
SULS	MALDONADO/CARLOS A.CURBELO	Uruguay	SAM	Y	Y	Y	Y	Y	SULS	
SUMU	MONTEVIDEO INTL DE CARRASCO	Uruguay	SAM	Y	Y	Y	Y	Y	SUMU	
SURV	RIVERA	Uruguay	SAM	Y	Y	Y	Y	Y	SURV	
SUSO	SALTO/INTL	Uruguay	SAM	Y	Y	Y	Y	Y	SUSO	
SVBC	BARCELONA / J.A. ANZOATEGUI	Venezuela	SAM	Y	Y	Y	Y	Y	SVBC	
SVJC	PARAGUANA	Venezuela	SAM	Y	Y	Y	Y	Y	SVJC	
SVMC	MARACAIBO / LA CHINITA	Venezuela	SAM	Y	Y	Y	Y	Y	SVMC	
SVMG	MARGARITA/INTL	Venezuela	SAM	Y	Y	Y	Y	Y	SVMG	
SVMI	CARACAS SIMON BOLIVAR	Venezuela	SAM	Y	Y	Y	Y	Y	SVMI	
SVSA	SAN ANTONIO DEL TACHIRA	Venezuela	SAM	Y	Y	Y	Y	Y	SVSA	
SVVA	VALENCIA/ARTURO MICHELENA INTL	Venezuela	SAM	Y	Y	Y	Y	Y	SVVA	
Non-AOP aerodormes 24H TAF SADIS										
EGYP	MOUNT PLEASANT/FALKLAND ISLAND	United Kingdom	SAM	Y	Y	✕	Y	Y	EGYP	
SCBA	BALMACEDA	Chile	SAM	Y	Y	Y	Y	Y	SCBA	OPR 24-hr

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ICAO		SADIS						AOP	IATA	Remarks
Indicator	Aerodrome name	Annex 1						Aerodrome	Table A	
		Country	Region	SA	SP	FC	FT			
SCCF	CALAMA/EL LOA	Chile	SAM	Y	Y	Y	Y		SCCF	OPR 11-00 UTC
SCJO	OSORNO/CANAL BAJO-CARLOS H.S:	Chile	SAM	Y	Y	Y	Y		SCJO	OPR 12-00 UTC
SCSE	LA SERENA/LA FLORIDA	Chile	SAM	Y	Y	Y	Y		SCSE	SA/FT: during OPR hours
SKBG	BUCARAMANGA/PALONEGRO	Colombia	SAM	Y	Y	Y	Y		SKBG	
SKPE	PEREIRA	Colombia	SAM	Y	Y	Y	Y		SKPE	
SLCO	COBIJA	Bolivia	SAM	Y	Y	Y	Y		SLCO	Only in the daytime.
SLET	SANTA CRUZ/ EL TROMPILLO	Bolivia	SAM	Y	Y	Y	Y		SLET	Only in the daytime.
SLPO	POTOSI	Bolivia	SAM	Y	Y	Y	Y		SLPO	Only in the daytime.
SLPS	PUERTO SUAREZ/CAP DE A.S.OGAYA	Bolivia	SAM	Y	Y	Y	Y		SLPS	Only in the daytime.
SLSU	SUCRE/J AZURDUY DE PADILLA	Bolivia	SAM	Y	Y	Y	Y		SLSU	Only in the daytime.
SPHO	AYACUCHO/CRN.ALFREDO M. DUARTE	Peru	SAM	Y	Y	Y	Y		SPHO	
SPHY	ANDAHUAYLAS	Peru	SAM	Y	Y	Y	Y		SPHY	
SPJL	JULIACA	Peru	SAM	Y	Y	Y	Y		SPJL	
SPME	TUMBES/PEDRO CANGA	Peru	SAM	Y	Y	Y	Y		SPME	
SPTU	PUERTO MALDONADO/PADRE ALDAMIZ	Peru	SAM	Y	Y	Y	Y		SPTU	
SPYL	TALARA/CAPITAN MONTES	Peru	SAM	Y	Y	Y	Y		SPYL	
SVAC	ACARIGUA	Venezuela	SAM	Y	Y	Y	Y		SVAC	
SVBI	BARINAS	Venezuela	SAM	Y	Y	Y	Y		SVBI	
SVBM	BARQUISIMETO	Venezuela	SAM	Y	Y	Y	Y		SVBM	
SVCB	CIUDAD BOLIVAR	Venezuela	SAM	Y	Y	Y	Y		SVCB	
SVCL	CALABOZO	Venezuela	SAM	Y	Y	Y	Y		SVCL	
SVCR	CORO	Venezuela	SAM	Y	Y	Y	Y		SVCR	
SVCS	CHARALLAVE	Venezuela	SAM	Y	Y	Y	Y		SVCS	
SVFM	CARACAS/B.A. GEN F, DE MIRANDA	Venezuela	SAM	Y	Y	Y	Y		SVFM	
SVGI	ALMIRANTE CRISTOBAL COLON	Venezuela	SAM	Y	Y	Y	Y		SVGI	
SVGU	GUANARE	Venezuela	SAM	Y	Y	Y	Y		SVGU	
SVHG	HIGUEROTE	Venezuela	SAM	Y	Y	Y	Y		SVHG	
SVJM	SAN JUAN DE LOS MORROS	Venezuela	SAM	Y	Y	Y	Y		SVJM	
SVMD	MERIDA	Venezuela	SAM	Y	Y	Y	Y		SVMD	
SVMT	MATURIN	Venezuela	SAM	Y	Y	Y	Y		SVMT	
SVPA	PUERTO AYACUCHO	Venezuela	SAM	Y	Y	Y	Y		SVPA	
SVSO	SANTO DOMINGO	Venezuela	SAM	Y	Y	Y	Y		SVSO	
SVSR	SAN FERNANDO DE APURE	Venezuela	SAM	Y	Y	Y	Y		SVSR	
SVTM	TUMEREMO	Venezuela	SAM	Y	Y	Y	Y		SVTM	
SVVP	VALLE DE LA PASCUA	Venezuela	SAM	Y	Y	Y	Y		SVVP	

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ICAO		SADIS						AOP	IATA	Remarks
Indicator	Aerodrome name	Annex 1						Aerodrome	Table A	
		Country	Region	SA	SP	FC	FT			
Non-AOP aerodormes 24H TAF Non-SADIS										
SANT	TUCUMAN/TTE. BENJAMIN MATIENZO	Argentina	SAM	Y	Y		Y		SANT	
SARF	FORMOSA	Argentina	SAM	Y	Y		Y		SARF	
SARP	POSADAS	Argentina	SAM	Y	Y		Y		SARP	
SBAR	ARACAJU/SANTA MARIA	Brazil	SAM	Y	Y		Y		SBAR	
SBBG	BAGE INTL/GUSTAVO KRAEMER	Brazil	SAM	Y	Y		Y		SBBG	
SBCJ	PARAUPEBAS/CARAJAS	Brazil	SAM	Y	Y		Y		SBCJ	
SBFN	FERNANDO DE NORONHA	Brazil	SAM	Y	Y		Y		SBFN	
SBJP	JOAO PESSOA/PRES CASTRO PINTO	Brazil	SAM	Y	Y		Y		SBJP	
SBLO	LONDRINA	Brazil	SAM	Y	Y		Y		SBLO	
SBMA	MARABA	Brazil	SAM	Y	Y		Y		SBMA	
SBPK	PELOTAS	Brazil	SAM	Y	Y		Y		SBPK	
SBPV	PORTO VELHO INTL/GOV J.T.DE O.	Brazil	SAM	Y	Y		Y		SBPV	
SBRB	RIO BRANCO/PRESID MEDICI INTL	Brazil	SAM	Y	Y		Y		SBRB	
SBRJ	RIO DE JANEIRO/SANTOS DUMONT	Brazil	SAM	Y	Y		Y		SBRJ	
SBRP	RIBEIRAO PRETO/LEITE LOPES	Brazil	SAM	Y	Y		Y		SBRP	
SBSJ	SAO JOSE DOS CAMPOS	Brazil	SAM	Y	Y		Y		SBSJ	
SBSP	SAO PAULO/CONGONHAS	Brazil	SAM	Y	Y		Y		SBSP	
SBTE	TERESINA/SENADOR PETRONIO PORT	Brazil	SAM	Y	Y		Y		SBTE	
SBTF	TEFE	Brazil	SAM	Y	Y		Y		SBTF	
SCAT	COPIAPO/DESIERTO DE ATACAMA	Chile	SAM	Y	Y		Y		SCAT	
SCNT	PUERTO NATALES/TTE.J.GALLARDO	Chile	SAM	Y	Y		Y		SCNT	
SCTC	TEMUCO/MAQUEHUE	Chile	SAM	Y	Y		Y		SCTC	
SPCL	PUCALLPA	Peru	SAM	Y	Y		Y		SPCL	
SPGM	TINGO MARIA	Peru	SAM	Y	Y		Y		SPGM	
SPJI	JUANJUI	Peru	SAM	Y	Y		Y		SPJI	
SPJR	CAJAMARCA/MAJ ARMANDO R.I.	Peru	SAM	Y	Y		Y		SPJR	
SPLO	ILO	Peru	SAM	Y	Y		Y		SPLO	
SPST	TARAPOTO/C.GUILLEMO DEL CAST.	Peru	SAM	Y	Y		Y		SPST	
SUDU	DURAZNO/SANTA BERNARDINA	Uruguay	SAM	Y	Y		Y		SUDU	

Agenda Item 6: Review of the CAR/SAM ANP/FASID, Part VI - MET

6.1 Under this Agenda item, the meeting reviewed regional meteorological procedures indicated in Part VI – Meteorology of the CAR/SAM ANP Basic/FASID (Doc 8733), in accordance with the structure of the current practices of the operational requirements in the CAR/SAM Regions.

CAR/SAM ANP Basic/FASID, Part VI - MET

6.2 The meeting recalled that regional meteorological procedures indicated in Part VI – Meteorology of the CAR/SAM ANP Basic/FASID (Doc 8733), were amended in October and November 2007, respectively. The valid ANP Basic/FASID, Part VI – MET is available at ICAO SAM Office website, [www.lima.icao.int/e-documents/CAR/SAM Air Navigation Plan](http://www.lima.icao.int/e-documents/CAR/SAM%20Air%20Navigation%20Plan).

Operational implementation of MET database – Tables MET 1A and 2A

6.3 The meeting recalled that the Fourteenth GREPECAS Meeting (April 2007), convened that CAR/SAM FASID Table MET 1A should be amended and maintained in the CAR/SAM ANP, pending the decision on the future air navigation regional plans and their relation with the new global plan.

6.4 In this regard, the meeting noted that on 20 February 2008 the development of the MET database – Tables MET 1A and 2A was completed, and since then the database is considered operational. To ensure access by States to this database, a new server host is required, which would be available by the end of 2008. In the meantime, the access will be through ICAO SAM Office website ([http://www.icao.int/eDocuments/CAR/SAM Air Navigation Plan](http://www.icao.int/eDocuments/CAR/SAM%20Air%20Navigation%20Plan)), where Part VI – MET of CAR/SAM ANP Basic/FASID is currently available.

6.5 The subgroup noted that the database is now a “master copy” and any change, except for editorials and omissions which may have occurred, and may require future amendments, will be subject to the standard amendment process to ANP Basic/FASID. In this regard, the meeting may note that the FASID should be amended to reflect the existing MET database – Tables MET 1A and 2A, as shown in **Appendix A** to this part of the report.

6.6 Additionally, in compliance with GREPECAS/14 Conclusions 14/23 and 14/25, the subgroup reviewed and proposed amendments to Tables MET 1A and 2A of the database, and reviewed as well the provision of OPMET data of Table MET 2A of non-AOP aerodromes of the CAR/SAM FASID. These changes are included in the above mentioned Appendix A.

6.7 The meeting noted that the new database is in alphabetical order and is based on Doc 7910 – *Location Indicators*, and not on FASID Tables AOP, therefore, there are some differences between the former FASID Tables and the new database.

6.8 In this regard, the meeting noted that in Doc 7910 - *Location Indicators*, the data of the indicators is in alphabetical order, followed by the “location name”, as in FASID Table AOP 1, where the name of the aerodrome is also included. However, during the review of the Tables of the database, it could be verified that the information contained in Doc 7910 is not always aligned with that included in CAR/SAM FASID Table AOP 1, noting that in some cases the name of the cities, departments or towns

is included in Doc 7910, as “location name”, while in CAR/SAM FASID Table AOP 1 the city is correctly included, followed by the name of the aerodrome.

6.9 The meeting considered that the differences in the information regarding the “location name” could be due to the fact that some CAR/SAM States have not taken into consideration the “Editorial Note” of Doc 7910, which is transcribed hereunder for ease of reference:

“Where the place name identifies an aerodrome with a name different from that of the city it serves, the city name appears first, followed by an oblique stroke (/) and the name of the aerodrome...”

6.10 Considering that in the future a database for the Table AOP will be prepared and, once operational, the MET database will be updated based on that Table, the meeting agreed that the Table AOP of the CAR/SAM Regions and the information contained in Doc 7910, should be reviewed in order that the information contained in both documents is harmonized, formulating the following draft decision:

DRAFT

DECISION 9/15 –

**HARMONIZATION OF THE INFORMATION CONTAINED IN
CAR/SAM FASID TABLE AOP 1 AND IN DOC 7910**

That, in order to harmonize the information contained in Doc 7910 – “*Location Indicators*” and CAR/SAM FASID Table AOP 1, GREPECAS AGA/AOP Subgroup carries out a detail review of the information contained in both documents and, as necessary, update and amend CAR/SAM FASID Table AOP 1, in accordance with the ICAO amendment procedures.

6.11 The meeting recalled that in compliance with Conclusion 3/2 of the International Airways Volcano Watch Operations Group (IAVWOPSG), Table MET 3B – Volcanic Ash advisory centre was amended, and in compliance of GREPECAS/13 Conclusion 13/31, Table MET 3A - Tropical cyclone advisory centre was amended, in order to harmonize Table MET 3A with the amendment of Table MET 3B.

6.12 Likewise, the meeting noted that Table MET 3A - Tropical cyclone advisory centre in ASIA/PAC Region was recently amended and that this table includes the location indicator of the tropical cyclone advisory centre. In this regard, being aware that the harmonization of FASID Tables in every region is an ICAO policy; the meeting agreed to amend CAR/SAM FASID Table MET 3A - Tropical cyclone advisory centre in the same conditions.

6.13 The meeting carried out a review and update of Tables MET 1A and MET 2A of the database, as well as of the regional meteorological procedures indicated in Part VI – Meteorology of CAR/SAM ANP Basic/FASID (Doc 8733).

6.14 Considering the above mentioned paragraphs related with amendments to CAR/SAM ANP Basic/FASID, the subgroup agreed to formulate the following draft conclusion:

DRAFT

CONCLUSION 9/16 –

**PROPOSAL FOR AMENDMENT TO CAR/SAM ANP FASID,
PART VI – MET**

That the CAR/SAM Facilities and Services Implementation Document, CAR/SAM FASID, be amended as indicated in Appendix A to this part of the report.

Part VI

METEOROLOGY (MET)

FASID

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EXCHANGE OF MET INFORMATION FOR OPERATIONS (FASID Tables MET 2A and MET 2B)

4. ~~Reports in the METAR/SPECI code forms and aerodrome forecasts in the TAF code form required in ISCS and SADIS are shown in FASID Table MET 2A.~~ The requirements for availability of OPMET information METAR, SPECI and TAF on a global basis through the AFS satellite distribution system (the ISCS and SADIS Broadcast and the associated internet based distribution system (SADIS FTP and ISCS...)) are included in FASID Table MET 2A. This table contains the aerodromes included in the CAR/SAM FASID Table AOP and those non-AOP aerodromes for which the States concerned have agreed to make available the OPMET information via the satellite distribution system on a regular basis.

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Appendix A to the Report on Agenda Item 6

6A- 2

Table MET 1A - Tableau MET 1A - Tabla MET 1A

Aerodrome where service is required Aérodrome où le service doit être assuré Aeródromo donde se requiere el servicio			Responsible MET Office Centre MET responsable Oficina MET responsable		Forecasts to be provided Prévisions à fournir Pronósticos a suministrar		
Name Nom Nombre	ICAO loc. ind. Ind. d'empl OACI Ind. lugar OACI.	Use Vocation Uso	Name Nom Nombre	ICAO loc. ind. Ind. d'empl. OACI Ind. lugar OACI	Trend Tendance Tendencia	TAF 18h	TAF 24h
1	2	3	4	5	6	7	8
...							
BRAZIL							
BELEM/Val de Caes	SBBE	RS	MANAUS/CINDACTA IV, AMBELEM/Val de Caes	SBAZSBB E			X
BELO HORIZONTE/Tancredo Neves	SBCF	RS	RIO DE JANEIRO/Antonio Carlos Jobim Intl	SBGL			X
BOA VISTA/Boa Vista Intl	SBBV	RS	MANAUS/CINDACTA IV, AMEduardo Gomes	SBAZSBE G			X
BRASILIA/Pres. Juscelino Kubitschek, DF	SBBR	RS	BRASILIA/CINDACTA I, DFBrasília Intl	SBBSSBB R			X
CAMPINAS/Viracopos	SBKP	RS	SAO PAULO/Guarulhos Intl	SBGR			X
CAMPO GRANDE/Campo Grande Intl	SBCG	RS	PORTO ALEGRE/Salgado Filho	SBPA			X
CORUMBA/Corumba Intl	SBCR	RS	PORTO ALEGRE/Salgado Filho	SBPA			X
CRUZEIRO DO SUL/Cruzeiro do Sul Intl	SBCZ	RS	MANAUS/CINDACTA IV, AMEduardo Gomes	SBAZSBE G			X
CUIABA/Marechal Rondon	SBCY	RS	BRASILIA/CINDACTA IBrasília Intl	SBBSSBB R			X
CURITIBA/Afonso Pena	SBCT	RS	PORTO ALEGRE/Salgado Filho	SBPA			X
FLORIANÓPOLIS/Hercílio Luz Intl	SBFL	RS	PORTO ALEGRE/Salgado Filho	SBPA			X
FORTALEZA/Pinto Martins	SBFZ	RS	RECIFE/CINDACTA III, PEGuararapes	SBRESBR F			X
FOZ DO IGUAÇU/Cataratas	SBFI	RS	PORTO ALEGRE/Salgado Filho	SBPA			X
MACAPA/Macapa Intl	SBMQ	RS	MANAUS/CINDACTA IV, AMBELEM/Val de Caes	SBAZSBB E			X
MACEIO/Zumbi dos Palmares Intl.	SBMO	RS	RECIFE/CINDACTA III, PEGuararapes	SBRESBR F			X
MANAUS/Eduardo Gomes	SBEG	RS	MANAUS/CINDACTA IV, AMEduardo Gomes	SBAZSBE G			X
NATAL/Augusto Severo	SBNT	AS	RECIFE/CINDACTA IVGuararapes – CINDACTA IIIGILBERTO FREYRE, PE	SBRESBR F			X
PONTA PORA/Ponta Pora Intl	SBPP	RS	PORTO ALEGRE/Salgado Filho	SBPA			X
PORTO ALEGRE/Salgado Filho	SBPA	RS	PORTO ALEGRE/Salgado Filho	SBPA			X
RECIFE/Guararapes	SBRF	RS	RECIFE/CINDACTA IIIGuararapes	SBRESBR F			X
RIO DE JANEIRO/Galeao, Antonio Carlos Jobim Intl	SBGL	RS	RIO DE JANEIRO/Galeao, Antonio Carlos Jobim Intl	SBGL			X

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Aerodrome where service is required Aérodrome où le service doit être assuré Aeródromo donde se requiere el servicio			Responsible MET Office Centre MET responsable Oficina MET responsable		Forecasts to be provided Prévisions à fournir Pronósticos a suministrar		
Name Nom Nombre	ICAO loc. ind. Ind. d'empl OACI Ind. lugar OACI.	Use Vocation Uso	Name Nom Nombre	ICAO loc. ind. Ind. d'empl OACI Ind. lugar OACI	Trend Tendance Tendencia	TAF 18h	TAF 24h
1	2	3	4	5	6	7	8
SALVADOR/Deputado Luis Eduardo Magalhaes	SBSV	RS	RECIFE/ ~~CINDACTA III~~ Guararapes	~~SBRESBR~~ F			X
SANTAREM/Santarém Intl	SBSN	AS	MANAUS/ ~~CINDACTA IV, AMBELEMA~~ Val de Caes	~~SBAZSBB~~ E			X
SAO LUÍS/Marechal Cunha Machado	SBSL	AS	MANAUS/ ~~CINDACTA IV, AMBELEM-~~ Val de Caes	~~SBAZSBB~~ E			X
SAO PAULO/Guarulhos Intl	SBGR	RS	SAO PAULO/Guarulhos Intl	SBGR			X
TABATINGA/Tabatinga Intl	SBTT	RS	MANAUS/ ~~CINDACTA IV, AM~~ Eduardo Gomes	~~SBAZSBE~~ G			X
URUGUAIANA/Rubem Berta	SBUG	RS	PORTO ALEGRE/Salgado Filho	SBPA			X
...							
CHILE							
ANTOFAGASTA/Cerro Moreno	SCFA	AS	ANTOFAGASTA/Cerro Moreno	SCFA	X		X
ARICA/Chacalluta	SCAR	RS	ANTOFAGASTA/Cerro Moreno	~~SCARS~~ A			X
CONCEPCION/Carriel Sur	SCIE	RS	SANTIAGO/Arturo Merino Benítez	~~SCIES~~ CEL			X
IQUIQUE/Gral Diego Aracena Intl.	SCDA	RS	ANTOFAGASTA/Cerro Moreno	~~SCDAS~~ A			X
PUERTO MONTT/EI Tepual	SCTE	RS	PUERTO MONTT/EI Tepual	SCTE	X		X
PUNTA ARENAS/Pdte. C. Ibañez del Campo	SCCI	AS	PUNTA ARENAS/Pdte. C. Ibañez del Campo	SCCI	X		X
SANTIAGO/Arturo Merino Benitez	SCEL	RS	SANTIAGO/Arturo Merino Benitez	SCEL	X		X
COLOMBIA							
BOGOTA/Eldorado	SKBO	RS	BOGOTA/Eldorado	SKBO	X		X
BARRANQUILLA/Ernesto Cortissoz	SKBQ	RS	BARRANQUILLA/Ernesto Cortissoz	SKBQ	X		X
CALI/Alfonso Bonilla Aragón	SKCL	RS	CALI/Alfonso Bonilla Aragón	SKCL	X		X
CARTAGENA/Rafael Núñez	SKCG	RS	CARTAGENA/Rafael Núñez	SKCG			X
CUCUTA/Camilo Daza	SKCC	RNS&AS	CUCUTA/Camilo Daza	SKCC			X
LETICIA/Alfredo Vásquez Cobo	SKLT	RNS&AS	SANTA FE DE BOGOTA/Eldorado	SKBO			X
RIONEGRO/José María Córdoba	SKRG	RS	RIONEGRO/José María Córdoba	SKRG	X		X
SAN ANDRES I./Sesquicentenario	SKSP	RS	SAN ANDRES I./Sesquicentenario	SKSP			X
...							

Table MET 1B — Tabla MET 1B

METEOROLOGICAL WATCH OFFICES OFICINAS DE VIGILANCIA METEOROLÓGICA

MWO location Emplacement du MWO Lugar de la MWO	ICAO loc.ind. Ind. d'empl. OACI Ind. lugar OACI	Area served/Région desservie/Zona atendida		Remarks Remarques Observaciones
		Name Nom Nombre	ICAO loc. ind. Ind. d'empl. OACI Ind. lugar OACI	
1	2	3	4	5
.....				
CHILE				
ANTOFAGASTA/Cerro Moreno SANTIAGO/Arturo Merino Benítez	SCFA SCEL	Antofagasta FIR/SRR	SCFZ	During the night SCEL assumes functions of Meteorological Watch Office for the FIR / En horario nocturno SCEL assume las funciones de oficina de vigilancia meteorológica para la FIR.
PUERTO MONTT/El Tepual	SCTE	Puerto Montt FIR/SRR	SCTZ	
PUNTA ARENAS/Pdte. C. Ibañez del Campo	SCCI	Punta Arenas FIR/SRR	SCCZ	
SANTIAGO/Arturo Merino Benitez	SCEL	Santiago FIR/SRR	SCEZ	Assumes functions of Meteorological watch in absence of another WMO / Asume funciones de vigilancia en ausencia de otra MWO.
.....				
UNITED STATES				
Kansas City Aviation Weather Center	KKCI	Houston Oceanic FIR Miami Oceanic FIR/SRR ~~Nassau FIR~~ San Juan FIR/SRR	KZHU KZMA ~~MYNA~~ TJZS	
.....				

Table MET 2A — Tabla MET 2A

~~Availability of~~ OPMET information (METAR, SPECI and TAF) required in ISCS and SADIS

~~www.icao.int/anb/sadisopsg/sug/sug_annex1.pdf~~

~~Note: FASID Table MET 2A is a global table showing the current requirements for OPMET information (METAR/SPECI and TAF) from all ICAO Regions necessary for the international air navigation. FASID Table MET2A is available on: www.icao.int/anb/sadisopsg/sug/sug_annex1.pdf and is regularly updated through the ICAO Regional Offices based on identified user agreements and in consultation with the States concerned.~~

~~Disponibilidad de i~~Información OPMET (METAR, SPECI Y TAF) requerida en el ISCS y en el SADIS

~~Nota: La Tabla MET 2A del FASID es una tabla global que muestra los requerimientos actuales de información OPMET (METAR/SPECI y TAF) de todas las Regiones de la OACI necesarios para la navegación aérea internacional. La Tabla MET 2A del FASID está disponible en: www.icao.int/anb/sadisopsg/sug/sug_annex1.pdf y es actualizada regularmente a través de las Oficinas Regionales de la OACI basadas en acuerdos de los usuarios identificados y en consulta con los Estados concernientes.~~

Table MET 2A — Tabla MET 2A

Aerodrome where service is to be provided			OPMET to be provided			
Listed in AOP Tables	Not Listed in AOP Tables	ICAO Location	SA/SP	FC	FT	Remark
1	2	3	4	5	6	7
.....						
Bolivia						
COCHABAMA	COBIJA	SLCO	Y		Y	Only in the daytime
LA PAZ	EL TROMPILLO	SLCB	Y		Y	
		SLET	Y		Y	Only in the daytime
	POTOSI	SLLP	Y		Y	
	PUERTO SUAREZ	SLPO	Y			Only in the daytime
	SUCRE	SLPS	Y		Y	Only in the daytime
		SLSU	Y		Y	Only in the daytime
TARIJA		SLTJ	Y		Y	Only in the daytime
TRINIDAD		SLTR	Y		Y	Only in the daytime
VIRU VIRU		SLVR	Y		Y	Only in the daytime
Peru						
AREQUIPA	ANDAHUAYLAS	SPHY	Y		Y	
		SPQU	Y		Y	
	AYACUCHO/CORONEL FAP	SPHO	Y		Y	
	ALFREDO MENDIVIL DUARTE					
	CAJAMARCA/MAYOR	SPJR	Y		Y	
	GENERAL FAP ARMANDO					
	REVOREDO IGLEXIAS					
	CELENDIN	SPLD	✗		✗	
CHICLAYO/CAP. JOSE ABELARDO		SPHI	Y		Y	
QUIÑONES GONZALES						
CUSCO/VELAZCO ASTETE		SPZO	Y		Y	
	ILO	SPLO	Y		Y	
IQUITOS/CORONEL FAP FRANCISCO		SPQT	Y		Y	
SECADA VIGNETTA						
	JUANJUI	SPJI	Y	✗		
	JULIACA	SPJL	Y		Y	
LIMA-CALLAO/INTL JORGE CHAVEZ		SPIM	Y		Y	
PISCO		SPSO	Y		Y	
	PTO. MALDONADO/PADRE	SPTU	Y			
	ALDAMIZ					
TACNA/CORONEL FAP CARLOS	PUCALLPA/DAVID ABENSUR R.	SPCL	Y		Y	
CIRIANI SANTA ROSA		SPTN	Y		Y	
	TALARA/CAPITAN MONTES	SPYL	Y		Y	
	TARAPOTO/CDTE. GUILLERMO	SPST	Y		Y	
	DEL CASTILLO PAREDES					
	TINGO MARIA	SPGM	Y	✗		
TRUJILLO/CAPITAN CARLOS		SPRU	Y		Y	
MARTINEZ DE PINILOS						
	TUMBES/PEDRO CANGA	SPME	Y			
	YURIMAGUAS/MOISES	SPMS	Y	✗		
	BENZAQUEN RENGIFO					
.....						

Apéndice A al Informe sobre la Cuestión 6 del Orden del Día / Appendix A to the Report on Agenda Item 6

VI-MET 2B-2

[illegible]

Apéndice A al Informe sobre la Cuestión 6 del Orden del Día / Appendix A to the Report on Agenda Item 6

[illegible]

Apéndice A al Informe sobre la Cuestión 6 del Orden del Día / Appendix A to the Report on Agenda Item 6

[illegible]

Apéndice A al Informe sobre la Cuestión 6 del Orden del Día / Appendix A to the Report on Agenda Item 6

[illegible]

Table MET 3A — Tabla MET 3A

TROPICAL CYCLONE ADVISORY CENTRE CENTRO DE AVISOS DE CICLONES TROPICALES

EXPLANATION OF THE TABLE

1	Location of the tropical cyclone advisory centre (TCAC).	
<u>2</u>	<u>ICAO location indicator of TCAC.</u>	
<u>23</u>	Area of responsibility for the preparation of advisory information on tropical cyclones by the TCAC in Column 1.	
<u>34</u>	Period of operation of the TCAC.	
<u>45</u>	MWO to which the advisory information on tropical cyclones should be sent.	
<u>56</u>	Location indicator assigned to the MWO in Column 4.	

EXPLICACIÓN DE LA TABLA

<i>Columna</i>		
1	Lugar del centro de avisos de ciclones tropicales (TCAC).	
<u>2</u>	<u>Indicador de lugar del TCAC</u>	
<u>23</u>	Zona de responsabilidad para la preparación de la información de asesoramiento sobre ciclones tropicales por el TCAC en la Columna 1.	
<u>34</u>	Período de operación del TCAC.	
<u>45</u>	MWO a la que debe enviarse la información de asesoramiento sobre ciclones tropicales.	
<u>56</u>	Indicador de lugar de la OACI asignado a la MWO de la Columna 4.	

Table MET 3A — Tabla MET 3A

Tropical cyclone advisory centre/Centro de avisos de ciclones tropicales	<u>ICAO Loc. Ind / Ind. De Lugar OACI</u>	Area of responsibility/ Zona de responsabilidad	Period of operation/ Período de operación	MWO to which advisory information is to be sent/ MWO a la que debe enviarse información de asesoramiento	
				Name/ Nombre	ICAO Loc. Ind./ Ind. de Lugar OACI
1	2	3	4	5	6
Miami (United States) (Estados Unidos)	<u>KKCI</u>	Tropical Atlantic, Caribbean Sea, Gulf of Mexico Relevant parts of the Pacific East of E148° Atlántico Tropical, Mar del Caribe, Golfo de México Partes pertinentes del Pacífico al este de los 148° E	1 June – 30 November 1 de junio – 30 noviembre	Bogotá Caracas Cayenne Timehri Habana Kingston México Kansas City Panama Port of Spain Port-au-Prince Recife Santo Domingo Tegucigalpa Willemstad Zandery	SKBO SVMI SOCA SYCJ MUHA MKJP MMM KKCI MPTO TTPP MTPP SBRF MDSD MHTG TNCC SMJP

Table MET 3B — Tableau MET 3B — Tabla MET 3B

Volcanic ash advisory centre/Centro de aviso de ceniza volcánica		Area of responsibility/ Zona de responsabilidad	ICAO Region/ Zona de la OACI	State/ Estado	MWO to which the information is to be sent/MWO a la que se enviará la información		ACC/FIC to which the information is to be sent/ACC/FIC a la que se enviará la información	
Name/ Nombre	ICAO Loc. Ind. de Lugar OACI				Name/ Nombre	ICAO Loc. Ind. de Lugar OACI	Name/ Nombre	ICAO Loc. Ind. de Lugar OACI
1	2	3	4	5	6	7	8	9
Buenos Aires (Argentina)	SABM	South of S10° between W10° and W90° Al sur de los 10°S entre 10°W y 90°W	SAM	ARGENTINA	Buenos Aires (Aeroparque)	SABE	Ezeiza	SAEF/ SAEU
					Comodoro Rivadavia	SAVC	Comodoro	SAVF/ SAVU
					Córdoba	SACO	Rivadavia	SACF/ SACU
					Mendoza	SAME	Mendoza	SAMF/ SAMV
					Resistencia	SARE	Resistencia	SARR/ SARU
				BOLIVIA	La Paz	SLLP	La Paz	SLLF
				BRAZIL	Amazónica	~~SBAZ~~ ~~SBEG~~	Amazónico	~~SBAZ~~
					Brasília/Cindacta I	~~SBBS~~ ~~SBDR~~	Brasília	~~SBBS~~
					Curitiba/Cindacta II	~~SBCW~~ ~~SBCT~~	Curitiba	~~SBCW~~
					Recife/Cindacta III	~~SBRE~~ ~~SBRF~~	Recife	~~SBRE~~
					Recife/Cindacta III	~~SBRE~~ ~~SBRF~~	Atlántico	~~SBAO~~
				CHILE	Antofagasta	SCFA	Antofagasta	SCFZ
					Puerto Montt	SCTE	Puerto Montt	SCTZ
					Punta Arenas	SCCI	Punta Arenas	SCCZ
					Santiago	SCEL	Santiago	SCEZ
				PARAGUAY	Asunción	SGAS	Asunción	SGFA
Washington (United States)	KNES	North of S10° 140°W Al norte de los 10°S 140°W New York Oceanic* Oakland Oceanic* United States Continental FIRs*	SAM	BRAZIL	~~Amazonico~~ Manaus/Cindacta IV	SBEG	Amazonico	~~SBAZ~~
					Recife	SBRF	Recife	~~SBRE~~
			SAM	COLOMBIA	Recife	SBRF	Atlantico	~~SBAO~~
					Santa Fe de Bogotá	SKBO	Barranquilla	~~SKEC~~
					Santa Fe de Bogotá	SKBO	Bogotá	~~SKED~~
			CAR	CUBA	Habana	MUHA	Habana	~~MUFH~~
			CAR	DOMINICAN REPUBLIC	Santo Domingo	MDSD	Santo Domingo	~~MDCS~~
			SAM	ECUADOR	Guayaquil	SEGU	Guayaquil	~~SEGU~~
			SAM	FRENCH GUIANA (France)	Cayenne	SOCA	Rochambeau	~~S000~~
			SAM	GUYANA	Timehri	SYCJ	Georgetown	~~SYGC~~
			CAR	HAITI	Port-au-Prince	MTTP	Port-au-Prince	~~MTEG~~
			CAR	HONDURAS	Tegucigalpa	MHTG	Central American	~~MHTG~~
			CAR	JAMAICA	Kingston	MKJP	Kingston	~~MKJK~~
			CAR	MEXICO	México	MMMX	Mazatlán	~~MMZT~~
					México	MMMX	México	~~MMEX~~
			CAR	NETHERLANDS ANTILLES (Netherlands)	Willemstad	TNCC	Curacao	~~TNCF~~
			SAM	PANAMA	Panamá	MPTO	Panamá	~~MPZL~~
			SAM	PERU	Lima - Callao	SPIM	Lima	~~SPIM~~
			SAM	SURINAME	Zandery	SMJP	Paramaribo	~~SMPM~~
			CAR	TRINIDAD AND TOBAGO	Port of Spain	TTTP	Piarco	~~TTZP~~
			NAM	UNITED STATES	Kansas City	KKCI	Houston Oceanic	~~KZHU~~
					Kansas City	KKCI	Miami Oceanic	~~KZMA~~
					~~Kansas City~~	~~KKCI~~	~~Nassau~~	~~MYNA~~
					Kansas City	KKCI	San Juan	~~TJZS~~
			SAM	VENEZUELA	Caracas	SVMI	Maiquetia	~~SVZM~~

Table MET 3C — Tabla MET 3C

Provider State of volcano observatory Estado Proveedor del observatorio de volcanes	Volcano observatory Observatorio de volcanes	VAAC to which the information is to be sent VAAC al cual se debe enviar la información	ACC to which the information is to be sent ACC a la cual se debe enviar la información		MWO to which information is to be sent MWO a la cual se debe enviar la información	
			Name Nombre	ICAO Loc Ind. Ind. de lugar OACI	Name Nombre	ICAO Loc Ind. Ind. De lugar OACI
1	2	3	4	5	6	7
Costa Rica	Observatorio de volcanes y Sismológico de Costa Rica, (OVSICORI-UNA), Heredia ~~Obs. Sismológico y vulcanológico de Arenal y Miravalles, San José~~	Washington	Central American	MHTG	Tegucigalpa	MHTG
El Salvador	Servicio Nacional de Estudios Territoriales (SNET), Ministerio de Medio Ambiente y Recursos Naturales, (MARN), El Salvador					
Trinidad & Tobago	Seismic Research Unit, University of Indies St. Augustine	Washington	Piarco	TTZP	Port of Spain	TTTP

Table MET 7 / Tabla MET 7

International Satellite Communication System (ISCS/1) provided by the United States Systeme de communications internationales par satellite (ISCS/1) fourni par les États-Unis Sistema Internacional de comunicaciones por satélite (ISCS/1) proporcionado por Estados Unidos			
State/Territory État/Territoire Estado/Territorio	User of satellite broadcast Utilisateur des diffusions par satellite Usuario de la radiodifusión por satélite	Location of VSAT Emplacement du VSAT Lugar del la VSAT	Equipment operational Équipement opérationnel Equipo operativo
1	2	3	4
...			
COLOMBIA	NMS	Headquarters of the Hydrology and Met Institute, Bogotá <u>Bogotá/Eldorado</u>	2w <u>1W</u>
...			

Agenda Item 7: Regional MET requirements for ATM

7.1 Under this Agenda Item, the meeting took note that the *ICAO Global Coordinated Plan for Transition to ICAO CNS/ATM* was developed in support of the global ATM concept and that this Plan has been periodically updated to attend the changing requirements of technical, operational, economic, financial, legal and institutional elements. It was later recognized that technology was not an end in itself and that a comprehensive concept of an integrated and global air navigation system, based on clearly established operational requirements, was needed. To develop this concept, the Air Navigation Commission established in 1998 the Air Traffic Management Operational Concept Panel (ATMCP). The *Global Air Traffic Management Operational Concept* (Doc 9854) was subsequently endorsed by the Eleventh Air Navigation Conference in 2003, which will assist, among others, in the transition from the air traffic control environment of the twentieth century to the performance-based, integrated and collaborative air traffic management system needed to meet aviation's needs in the twenty-first century.

7.2 Additionally, the subgroup took note that the Third edition – 2007 of the *Global air navigation plan for CNS/ATM systems*, re-titled as ***Global air navigation Plan*** (Doc 9750 AN/963), was prepared in consideration of the operational concept and the Strategic Objectives of the Organization for CNS/ATM systems and contains near and medium term guidance on air navigation system improvements necessary to support a uniform transition to the ATM system. Long-term initiatives will be added to the Global Plan as the technology matures and the supporting provisions are developed.

7.3 In accordance with the Global Plan, planning is focused on specific performance objectives, supported by a set of Global Plan “initiatives”; these initiatives are options for air navigation system improvements that when implemented will result in direct performance enhancements.

7.4 The meeting noted that a global ATM system can be described as a worldwide system that, on a global basis, that will enable to achieve interoperability and seamlessness across regions for all users during all phases of flight, meets agreed levels of safety, provides for optimum economic operations, is environmentally sustainable, and meets national security requirements, based on the provision of integrated services.

7.5 The Global ATM Operational Concept provides the vision. The Global Air Navigation Plan, with its initiatives and associated interactive planning tools, serves as a strategic document providing the planning methodology that will lead to global harmonization. The performance framework will provide performance-based transition guidance, including guidance on how to choose performance objectives, set targets and measure the overall performance of the system, leading to the establishment of cost-effective global and regional work programmes in support of a global air navigation system.

ICAO'S planning structure for Global ATM

7.6 The AERMETSG took note that the vision of the international civil aviation community and that of ICAO is to achieve a seamless, global ATM system through the implementation of air navigation facilities and services in a progressive, cost-effective and cooperative manner. **Appendix A** to this part of the report presents Figure A-1 of the *Global air navigation plan*, illustrating the progression of the work of ICAO toward a global ATM system and including the relationship between the various members of the ATM community.

Integration of initiatives

7.7 The subgroup was also aware that in order to facilitate the planning process, the Plan includes 23 Initiatives, which should not be viewed as stand-alone work items, but rather, in many cases, as interrelated. Therefore, initiatives are quite capable of integrating with and supporting each other. **Appendix B** to this part of the report presents Table 1-1 Global Plan Initiatives and their relationships to the major groupings. In addition, **Appendix C** presents Initiative GPI-19 Meteorological Systems (GPI), which objective is to improve the availability of meteorological information in support of a seamless global ATM system. The Related Operational Concept Components are: Airspace Organization and Management (AOM), Demand and Capacity Balancing (DCB), Aerodrome Operations (AO) and Airspace User Operations (AUO).

Regional planning process

7.8 The meeting also recognized that the regional planning process is the principal engine of ICAO's planning and implementation work. It is here that the top-down approach, comprising global guidance and regional harmonization measures, converges with the bottom-up approach constituted by States and aircraft operators and their proposals for implementation options. The development of regional plans for air navigation systems including CNS/ATM systems is undertaken by ICAO's PIRGs (GREPECAS in the CAR/SAM Regions), with the assistance of ICAO's Regional Offices, and in coordination with ICAO Headquarters staff.

7.9 The regional planning process is a listing of air navigation facilities and services, together with their achievable time frames, necessary for implementation. These listings are included in the Air Navigation Plans (ANPs), which are produced and maintained by PIRGs (GREPECAS) with the assistance of ICAO's Regional Offices (Lima and Mexico).

National planning process

7.10 The meeting was aware that ICAO has been addressing the planning strategy at the global and regional levels, leaving the responsibility for undertaking the task of structuring national plans to Contracting States/Territories.

7.11 In this regard, the meeting took note that GREPECAS, during its last meeting (April 2007), formulated Conclusion 14/51 requesting in paragraph a) that CAR/SAM States/Territories/International Organizations take the necessary action to develop and implement national ATM work programmes in accordance with the performance objectives of GREPECAS ATM Committee, and in paragraph b) that ICAO continue coordination of the re-organization of CAR/SAM ATM Work Programmes in accordance with the new Global Plan Initiatives (GPIs), and in support of ICAO Strategic Objectives.

7.12 The subgroup also noted that GREPECAS during the same meeting, took note that its ATM/CNS Committee has developed a framework document for updating the CAR/SAM ANP, taking into consideration the *Global Plan*, ICAO Strategic Objectives and Roadmap elements defined in collaboration with industry. In addition, GREPECAS was aware that the ATM/CNS Subgroup had analyzed the document and deemed advisable that the ATM Committee continue to review and update it and agreed that it should be sent to the other GREPECAS Subgroups for their contribution, with the understanding that approval of the final document would have to wait until all the supplementary parts had been received. In this regard, the meeting formulated the following draft decision:

DECISION 9/17 –

MET REQUIREMENTS IN THE ATM CONCEPT

That in order to be in accordance with the new Global Plan Initiatives and in support of ICAO's Strategic Objectives, the Subgroup Work Programme should include the planning details for the implementation of the meteorological system, in the draft Transition Plan to the ATM system in the CAR/SAM Regions, Version 1.1.

7.13 Likewise, the AERMETSG, based on the aforementioned, considered the need to review its Terms of Reference and Work Programme.

7.14 The meeting also took note that Project RLA/06/901 – Assistance in the implementation of an ATM regional system, considering the ATM operational concept and the corresponding technological support for communications, navigation and surveillance (CNS), is currently being developed in the SAM Region, with the participation of 9 States of the Region.

7.15 The purpose of this project is to provide assistance to the civil aviation authorities of participating States and organisations in the development of global air navigation plan initiatives that will contribute to the implementation of a regional air traffic management system, taking into account the global ATM operational concept and the corresponding CNS technology support, including the necessary AGA, AIS and MET elements, as well as the exchange of experiences concerning the processes, and the training of personnel in the topics involved.

7.16 In addition, the meeting also noted that in the reports of the Regional Associations Rapporteurs of the Meeting of the Management Group (MG) of the WMO Commission for Aeronautical Meteorology (CAeM), held in Paris, France, from 8 to 12 October 2007, it was informed that the MG was pleased to know that in Region IV (CAR), substantial importance was being given to MET information within the FAA NextGen project which has been established to address capacity problems. The MET information would be fully integrated in the ATM concept and multi-agency team (involving FAA, National Weather Service (NWS), Department of Defence) was working to this end. Although the NextGen is a vision for 2025, the implementation of its programme elements would start as early as 2008.

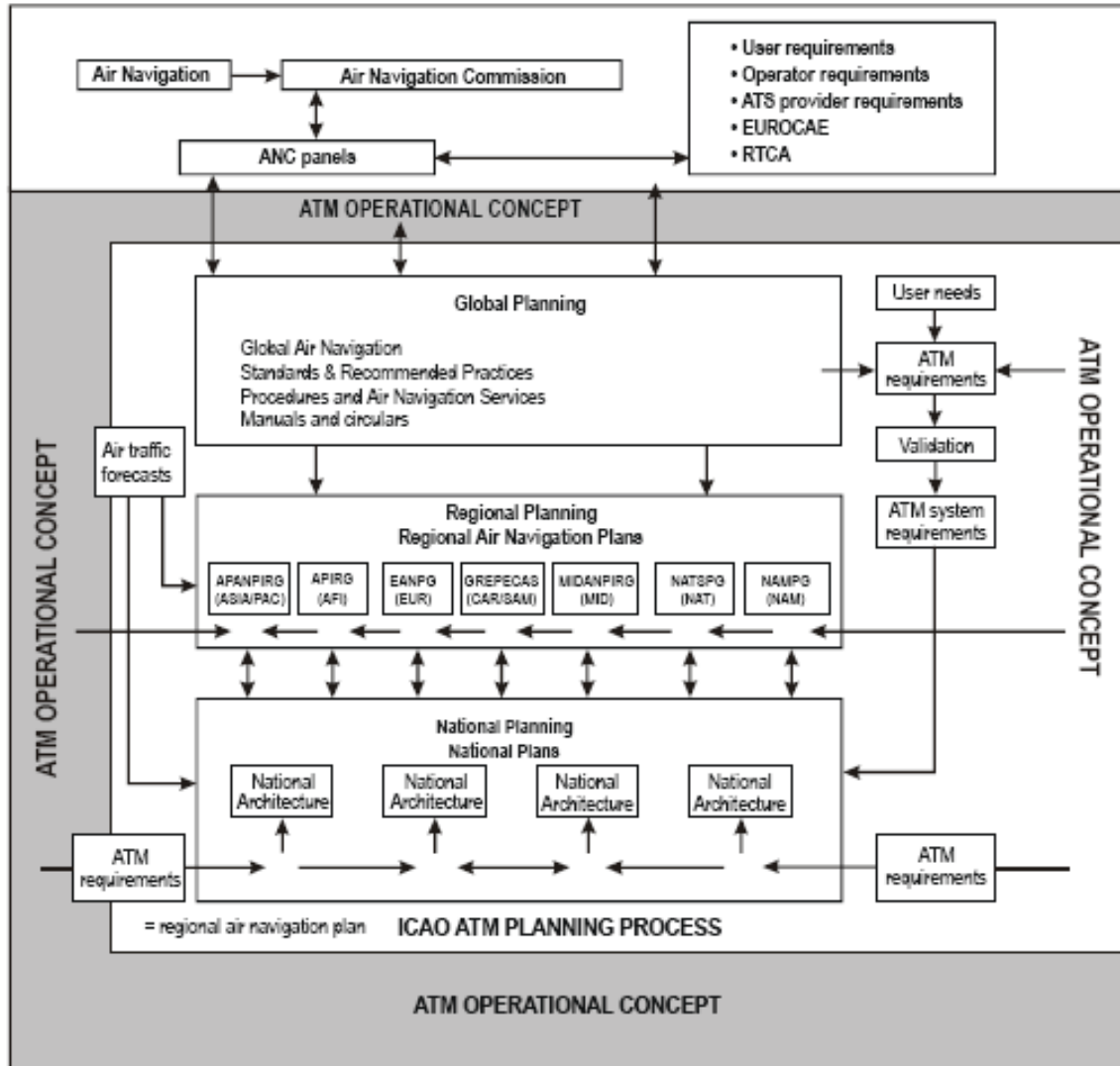


Figure A-1. Framework for achieving a global ATM system

Table 1-1. Global plan initiatives and their relationships to the major groupings

<i>GPI</i>		<i>En-route</i>	<i>Terminal Area</i>	<i>Aerodrome</i>	<i>Supporting Infrastructure</i>	<i>Related Operational Concept Components</i>
GPI-1	Flexible use of airspace	X	X			AOM, AUO
GPI-2	Reduced vertical separation minima	X				AOM, CM
GPI-3	Harmonization of level systems	X				AOM, CM, AUO
GPI-4	Alignment of upper airspace classifications	X				AOM, CM, AUO
GPI-5	RNAV and RNP (Performance-based navigation)	X	X	X		AOM, AO, TS, CM, AUO
GPI-6	Air traffic flow management	X	X	X		AOM, AO, DCB, TS, CM, AUO
GPI-7	Dynamic and flexible ATS route management	X	X			AOM, AUO
GPI-8	Collaborative airspace design and management	X	X			AOM, AUO
GPI-9	Situational awareness	X	X	X	X	AO, TS, CM, AUO
GPI-10	Terminal area design and management		X			AOM, AO, TS, CM, AUO
GPI-11	RNP and RNAV SIDs and STARs		X			AOM, AO, TS, CM, AUO
GPI-12	Functional integration of ground systems with airborne systems		X		X	AOM, AO, TS, CM, AUO
GPI-13	Aerodrome design and management			X		AO, CM, AUO
GPI-14	Runway operations			X		AO, TS, CM, AUO
GPI-15	Match IMC and VMC operating capacity		X	X	X	AO, CM, AUO
GPI-16	Decision support systems and alerting systems	X	X	X	X	DCB, TS, CM, AUO
GPI-17	Data link applications	X	X	X	X	DCB, AO, TS, CM, AUO, ATMSDM
GPI-18	Aeronautical information	X	X	X	X	AOM, DCB, AO, TS, CM, AUO, ATMSDM

(GPI-19) METEOROLOGICAL SYSTEMS

Objective: To improve the availability of meteorological information in support of a seamless global ATM system.

Related Operational Concept Components: AOM, DCB, AO, AUO

Description of strategy

1.85 Immediate access to real-time, global operational meteorological (OPMET) information is required to assist ATM in tactical decision-making for aircraft surveillance, air traffic flow management and flexible/dynamic aircraft routing which will contribute to the optimization of the use of airspace. Such stringent requirements will imply that most meteorological systems should be automated and that meteorological service for international air navigation be provided in an integrated and comprehensive manner through global systems such as the world area forecast system (WAFS), the international airways volcano watch (IAVW) and the ICAO tropical cyclone warning system.

1.86 Enhancements to WAFS, IAVW and the ICAO tropical cyclone warning system to improve the accuracy, timeliness and usefulness of the forecasts issued will be required to facilitate the optimization of the use of airspace.

1.87 Increasing use of data-link to downlink and uplink meteorological information (through such systems as D-ATIS and D-VOLMET) will assist in the automatic sequencing of aircraft on approach and will contribute to the maximization of capacity. The development of automated ground-based meteorological systems in support of operations in the terminal area will provide OPMET information (such as automated low-level wind shear alerts) and automated runway wake vortex reports. OPMET information from the automated systems will also assist in the timely provision of forecasts and warnings of hazardous weather phenomena. These forecasts and warnings, together with automated OPMET information, will contribute to maximizing runway capacity.

Agenda Item 8: Implementation of MET quality system

8.1 The meeting recalled that Amendment 72 to Annex 3 (which became applicable on 1 November 2001) introduced, in the interest of flight safety, requirements concerning quality management that include quality assurance and quality control of meteorological information supplied to users, and the qualifications and training of meteorological personnel serving international air navigation. These provisions, as far as possible, had been aligned with “quality system” provisions introduced into Annex 15 – *Aeronautical Information Services*.

8.2 The ICAO quality system provisions recommended conformity with the ISO 9000 series of quality assurance standards. These requirements necessitate the development of appropriate regulations and formal documentation, and should be continuously monitored. Furthermore, States have to develop mechanisms on how to implement the corrective actions originating from their audits referred to in Annex 3, paragraph 2.2.6.

8.3 The audits referred to in Annex 3 are the responsibility of the State, i.e., an audit by a certified auditor from that State, which does not involve missions from international organizations, such as are used in the ICAO safety oversight audit programme. In view of these new requirements, the MET Divisional Meeting (2002) adopted Recommendation 4/3 calling ICAO and WMO to develop joint guidance material to assist States in the development of quality management systems for the provision of meteorological services for international air navigation. In addition, GREPECAS formulated Conclusion 12/66 regarding CAR/SAM training in MET quality management.

8.4 The subgroup noted with pleasure that ICAO in coordination with WMO published in 2007 the *Manual on the Quality Management System for the provision of meteorological service to international air navigation* (Doc 9873). Likewise, the meeting recalled that in accordance with GREPECAS Conclusions 12/66 and 12/69, WMO in coordination with ICAO, carried out the CAR/SAM Seminar on quality management and cost recovery of aeronautical meteorological services, from 11 to 15 December 2006.

8.5 During the Seminar on quality management, the delegate of Peru presented Standard ISO 9001:2000 mandatory documented procedures and MET service operation procedures of Lima Jorge Chávez aerodrome, which were analyzed through workshops by meteorologists representing the CAR/SAM Regions, suggesting the separation of the working instructions of the Aerodrome Meteorological Office and the Meteorological Watch Office. In addition, it was suggested that the Aeronautical Meteorology Subgroup should establish a task force to analyze and standardize the instructions, in order to be used as a guide for CAR/SAM States.

8.6 Likewise, the meeting noted that in reviewing the Report of the Thirty First Meeting of the European Air Navigation Planning Group (EANPG/31), the Air Navigation Commission requested the Secretariat to develop proposals to amend Annex 3 related to quality management systems (AN Min. 148-14). In this regard, the Secretariat requested to upgrade these Recommendations to Standards. This upgrade is particularly important since it will be an essential component in support of the implementation of quality management systems by States. Additionally, this upgrade will be aligned with the provisions of Annex 15 – *Aeronautical Information Services*, where provisions related to QMS are already classified as Standards.

8.7 In this respect, the Secretariat prepared the corresponding amendment (AN-WP/8294), for consideration of the Air Navigation Commission. This proposal is part of the draft Amendment 75 to Annex 3, to be applicable in November 2010.

8.8 The subgroup noted the status of implementation of the MET service quality management system in the Peruvian State, which is included as **Appendix A** to this part of the report. Likewise, the meeting agreed that in order to assist States in the implementation of a MET quality management system, with the development of procedures and instructions for MET service aligned with Doc 9783, following the suggestions made at the QMS Seminar, a task force should be established to review and standardize the procedures and instructions developed by the Peruvian State, with the purpose of having a Guide for the States of the Region that may require it.

Implementation Status of MET Quality Management System in Peru

1.1 In July 2005, the Implementation Plan for the Safety Management System (SMS) was approved for air navigation services by means of agreement N° 2-2033-2005 of the Board of Directors, including Air Traffic Control, Meteorology, Aeronautical Information and Aeronautical Fixed Communications services, with a structure based on Standard ISO 9001:2000.

1.2 In the years 2005 to 2006, training in Quality Management of administrative and operational personnel of the Assistance and Support Units was initiated in coordination with the Civil Aviation Training Centre; as well, Internal Quality Auditors were trained for operational areas. An induction on the Safety System was made to all the staff of CORPAC S. A.

1.3 Based on the requirements of Standard ISO 9001:2000, the Air Navigation Services Process Chart was prepared, in which MET service process and other operational and support processes are part of CORPAC S.A. Air Navigation System.

1.4 Subsequently, in December 2006, documented procedures required by Standard ISO 9001:2000 were completed and approved: Control of SMS documents, Control of SMS registry, Internal Audit on SMS Operation and Follow up, Control and management of Services or non-SMS products and SMS Corrective and Preventive Actions; as well as the procedure Preparation and presentation of SMS documents, which were distributed at a national level for their application in operational areas.

1.5 In January 2007, the Peruvian aeronautical authority (Dirección General de Aeronáutica Civil) approved the first operational procedures of the Meteorology Area, as: Aeronautical Meteorological Information Service Procedure, Working Instructions on meteorological observations and reports at the International AD “Jorge Chávez” /Lima EMA, Working Instructions on Meteorological Forecasts of OMA/MWO Lima and Working Instructions on Aeronautical Climatology OMA Lima; once approved they were distributed to the points of use in charge of the Organization and Methods Office through controlled documents.

1.6 In the same year 2007, the Working Instructions on Meteorological observations and reports and on Meteorological Forecasts for the aerodromes of Cusco, Iquitos and Arequipa were approved. Then, the Working Instructions on Meteorological observations and reports for the aerodromes of Chiclayo and Pucallpa, which were distributed to those locations for their implementation.

1.7 On the other side, a Safety Incident Reporting System (SIRSO) was implemented at the Aeronautical Meteorological Stations and Aerodrome Meteorological Offices of Lima and Cusco, in order to report in an operational manner incidents affecting safety, addressed to the generation of statistics and search of quality objectives.

1.8 In the year 2008, the methodology for hazard identification and operational risk management in the MET service was initiated, addressed to the search of quality objectives, establishment of defences and risk mitigation.

Review of MET Operational Procedures

1.9 In April 2008, revision 01 of the Working Instructions on Meteorological observations and reports at the Aeronautical Meteorological Station of Lima (EMA-Lima) and the Working

Instructions of the Aerodrome Meteorological Office of the “Jorge Chávez” / OMA Lima International Airport. On the other hand, new instructions, Revision 00 “Working Instructions of the Meteorological Watch Office of the FIR Lima” were developed. All these documents were made available to the MET Area and are under the evaluation and approval process.

Agenda Item 9: Status of MET deficiencies (GREPECAS List of MET Deficiencies)

Introduction

9.1 Under this Agenda item, the meeting recalled that according to their responsibilities and based on the uniform methodology for the identification, evaluation and reporting of air navigation deficiencies, formulated by the ICAO Council, the Regional Offices, in coordination with the States and GREPECAS mechanism, have been periodically reviewing the status of implementation of the CAR/SAM Regional Air Navigation Plan, with a view to identifying and assessing air navigation safety aspects. Based on the results of this review, air navigation deficiencies are identified and then submitted to the ICAO Council, and reported to the States and user organizations involved.

9.2 Likewise, the meeting was aware that the Regional Offices maintain the list of deficiencies updated and GREPECAS mechanism, through the Aviation Safety Board (ASB), periodically reviews that list and recommends actions for resolving urgent air navigation deficiencies (U) in the CAR/SAM Regions. Likewise, the Regional Offices in agreement with the States resolve the deficiencies, and make the follow-up on the recommendations of GREPECAS Aviation Safety Board (ASB).

9.3 Moreover, the meeting noted that the existing deficiencies affecting the provision of air navigation services in the ICAO Regions, and the need for the States to implement programmes to resolve them, are a matter of constant concern and high priority for the ICAO Council. In this sense, it noted that an important element of the ICAO Global Aviation Safety Plan (GASP), approved through Assembly Resolution A33-16, is the need to improve the identification and resolution of air navigation deficiencies in order to take specific actions for their deletion.

9.4 The subgroup noted that when reviewing deficiencies in its 14th Meeting, GREPECAS noted that many of the problems concerning deficiencies could be solved through better coordination between the States and their respective Regional Offices. It also recognised that the GANDD was the best tool to improve this coordination.

9.5 GREPECAS as well noted that the failure by States to update the GANDD could be due to the coordination of personnel responsible for this function. With this purpose, GREPECAS adopted Conclusion 14/59 for the designation of a National Coordinator, in order to facilitate administrative coordination of the database with those responsible in each area of air navigation services of the States.

9.6 Likewise, the group also agreed that a complete review of GREPECAS deficiency system was necessary, including the procedures, database, database user's guide, and that this review should be applied by the Regional Offices to all "U" deficiencies prior to 31 December 2007, using standardised criteria. Acting in this way would be in a position to identify "U" deficiencies with a high degree of certainty so that an extraordinary meeting of the GREPECAS Aviation Safety Board (ASB) could review the implementation of Conclusion 13/92 and safely apply *last resort action*. Based on the above, GREPECAS adopted Decision 14/60.

9.7 In this sense, the Aviation Safety Board (ASB) carried out its Fourth Meeting from 5 to 6 March 2007 in Lima, Peru, and note was taken that with regard to Conclusion 14/59 - *National Coordinator Responsible for Updating the GREPECAS Air Navigation Deficiency Database*, the

currently list available of National Coordinators responsible for updating the GANDD is being completed by the Secretariat.

9.8 Regarding Decision 14/60 - *Procedures for Classifying and Addressing GREPECAS “U” Deficiencies*, the Aviation Safety Board was informed that a criterion for classifying “U” deficiencies was developed which recommended the application of the risk analysis approach currently used by the ICAO SMS official course. The idea is to consider all deficiencies with Risk Indexes **5A, 5B, 5C, 4A, 4B** and **3A**, respectively, with **frequent, occasional** and **remote** levels of probability and **catastrophic, hazardous** and **major** levels of severity as “U” deficiencies.

9.9 Likewise, the Board noted the efforts performed by the CAR and SAM Regional Offices to completely revise the method for presenting “U,” “A” and “B” deficiencies in one format. To achieve this goal, the way to capture information for the GANDD was reformulated. As a consequence, the former “A,” “B,” “C” and “D” Appendices used to report unresolved GREPECAS deficiencies are reduced to one appendix and “Corrected Deficiencies” are retained and presented only for statistical purposes.

9.10 In order that the Secretary of GREPECAS analyze the feasibility of applying the new classification procedure for “U” type deficiencies to classification of “A” and “B” air navigation deficiencies and present the results of the analysis to ASB/9, the Aviation Safety Board formulated Decision ASB/8/1.

9.11 The Board also reviewed the reclassification of “U” deficiencies carried out by the Regional Offices according to the document “Procedures for Classifying and Addressing GREPECAS “U” Deficiencies. This document is presented as **Appendix A** to this part of the report, and after a long and fruitful discussion, the meeting formulated draft conclusion ASB 8/2 – classification of “U” deficiencies, which is included as **Appendix B** to this part of the report.

9.12 The application of “last resort action,” as required by GREPECAS Conclusion 13/92 is under study and will be finalized after States/Territories and International Organizations reply to the requirements of Draft Conclusion ASB/8/2.

9.13 The subgroup recalled that in accordance with paragraph 1.2.3.7 b) of GREPECAS Procedural Handbook, which says that “in the interval between meetings, the Secretariat should intensively use available electronic means, with a view to expediting the approval and implementation process of the draft Decisions and Conclusions provided by the Contributory Bodies which, at the Secretariat’s discretion, need immediate attention” and in order to prepare the results for the forthcoming ASB/9 Meeting, Draft Decision ASB/8/01 and Draft Conclusion ASB/8/02 had been approved by States through the GREPECAS Fast Track procedure.

9.14 In this regard, the list of GREPECAS deficiencies contained in the database was sent to all CAR/SAM States in order to determine the Risk Index for each one of them.

9.15 **Appendix C** to this part of the report presents an updated list of MET deficiencies. The meeting reviewed the referred Appendices and some States presented the information to update the list of deficiencies.

9.16 The meeting was aware of the importance of the user’s feedback (IATA, IFALPA), regarding the reporting of deficiencies in order to reflect the real situation in the list of MET deficiencies.

It was also considered important that MET authorities contact the selected coordinator of their State to review and, if necessary, reclassify MET deficiencies.

**PROCEDURES FOR CLASSIFYING AND ADDRESSING “U” DEFICIENCIES IN THE AIR
NAVIGATION FIELD**

1 Introduction

1.1 The procedures described below establish the steps to be followed by States and the ICAO NACC/SAM Regional Offices for resolving “U” deficiencies in the air navigation field. These procedures, developed in compliance with GREPECAS Decision 14/60, contribute to the application of a Uniform Methodology for the identification, assessment and reporting of deficiencies, as approved by ICAO Council, and are included as **Appendix A**.

1.2 These procedures shall provide Regional Offices and States with a method to re-classify current deficiencies, update procedures for capturing data and reports, and improve the use of the web application associated with the GANDD database.

1.3 These procedures shall also facilitate the *review of deficiencies* with “U” priority with a view to implement GREPECAS Conclusion 13/92 in the application of last resort action.

2 Common Criteria for its Classification and Storage in the GANDD

2.1 Two main parts are identified in the integral treatment of deficiencies as shown below:

1. ICAO NACC and SAM Regional Offices through:
 - a) specific fields (AGA, ATM, AIM, CNS, MET, SAR);
 - b) administration of the database (GANDD) by the ICT section of each Regional Office; and
2. States that coordinate with the Regional Offices through Focal Points in accordance with GREPECAS Conclusion 14/59.

2.2 The identification and reporting process of deficiencies is as prescribed in the Uniform Methodology.

2.3 The process of deficiency classification requires an assessment for priority assignment. For this reason, the deficiency must be duly identified and reported. In this regard, the information from columns 1 to 6 from **Appendix B**, which is the report extracted from the GANDD, must be available in order for the GREPECAS mechanism to revise the status of “U” “A” and “B” deficiencies.

2.3.1 In accordance with the guidance provided in paragraph 4 of the Uniform Methodology, the Regional Office, in coordination with the State Focal Point, shall determine the Priority of the Requirement, which determines the priority of the deficiency. In order to determine whether or not a “U” deficiency exists, a risk analysis will be necessary. **Appendix C** provides criteria for use in this respect.

*Important Note: Every deficiency may represent a potential **hazard** to air navigation, which is associated to a specific **risk**. There are several methods of risk analysis, each of them specific to the case in question. In the ICAO Safety Management System (SMS) training courses, a risk analysis method is presented that is applicable to cases affecting safety and determines whether the risk is intolerable or tolerable, and whether it may be mitigated. Based on this, a concept is available to mainly provide assistance with prioritizing the requirements that could result in “U” deficiencies, since the case of SMS methodology is oriented to risks affecting safety.*

2.4 Once the deficiency is classified, coordination with the Focal Point will take place regarding the information required in columns 8, 9, 10, and 11 from Appendix B, and will then be entered into the GANDD database, notifying the State through the Focal Point.

Important note: If some fields of Appendix B are not completed, for example, fields in the Action Plan, the deficiency will be entered into the GANDD and a notation will be made in the Remarks field.

3 **Reports to be Presented to the GREPECAS Mechanism**

3.1 In accordance with the Uniform Methodology, the GREPECAS mechanism shall receive information on deficiencies from the Regional Offices, found in the attached **Appendix B**. Based on this information, the mechanism shall proceed with the Uniform Methodology procedures. In addition, the GANDD can provide statistical reports that the mechanism could require for analysis.

4 **Responsibilities in the Treatment of Deficiencies and Maintenance of GANDD**

4.1 Considering that the GANDD is a tool to manage the treatment of deficiencies, the procedures outlined below are applicable while the deficiency is registered and stored in the database.

Responsibility of the Regional Offices

- a) Review and, if necessary, reclassify existing deficiencies based on established procedures.
- b) Coordinate the validation, revision, and/or updating of data for deficiencies with Focal Points, and update the information in the GANDD, advising the Focal Points of changes.
- c) Review periodic reports from Focal Points on the status of resolution implementation for the deficiencies. Any missing data from the Action Plan shall have a high priority during the review.

- d) Review deficiencies with the Focal Point during visits carried out by Regional Officers according to the mission programme established by the corresponding Regional Office.
- e) Present the list of deficiencies for revision at each meeting of GREPECAS Subgroups and/or Committees or other informal meetings, such as implementation meetings.
- f) Present information and reports to the ASB and to GREPECAS regarding the status of deficiencies.

Responsibilities of States/Focal Points

- a) Review, at least quarterly, the deficiencies and their respective Action Plans, and give special attention to missing information from the Action Plan.
- b) Respond to all requests from the Regional Offices that may necessitate the revision/updating of the list of deficiencies without delay.
- c) Request the corresponding Regional Office to update the status of deficiencies through the web application form (see details in paragraph 6).
- d) Once the deficiency is corrected, inform the corresponding Regional Office of the area involved without delay.

5 Deficiency Resolution Follow-up

5.1 Regional Offices and Focal Points shall closely follow-up on the Action Plan to resolve deficiencies, and the GANDD database will be updated accordingly. The deficiencies with missing data, for example, those referred to the Action Plan, will have priority in the follow-up.

6 Procedures to Manage the GANDD Database, Based on the Existing Web Application

6.1 In October 2004, the procedures for access and use of the GANDD database were circulated to States so that States could report, review and update their corresponding deficiencies. In accordance with GREPECAS Decision 14/60, the Regional Offices have completely revised the procedures and structure of the GANDD in order to increase the efficiency of this tool. Updated procedures for Focal Points to interact with the database to revise and report amendments are attached as **Appendix D**. A presentation in power-point has been uploaded on the websites of each Regional Office for training purposes.

7 Complementary Measures

7.1 This document will be updated by the ICAO Regional Offices. Amendments shall be distributed to States via e-mail through the Focal Points.

DRAFT

CONCLUSION ASB/8/2 - CLASSIFICATION OF “U” DEFICIENCIES

That:

- a) GREPECAS “U” type deficiencies be sent to States/Territories and International Organizations (IATA and IFALPA) to carry out a risk analysis assessment for each “U” deficiency and the aspects of the uniform methodology approved by the Council;
- b) States/Territories and International Organizations should determine the Risk Index for each deficiency according to the ICAO SMS methodology for risk assessment (the respective matrix is represented by **Appendix D**¹ to this Report) using the format presented as **Appendix E**² to this Report; and
- c) the Secretary of GREPECAS present the results of the analysis mentioned in a) and b) to the ASB/9 Meeting scheduled previous to GREPECAS/15 Meeting.

¹ Appendix D correspond to Appendix B to this working paper

² Appendix E correspond to Appendix C to this working paper

OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE CAR REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11

AIA Anguilla

MET	7 CAR	Compliance with the requirements of WMO with regard to qualifications and training of aeronautical meteorology personnel (Annex 3, Part I, Chapter 2, standard 2.1.5	Anguilla	Not all personnel complies with the requirements related to qualifications and training of WMO Publications N°. 49	JUN/ 1996	Review the functions and training of the aeronautical meteorologist.	A	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology.	State	
MET	58 CAR	Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	Anguilla	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 3B.	JUN/ 1996	Make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A.	State	

ATG Antigua and Barbuda

MET	6 CAR	Compliance with the requirements of WMO with regard to qualifications and training of aeronautical meteorology personnel (Annex 3, Part I, Chapter 2, standard 2.1.5	Antigua and Barbuda	Not all personnel complies with the requirements related to qualifications and training of WMO Publications N°. 49.	JUN/ 1996	Review the functions and training of the aeronautical meteorologist	A	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology. Action Plan: The World Meteorological Organization, in coordination with ICAO, is seeking a solution to offer courses and seminars in aeronautical meteorology.	State	
MET	59 CAR	Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	Antigua and Barbuda	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 3B	JUN/ 1996	a) To implement the SIP COM/MET Recommendations for the CAR Region, b) to make use for the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions.	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A.	State	The deficiencies in the OPMET exchange remain. An AFTN terminal is required at the MET Office

ABW Aruba

MET	8 CAR	Compliance with the requirements of WMO with regard to qualifications and training of aeronautical meteorology personnel (Annex 3, Part I, Chapter 2, standard 2.1.5	Aruba	Not all personnel complies with the requirements related to qualifications and training of WMO Publications N°. 49	JUN/ 1996	Review the functions and training of the aeronautical meteorologist.	A	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology.	States	
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OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE CAR REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 27 CAR	Notify the RVR for CAT I operations (Annex 3, Part I, Chapter 4, Recommendation 4.6.3.2)	Aruba	RVR have not been implemented	JUN/ 1996	Plan the acquisition of the RVR	B	To ensure the implementation of required RVR.	State		
MET 60 CAR	Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	Aruba	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 3B.	JUN/ 1996	Make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions.	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A.	States		
BHS Bahamas										
MET 9 CAR	Compliance with the requirements of WMO with regard to qualifications and training of aeronautical meteorology personnel (Annex 3, Part I, Chapter 2, standard 2.1.5)	Bahamas	Not all personnel complies with the requirements related to qualifications and training of WMO Publications N°. 49.	JUN/ 1996	Review the functions and training of the aeronautical meteorologist.	A	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology.	States		
MET 61 CAR	Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	Bahamas	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 3B.	JUN/ 1996	Make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions.	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A.	States		
BRB Barbados										

OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE CAR REGION

IDENTIFICATION				DEFICIENCY			ACTION PLAN				
ID		Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1		2	3	4	5	6	7	8	9	10	11
MET 10	CAR	Adequate number of MET trained staff.	Barbados	There are requirements of specialized meteorology personnel in the aeronautical meteorology field and of an increase of the number of aeronautical meteorologists.	JUN/ 1996	To use CAR/SAM technical cooperation regional projects for the training of aeronautical meteorology.	A	1. There is still a need for met information technology specialist. STATUS - Outstanding 2. A new Doppler radar will be installed in 2007, personnel will be trained to analyze imagery. - STATUS - To be completed in 2007. 3. There was never any need to increase aeronautical meteorologist. The Caribbean Meteorological Institute is located in Barbados and our MET Services has an adequate number of trained Meteorologist. - STATUS - Corrected	Barbados	DEC/ 2007	There is still a need for MET information Technology specialist.
BLZ Belize											
MET 11	CAR	Compliance with the requirements of WMO with regard to qualifications and training of aeronautical meteorology personnel (Annex 3, Part I, Chapter 2, standard 2.1.5.	Belize	Not all personnel complies with the requirements related to qualifications and training of WMO Publications N°. 49.	JUN/ 1996	Review the functions and training of the aeronautical meteorologist.	A	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology.	States		
MET 30	CAR	Notify the RVR for CAT I operations (Annex 3, Part I, Chapter 4, Recommendation 4. 6.3.2)	Belize	RVR have not been implemented.	JUN/ 1996	Plan the acquisition of the RVR	B	To ensure the implementation of required RVR.	State		
MET 63	CAR	Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	Belize	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 3B.	JUN/ 1996	a) Implement the SIP COM/MET Recommendations for the CAR Region, b) Make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A.	States		
CRI Costa Rica											

OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE CAR REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 12 CAR	Compliance with the requirements of WMO with regard to qualifications and training of aeronautical meteorology personnel (Annex 3, Part I, Chapter 2, standard 2.1.5)	Costa Rica	Not all personnel complies with the requirements related to qualifications and training of WMO Publications N°. 49	JUN/ 1996	Review the functions and training of the aeronautical meteorologist.	A	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology.	States		
MET 31 CAR	Notify the RVR for CAT I operations (Annex 3, Part I, Chapter 4, Recommendation 4. 6.3.2)	Costa Rica	The RVR of the Liberia airport has not been implemented	JUN/ 1996	Plan the acquisition of the RVR	B	To ensure the implementation of required RVR.	State		
MET 64 CAR	Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	Costa Rica	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Table MET 2A.	JUN/ 1996		A	Ensure that OPMET exchange is made in accordance with requirements of Table MET 2A.	States		
MET 85 CAR	Communications (Annex 3, Chap. 11, Standards 11.1.1, 11.1.2, 11.1.4).	Cosa Rica	These requirements are not being complied.	NOV/ 2007		A				
MET 87 CAR	Routine observations and reports (Annex 3, Part I, Chap. 4, Standard 4.3.2 a)	Costa Rica	The standard has not been implemented.	NOV/ 2007	Update personnel and implement the standard.	A		State		
MET 89 CAR	Special observations and reports (Annex 3, Chap. 4, Standard 4.4.2 a)	Costa Rica	The standard has not been implemented	NOV/ 2007	Update personnel and implement the standard.	A		State		

CUB Cuba

MET 32 CAR	CAR/SAM ANP MET Requirements, Table AOP 1.	Cuba	MUCO RVR has not been implemented.	JUN/ 1996		B	Request ICAO a proposal for amendment of the CAR/SAM ANP FASID Table AOP1. Completion date: Boyeros - December 2006 Varadero - December 2007 Camagüey - the requirement will be deleted when requesting the elimination of the main runway Cat I	ECASA	DEC/ 2007	
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DOM Dominican Republic

OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE CAR REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 14 CAR	Adequate number of MET trained staff.	Dominican Republic	There are requirements of specialized meteorology personnel in the aeronautical meteorology field and of an increase of the number of aeronautical meteorologists.	JUN/ 1996	To use CAR/SAM technical cooperation regional projects for the training of aeronautical meteorology.	A	To establish training courses at national level for basic and regular levels, and to use the regional projects of Technical Cooperation for high level. Action Plan: There are requirements of specialized meteorological personnel in the Meteorological Aeronautical field and an important amount of aeronautical meteorologists.	States	DEC/ 2008	Few regional contacts for a training plan and lack of financing.
MET 33 CAR	CAR/SAM ANP MET Requirements, Table AOP 1.	Dominican Republic	RVR have not been implemented.	JUN/ 1996		B	Establishment of RVR systems. Action Plan: The RVR have not been implemented yet.	State	DEC/ 2008	Lack of financing and very expensive equipment.
MET 49 CAR	CAR/SAM ANP, Part VI, Meteorology, para. 3.	Dominican Republic	Do not transmit regularly the special AIREPs in accordance with requirements.	MAY/ 1996	Keep a strict supervision and control of the operational ATS/MET staff to keep them informed on the importance of AIREPs and on the need to disseminate them where required.	A	To coordinate with the ATC the technical agreements to obtain the information from the aircrafts. Action Plan: The special AIREPs are not being transmitted in regular form, according to the requirements.	States		Problems to establish the letters of agreement and few personnel.
MET 66 CAR	CAR/SAM ANP Requirements, Part VI, para. 8.	Dominican Republic	There are deficiencies in the OPMET exchange.	JUN/ 1996	Review the OPMET exchange procedures, both in the meteorology and communications areas.	A	To foster the control of MET information exchange of the Region and at national level.	States	DEC/ 2006	Lack of information and few available personnel to carry out the control. There are deficiencies in the OPMET exchange

SLV El Salvador

MET 15 CAR	Compliance with the requirements of WMO with regard to qualifications and training of aeronautical meteorology personnel (Annex 3, Part I, Chapter 2, standard 2.1.5)	El Salvador	Not all personnel complies with the requirements related to qualifications and training of WMO Publications N°. 49 . Personnel not qualified is making MET observations and reports	NOV/ 2007	Review the functions and training of the aeronautical meteorologist.	U	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology.	States		
MET 34 CAR	Notify the RVR for CAT I operations (Annex 3, Part I, Chapter 4, Recommendation 4. 6.3.2)	El Salvador	RVR have not been implemented	JUN/ 1996	Plan the acquisition of the RVR	B	To ensure the implementation of required RVR.	State		

OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE CAR REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 67 CAR	Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	El Salvador	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 3B.	JUN/ 1996	a) Implement the SIP COM/MET Recommendations for the CAR Region, b) Make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions.	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A.	States		
MET 86 CAR	Communications (Annex 3, Chap. 11, Standards 11.1.1, 11.1.2, 11.1.4)	El Salvador	These requirements are not being complied.	NOV/ 2007		A				
MET 88 CAR	Special observations and reports (Annex 3, Chap. 4, Standard 4.4.2 a)	El Salvador	The standard has not been implemented.	NOV/ 2007	Update personnel and implement the standard.	A		State		
MET 91 CAR	Routine observations and reports (Annex 3, Part I, Chap. 4, Standard 4.3.2 a)	Costa Rica	The standard has not been implemented.	NOV/ 2007	Update personnel and implement the standard.	A		State		
GRD Grenada										
MET 16 CAR	Compliance with the requirements of WMO with regard to qualifications and training of aeronautical meteorology personnel (Annex 3, Part I, Chapter 2, standard 2.1.5)	Grenada	Not all personnel complies with the requirements related to qualifications and training of WMO Publications N°. 49	JUN/ 1996	Review the functions and training of the aeronautical meteorologist	A	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology.	State		
MET 35 CAR	Notify the RVR for CAT I operations (Annex 3, Part I, Chapter 4, Recommendation 4.6.3.2)	Grenada	RVR have not been implemented	JUN/ 1996	Plan the acquisition of the RVR	B	To ensure the implementation of required RVR.	State		
MET 69 CAR	Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	Grenada	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 3B	JUN/ 1996	a) Implement the SIP COM/MET Recommendations for the CAR Region, b) Make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A.	State		
GTM Guatemala										

OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE CAR REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 17 CAR	Compliance with the requirements of WMO with regard to qualifications and training of aeronautical meteorology personnel (Annex 3, Part I, Chapter 2, standard 2.1.5	Guatemala	Not all personnel complies with the requirements related to qualifications and training of WMO Publications N°. 49	JUN/ 1996	Review the functions and training of the aeronautical meteorologist	A	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology.	States		
MET 36 CAR	Notify the RVR for CAT I operations (Annex 3, Part I, Chapter 4, Recommendation 4. 6.3.2)	Guatemala	RVR have not been implemented	JUN/ 1996	Plan the acquisition of the RVR	B	To ensure the implementation of required RVR.	State		
MET 70 CAR	Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	Guatemala	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 3B.	JUN/ 1996	a) Implement the COM/MET SIP Recommendations for the CAR Region; and b) Make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions.	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A.	States		
HTI Haiti										
MET 2 CAR	SIGMET information (Annex 3, Part I, Chapter 7, standard 7.1.1)	Haiti	Not all SIGMET messages are prepared based on the procedures established by ICAO.	MAY/ 1996	a) Implement the COM/MET SIP recommendations for the CAR Region; and b) make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions.	U	Ensure the correct elaboration of SIGMETs and their dissemination in accordance with the requirements of Table MET 2A.	State	APR/ 2003	
MET 18 CAR	Compliance with the requirements of WMO with regard to qualifications and training of aeronautical meteorology personnel (Annex 3, Part I, Chapter 2, standard 2.1.5	Haiti	Not all personnel complies with the requirements related to qualifications and training of WMO Publications N°. 49.	JUN/ 1996	Review the functions and training of the aeronautical meteorologist	A	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology.	States		
MET 37 CAR	Notify the RVR for CAT I operations (Annex 3, Part I, Chapter 4, Recommendation 4. 6.3.2)	Haiti	RVR have not been implemented.	JUN/ 1996	Plan de acquisition of the RVR	B	To ensure the implementation of required RVR.	State		

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE CAR REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 71 CAR	Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	Haiti	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 3B	JUN/ 1996	a) Implement the COM/MET SIP Recommendations for the CAR Region; and b) Make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A.	States		
HND Honduras										
MET 19 CAR	Compliance with the requirements of WMO with regard to qualifications and training of aeronautical meteorology personnel (Annex 3, Part I, Chapter 2, standard 2.1.5)	Honduras	Not all personnel complies with the requirements related to qualifications and training of WMO Publications N°. 49	JUN/ 1996	Review the functions and training of the aeronautical meteorologist	U	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology.	DGCA		
MET 38 CAR	Notify the RVR for CAT I operations (Annex 3, Part I, Chapter 4, Recommendation 4. 6.3.2)	Honduras	RVR have not been implemented	JUN/ 1996	Plan the acquisition of the RVR	B	To ensure the implementation of required RVR.	DGCA		
MET 72 CAR	Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	Honduras	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 3B.	JUN/ 1996	a) Implement the COM/MET SIP Recommendations for the CAR Region; and b) Make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A.	DGCA		
MET 80 CAR	Establishment of aerodromes meteorological offices (Annex 3, Chapter 3, Standard 3.3.1) and Table MET 1A of CAR/SAM FASID.	Honduras	Toncontín aerodrome (HHTG) does not have a meteorological office.	SEP/ 2005		U		DGCA		
MET 81 CAR	Establishment of a meteorological watch office (MWO) (Annex 3, App. 3, Estándar 3.4.1 and Table MET 2B of CAR/SAM FASID).	Honduras	Honduras does not have instalations for the MWO of Tegucigalpa.	SEP/ 2005		U		DGCA		
MET 82 CAR	Aeronautical weather information (Annex 3, Chap. 8, Standard 8.1.1)	Honduras	No aerodrome weather tables are being prepared, nor aerodrome weather summaries.	SEP/ 2005		B		DGCA		

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IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 84 CAR	Communications (Annex 3, Chap. 11, Standards 11.1.1, 11.1.2, 11.1.4)	Honduras	These requirements are not being complied.	SEP/ 2005		A		DGCA		
MET 92 CAR	Routine observations and reports (Annex 3, Part I, Chap. 4, Standard 4.3.2 a)	Honduras	The standard has not been implemented.	NOV/ 2007	Update personnel and implement the standard.	A		State		
MET 94 CAR	Special observations and reports (Annex 3, Part I, Chap. 4, Standard 4.4.2 a)	Honduras	The standard has not been implemented.	NOV/ 2007	Update personnel and update the standard.	B		State		
MET 95 CAR	Agreement between air traffic services authorities and meteorological authorities. (Annex 3, Chap. 4, Rec. 4.2)	Honduras	Deficient coordinations between ATS/MET units are deficient.	NOV/ 2007		A		DGCA/NMS		
MET 96 CAR	METAR shall be issued one hour prior to the aerodrome resuming operations. (Annex 3, Chap. 4, Standard 4.3.3)	Honduras	METARs are issued when the aerodrome starts operation.	NOV/ 2007		A		NMS		
MET 97 CAR	Meteorological offices preparing TAF shall keep the forecasts under continuous review and, when necessary, shall issue amendments promptly. (Annex 3, Chap 6, Standard 6.2.4)	Honduras	TAF are not being issued.	NOV/ 2007		A		NMS		
JAM Jamaica										
MET 4 CAR	SIGMET information (Annex 3, Jamaica Part I, Chapter 7, standard 7.1.1)		Not all SIGMET messages are prepared based on the procedures established by ICAO	MAY/ 1996	a) Implement the COM/MET SIP recommendations for the CAR Region; and b) make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions	U	Ensure the correct elaboration of SIGMETs and their dissemination in accordance with the requirements of Table MET 2A.	State	APR/ 2003	
MET 20 CAR	Compliance with the requirements of WMO with regard to qualifications and training of aeronautical meteorology personnel (Annex 3, Part I, Chapter 2, standard 2.1.5	Jamaica	Not all personnel complies with the requirements related to qualifications and training of WMO Publications N°. 49	JUN/ 1996	Review the functions and training of the aeronautical meteorologist	A	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology.	States		

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE CAR REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 39 CAR	Notify the RVR for CAT I operations (Annex 3, Part I, Chapter 4, Recommendation 4.6.3.2)	Jamaica	RVR have not been implemented	JUN/ 1996	Plan the acquisition of the RVR	B	To ensure the implementation of required RVR.	State		
MET 73 CAR	Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	Jamaica	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 3B.	JUN/ 1996	a) Implement the COM/MET SIP Recommendations for the CAR Region; and b) Make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A.	States		
MEX Mexico										
MET 40 CAR	CAR/SAM ANP MET Requirements, Table AOP 1.	Mexico	RVR have not been implemented.	JUN/ 1996		B	Toluca Airport (MMTO) has three RVR sensors, and it is expected to be operating at the end of 2005. Expected dates of RVR installation at MMMX, MMGL and MMMY airports: 6/2007	State	JUN/ 2007	Budgetary reasons had delayed the acquisition of these equipments.
MET 74 CAR	CAR/SAM ANP Requirements, Part VI, para. 8.	Mexico	There are deficiencies in the OPMET exchange.	JUN/ 1996	Review the OPMET exchange procedures, both in the meteorology and communications areas.	A	It is expected that at the end of 2005 the implementation of the template be continued in order to avoid mistakes in the MET report transmission.	States	APR/ 2006	Budgetary reasons had delayed the implementation of this programme-template.
ANT Netherlands Antilles										
MET 5 CAR	SIGMET information (Annex 3, Part I, Chapter 7, standard 7.1.1)	Netherlands Antilles	Not all SIGMET messages are prepared based on the procedures established by ICAO.	MAY/ 1996	a) Implement the COM/MET SIP recommendations for the CAR Region; and b) make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions.	U	Ensure the correct elaboration of SIGMETs and their dissemination in accordance with the requirements of Table MET 2A.	State	APR/ 2003	
MET 22 CAR	Adequate number of MET trained staff.	Netherlands Antilles	There are requirements of specialized meteorology personnel in the aeronautical meteorology field and of an increase of the number of aeronautical meteorologists.	JUN/ 1996	To use CAR/SAM technical cooperation regional projects for the training of aeronautical meteorology.	A	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology.	States		

OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE CAR REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 75	CAR Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	Netherlands Antilles	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 3B.	JUN/ 1996	Make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A.	States		
NIC Nicaragua										
MET 23	CAR Adequate number of MET trained staff.	Nicaragua	There are requirements of specialized meteorology personnel in the aeronautical meteorology field and of an increase of the number of aeronautical meteorologists.	JUN/ 1996	To use CAR/SAM technical cooperation regional projects for the training of aeronautical meteorology.	A	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology. Action plan: There are ten aeronautical meteorologists duly trained by the OMM. This amount is due to the actual level of automation	States		
MET 41	CAR CAR/SAM ANP MET Requirements, Table AOP 1.	Nicaragua	RVR have not been implemented.	JUN/ 1996		B	To ensure the implementation of required RVR.	State		This implementation is still under study
MET 76	CAR CAR/SAM ANP Requirements, Part VI, para. 8.	Nicaragua	There are deficiencies in the OPMET exchange.	JUN/ 1996	Review the OPMET exchange procedures, both in the meteorology and communications areas.	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A. Action plan: The operating data exchange is given in a quick and dynamic way due to the new system of fiber optic that was installed in the last semester 2003.	States		
LCA Saint Lucia										
MET 24	CAR Compliance with the requirements of WMO with regard to qualifications and training of aeronautical meteorology personnel (Annex 3, Part I, Chapter 2, standard 2.1.5	Saint Lucia	Not all personnel complies with the requirements related to qualifications and training of WMO Publications N°. 49	JUN/ 1996	Review the functions and training of the aeronautical meteorologist	A	To make the best efforts to have the adequate number of personnel duly trained in aeronautical meteorology.	State		
MET 42	CAR Notify the RVR for CAT I operations (Annex 3, Part I, Chapter 4, Recommendation 4. 6.3.2)	Saint Lucia	RVR have not been implemented	JUN/ 1996	Plan de acquisition of the RVR	B	To ensure the implementation of required RVR.	State		

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REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE CAR REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 77 CAR	Exchange of OPMET information (ANP Basic CAR/SAM para. 35 to 39)	Saint Lucia	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 3B.	JUN/ 1996	a) Implement the COM/MET SIP Recommendations for the CAR Region; and b) Make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions	A	Ensure that OPMET exchange is made in accordance with requirements of Tables MET 2 and MET 2A.	State		
VCT Saint Vincent and the Grenadines										
MET 79 CAR	Adequate number of MET trained staff.	Saint Vincent	There are requirements of specialized meteorology personnel in the aeronautical meteorology field and of an increase of the number of aeronautical meteorologists.	JUN/ 1996	To use CAR/SAM technical cooperation regional projects for the training of aeronautical meteorology.	A	Upgrade training to senior and junior members of staff and increase the number of personnel.	State		
TTO Trinidad and Tobago										
MET 43 CAR	CAR/SAM ANP MET Requirements, Table AOP 1.	Trinidad and Tobago	RVR have not been implemented.	JUN/ 1996		B	As stated in an earlier document, the Trinidad and Tobago Meteorological Service will not be installing Runway Visual Range equipment in Trinidad and Tobago, due to the low frequency of limiting visibility. The Civil Aviation Authority is advised that the "Supplement in respect of the provisions of Trinidad and Tobago be amended"	State	JUN/ 2004	
MET 57 CAR	CAR/SAM ANP, Part VI, Meteorology, para. 3.	Trinidad and Tobago	Do not transmit regularly the special AIREPs in accordance with requirements.	MAY/ 1996	Keep a strict supervision and control of the operational ATS/MET staff to keep them informed on the importance of AIREPs and on the need to disseminate them where required.	A	Disseminate air notifications to required locations in accordance with the Table MET 2A requirements. Action plan: The Meteorological Service has not received an AIREP message during the past four (4) years at least from Civil Aviation. Therefore we are unable to transmit these messages.	State	APR/ 2003	

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ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 78 CAR	CAR/SAM ANP Requirements, Part VI, para. 8.	Trinidad and Tobago	There are deficiencies in the OPMET exchange.	JUN/ 1996	Review the OPMET exchange procedures, both in the meteorology and communications areas.	A	The Trinidad and Tobago Meteorological Service transmits, via the AFTN, all observations and SIGMETs. TAFs are transmitted via the International Satellite Communications System (ISCS). However, there have been many occasions when observations reaches the addressees in the Eastern Caribbean only, because there is a problem in Atlanta of which we are not made aware. If all our transmissions are sent via the ISCS, CAA will not receive any transmissions from us because your are not on the ISCS.	State		

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IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
ARG Argentina										
MET 53 SAM	Notify the RVR for CAT 1 operations [(Annex 3, Part I, Chapter 4, Rec. 4.6.3.2)]	Argentina / Aeronautical meteorological stations	The RVR of SAEZ, SACO, SAZM, SARE and SAME have not been implemented.	AUG/ 2006	Plan the acquisition or repairment of the RVR.	A	Installation of RVR Integrated Systems, Nefobasimeter and Automatic Meteorological Station with visual presentations in MET and TWR.	FAA - CRA in coordination with Natl. MET Service.	2007	
MET 76 SAM	Notify the RVR for CAT 1 operations [(Annex 3, Part I, Chapter 4, Rec. 4.6.3.2)]	Argentina / Aeronautical meteorological stations	The RVR of SAZS, SARI y SAWH have not been implemented.	AUG/ 2006	Plan the acquisition or repairment of the RVR.	A	Acquisition and installation of RVR Integrated Systems, Nefobasimeter and Automatic Meteorological Station with visual presentations in MET and TWR.	FAA - CRA in coordination with Natl. MET Service.	2008	Waiting for the assignment of the corresponding financial resources.
MET 77 SAM	Notify the RVR for CAT 1 operations [(Annex 3, Part I, Chapter 4, Rec. 4.6.3.2)]	Argentina / Aeronautical meteorological stations	The RVR of SASA, SAZN SARP have not been implemented.	AUG/ 2006	Plan the acquisition or repairment of the RVR.	A	Acquisition and installation of RVR Integrated Systems, Nefobasimeter and Automatic Meteorological Station with visual presentations in MET and TWR.	FAA - CRA in coordination with Natl. MET Service.	2009	Waiting for the assignment of the corresponding financial resources.
MET 78 SAM	Notify the RVR for CAT 1 operations [(Annex 3, Part I, Chapter 4, Rec. 4.6.3.2)]	Argentina / Aeronautical meteorological stations	The RVR of SASJ, SAWG, SANT have not been implemented.	AUG/ 2006	Plan the acquisition or repairment of the RVR.	A	Acquisition and installation of RVR Integrated Systems, Nefobasimeter and Automatic Meteorological Station with visual presentations in MET and TWR.	FAA - CRA in coordination with Natl. MET Service.	2010	Waiting for the assignment of the corresponding financial resources.
MET 79 SAM	Notify the RVR for CAT 1 operations [(Annex 3, Part I, Chapter 4, Rec. 4.6.3.2)]	Argentina / Aeronautical meteorological stations	The RVR of SAWE, SAVC, SARF have not been implemented.	AUG/ 2006	Plan the acquisition or repairment of the RVR.	A	Acquisition and installation of RVR Integrated Systems, Nefobasimeter and Automatic Meteorological Station with visual presentations in MET and TWR.	FAA - CRA in coordination with Natl. MET Service.	2011	Waiting for the assignment of the corresponding financial resources.
BOL Bolivia										
MET 11 SAM	Exchange of OPMET information (ANP Basic CAR/SAM, para. 35 to 39)	Bolivia / Aeronautical meteorological stations and meteorological watch office (MWO) of La Paz	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 2B.	OCT/ 2006	a) Implement the COM/MET SIP recommendations for the SAM Region; and b) make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions.	A	Implementation of the SIP COM/MET recommendations for the Sam Region. GREPECAS Recommendation 6/33.	AASANA		

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IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 30 SAM	Compliance with the requirements of the World Meteorological Organization (WMO) with regard to qualifications and training of aeronautical meteorology (MET) personnel (Annex 3, Chapter 2, Standard 2.1.5)	Bolivia / Aerodrome meteorological offices and meteorological watch office (MWO) of La Paz	Not all MET personnel complies with the requirements related to qualifications and training of WMO Publication No. 49. MET Technical personnel is complying functions of professional meteorologists.	OCT/ 2006	a) Carry out a review the functions and training of the aeronautical meteorologists; and b) plan and carry out training and/or refreshment courses for aeronautical meteorological personnel requiring them.	U	They have sent MET personnel to get trained in Argentina. These efforts will continue.	AASANA		
MET 41 SAM	Notify the RVR for CAT 1 operations [(Annex 3, Chapter 4, para. 4.7.4 a)]	Bolivia / Aeronautical meteorological stations.	RVRs SLCB, SLVR and SLTR have not been implemented or are not operational.	OCT/ 2006	Plan the acquisition or repair of the RVRs.	A		AASANA		
BRA Brasil										
MET 74 SAM	Notify the RVR for CAR III operations [Annex 3, Chapter 4, Standards: 4.6.3.1 and 4.6.3.4 c)]	Runway visual range	The RVR of SBBR and SBCG have not been implemented	NOV/ 2005	Plan RVR acquisition	A	The RVR SBBR has already been implemented in 2005. The RVR SBCG was acquired and the process of installation is foreseen for 2007.	DECEA	2007	
CHL Chile										
MET 75 SAM	Notify the RVR for CAT I Operations (Annex 3, Chapter 4, Rec. 4.6.3.2)	Chile, transmissometer	The RVR of SCIE SCCI have not been implemented.	DEC/ 2006		A	To plan the acquisition of the transmissometer or forward-scatter meter for SCCI aerodrome.	DGCA in coordination with the MET authority		
COL Colombia										
MET 32 SAM	Compliance with the requirements of the World Meteorological Organization (WMO) with regard to qualifications and training of aeronautical meteorology (MET) personnel (Annex 3, Chapter 2, Standard 2.1.5)	Colombia / Aerodrome meteorological offices and meteorological watch office (MWO) of Bogotá	Not all MET personnel complies with the requirements related to qualifications and training of WMO Publication No. 49, MET Class IV personnel is carrying out functions of MET Class II personnel.	JUN/ 1996	a) Review the functions and training of the aeronautical meteorologists; and b) Plan and carry out training and/or refreshment courses for aeronautical meteorological personnel requiring them.	U	In consultancy process, through TDA; through which alternatives for the solution to this problem are expected.	UAEAC		
MET 42 SAM	Notify the RVR for CAT 1 operations [(Annex 3, Part I, Chapter 4, Recommendation 4.6.3.2]	Colombia / Aerodrome meteorological stations	RVRs SKBQ, SKCG and SKLT have not been implemented or are not operational.	JUN/ 1996	Plan the acquisition or repairment of the SKLT RVR.	A	SKBQ RVR in repairment process; SKCG RVR will be acquired; SKRG RVR in repairment process. CORRECTED	UAEAC	2007	
ECU Ecuador										

OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE SAM REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 33 SAM	Compliance with the requirements of the World Meteorological Organization (WMO) with regard to qualifications and training of aeronautical meteorology (MET) personnel (Annex 3, Part I, Chapter 2, standard 2.1.5)	Ecuador / Aerodrome meteorological offices and meteorological watch office (MWO) of Guayaquil	Not all MET personnel complies with the requirements related to qualifications and training of WMO Publication No. 49.	JUN/ 1996	a) Review the functions and training of the aeronautical meteorologists; and b) Plan and carry out training and/or refreshment courses for aeronautical meteorological personnel requiring them.	B	Training programmes at national and international level are being carried out to have the specialized aeronautical meteorology personnel required.	DGAC	2007	
MET 84 SAM	Observations and routine reports (annex 3, Part I, Chap. 4, Standard 4.3.2 a)	Ecuador, aerodrome meteorological Offices.	The standard has not been implemented.	MAY/ 2007	Update personnel and implement the standard.	B		DGCA		
MET 85 SAM	Observations and routine reports (annex 3, Part I, Chap. 4, Standard 4.4.2 a)	Ecuador, aerodrome meteorological Offices.	The standard has not been implemented.	MAY/ 2007	Update personnel and implement the standard.	B		DGCA		
GUY Guyana										
MET 17 SAM	Exchange of OPMET information (FASID CAR/SAM para. 35 to 39)	Guyana / Aeronautical meteorological stations and meteorological watch offices (MWO) of Georgetown	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 2B.	NOV/ 2006	a) Implement the COM/MET SIP conclusions for the SAM Region; and b) make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions.	A		NCAA in coordination with Hydromet Nat. Service		
MET 28 SAM	SIGMET information (Annex 3, Chapter 7, Standard 7.1.1)	Guyana / Meteorological watch offices (MWOs) of Georgetown	Not all SIGMET messages are prepared based on the procedures established by ICAO.	NOV/ 2006	a) Implement the SIGMET SIP recommendations for the SAM Region; and b) make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions.	U		Guyana Hydromet National Service		
MET 34 SAM	Compliance with the requirements of the World Meteorological Organization (WMO) with regard to qualifications and training of aeronautical meteorology (MET) personnel (Annex 3, Part I, Chapter 2, standard 2.1.5)	Guyana / Aerodrome meteorological office and meteorological watch office (MWO) of Georgetown	The MET Authority does not have available the minimum quantity of personnel to provide MET service.	NOV/ 2006	a) Review the functions and training of the aeronautical meteorologists; and b) Plan and carry out training and/or refreshment courses for aeronautical meteorological personnel requiring them.	A		GCAA in coordination with National MET Service		

OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE SAM REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 44 SAM	Report the RVR for CAT 1 operations [(Annex 3, Part I, Chapter 4, Recommendation 4.7.4 a)]	Guyana / Georgetown aeronautical meteorological station	RVRs SYCJ is not operational.	NOV/ 2006	Plan the repairment of the RVR	A		GCAA in coordination with Natl. MET Service		
MET 56 SAM	Surface wind, Annex 3, Standard 4.1.2.1)	Guyana COM Unit	Displays of surface wind in ATS units corresponds to wind sensor installed under the control tower	NOV/ 2006	Surface wind displays from surface wind from meteorological stations shall be installed in ATS units	A	Project proposal for new equipment includes Automated Weather System. This will fulfill this task when it becomes available. It is envisaged that once the project is approved, the deficiency will no longer exist.	NCAA in coordination with Hydromet Service		
MET 61 SAM	Requirements for communications, Annex 3, Chap. 11, Standard 11.1.1	Guyana, COM uit		NOV/ 2006	Suitable communications facilities shall be made available to permit MET offices to supply the required MET information to ATS units.	A	Project proposal for new equipment includes Automated Weather System. This will fulfill this task when it becomes available. It is envisaged that once the project is approved, the deficiency will no longer exist.	NCAA in coordination with the Hydromet Service		
PAN Panama										
MET 35 SAM	Compliance with the requirements of the World Meteorological Organization (WMO) with regard to qualifications and training of aeronautical meteorology (MET) personnel (Annex 3, Chapter 2, Standard 2.1.5)	Panama / Aerodrome meteorological offices and meteorological watch offices (MWO) of Tocumen	Not all MET personnel complies with the requirements related to qualifications and training of WMO Publication No. 49.	NOV/ 2000	a) Review the functions and training of the aeronautical meteorologists; and b) Plan and carry out training and/or refreshment courses for aeronautical meteorological personnel requiring them.	A	They are making efforts to use the resources of some projects to be implemented. Plans for the formation and update to start in 2007 and end in 2010. Coordination with the universities is being carried out to correct this deficiency.	NCAA in coordination with Hydromet Nat. Service		
MET 81 SAM	Aeronautical meteorological stations and observations (Annex 3, Part I, Chap. 4, standard 4.1.1)	Panama, Changuinola, Bocas del Toro and David aerodromes.	There are no MET stations in the aerodromes of MPBO, MPCH and MPDA.		Acquire and install the stations.	U	The Aeronauticla Authority of has already planned the installation of sensors and meteorological equipment at the aerodromes of Bocas del Toro, Changuinola and David, in order to correct this deficiency as soon as possible.	AAC		

PER Peru

OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE SAM REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 46 SAM	Notify the RVR for CAT 1 operations (Annex 3, Chap 4, Rec 4.6.3.2)	Peru / Aeronautical meteorological stations	RVRs SPIM MID, SPHI, SPSO and SPTN have not been implemented.	JUN/ 1996	Plan the acquisition or repairment of the RVRs.	A	Chiclayo 2009, Pisco 2010 and Tacna 2011. The RVR MID of Lima, 2009.	CORPAC	2011	
MET 63 SAM	Runway visual range (Annex 3, Chap. 4, Standard 4.6.3.4) FASID Table AOP 1 (CAR/SAM III-AOP 1-35)	Aerodrome meteorological station of Lima-Callao	No runway visual range assessments are made in the middle point.	NOV/ 2004		A	The RVR will be transferred from the runway end to the middle point.	CORPAC	2009	

PRY Paraguay

MET 36 SAM	Compliance with the requirements of the World Meteorological Organization (WMO) with regard to qualifications and training of aeronautical meteorology (MET) personnel (Annex 3, Chapter 2, Standard 2.1.5)	Paraguay / Aerodrome meteorological offices and meteorological watch office (MWO)	Not all MET personnel complies with the requirements related to qualifications and training of WMO Publication No. 49. The actual personnel does not satisfy the minimum requirements for the provision of MET service.	OCT/ 2006	Plan and carry out training and/or updating courses for aeronautical meteorological personnel, as necessary.	U	Short Term: Hire the personnel available graduated at the FP-UNA and 5 meteorological observers, graduated in Class IV Course carried out by INAC. Med. Term: Carry out an Aeronautical Meteorology Formation Course, in accordance with the requirements of WMO document No. 258. Long Term: Develop projects for the formation of Class I and Class II personnel with the assistance of Voluntary Technical Cooperation and senior level education institutes of the country.	DINAC	DEC/ 2007	There are legal restrictions, since currently it is not possible to increase the number of public officers hired.
MET 45 SAM	Notify the RVR for CAT 1 operations (Annex 3, Part I, Chapter 4, Recommendation 4.6.3.2)	Paraguay / aeronautical meteorological stations	RVRs SGAS is functioning but not in operation. The RVR SGES is not in operation.	OCT/ 2006	In SGAS, the equipment is installed but with communication problem. In SGES, the equipment is out of service and the purchase of a semi-automatic meteorological station is planned, including an RVR equipment.	A	In SGAS. Contract with ICAO is being reviewed for the acquisition of the RADIO-MODEM, to carry out the RVR connection and the ATS/MET units ATS/MET (CAP). A project is being developed, which is in the bidding process, for the acquisition of a semi-automatic meteorological station, including RVR for SGES, is foreseen.	DINAC	2007	

SUR Suriname

OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE SAM REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 21 SAM	Exchange of OPMET information (CAR/SAM FASID para. 35 to 39)	Suriname / Aeronautical meteorological stations and meteorological watch office (MWO) of Paramaribo	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 2B.	JUN/ 1996	a) Implement the COM/MET SIP recommendations for the SAM Region; and b) make use of the Guide for the preparation, dissemination and use of SIGMET messages in the CAR/SAM Regions.	A		NCAA in coordination with the MET Centre		
MET 38 SAM	Compliance with the requirements of the World Meteorological Organization (WMO) with regard to qualifications and training of aeronautical meteorology (MET) personnel (Annex 3, Part I, Chapter 2, standard 2.1.5)	Suriname / Aerodrome meteorological offices and meteorological watch office (MWO) of Paramaribo	Not all MET personnel complies with the requirements related to qualifications and training of WMO Publication No. 49.	JUN/ 1996	a) Review the functions and training of the aeronautical meteorologists; and b) Plan and carry out training and/or refreshment courses for aeronautical meteorological personnel requiring them.	B		NCAA in coordination with the MET Centre		
MET 47 SAM	Report the RVR for CAT 1 operations (Annex 3, Part I, Chapter 4, Recommendation 6.3.2)	Suriname / Aeronautical meteorological stations	SMJP RVRs of Zandery - SMJP have not been implemented.	JUN/ 1996	Plan the acquisition or repairment of RVRs.	A		DCA		
MET 58 SAM	SIGMET information (Annex 3, Chap 7, Standard 7.1.1)	Suriname Aerodrome MET Offices and MET Watch Office (MWO) of Paramaribo	SIGMETs have not been prepared	OCT/ 2004	As a matter of urgency the Suriname MET services starts preparing and issuing SIGMETs	U		The NCAA in coordination with the MET Centre		
MET 59 SAM	Surface wind (Annex 3, Standard 4.1.2.1)	Suriname COM Dependency	Displays of surface wind in ATS units correspond to wind sensor installed at the top of the TWR	OCT/ 2004	Surface wind display in the surface of ATS dependencies must corresponds to the sensors of the MET station	U		NCAA in coordination with the Hydromet Centre		
MET 64 SAM	Requirements for communications (Annex 3, Standard 11.1.1)	Suriname COM unit		OCT/ 2004	Suitable telecommunications facilities shall be made available to permit MET offices to supply the required MET information to ATS units.	A		NCAA in coordination with the Guyana Hidromet Serv		

URY Uruguay

OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE SAM REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 22 SAM	Exchange of OPMET information (FASID CAR/SAM para. 35 to 39)	Uruguay / Aeronautical meteorological stations and meteorological watch offices (MWO)	OPMET information is not being disseminated in accordance with the requirements of CAR/SAM FASID Tables MET 2A and MET 2B.	JUN/ 1996	Implement the COM/MET SIP Recommendations for the SAM Region.	A	Coordination between COM/MET.	COM/MET - WMO		
MET 39 SAM	Compliance with the requirements of the World Meteorological Organization (WMO) with regard to qualifications and training of aeronautical meteorology (MET) personnel (Annex 3, Chapter 2, Standard 2.1.5)	Uruguay / Meteorological Watch Offices (MWO) and aerodrome meteorological offices.	Not all MET personnel complies with the requirements related to qualifications and training of WMO Publication No. 49.	JUN/ 1996	a) Review the functions and training of the aeronautical meteorologists; and b) Plan and carry out training and/or refreshment courses for aeronautical meteorological personnel requiring them.	U		DINACIA / DNM		
MET 80 SAM	Aerodrome meteorological stations and observations. (Annex 3, Chap 4, Standard 4.1)	Uruguay, SUCA and SURV.	There is not aerodrome meteorological station.	OCT/ 2006	Acquire and install the stations.	A		DINACIA/ DNM		
VEN Venezuela										
MET 65 SAM	WMO requirements regarding MET personnel qualifications and training (Annex 3, Part I, Chapter 2, standard 2.1.15)	Venezuela, Caracas WMO	Caracas MWO does not have the minimum personnel required for the provision of MET service	FEB/ 2004		A	Implement recommended actions MET/05 and MET/06 of December 2004 mission.	INAC in coordination with SMN		
MET 66 SAM	Routine observations and reports (Annex 3, Chap 4, Standards 4.3.1 and 4.3.2)	Venezuela, Paraguana	Does not have MET stations	DEC/ 2004	Installation in process	A	Give priority to the installation of these stations with the VNEMETH Programme.	INAC in coordination with the SMN	AUG/ 2007	
MET 67 SAM	FASID Table AOP 1 (CAR/SAM III-AOP 1-39)	Venezuela, Barcelona, Caracas, Maracaibo and Margarita	RVR assessments have not been implemented.	JUN/ 1996		A	Plan the acquisition of the required instruments.	INAC in coordination with the SMN		
MET 68 SAM	Exchange of OPMET information (CAR/SAM ANP Basic, paras. 35 to 39)	Venezuela, Caracs MWO and MET offices	MET offices do not have direct access to AFTN	DEC/ 2004	Implement COM Recommendations of SIP COM/MET for CAR/SAM Regions	A	Project for the modernization of the communications	INAC in coordination with the SMN	DEC/ 2008	
MET 69 SAM	Flight documentation (Annex 3, Part I, Recommendation 9.4.1)	Venezuela, MET Office Caracas	Is not in accordance with Annex 3.	DEC/ 2005	Reported by IATA	A	Implement the Recommendations of the mission carried out on Dec. 2004.	INAC in coordination with SMN	2007	

OUTSTANDING DEFICIENCIES

REPORTING FORM ON AIR NAVIGATION DEFICIENCIES IN THE MET FIELD IN THE SAM REGION

IDENTIFICATION			DEFICIENCY				ACTION PLAN			
ID	Requirements	States/facilities	Description	Date first reported	Remarks	Priority	Description	Executing body	Date of completion	Remarks
1	2	3	4	5	6	7	8	9	10	11
MET 70 SAM	MET stations and obs. (Annex 3, Chap 4, Standard 4.1.1)	Venezuela, MET Office Maracaibo	IATA informs that all MET information is inappropriate.	APR/ 2005	Reported by IATA.	A	Implement the Recommendations of the mission carried out in Dec. 2004.	INAC in coordination with SMN	DEC/ 2008	
MET 86 SAM	Observations and routine reports (annex 3, Part I, Chap. 4, Standard 4.4.2 a)	Venezuela, aerodrome meteorological Offices.	The standard has not been implemented.	MAY/ 2007	Update personnel and implement the standard.	B		INAC	AUG/ 2007	

Agenda Item 10: Future Work Programme of the AERMET Subgroup

10.1 Under this Agenda Item, the meeting recalled that coordination among GREPECAS contributory bodies is ruled by the Procedural Handbook of this Group, taking into account the terms of reference and the specific task of each body. During the meetings of the GREPECAS Administration Coordination Group (ACG), since its establishment, the GREPECAS Procedural Handbook has been thoroughly revised, taking into consideration the mechanisms of its structure. In this regard, the revision made by the ACG/7, Lima, Perú, 3 – 4 March 2008, which will be presented for consideration of the Fifteenth Meeting of GREPECAS (GREPECAS/15), 13 – 17 October 2008, for its approval.

10.2 In addition, the subgroup recalled that the terms of reference of the ACG include, among others, to coordinate and harmonize administrative matters of GREPECAS and its contributory bodies, as well as to make follow-up and monitoring of target dates assigned to tasks.

10.3 When discussing Agenda Item 1, the ACG during its Seventh Meeting (ACG/7 – Lima, Peru, 3 and 4 March 2008) the meeting recognized that since the last triennium, ICAO has established Strategic Objectives in each area of competency with a Business Plan for their implementation. In this context, it has also favoured the functional integration of the Regional Offices with Headquarters. Consequently, all the activities developed by the Regional Offices must be identified with the strategic objectives of the organization.

10.4 The ACG considered that the work programme of Contributory Bodies of GREPECAS should be detailed into deliverables in order to allow for better understanding of the goals and results. The deliverables must be clearly defined to breakdown large volumes of work into specified activities. These activities would be used as project schedule foundation.

10.5 On the other hand, the Coordination Group concurred that the permanent tasks listed by the different work programmes of the Contributory Bodies should be eliminated, with the exception of limited, but in general terms, tasks identified as permanent should be managed by the Regional Offices.

10.6 Taking into account the above mentioned, the ACG formulated Draft Decision ACG 7/02 - Aspects to be considered in developing the work programmes of GREPECAS contributory bodies, which is included in Appendix A to this part of the report for ease of reference.

10.7 The subgroup noted that in accordance with paragraph 1.2.3.7 b) of GREPECAS Procedural Handbook, the referred Draft Decision had been approved by States through the GREPECAS Fast Track procedure.

10.8 The meeting took note of the tasks being advanced by the ICAO meteorology area according with the strategic objectives, which are listed below:

a) **Safety (A):**

- International airways volcanic watch
- Tropical cyclone warning system
- Quality management system (QMS)
- Uplink and downlink of MET information

- Turbulence reporting and warnings
 - SIGMET
 - wind shear

b) **Efficiency (D):**

- World Area Forecast System (WAFS)
- Satellite distribution system for the information relating to air navigation
- Observing and forecasting of MET conditions at aerodromes and terminal area
- Migration of OPMET messages to digital codes
- MET Information to support ATM

10.9 Additionally, **Appendix B** presents Global Plan Initiatives of meteorological systems (GPI-19) with its related operational concept components:

- **AOM:** Airspace organization management
- **DCB:** Demand and capacity balancing
- **AO:** Aerodrome operations de aeródromo
- **AUO:** Airspace user operations

Review of the AERMET subgroup work programme approved by GREPECAS/14, including priorities and target dates of the tasks inherent to the Subgroup

10.10 Based on the above paragraphs, the meeting updated the terms of reference and work programme of the subgroup and formulated one (1) Draft Conclusion and four d Decisions, as follows:

DRAFT

DECISION 9/18 - AERMET SUBGROUP NEW TERMS OF REFERENCE AND WORK PROGRAMME

That the AERMET subgroup terms of reference and work programme is updated as indicated under **Appendix C** to this part of the report.

DECISION 9/19 - NEW TERMS OF REFERENCE, WORK PROGRAMME AND COMPOSITION OF THE TASK FORCE ON VOLCANIC ASH

That the Task Force on Volcanic Ash terms of reference, work programme and composition is updated as indicated under **Appendix D** to this part of the report.

DECISION 9/20 - NEW TERMS OF REFERENCE, WORK PROGRAMME AND COMPOSITION OF THE MET/ATM/OP TASK FORCE ON MET IN THE ATM CONCEPT

That the MET/ATM/OP Task Force on MET in the ATM concept terms of reference, work programme and composition is updated as indicated under **Appendix E** to this part of the report.

DECISION 9/21 - DISBANDING OF THE COM/MET TASK FORCE

That, taking into account that the tasks of this Task Force have been completed:

- a) the COM/MET Task Force be disbanded; and
- b) express the gratitude to the group rapporteur and its members for the work carried out and this contribution to the subgroup.

DECISION 9/22 - ESTABLISHMENT OF THE MET QUALITY MANAGEMENT TASK FORCE

That the MET Quality Management Task Force be established with the terms of reference, work programme and composition presented in Appendix F to this part of the report.

10.11 During the revision and update of the AERMET Subgroup work programme, the meeting noted with great concern that the implementation of Annex 3 provisions is being affected by the lack of guidance material in Spanish. Also, several tasks of the Subgroup can not be completed due to the need of training and appropriate guidance material in English and Spanish, as well as the translation of several documents into English, which, due to their great volume, require of a budget that can not be assumed by GREPECAS.

10.12 In this regard, and after an extensive discussion, the meeting considered the need to develop a technical cooperation project for the CAR/SAM Regions for the translation from English into Spanish of digital modules and formation and training texts, as well as for the translation of update material and guides prepared by the subgroup in Spanish, and agreed to formulate the following draft conclusion:

DRAFT

CONCLUSION 9/23 - TECHNICAL COOPERATION PROJECT FOR THE TRANSLATION OF TRAINING MATERIAL AND GUIDANCE DOCUMENTATION PREPARED BY THE SUBGROUP IN SPANISH

That, a technical cooperation project be carried out for CAR/SAM States/Territories for the translation of training material and guidance documentation prepared by the AERMET Subgroup.

Date and site for the next Meeting of the AERMET Subgroup

10.13 Under this Agenda Item the subgroup recalled that based on several working papers presented at the Thirteenth Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/13, Santiago, Chile, 14 to 18 November 2005), GREPECAS formulated Conclusion 13/95 aimed to request the support of the civil aviation administrations and the continuity and possible increase of ICAO financial support, as well as the application of internal measures which contribute to save

resources and optimize the management and work of the GREPECAS mechanism. **Appendix G** includes an extract of the appendix approved by GREPECAS.

10.14 Likewise, the meeting recalled that GREPECAS formulated Decision 13/96, which is included as **Appendix H** for ease of reference. In this regard, the meeting could take note that in accordance with Appendix B to the ACG/7 Report, the Tenth Meeting of the Subgroup is foreseen to be carried out from 14 to 17 September 2009, however, according to **Appendix G**, the establishment of the sites for the meeting should be made three years in advance. In spite of the above, so far there are no proposals by the States to host this meeting.

10.15 With regard to the assignment of ICAO funds for GREPECAS activities, which limits the development of meetings of some of its subgroups, the AERMET Subgroup expressed its great concern, since the previous meetings were financed by Chile and United States of America. In addition, it was emphasized that since its creation, the subgroup took organizational measures to make its meetings and those of its task forces more efficient. At the same time, it was considered that even though the efficiency of the subgroup could still be improved, ICAO should consider this situation when assigning the resources available.

DRAFT

DECISION ACG/7/02

**ASPECTS TO BE CONSIDERED IN DEVELOPING THE WORK
PROGRAMMES OF GREPECAS CONTRIBUTORY BODIES**

That, in developing the work programmes of the GREPECAS Contributory Bodies, the following aspects be considered:

- a) The related strategic objective.
- b) The contribution made to achieve that strategic objective.
- c) Other relevant tasks in the overall programme of GREPECAS Contributory Bodies.
- d) The relationship to the Regional Air Navigation Plan and/or SARPs implementation.

Note: Until the new Regional Air Navigation Plan is developed, GREPECAS Contributory Bodies should refer tasks to Global Plan Initiatives (GPIs).

- e) Detail the work programme into specific deliverables in order to allow for better understanding of the expected results.
- f) Completion date of the task.

(GPI-19) METEOROLOGICAL SYSTEMS

Objective: To improve the availability of meteorological information in support of a seamless global ATM system.

Related Operational Concept Components: AOM, DCB, AO, AUO

Description of strategy

1.85 Immediate access to real-time, global operational meteorological (OPMET) information is required to assist ATM in tactical decision-making for aircraft surveillance, air traffic flow management and flexible/dynamic aircraft routing which will contribute to the optimization of the use of airspace. Such stringent requirements will imply that most meteorological systems should be automated and that meteorological service for international air navigation be provided in an integrated and comprehensive manner through global systems such as the world area forecast system (WAFS), the international airways volcano watch (IAVW) and the ICAO tropical cyclone warning system.

1.86 Enhancements to WAFS, IAVW and the ICAO tropical cyclone warning system to improve the accuracy, timeliness and usefulness of the forecasts issued will be required to facilitate the optimization of the use of airspace.

1.87 Increasing use of data-link to downlink and uplink meteorological information (through such systems as D-ATIS and D-VOLMET) will assist in the automatic sequencing of aircraft on approach and will contribute to the maximization of capacity. The development of automated ground-based meteorological systems in support of operations in the terminal area will provide OPMET information (such as automated low-level wind shear alerts) and automated runway wake vortex reports. OPMET information from the automated systems will also assist in the timely provision of forecasts and warnings of hazardous weather phenomena. These forecasts and warnings, together with automated OPMET information, will contribute to maximizing runway capacity.

AERONAUTICAL METEOROLOGY SUBGROUP (AERMETS/9)

1. Terms of reference

- a) ~~Monitor the implementation of MET facilities and services; of the world-area forecast system; of the international airways volcano watch; of the tropical cyclone alert system; and the issuance and dissemination of OPMET data. Identify any deficiency and develop proposals to improve their implementation;~~Ensure seamless and consistent development of the CAR/SAM Regional Air Navigation Plan and the CAR/SAM Regional Plan for ATM System in the MET area;
- b) ~~Review and update the CAR/SAM Air Navigation Plan in accordance with the operational requirements of the CAR/SAM Regions and ensure its seamless and consistent implementation addressed to the new CNS/ATM systems concerning MET;~~
- b) Review in a continuous basis the list of MET deficiencies, identify new deficiencies that prevent the implementation or provision of MET service in the CAR/SAM Regions and propose actions for their correction;
- c)d) Monitor the research and development of ~~the~~CNS/ATM systems, the tests and demonstrations in the ~~CNS/ATM~~CNS/ATM/MET field and facilitate the transference of these information and experience among the CAR/SAM States and recommend specific actions aimed at the implementation of MET services to satisfy ~~CNS/ATM~~ requirements.
- d) ~~Monitor the implementation of WAFS, IAVW and tropical cyclones warning system.~~
- e) ~~Monitor the implementation of a Quality Management System.~~

AERMETSG/9
Appendix C to the Report on Agenda Item 10

10C - 2

2. Work Programme

TOR = Terms of reference.

A* Tasks of high priority on which work should be expedited.

B* Tasks of medium priority on which work should be undertaken as soon as possible but not to the detriment of Priority **A** tasks.

C* Tasks of medium priority on which work should be undertaken as time and resources permit but not to the detriment of Priority **A** and **B** tasks.

No.	Reference	Strategic Objective and GPI	Task	Priority*	Date	
					Start	End
~~8-1~~	~~TOR~~	~~A – Safety D – Efficiency & GPI 19~~	~~Carry out a survey on MET facilities and services and present the results in terms of percentage of implementation of facilities and services at the AERMETSG/9.~~	~~A~~	~~JUL 2007~~	~~DEC 2007~~
~~8-2~~	~~TOR~~	~~D – Efficiency & GPI 19~~	~~Monitor WAFS implementation, in particular States readiness to convert significant weather forecasts (SYGWX) received, into SIGWX in BUFR code and present the results in percentage terms to the AERMETSG/9.~~	~~A~~	~~FEB 2001~~	~~DEC 2007~~
<u>9-1</u>	<u>WAFSOPSG/ GREPECAS</u>	<u>D- Efficiency & GPI 19</u>	<u>Monitor WAFS implementation, particularly in respect to the new WAFS Forecasts in the introduction of SIGWX Forecasts and ICE/TURB/CB</u>	<u>A</u>	<u>JUL2008</u>	<u>SEP 2010</u>
<u>9-2</u>	<u>WAFSOPSG/ GREPECAS</u>	<u>D- Efficiency & GPI 19</u>	<u>Monitor and plan the support for the training of the new WAFS SIGWX and ICE/TURB/CB forecasts</u>	<u>A</u>	<u>JUL 2008</u>	<u>SEP 2010</u>
<u>9-3</u>	<u>WAFSOPSG/ GREPECAS</u>	<u>D- Efficiency & GPI 19</u>	<u>Monitor and plan the support and capability of the States to implement ISCS G2 to G3 transition foreseen for December 2009.</u>	<u>A</u>	<u>JUL 2008</u>	<u>SEP 2010</u>
~~8-39-4~~	~~GREPECAS~~	~~D – Efficiency & GPI 19~~	<del>Carry out a <u>annual</u> surveys on ISCS efficacy in order to send ~~it~~ them to the focal points and analyze the results to be presented at the <u>next</u> AERMETSG/9 meeting.</del>	~~A~~	~~FEB 2007~~ ~~ABR 2008~~	~~MAY 2007~~ ~~ABR 2010~~
~~8-49-5~~	~~TOR~~	~~A – Safety & GPI 19~~	~~Monitor IAVW implementation, in particular the status of the designation of volcano observatories and present the results in terms of percentage of IAVW implementation and of the designation of volcano observatories at the AERMETSG/9.~~	~~A~~	~~JUL 2008~~ ~~FEB 2001~~	~~SEP 2010~~ ~~DEC 2007~~
~~8-59-6~~	~~GREPECAS~~	~~A – Safety & GPI 19~~	~~Carry out <u>biannual</u> (May and November) SIGMET WV tests, analyze their results and present them at the next AERMETSG Meeting.~~	~~B~~ ~~A~~	~~JUL 2008~~ ~~NOV 2006~~	~~SEP 2010~~ ~~Continuous~~
~~8-6~~	~~GREPECAS~~	~~A – Safety D – Efficiency & GPI 19~~	~~Develop, in coordination with the Secretariat, the draft Guidance Material for the development of airport emergency plans in case of volcanic eruptions in the CAR/SAM Regions.~~	~~B~~	~~JUL 2005~~	~~MAR 2008~~
~~89-7~~	~~TOR~~	~~A – Safety & GPI 19~~	~~Monitor the implementation of the tropical cyclones warning system, in particular the introduction of every 6 hours forecasts.~~	~~A~~	~~JUL 2008~~ ~~ENE 2007~~	~~SEP 2010~~ ~~DEC 2007~~

AERMETSG/9
Appendix C to the Report on Agenda Item 10

10C - 3

No.	Reference	Strategic Objective and GPI	Task	Priority*	Date	
					Start	End
<u>9-8</u>	<u>GREPECAS</u>	<u>A Safety</u> <u>D Efficiency</u> <u>& GPI 19</u>	<u>Review, in coordination with the Secretariat, the draft Guidance Material for the development of airport emergency plans in case of volcanic eruptions in the CAR/SAM Regions.</u>	<u>B</u>	<u>JUL 2008</u>	<u>SEP 2008</u>
<u>9-9</u>	<u>GREPECAS</u>	<u>A Safety</u> <u>D Efficiency</u> <u>& GPI 19</u>	<u>Translate the draft Guidance Material for the development of airport emergency plans in case of volcanic eruptions in the CAR/SAM Regions.</u>	<u>B</u>	<u>TBD</u>	<u>TBD</u>
<u>8-8</u>	<u>TOR</u>	<u>A – Safety</u> <u>& GPI 19</u>	<u>Monitor the issuance and dissemination of OPMET data, in particular of ISGMET according with CAR/SAM FASID Tables MET 1A and 2B and “global” requirements.</u>	<u>B</u>	<u>MAR 2007</u>	<u>Continuous</u>
<u>8-9</u>	<u>TOR</u>	<u>A – Safety</u> <u>& GPI 19</u>	<u>Monitor OPMET information exchange (METAR/SPECI, TAF and SIGMET in BUFR code).</u>	<u>TBD</u>	<u>TBD</u>	<u>TBD</u>
<u>8-10</u>	<u>GREPECAS</u>	<u>A – Safety</u> <u>& GPI 19</u>	<u>Develop in coordination with the Secretariat the OPMET Guide</u>	<u>B</u>	<u>JUL 2005</u>	<u>MAR 2008</u>
<u>8-11</u>	<u>GREPECAS</u>	<u>A – Safety</u> <u>& GPI 19</u>	<u>Develop a plan for the implementation of migration of OPMET messages in BUFR code, with possibilities of different scenarios for the transition, including a cost-benefit study and its implications.</u>	<u>A</u>	<u>ENE 2007</u>	<u>DEC 2008</u>
<u>8-129-10</u>	<u>GREPECAS</u>	<u>A – Safety</u> <u>& GPI 19</u>	<u>Coordinate the OPMET exchange control annually (10-16 JUN), analyze the results and present them in the next AERMETSG Meeting.</u>	<u>A_b</u>	<u>JUL 2006</u>	<u>Continuous</u> <u>SEP 2010</u>
<u>8-139-11</u>	<u>TOR</u>	<u>A – Safety</u> <u>D - Efficiency</u> <u>& GPI 19</u>	<u>Based on the last edition of Doc 9750 - Global Air Navigation Plan for CNS/ATM, develop the MET chapter of the CAR/SAM Regional Plan for the implementation of CNS/ATM systems, Document I.</u>	<u>B</u>	<u>JUN 2006</u> <u>2009</u>	<u>SEP 2010</u> <u>DEC 2007</u>
<u>8-149-12</u>	<u>TOR</u> <u>GREPE</u> <u>CAS</u>	<u>A – Safety</u> <u>D – Efficiency</u> <u>& GPI 19</u>	<u>Develop, in coordination with the Secretariat, a draft Guide of MET documented procedures required by Standard ISO 9001:2000, and present it at the AERMETSG/10.</u>	<u>BA</u>	<u>JUL 2005</u> <u>9</u>	<u>SEP 2010</u> <u>DEC 2007</u>
<u>8-149-13</u>	<u>TOR</u>	<u>A – Safety</u> <u>D – Efficiency</u> <u>& GPI 19</u>	<u>Monitor the research and development of MET concept in CNS/ATM field and facilitate the transference of this information and experience among CAR/SAM States.</u>	<u>B</u>	<u>JUL 2005</u> <u>ENE 2009</u>	<u>DEC 2007</u> <u>SEP 2010</u>
<u>8-159-14</u>	<u>GREPECAS</u> <u>TOR</u>	<u>A – Safety</u> <u>& GPI 19</u>	<u>Identify activities for the implementation of new meteorological services related both to training and application of the new CNS/ATM systems. Provide guidelines.</u>	<u>AB</u>	<u>ENE 2009</u> <u>JUL 2005</u>	<u>SEP 2010</u> <u>DEC 2007</u>
<u>8-16</u>	<u>CAR/SAM/3</u>	<u>D – Efficiency</u> <u>& GPI 19</u>	<u>Carry out a study to determine the need for VOLMET services in the CAR/SAM Regions.</u>	<u>B</u>	<u>JUL 2005</u>	<u>DEC 2007</u>

AERMETSG/9
Appendix C to the Report on Agenda Item 10a

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No.	Reference	Strategic Objective and GPI	Task	Priority*	Date	
					Start	End
~~8-17~~	~~GREPECAS~~	~~A – Safety D – Efficiency & GPI 19~~	~~Propose short, medium and long term measures to satisfy the requirements for MET personnel in the States of the CAR/SAM Regions.~~	~~B~~	~~ENE 2005~~	~~DEC 2007~~
~~8-189-15~~	GREPECAS TOR	A – Safety D - Efficiency & GPI 19	Update the list of MET deficiencies.	A	JUL 2005	Continuous

3. **Composition**

Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, France, Panama, Paraguay, Peru, Spain, United States, Uruguay, Venezuela, COCESNA, IATA, IFALPA and WMO.

4. **Chairmanship**

Chairman: ~~Mr. Gustavo Flores (Argentina)~~ Carlos Roberto Salinas Rojas (Paraguay)

Vice-Chairman: Steven R. Albersheim (United States)

TASK FORCE ON VOLCANIC ASH

1. Terms of Reference

- a) Implementation of the international airways volcano watch (IAVW) and the tropical cyclone alert system.

2. Work Programme

TASK NUMBER	TASK DESCRIPTION	PRIORITY	DATE	
			START	END
	IAVW Implementation			
9-5	Monitor IAVW implementation.	A	JUL 2008	SEP 2010
9-6	Carry out biannual SIGMET WV tests (May and November), analyze their results and present them at the following AERMETSG Meeting.	A	JUL 2008	SEP 2010
9-7	Monitor the implementation of the tropical cyclones warning system.	A	JUL 2008	SEP 2010
9-8	Review, in coordination with the Secretariat, the draft Guidance Material for the development of airport emergency plans in case of volcanic eruptions in the CAR/SAM Regions.	B	JUL 2008	SEP 2008
9-9	Translate the draft Guidance Material for the development of airport emergency plans in case of volcanic eruptions in the CAR/SAM Regions.	B	TBD	TBD

3. Priority

- A** High priority tasks, on which work should be speeded up.
B Medium priority tasks, on which work should commence as soon as possible, but without detriment to priority **A** tasks.
C Tasks of lesser priority, on which work should commence as time and resources allow, but without detriment to priority **A** and **B** tasks.

4. Composition

Argentina:	Carlos Benitez (<i>Rapporteur</i>)
Chile:	Reynaldo Gutiérrez
Colombia:	Oscar Bermúdez
Cuba:	Juan Ayón
Estados Unidos:	Steven Albersheim
Paraguay:	Roberto Salinas
IATA:	Mauricio Morán

MET/ATM/OP TASK FORCE ON MET IN THE CNS/ATM CONCEPT

1. Terms of reference

Implementation of the world area forecast system.

2. Work Programme:

TASK NUMBER	TASK DESCRIPTION	PRIORITY	DATE	
			START	END
	WAFS Implementation			
9-2	Monitor and plan the support for the training in the new WAFS SIGWX and ICE/TURB/CB forecasts.	A	JUN 2008	SEP 2010
9-3	Monitor and plan the support for the capability of the States to implement the ISCS transition from G2 to G3 foreseen for December 2009.	A	JUL 2008	SEP 2010
9-4	Carry out annual surveys on ISCS efficacy in order to send them to the focal points and analyze the results to be presented at the next AERMETSG meeting.	A	APR 2008	APR 2010
	MET Requirements in the CNS/ATM concept			
9-11	Based on the last edition of Doc 9750 - <i>Global Air Navigation Plan for CNS/ATM</i> , develop the MET chapter of the <i>CAR/SAM Regional Plan for the implementation of CNS/ATM systems</i> , Document I.	B	JUN 2009	SEP 2010
9-13	Monitor the research and development of MET concept in CNS/ATM field and facilitate the transference of this information and experience among CAR/SAM States.	B	ENE 2009	SEP 2010
9-14	Identify activities for the implementation of new meteorological services relate both to training and application of the new CNS/ATM systems. Provide guidelines.	B	ENE 2009	SEP 2010

3. Priority

- A** High priority tasks, on which work should be speeded up.
- B** Medium priority tasks, on which work should commence as soon as possible, but without detriment to priority **A** tasks.
- C** Tasks of lesser priority, on which work should commence as time and resources allow, but without detriment to priority **A** and **B** tasks.

4. Composition

Bolivia:	Aníbal Castro Cárdenas
Brasil:	Martim Roberto Matschinske (MET)
Chile:	Reinaldo Gutiérrez
Cuba:	Juan Ayón
Estados Unidos:	Steven Albersheim (<i>Rapporteur</i>)
Panama:	Celestino Lamboglia
Peru:	Baldomero Celis
IFALPA:	Christian Cardoso

MET QUALITY MANAGEMENT TASK FORCE

1. **Terms of Reference**

Implementation of the MET Quality System

2. **Work Programme**

TASK NUMBER	TASK DESCRIPTION	PRIORITY	DATE	
			START	END
	OPMET Exchange			
9-12	Develop, in coordination with the Secretariat, a draft Guide of the documented procedures required by Standard ISO 9001:2000, and present it at the AERMETSG/10.	A	JUL 2009	SEP 2010

3. **Priority**

- A** High priority tasks, on which work should be speeded up.
B Medium priority tasks, on which work should commence as soon as possible, but without detriment to priority **A** tasks.
C Tasks of lesser priority, on which work should commence as time and resources allow, but without detriment to priority **A** and **B** tasks.

4. **Composition**

Cuba: Juan Ayón
Chile: Reinaldo Alex Gutiérrez
Peru: Ricardo Reyes Tavera (**Rapporteur**)
United States: Steven Albersheim

**RECOMMENDED MEASURES TO SAVE RESOURCES AND OPTIMISE THE
WORK OF THE GREPECAS MECHANISM**

1. Establishment of a system whereby the venue of the meetings of GREPECAS and its contributory bodies rotates amongst the States, Territories and International Organizations.
2. Extension of the period between the meetings of GREPECAS and its contributory bodies.
3. Establishment of a three-year meeting venue.
4. Establishment of project management methods.
5. Use of the Internet and teleconferencing.
6. Others.

Agenda Item 11: Any other business

11.1 Under this part of the Agenda, the meeting coincided with IATA's requirements regarding the necessity for States/Territories to comply with Annex 3 standards with regard to aeronautical climatology.

11.2 The subgroup noted that the Chairman, Mr. Gustavo Flores, from Argentina and the Vice-Chairman, Mr. Guillermo Armengol, from Cuba, could not continue with their functions. In such sense, Mr. Carlos Roberto Salinas from Paraguay was designated as Chairman while Mr. Steve Albersheim, from the United States, was elected as Vice-Chairman.

11.3 The meeting made a special mention to Mr. Gustavo Flores, expressing their appreciation for his great contribution to the subgroup and his great sense of collaboration during his fruitful participation in the subgroup.