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COMMISSION FOR BASIC SYSTEMS
OPEN PROGRAMME AREA GROUP ON INTEGRATED OBSERVING SYSTEMS

EXPERT TEAM ON SATELLITE UTILIZATION AND PRODUCTS

ITEM: 7.1

SIXTH SESSION

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RA I Dissemination Expert Group

(Submitted by Sally Wannop, EUMETSAT)

Summary and Purpose of Document

This document reports on the developments, plans and activities associated with the WMO RA I Dissemination Expert Group. The Group, established in 2009 through cooperation between the WMO Secretariat, EUMETSAT and RA I Members, is primarily tasked to consider the data and product requirements for the EUMETCast-Africa service. Their 2nd meeting was held in Darmstadt, Germany, in June 2010.

This report is provided in response to request for information in support of ET-SUP-6 meeting.

ACTION PROPOSED

The sixth session is invited to take note of the status of activities relating to the RA I Dissemination Expert, and to comment accordingly.

Appendix: Minutes of the 2nd Meeting of the RA I Dissemination Expert Group

RA I Dissemination Expert Group

Introduction

This document reports on the developments, plans and activities associated with the WMO RA I Dissemination Expert Group.

Background Information

EUMETSAT has a strong commitment to serving the data needs of the WMO community in RA I. This is expressed not only in the products it generates but also in the availability of a dissemination system which meets the needs of the African NMHSs, namely EUMETCast.

Part of EUMETSAT's support to RA I is the hosting of a biennial User Forum in Africa. The purpose of the Forum is to reinforce the well-established dialogue between EUMETSAT and the African user community to optimise the use of EUMETSAT satellite data and products throughout the continent. At the time of the 8th EUMETSAT User Forum in Africa (and already expressed during the 7th User Forum) participants of the Forum recognised the need for a dedicated discussion on data and product requirements. As a result, the following recommendation was made:

“WMO, in cooperation with African NMHSs and EUMETSAT, to establish a group of experts to assess requirements and priorities, [...], for the dissemination of products through EUMETCast-Africa”.

After a meeting between the WMO Secretariat and EUMETSAT in February 2009, the Group was established and held their first meeting in Ouagadougou, Burkina Faso, in September 2010. It was proposed that the Group endeavour to meet once per year to discuss ongoing dissemination issues.

Terms and Reference of the WMO RA I Dissemination Group

The purpose of the Expert Group is to:

- a) Collect, review and maintain requirements for access to meteorological and environmental data and products by NMS and partner organizations in Africa;
- b) Analyze the requirements for satellite-based products expressed by African NMS, centres of excellence, training institutes and other environmental monitoring organizations in Africa making use of EUMETCast and GTS dissemination services;
- c) Make recommendations on the requirements for products and on the assignment of priorities, aiming at optimizing product dissemination through EUMETCast or the GTS.

Mr. James Kongoti of Kenyan Meteorological Department (KMD) is the current meeting Chair and the members comprise representatives from:

- Morocco, for Northern Africa;
- Senegal, for Western Africa;
- Cameroon, for Central Africa;
- Kenya, for Eastern Africa;
- South Africa, for Southern Africa;
- Mauritius, for Indian Ocean region;
- as well as from ACMAD (regional centre) and EAMAC training centre.

WMO RA I Dissemination Group – 2nd Meeting

From 28 to 30 June 2011, EUMETSAT hosted the 2nd meeting of the WMO Regional Association I Expert Group on EUMETCast products and dissemination. The meeting gathered representatives from

all the African regions and from some Numerical Weather Prediction (NWP) centres in Europe (ECMWF, UK Met Office and DWD) to review and comment on the EUMETCast-Africa baseline and focus on Metop products, Satellite Application Facilities products, and improving dissemination of NWP model outputs.

The discussion topics included:

- Presentation and review of Dissemination Baseline Update Document – Data and products currently disseminated over EUMETCast:
The document was prepared and distributed to the Group by EUMETSAT. Each region provided their review of the document indicating:
 - the products used/not used
 - new products requirements
 - those products currently disseminated but not yet processed using the processing software supplied with their PUMA 2010 station
- Evolution of Meteorological Data Dissemination (MDD) on EUMETCast:
EUMETSAT presented an overview of the changes to the MDD service on EUMETCast, namely the introduction of specific EUMETCast Channels for the delivery of WMO RA I and WMO RA VI community NWP, Forecast and Analysis data.
- Presentations on the future enhancements to NWP Model output products:
 - ECMWF - Alfred Hofstadler
 - UK Met Office - Karen McCourt; Douglas Boyd
 - DWD - Bernd Richter
 - Météo-France - Jean-Philippe Lafore (*unable to attend*)
- Situation with PUMA 2010 Stations & New Product evolutions:
Although maintenance activities are in place for PUMA 2010, there is currently no provision for update of the software, notably to cope with evolution in the EUMETCast data stream (new products, updated products, etc.) or to focus on specific applications areas (e.g. nowcasting).
- Working arrangements – identifying improvements to team structure and regional support:
Several Members reported problems in gathering feedback from other NMHSs within their region.

A copy of the Minutes of Meeting with the list of actions and the list of product requirements is annexed to this document.

Outcome and Plans

Update to the EUMETCast Baseline Document:

- List of identified product enhancements has been evaluated and included in the update to the EUMETCast Baseline Document presented to the EUMETSAT Council in November 2011. All changes were approved
- Products already existing, will be implemented on the EUMETCast-Africa service during the course of Q1-Q2/2012

NWP Model output requirements:

- NWP data providers took note of the new enhancement requests from RA I and are in the process of discussing these enhancements with EUMETSAT with the aim of including them in future updates to the EUMETCast Baseline Document
- EUMETSAT is currently in the process of implementing model updates from Météo-France, ECMWF and NCEP model enhancements.

PUMA 2010 station software upgrade:

- In order to ensure that this user community continues to fully benefit from the new data distributed through EUMETCast, it is proposed to develop an activity aiming at updating the software part of the receiving equipment to enable users to get access to the full EUMETCast data stream.
- It is proposed that EUMETSAT supports some clearly defined PUMA 2010 software updates (mainly visualisation), within the next two years (2012 – 2013), in order to fill-in the gap between now and the start of Monitoring of the Environment and Security in Africa (MESA) activities (in 2014), which will then take-over the update of the receiving stations in the MESA timeframe (2012 – 2017).

The next meeting of the RA I Dissemination Expert Group is scheduled to take place in conjunction with the 10th User Forum for Africa, in October 2012, Addis Ababa, Ethiopia.

Conclusion

ET-SUP 6th Session is invited to take note of the status of activities relating to the RA I Dissemination Expert and to comment accordingly.

Appendix: Minutes of the 2nd Meeting of the RA I Dissemination Expert Group

Minutes of Meeting

Meeting Name	: 2 nd Meeting of the WMO RAI Dissemination Expert Group
Meeting Reference	: EUM/OPS/DOC/09/5916, v1 Draft
Date(s) of Meeting	: 28-30 June 2011
Place of Meeting	: EUMETSAT HQ, Darmstadt, Germany
Minute Taker	: Sally Wannop
Participants	: See Annex I
Distribution	:
Attachments	: Annex I : List of participants Annex II: Table of presentations Annex III: Agenda (separate document)

ACTIONEE

1. Introductory session

Vincent Gabaglio (for EUMETSAT), James Kongoti (as Chairman of the Expert Group) and Jérôme Lafeuille (for WMO) welcomed the participants to the meeting.

A tour de table allowed all participants to introduce themselves. The agenda was then adopted.

Actions from the first meeting were reviewed (See Presentation #1):

- Action #3 (network) will be tackled on Day 3 of the 2nd meeting.
- Action #4 (promotion) will be tackled on Day 2 (reports)
- Action #5 will be discussed with the NWP providers

All other actions from the 1st meeting were closed.

Sally Wannop (EUMETSAT) presented information about the EUMETSAT services (see Presentation #2). Jérôme Lafeuille (WMO) presented an updated on the WMO programme in general and the Space programme in particular (see Presentation #3).

Concluding the session, Sally Wannop described then the structure and content of the Update of the Dissemination Baseline Document, which was distributed to all participants in advance to the meeting.

2. Presentation of specific products (Metop and SAF)

Jörg Ackermann and Frédéric Gasiglia presented the status of the Metop and SAF products, respectively. (See Presentation #4 and #5).

Particular interest was raised by the participants on the products generated

Action #1:
EUMETSAT to inform the EG about products requested by AMESD. (end of July)

by the Nowcasting SAF. The two following actions were therefore adopted:

Action #2 : some African Users to install and test the NWC SAF SW

Action #2
(end of 2011)

Action #3: EUMETSAT to discuss issues raised with the NWC SAF:

Action #3
(end of 2011)

- o Invite NWC SAF to 10th UFA
- o Support establishing a dialogue between NWC SAF and validation partners in Africa

3. Feedback on the baseline documents (EUMETSAT and third party products)

The participants presented their feedback on the EUMETCast Baseline Document (EUMETSAT and third party products, notably NWP):

- ACMAD (Presentation #6)
- EAMAC (Presentation #7)
- Senegal (Presentation #8)
- Morocco (Presentation #9)
- Kenya (Presentation #10)
- Cameroon (Presentation #11)
- South Africa (Presentation #12)
- Mauritius (Presentation #13)

A synthesis of the comments raised by the participants are presented in the synthesis presentation (presentation #20) and associated table “Data & Products requirement for WMO RA-I – July 2011” (see Attached document)

The following process has been decided upon to deal with the Expert Group requests:

For EUMETSAT products:

- Action #4: EUMETSAT to compile the “wish list” of EUMETSAT products based upon detailed analysis of feedback provided and circulate it to the group (by mid-July)
- Action #5: the Group to confirm requirements
- Action #6: EUMETSAT to include products in the next EUMETCast baseline update

Action #4
(mid-July)

Action #5
(end August)

For NWP products, following presentation from ECMWF, UK Metoffice and DWD:

- Action #7: EUMETSAT to compile the wish list of NWP products based upon detailed analysis of feedback provided and circulate it to the group (by mid-August).
- Action #8: Members to confirm requirements
- Action #9: EUMETSAT to consult with the NWP on the update cycle

Action #6
(October)

Action #7
(mid-August)

Action #8
(end August)

Action #9
(September)

- Action #10: EUMETSAT to establish and maintain a content list based upon input from NWP data providers

Specific additional action for ECMWF data:

- Action #11: ACMAD to officially request any modifications to ECMWF services

4. Issue related to the current PUMA 2010 stations

Remarks have been raised by some participants also about functionalities of the PUMA 2010 stations and issue regarding the visualisation of some products:

VITO products ; Meteosat CSR & CRM &TH; LSA SAF; MODIS Aqua (terra included); OSI SAF (Sea Ice); TAMSAT; ATOVS sounding products; FY-2E products; ASCAT L2; AVISO products; MODIS Ocean colour; Jason-2 OGDR; EUMETnet products; DevCoCast products; AMESD SADC Thema products; some model output parameters

5. Removal of products from the baseline

During the meeting, some experts proposed removal of some products. After interventions from all regions it was agreed that there were currently no products identified for removal. The meeting recognised the need to have a procedure for removal (to ensure all needs have been considered before removal takes place)

Action #13: WMO to consider a procedure loop involving the PRs/Chair of WMO RAI

6. Working Arrangements

The meeting recognised the importance of face-to-face meetings. The meeting agreed that current list server was fine for email communication and welcomed the inclusion of both data providers and station software manufacturers in future meetings.

Several Members reported problems in gather feedback from other NMHSs within their region. To assist the problems concerning the regional contacts, the Group recommended that a focal point is nominated in each NMHS to liaise with the Regional Expert Members

Action #14: WMO to request each NMHS to provide a focal point to liaise with the Regional Expert, “re-emphasise” the importance of the Group to all PRs of WMO RAI

Action #15: EUMETSAT to facilitate contacts with other NMHS in the region during the next User Forum

Finally the group also recommended ensuring that the needs of marine meteorology, hydrology and agro-meteorology are also considered along with standard weather forecasting and aviation forecasting needs.

Action #10
(October)

Action #11
(October)

Action #12
EUMETSAT to investigate missing products and address these issue with the AMESD project (July 2011)

Action #13:
(next meeting)

Action #14 –
next User Forum

Action #15:
next user forum

Action #16: all experts, EUMETSAT and WMO to promote the use of EUMETCast products beyond the standard meteorological forecasting

Action #16:
next user
forum

7. Training

The meeting highlighted the importance of training to ensure the exploitation of current and new products.

Action#17: EUMETSAT to ensure training activities evolve in step with enhancements to the EUMETCast baseline

Action #17 –
next user
forum

8. Guideline for evolution of the PUMA 2010 stations

Finally the group discuss ways to ensure updates of the PUMA 2010 stations, which is the reference system for the NMHS in Africa for getting access to data disseminated over EUMETCast. The group recognised the need to enhance processing/visualisation software in order to exploit new/modified products. The group identified several enhancements pending for 2011 and recognised that funding is not foreseen in the current PUMA2010 maintenance arrangements. The group indicated that potential funding sources could be (i) from Data Providers, (ii) from EUMETSAT, (iii) through WMO Trust Fund (with Kenya representative indicating his readiness to investigate contribution from Kenya NMHS).

The group agreed that EUMETSAT plays a central role in the interaction between the African users and the PUMA 2010 station procurement agent (Telespazio and MFI). It recognised that upgrades could only take place at a minimum of once per year.

Action #17: EUMETSAT to further investigate potential funding options

Action #18: EUMETSAT to bundle modifications and to gather relevant quote from industry

Action #17 &
18 (Sept.
2011)

WMO RA I Product Requirements (2nd Meeting July 2011)

Data Type	Data Provider	Product Name	Coverage	Product Description	Format	File Size	Frequency	Requesting Region	EUMETCast Status	EUMETSAT Response to Request
Satellite Product	SAWS	Combined Instability Index(CII)	Africa- South of Equator	CII is a product that combines the average of 4 Instability indices (KI,LI, PW,TT) to indicate the probability of convective development later in the day. This product is useful as a nowcasting tool for early warning of convective activity.	Binary	0.2 MB (Zipped)	Between 0300 and 1400 UTC- every 15 minutes. 44 (per day)	SADC	New	Pending initial discussion with Data Provider.
Satellite Product	SAWS	Hydro-Estimator (HE)	Africa- South of Equator	HE is a Quantitative Precipitation Estimation (QPE) technique combining the MSG-satellite and numerical model precipitation estimation. The MSG 10.7 µm brightness temperature is used together with the Unified Model (UM) from the UK-Met Office.	Binary	0.2 MB (Zipped)	96 / day	SADC	New	Pending initial discussion with Data Provider.
Satellite Product	SAWS	Southern Africa Limited Area Model (LAM)	Africa- South of Equator	UK Met Office- Unified Model (UM) output for Africa South of the equator in a 12 x 12 km spatial resolution, 3 hour temporal resolution for a 48 hour Forecasting period . Plans are to	GRIB	tbd	1 / day	SADC	New	Pending initial discussion with Data Provider.

				increase the forecasting period to 72 hours to coincide with the WMO definition of Short Range Forecasts						
Satellite Product	German Aerospace Center (DLR)	Cumulonimbus Tracking and Monitoring (Cb TRAM)	Africa	Early detection and tracking of convection. This product is useful as a now casting tool for disaster management purposes.	XML	≈2 MB	96 / day	SADC	New	Pending initial discussion with Data Provider.
Satellite Product	O3M SAF	Near Real Time Total Column - Metop (NTO)	Global	The Near Real Time Total Column (NTO) product provides information about total columns of two trace gases in the atmosphere: O3 (Ozone) and NO2 (Nitrogen Dioxide), as well as tropospheric NO2.	BUFR	30 KB	250 / day	SADC / North Africa	EUMETCast-Europe	Pending implementation
Satellite Product	O3M SAF	Near Real Time Ozone Profiles - Metop (NOP)	Global	The NRT Ozone Profile (NOP) product provides ozone profiles reported as partial columns, in Dobson Units, between 41 pressure levels logarithmically spaced between and including surface pressure and 0.1 hPa	BUFR	45 KB	250 / day	SADC / North Africa	EUMETCast-Europe	Pending implementation

Satellite Product	NWC SAF	Nowcasting Products derived from the MSG software package	Meteosat Full Disk	Selection of the NWC SAF products, e.g. Rapid Developing Thunderstorm Product	~	~	~	ACMAD	EUMETCast-Europe	Pending implementation
Satellite Product	EUMETSAT	IASI Sounding Products (5 products)	Global	Ozone, Trace Gases, Surface Emissivity, Cloud Parameters, Atmospheric Temperature Water Vapour	BUFR	~400 KB	480 / day	SADC / North Africa	EUMETCast-Europe	Pending implementation
Satellite Product	EUMETSAT	Metop/NOAA MHS GDS Level 1	Global/Africa	MHS GDS from both Metop and NOAA. Vertical atmospheric humidity profile retrievals to complete the gap of in situ vertical sounding observations in Africa. Data could be regionally subset for Africa.	BURF	26 KB	480 day	ACMAD / ECOWAS	EUMETCast-Europe	Pending user evaluation of the ATOVS Sounding Products
Satellite Product	EUMETSAT	Metop/NOAA AMSU GDS Level 1	Global/Africa	AMSU-A GDS from both Metop and NOAA. Vertical atmospheric humidity profile retrievals to complete the gap of in situ vertical sounding observations in Africa. Data could be regionally subset for Africa.	BURF	26 KB	480 day	ECOWAS	EUMETCast-Europe	Pending user evaluation of the ATOVS Sounding Products
Satellite Product	EUMETSAT	IODC Meteorological Products	Meteosat Full Disk 57 deg E	5 Meteorological products: Clear Sky Radiances, Clear Sky Water Vapour Winds; Cloud Analysis, Expanded	BURF	~1.0MB	24 / day	IOC	New	Pending implementation

				Low-resolution Cloud Motion Winds, Upper Tropospheric Humidity.						
Model	ECMWF/Met Office	Vertical velocity; Theta Prime W; Dew Point Temperature;	Global/Africa	Vertical velocity; Theta Prime W; Dew Point Temperature for all available levels (925 down to 200). Every 6-hours	~	~	every 6-hrs	ECOWAS /EAMAC / ACMAD /IOC	New	Pending analysis by Data Provider
Model Output	ECMWF / Met Office	Temperature; Wind; RH	Global/Africa	Temperature, Wind & RH products for all available levels (925 down to 200). Every 6-hours	~	~	every 6-hrs	ECOWAS /EAMAC / ACMAD /IOC	New	Pending analysis by Data Provider
Model	ECMWF	Tropical Cyclone Tracks	Global	Surface cyclone tracks	~	~	~	IOC	New	Pending analysis by Data Provider
Model	ECMWF / Met Office	Ocean Model output	Global/Africa	Model outputs for significant Wave Height, wave mean period, wave mean direction	~	~	every 6-hrs	ECOWAS /EAMAC / IOC / IGAD	New	Pending analysis by Data Provider
Model	ECMWF	Seasonal Forecasts	Africa	Seasonal SST	~	~	~	IOC	New	Pending analysis by Data Provider
Model	DWD	Global Model	Global/Africa	GME output - contents tbc	~	~	every 6-hrs	ECOWAS /EAMAC / ACMAD	New	Pending analysis by Data Provider

Model	DWD	Model Output Statistics (MOS)	Africa	MOS Contents tbc	~	~	~	ECOWAS /EAMAC / ACMAD	New	Pending analysis by Data Provider
Observations	Met Office	ATDnet Lightning	Africa	Observations from the ATDnet lightning network with coverage over the African Continent	~	~	~	ACMAD	New	Pending implementation

Approved for EUMETCast-Africa baseline prior to the meeting pending implementation

Model	NOAA NCEP	GFS for Africa	Africa	GFS model output with regional African coverage including the Indian Ocean	GRIB2	~	~	ECOWAS / EAMAC / ACMAD / IGAD / CEMAC / IOC	New
Satellite Product	OSI SAF	ASCAT Coastal Winds	Global	New OSI SAF product expected by end September 2011	BUFR	tbd	480 / day	IOC	New
Satellite Product	OSI SAF	Full Resolution SST	Global	New OSI SAF product expected by end September 2011	netcdf	tbd	480 / day	IOC	New
Satellite Product	OSI SAF	SST base on MSG	Meteosat Full Disk 0 deg	New OSI SAF product expected by end September 2011	GRIB2	tbd	tbd	IOC	New
Model	Météo-France	ARPEGE	Africa	ARPEGE model output	~	~	~	CEMAC	New
Model	ECMWF	Higher resolution model output	Africa	WMO essential & additional data (0.50 grid); ACMAD data (0.50 grid); Tropical cyclone tracks	GRIB2 / BUFR	tbd	2 / day	~	New