

EUMETSAT  
COOPERATION

# REPORT OF THE 9TH EUMETSAT USER FORUM IN AFRICA

OUAGADOUGOU, BURKINA FASO  
27 SEPTEMBER - 1 OCTOBER 2010

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## **REPORT OF THE 9<sup>TH</sup> EUMETSAT USER FORUM IN AFRICA**

Organised by EUMETSAT in collaboration with the  
Directorate General for Civil Aviation and Meteorology, Burkina Faso

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Ouagadougou, Burkina Faso  
27 September - 1 October 2010





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## SUMMARY REPORT

### Introduction

The 9<sup>th</sup> EUMETSAT User Forum in Africa was organised in Ouagadougou, Burkina Faso, by EUMETSAT, in collaboration with the Directorate General for Civil Aviation and Meteorology.

The Forum was held from 27 September to 1 October 2010 with some 180 participants representing 58 countries, of which 50 were African. In addition to the representatives of African National Meteorological and Hydrological Services (NMHSs) and regional specialised institutions for Meteorology, Climate and Environment, the following African political Institutions were represented: Communauté Economique et Monétaire de l'Afrique Centrale (CEMAC), Economic Community Of Western African States (ECOWAS), Intergovernmental Authority on Development (IGAD), Indian Ocean Commission (IOC), and South African Development Community (SADC), together with representatives from the African Union Commission (AUC), the African, Caribbean and Pacific Group of States (ACP).

In addition, several specialised Regional and sub-regional Technical Institutions such as ACMAD, AGRHYMET, ASECNA, CICOS, ICPAC; the SADC Drought Monitoring Centre, the Mauritius Oceanographic Institute (MOI), Regional Centre for Mapping of Resources for Development (RCMRD), Universities and National GIS entities, were represented.

Representatives of the following European and international institutions also attended the Forum: various Directorates-Generals of the European Commission (DG AIDCO, the Joint Research Centre), the European Union Delegation to Burkina Faso, the European Union Delegation to the African Union, the Portuguese Instituto de Meteorologia (IM), the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (IOC/UNESCO) and the World Meteorological Organization (WMO).

Other organisations were also represented: the Vlaamse Instelling voor Technologisch Onderzoek (VITO), the International Institute for Geo-Information Science and Earth Observation (ITC), the AMESD Programme Coordination Team, Météo France International and some European industries as well as several Burkina Faso national institutions.



### Opening Ceremony

The Forum was officially opened at 09:00 on 27 September 2010. The Opening Ceremony was conducted by Mr. Nouhou Berté, Director of Communication in the Burkina Faso Ministry of Transport.

***The Permanent representative of Burkina Faso to the WMO, Mr. Ali Jacques Garané,*** opened the Ceremony welcoming all participants and highlighting his pleasure to see

the 9<sup>th</sup> EUMETSAT User Forum in Africa starting after two years of preparation. He underlined the work done by the National Organising Committee and wished all participants an enjoyable stay in Burkina Faso.

**Dr. Lars Prahm, EUMETSAT Director-General**, expressed his gratitude to the authorities of the Burkina Faso and the hosts for their support and assistance in the organisation of the 9<sup>th</sup> EUMETSAT User Forum in Africa. He informed the participants about EUMETSAT activities in Africa over the past 15 years: data dissemination over EUMETCast, training activities, cooperation and support to international projects such as PUMA and AMESD. He underlined the long term commitment of EUMETSAT to service its users in Africa and explained how the Meteosat Third Generation programme will ensure availability of data throughout Africa for the next 25 years.

Referring to the GMES Africa initiative, he emphasised EUMETSAT's readiness to work with its African partners, in order to develop the necessary resources to help Africa to take part in these initiatives, benefit from the new services and develop its own capabilities for monitoring its environment and the climate. He highlighted the fact that the well structured Meteorological Community in Africa, within the WMO, can contribute to this initiative. The well established relationship between EUMETSAT and its User Community in Africa should be a valuable asset for the GMES Africa initiative and related projects.

Finally, he invited the participants to pay particular attention to the potential use of Space data and products during the setting up of Climate Services in Africa. Explaining the broadening of

EUMETSAT operations towards oceanography and climate, he invited the participants to gather the necessary information to ensure utilisation of these data in Africa.

He wished all participants very successful and fruitful debates during the Forum.

**Mr. Michel Jarraud, WMO Secretary-General** thanked the authorities of Burkina Faso and EUMETSAT for the organisation of the 9<sup>th</sup> EUMETSAT User Forum in Africa, which plays an important role for Africa, notably with respect to projects such as PUMA and AMESD. He recalled the commitment of WMO to support activities in Africa for matters related to prevention of natural disasters, impact of climate variability and change, drought, flooding, health, etc.

Referring to the outcomes of the First Conference of Ministers in Charge of Meteorology in Africa, he highlighted the importance of ensuring the strengthening of the observing systems and that the EUMETSAT User Forum plays an important role in this respect. He talked about the Global Framework for Climate Service and stressed the importance of the preparation of proposals to be submitted to the next WMO Congress in May 2011.

Finally he wished great success to all participants for the Forum.

On behalf of **H.E. Commissioner Rhoda Peace Tumusiime**, African Union Commissionaire for Rural Economy and Agriculture, African Union Commission, **Dr. Khalil Mohamed Timamy**, Director for Environment, addressed the assembly by underlining that humanity has arrived at a point in its history where major achievements in the economic and technological spheres are

becoming increasingly overshadowed by disturbing environmental changes. He explained that Space technologies can support the proper understanding and management of these changes.

He observed that the African Union Commission already has active programmes, such as AMESD, which foster the use of Earth Observation data from space. He recalled that at the African Ministerial Conference on Environment (AMCEN) held in Bamako, Mali 19-26 June 2010, the Ministers passed a landmark decision that urged Member States to institutionalize and integrate AMESD products and services into their development plans and processes.

Finally, he thanked the ACP partners, the European Union, the Regional Economic Communities, and EUMETSAT for the financial and technical support. He expressed gratitude to the Government and people of Burkina Faso for their welcome.

**H.E. Amos Tincani, Ambassador of the European Union to Burkina Faso**, recalled the cooperation between EU and EUMETSAT during the last 10 years to support the PUMA and AMESD projects and emphasised the concrete results provided by these projects, giving as example the environmental bulletin produced regularly by the AGRHYMET centre for more than one year. He mentioned that despite some difficulties during the inception of the AMESD programme, it will now deliver very concrete information and services for Africa.

Concerning the GMES Africa initiative and the 8<sup>th</sup> Africa-EU Strategic Partnership on Sciences, Information Society and Space, he firstly recalled the Maputo Declaration and the ongoing Lisbon process. He highlighted then the importance to develop a coherent and achievable action plan

with clear budgetary indication and milestones for the extensive use of Earth Observation in Africa.

He underlined that the effort currently under preparation within the framework of the 10<sup>th</sup> European Development Fund could provide a very concrete and important contribution to the GMES Africa initiative, while pursuing the efforts undertaken in PUMA and AMESD.

He finally wished all participants successful deliberations during the 9<sup>th</sup> EUMETSAT User Forum in Africa.

**H.E. Commissioner Ousseini Salifou, ECOWAS Commissioner for Agriculture, Environment and Water Resources**, read the Ouagadougou Declaration in support to the GMES Africa initiative, endorsed on the eve of the 9<sup>th</sup> EUMETSAT User Forum in Africa, on 26 September 2010, by the African Union Commission, the ACP Secretariat, five Regional Economic Communities, and the Burkina Faso authorities.

On behalf of the **Burkina Faso Minister of Transport, H.E. Me. Gilbert G. Noël Ouédraogo, H.E. Abdoulaye Combar, Delegated Minister in charge of Agriculture** stated that Burkina Faso was honoured to host the 9<sup>th</sup> EUMETSAT User Forum in Africa. He thanked EUMETSAT and the WMO for the continuous effort made to support the meteorological community in Africa. He illustrated the concrete effect of Climate change and variability on the African people and provided examples of recent hydro-meteorological phenomena that had affected the country and the region.

Referring to the theme of the 9<sup>th</sup> EUMETSAT User Forum in Africa, he emphasised the urgency and importance of making proper

meteorological data and information available to the population and the farmers in order to cope with the adverse effect of climate change and variability. He highlighted the importance of meteorological and climate information for countries such as Burkina Faso, where agriculture is an important part of the economy. He underlined the contribution of projects such as PUMA and AMESD that allow an operational and continuous access to satellite data that can improve weather forecasting and monitoring of the environment.

He concluded his speech by declaring the 9<sup>th</sup> EUMETSAT User Forum in Africa open.



### Introductory session

**Mr. Ali Jacques Garané**, Director of the Burkina Faso Meteorological Agency expressed his gratitude to EUMETSAT for holding this important event in Burkina Faso. He provided details on logistics aspects related to the Forum and informed all participants of the commitment of the national organising committee to ensure a safe and enjoyable stay in Burkina Faso.

**Dr. Vincent Gabaglio**, International Relations Officer at EUMETSAT, described the main objectives of the Forum. He emphasised the favourable context around the Forum: the cooperation between Africa and Europe in Space is high in the political agenda and the recent Conference of Ministers in charge of Meteorology in Africa provided a clear indication on the involvement and role of Africa in the Global Framework for Climate Services. He then provided the

objective of the 9<sup>th</sup> EUMETSAT User Forum in Africa, which is to build on the well established, 15-year cooperation between EUMETSAT and its user community in Africa in order to further contribute to environmental and climatic challenges in providing decision makers and partners in charge of environment and climate policy with information and services that answer to their needs.

After presenting the objectives, he reviewed the status of the recommendations of the 8<sup>th</sup> EUMETSAT User Forum in Africa. During 2010, EUMETSAT had issued two reviews of these recommendations (in March and in July). The recommendations which were still open have been discussed in the framework of the various sessions and some had resulted in renewed recommendations.

**Mr. Emilio Barisano**, EUMETSAT Consultant, introduced the programme of the Forum. He went through the various sessions and highlighted the points of particular interest, namely:

- the status of EUMETSAT programmes;
- the two sessions and associated round tables on Climate Service and on GMES Africa;
- the scientific session on water management;
- the status of the AMESD programme, the deployment of the PUMA 2010 stations and other initiatives in the region.

He mentioned that the programme had been conceived to provide enough time for discussions and interactions. He also encouraged representatives of the NMHSs to fill-in the Survey Form, which has been sent with the 2<sup>nd</sup> Information Package, and distributed during the registration.

Finally, **Mr. Jérôme Lafeuille** from the World Meteorological Organisation presented the WMO Space programme. After describing the scope, objective and activities of the programme, he underlined that EUMETSAT is a major contributor to every component of the WMO Space Programme and that the EUMETSAT User Forum in Africa is a unique opportunity to collect information, share experiences, foster collaboration and provide user feedback.



### **Session 1 - Overview of EUMETSAT programmes**

The first session was dedicated to the presentation of the status of the EUMETSAT programmes, the EUMETCast/GEONETCast data dissemination system, the user service, the Earth Observation portal and the training activities performed by EUMETSAT in Africa.

The presentation on EUMETSAT programmes included the activities performed via the Satellite Application Facilities, for which participants demonstrated a clear interest. The increasing number of data and products delivered by EUMETSAT and third party data providers, that are included in the EUMETCast dissemination channels over Africa was also emphasised. The participants were invited to consult regularly the EUMETSAT EO portal and Data centre for gathering information about the data and products disseminated in Africa.

Finally, the presentation of the training activities emphasised the increasing role of the Virtual Laboratory and distance learning tool for providing additional training services to African

users. The opening of the new WMO Centre of Excellence for training in Satellite Meteorology at SAWS in Pretoria was also announced.



### **Session 2 - PUMA 2010 stations**

This session focused on the new PUMA 2010 stations that are currently being deployed in the NMHS of all sub-Saharan countries in Africa and to the regional specialised centres for meteorology and climate. The plan of deployment and maintenance was presented by the company in charge of the deployment. The provider of the meteorological software installed in the stations also illustrated the capabilities of the new PUMA 2010 station.



### **Session 3 - Climate**

The third session was dedicated to the application of satellite data in support to global climate monitoring activities.

The session commenced with a presentation on the contribution from EUMETSAT, through its qualified data sets, to climate monitoring research. The Forum took note of the current status of two African climate projects, CLIMDEV Africa and ClimServ Africa, being undertaken by regional centres of excellence.

Specific examples of regional climate study applications were provided through presentations on rainfall estimates in Ethiopia and the application of satellite data for climate research in Guinea Conakry. The presentation session closed with

information on the climate relevant activities of the ACP Observatory.

The session discussion provided a fora for NMHSs to voice their commitment to support climate monitoring research and, in doing so, acknowledgment of the important contribution they can make to climate monitoring projects through the provision of their local in-situ observational data and satellite data and, through inter-agency cooperation.



### **Round Table #1 on Climate**

The Chairman of the Round Table began by taking stock of the situation in accordance with his opinion of the state of need for climate services in Africa. This was followed by a tour de table of the 7 experts present. A discussion with participants from the floor also took place, with a number of contributions being made.

The discussions focused on the importance of the climate services and the role of the NMHS rather than on descriptions of the climate services themselves. In particular, the fundamental role of the NMHS in collecting basic data and analysing climate indicators in accordance with their mandate was emphasised.

On the basis of this discussion, the Round Table enabled a certain number of agreements to be reached that were then turned into recommendations. These recommendations basically addressed the role of the NMHS in the context of the climate services and their relations with other climate change players.



### **Session 4 – Water Management for Rangeland and Cropland**

The fifth session focused on the theme of the 9<sup>th</sup> EUMETSAT User Forum in Africa: Use of Satellite Data for Monitoring Climate Change and Water Resources. This session was the result of a Call for Contributions and a total of 7 papers were presented. Speakers addressed various Water-related topics. This session also demonstrated a growing interest from EUMETSAT's users in Africa in dedicating more time to research oriented activities based on the use of satellite data.



### **Session 5 – GMES Africa**

The fifth session focused on the current status the GMES Africa initiative. The view of the RECs, Rural Economy and Agriculture Department of the African Union Commission and the ACP Secretariat was presented by Debalkew Berhe from IGAD. As underlined in the Ouagadougou Declaration, they emphasised the need to build on PUMA and AMESD and avoid a gap between the end of AMESD and the start of a 10<sup>th</sup> EDF programme.

Projects financed by the European Commission Framework programme for Research, Technological Development and Demonstration Activities and supporting the definition of African user requirements within GMES Africa were also presented.



## Round Table #2 on GMES Africa

The chairman of the meeting recalled the history of GMES Africa, emphasising the key stages represented by the PUMA and AMESD projects, to which the NMHS regularly contributed. Following a tour de table of the participants, the discussion was opened to the floor.

As the thematics of GMES Africa are very similar to those of the AMESD project with, in addition, the subject of climate change, an agreement that was similar to that of Round Table No 1 was very quickly reached. This made it possible to conclude the Round Table fairly quickly.

Attention was drawn to the importance for the NMHS of working closely with the other development players while respecting their prerogatives and mandates.

The recommendations made by the two Round Tables were merged into a single series of recommendations and presented in a plenary session.



## Session 6 - AMESD

During this session, a presentation of the status of AMESD was provided by the Programme Coordination Team. It covered the objectives of the programme, the status of activities, the training aspects and the thematic EUMETCast stations.

The five Regional Implementation Centres responsible for the implementation of the regional THEMA presented the status of AMESD activities in their region. This session facilitated close interactions between

AMESD Technical Assistance, the AMESD Regional Implementation Centres, the Regional Economic Communities and the National Meteorological Services of the regions.

Finally the Joint Research centre of the European Commission in Ispra described the eStation, which is the software solution that is provided with the AMESD stations currently deployed together with the PUMA 2010 stations.



## Session 7 – Other EO projects

This session provided an overview of the progress made in various projects and initiatives taking place in Africa and that are of interest to EUMETSAT's users in Africa. A number of international projects (SERVIR, EO Information Dissemination for Food Security in the Lake Chad Region, ViGIRisC RANET) were presented as well as European Commission funded activities (NARMA, DevCoCast, AEGOS). In addition, a movie showed the VHF lightning detection system (ATDnet) run by the UK Met Office that also covers the African continent.

It was encouraging to see an increasing African involvement in many projects. The session also evidenced the need for improved coordination among the numerous research/application initiatives and the products they produce. Product dissemination by EUMETCast/GEONETCast plays a central role in projects in support of routine applications. Beyond these crucial dissemination services an urgent need to reach out to rural communities was identified by the Chad Basin project

and by RANET (before the demise of its space component).



## **Session 8 – Recommendations and concluding session**

Finally, the eighth and concluding session was dedicated to the review and adoption of the recommendations generated during the 9<sup>th</sup> EUMETSAT User Forum in Africa.

As a result of the wide range of discussions that took place during the Forum, a total of 40 recommendations were reviewed and unanimously adopted by the participants in the final session.

These Recommendations were not only directed towards EUMETSAT, but also to the African National Meteorological Services, the sub-regional African Economic Groupings, the WMO and the AMESD Programme Coordination Team. Recommendations addressed: Data and products, EUMETCast stations, Training and research, Climate, AMESD and GMES Africa.

Participants were invited to complete a Survey Form regarding the organisation of the 9<sup>th</sup> EUMETSAT User Forum in Africa, in order to help EUMETSAT make the necessary improvements for the organisation of the next Forum.

EUMETSAT then invited the participants to indicate their interest in hosting the 10<sup>th</sup> EUMETSAT User Forum in Africa, in 2012. Representatives from Mauritania, Togo, Equatorial Guinea, Ethiopia, Seychelles, Rwanda, Zambia, Malawi and Swaziland expressed their interest in hosting the next forum.



## **Exhibition area**

On the occasion of the 9<sup>th</sup> EUMETSAT User Forum in Africa, an exhibition area was jointly set up by EUMETSAT and the Burkina Faso Meteorological Service. The Exhibition consisted of several display computers connected to a EUMETCast reception station, providing a live stream of data and products that could be displayed. The Exhibition included a demonstration of EUMETSAT data and products, DevCoCast and VITO products, GEONETCast Toolbox by ITCm University of Twente. Telespazio, MFI and the EC-JRC, with the cooperation of CONEDD and Burkina Faso Meteorological Directorate also ran a live demonstration of the new PUMA 2010 and AMESD stations.

The EUMETCast Village became a very effective venue for the numerous interactions between users and data providers.



## **Technical visit**

On the third day of the Forum, Burkina Faso organised a technical excursion. This well-attended excursion (about 140 participants), which was linked to the theme of the Forum, consisted of a visit to an agronomical research centre in the Ziniaré region. The personnel of this centre presented their activities focusing on the techniques studied and implemented in order to better manage the water resources for the cropland, also taking into account the impact of climate change on the availability of these water resources.

After this visit, the participants had the opportunity to visit the cultural site of Loango, which is home to a modern granite sculpture garden.



## Closing Ceremony

The Closing Ceremony proceedings were led by Mr. Nouhou Berté, Director of Communication in the Burkina Faso Ministry of Transport. He gave the floor to two participants, who were asked to report on the main recommendations of the 9<sup>th</sup> EUMETSAT User Forum in Africa.

**Mr. Mactar N'diaye, Director of the Meteorological Service of Senegal** read the Recommendation #23 dedicated to National Network for Climate services and GMES Africa

**Mrs. Espérance Nyiranteziryayo** of the Rwanda Meteorological Service read the Recommendation #28 on the Ouagadougou Declaration in support to GMES Africa.

**Mr. Benjamin N'dala**, delivered a motion of thanks to the Burkina Faso authorities for the hosting of the 9<sup>th</sup> EUMETSAT User Forum in Africa and their welcome.

The presidium of the Closing Ceremony was composed of Samuel Medu, ECOWAS expert, Vincent Gabaglio, EUMETSAT representative, H.E. Minister of Environment, Dr. Khalil Mohamed Timamy, African Union Commission representative and M. Ali Jacques Garané, Permanent Representative of Burkina Faso to the WMO.

**Dr. Vincent Gabaglio**, EUMETSAT representative, mentioned that the overall and specific objectives of the Forum had been met. The Forum permitted the strengthening of the dialogue between EUMETSAT and its users in Africa, through the presentations, discussion, round tables and recommendations. He also noted that progress has been made towards the definition of satellite support to climate services and the positioning of the NMHS with respect to the GMES Africa initiative. He finally affirmed that EUMETSAT will carefully follow and regularly report on the implementation of the forty recommendations raised by the Forum.

**Dr. Khalil Mohamed Timamy**, African Union Commission representative, highlighted the constructive work that took place during the five days of the EUMETSAT User Forum in Africa. He also highlighted the need to provide an operational framework for the various initiatives arising in the domain of Earth Observation in Africa in order to ensure the proper involvement of the African institutions and existing networks in these initiatives. Finally, he thanked the Burkina Faso authorities and EUMETSAT for providing an optimal environment that greatly facilitated the work of the participants during the Forum.

**H.E. Mr. Salifou Sawadogo, Minister of Environment and livelihood of Burkina Faso**, began his intervention by mentioning that the lively dialogue between EUMETSAT and its user community in Africa was a very good example of North-South cooperation. Referring to the GMES Africa initiative and the pertinence of Earth Observation data for the environment in Africa, he urged the participants to exploit efficiently the available data and products, in order to provide appropriate answers to the effects of climate change on the African people.

He highlighted that it is through this efficient use that the participants could play an important role in initiatives dedicated to support socio-economic issues related to weather, climate, and water; in one word: the environment. Finally, he thanked, on behalf of the Minister of Transport, all persons who contributed to the success of the Forum. He wished all the participants a

safe return journey to their home country.



The 9<sup>th</sup> EUMETSAT User Forum in Africa was officially closed at 12:30 on 1 October 2010.



## LIST OF RECOMMENDATIONS OF THE 9<sup>th</sup> EUMETSAT USER FORUM IN AFRICA

The recommendations of the 9<sup>th</sup> EUMETSAT User Forum in Africa are sorted by:

1. Data and products
2. EUMETCast stations
3. Training and research
4. Climate
5. GMES Africa and AMESD
6. Others

They were generated in the various sessions and reviewed and approved during the last session.



### **1. Data and products**

#### **Recommendations #1 and #2**

#### **Expert Group on Data dissemination over EUMETCast Africa**

The Forum appreciates the creation by WMO, in cooperation with EUMETSAT, of the Expert Group on Data Dissemination over EUMETCast Africa. The Forum takes good note of the mandate, composition and methodology of the work of the Expert Group.

#### ***Recommendation #1***

The Forum recommends that each NMHS and regional centre of RA-I channel its needs for inclusion of new data and products on EUMETCast through the Expert Group.

#### **Recommendation #2**

The Forum further recommends that the Experts of this Group regularly contact (at least annually) the other NMHS and specialised regional meteorological and climate institutions of his region to gather their comments and needs; to this end, the NMHS will designate a point of contact.

#### **Recommendation #3**

#### **Centralised catalogue for data on EUMETCast Africa**

Informed about the outcome of the first meeting of the Expert Group, the Forum adopted the following principle recommendation of the Expert Group to promote the implementation of a centralised catalogue of products on EUMETCast, by inviting

- a) Meteo-France to include RETIM-Africa metadata in the EUMETSAT Product Navigator;
- b) NWP centres and other operational centres producing the data part of MDD to include metadata within the Product Navigator.

#### **Recommendation #4**

#### **NWP products**

The Forum recommends that the Expert Group take a specific action to encourage the providers of state of the art Numerical Weather Prediction (NWP) products to include their NWP products, which are free of charge for RA-I NMHS, in the EUMETCast Africa dissemination.

### **Recommendation #5 User requirements for environmental data dissemination on EUMETCast Africa**

Taking note of the user consultation mechanisms implemented within the WMO Expert Group on Data Dissemination over EUMETCast Africa for Meteorological related data, the Forum recommends that similar mechanisms are put in place for the inclusion of new environmental related products, building on the environmental actors involved in the AMESD project and the structure of this programme.

### **Recommendation #6 Access to EUMETSAT Data centre**

Aware of the existence of the EUMETSAT Data centre, the Forum recommends that EUMETSAT informs users widely on how to access the EUMETSAT Data Centre and how to retrieve data/products.

### **Recommendation #7 Products from Africa on EUMETCast**

The Forum notes that African institutions, notably regional expert centres, are providing more and more EO-based products, which are very pertinent to the countries for various applications. The Forum recommends that the possibility to disseminate these products over EUMETCast Africa is considered. Examples of these African products are those provided by the AMESD Regional Implementation Centres.

### **Recommendation #8 LSA SAF data format**

The Forum recommends that the LSA SAF data, recognised as very pertinent data for various applications in Africa, is disseminated via EUMETCast in appropriate format allowing user-friendly data extraction and integration in geographical information systems (e.g. search by latitude longitude)

### **Recommendation #9 Information on other SAF data and products**

Considering the interest among the NMHS participants of the EUMETSAT Users Forum in Africa for additional products to those presented by LSA SAF, the Forum recommends that other SAFs (e. g. Nowcasting, OSI, HYDRO,...) be given the opportunity to present their activities and products at the forthcoming forum.



## **2. EUMETCast station**

### **Recommendation #10 PUMA 2010 stations**

Concerning the SW of the PUMA 2010 stations, the Forum recommends that:

- a) Documentation describing all the functionalities of the SW is provided;
- b) The “cyclone forecasting” functionalities are introduced in the PUMA 2010 software for NMHS;
- c) Hard copies of training materials should be provided during the training courses.

### **Recommendation #11 Sustainability of the PUMA 2010 Stations**

The beneficiaries of the PUMA 2010 station thank the AMESD project for the provision of a station with state-of-the-art hardware and software. They also recognise the positive aspects of maintenance planned for the new equipment (including the UPS) – 3 years - and on the Software – 1 year. The Forum recommends to the European Union and to the African Union Commission

- a) to foresee a prolongation of the maintenance plan in the project that will follow AMESD;
- b) to consider possibilities for the maintenance or replacement of the LNB deployed at the time of the PUMA project.

### **Recommendation #12 Update and virus protection of PUMA 2010 and AMESD station**

In order to avoid difficulties during the update of the SW installed in the PUMA 2010 and AMESD station and in order to offer optimal protection against viruses, the Forum recommends that SW updates (incl. antivirus updates) are done through EUMETCast in a coordinated way, without having to connect the station to the internet.

### **Recommendation #13 Exploiting the full potential of the PUMA 2010 station**

The possibilities offered by the new SW installed in the PUMA 2010 station has the potential to deeply modify and modernise the way operational forecasting is done within the NMHS (from paper to numeric approach). The Forum recommends that:

- a) accompanying measures are made for the long term, notably through regular classroom training and distance learning;
- b) a progressive transition of the forecasting team between the old system and the new one is made, starting with a team of voluntary forecasters, who will then train their colleagues;
- c) the management of the NMHS is supportive and takes all necessary measures to ensure this transition.

### **Recommendation #14 Training on Linux and e-station**

Considering the operating system of the PUMA 2010 and AMESD stations (Linux based), the Forum recommends that

- a) elementary Linux training is organised as part of the PUMA 2010 station system administrator courses, and in addition through distance learning or provision of self-training material;
- b) pre-qualification on Linux to attend the System Administrator course is an advantage and not a pre-requisite.

### **Recommendation #15 Training on e-station**

Concerning the SW of the AMESD station, the Forum recommends to the European Commission Joint Research Centre and to the AMESD programme to conduct all the necessary courses on the e-station.

### **Recommendation #16 Deployment of AMESD station**

Taking into account difficulties encountered for the deployment and

installation of AMESD stations in some countries, the Forum recommends that the NMHS of these countries, based on its experience acquired through the PUMA project, provide support to the AMESD beneficiary in order to facilitate the deployment and installation process. In case of real obstacles, the Forum recommends that practical arrangements be found to secure on-time deployment of the PUMA 2010 stations.



### **3. Training and research**

#### **Recommendation #17**

#### **ASMET - African Satellite Meteorology Education and Training**

The Forum recommends that the preparation of ASMET training modules for teaching African weather phenomena should be continued beyond ASMET 6.

#### **Recommendation #18** **Virtual Laboratory**

The Forum takes note that the WMO Virtual Laboratory (VL) programme organises regular distance training courses, which are pertinent for African NMHSs (dust monitoring, cyclones, etc...). In order to enable more participation from the African NMHS representatives, the Forum recommends that:

- a) EUMETSAT and WMO investigate the possibility for a permanent technical officer post for the VL;
- b) The VLab activities are pursued and coordinated and regularly

- updated at the level of the Centres of Excellence for VL;
- c) Internet connection in the African NMHS are appropriate for the national experts to participate to the VLab training courses;
- d) Information about upcoming training courses is spread to the African NMHS by email.

#### **Recommendation #19**

#### **Extended training activities**

Given the importance, the quality and the diversity of the EUMETSAT and Third-Party products (e.g. SAF, Metop, VGT, , etc.) that are made available to African users, notably through EUMETCast and the EUMETSAT Data Centre, the Forum recommends that WMO, in cooperation with EUMETSAT, promote and organise additional training activities (conducted as specialised, targeted training courses), in addition to the EUMETSAT training activities on satellite meteorology, notably in the area of atmospheric composition, hydrology, marine meteorology, oceanography, land surface, air quality and climatology.

#### **Recommendation #20**

#### **Training to prepare for future programmes (Jason-3, MTG)**

Given that training on the future satellite programmes is an important starting point for the future operational exploitation of these data, the Forum recommends that EUMETSAT starts to conceptualise a training programme on the use of future satellite data at the most appropriate time.

### **Recommendation #21 R&D on rainfall**

In view of the fundamental role that temporal-spatial distribution of rainfall plays in many applications areas, the Forum recommends that further research and development in high-resolution rainfall mapping gets major attention and funding. The Forum further recommends easing access to these data.

### **Recommendation #22 Regional Focus Group**

The Forum recommends that EUMETSAT, the Virtual Laboratory and the WMO Centre of Excellence extend the activities of the Regional Focus Groups for the user communities in other regions subject to similar meteorological and climatic conditions.



## **4. Climate**

### **Recommendation #23 National Network on Climate and GMES Africa**

The Forum recommends that the NMHSs are strengthened in order to generate quality and adequate climate related information. The Forum recommends that the NMHSs strengthen their partnership with the national socio-economic stakeholders in Climate and Environmental monitoring which are decision makers in the field of environment, agriculture, energy, health, etc. The Forum further recommends that NMHSs participate in a national network to firstly strengthen the capacity of relevant sectors to include climate change and

climate variability in their respective strategies and, secondly, to facilitate the implementation of GMES Africa activities for sustainable development in their country.

### **Recommendation #24 Implementation of Climate Services**

The Forum recommends to the AUC and the RECs to promote the harmonisation of sectorial climate related policies at regional and national level, in order to improve and expedite the implementation of climate services and climate adaptation programmes.

### **Recommendation #25 Coordination of projects on climate**

Noting the many important initiatives (e.g .ClimDevAfrica) from several institutes and organisations that are in place in the region, the Forum recommends that communication between these organisations is strengthened to facilitate improved coordination of the complementary activities in the area of climate monitoring and research.

### **Recommendation #26 Cooperation on Climate Research**

The Forum recommends that the NMHSs enhance cooperation, mainly with the African specialized regional centres (AGRHYMET, ICPAC, DMC, ACMAD...) and the universities in order to enhance Research and Development in Climate Change and Climate Variability and their associated impacts establishing a mechanism or framework that will ensure knowledge (science) based policy formulation;

## **Recommendation #27**

### **Availability of in-situ measurement**

Noting the important contribution NMHSs can bring to climate research, notably through the provision of their local in-situ observational data and satellite data, the Forum recommends that a collaborative framework is established between the NMHSs and the research institutes and centres of excellence responsible for research on climate.



## **5. AMESD, GMES Africa and other projects**

### **Recommendation #28**

#### **GMES Africa**

Highlighting the importance of the Ouagadougou Declaration to secure long term commitment in the strengthening of African capacities for the operational exploitation of Earth Observation data for sustainable development, the Forum recommends that the GMES Africa initiative within the EU-Africa Strategic Partnership urgently addresses the aspects of ownership of GMES Africa and of institutional arrangements according to the Departmental responsibilities of the African Union Commission.

### **Recommendation #29**

#### **AMESD Phase II**

Highlighting the necessity to ensure continuity of the efforts deployed in the PUMA and AMESD programme, the Forum recommends that a new project (post-AMESD / AMESD Phase II), which builds on the results of AMESD and prepares for full-scale implementation of GMES Africa, is launched in time to avoid a gap after

the end of the technical assistance in the current AMESD programme (end of 2011).

### **Recommendation #30**

#### **Building on existing capacities**

Commending the international institutions for the efforts to support exploitation of EO data at all levels and for various thematic areas, and appreciating the new projects launched recently, notably within the EU FP7 programme, the Forum recommends that these projects:

- a) build on existing capacities;
- b) make sure that users are involved and that the project can have an actual impact ;
- c) are designed to ensure sustainability.

### **Recommendation #31**

#### **Meteorological community support to new projects**

The Forum recommends that new projects (e.g FP7) should exploit existing capabilities, infrastructure and programmes put in place by the meteorological community in Africa. The Forum further recommends that NMHSs take a pro-active role in offering the possibility to access their infrastructure and in initiating cooperation with the projects.

### **Recommendation #32**

#### **Project and products database at AUC level**

In view of the many products delivered by the large number of projects and operational programmes, the Forum recommends that the African Union Commission compile and maintain an exhaustive database and detailed guidance on the available products

and their use. This will be beneficial for the individual user and lead to a better coordination among the deliverables of the projects and programmes.

### **Recommendation #33 GOOS Africa**

The Forum recommends that EUMETSAT and GOOS Africa reinforce their cooperation in the area of oceanography and marine applications, with the involvement African meteorological services, marine institutes, research centres and universities based in Africa in order to:

- a) promote marine and oceanographic EO applications relevant to African users;
- b) reinforce research and training activities in the field;
- c) ensure continuation and extension of marine and oceanographic applications developed in AMESD, within the AMESD Phase II and GMES Africa initiative.

### **Recommendation #34 AMESD – NMHS in AMESD training**

Taking into account the cross-cutting role of the meteorological sector the forum recommends the full involvement of the National Meteorological and Hydrological Services (and regional specialised institutions) in all training activities in the framework of the AMESD implementation relevant to the mandate and expertise of the NMHS. Moreover the Forum recommends that the “training the trainers” sessions involve at least one member of each National Meteorological Service.

### **Recommendation #35 AMESD – Tanzania and Mozambique in SADC Thema**

Given the importance of SADC THEMA, for Mozambique and Tanzania, in particular for the monitoring of fires, floods and drought, and in view of the achievements of the MDG, the Forum recommends that AMESD take the appropriate measure (e.g. additional fund if necessary and possible) to fully integrate these two countries in the above-mentioned THEMA.

### **Recommendation #36 AMESD – AMCOMET sensitisation**

In view of the cross-cutting nature of meteorology in almost all the AMESD THEMAs and the important role of climate and weather data and information in this framework, the Forum recommended that the African Union Commission and WMO raise awareness among AMCOMET (African Ministers Conference in charge of Meteorology) in addition to AMCEN.

### **Recommendation #37 AMESD cross fertilisation between region**

In view of the interest of each region in applications that are developed in the framework of the THEMA of other regions, the Forum recommends that relevant geographical areas outside the THEMA's region also be monitored when this application is useful for one or several countries. This recommendation is also valid for the sharing of methods and data between regions, in particular when information over a given region is useful to other regions such as in the case of the management of large watersheds.



## **6. Others**

### **Recommendation #38 Synergy between national Earth Observation actors**

Recognising the expertise of national structures in charge of Geographical information for processing EO data, also recognising the expertise of the meteorological services to exploit real-time Earth Observation data, the Forum recommends that synergies at national level are build between these national services for the efficient and sustainable management of the data disseminated over EUMETCast.

### **Recommendation #39 Data dissemination - RANET**

Recognising the importance of dissemination of information to rural communities and of system such as RANET, the Forum recommends to all the stakeholders to consult in order to look for appropriate mechanisms for the dissemination of information to rural communities.

### **Recommendation #40 Training for free of charge SW**

Acknowledging the fact that free of charge SW for processing and displaying products provided by EUMETCast/GEONETCast are now widely available, the Forum recommends that training in such free of charge SW should be provided by the SW providers, and that emerging new application software should be demonstrated at future Forums.



## SPEECHES

### OPENING CEREMONY

#### **Welcome Speech by Mr. Ali Jacques Garané, Permanent Representative of Burkina Faso to WMO**

His Excellency, Delegated Minister for Agriculture,  
Excellencies, Members of the Government,  
Parliamentarians,  
Dr. Lars Prahm, Director General of EUMETSAT,  
Mr. Michel Jarraud, Secretary-General of the World Meteorological Organisation,  
His Excellency, Mr. Amos Tincani, Ambassador of the European Union to Burkina Faso,  
Heads of Diplomatic missions,  
The representatives of the international, regional and sub-regional organisations,  
Technical Experts,  
Distinguished Guests in your respective functions, positions and ranks;  
Ladies and Gentlemen,

Please allow me, on behalf of the Secretary-General of the Ministry of Transport, who has chaired the National Organising Committee for this Forum, to extend a warm welcome to Ouagadougou to all of you who have come here from various places and are honouring us with a visit to Burkina Faso.

When, at the close of the 8th EUMETSAT User Forum in Africa on 10 October 2008 in Accra, Ghana, I indicated that my country would be

willing to organise the 9th Forum, I had presented a challenge on behalf of my country. Today, 27 September 2010, with my country's support, what was perhaps a dream for me two years ago has now become a reality.

Before it is said by persons with greater authority than mine, I would like to extend my most sincere thanks to EUMETSAT and its Director-General for the confidence that it has shown us in choosing our country from among five other candidates to host this important meeting.

Members of the Government,  
Technical and financial Partners,  
Distinguished guests,

At this point, the National Organising Committee would like to ask you to make allowances for all the shortcomings and weaknesses that you will note in our organisation of this event. However, I would like to give you my assurance that all the members of the Organising Committee are entirely at your disposal to make your stay in Burkina Faso as pleasant as possible.

For those of you who are visiting Burkina Faso for the first time and even those who have been here before, I would like to draw your attention to the fact that Ouagadougou and the surrounding area have many different tourist attractions and recreational facilities to offer. These include, for example, the National Museum, the Loango granite area that we will be visiting on Wednesday, the Ziniaré wildlife park, the crafts village,

the SIAO where the International Tourism and Hostelry Salon (SITHO) is currently being held, the various restaurants and bars in the city centre, and so on.

On behalf of the National Organising Committee, I would like to wish you all a pleasant stay in Burkina Faso and an excellent forum.

Thank you.



**Speech by Dr. Lars Prahm,  
EUMETSAT Director-General**

His Excellency, Delegated Minister for Agriculture, representing the Minister of Transport of Burkina Faso,  
His Excellency, Mr. Ousseini Salifou, Commissioner for Agriculture, Environment and Water Resources of the ECOWAS,  
His Excellence, Mr. Achille Bassilekin III, Assistant Secretary General of the ACP Group of States Secretariat,  
His Excellency, Mr. Amos Tincani, Ambassador of the European Union to Burkina Faso,  
Mr. Michel Jarraud, Secretary-General of the World Meteorological Organisation,  
Dr. Mohamed Khalil Timamy, representative of the African Union Commission  
Miss and Misters the representatives of the sub-Saharan Regional Economic Communities,  
Dear participants,

It is a pleasure and honour for me to be here in Burkina Faso at the occasion of the Opening Ceremony of the 9th EUMETSAT User Forum in Africa and to address this honourable assembly.

The cooperation between Africa and Europe, in the field of use of European Meteorological Satellite started in 1977 with the launch of the first Meteosat satellite above the Gulf of Guinea.

Since the creation of EUMETSAT, the European Organisation for the Exploitation of Meteorological Satellites, in 1986, Africa has always occupied an important place within the organisation. During the last 20 years, continuous and increasing efforts have been dedicated to ensure that African States benefit from our Satellites and related infrastructure. This support to Africa is part of EUMETSAT Long Term Strategy approved by all our Member States.

And this strategy has been translated into very concrete actions. Beyond the continuous coverage of Africa by the satellites operated by EUMETSAT, several concrete activities are undertaken, such as data dissemination via EUMETCast, training, User Fora, support to international and joint Europe-Africa Earth Observation projects.

Firstly, all Satellites operated by EUMETSAT (we currently have 6 satellites in operation) are covering Africa. They provide key information every 15 minutes that contributes to the monitoring of the weather, the climate and the environment. This year EUMETSAT Member States have decided positively on the financing and launch of the next generation of its Meteosat satellites (the Meteosat Third Generation), that will also provide full coverage of Africa.

This means that continuous coverage of Africa by EUMETSAT satellites is ensured until 2035!

Satellite data and products are of great benefit for meteorological applications, especially in the Southern Hemisphere

and in Africa, where in-situ observations are scarce. Studies show that satellite data improves the quality of medium-range forecast by 3 days. This means that thanks to satellite data, you can predict weather conditions for the next 5 days, as well as you could for the next 2 days without satellite observations. Weather forecasting capabilities across the continent have been greatly enhanced thanks to operational access to satellite information.

Secondly, EUMETSAT has put in place a Data dissemination system, the EUMETCast system, which ensures that the images and data produced from our Satellites are transmitted in near real-time to all our users in Africa. Thanks to the financial support of the European Commission, the PUMA project was launched in 2002 and at the end of 2005 PUMA reception stations were installed in each and every country. The stations provide real time Satellite data to all National Meteorological Services in Africa.

As a result of the PUMA project, weather forecasting capabilities across the continent have been greatly enhanced.

The AMESD project is the first operational, project exploiting widely the EO data and process. The EUMETSAT data are used both by the National Meteorological Services and other Institutions for Environmental and Agricultural purposes.

In order to support the operational use of the data, EUMETSAT is also providing training in satellite meteorology to the civil servants of the national meteorological services. In cooperation with the Training Centres on Satellite Meteorology in Africa, a critical mass of persons is trained each year on satellite meteorology.

EUMETSAT also focuses on keeping close links with its users in Africa. In addition to day-to-day support through our EUMETSAT help desk and contacts established during the training courses, EUMETSAT organises a User Forum in Africa every two years. The User Fora are an opportunity for active exchange during one week on the various activities of EUMETSAT in Africa and allow us to further improve the pertinence of our contribution to African Users.

These four examples illustrate the continuous and lively cooperation between EUMETSAT and the meteorological community in Africa. A solid basis has been built in the past 20 years. And this will certainly continue over the next 20 years thanks to Meteosat Third Generation programme.

Over the last few years, EUMETSAT has been expanding its activities in order to provide data which are relevant for oceanography, climate, and environment. We are today operating the Jason-2 satellite, which provides satellite ocean altimetry data and our Satellite Application Facilities are providing more and more products relevant to these applications. Tomorrow we will also operate, on behalf of the European Commission, some of the satellites of the GMES programme, notably Sentinel 3 for oceanography and sentinels 4 and 5 for Atmosphere monitoring.

Today EUMETSAT has a clear role in Europe for serving the oceanographic community, in addition to the meteorological and climate community.

The currently on-going High level dialogue between Africa and Europe on Space highlights the importance of Earth Observation applications. Initiated through the Maputo

Declaration on the eve of the 7th EUMETSAT User Forum in Africa, the GMES Africa initiative is now fully part of the Strategic Partnership between Africa and Europe, based on the ongoing AMESD Project. This initiative should offer additional opportunities for users from all African countries, to benefit from operational satellite data in support to policies in various domains (environment, climate, transport, health, security, etc).

EUMETSAT would also like to ensure that Africa can benefit from this enlarged scope of data and products. I am convinced that the new data and products can be beneficial to Africa if capacities and networks are put in place or strengthened.

The African Meteorological communities which benefit from a 20-year long cooperation with EUMETSAT should act as catalysts in their countries to encourage their partners to use these new opportunities and to build enhanced weather, water and climate services, according to their mandate.

AMESD is a good example and is showing the way forward. Today concrete results are delivered by this programme, which focuses on the implementation of operational services based on satellite data, providing information in support to decision making processes for environmental matters. Through this project, EUMETSAT data and infrastructure provides benefit to environmental monitoring and the policy making process in the African continent.

I encourage all the participants to prepare themselves for fully contributing to the GMES Africa initiative. This will be discussed during the Forum and I am sure that you can demonstrate the support that you can provide to this initiative.

During the Forum, the theme of Climate and Climate services is very present.

Our cooperation has always, at its heart and as a starting point, the requirements raised from our users, primarily the Meteorological Community in Africa. Our main objective is to make sure that African countries can develop the capacities to receive, to process and to utilise the data from our Satellites in an efficient way, in answer to national or regional duties and to the benefit of their citizens.

This is valid for building meteorological services but also for supporting the building of operational climate services in Africa. I expect that the discussion during this Forum will give us clear guidelines on how, with our satellite data and products, we can support African countries in putting in place these Climate services.

Thank you for your attention



**Speech by Mr. Michel Jarraud,  
Secretary General of the WMO**

Excellencies,  
His Excellency, Delegated Minister for Agriculture,  
Mr. Garané, Director of Meteorology and Permanent Representative of Burkina Faso to WMO,  
Dr. Lars Prahm, Director General of EUMETSAT,  
His Excellency, Mr. Amos Tincani, Ambassador of the European Union to Burkina Faso,  
The representatives of the international, regional and sub-regional organisations,  
Dear Colleagues,

Ladies and Gentlemen,

It gives me pleasure to take the floor today at the 9th EUMETSAT User Forum in Africa. Speaking on behalf of the World Meteorological Organisation (WMO) and in my personal capacity, I would like to begin by expressing my thanks for this invitation to His Excellency Mr. Gilbert G. Noël Ouédraogo, Minister of Transport of Burkina Faso, and to Ms Rhoda Peace Tumusiime, Commissioner for Rural Economy and Agriculture at the African Union Commission.

It also gives me pleasure to thank the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), through its Director-General, Dr. Lars Prahm, for the exemplary support provided for developing countries, particularly in the area covered by Meteosat and especially in Africa. This helps to meet the needs of those countries in terms of satellite data, products and services.

I would also like to express my thanks to Mr. Ali Jacques Garané, Director of Meteorology and Permanent Representative of Burkina Faso to WMO, for the exemplary working relationship that has been established since Burkina Faso became a member of our Organisation in October 1960, almost exactly 50 years ago.

This event is also of crucial importance to the AMESD initiative established to monitor the environment for sustainable development in Africa, the successor to the former PUMA project which enabled satellite stations to be deployed in a number of African meteorological services, while emphasising training and capacity-building.

Excellencies, Ladies and Gentlemen,

The African continent currently includes 67 per cent of the least developed countries in the world. At the same time, Africa has natural and human resources that could transform its socio-economic and environmental reality if account is taken of the principles of sustainable development.

As an institution within the United Nations system that specialises in matters related to the weather, the climate and water, WMO is committed to intensifying efforts in the areas within its competence by helping, in particular, to prevent natural disasters and the effects of climate change, such as droughts and floods, the adaptation to climate change, health protection, food security and the management of water resources, among other things. This partnership covers specific regional actions with the African Union and a number of other partners.

Although the frequency of extreme hydrometeorological phenomena is increasing, the number of victims caused by these events is nonetheless decreasing regularly – thanks, in particular, to the improvement in the early warning systems – even though the economic impact of those disasters continues to grow.

In April 2010, at the kind invitation of the Government of Kenya and in association with the African Union, WMO organised the first Conference of Ministers Responsible for Meteorology in Africa in Nairobi. Recognising the importance of the meteorological and climate services in Africa, the ministerial conference adopted a Declaration and decided to establish a high-level consultation mechanism. In order for this cooperation to function successfully, it is essential for WMO to ensure that the observation systems will continue to be optimised, hence the importance of

the 9th EUMETSAT User Forum in Africa.

The Fourth Assessment Report of the IPCC – the Group co-sponsored by WMO which was awarded the prestigious Nobel Peace Prize in 2007 – helped to increase awareness of the issue of climate change and its risks and vulnerabilities. In 2009, the third World Climate Conference (WCC-3) voted unanimously for the establishment of a Global Framework for Climate Services (GFCS) in order to consolidate climate predictions and services and a special high-level taskforce is actively drawing up proposals which will be submitted to the Sixteenth World Meteorological Congress in May 2011. That taskforce includes three representatives of your region.

Natural disasters and climate change are tending to slow down our progress towards fulfilling the Millennium Development Goals. Our ability to adapt to climate change is likely to prove insufficient in the coming decades, unless humankind can reach an agreement swiftly.

Before concluding my remarks, I would like to thank Burkina Faso and EUMETSAT once again for having organised this forum. I would like to wish you every success in your work.

Thank you.



**Speech by Dr. Mohammed Khalil Timamy, representatives of the African Union Commission,**

Hon. Minister of Agriculture of Burkina Faso,  
His Excellency Head of the European Union Office in Burkina Faso,

H.E Commissioner of Agriculture, ECOWAS,  
Secretary-General of WMO,  
Director-General of EUMETSAT  
Representatives of RECS,  
International Organisations,  
Director of Department of Meteorology, Burkina Faso,  
Distinguished Delegates,  
Ladies and Gentlemen,

I am profoundly delighted to be here in Ouagadougou to attend this crucial event, and I thank the Government and the people of Burkina Faso for their leadership for a great welcome to this beautiful city.

Humanity has arrived at a point in its history where major achievements in the economic and technological spheres are becoming increasingly overshadowed by disturbing environmental changes.

The adverse consequences unleashed by our development efforts have made serious inroads on our natural resources base in general and the life-support functions in general.

Our very existence is being threatened by the stresses caused by rising global temperatures and intensifying natural disasters, water scarcities, and growing food insecurity.

Given these excesses and the desire of concerned parties around the world to combat the threats, the systematic exploration of the Earth's space offers the most promising prospect for humanity.

In fact, the dramatic advances in space technologies during the post-World War II period have considerably widened our horizons of thought, and opened up unimaginable possibilities for human progress.

With time, intense and sustained space research culminated in the

materialization and the launching of satellite technologies, thus giving birth to a new era, called the SPACE AGE, in the annals of human civilization.

The space technologies are not only tools that have changed the course of history, but are also now poised to rescue humanity from the tight corner it has boxed itself in.

Honourable Minister,  
Distinguished Ladies and Gentlemen,

I wish to inform you that we at the African Union, specifically in my Department of Rural Economy and Agriculture, are already running programmes where Earth Observation data from space applications are expected to reshape the development trajectories of African States.

The most notable one, funded by the European Union and coordinated by the DREA is AMESD.

Clearly, Honourable Minister, the development value of the Earth Observation data generated by the various stations in Africa reflective of their respective themes, would have climate and climate-related utility, thus enabling Africa to monitor environmental changes, as well as predict possible scenarios

But in our collaboration with partners, we have proposed that the training be expanded to offer skills and knowledge to our policy makers and planners on how the Earth Observation data can be used to realise developmental aspirations, over and above the generation of data whose potential benefits are greatly appreciated.

Honourable Minister, Ladies and Gentlemen,

We have already taken steps to popularise the AMESD programme

continually so that African policymakers, planners, and the media can play their respective parts in using the Earth Observation data.

At the African Ministerial Conference on Environment (AMCEN) held in Bamako, Mali 19-26 June 2010, the Ministers passed a landmark decision that urged Member States to institutionalise and integrate AMESD products and services into their development plans and processes.

It was a clear expression of commitment on their part to translate Earth Observation data into practical space applications.

We profoundly thank our partners and the ACP partners, the European Union as our stakeholders, the Regional Economic Communities, and EUMETSAT for the financial and technical support.

We sincerely express gratitude to the Government and people of Burkina Faso for making us feel at home.

With these few remarks, we at the African Union look forward to enhanced and fruitful collaboration between all involved.

Thank you for your attention.



**Opening address by H.E. Amos Tincani, Ambassador of the European Union to Burkina Faso**

His Excellency, Delegated Minister for Agriculture, representing the Minister of Transport of Burkina Faso, His Excellency, Mr. Ousseini Salifou, Commissioner for Agriculture, Environment and Water Resources of the ECOWAS,

His Excellence, Mr. Achille Bassilekin III, Assistant Secretary General of the ACP Group of States Secretariat,  
Dr. Lars Prahm, Director-General of EUMETSAT,  
Mr. Michel Jarraud, Secretary-General of the World Meteorological Organisation,  
Dr. Mohamed Khalil Timamy, representative of the African Union Commission  
Miss and Misters the representatives of the sub-Saharan Regional Economic Communities,  
Distinguished Ladies and Gentlemen,

Being aware that earth and space observation is useful for managing the environment, the EU and EUMETSAT have provided support for two initiatives for Africa over the past 10 years.

In 2003, the "Preparation for the Use of MSG in Africa" initiative (the PUMA project), which was financed by the European Union, helped the meteorological communities to obtain and use satellite data in order to improve their weather predictions. The PUMA project made the meteorological data available to all meteorological services in Africa. Today, the African meteorological services use those satellite pictures for their daily predictions.

The successor to the PUMA project, the African Monitoring of the Environment for Sustainable Development (AMESD) project, is a pan-African programme financed by the EU and coordinated by the African Union Commission's Department of Rural Economy and Agriculture and the Secretariat of the ACP Group of States with the support of the World Meteorological Organization (WMO) and two United Nations institutions, UNECA and FAO. It is a response to the need to improve monitoring of the environment for the sustainable

management of natural resources in five regions and with the regional joint financing of sub-Saharan Africa, i.e. in the member states of the Economic and Monetary Community of Central African States (CEMAC), the Economic Community Of West African States (ECOWAS), the Intergovernmental Authority on Development (IGAD), the Indian Ocean Commission (IOC) and the Southern African Development Community (SADC). The AMESD project builds on the knowledge acquired by the meteorological sector but now forges a link to the environmental sector.

AMESD reinforces regional capacities in Africa related to the use of earth observation data for monitoring the environment. AMESD is now developing sustainable operational services based on earth observation on behalf of 47 countries in sub-Saharan Africa, covering all the countries in West Africa. We are satisfied that, thanks to programmes such as PUMA and AMESD, Africa can now take full advantage of this space infrastructure for their own environmental management. The continental dimension of the AMESD project is based on five Regional Thematic Actions covering water resources management, marine and coastal management, crop and rangeland management, monitoring drought, land degradation, the mitigation of desertification and the conservation of natural habitats.

The activities carried out in West Africa (plus Chad and Mauritania) focus on water management for cropland and rangeland. The implementation of these activities has been entrusted to the AGRHYMET Regional Centre. Agriculture is the primary source of revenue in West Africa. Monitoring food security is a matter of very considerable importance. The early

identification of populations at risk will enable actions that set out to prevent serious food crises to be planned adequately. The information services that have been developed for West Africa include the development of environmental indicators for four environmental topics: (1) monitoring vegetation to evaluate cropland and rangeland productivity; (2) the determination of areas affected by desertification; (3) the localisation and monitoring of small surface water bodies and, lastly, (4) the localisation of bush fires and estimating the size of burned areas. Moreover, AGRHYMET has been publishing a regular environmental monitoring report since August 2009.

I am pleased to say that thanks to earth observation, the AMESD project will very soon be providing services in Africa for agriculture, water, and monitoring of droughts and fires.

Although AMESD had some teething troubles, it is now up and running and provides useful services for African users.

At the same time, Europe and Africa have been working together for some years to establish the 8th Partnership on Science, Information Society and Space, with a priority action programme.

In Maputo in October 2006, the African Union Commission and the five Regional Economic Communities (which include ECOWAS) called for the "Earth Observation in Africa" initiative to be strengthened by launching a "GMES Africa programme". The African Union confirmed its conviction that the "GMES Africa" initiative will complement, at an international level, European GMES efforts, will consolidate the objectives of PUMA and AMESD, and will help to

strengthen the 8th Africa-EU Partnership. On the strength of that conviction, the European Union was invited to extend the European GMES initiative to Africa.

That political initiative was consolidated by the Lisbon Declaration in December 2007, with a decision to launch the GMES and Africa Action Plan, which is currently being developed and should be presented for adoption at the Africa-EU Summit to be held in Libya on 29-30 November.

That action plan sets out to fully exploit the potential of space systems for local, regional and continental sustainable development, and to reinforce Africa's ability to use and adopt remote sensing technology. The action plan also introduces a long-term structured dialogue between Africa and Europe on earth observation applications.

We are at present at the crossroads in terms of the Africa-EU space partnership. Although the "GMES Africa" initiative is still the spearhead of the current partnership, I today note a lack of impetus and of vision, a dispersion of efforts, with no clear, practical direction emerging.

It is important for those involved in the Africa-EU Strategic Partnership to work together to develop a true common vision for innovation and space cooperation, a coherent and feasible action plan with deadlines and budgets. Joint Expert Group 8 could concentrate more on the results.

In Africa, my view is that it is important to have a broad, open dialogue structure on space, including not only scientists but also users. This dialogue must not be limited to science and technology. We must have proof that space provides a practical solution to

the everyday problems of the average African.

While the leadership of the African Union Commission is vital, the Regional Economic Communities (RECs) are also key institutional partners.

A balance must also be sought between long-term planning and vision and the implementation of mature projects, such as the continuation of the AMESD project. Giving priority attention to projects that provide a solution for Africans' current problems (low-hanging fruits) is a useful way of showing that our investment is worthwhile.

Lastly, our activities must be firmly anchored in the framework of institutional deadlines.

In that respect, the current GMES Programme is funded until 2013. In order to ensure its funding for the next budgetary period, 2014-20, we must now be in a position to identify and justify the needs of African users. The African and European parties must therefore agree on a detailed and "bankable" action plan by spring 2011 at the latest so as ensure its inclusion in the unavoidable budget negotiations. This is essential to ensure future funding for GMES Africa which meets the real African needs.

In the framework of development cooperation, it is important to be included in the programming cycle for the 10th EDF. The intra-ACP fund and several African regions have already indicated their wish to build on PUMA and AMESD, while actively pursuing the broader vision of the GMES Africa initiative.

The continuation of the AMESD project is currently being identified and we hope to have an approved project by

the end of 2011, for an amount that is higher than for the current AMESD project.

I would like to wish all those taking part in the 9th EUMETSAT User Forum every success in their deliberations.



### **Opening address by the Minister in charge of Agriculture, Burkina Faso,**

Hon. Members of the Government;  
Their Excellencies Ambassadors;  
His Excellency the Director General of EUMETSAT;  
Secretary-General of the World Meteorological Organisation;  
Distinguished Chair of the UE Commission;  
Commissioner for the Department of Rural Economy and Agriculture of the African Union Commission;  
Distinguished Chair of the Economic Community of West African States;  
Distinguished Chair of the Economic Community of Central African States;  
Executive Secretary of the Southern African Development Community;  
Executive Secretary of the Intergovernmental Authority on Development;  
Secretary General of the Indian Ocean Commission;  
Secretary-General of the African, Caribbean and Pacific Group of States;  
Director-General of the African Centre of Meteorological Application for Development;  
Representatives of the international regional and sub-regional organisations;  
Technical Assistants;  
General Directors and Directors of the meteorological, climatological and hydrological services in Africa;  
Representatives of the technical and financial partners;

Distinguished Guests in your respective functions, positions and ranks;

Ladies and Gentlemen,

Burkina Faso is deeply honoured to host the 9th EUMETSAT User Forum in Africa today and it gives me pleasure, on behalf of His Excellency the Prime Minister, our Head of Government, to extend a warm welcome to the eminent personae, researchers, men of science and academics in charge of meteorological and climatic issues, meteorological satellite administrators, and the technical and financial partners who have been willing to travel to Ouagadougou.

On this happy occasion, I would like to pay deserved tribute to His Excellency the Director-General of EUMETSAT, Dr. Lars Prahm, who, with his organisation, is working selflessly for on the development of meteorological satellites for the progress and well-being of humankind.

May I be allowed, on behalf of the people of Burkina Faso, to convey to him our deep appreciation of our country being chosen and the trust shown in it for holding these meetings.

This is also the appropriate moment to pay clear tribute to the Secretary-General of the World Meteorological Organization, Mr. Michel Jarraud, and to his Organization, which, tirelessly and with dynamism and skill, presides over the future of that exemplary multinational cooperation instrument.

Ladies and Gentlemen,

I am proud to extend this series of tributes to all your teams; no evidence is needed of their commitment and determination to rise to the climatic and environmental challenges.

Ladies and Gentlemen of the Government,

His Excellency the Director-General of EUMETSAT,

His Excellency the Secretary-General of the WMO,

Distinguished guests,

Ladies and Gentlemen,

The main challenges facing the international community and, more especially Africa, on a daily basis are the fight against poverty, strengthening the democratic process, the stability of the institutions, economic and political governance, and, especially over the past few decades, efforts to combat the perverse effects of the natural disasters that are dangerously undermining its development.

We need to remember that Africa, our continent, has immense natural wealth which ought to give it advantageous opportunities for the socio-economic development of its people as national sustainable development policies that are basically geared to the fight against poverty are defined and implemented in its States.

However, the lack of appropriate technological means, anarchic and often irresponsible use of those resources, combined, for more than 30 years now, with the phenomenon of severe climate change and its perverse effects in terms of natural disasters (floods, drought, etc.), have contributed to the socio-economic decline of a fair number of countries in Africa.

We can still recall the recent floods in the Horn of Africa and southern Africa that were accompanied by an ongoing, dramatic worsening rainfall pattern and flows. Nor have we forgotten the locust invasion which led to famine and distress for both people and animals and did not spare Burkina, Senegal, Mali, Niger and Chad.

Burkina Faso is still suffering from the after-effects of the torrential rains that hit Ouagadougou, the capital, on 1 September 2009, causing the loss of several human lives and substantial material damage. Recent floods that were just as dramatic have affected some of the country's provinces, plunging the people into distress and deep dismay.

Distinguished guests,  
Ladies and Gentlemen,

Again this year, our sub-region has been severely affected by raging waters and the persistence of extreme meteorological and climatic phenomena.

Early in the season, the African Centre of Meteorological Application for Development, its partners and the National Meteorological Services did indeed issue warnings about the risks of rainfall but our people's limited anticipation capacity, which is largely attributable to inappropriate technical material, gave free rein to those hydrometeorological disasters.

Thus, confronted with the considerable vulnerability of our people, the African political authorities have undertaken in recent years to give high priority to the question of climate change and variability in the programmes to combat poverty.

It is with that in mind that, from 9 to 11 October 2009, Ouagadougou hosted a Global Forum on Sustainable Development on the theme of "Climate change: what opportunities for sustainable development?"

Also to be noted is the strong participation by very high-level African delegations in the third Global Climate Conference in Geneva, Switzerland, which took place from 31 August to 4

September 2009, and the first Conference of Ministers Responsible for Meteorology, organised by the World Meteorological Organization, which was held in Nairobi, Kenya, from 12 to 16 April 2010.

It emerged from these different meetings that it is urgent for an effective policy for gathering meteorological data and information which will involve the local communities in monitoring climate conditions to be introduced in order to improve productivity in vital sectors such as agriculture and the related sectors.

Ladies and Gentlemen of the Government,  
His Excellency the Secretary-General of the WMO,  
Distinguished guests,  
Ladies and Gentlemen

This EUMETSAT User Forum in Africa is being held at a time when current international events are still calling for our attention in terms of natural disasters, particularly those that are hydrometeorological in origin (floods in Haiti, China and Pakistan, landslides in China) and those that follow on from global warming (fires in Russia).

The combination of all these geophysical imbalances poses a serious threat to our ecosystem and, according to experts, could destroy life on earth if appropriate solutions are not found in the short and medium term.

The theme of these meetings, which are devoted to "The Impact of Climate Change on Water Management for Cropland and Rangeland in Africa", is therefore timely, as at the end of this Forum, our wish is, by adopting a dynamic approach to working and exchanging experience between meteorologists, the providers of

satellite data and products, the users of satellite products and meteorological predictions, scientists and researchers, for possible relevant and innovative solutions regarding the impact of climate change on those sectors to be found so that warning and adaptation strategies can be developed and integrated into our development programmes. Agriculture is particularly affected by disruptions to the climate and it is essential for solutions to be found to that problem, on the one hand, because of the risk to food security and, on the other, because agricultural activity alone represents 70% of employment on the continent of Africa and is the main economic driver of most of the States.

The Government of Burkina Faso is therefore following the progress made in your work with considerable interest and would like to reaffirm its readiness to lend strong support to this important initiative concerning the establishment of dynamic analysis and planning mechanisms that will enable effective combating strategies to be implemented.

Ladies and Gentlemen of the Government,  
His Excellency the Secretary-General of the WMO,  
Distinguished representatives of our technical and financial partners,

The World Meteorological Organization would not be true to its mission if it were not a model of international cooperation. The reality of our world and contemporary societies calls for very intensive international scientific cooperation between university institutions, operational forecasting centres and the users of meteorological predictions, the best equipped States and those who are less well equipped, so as to find, in a synergy of actions, sensible solutions

to the problems associated with the climate and the environment.

Thus, in the context of the changeover in 2002 to the second generation meteorological satellite (MSG), which risked being fatal for the African meteorological services, in 1996 the latter, working with WMO, the African regional economic groupings (e.g. ECOWAS, SADC) and the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), had established the Preparation for the Use of the Meteosat satellite in Africa project (PUMA).

Through European Union financing, the project enabled all African meteorological services to be equipped with satellite data receiving stations. Like other African countries, Burkina Faso has benefited since that period from the valuable work of EUMETSAT, which has thus helped to improve the quality of meteorological predictions in our country.

This is therefore an appropriate opportunity for me to extend my most sincere thanks to EUMETSAT and its financial partners, particularly the Commission of the European Union, for this substantial material support.

Ladies and Gentlemen of the Government,  
His Excellency the Secretary-General of the WMO,  
Distinguished representatives of our technical and financial partners,

I would also like to pay tribute to and encourage fruitful cooperation between Burkina Faso, the African countries and EUMETSAT and its partners, one of the outcomes being the AMESD Project, which provides our countries with satellite reception stations for the acquisition of applied satellite products for environmental management and

the upgrading of PUMA stations, which have made a major contribution over the past decade to improving the quality of meteorological predictions in our countries.

I would like to take advantage of this platform to make an urgent appeal to EUMETSAT, the World Meteorological Organization and the international meteorological institutions to strengthen technical and scientific cooperation with African countries, particularly by:

- the implementation of operational observation, measuring, analysis and data distribution networks,
- the acquisition of remote sensing equipment,
- the improvement of meteorological predictions,
- capacity-building through human resources training.

Our government and our people are expecting a lot of your work and very special attention will be paid to its conclusions.

On that note of hope, I would like to wish you every success in your work and declare the 9th EUMETSAT User Forum in Africa open.

Thank you.



**Objectives of the 9<sup>th</sup> EUMETSAT User Forum in Africa, Dr. Vincent Gabaglio, International Relations Officer,**

Dear Participants,

The 9th EUMETSAT User Forum in Africa opens against a background

that I would wish to describe as favourable.

On the one hand, the African metrological community has this year experienced the first meeting of its ministers responsible for meteorology. They insisted, in particular, on the need for Africa to become involved in the Global Framework for Climate Services initiated in Geneva one year ago at the third Global Climate Conference. Everyone is aware of the exposure of the African continent to climate changes and it is therefore important for effective and efficient climate services to be proposed by Africans on the African continent.

On the other hand, cooperation regarding space between Europe and Africa is currently very high on the political agenda of relations between Europe and Africa. As part of this dialogue, EUMETSAT has stressed the fact that although it is legitimate for Africa to discuss the way in which space activities may be structured in the future (hence the discussion on the creation of an African space agency), it is vital for the decision-makers to realise that Africa already has considerable skills in the use of existing satellite systems such as MSG. Earth observation applications must occupy a key place in this political dialogue on space ... and it is your responsibility to use those data to make your politicians aware of these matters.

In order to contribute to that favourable political environment both at the level of the meteorological community and in the field of Europe-Africa relations regarding space, and in order to give a practical illustration of the possible results, following a few preparatory years that were sometimes difficult, the AMESD project is starting to provide visible, concrete results: PUMA stations are being replaced by PUMA

2010 stations, new AMESD data receiving stations have been deployed among your partners in the environment, water or agriculture, training courses are held at very regular intervals and the five regional thematic activities have taken off.

For all of us who work on a day-to-day basis in the field of satellites, meteorology, the climate or the environment, this political context is a unique opportunity to be seized!

In this connection, the representatives of your African sub-regional or regional institutions have lent significant impetus to that matter in adopting the Ouagadougou Declaration!

Although the Declaration places particular emphasis on consolidating the results obtained, it does so in order to be able to make better progress and to make even better use of satellite data so that we can meet the challenges that lie ahead of us.

And, as you know, there is no shortage of challenges in the field of the climate and the environment!

The objective of this Forum is therefore for EUMETSAT and its users in Africa to assume a joint positive, active and constructive position within this favourable context.

The aim is to find out how the close relations that we have built up between us over these past 15 years can enable us, as we look to the future, to provide better support in terms of rising to the numerous challenges that occur and to provide better help for our partners in charge of managing the environment and climate and the relative policies by placing ourselves at their service and by meeting their needs.

It is therefore crucial that through the various meetings, presentations, round tables –on climate services and the contribution of meteorologists to GMES Africa – we are able to establish clear directions and make constructive recommendations so that our association can fully contribute to Africa and its sustainable development.

I would like to wish you all an excellent Forum!



## **CLOSING CEREMONY**

### **Closing Remarks by the representative of EUMETSAT, Dr. Vincent Gabaglio, International Relations Officer,**

His Excellency the Minister for Environment,  
Hon. Representatives of the African Union Commission, Regional Economic Groups and international institutions  
Dear Participants,

The main aim of the EUMETSAT User Forum in Africa is to strengthen the dialogue between EUMETSAT and its users in Africa. The wealth of the presentations and the intensity of the discussions have made it possible to achieve that objective and even to go beyond it since, more than a dialogue, a genuine partnership has been established.

Hon. Minister,  
Dear Participants,

The specific objectives of this Forum were related to the support of satellite data for the implementation of climate

services in Africa and the establishment of the GMES Africa initiative. It has also proved possible to achieve those two specific objectives, as you will have realised by reading the two main recommendations.

On behalf of the Director-General of EUMETSAT, I can today assure you that EUMETSAT will attend to the implementation of the recommendations made at this Forum and will report regularly on that matter to our users in Africa before the next EUMETSAT User Forum in Africa.



**Closing Remarks by the representative of the African Union Commission, Dr. Khalil Mohamed Timamy, Director for Environment,**

Hon. Minister of Environment of Burkina Faso,  
Director of Meteorological Services,  
Heads of Meteorological Institutions in Africa,  
Distinguished Delegates,  
Ladies and Gentlemen,

We have come to the end of the EUMETSAT Forum after five days of serious work.

It is evident from the wide range of recommendations produced by the Forum that the participants applied themselves conscientiously to the tasks. The enthusiasm was palpable.  
Hon. Minister,

The challenge before us now is to prepare the ground for the implementations of resolutions arrived at during this Forum. This is no mean feat, since resources will be needed to facilitate the process of implementation.

One area that would need particular attention is limiting the proliferation of initiatives, especially involving the start-up of new networks, where new set-ups proceed without the involvement of key stakeholders in Africa.

We have called for more prudence in this area, where ownership and operational management would nest with African Institutions in collaboration with our technical partners overseas.  
Hon. Minister,

Our stay here in Burkina Faso was memorable. First, we have produced the milestone document, The Ouagadougou Declaration. But more importantly, we have been able to give our best because Burkina Faso has offered an optimal environment to work in. We thank our partner EUMETSAT for organizing a very successful Forum.

We therefore thank the Government, the people, and the leadership of Burkina Faso for the great reception accorded to us.

We will leave this wonderful city with fond memories, and because we were made to feel at home, we look forward to coming again to Ouagadougou in not too distant a future.

With these few words, I thank you once again from the deep recesses of my heart.

Thank you



**Closing speech by H.E. Mr. Salifou Sawadogo, Minister of Environment and Livelihood, Burkina Faso,**

His Excellency Ambassador, Head of the Delegation of the European Union to Burkina Faso,  
Hon. Secretary-General of the Ministry of Transport,  
Representative of the Director-General of EUMETSAT,  
Representatives of the Regional Economic Communities,  
Representatives of our technical and financial Partners,  
Hon. Director-General of the African Centre of Meteorological Application for Development;  
Technical Experts, Inspectors, General Directors and Heads of projects,  
Distinguished Guests in your respective functions, positions and ranks;  
Ladies and Gentlemen,

The 9th EUMETSAT User Forum in Africa, which opened in Ouagadougou on 27 September 2010, is now drawing to a close.

Decision-makers, specialists and experts on meteorology, agriculture and the environment have spent five days working on the key problem of the "impact of climate change on water management for cropland and rangeland".

I have no doubt that the intense work, interspersed with invaluable communications and fruitful exchanges on:

- the evolution of EUMETSAT programmes and the data distribution system;
- the role of satellite data in strengthening climate services; and
- the role of the African national meteorological services in the programme of Global Monitoring for Environment and Security in Africa,

formed the deciding factors that have made it possible to take stock of the key issues of the 9th EUMETSAT User Forum in Africa. It is therefore appropriate to show appreciation of, and pay tribute to the relevance and the aptness of the major recommendations that you have just shared with us.

As you know, the objective of the EUMETSAT Forums is to establish an ongoing dialogue with its users in Africa.

The conclusions of your various exchanges will certainly enable progress to be made in the initiatives promoting greater use of satellite data in managing the environment and monitoring the climate in Africa.

On behalf of His Excellency the Prime Minister, Head of Government, I would therefore like to thank the Director-General of EUMETSAT and the Organisation's technical, scientific and financial partners for their commitment to ensuring that these meetings take place at regular intervals and particularly for their substantial contribution to the success of the 9th Forum. What a good example it is of north-south cooperation.

Distinguished Guests,  
Ladies and Gentlemen,

Following the Ouagadougou Declaration in support of the GMES-Africa initiative (Global Monitoring for Environment and Security in Africa), signed on Sunday, 26 September 2010, the User Forum has presented innovative ideas and made significant contributions on thematic and technical aspects.

The Forum will thus have been an opportunity to further the GMES initiative through relevant proposals for institutional governance by suggesting

the establishment of appropriate coordination.

On the basis of your relevant recommendations, I would also like to encourage the strengthening of the good working relations and working synergy between EUMETSAT and its users in Africa in terms of making satellite data available, thus bringing about an indisputable improvement in meteorological predictions for the security of our people and their property.

To that end, I would like to invite the national meteorological and hydrological services to make wise and broad use of this flow of available information so as to cultivate a monitoring and early warning approach and to contribute appropriate responses to the harmful consequences of climate change which are taking a heavy toll on our people.

Through this wise use of those data and high-tech products, to achieve practical results, you will play a major role in the initiatives intended to respond to the socio-economic concerns caused by the weather, the climate and water – in a word, our entire environment.

The Government of Burkina Faso greatly appreciates the results of your work and the valuable recommendations that you have formulated and would like to assure you of its readiness to take the

necessary steps to ensure their implementation.

At this point, I give you my assurance that the final report of this 9th EUMETSAT User Forum in Africa will be examined thoroughly so that we can pool our efforts to turn satellite data and products into strategic decision-making tools for the development of Africa.

Distinguished Representative of the Director-General of EUMETSAT,  
Distinguished Guests,  
Ladies and Gentlemen,

On behalf of the Minister of Transport, I would like to express my sincere thanks to all those who have contributed to the success of this Forum.

I hope that each of you here finds that this success gives additional reasons for you to continue to seek excellence in the conduct of our meteorological polices in the service of development.

I would like to wish all participants, who have come from every corner of Africa and elsewhere, a safe journey home and thus declare the 9th EUMETSAT User Forum in Africa closed.

Thank you for your kind attention.





## SESSION REPORTS

All presentations and speeches delivered during the 9<sup>th</sup> EUMETSAT User Forum in Africa are included in the CD-ROM inserted in the present report. The following paragraphs provide a brief abstract of the presentations and report on the discussions.



### Introductory Session

Following the introductory remarks from Mr. Ali Jacques Garané, Director of the Burkina Faso Meteorological Agency, the description of the objectives of the Forum by Dr. Vincent Gabaglio and the presentation of the agenda by Mr. Emilio Barisano, Mr. Jérôme Lafeuille, from the WMO, introduced the WMO Space programme.



### Session 1 – Overview of EUMETSAT programmes

Chairperson: Mr. Ali Jacques Garané, Burkina Faso Meteorological Service  
Rapporteur: Mr. Hans-Peter Roesli, EUMETSAT

Session 1 was dedicated to the presentation of the status of the various EUMETSAT programmes as well as to an overview on the many services and activities linked to the

programmes and their data and products.

Mrs. Sally Wannop, EUMETSAT, presented an overview of all the EUMETSAT programmes. Concerning the satellites, the status of Meteosat Second Generation (Meteosat-8/9), the EUMETSAT Polar System (Metop-A) and the Ocean Surface Altimetry Mission (Jason-2) was presented. All satellites in orbit are in good health. The numerous instruments on board the satellites are delivering routine data. The data and products are available in real-time (EUMETCast) and through the archive. The products, be it from the Central Facility or the the 8 Satellite Application Facilities (SAF) make an important contribution to monitoring of weather, climate, land and ocean, not least over the African continent. Both in the geostationary and the polar orbits, EUMETSAT is working on follow-on programmes, the most advanced being MTG (Meteosat Third Generation). EUMETSAT is also becoming a major player in the GMES (Global Monitoring for Environment and Security) framework.

Mr. Henk Verschuur, EUMETSAT Senior Training Officer, then presented the EUMETSAT training activities. Taking into account the recommendations of WMO, the EUMETSAT training activities in Africa are building on the existing Regional Training Centres and the Centres of Excellence in satellite meteorology at EAMAC Niamey, IMTR Nairobi and SAWS Pretoria. The organisation of yearly ESAC courses continues as well as the development of training

material on African weather and climate phenomena (ASMET). Module 5 is now available and work on ASMET-6 has started. In the framework of VLab a Dust Event Week has been held involving various experts lecturing from their home countries. Two African countries (Burkina Faso and Niger) participated. In 2010 EUMETSAT has been funding two AMESD software application courses in Nairobi and Niamey. EUMETrain, a programme with substantial support by EUMETSAT, for several years already is running a website called Satrep Online that assists European forecasters in analysing the current weather situation. SAWS adopted this approach for the southern parts of Africa and has recently established a page on the Satrep Online site called 'Today's Images'. Finally, by transmitting some training material through the very successful EUMETCast service the frequent underperformance of internet links in Africa is partially mitigated.

Mrs. Sally Wannop, EUMETSAT, introduced the status of EUMETCast and EUMETSAT User Services ((Help Desk, EO portal). The real-time dissemination of observations and products through EUMETCast has and still is increasing and widening considerably. A recently established WMO Expert Team will be advising on the content of the African dissemination channels. EUMETSAT's Help Desk and the new EO portal on the EUMETSAT website are crucial services for the users world-wide to find their way in the wide range of available data and products.



## Session 2 – The PUMA 2010 Station

Chairperson: Mr. G. Goroza, Direction de la météorologie nationale, Ivory Coast

Rapporteur: Mr. Emilio Barisano, GEOSAT Technology (EUMETSAT consultant)

The theme of this session was "The new stations PUMA 2010" introduced by AMESD and progress.

This session consisted of 4 presentations from:

Dr. Vincent Gabaglio, International Relations EUMETSAT, made a brief introduction on the AMESD responsibility for carrying out maintenance of the PUMA stations, called PUMA 2010. He recalled that the Terms of Reference of this maintenance has been done by AMESD in close collaboration with EUMETSAT and the African users. The general philosophy is to take the original PUMA specification and incorporate comments and suggestions collected during the previous EUMETSAT User Forum. The new version of PUMA 2010 was conceived with the assistance of industry to ensure its sustainability and was evaluated by a panel of experts including several African experts from the NMHS.

Loïc Legallou, Technical Director of Meteo-France International (MFI), introduced the new application software for the new PUMA 2010 weather station. This software is ARCHIPEL-SYNERGY commonly known as SYNERGY, and covers the display and production of several functions. He said that the software has been in operation for many years and constantly changed according to user request. He stressed that the software is fully customisable according to requirement. Moreover he

highlighted that the version implemented was designed to match the data flow currently available through EUMETCast Africa.

Rémi Alquier, Director of Telespazio France, belongs to the company that was chosen for the maintenance of all PUMA stations (52) and deployments of the AMESD stations (57) as part of an AMESD supply contract. He presented the status of the deployment, indicating that to date approximately 30% of stations planned maintenance or deployment has been completed. He indicated that the aim of finalising this by March 2011 is maintained. He also acknowledged the positive contribution of NMHS to the installation of AMESD stations at the other AMESD partners in the countries, and the rapid acceptance of new operating system SYNERGY by NMHS.

Marc Leroy, Head of Development AMESD, described the training program provided by AMESD to accompany the new PUMA 2010 stations and AMESD stations. This program provides two types of training based on "training trainers" concept: a technical training, called "System Administration" on aspects of hardware and software common to both types of stations started in July 2010 for 2 participants per country, and a separate thematic training. The thematic training will be conducted in close cooperation with EUMETSAT training programme. Two persons per country from the NMHSS will take part. Training began in August 2010. The thematic training are also planned by AMESD for 2 people per country from thematic services (environment, agriculture, etc ...) and the E-station software produced by the Joint Research Centre in Ispra. These courses will be supported by the JRC and carried out at IMTR in Kenya in late October 2010.

All these presentations have been thoroughly discussed and led to the proposal of a series of recommendations reported in the final plenary session.



### **Session 3 – Satellite support to Global Framework for Climate Services**

Chairperson: Mr. Alioune N'Diaye, WMO

Rapporteur: Mrs. Sally Wannop, EUMETSAT

The third session was dedicated to the application of satellite data in support to global climate monitoring activities.

The session commenced with a presentation by Mr. Hans-Peter Rosseli, EUMETSAT Consultant, on the contribution from EUMETSAT through its qualified data sets to climate monitoring research.

The Forum took note of the current status of two African climate projects being undertaken by regional centres of excellence, CLIMDEV Africa was presented by UNECA representative, Mr. André Nonguierma and the ClimServ Africa, was presented by the Director General of ACMAD, Mr. Alhassane Diallo.

Specific examples of regional climate study applications were provided through presentations. Study on rainfall estimates in Ethiopia, was introduced by Miss Greatrex who presented the results of research work undertaken at the University of Reading. The application of satellite data for climate research in Guinea Conakry was also presented by Mr. Diallo from the NMHS. The

presentation session closed with information on the activities of the ACP Observatory, which were presented by Mr. Etienne Bartholomé of the Joint Research Centre of the European Commission.

The session discussion provided a fora for NMHSs to voice their commitment to the support for climate monitoring research and, in doing so, acknowledgment of the important contribution they can make to climate monitoring projects through the provision of their local in-situ observational data and satellite data and, through inter-agency cooperation.



### **Roundtable # 1 – Support for climate services**

This roundtable was chaired by Mr. Debalkew Berhe, head of the Environment Department of IGAD.

The participants were: Mr. Adama Diallo ACMAD, Mr. Alioune Ndiaye of WMO, Mr. Zida ECOWAS, Ms. Gina Good IOC, Mr. Ould Sidaty Dah NPS Mauritania, André Nonguierma of UNECA and Mr. Hans-Peter Roesli, Consultant EUMETSAT.

The Chairman of the Round Table began by taking stock of the situation regarding the state of need for climate services in Africa. This was followed by a tour de table of the seven experts. A discussion with participants from the floor also took place, with a number of contributions being made.

Climate change is widely recognised in Africa as aggravating the environmental situation, food security and increasing the occurrence of natural hazards.

Numerous actions and projects are undertaken in Africa to carry out reviews and diagnostics linked to climate change, in particular by using Earth Observation Satellites.

The Political Institutions in Africa, the African Union Commission, Regional Economic Communities (groupings), African Ministerial Conferences (ANCEN, ANCOMET, ANCOW), the International Technical Agencies (UNEP, UNECA, FAO), the African Technical Institutions (ACMAD, AGRHYMET, DMC, ICPAC, CSE, ...) have developed many analyses and proposed many strategies, which have allowed the definition of policies to combat and adjust to Climate Change.

During the Round Table the participants reflected on concrete and practical ways to offer "services" in climate change (Climate Services), based in part, on the techniques of Earth Observation that technical institutions can already offer, or that they should provide to actors in development and to the populations, taking into consideration the recent learning on that matter.

The discussions focused on the importance of the climate services and the role of the NMHS rather than on descriptions of the climate services themselves. In particular, the fundamental role of the NMHS in collecting basic data and analysing climate indicators in accordance with their mandate was emphasised.

On the basis of this discussion, the Round Table enabled a certain number of agreements to be reached that were then turned into recommendations. These recommendations basically addressed the role of the NMHS in the context of the climate services and their relations with other climate change players.



## **Session 4 – Water management for cropland and rangeland**

Chairperson: Mr. Samuel Medu, ECOWAS

Rapporteur: Mr. Henk Verschuur, EUMETSAT

After a brief introduction of the topic by the Chairman, the session started with a concrete example of a flood event, which took place in Burkina Faso on 1<sup>st</sup> September 2010. Mr. Garané from the Burkina Faso Meteorological Service described the event and its consequences.

This spectacular event was also included in the overall analysis made by Mr. Adamou Garba from EAMAC on recent heavy rain events in Western Africa. Mr. Garba indicated to the participants how satellite images could be used to better monitor and forecast heavy rain events in that region.

Supporting the previous presentation, the Director of EAMAC, Mr. Sadamba Tchagbé, presented the status of the training activities on satellite meteorology in his institution. He emphasised the need for continuously training forecasters in order to make sure that the latest knowledge on satellite meteorology can be applied in every African country.

Mr. Issifou Alfari from AGRHYMET, introduced the efforts made by his institution to provide information to farmers in order to ease water management for cropland and rangeland. The techniques used by the farmers in west Africa to adapt their behaviour due to climate change was then presented by Mr. Somé Leopold from INERA in Burkina-Faso.

The following presentation was made by Miss. Helen Greatrex from the University of Reading, United Kingdom on behalf of the research group. She presented how seasonal rainfall forecasts and satellite rainfall observation can be combined to forecast crop yields in Africa. The presentation emphasised in a scientific way the uses of satellite data to observe rainfall.

Mr. Ben Maathuis from the ITC in the Netherlands followed with a presentation on the technical possibility to couple GEONETCast with ESA DDS in order for the users to benefit from more Earth Observation data. A practical example of the uses of both systems was demonstrated with an application developed for Monitoring Food and Water Security in Africa.

Mr. Georges Gulemvuga from the CICOS presented the application of Earth Observation satellites, in particular using satellite altimetry techniques, to support the management of water in the Congo basin.

To conclude the session, Mr. Justin Ahanhanzo from UNESCO, presented the status of the activities of GOOS-Africa. He emphasised the benefit of some projects undertaken commonly between the meteorological and the oceanographic communities in Africa (e.g. EAMNET), catalysed by the recommendations of the last Forum. Based on this positive experience, he insisted on the need to create additional synergies between the two communities, notably through joint projects and training events.



## **Session 5 – GMES Africa Initiative and early projects**

Chairperson: Dr. Khalil Mohamed Timamy, African Union Commission  
Rapporteur: Dr. Vincent Gabaglio, EUMETSAT

As an introduction to the GMES Africa session, Dr. Debalkew Berhe from IGAD presented the perspective of the African RECs, ACP Secretariat and AUC/REA on the GMES Africa. In his presentation, he insisted on the need to secure a follow-on of the AMESD project, with a pre-GMES Africa project, minimising the time gap and as a transition towards the full GMES Africa.

His introduction was followed by the presentation of two of the three FP7 research projects, launched by the European Commission to support the GMES and Africa initiative.

Mr. Isi Ambrose Ikhuori from RECTAS, Nigeria, presented the GARNET-E project, which focuses on creating a framework for discussion aimed at understanding how to improve Emergency systems in Africa using Earth Observation data. After presenting the consortium in charge of implementing the project and its objectives, he described the first set of activities that will take place in the coming months and invited the meteorological community to take a proactive part in interacting with the project.

Mr. Jean-Guy Planès, Thalès Alenia Space introduced the second FP7 project: SAGA-EO. He explained that this project focuses on exploring ways to facilitate exchange and optimise the utilisation of earth observation data within national networks. He explained that the project was focusing on five countries in Africa.

Finally, Mr. Pedro Viterbo from the NMHS Portugal, presented the activities of the Land Surface Analysis SAF and in particular those relevant for Africa. He presented the new products that have been introduced recently and provided a perspective for the next five years.



### **Round Table # 2 – Rôle des Services météorologique en support à GMES Africa**

This roundtable was chaired by Mr.. Alioune Ndiaye Director for Africa at WMO

The participants were: Mr. Goroza GUEHI, NMHS Director Cote d'Ivoire, Mr. Mahmoud Yahya, Managing Director of AGRHYMET, Mr. Camille Loumouamou, Director of the NMHS of the Congo, Mr. Jacques Garané Director of the Burkina Faso NMHS and Mr. Etienne Bartholomé from the JRC.

The chairman of the meeting recalled the history of GMES Africa, emphasising the key stages represented by the PUMA and AMESD projects, to which the NMHS regularly contributed. Following a tour de table of the participants, the discussion was opened to the floor.

The African NMHS were the promoters of the PUMA Initiative in which they were associated with the Regional Economic Communities (RECs). The European Union funded PUMA to equip 43 NMHS and 5 African regional centres with EUMETCast receiving stations and specialised software for meteorological forecasting. In addition, training for around 300 technical staff was provided on use of this equipment and software. Furthermore, the PUMA Project carried out 6 Pilot Projects on

non-meteorological applications based on meteorological satellite data, in order to show the relevance of these applications for sustainable development. The PUMA Project has been recognized as an important success story of African capacity building.

A follow-up of the PUMA Project has been funded by the European Union on Environment and Agriculture: the so called AMESD (African Monitoring of Environment for Sustainable Development), under the leadership of the African Union Commission AUC), the Regional Economic Communities (RECs) and the ACP Secretariat. The NMHSs were associated with the project, but without a central role. The AMESD project has also permitted the full renewal of the hardware and software used by the PUMA stations of the NMHS. In addition, many NMHS have supported their AMESD partners with Environment and Agriculture applications in the installation of AMESD stations and the integration of the meteorological data in their thematic application.

In October 2006, the Maputo Declaration launched the GMES Africa initiative under the leadership of the AUC, RECs and ACP Secretariat, and the support of EUMETSAT, WMO, GEO and the EU.

On the eve of the political appropriation of GMES Africa, which will be presented at the EU-Africa Summit in November 2010, this round table was an opportunity to formulate ideas on the possible role of the NMHSs in the initiative.

The positioning of the NMHSs must be institutional, technical and thematic in relation to the mandates of the other actors of development involved in GMES Africa. The NMHSs can also, in a close association with AUC, RECS,

WMO and EUMETSAT, be involved in the discussions and formulation of concrete ideas on GMES Africa in the framework of their work at regional and continental level.

Attention was drawn to the importance for the NMHS of working closely with the other development players while respecting their prerogatives and mandates.

The recommendations made by the two Round Tables were merged into a single series of recommendations and presented in a plenary session.



## **Session 6 – Status of AMESD programme**

Chairperson: Mr Olushola Ojo, ACP Secretariat

Rapporteur: Mr. Etienne Bartholomé, Joint Research Centre, European Commission.

After a short introduction by the chairperson, Dr. Khalil Timamy Director for Environment at the African Union Commission, Department for Rural Economy and Agriculture gave an overview of the status of the AMESD programme. He indicated that the various problems which caused initial delays had been resolved and that all grants foreseen for project implementation at regional level had been signed. He mentioned the specific effort of the programme regarding training activities. He indicated that “visibility” workshops are being organised to popularise the programme among the policy makers, to consolidate the results already achieved by having AMCEN at its Bamako meeting officially recognising Earth Observation as a working instrument integrated in the decision

making process. Finally he indicated that the deployment of the PUMA 2010 and AMESD stations is progressing well and is due to be completed by February 2011.

Dr. Marc Leroy Technical Manager of the AMESD Technical Assistance Team further described the key properties of this programme financed under the European Development Fund mechanism by the ACP Secretariat and five Regional Economic Communities: ECOWAS, IGAD, CEMAC, SADC and IOC; its partnership, its pan-African dimension, its final aim of improving the decision making process and the management of environmental resources and risks. He also recalled the content and extent of the four main expected results: data access, regional information services, political outreach, capacity building. He indicated that about one thousand staff are expected to have been trained by the end of the programme. He announced that the second AMESD forum is planned to be held in Mauritius in July 2011.

Each technical expert of the five regions introduced the specific thematic area on which their regional implementation centre is focussing and explained the strategy and status quo of the activities.

Mr. Issifou Alfari from the AGRHYMET Regional Centre in Niamey illustrated the activities related to water management for cropland and rangeland management in the ECOWAS region.

Mr. Isaac Kusane from the Botswana Meteorological Service in Gaborone presented the work going on in the SADC region regarding the development of their activities in the field of Agricultural and Environmental Resource Management.

Mr. Mohammed Rezah Badal from the Mauritius Oceanography Institute introduced the services in development for the Indian Ocean Commission region in the field of coastal and marine environment management.

Mr. Georges Gulemvuga from CICOS, the Inter-State Commission for the Congo – Ubangi – Sangha basin based in Kinshasa, presented the proposed activities in the field of management of water resources in this region including the CEMAC countries as well as DRC.

Finally Mr. Zachary Atheru from ICPAC, the IGAD Climate Prediction and Applications Centre located in Nairobi described the ongoing activities regarding land degradation mitigation and natural habitat conservation.

Dr. Marc Leroy described in detail the overall strategy and implementation plan regarding training activities in the AMESD programme organised both at pan-African and at regional levels. He insisted on the wide range of types of training organised, from purely technical required for operation, maintenance and upgrade of the stations and services, up to managerial level, for instance related to the administrative implementation rules applicable to projects funded by the European Development Fund.

Mr. Jean-Guy. Planès from Thales-Alenia Space France in Toulouse, the company leading the consortium that provides technical assistance to the AMESD Programme, described the process that led to the installation of the AMESD and PUMA 2010 stations in the countries. He particularly highlighted the architectural design of the system that took into consideration the experience gained in the framework of the PUMA project, in

order to facilitate operation, maintenance and upgrade of the systems on a long-term basis.

Finally Mr. Marco Clerici from the Joint Research centre of the European Commission in Ispra described the eStation, the software solution that is provided with the AMESD stations. He paid particular attention to a number of key features: the management of the data acquired the fully automated post-processing capacity of such data according to user needs, the user interface for data viewing (EMMA), and "REPORTER" the collaborative bulletin editing tool. The system is entirely based on open source solutions and is provided free of charge to AMESD project partners by the Joint Research Centre of the European Commission through the company in charge of station installation. He also mentioned the capacity to despatch software updates to all stations at once through EUMETCast.

During the discussion, participants proposed a series of recommendations to be submitted to the approval of the participants during the final session.



## **Session 7 – Earth Observation projects in Africa**

Chairperson: Mr. Camille Loumouamou, NMHS Congo  
Rapporteur: Mr. Hans-Peter Roesli, EUMETSAT,

The chairman introduced the session mentioning that the various presentations will demonstrate the large scope of applications that can benefit from the use of Earth Observation satellites.

The first presentation was made by Mr. Etienne Bartholome from the European Commission Joint Research Centre. He presented the status of the NARMA activities in the framework of the geoland2 project, which is supporting the implementation of the GMES Land Core Service. He highlighted the various products developed by geoland2 that can be beneficial for Africa, and how the use of these products will be supported.

Mr. Garba Sambo Hassa from the University of Maiduguri in Nigeria provided a very interesting presentation on the use of EO Information Dissemination for Food Security in the Lake Chad Region. He particularly emphasised the importance of securing good dissemination of the information to the end-users in the region.

The theme of dissemination of the information to the end users was at the heart of the presentation on RANET delivered by Mr. Milton Waiswa from Zambia, on behalf of Mr. Kelly Sponsberg from NOAA. He provided the status of the RANET programme and emphasised the need to find alternative solutions in order to ensure that information can reach the farmers.

Mr. Tim Jacobs, from VITO presented the status of the DevCoCast project that will end in March 2011. He emphasised its early achievements and encouraged all participants to make use of the new products made available by the partners of the DevCoCast project and disseminated by EUMETCast. He also presented the various training activities that are taking place within the project to support the use of the products.

The SERVIR Africa was then presented by Mr. Lawrence Ochieng Okello from the RCMRD, Kenya. He explained that this project was supported by NASA and implemented

by the RCMRD in cooperation with the countries in the region. He emphasised the various applications targeted by the project and demonstrated some early prototypes.

Mr. Léon Guy Razafindrakoto from ACMAD presented the VGIRISK project, supported by the Fond Français de l'Environnement Mondial. After explaining the status of this project, he presented the various activities that will be implemented in the four regions by ACMAD, AGRHYMET, ICPAC, and Mauritius NMHS and the SADC.

Through video, Steve Palmer and his team presented the lightning detection products developed by the UK Met office. After describing the characteristics of this product and its potential applications, he explained the on-going plan to introduce these products in EUMETCast Africa in order to make them easily available to African users.

Mr. Tim Duffy from the British Geological Service concluded the session by presenting the status of the AEGOS project and notably the activities that aim to facilitate access to Earth Observation data for the Geological services in Africa, by making use of GEONETCast system. He emphasised the need to establish cooperation between the Geological service and the owners of EUMETCast and GEONETCast stations in Africa in order to facilitate access.



## **Annexes**

In the annex the following is provided:

- Forum programme
- List of participants
- Ouagadougou Declaration
- CD Rom



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## LIST OF ABBREVIATIONS

ACMAD	African Centre for Meteorological Application for Development
ACP	African, Caribbean and Pacific Group of States
AFIS	Advanced Fire Information System
AGRHYMET	Centre Régional de Formation et d'Application en Agrométéorologie et Hydrologie Opérationnelle
AICC	Accra International Conference Centre
AMCEN	African Ministerial Conference on the Environment
AMCOW	African Ministers' Council on Water
AMDAR	Aircraft Meteorological Data Relay
AMESD	African Monitoring of the Environment for Sustainable Development
AMMA	African Monsoon Multidisciplinary Analysis
ANBO	African Network of Basin Organisations
ARC	South Africa Agriculture Research Council
ASECNA	Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar.
ASMET	African Satellite Meteorology for Education and Training
ATOVs	Advanced TIROS Operational Vertical Sounder
AUC	African Union Commission
CBERS	China-Brazil Earth Resources Satellite
CGMS	Coordination Group for Meteorological Satellites
CICOS	Commission Internationale du bassin Congo-Oubangi-Sangha
CEMAC	Central African Economic and Monetary Community
CSIR	Council for Scientific and Industrial Research, South Africa
DCP	Data Collection Platform
EAMAC	Ecole Africaine de la Météorologie et de l'Aviation Civile
EC	European Commission
ECOWAS	Economic Community Of Western African States
EDF	European Development Fund
EO	Earth Observation
EPS	EUMETSAT Polar System
ESA	European Space Agency
EU	European Union
Eumetcal	Training programme for satellite Meteorology
EUMETCast	EUMETSAT's Broadcast System for Environmental Data
FAO	Food and Agriculture Organisation
GEO	Group on Earth Observation
GEOSS	Global Earth Observation System of Systems (GEOSS)
GMES	Global Monitoring of the Environment and Security
GMet	Ghana Meteorological Agency
GOOS	Global Ocean Observing System
HRPT	High Rate Picture Transmission (Metop)
ICPAC	IGAD Climate Prediction and Applications Centre
IGAD	Intergovernmental Authority on Development
IM	Instituto de Meteorologia , Portugal
IMTR	Institute for Meteorological Training and Research

IOC	Indian Ocean Commission
IOC	Intergovernmental Oceanographic Commission
IODC	Indian Ocean Data Coverage
IPCC	Intergovernmental Panel on Climate Change
ITC	International Institute for Geo-Information Science and Earth Observation, Netherlands
JRC	Joint Research Centre, European Commission
LSA SAF	Land Surface Analysis SAF
MDD	Meteosat Data Distribution
MDG	Millennium Development Goals
MOI	Mauritius Oceanographic Institute
MSG	Meteosat Second Generation
MTG	Meteosat Third Generation
NCAR	National Center for Atmospheric Research (USA)
NDVI	Normalized difference vegetation index
NMHS	National Meteorological and Hydrological Service
NOAA	National Oceanic and Atmospheric Administration
NWP SAF	Numerical Weather Prediction SAF
OGDR	Operational Geophysical Data Record (Jason)
OSI SAF	Ocean and Sea Ice SAF
PCT	Project Coordination Team (AMESD)
PUMA	Preparation for the Utilisation of Meteosat Second Generation in Africa
RA-I	Regional Association One (WMO)
RCMRD	Regional Centre for Mapping of Resources for Development
RECs	Regional Economic Communities
RIC	Regional Implementation Centre
SADC	Southern African Development Community
SAF	Satellite Application Facility
SAWS	South African Weather Service
SUMO	Software for the Utilisation of MSG in Outlook Activities
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UPS	Uninterrupted Power Supply
VITO	Vlaamse Instelling voor Technologisch Onderzoek, Belgium
VL	Virtual Laboratory (WMO)
WAM	West African Monsoon
WMO	World Meteorological Organization



## **ANNEX/ANNEXE**





## FORUM PROGRAMME (English)

### Monday 27 September 2010 (am)

#### 09:00 Opening Ceremony

##### **Statements**

- Ali Jacques Garané, Permanent Representative of Burkina Faso to WMO
- Lars Prahm, EUMETSAT Director-General
- Michel Jarraud, Secretary-General of WMO
- K. M. Timamy, Director for Environment, African Union Commission
- Amos Tincani, Ambassador of the European Union to Burkina Faso
- Ousseini Saïfou, ECOWAS Commissioner for Agriculture, Environment and Water Resources
- Abdoulaye Combarry, Delegated Minister in charge of Agriculture

10:30 Coffee Break

#### 11h00 Introductory Session

11:00 Introductory remarks

*Ali Jacques Garané, Burkina Faso Meteorological Service*

11:15 Objectives of the 9<sup>th</sup> EUMETSAT User Forum in Africa  
*Vincent Gabaglio, EUMETSAT*

11:30 Review of Recommendations of the 8<sup>th</sup> EUMETSAT User Forum in Africa  
*Vincent Gabaglio, EUMETSAT*

12:00 Programme of the 9<sup>th</sup> EUMETSAT User Forum in Africa  
*Emilio Barisano, EUMETSAT*

12:10 Status of WMO Space programme  
*Jérôme Lafeuille, OMM*

### Monday 27 September 2010 (pm)

#### Session 1 Overview of EUMETSAT programmes

Chairperson: Ali Jacques Garané, Burkina Faso Meteorological Service  
Rapporteur: Hans-Peter Roesli, EUMETSAT

14:00 Status of EUMETSAT satellite programmes  
MSG, EPS, Jason, GMES, SAF's and future programmes  
*Sally Wannop, EUMETSAT*

14:40 Overview of EUMETSAT Training activities for Africa  
*Henk Verschuur, EUMETSAT*

15:00 EUMETCast and EUMETSAT User Service (Help Desk, EO portal)  
*Sally Wannop, EUMETSAT*

15:20 Q&A, discussion

#### Session 2 The PUMA 2010 Station

Chairperson: Guehi Goroza, Director NMHS, Ivory Coast  
Rapporteur: Emilio Barisano, GEOSAT Technology (EUMETSAT)

16:00 Introduction to the PUMA 2010 Station  
*Vincent Gabaglio, EUMETSAT*

16:10 The PUMA 2010 station and its application software  
*L. oic Legallou, Météofrance International*

16:50 Deployment status of the PUMA 2010 Stations  
*Rémi Alquier, Telespazio*

17:20 Training activities for the PUMA 2010 stations  
*Marc Leroy, AMESD TA*

17:40 Q&A, discussion



## FORUM PROGRAMME (English)

### Tuesday 28 September 2010 (am)

08:30 *Presentation of the draft recommendations - Session 1 and 2*  
*Hans-Peter Roesli, E. Barisano (Session 1 and 2 rapporteurs)*

#### **Session 3: Satellite support to Global Framework for Climate Services**

Chairperson: Alioune N'Diaye, WMO  
 Rapporteur: Sally Wannop, EUMETSAT

08:35 Session presentation

08:40 EUMETSAT and Climate Monitoring activities  
*Hans-Peter Roesli, EUMETSAT*

09:10 CLIMDEV Africa and the role of satellite observation  
*André Nonguierma, UNECA*

09:40 ClimServ Africa  
*Alhassane Diallo, ACMAD*

10:30 Temporally homogenous monitoring of African rainfall climate using  
 Meteosat – a 29 year time series  
*Helen Greatrex, University of Reading*

10:50 Satellite Data in support to climate service, the case of Guinea  
 Conakry  
*Boubacar Madina Diallo, NMS Guinee Conakry*

11:10 ACP Observatory, benefit for Africa  
*Etienne Bartholomé, EC-JRC*

11 :10 **Round table** on Climate Services in Africa for a sustainable  
 development

12:30 **Lunch**

### Tuesday 28 September 2010 (pm)

14h00 *Presentation of the draft recommendations of Session 3*  
*Sally Wannop, EUMETSAT (rapporteur Session 3)*

#### **Session 4 Water management for cropland and rangeland**

Chairperson: Samuel Medu, ECOWAS  
 Rapporteur: H. Verschuur, EUMETSAT

14:05 Session presentation

14:10 1<sup>st</sup> September 2009 event in Ouagadougou  
*Ali-Jacques Garane, Burkina Faso Meteorological Service*

14:15 Water monitoring for cropland and rangeland management  
*Issifou Alfari, AGRHYMET*

14:30 Cultural techniques for water management in a climate change  
 context *Somé Leopold, INERA, Burkina-Faso*

14:50 Application of seasonal rainfall forecasts and satellite rainfall  
 observation to crop yields forecasting for Africa  
*Helen Greatrex, University of Reading, UK*

15:10 Coupling GEONETCast and ESA DDS for Food and Water Security  
 Monitoring in Africa, *Ben Maathuis, ITC, The Netherlands*

15:50 Management of water in the Congo basin, *Georges Gulemvuga,*  
*CICOS*

16:10 Analysis of recent heavy rain events in Western Africa  
*Adamou Garba, EAMAC*

16:30 Presentation of GOOS-Africa, *Justin Ahanhanzo, UNESCO*

16:50 Status of training activities at EAMAC, *Sadamba Tchagbé, EAMAC*  
 17:30 Conclusions & recommendations – Session 4



## FORUM PROGRAMME (English)

### Wednesday 29 September 2010 (am)

- 08:30 *Presentation of the draft recommendations - Session 4*  
*Henk Verschuur (Session 4 rapporteurs)*
- 08:35 *Presentation of the outcome of the Expert Group on Data Dissemination on EUMETCast*  
*Sally Wannop, EUMETSAT*

#### **Session 5 GMES Africa Initiative and early projects**

Chairperson: Dr. Mohamed Timamy, African Union Commission  
 Rapporteur: Vincent Gabaglio, EUMETSAT

- 08:45 GMES Africa: the perspective from the African RECs, ACP Secretariat and AUC/REA, *Debaikew Berthe, IGAD*
- 09:00 Introduction to FP7 project in support to GMES Africa  
*Vincent Gabaglio, EUMETSAT (on behalf of R Meneses, DG ENTR)*
- 09:10 Activities of the Land Surface Analysis SAF for Africa  
*Pedro Viterbo, NMS Portugal*
- 09:10 EAMNET project – Europe-Africa Marine Network (NOT PRESENTED), *George Wiafe, University of Ghana*
- 09:35 GARNET-E, *Isi Ambrose Ikhuria, RECTAS, Nigeria*
- 10:00 SAGA-EO, *Jean-Guy Planès, Thalès Alenia Space*
- 10:45 **Round table** on the role of the Meteorological Community in support to GMES Africa  
*Participant will be announced*

### **11h00 – 18h00 Technical Visit to Ziniaré area**

### Thursday 30 September 2010 (am)

- 08:30 *Presentation of the recommendations - Session 5,*  
*Emilio Barisano (Session 5 rapporteurs)*
- Session 6 Status of AMESD programme**  
 Chairperson: Olusola Ojo, ACP Secretariat  
 Rapporteur: Etienne Bartholomé, Joint Research Centre, EC
- 08:35 General Status of AMESD project  
*Mohamed Timamy, African Union Commission*
- 08:55 Introduction to the AMESD Thema presentations  
*Marc Leroy, AMESD TA*
- 09:10 AMESD THEMA in the ECOWAS Region  
*Issifou Alfari, AGRHYMET*
- 09:25 THEMA in the SADC region, *Isaac Kusane, BDMS*
- 09:40 THEMA in the IOC region, *Rezah Badal, MOI*
- 09:55 THEMA in the CEMAC region, *Georges Gulemvuga, CICOS*
- 10:10 THEMA in the IGAD region, *Zachary Atheru, ICPAC*
- 10:45 AMESD Training Activities, *Marc Leroy, AMESD TA*
- 11:10 AMESD related data available in EUMETCast  
*Jean-Guy Planès, AMESD TA*
- 11:30 AMESD Station and its application software (e-station)  
*Marco Clerici, JRC*
- 11:55 Open discussion on the AMESD Programme



## FORUM PROGRAMME (English)

### Thursday 30 September 2010 (pm)

14:00 *Presentation of the recommendations - Session 6*  
*Etienne Bartholomé (Session 6 rapporteurs)*

#### **Session 7 Earth Observation projects in Africa**

Chairperson: Camille Loumouamou, Congo Brazzaville  
Rapporteur: Hans-Peter Roesli, EUMETSAT

14:05 Session presentation

14:10- Presentation of NARMA activities in GEOLAND (GMES Land Service), *Etienne Bartholomé, JRC*

14:30 EO Information Dissemination for Food Security in the Lake Chad Region, *Garba Sambo Hassa, University of Maiduguri; Bello Umar Musa, Kano University S&T, Nigeria*

14:50 Status of the DEVCOCAST project, *Tim Jacobs, VITO*

15:10- SERVIR AFRICA, *Lawrence Ochieng Okello, RCMRD, Kenya*

15:50 VIGIRISK , *Léon Guy Razafindrakoto, ACMAD*

16:10 Lighting detection products, *Steve Palmer, UK Met Office*

16:30 Status of RANET, Mr Waswa NMS Zambia and *Kelly Spoonsberg, UCAR, US*

16:50 Status of AEGOS, *Tim Duffy, BGS*

17:10 Conclusions & Recommendations of Session 7

### Friday 1 October 2010

08:30 *Presentation of the draft recommendations for session 7*  
*Hans-Peter Roesli, EUMETSAT*

#### **Session 8 Forum recommendations**

Chairperson: Vincent Gabaglio, EUMETSAT  
Rapporteur: Emilio Barisano, EUMETSAT

08:35 Survey of the 9<sup>th</sup> EUMETSAT User Forum in Africa

09:30 Review of the 9<sup>th</sup> EUMETSAT User Forum recommendations

11:20 Adoption of the 9<sup>th</sup> User Forum recommendations

**11:30 Closing ceremony**



## PROGRAMME DU FORUM (Français)

### Lundi 27 Septembre 2010 (matin)

#### 109:00 Cérémonie d'ouverture

##### **Allocutions**

- Ali Jacques Garané, Représentant Permanent du Burkina Faso auprès de l'OMM
- Lars Prahm, EUMETSAT Directeur Général
- Michel Jarraud, Secrétaire Général de l'OMM
- K. M. Timamy, Directeur Environnement, Commission de l'Union Africaine
- Amos Tincani, Ambassador of the European Union to Burkina Faso
- Ousseini Saïfou Commissaire en charge du département Agriculture, Environnement et Ressources en eau de la CEDEAO,
- Abdoulaye Combarby Ministre délégué en charge de l'Agric-culture,

#### 11:00 – 12:30 Introduction au 9ème Forum des Usagers d'EUMETSAT en Afrique

- 11:00 Remarques introductives  
*Ali Jacques Garane, DGACM, Burkina Faso*
- 11:15 Objectifs du 9ème Forum des Usagers d'EUMETSAT en Afrique  
*Vincent Gabaglio, EUMETSAT*
- 11:30 Revue des Recommandations du 8<sup>ème</sup> Forum des Usagers d'EUMETSAT en Afrique  
*Vincent Gabaglio, EUMETSAT*
- 12:00 Programme du 9<sup>ème</sup> Forum des Usagers d'EUMETSAT en Afrique  
*Emilio Barisano, EUMETSAT*
- 12:10 Présentation du Programme spatial de l'OMM  
*Jérôme Lafeuille, OMM*

### Lundi 27 Septembre 2010 (après-midi)

#### Session 1 Vue d'ensemble des programmes EUMETSAT

Président: Ali Jacques Garané, Service Météorologique Burkina Faso  
Rapporteur: Hans-Peter Roesli, EUMETSAT

- 14:00 État des programmes satellites d'EUMETSAT  
MSG, EPS, Jason, GMES, SAFs et futurs programmes  
*Sally Wannop, EUMETSAT*
- 14:40 Vue d'ensemble des activités de formation d'EUMETSAT en Afrique  
*Henk Verschuur, EUMETSAT*
- 15:00 EUMETCast et Service des usagers d'EUMETSAT (Service d'aide en ligne, Portail OT) , *Sally Wannop, EUMETSAT*

#### 15:20 Questions&réponses

#### Session 2 Les stations PUMA 2010

Président: Guehi Goroza, Directeur Directeur SNMH, Côte d'Ivoire  
Rapporteur: Emilio Barisano, GEOSAT Technology (EUMETSAT consultant)

- 16:00 Introduction à la station PUMA 2010  
*Vincent Gabaglio, EUMETSAT*
- 16:10 La station PUMA 2010 et son logiciel d'application  
*Loïc Legallou, MeteoFrance International*
- 16:50 État du déploiement des stations PUMA 2010  
*Rémi Alquier, Telespazio*
- 17:20 Activités de formation pour la station PUMA 2010  
*Marc Leroy, AMESD TA*



## PROGRAMME DU FORUM (Français)

### Mardi 28 Septembre 2010 (matin)

08:30 *Présentation des recommandations - Session 1 and 2*  
*Hans-Peter Roesli, Emilio Barisano (Rapporteurs sessions 1 et 2)*

#### **Session 3 Contribution des satellites au Cadre mondial pour les services climatiques**

Président: Alioune N'Diaye, OMM  
 Rapporteur: Sally Wannop, EUMETSAT

08:35 Présentation de la session

08:40 EUMETSAT et les activités de surveillance du climat  
*Hans-Peter Roesli, EUMETSAT*

09:10 CLIMDEV Afrique et le rôle des observations satellitaires  
*André Nonguierma, UNECA*

09:40 ClimServ Africa  
*Alhassane Diallo, ACMAD*

10:30 Surveillance temporelle homogène des pluies africaines utilisant  
 Meteosat – une série sur 29 ans  
*Helen Greatrex, Université de Reading, R-U*

10:50 Données satellitaires pour les services climatologiques, le cas de la  
 Guinée Conakry  
*Boubacar Madina Diallo, Service Météorologique de Guinée Conakry*

11:50 Observatoire ACP, bénéfices pour l'Afrique  
*Etienne Bartholomé, EC-JRC*

11 :30 **Table ronde** sur les services climatiques en Afrique pour un  
 développement durable

### Mardi 28 Septembre 2010 (après-midi)

14h00 *Présentation des recommandations de la session 3*  
*Sally Wannop, EUMETSAT (rapporteur de la session 3)*

#### **Session 4 Gestion de l'eau pour l'agriculture et le pastoralisme**

Président: Samuel Medu, CEDEAO  
 Rapporteur: Henk Verschuur, EUMETSAT  
 14:05 Présentation de la session

14:10 Événement du 1<sup>st</sup> Septembre 2009 à Ouagadougou  
*Ali Jacques Garane, DGACM, Burkina Faso*

14:15 Surveillance de l'eau pour la gestion de l'agriculture et du  
 pastoralisme , *Issifou Alfari, AGRHYMET*

14:30 Technique cultural pour la gestion de l'eau dans un contexte de  
 changement climatique, *Somé Leopold, INERA, Burkina-Faso*

14:50 Application des prévisions saisonnières et des observations  
 satellitaires des pluies pour la prédiction des rendements agricole en  
 Afrique, *Helen Greatrex, Université de Reading, R-U*

15:10 GEOENTCast et ESA DDS pour le suivi de la sécurité alimentaire et  
 de l'eau en Afrique, *Ben Maathuis, ITC, Pays-Bas*

15:50 Gestion de l'eau sur le bassin du Congo,  
*Georges Gulemvuga, CICOS*

16:10 Analyse d'événements pluvieux intenses sur l'Afrique de l'Ouest  
*Adamou Garba, EAMAC*

16:30 Présentation de GOOS-Afrique, *Justin Ahanhanzo, UNESCO*

16:50 État des activités de formation à l'EAMAC,  
*Sadamba Tchagbé, EAMAC*

17:10 Conclusions & recommandations – Session 4



## PROGRAMME DU FORUM (Français)

### Mercredi 29 Septembre 2010 (matin)

- 08:30 *Présentation des recommandations - Session 4*  
*Henk Verschuur (Rapporteur de la session 4)*
- 08:35 *Présentation des résultats du Groupe d'Expert Diffusion des données sur EUMETCast, Sally Wannop, EUMETSAT*
- Session 5 Initiative GMES Afrique et pré-projet**  
Président: Dr. Mohamed Timamy, Commission de l'Union Africaine  
Rapporteur: Vincent Gabaglio, EUMETSAT
- 08:45 GMES Afrique: La perspective des GER Africains, du Secrétariat ACP et de la CUAVERA, *Debaikew Berhe, IGAD*
- 09:00 Introduction aux projets FP7 en support à GMES Afrique  
*Vincent Gabaglio, EUMETSAT (pour Rui Meneses. EC DG ENTR)*
- 09:10 Activités de SAF Analyse de la surface terrestres pour l'Afrique  
*Pedro Viterbo, SNM Portugal*
- 09:10 Projet EAMNET – Réseau Marin Europe-Afrique (NON PRÉSENTÉ)  
*George Wiafe, University of Ghana*
- 09:35 GARNET-E, *Isi Ambrose Ikhuoria, RECTAS, Nigeria*
- 10:00 SAGA-EO, *Jean-Guy Planès, Thalès Alenia Space*
- 10:45 **Table ronde** sur le rôle de la communauté météorologique en support à GMES Afrique
- 11h00 – 18h00 Visite technique dans la région de Ziniaré**

### Jeudi 30 Septembre 2010 (matin)

- 08:30 *Présentation des recommandations - Session 5*  
*Emilio Barisano (Rapporteur de la session 5)*
- Session 6 État du programme AMESD**  
Président: Olusola Ojo, Secrétariat ACP  
Rapporteur: Etienne Bartholomé, Centre Commun de Recherche
- 08:35 État global du projet AMESD  
*Mohamed Timamy, Commission de l'Union Africaine*
- 08:55 Introduction aux présentations des THEMAs AMESD  
*Marc Leroy, AMESD Assistance technique*
- 09:10 AMESD THEMA in the ECOWAS Region, *Issifou Alfari, AGRHYMET*
- 09:25 THEMA in the SADC region, *Isaac Kusane, BDMS*
- 09:40 THEMA in the IOC region, *Rezah Badal, MOI*
- 09:55 THEMA in the CEMAC region, *Georges Gulemvuga, CICOS*
- 10:10 THEMA in the IGAD region, *Zachary Atheru, ICPAC*
- 10:45 Activités de formation AMESD, *Marc Leroy, AMESD AT*
- 11:10 Données liées à AMESD dans EUMETCast,  
*Jean-Guy Planès, AMESD AT*
- 11:30 La station AMESD et son logiciel d'application (e-station)  
*Marco Clerici, JRC*
- 11:55 Discussion sur le programme AMESD



## PROGRAMME DU FORUM (Français)

### Jeudi 30 Septembre 2010 (après-midi)

14:00 *Présentation des recommandations - Session 6*  
*Etienne Bartholomé (Rapporteur de la Session 6)*

**Session 7 Projets d'Observation de la Terre en Afrique**  
Président: Camille Loumouamou, NIMS Congo Brazzaville  
Rapporteur: Hans-Peter Roesli, EUMETSAT

14:05 Présentation de la session

14:10- Présentation des activités NARMA de GEOLAND (Service terres émergées GMES), *Etienne Bartholomé, JRC*

14:30 Diffusion d'information OT pour la sécurité alimentaire dans la région du Lac Tchad  
*Garba Sambo Hassa, Université de Maiduguri; Bello Umar Musa, Université S&T de Kano, Nigeria*

14:50 État du projet DEVCOCAST, *Tim Jacobs, VITO*

15:50- SERVIR AFRICA, *Lawrence Ochieng Okello, RCMRD, Kenya*

15:50 VIGIRISK ,  
*Léon Guy Razafindrakoto, ACMAD*

16:10 Détection de la foudre  
*Steve Palmer, UK Met Office*

16:30 État de RANET  
*Kelly Sponberg, UCAR, États-Unis*

16:50 État de AEGOS  
*Tim Duffy, BGS*

17:10 Conclusions & Recommandations de la Session 7

### Vendredi 1<sup>er</sup> Octobre 2010

08:30 *Présentation des recommandations de la session 7*  
*Hans Peter Roesli, EUMETSAT*

**Session 8 Recommandation du Forum**  
Président: Vincent Gabaglio, EUMETSAT  
Rapporteur: Emilio Barisano, EUMETSAT

08:35 Formulaire d'enquête du 9<sup>th</sup> Forum des Usagers d'EUMETSAT en Afrique

09:30 Revue des recommandations du 9<sup>ème</sup> Forum des Usagers d'EUMETSAT en Afrique

11:20 Adoption des recommandations du 9<sup>ème</sup> Forum des Usagers d'EUMETSAT en Afrique

**11:30 Cérémonie de Clôture**

12:30 **Repas**



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