World Meteorological Organization
Organisation météorologique mondiale

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Our ref.: OBS/SAT/SDR GENEVA, 2 November 2012

Annexes: 4 (available in English only)

Subject: Regional Satellite Data Requirements in WMO RA III and RA IV successfully established

Action required: Nominations for Regional Coordination Group on Satellite Data Requirements by **30 November 2012**

Dear Sir/Madam,

Defining an initial set of agreed Region-specific user requirements for satellite data and products, in support of all WMO application areas, has been the objective of the Task Team on Satellite Data Requirements for South and Central America and the Caribbean islands established in 2009. The Team consisted of nine representatives of Members and Territories in the Region, joined by the National Oceanic and Atmospheric Administration (NOAA), the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) and WMO.

I am pleased to inform you that the Team successfully completed its work and that the set of requirements thus established is given in Annex I and, together with final documentation, at http://satelite.cptec.inpe.br/geonetcast/es/datareq.html. This success has only been possible through the active participation by all Team members (cf. Annex II), and through the generous support that the Team received from NOAA and the National Institute for Space Research, Brazil (INPE), in particular.

To: Permanent Representatives of Members of Regional Association III (AMS-487)
Permanent Representatives of Members of Regional Association IV (AMN-556)

cc: Hydrological Advisers to Permanent Representatives)
Mr Frederick R Branski, president, CBS)
Lic. Julián Báez, acting president of RA III)
Mr Arthur W. Rolle, president of RA IV)
WMO Regional Office for the Americas)
Dr Leonel F. Perondi (Director, INPE)) (for information)
Mr José Raimundo Braga Coelho (President Agência Espacial Brasileira))
Dr Conrado F Varotto (Executive Director, CONAE))
Ms Mary Kicza (Assistant Administrator for Satellite and Information Services, NOAA/NESDIS))
Dr Alain Ratier (General Director, EUMETSAT))

The process of defining regional satellite data requirements in RAs III and IV has led to many positive results, including:

- Better understanding of the technical and operational context of satellite activities for WMO Members in the area;
- Better understanding of existing and planned data dissemination means;
- Demonstration of a process for collecting requirements and subsequent dialogue among data users and providers (e.g., NOAA have added products to the GEONETCast-Americas broadcast stream in response to the requirements);
- Identification of the highest priority needs in the short-term, and recommendations to prepare a sustainable response to regional needs in the longer term;
- Serving as a model for the general Procedure for Documenting Regional Requirements for Satellite Data Access and Exchange for all WMO Regions, as adopted by CBS-XV in September 2012:
  (see http://www.wmo.int/pages/prog/sat/documents/SAT-GEN_CBS-15-ProcedureRegionalDataAccessReq.pdf for details).

It is now essential that the regional requirements be reviewed on a routine basis, and that a standing regional mechanism be established to coordinate this process. I am therefore inviting your proposals for candidates to a Regional Coordination Group on Satellite Data Requirements, **by 30 November 2012** (cf. Annex III for the Nomination Form and Annex IV for recommended Terms of Reference).

The establishment of the Group will be confirmed by the regional association. It is envisaged that the Group meets in person at least every two years, and that intermittent communication be organized regularly, e.g. by using e-mail and telephone conferences. The WMO Secretariat can assist in this process as appropriate.

WMO also encourages the satellite providers covering the area to continue working with regional Members on meeting their requirements for satellite data, including satellite data dissemination mechanisms in response to regional requirements that could be established on a long-term, timely and affordable footing.

I look forward to your continued collaboration in this important regional activity.

Yours faithfully,

(M. Jarraud)
Secretary-General

OBS/SAT/SDR, ANNEX I

RA III – IV Satellite Data Requirements (Status: 21 March 2011)

item	INFORMATION FROM PROVIDER									INFORMATION FROM USER				
	Product Name	Data characteristics	Format	Geographical area	Frequency	Size (kB)	size comment	Format expected in the Future	FINAL Size (compressed) - kB	Basic Application	Priority		Timeliness (min)	Required data rate (kb/s)
1	GOES imagery over the Region - A	GEO satellite, channel VIS, WV, IR, Resolution 4km	level 1B original from Satellite Operator	SAM	15 - 30 minutes	16500	three images	Geotiff	8250	1)Product and Image generation.	P1	Real time	15	73.3
2	GOES imagery over the Region - B	GEO satellite, channel VIS, WV, IR, Resolution 12km	tiff image	SAM	30 minutes	2100	three images	Geotiff	1050	warning (+Synoptic analysis)	P1	Real time	5	28.0
3	GOES imagery over the Region - C	GEO satellite, other channels	level 1B original from Satellite Operator	SAM	30 minutes	5500	GOES (+1ch South America)	Geotiff	2250	1)Product and Image generation.	P2	Real time	10	30.0
4	GOES imagery from other regions	GEO satellite, channel IR Resolution 4km	level 1B original from Satellite Operator	to be defined	3 hours	5500	One ch/ additional GEO Sat.	Geotiff	2250	1)Product and Image generation.	P1	Real Time	20	15.0
5	MSG imagery over the Region - A	GEO satellite, channel VIS, WV, IR. Resolution 4km	level 1B original from Satellite Operator	30N, 30S, 50W, 50E	15 – 30 minutes	40500	six channels compress	Geotiff	40500	1)Product and Image generation	P1	Real time	10	540.0
6	MSG imagery over the Region - B	GEO satellite, channel VIS, WV, IR. Resolution 12km	tiff image	15N, 37S, 71W, 25E	30 minutes	2100	three images	Geotiff	1050	synoptic Analysis	P1	Real time	10	14.0
7	MSG imagery over the Region - C	GEO satellite, other channels	level 1B original from Satellite Operator	60N, 60S, 60W, 60E	30 minutes	13500	full disk one channel	Geotiff	6750	1)Product and Image generation.	P2	Real time	10	90.0
8	Regional Wind vectors from GEO - A	Low,middle, and high level. Low resolution.	Tiff mage	SAM	3 hours	2100	3 images	Geotiff	1050	Synoptic analysis	P1	real time	10	14.0
9	Regional Wind vectors from GEO - B	From IR, WV, VIS and 3.9 Retrieval zonal, meridional, height and quality indicator	BUFR	SAM	3 hours	8000	four images (4 channels)	BUFR	8000	Product generation. Synoptic analysis Assimilation	P1	real time	30	35.6

item	INFORMATION FROM PROVIDER									INFORMATION FROM USER				
	Product Name	Data characteristics	Format	Geographical area	Frequency	Size (kB)	size comment	Format expected in the Future	FINAL Size (compressed) - kB	Basic Application	Priority		Timeliness (min)	Required data rate (kb/s)
10	Global Wind vectors from GEO	From IR, WV, VIS and 3.9 channels. Retrieval zonal, meridional, height and quality indicator	BUFR	Global	3 hours	40000	(5 satellites)	Bufr	40000	Assimilation	P3	real time	60	88.9
11	Polar regions Wind vectors from LEO - A	Retrieval zonal, meridional, height and quality indicator	BUFR	POLAR	3 hours	7000		Bufr	7000	Synoptic analysis Assimilation	P1	real time	30	31.1
12	Polar regions Wind vectors from LEO - B	Low resolution. Retrieval zonal, meridional, height and quality indicator	Tiff image	POLAR	3 hours	6000		Geotiff	3000	Synoptic analysis	P1	real time	30	13.3
13	Global Radio-occultation sounding	Retrieval profiles	BUFR	Global	1 hour	10000		Bufr	10000	Product generation. Assimilation	P1	real time	40	33.3
14	Global hyperspectral Sounding	RARS Hyperspectral (IASI and CrIS)	level 1C, original from satellite operator	Global	30 minutes	21000	one pass	Bufr	21000	Product generation. Assimilation	P3	real time	10	280.0
15	Global operational LEO sounding	RARS Data (NOAA / METOp)	(level 1c data in BUFR)	Global	30 minutes	1500	one pass	Bufr	1500	Assimilation	P1	real time	10	20.0
16	GEO sounding channels over the Region	(full spatial resolution)	level 1b original from satellite operator	SAM	2 hours	380	one satellite	Bufr	380	Product and Image generation. Assimilation	P3	real time	10	5.1
17	GEO sounding over other regions	(full spatial resolution)	level 1b, original from satellite operator	to be defined	2 hour	760	GOES E and W	Bufr	760	Product and Image generation. Assimilation	P3	real time	10	10.1
18	Regional LEO MW Imagery for precipitation	(operational and R&O), (Ex: NOAA, DMSP and METOp)	Level 1b, original from satellite operator	SAM	3 hours	5500	(one granule)	Bufr	5500	Assimilation	P1	real time	10	73.3

item	INFORMATION FROM PROVIDER									INFORMATION FROM USER				
	Product Name	Data characteristics	Format	Geographical area	Frequency	Size (kB)	size comment	Format expected in the Future	FINAL Size (compressed) - kB	Basic Application	Priority		Timeliness (min)	Required data rate (kb/s)
19	Regional Data Operational LEO	3.9, 10 and 11u channels Full resolution imagery (NOAA-METOP – FY)	level 1b, original from satellite operator	SAM	3 hours	45000		Geotiff	22500	Product and Image generation.	P1	real time	30	100.0
20	Rainfall Nowcasting	(2 hour forecasts based on GOES satellite data) - Regional Coverage	tiff image low resolution	SAM	30 minutes	700		Geotiff	200	Warning (+Synoptic analysis)	P1	real time	5	5.3
21	Regional Rainfall Satellite	Rainfall Satellite (based on GOES satellite data)	tiff image low resolution	SAM	30 minutes	400		Geotiff	200	Synoptic analysis	P1	real time	10	2.7
22	Regional Precipitation	accumulated daily	tiff image low resolution	SAM	daily	400		Geotiff	200	Synoptic analysis	P1	real time	20	1.3
23	Total Precipitable Water	Regional LEO satellite	tiff image low resolution	SAM	3 hours	400		Geotiff	200	Synoptic analysis	P1	real time	20	1.3
24	Lightning Discharge Images	Regional GEO satellite and lightning detector network	tiff image low resolution	SAM	1 hour	400		Geotiff	80	Synoptic analysis	P1	real time	10	1.1
25	Stability index	Regional LEO satellite	tiff image low resolution	SAM	3 hours	400		Geotiff	100	Synoptic analysis	P1	real time	10	1.3
26	GEO Fire detection	(from GOES satellite) -	ASCII – time, latitude and longitude(CAP)	SAM	30 minutes	70		ASCII (CAP)	70	Warning	P1	real time	3	3.1
27	LEO Fire detection	(mosaics form NOAA, accumulated spots) -	tiff image low resolution	SAM	daily	400		Geotiff	50	Product generation	P1	real time	30	0.2
28	SST - A	Global LEO satellite - 50km	image tiff – low resolution	Global	3.5 days	700		Geotiff	350	Synoptic analysis	P1	no real time	50	0.9
29	SST - B	Regional LEO satellite	netcdf	SAM	daily	3000	South Am region, mosaic	Geotiff	1500	Product generation.	P1	no real time	40	5.0

item	INFORMATION FROM PROVIDER									INFORMATION FROM USER				
	Product Name	Data characteristics	Format	Geographical area	Frequency	Size (kB)	size comment	Format expected in the Future	FINAL Size (compressed) - kB	Basic Application	Priority		Timeliness (min)	Required data rate (kb/s)
29a	SST - C	Regional LEO satellite	netcdf	SAM	daily	3000	South Am region, mosaic	HDF	3000	Assimilation	P1	no real time	40	10.0
30	Cloud Top Pressure	GOES Imagery	tiff image low resolution	SAM	30 minutes	2100	three images	Geotiff	1050	warning (+Synoptic analysis)	P1	Real time	5	28.0
31	Cloud Classification	Regional GOES Imagery	tiff image low resolution	SAM	every 30 minutes	400		Geotiff	200	synoptic analysis	P1	real time	30	0.9
32	Regional Cloud analysis	Regional GOES Imagery	level 2	SAM	30 minutes	13000	image size	Geotiff	6500	Product and Image generation.	P1	real time	15	57.8
33	Global Cloud analysis - A	Global GOES Imagery	level 2	Global	3 hours	65000	(5 satellites)	Geotiff	32500	Product and Image generation.	P2	real time	60	72.2
33a	Global Cloud analysis - B	Global GOES Imagery	level 2	Global	3 hours	65000	(5 satellites)	HDF	65000	Assimilation	P3	real time	60	144.4
34	Turbulence	From forecast model	Bufr	SAM	3 hours	400		Bufr	400	Product generation	P1	real time	30	1.8
35	Synthetic Aperture Radar	(SAR) images	tiff image low resolution	to be defined	daily	400		Geotiff	200	Synoptic analysis	P1	real time	50	0.5
36	Soil moisture - A	Regional LEO satellite (AQUA/AMSR-E)	image tiff – low resolution	SAM	daily	3000		Geotiff	1500	Synoptic analysis	P1	no real time	40	5.0
37	Soil moisture - B	Regional LEO satellite (AQUA/AMSR-E)	Bufr	SAM	daily	3000		Bufr	3000	Assimilation	P1	no real time	40	10.0
37a	Soil moisture - C	Regional LEO satellite (ASCAT, SMOS, SMAP)	Bufr	SAM	daily	3000		Bufr	3000	Assimilation	P1	no real time	40	10.0

item	INFORMATION FROM PROVIDER									INFORMATION FROM USER				
	Product Name	Data characteristics	Format	Geographical area	Frequency	Size (kB)	size comment	Format expected in the Future	FINAL Size (compressed) - kB	Basic Application	Priority		Timeliness (min)	Required data rate (kb/s)
38	Volcanic ash - A	Regional LEO satellite	tiff image low resolution	SAM	daily – when it is detected	70		Geotiff	50	Warning	P1	real time	3	2.2
38a	Volcanic ash - B	Regional LEO satellite	tiff image low resolution	SAM	daily – when it is detected	70		Ascii CAP	50	Warning	P1	real time	3	2.2
39	Number of Days without Rain	Regional LEO and GEO satellites	tiff image low resolution	SAM	daily	400		Geotiff	100	Synoptic analysis	P1	real time	10	1.3
40	Ultra Violet Index		tiff image low resolution	SAM	every 30 minutes	400		Geotiff	100	Synoptic analysis	P1	no real time	50	0.3
41	Land Surface temperature	Regional GEO satellite	tiff image low resolution	SAM	every 30 minutes	400		Geotiff	100	Synoptic analysis	P1	no real time	50	0.3
42	R&O LEO Imagery	VIS to IR imagery Regional Data – (MODIS)	level L1b (HDF)	SAM	6 hours	50000	(granule)	Geotiff	25000	Product and Image generation.	P2	real time	50	66.7
43	Global LEO Scatterometer sensors	Retrieval Winds	BUFR	Global	3 hours	24900	(three granules	Bufr	24900	Assimilation	P2	real time	30	110.7
44	Ocean surface altimetry - A	Regional (Atlantic and Pacific) LEO satellite altimeter sensor	Retrieval altimetry level 2	SAM	6 hour	680		Bufr	680	Product generation Assimilation	P3	no real time	40	2.3
45	Ocean surface altimetry - B	Global LEO satellite altimeter sensor	Retrieval altimetry ASCII	Global	daily	10200	(15 granules)	Bufr	10200	Product generation. Assimilation	P3	no real time	60	22.7
46	Oceanic chlorophyll	Global LEO satellite - Modis	tiff image low resolution	Global	daily	9000		Geotiff	4500	Synoptic analysis	P3	real time	50	12.0
47	Surface Solar and Earth radiation	Regionall LEO satellite - NOAA	tiff image low resolution	SAM	3 hours	400		Geotiff	200	Synoptic analysis and applications	P3	real time	10	2.7

item	INFORMATION FROM PROVIDER									INFORMATION FROM USER				
	Product Name	Data characteristics	Format	Geographical area	Frequency	Size (kB)	size comment	Format expected in the Future	FINAL Size (compressed) - kB	Basic Application	Priority		Timeliness (min)	Required data rate (kb/s)
48	Ice and snow extent	Special Sensor Microwave Imager/Sounder (DMSP/SSMIS)	tiff image low resolution	SAM	daily	400		Geotiff	200	Synoptic analysis	P3	no real time	50	0.5
49	Ozone	(sensor SBUV/2, GOME).	tiff image low resolution	SAM	daily	400		Geotiff	200	environmental analysis	P3	real time	50	0.5
50	Fog	1 Km NOAA/MODIS	tiff image low resolution	SAM	daily	400		Geotiff	200	synoptic analysis	P3	real time	30	0.9
51	Vegetation index - A	Global LEO satellite (VGT and Modis)	Level 2	Global	10 days	15000		Geotiff	12000	Product generation.	P3	no real time	120	13.3
51a	Vegetation index - B	Global LEO satellite (VGT and Modis)	Level 2	Global	10 days	15000		HDF	15000	Assimilation	P3	no real time	120	16.7
52	Vegetation index - C	Global LEO satellite (VGT and Modis)	tiff image low resolution	Global	every 15 days	200		Geotiff	180	Synoptic analysis	P3	no real time	50	0.5

Geographical area legend:
3AM (3 Americas)
SAM (South America) - 10N, 55S, 110W, 25W
SCA (South and Central Americas)
GLOBAL (Global coverage)
POLAR (Polar region)

MAX (PEAK) DATA RATE P1 =	1143.6
MAX (PEAK) DATA RATE P2 =	369.6
MAX (PEAK) DATA RATE P3 =	600.6
TOTAL	2113.7

OBS/SAT/SDR, ANNEX II

PARTICIPANTS IN 2010 RAs III/IV SATELLITE DATA REQUIREMENTS WORKSHOP

TASK TEAM MEMBERS

Mr Luiz Machado (INPE/CPTEC), Task Team Chairman	Brazil
Ms Gloria Pujol (SMN)	Argentina
Mr Arnold King (BMD)	Bahamas
Ms Kathy-Ann Caesar (CIMH)	Caribbean Meteorological Organization
Ms Gina Charpentier H. (DMC)	Chile
Ms Vilma Castro (University of Costa Rica)	Costa Rica
Mr Miguel Jarrín (INAMHI)	Ecuador
Mr Jorge Chira (SENAMHI)	Peru
Mr Luiz Alfonso Fernandez Hernandez (SMA)	Venezuela

EUMETSAT

Mr Mikael Rattenborg	(EUMETSAT, Director of Operations)

INPE

Mr Carlos Frederico Angelis	(CPTEC, Head of Division of Satellite Applications)
Mr Milton Kampbel	(Head of Remote Sensing Division – Oceanography)
Mr Luiz Machado	(CPTEC, Director)
Mr Ivan Márcio Barbosa	(CBERS)
Mr Sérgio Pereira	(CPTEC, Division of Satellite Applications)
Mr Haroldo de Campos Velho	(Associated Director of Space and Environment)
Mr Cesar de Mello	(CPTEC, Satellite Data Broadcast)
Mr Waldenio Gambi de Almeida	(CPTEC, Operational Division)
Mr Sergio Henrique Soares Ferreira	(CPTEC, Data Assimilation)

NOAA

Mr Fred Branski	(NWS, Telecommunications Operations Centre and president of CBS)
Mr Robert Gillespie	(NWS, Office of Operational Systems)
Mr George Jungbluth	(NESDIS, International and Interagency Office)
Mr Eric Madsen	(NESDIS, International and Interagency Office)
Ms Renee Tatusko	(NWS, International Activities Office)

WMO SECRETARIAT

Mr Jérôme Lafeuille	(WMO Space Programme)

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W O R L D M E T E O R O L O G I C A L O R G A N I Z A T I O N

OBS/SAT/SDR, ANNEX III

NOMINATION FORM

Participation in the Regional Coordination Group on Satellite Data Requirements for Central and South America

I, Permanent Representative of …….. propose Mr/Ms …….. as a candidate for the Regional Coordination Group on Satellite Data Requirements for Central and South America.

His/Her contact references are:

(e-mail) ……..

(phone) ……..

(mail address) ……..

Signature and stamp

Please return this response to the WMO Space Programme Office:

- Fax: +41 22 730 8181, or
- E-mail : sbojinski@wmo.int (Stephan Bojinski, Scientific Officer, Satellite Utilization and Products, WMO Space Programme Office)

OBS/SAT/SDR, ANNEX IV

RECOMMENDED TERMS OF REFERENCE FOR THE REGIONAL COORDINATION GROUP ON SATELLITE DATA REQUIREMENTS

1. The Group consists of a representative number of members from the satellite data user community in the Region, joined, as associate members, by satellite data providers and WMO. The Group is chaired by one or two representatives from key satellite data user organizations of the Region.

2. The Group maintains an updated list of satellite data and products available to the Region through existing dissemination services. Data and products shall be classified by categories of variables and derived products.

3. The Groups regularly reviews sources of regional needs and undertakes, as needed, further information gathering, such as surveys, to ensure that views of WMO Members in the Region are adequately represented.

4. The Group analyzes the requirements for each relevant category of product, and identifies which requirements are not adequately met by existing services. The unmet requirements are prioritized, taking into account:

   a. The applications supported and their impact;
   b. The number and representativeness of the users;
   c. The status of the required data or products;
   d. The quality and suitability of the required data or products.

5. In summary the Group formulates recommendations pertaining to:

   a. Existing satellite data/products (with detailed references) to be included in existing distribution services, or moving a product from one service to another, or assigning lower priority to an existing product (or removing it if obsolete);
   b. Amendments of existing products or development of new products;
   c. Evolution (upgrade, or consolidating) of data dissemination means, or other (e.g. training, tools, user equipment);
   d. Short-term action to implement these recommendations.

6. The Group maintains a dialogue with satellite data providers of relevance to the Region, and other partners as needed, to ensure that its recommendations are implemented.

7. The Group uses the WMO Procedure for Documenting Regional Requirements for Satellite Data Access and Exchange for guidance (see http://www.wmo.int/pages/prog/sat/documents/SAT-GEN_CBS-15-ProcedureRegionalDataAccessReq.pdf).

8. The Group meets in person at least every two years, and, to ensure continuity, works through collaborative tools during the intersessional period.

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