

**WORLD METEOROLOGICAL ORGANIZATION**

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**RA I DISSEMINATION EXPERT GROUP**

**SIXTH MEETING**

**DARMSTADT, GERMANY**

**24-25 AUGUST 2015**

**FINAL REPORT**



## **WMO General Regulations**

### **Regulation 42**

Recommendations of working groups shall have no status within the Organization until they have been approved by the responsible constituent body. In the case of joint working groups the recommendations must be concurred with by the presidents of the constituent bodies concerned before being submitted to the designated constituent body.

### **Regulation 43**

In the case of a recommendation made by a working group between sessions of the responsible constituent body, either in a session of a working group or by correspondence, the president of the body may, as an exceptional measure, approve the recommendation on behalf of the constituent body when the matter is, in his opinion, urgent and does not appear to imply new obligations for Members. He may then submit this recommendation for adoption by the Executive Council or to the President of the Organization for action in accordance with Regulation 9(5).

## **1. WELCOME**

Alain Ratier, Director General, EUMETSAT, opened the session at 09.00 on 24 August at EUMETSAT headquarters in Darmstadt, Germany, and welcomed all participants to the 6th Meeting of the WMO RA I Dissemination Expert Group. In his address, he stressed the importance of the Group in providing requirements for and building upon the needs of the African user for a future satellite service from MTG.

Dr. Joseph Mukabana, Director, Offices for Africa and Least Developed Countries (AFLDC), WMO, added his welcome to the group on behalf of the WMO Secretary General. He also emphasised the important role the Group will play in establishing needs for MTG data, including the wider need for training to support data utilisation.

Joachim Saalmueller, the new Head of User Support and Climate Services at EUMETSAT, added his welcome to the Group.

During the Tour de Table, the following new members were welcomed to the group: George Wiafe, representing JCOMM; Maixent Kambi replacing Etienne Kenne from CEMAC region and Joseph Kagenyi, representing IGAD region. Apologies for absences were received from Stella Aura (IMTR Training Centre) and Noureddine Filali Boubrahmi (Morocco Training Centre).

On this occasion representatives from the NWP Centers in Europe were invited to participate in the meeting. Mr. Steve Manktelow, Met Office, UK and Mr. Umberto Modigliani, ECMWF were present and apologies were received from Detlev Majewski, DWD, who could not attend. A copy of D. Majewski's presentation was circulated to the group.

S. Bojinski, WMO, attended the meeting on a part-time basis via WebEx.

## **2. ADOPTION OF AGENDA**

The Agenda (see Appendix I) was adopted with no modifications.

## **3. NOMINATION OF CHAIR AND VICE CHAIR**

The group unanimously nominated Dr. Mariane Diop Kane as Chair and Mr. Joseph Kagenyi as Vice-Chair.

## **4. REVIEW OF ACTIONS FROM PREVIOUS MEETING**

S. Wannop presented the review of actions.

Action #	Action item description	Status	Due date	Actionee	Closure
01/03	Establish a working group network - Members are invited to establish a communication network within their region/sub-region to identify specific requirements from both the NMHSs and from relevant non-meteorological users, e.g. RICs, AMESD thematic regions, research institutes, and to forge links with JCOMM, etc.	Group to increase their representation within the governance of the WIGOS and the Regional Association I subsidiary bodies. <b>Standing Action.</b>	na	RAIDEG Members & WMO	Open
02/14	Identification of focal points within NMHSs - WMO to request each NMHS to provide a focal point to liaise with the regional representative on the Group.	Letter has been prepared. Distribution was pending the endorsement of RAIDEG by RA I as a regional body within the WIGOS structure (endorsed in Feb 2015).	Oct-15	WMO	Open
05/01	EUMETSAT to explore with the NWC SAF the addition of graphical output formats to ease visualisation and the inclusion of country boundaries and/or geolocation information, within the product output.	Pending investigation (see also new action)	Jul-15	EUM	Open
05/02	Noting the need for users to access new incoming data streams from their PUMA 2010 PC 1 and to fork these for use on other machines.	RAIDEG representatives Hama and Maixent are requested to prepare the user information on how to perform these steps.	Dec-15	H. Hamadou & M. Kambi	Open
05/03	EUMETSAT to check the PUMA 2010 upgrade as users report difficulty in accessing NCEP GFS products and missing parameters in the ECMWF data since the upgrade was made	The contract has come to an end; we cannot change what has been implemented. We should look to ensuring that a RAIDEG representative witnesses all acceptance tests for future upgrades during the MESA software lifecycle.	Jul-15	EUM	Closed at 6th meeting
05/04	EUMETSAT are encouraged to include the NOAA–NCEP product in GRIB format at the next opportunity	Pending investigation and bandwidth upgrade	Jul-15	EUM	Open
05/05	At the request of ECOWAS, EUMETSAT is requested to resend the upgrade announcement information.	Information provided during the Forum to Chad representative and additional copy of announcement provided to Senegal	Sep-14	EUM	Closed at teleconf 27/01/15
05/06	EAMAC to provide screenshots of missing data (LINK TO ACTION 05/02)	Reply from EAMAC with screen shots	Jan-15	EAMAC	Closed at teleconf 27/01/15

05/07	EUMETSAT to follow up with data providers and the manufacturer to restore any missing data following the PUMA upgrade	Pending investigation of screenshots provided by EAMAC	Jul-15	EUM	Open
05/08	EUMETSAT to include additional modules in the French language on the Training Channel as requested by EAMAC	ASMET-7 modules ( in French) has been included on Training Channel in April 2015. These include: Convective Weather and Aviation in West and Central Africa; Detecting Clear Air Turbulence: South African Case Study; Forecasting Fog for Aviation: Kenya Case Study. New MESA module in both French and English included in July 2015. EAMAC to provide a wish list of modules	Jul-15	EUM/EAMAC	Closed at 6th meeting
05/09	WMO to include "Climate" as a Theme in the PAG and to point to climate gridded datasets include those available from providers outside space agencies, such as NMHSs.	IPET-SUP at its March 2015 session and subsequently PAG management team decided to keep the focus of the PAG on NRT products for the time being, given the existence of other climate dataset portals such as the ECV inventory, obs4MIPS, etc	Jul-15	WMO	Closed at 6 <sup>th</sup> meeting
05/10	WMO to provide to the group the Software Introduction guidance document referenced by G. Cheelo in his presentation.	Sent by EUM on 26 Jan	Jan-15	WMO	Closed at teleconf 27/01/15
05/11	EUMETSAT to circulate to the Group the high-level requirements document provided in the MESA ITT.	Distributed	Feb-15	EUM	Closed at teleconf 27/01/15
05/12	EUMETSAT to discuss with the JCOMM president Johan Stander, the contribution JCOMM could make to RAIDEG meetings.	G. Wiafe identified by JCOMM, pending confirmation from WMO	Feb-15	WMO	Closed at 6th meeting
05/13	EUMETSAT to investigate with the CM SAF the dissemination of operational monthly mean products as requested by ACMAD	Pending investigation and bandwidth upgrade. Item included in the requirements table.	Jul-15	EUM	Closed at 6th meeting

During the discussion of the open actions, the following points were raised.

Concerning ongoing action **05/01** – NWC SAF software, the Group reiterated that the HDF5 output is difficult to use and that a graphical format would be preferred. Morocco have Java based tools to process the HDF output. SAWS are running the software for the SADC region. They would prefer that standard formats are used where possible, and suggest netCDF.

Whilst some centres had been able to implement the software several report difficulties. Those centres running the software report that it is very CPU heavy. For this reason, ACMAD are unable to run the software in an operational mode. ACMAD would like to validate the NWC SAF products for Africa but have been unable to do this so far.

All members identified that the Rapidly Developing Thunderstorm (RDT) product would be extremely useful for African users. The RDT has already proved useful in the AMMA project. The other useful product from the NWC SAF is the Convective Rain Rate which is being used by SAWS.

Concerning ongoing action **05/02**, it was recommended that members of RAIDEG outline the steps needed to capture an incoming EUMETCast data stream for use in a separate processing environment. The action will be updated to reflect that EAMAC and CEMAC will prepare the outline steps.

Concerning ongoing action **05/04** it was noted by EAMAC and ACMAD that the current NOAA NCEP service is delayed by one day. In general it was felt by the group that the currently disseminated web structure service is not used. The Group encourage EUMETSAT to implement the GRIB format at the earliest opportunity.

Concerning 05/07, it was confirmed that there are data not being displayed. It was suggested to wait until EUMETSAT has implemented the dissemination of the remaining ECMWF data before closing the action. Noting that warranty on the PUMA 2010 station is over, no further adaptation of the graphical interface will take place.

During the discussion Mauritius reported that they are unable to visualise the ASCAT winds product. Other members note they prefer to view the ASCAT data, displayed under observations rather than the original Metop files. ECMWF indicated that they have reader software for BUFR data and have recently released a beta tester version of their new ecCodes decoding software. Also the Metview software package can be used to visualise BUFR data. Several members indicated a potential interest to install and run the software.

Concerning action 05/08, it was agreed to close the action with the understanding that the Training Centres are encouraged to make use of the Training Channel to distribute stand-alone training material. It was noted that the West Africa handbook online case studies will be distributed once it has been finalised.

During the discussion of previous actions, the following new actions were taken:

**Action 06/01: the EUMETSAT Secretariat to investigate with the NWC SAF the potential inclusion of the RDT and CRR products in graphical format on EUMETCast Africa.**

**Action 06/02: ECMWF to check if the ASCAT wind products from OSI SAF can be visualised in Metview. [ECMWF confirm this can be done].**

## 5. STATUS AND WORKING ARRANGEMENTS OF RAIDEG WITHIN RA I

The official recognition of RAIDEG by RA I was given by at its 16th session, February 2015. The important need to identify focal points within the NMHSs to support the work of RAIDEG members was reiterated by the Group (open Action 02/14). Dr. Mukabana indicated that the letters would be issued by October 2015.

As there are new members the RAIDEG Group should take the opportunity to distribute the Terms of Reference (ToR) and the working practices at its next meeting. As the ToR were adopted by RA-I, any review of the ToR should be made as a recommendation from RAIDEG to the WMO RA-I at the next RA-I conference (planned in 4 year time).

**Action 06/03: WMO Secretariat to circulate the Terms of Reference and any working practice information to RAIDEG members, including the CoEs. Due date: prior to mid-term teleconference.**

## 6. STATUS OF EUMETSAT OPERATIONAL SERVICES

S. Wannop gave an overview of the changes to the operational services since the last meeting of the Group. These updates included the status of the current operational satellites, Meteosat, Metop and Jason and an update of Sentinel-3 preparations. The presentation also included reference to the newly released User Notification Service (UNS) and the Pilot Web Mapping Service "EUMETView".

## 7. REVIEW OF EUMETCAST-AFRICA DISSEMINATION BASELINE

S. Wannop gave an overview of the current EUMETCast Africa dissemination baseline document, followed by the review of the current requirements table.

During the discussion regarding the use of the ensemble NWP model output data it was reiterated that the African user community should strengthen their capacity in this area, hence the wish to maintain this type of output as a priority 1. In parallel it was noted, that training to help build this capacity should be offered in parallel, see later action.

Details of recent requests were discussed and priority levels were set for each request. During the discussions the following changes were made to the requirements table (available on the WMO website):

- CII & Hydro-Estimator – SAWS is ready to disseminate these products which are currently used by the SWFDP. EUMETCast could offer a back-up service and offer availability to those outside of the SWFDP (priority set to 2)
- SAWS LAM - Change to 4km model will take place in 2016 (priority set to 3)
- MOI agreed to drop the requirements for further Scatterometer and microwave data
- NWP entries were refined following the discussions which took place under agenda item 11.

Concerning ECMWF model output data for, EUMETSAT and ECMWF are in discussion regarding the missing products (products agreed in the baseline, but not yet disseminated on EUMETCast Africa). It is expected that these products are included in the data stream in the coming weeks. If after these missing products have been included on EUMETCast Africa RAIDEG identifies further product needs, these should be requested separately through ACMAD.

Noting the potential for a future MSG service over the IODC region (the relocation of Meteosat-8 to 40°E is pending a decision which the EUMETSAT Council is expected to take in June 2016), RAIDEG members are requested to express their detailed requirements for a service via EUMETCast Africa. Given the provision of a full MSG service from Meteosat-8 would require in

the order of 1.2Mbps additional bandwidth, RAIDEG are asked to confirm their requirements for this service (full SEVIRI channel data, all Meteosat level 2 products etc.) and indicate priorities should the dissemination of full SEVIRI channel data not be affordable or implementable within the current EUMETCast Africa contractual framework.

During the review of the baseline, the following actions were noted:

**Action 06/04: RAIDEG Chair to write letter to ACMAD to request on behalf of the Group the additional ECMWF model output data still required once the missing products have been included in the data stream. Due date: after the mid-term teleconference.**

**Action 06/05: RAIDEG members are requested to give an indication of their requirements for an IODC service provided via EUMETCast Africa. Due date Jan 2016.**

## **8. FEEDBACK FROM THE REGIONS**

**SADC:** N. Krose gave a short presentation on the data needs and data access issues faced by SAWS and other NMHS in the region. He noted that NMHS are required to support a wide range of services requiring them to widen their sphere of discipline. In doing so the service must maintain its own infrastructure, gather observations, archive and process data, and generate products & services for external and internal customers. Through contacts at the weather services within SADC Nico prepared a mini-survey which has identified that many met services in addition to the general NWC activities are involved in providing forecasting support for marine, hydrology, energy, climate monitoring, etc. SAWS will support the MESA training and the seasonal products generated by SAWS during AMESD will continue to be made available should the MESA project require them.

**CEMAC:** M. Kambi gave feedback on the Central Africa region. Without the focal points there was limited opportunity to gather feedback. M. Kambi reported that some have experienced saturated hard drive capacity and power failure issues. Issues with the hard drives were expected to be fixed under the previous AMESD maintenance contract.

**North Africa:** T. Saouri reported that there are no issues with data access within the Moroccan weather service which receives both Ku- and C-band EUMETCast services. Unfortunately, with no focal points in place, communication with other Met Services within North Africa remains problematic.

**ECOWAS:** M. Diop reported that as there were few designated focal points any communication within the ECOWAS region was difficult. Mariane added that PR should be more sensitised so that once the designated person has been assigned the RAIDEG members and the focal points can work effectively together. Concerning data needs, the extension of the Met Office Africa cut-out and ECMWF ACMAD service further westwards would be beneficial to the countries in West Africa.

**IOC:** R. Dhurmea reported that the Mauritius Met Service had successfully performed the PUMA 2010 upgrade and data reception is working well. Unfortunately, Ram has no communication links with others in the Indian Ocean region, however once the focal points are in place he would like to invite them to participate in regional/continent wide RAIDEG WebEx sessions.

**IGAD:** J. Kagenyi reported that data reception at KMD, including the IMTR training centre, was functioning without problems. However, there is a difference in PC performance between the training centre and the met service PUMA 2010 stations. KMD are currently preparing to support the MESA training. Joseph reiterated the importance of establishing focal points to assist the work of the regional representatives.



**ACMAD:** Reported that they have run the NWC SAF software but do not have the computing power to run the software operationally, as production of all the needed products is computationally expensive.

During the discussion on the feedback from the regions, the following recommendations were made:

**Recommendation 06/01:** Once focal points are in place regional representatives should establish regular communication within their regions (e.g. via WebEx). In addition, the WMO Secretariat should consider including these focal points in some of the continent wide WebEx meetings.

**Recommendation 06/02:** RAIDEG should consider preparing a standardised questionnaire to send to all focal points to capture in a coherent manner their data reception issues and their evolving data requirements.

**Recommendation 06/03:** RAIDEG recommends to EUMETSAT and its SAFs the inclusion of African centres in the validation of the level 2 products generated both centrally and by the SAFs. This partnership should be fostered in the SAF CDOP3 phase.

**Recommendation 06/04:** Noting the importance of maintaining reception stations which once any warranty period is over, RAIDEG recommends that a group of regional/local system administrators is identified within the community with the aim of supporting neighbouring countries that experience reception data processing issues.

## **9. MARINE SERVICES FOR RAI**

### **9.1 Services Provided by EUMETSAT**

F. Montagner provided an overview of the current operational marine data streams available from EUMETSAT and the upcoming marine data foreseen from the European Commission's Copernicus Sentinel-3 mission. It was noted that EUMETSAT is in discussion with the EC to investigate the potential inclusion of a reduced level 2 Sentinel-3 marine service comprising SST, ocean colour and altimeter data on the EUMETCast Africa service. The Group was informed that the full range of Sentinel-3 marine data will be available in near real-time via an online rolling buffer, the Online Data Access (ODA), and historical data will be available for order through the Data Centre.

During the discussion which followed, the JCOMM representative commented that often the availability of ocean data was not the main hurdle to the use of marine data, but rather the lack of capacity of individuals and centres to utilise these data, either through lack of training or the paucity of utilisation tools.

EUMETSAT reminded the Group that COMET had recently issued a new scatterometer module which covers the use of both RAPIDSCAT and ASCAT data. The following web link provides user information on the Sentinel-3 service, including a link to some of the Sentinel-3 tool box developed by ESA:

<http://www.eumetsat.int/website/home/TechnicalBulletins/CopernicusUserPreparation/index.html>

### **9.2 JCOMM & MESA Marine Requirements**

G. Wiafe thanked the Group for inviting participation of JCOMM in RAIDEG meetings. In his presentation to the Group he outlined the data used in support of oceanography and marine meteorology, including NWP model output data. He emphasised the need to strengthen capacity in the utilisation of marine data at national, regional and continent wide level. In the MESA framework the RICs should make use of level 2/3 products and from these build value-added

services for downstream users. The future GMES Africa service will look beyond the work of the RICs with the aim of supporting the wider use of the marine and oceanographic applications. The marine services of the NMHSs may benefit from working more closely with those of the oceanographic community and vice versa.

Arising from the marine session, the following recommendation was noted:

**Recommendations 06/05: Noting the future Sentinel-3 marine service to Africa, EUMETSAT welcomes feedback from the JCOMM (MESA Ocean Thema Training Centre) and the CoE involved in marine training, e.g. SAWS, in its preparation of the Copernicus marine data training plan.**

## **10. BRIEFINGS BY NWP CENTRES**

### **10.1 Met Office – Steve Manktelow**

S. Manktelow gave a brief overview of recent and upcoming enhancements to the Met Office model output for Africa. These include the planned introduction of enhanced 25km resolution global model data (Africa cut-out) and data from the extension of the 4km Lake Victoria model domain to cover Eastern Africa. In addition, a 1.5km Lake Victoria model is under trial. The ATDNet lightning service continues to be made available through EUMETCast and since the PUMA2010 upgrade can be viewed by all NMHSs with a Synergie workstation. When it is released, the new African Meteorological Web Viewer, AMWV will complement the 'Africa LAM' website and will provide enhanced zooming/panning options together with additional parameter information e.g. derived model fields like CAPE. Several RAIDEG members have supported the beta testing for this new tool. Working in collaboration with African users, Met Office is able to better tune the model and its web presentation tools to more accurately observe/display the tropical region. In future enhancements, the Met Office will continue to develop its Earth System Model (with its atmospheric chemistry, land physics, biogeochemistry and hydrology regimes) across all time scales and increase its coupling with ocean, sea ice, land ice and ocean biogeochemistry models.

Concerning training support, a presentation by Met Office, UK, on the use of ATDNet in support of NWC techniques was circulated to some training centres. Also, the NWC SAF have developed some applicable training material, links are available from the presentation.

The Met Office encourages RAIDEG and other African users to provide feedback on the products provided through EUMETCast and their website.

### **10.2 ECMWF – Umberto Modigliani**

U. Modigliani presented the recent updates to the ECMWF services, including those providing to RAI through the ACMAD agreement. One key change planned by ECMWF is the removal of all GRIB1 products now that the equivalent GRIB2 formatted products can be processed by the PUMA2010 software. Noting reports from users on missing ECMWF data, EUMETSAT will address the matter and include the files currently received from ECMWF, but not sent out on EUMETCast.

ECMWF is also enhancing its support to the SWFDP (East & South Africa), through the provision of additional charts for use by project participants. Umberto reminded the group that TIGGE data (multi-model real-time forecasts (delay of 48 hours after initial time)) are openly available, links to the TIGGE site can be found in the presentation.

In addition to the data service, ECMWF are migrating to a new website and once migration is complete new products will be included on the website. The new ecCodes BUFR decoding software is available for beta testing and is open source. In addition, a new reduced-fee license for

web products has been agreed by ECMWF Council. This license has a cost of 3500 Euro and provides access to the ecCharts web interface which allows users to view, zoom, pan products will be coming online soon. Responding to a question from the Indian Ocean region, Umberto will confirm if ECMWF's Metview visualisation tool can process ASCAT wind data.

ECMWF provide training in the form of webinars and face-to-face courses. Typically three events take place each year and in 2016 one of them will be a 'train the trainer' event. There is also a portal containing user and training documentation, including a severe event catalogue where case studies examining how the model performed during such events can be accessed. NMHSs in Africa are invited to participate in such case study analysis with their own weather event analysis.

It was noted by the Group that to enhance the use and value of ensemble NWP data from the European NWP Centres (e.g. ECMWF and Met Office) in the forecasting environments, further training in the application of these data is welcomed.

During the discussion on the NWP services, the following recommendation was made by the group:

**Recommendation 06/06: to support general weather and marine forecasting for the African continent, it was noted by the Group that NWP model data which is openly available at time intervals – every synoptic hour (3hrs) for 48-hrs and subsequently every 6-hrs up to 72-hrs and 24-hrs up to 10-days - is of particular use in operational forecasting.**

During the session the following action was taken:

**Action 06/06: EUMETSAT to include on the EUMETCast Africa service the missing ECMWF data. Due date, end October 2015.**

The Data Requirements table was updated to reflect the modifications made as a result of the discussions from the NWP session.

## **11. CENTRES OF EXCELLENCE TRAINING REQUIREMENTS ARISING FROM THE DISSEMINATION BASELINE (15-MINS PER COE)**

### **Southern Africa CoE – SAWS, South Africa**

L-A. Simpson presented the status of training activities at the SAWS training centre, which covers Southern Africa and the Indian Ocean islands. To ensure that trainees get the most out of training courses when they attend, SAWS is introducing online pre-course competitions through the Moodle tool, to filter out potential participants. Each NMHS has the opportunity to allow more than one person to perform this online phase, which broadens the participant pool.

In addition to the standard training course placements, SAWS is introducing a forecast internship programme. Under MESA the training centre will be upgraded and SAWS are awaiting further information from the MESA project team on what the upgrade will entail and when implementation will take place.

It is anticipated that if Meteosat-8 is relocated to 40°E, there will be a greater need for training in the use of MSG data for the Indian Ocean island nations, particularly with application to tropical cyclones.

### **East Africa CoE – IMTR, Kenya**

J. Kagenyi presented an overview of the activities of IMTR which has a remit to provide quality education and training by developing skills of personnel in Meteorology, Hydrology and related geo-sciences in Anglophone Africa. The training schedule includes training in the following

disciplines: weather forecasting; ocean research for Western Indian Ocean region; and land research, including forestry needs. IMTR are preparing to support the MESA training activities.

#### **North Africa CoE – DNM, Morocco**

In the absence of N. Filali, T. Saouri presented the overview of training activities in the Casablanca Centre of Excellence. The training centres objectives are to: identify regional training needs, meet training priorities, develop proficiency in online training and to develop synergies with other CoEs, particularly Niamey. The training centre conducted a regional survey on training needs, an overview of the results is given in the presentation. In 2015/16 training will be conducted on aeronautical meteorology, dust monitoring, nowcasting and agricultural applications.

#### **West Africa CoE – EAMAC, Niger**

H. Hamidou presented an overview of the EAMAC training school activities. Hama reiterated the need for training centres to increase training in NWP applications, including the use of model data in the Tropical regions, ensemble forecasting and the interpretation of marine model data. Likewise, training on the use of PUMA software and visualisation tools continued to be required so that the users can activate any new products and exploit the full capabilities of the software provided under AMESD and now MESA.

#### **Indian Ocean – Met Service, Mauritius**

The Mauritius weather service has a training centre which has been used for AMESD training events. The centre could be used to support other training events as needed.

During the session, the following action was taken:

**Action 06/07: EUMETSAT is requested to include in future training activities the use and application of the level 2 products generated by the Central Facility.**

During the session discussion, the following recommendation was taken:

**Recommendation 06/07: RAIDEG recommends to WMO Secretariat that the Training Centres of Excellence in Africa are encouraged to exchange training experts and training know-how whenever possible and to promote the cross-fertilisation of topic expertise.**

**Recommendation 06/08: RAIDEG encourages the PRs of WMO RAI to ensure that the correct personnel participate in the MESA system administration and software training provided under MESA and, they are encouraged to assist in the transfer of knowledge from these training sessions to other relevant staff within their NMHS.**

## **12. STATUS OF MESA PROJECT AND RAIDEG INTERACTION**

V. Gabaglio outlined the status of the MESA project activities. Under the maintenance contract issued by the African Union Commission the upgrade of 55 PUMA2015, 115 MESA stations and 4 training centre stations will take place. It was noted that RAIDEG representatives (perhaps up to 3) could participate in the Factory Acceptance Test (FAT) which is currently scheduled to take place in mid-October 2015. The deployment of stations will begin with priority locations first, e.g. RICs, CICS and Training Centres. The installation is likely to take 1-2 days per station. Lessons learned following the AMESD project should mean that issues such as loss or damage of the licence key and accepting higher resolution products without changes to the software do not occur with the new reception system.

During this session, the following action was taken:

**Action 06/08: EUMETSAT to request AUC and MESA maintenance team to include RAIDEG representatives in the acceptance testing of upgrades made during the MESA warranty and support contract.**

### **13. PREPARATION FOR THE MTG MAPS WORKSHOP**

V. Gabaglio briefly outlined the agenda for the MAPS workshop which was taking place after the RAIDEG meeting 26-28 August.

### **14. NEXT MEETINGS**

It was agreed to host a mid-term virtual meeting (WebEx) could take place in December 2015/January 2016. The next in-person meeting takes place in September 2016 co-located with the 12<sup>th</sup> UFA meeting in Rwanda (12-16 September 2016). The RAIDEG meeting would likely take place on 10-11 September 2016.

### **15. AOB**

No items were identified under AOB.

## APPENDIX I - AGENDA

WORLD METEOROLOGICAL ORGANIZATION

RAIDEG-4/Doc. 1  
(16.6.2015)RA I DISSEMINATION EXPERT GROUP, 6<sup>th</sup> MEETING  
WORKSHOP ON THE MTG AFRICA PREPARATION STUDY (MAPS)

DARMSTADT, GERMANY, 24-28 AUGUST 2015

## PROVISIONAL AGENDA (20150623)

## 24 AUGUST 2015

<b>8:30</b>	<b><i>Registration</i></b>	
<b>9:00</b>	<b>1. Welcome</b>	<b>Alain Ratier, Director General, (EUMETSAT) Dr. Joseph Mukabana, Director, Offices for Africa and Least Developed Countries (AFLDC) (WMO) Joachim Saalmueller, Head of User Support and Climate Services (EUMETSAT)</b>
<b>9:15</b>	<b>2. Adoption of Agenda</b>	
<b>9:20</b>	<b>3. Nomination of Chair and Vice Chair</b>	
<b>9:30</b>	<b>4. Review of Actions from Previous Meeting</b>	Sally Wannop (EUMETSAT)
<b>9:45</b>	<b>5. Status and working arrangements of RAIDEG within RA I</b>	Stephan Bojinski (WMO) via WebEx
<b>10:00</b>	<b>6. Status of EUMETSAT Operational Services</b>	Sally Wannop (EUMETSAT)
<b>10:30</b>	<b><i>Break</i></b>	
<b>11:00</b>	<b>7. Dissemination Baseline Update Document EUMETCast-Africa</b>	Sally Wannop (EUMETSAT)
<b>11:30</b>	<b>8. Report from each region (15-mins per region)</b>	All concerned
<b>12:30</b>	<b><i>Lunch Break</i></b>	
<b>13:30</b>	<b>9. Report from each region (15-mins per region)</b>	All concerned
<b>15:00</b>	<b><i>Break</i></b>	
<b>15:20</b>	<b>10. Group Photograph</b>	

APPENDIX II

- 15:30 **11. Marine Services for RAI**  
11.1 Services provided by EUMETSAT  
11.2 JCOMM & MESA Marine Requirements
- Francois Montagner (EUMETSAT)  
George Wiafe (JCOMM)

17:00 *Adjourn for Day 1*

**25 AUGUST 2015**

- 9:00 **12. Briefings by NWP Centres (20-mins per Centre)**  
12.1 Steve Manktelow - Met Office, UK  
12.2 Detlev Majewski – DWD, Germany  
12.3 Umberto Modigliani – ECMWF, UK

11:00 *Break*

- 11:30 **13. Centres of Excellence Training Requirements arising from the Dissemination Baseline (15-mins per CoE)**
- All concerned

13:00 *Lunch Break*

14:00 **14. Tour of EUMETSAT Satellite Control Facilities**

- 14.30 **15. Status of MESA Project and RAIDEG Interaction**
- Vincent Gabaglio (EUMETSAT)

- 15.00 **16. *Follow-up discussion from the morning session (if needed)***

15:45 *Break*

- 16:00 **17. Preparation for the MTG MAPS Workshop**
- Vincent Gabaglio (EUMETSAT)

- 16:30 **18. Review of new inputs to the EUMETCast-Africa Baseline**
- Sally Wannop (EUMETSAT)

- 16:45 **19. Conclusions of Meeting & Review of Actions**
- Stephan Bojinski (WMO)

17:00 **20. AOB & Closure of the Meeting**

**26 - 28 AUGUST 2015**

**MTG MAPS WORKSHOP**

*(Separate agenda to be provided)*

## APPENDIX II: LIST OF PARTICIPANTS

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APPENDIX III

Ongoing requirements from WMO RA I

INFORMATION FROM PROVIDERS				USER REQUIREMENTS			Status	
#	Product name	Data provider	Data characteristics	Requesting Region	Basic Application (identified by User)	Priority	Implementation Status	Comments
1	Combined Instability Index(CII)	SAWS	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.	SADC	Sever weather warning & nowcasting	2	Pending initial discussion with Data Provider. SAWS to provide update	
2	Hydro-Estimator (HE)	SAWS	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.	SADC	Sever weather warning & nowcasting	2	Pending initial discussion with Data Provider. SAWS to provide update	
3	Southern Africa Limited Area Model (LAM)	SAWS	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 increase the forecasting period to 72 hours to coincide with the WMO definition of Short Range Forecasts	SADC	General weather forecasting	3	Pending initial discussion with Data Provider. SAWS to provide update	
4	NWP output	ECMWF	Vertical vorticity; Theta Prime W; Dew Point Temperature for standard pressure levels (925 down to 200) - Every 6-hours. Temperature, Wind & RH products for standard pressure levels (925 down to 200). Every 6-hours. Surface cyclone tracks. Model outputs for Significant Wave Height, wave mean period, wave mean direction. Seasonal SST. (See request sent by ACMAD )	ECOWAS /EAMAC / ACMAD /IOC	General weather forecasting	1	Agreed by ECMWF Council June 2013. Approved in the Operational Baseline June 2014. Some new products are still to be implemented.	ECMWF wish to remove the GRIB1 formatted products. Missing products to be implemented in Q4/2015 (see separate sheet).
5	NWP output	DWD	GME output - contents tbc	ECOWAS /EAMAC / ACMAD	General weather forecasting	?	Pending further analysis by RAIDEG.	Noting that the DWD presentation could not be given at the 6th meeting, this entry will be re-evaluated at a later date.
6a	NWP output	NOAA-NCEP	GFS model output with regional African coverage including the Indian Ocean - Ensembles	ECOWAS / EAMAC / ACMAD / IGAD / CEMAC / IOC	General weather forecasting	1	Pending further analysis by EUMETSAT	
6b	NWP output	NOAA-NCEP	GFS model output with regional African coverage including the Indian Ocean - Deterministic	ECOWAS / EAMAC / ACMAD / IGAD / CEMAC / IOC	General weather forecasting	2	Pending further analysis by EUMETSAT	SW:Web structure containing PNG files implemented March 2014; GRIB would provide more efficient way of delivering these data (to be considered under MESA) GRIB will be followed up by EUMETSAT.

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7	NWP output	Met Office	Enhancement to the global model Africa cut-out to extend the domain to 40W, 45N and 20E in order to better capture the weather systems that affect west Africa; improved time interval 3hrs for the first 48hrs and the 6-hrs after (e.g up to 10-days); products needed include divergence, dew point temperature, vertical velocity.	ECOWAS /EAMAC / ACMAAD /IOC	General weather forecasting	1	Pending analysis by Data Provider - renewed requirements during 5th meeting	
8	NWP output	ECMWF	ACMAAD additional data - Vertical velocity; CIN & CAPE & wind shear; Inclusion of missing standard hPa levels. Sub-seasonal (monthly) issued twice per week - covering min & max temperature, rainfall and MJO - (Charts and GRIB2 products).	ECOWAS / EAMAC / ACMAAD	General weather forecasting	1	Pending analysis by Data Provider	Currently not all parameters requested are available (Theta Prime W; Dew Point Temperature). The missing data already sent by ECMWF to EUMETSAT will be added by EUMETSAT and then any remaining parameters can be discussed. RAIDEG should make clear the exact requirements (data values, charts, parameters).
9	Altimeter data	EUMETSAT	Dissemination of a light text version of the OGDR from SARAL, Jason-2, HY2A & Cryosat-2. (This could potentially be applied for the future Jason-3 and Sentinel-3 altimeter data)	(Latvian NMS, Morocco DMN) SADC/ ECOWAS / IGAD	Marine Forecasting	1	Pending analysis at EUMETSAT	
10	Dust products	AEMET	Atmospheric sand and dust forecasts provided by the Barcelona Dust Forecast Center, jointly managed by AEMET and the Barcelona Supercomputing Center. Prediction of 5 variables are daily available (dust surface concentration, dust load, dust optical depth, dry and wet deposition) from H+0 to H+72 . See <a href="http://dust.aemet.es/">http://dust.aemet.es/</a>	Initial interest expressed through capacity building	Mainly targeted to NMHSs. Potential users in various sectors: air quality, public health, aviation, ground transport, agriculture, solar power generation, etc.	1	EUMETSAT to send sample data file	Approved June 2015 -implementation expected Q4/2015
11	Wave model	DMN Morocco	Wave Watch Model (WW3)	(Marine Meteorology Service -DMN Morocco)	Marine Forecasting	1	DMN Morocco to send sample file to EUMETSAT	Pending approval in Nov 2015 (potential to start trail in Q4/2015)
12	Ocean colour	EC via EUMETSAT	Copernicus Sentinel-3 OLCI L1b ocean colour data and potentially other Sentinel-3 products. See DM PDF 3180 for details	(UCT, S. Africa) IOC / IGAD / ECOWAS	Continuation of MERIS data usage	2	Pending analysis by RAIDEG and the MESA Marine Thema	SW: RAIDEG will need to specify detailed requirements for Copernicus data in a subsequent meeting. Following a request from the AUC, EUMETSAT has been asked by the EC to perform a feasibility study on the provision of a "reduced" Sentinel-3 marine service to Africa.

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13	Climate Products	CM SAF	Operational monthly mean products - cloud cover, surface albedo, water vapour, radiation.	ACMAD	Climate monitoring	1	Pending implementation	Approved by EUMETSAT Council June 2015. Implementation in Q4/2015
14	NWC SAF Products	NWC SAF	NWC SAF to consider implementing a graphical output format for their software products	EAMAC / SADC / ACMAD	General weather forecasting	2	Pending Analysis by EUMETSAT & NWC SAF	
15	NWP Centres	Various	Regional centres explore the potential use of EUMETCast for the delivery of model boundary condition information (including data from ACMAD) to the wider NMHS community in Africa. UFA 11 Rec #7	ACMAD	DRR	3	Pending formal requirement from DRR programme/ACMAD	
16	MODIS Ocean colour	NASA / PML?	Additional Ocean Colour parameters for MESA (ECOWAS and IOC) MODIS Kd940, SST & PAR	MESA ECOWAS & IOC	Fisheries	1	Pending implementation	Approved by EUMETSAT Council June 2015. Implementation in Q4/2015
17	MODIS Ocean colour	NASA / PML?	RIC generated products for fish zone monitoring based upon GAM model.	MESA ECOWAS	Fisheries	1	Pending implementation	Approved by EUMETSAT Council June 2015. Implementation in Q4/2015
18	Model update	UK MO	Enhanced global model 17km resolution		General weather forecasting	1	Pending implementation	Approved June 2015. Met Office to supply sample files further investigation with Data Provider required
19	Model update	UK MO	Extension 4km Lake Victoria model to East Africa region		General weather forecasting	2	Pending investigation	Further information from Data Provider
20	CHIRPS 10 day rainfall Estimate	JRC for MESA	CHIRPS 10 day rainfall Estimate	MESA	General weather forecasting	~	Pending implementation	Approved June 2015. Implementation in Q4/2015
21	MSG IODC Service from 40 deg E	EUMETSAT	12 Channels SEVIRI at 15-mins plus meteorological products - service requirements to be confirmed	11 th UFA recommendation	General weather forecasting	1	Pending refined requirements from RAIDEG. Can we relax SEVIRI timeliness requirement (e.g. from 5-mins to 15-mins)? L1 is 800kpbs. Are all level 2 meteorological products required? Level 2 is 300kpbs. High vol include GII (60% of all met products), CLM, MPE. Full service around 1.2 Mbps.	Approval of service pending (June 2016). Strong interest in the level 1.5 image data including HRV. Pending further requirements analysis by the group (SAWS, KMD, MOI).