Meteosat Third Generation

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WMO & AMCOMET Secretariat

15th EUMETSAT User Forum in Africa
HIGHLIGHTS – 29 September 2022

Overview

Meteosat Third Generation (MTG)

Benefit and challenges of the Meteosat Third Generation for Africa

MTG events at the 15th UFA

Policy, technical and cultural perspective

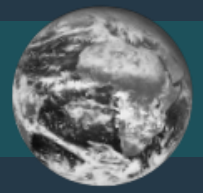
Summary of the MTG session

Main elements and recommendations

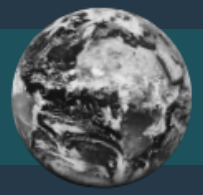
40+ years of Meteosat

www.eumetsat.int

METEOSAT FIRST GENERATION



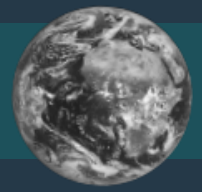
23 November
1977
Meteosat-1



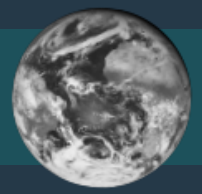
19 June
1981
Meteosat-2

15 June
1988
Meteosat-3

6 March
1989
Meteosat-4

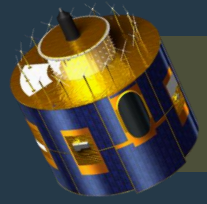


2 March
1991
Meteosat-5

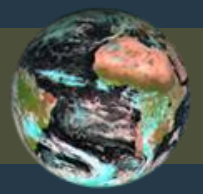


19 November
1993
Meteosat-6

2 September
1997
Meteosat-7



METEOSAT SECOND GENERATION

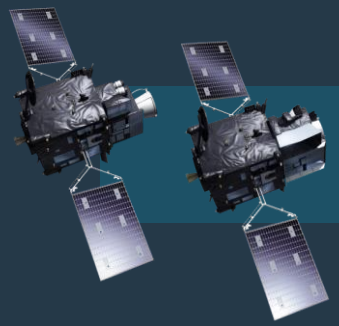


28 August
2002
Meteosat-8

21 December
2005
Meteosat-9

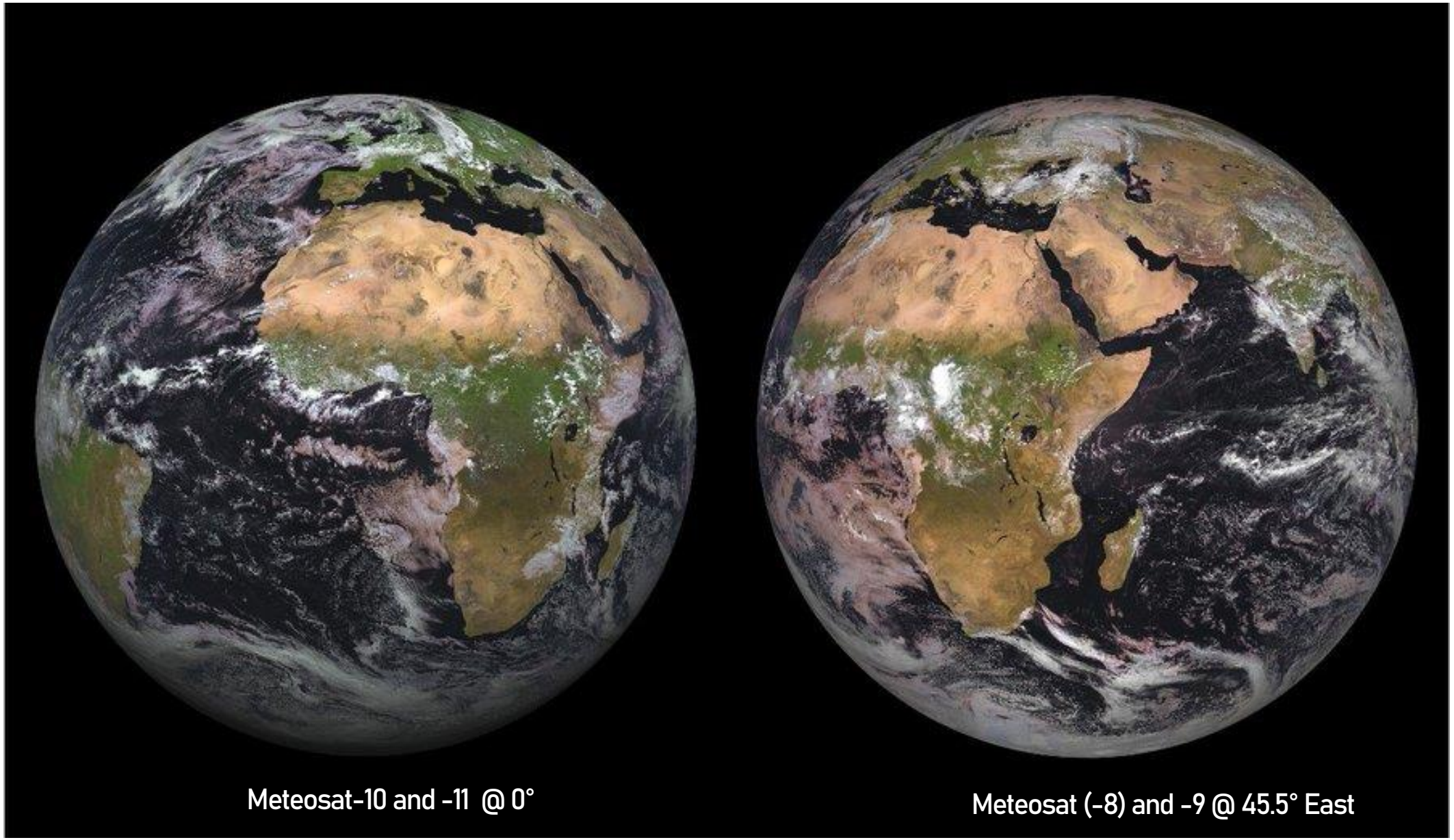
5 July
2012
Meteosat-10

15 July
2015
Meteosat-11



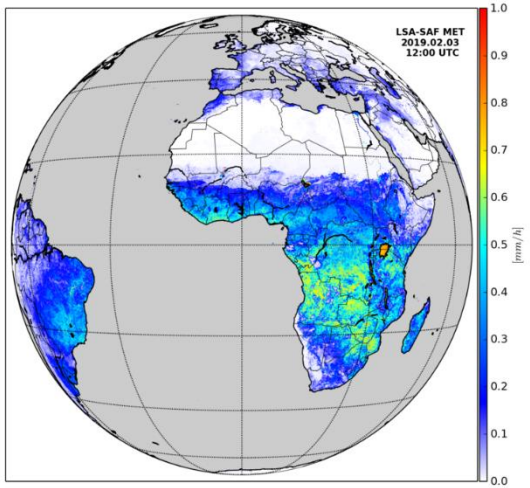
METEOSAT THIRD GENERATION

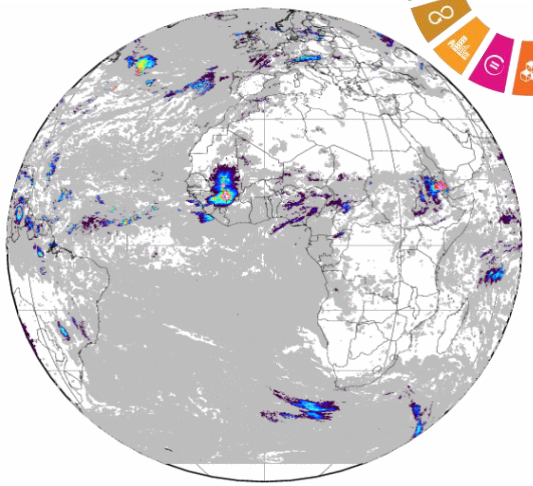
Meteosat : a unique observing system for Africa



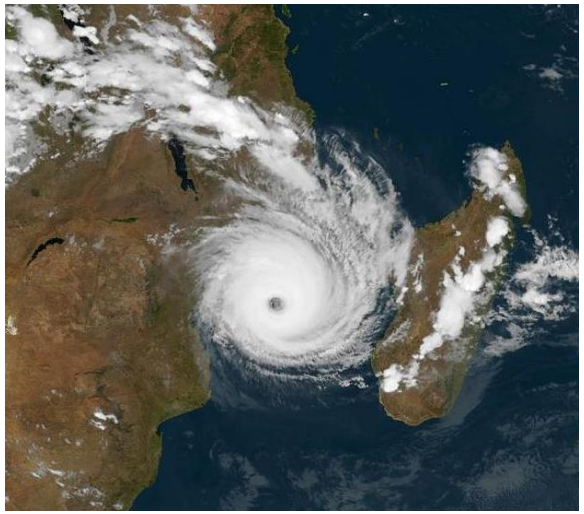
Meteosat applications in Africa & support global agreements

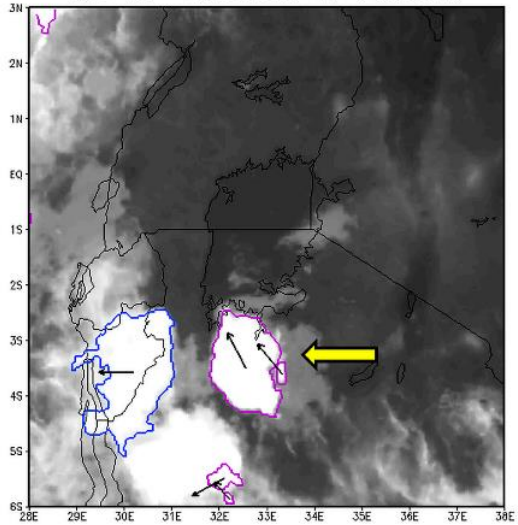
Rainfall estimate, Evapotranspiration -> Food security, Water management



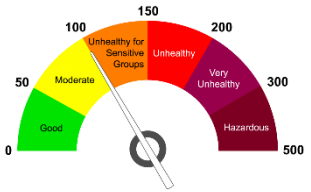


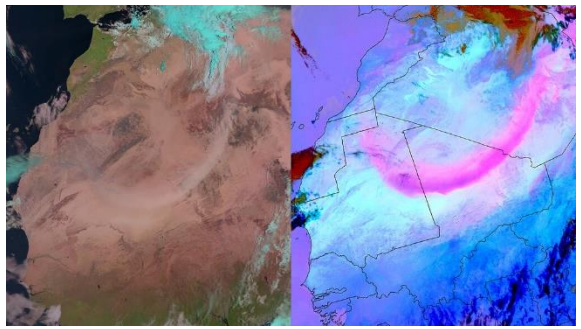
Convective event & Cyclone -> Disaster risk reduction

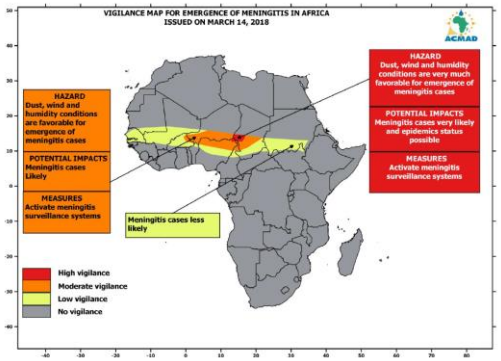




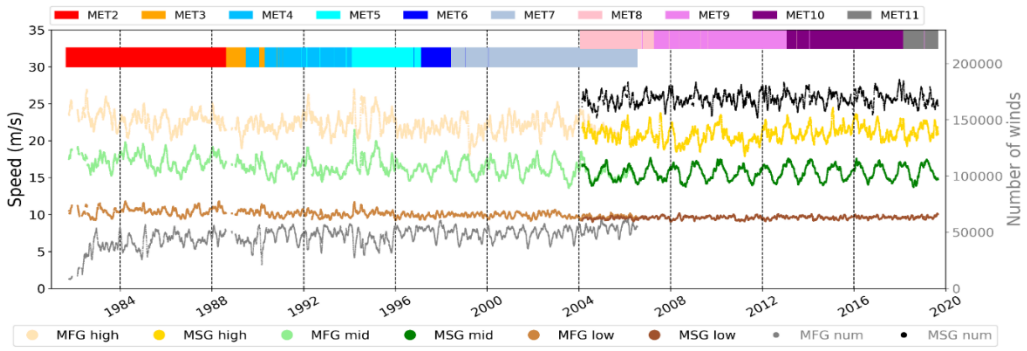
Dust and atmosphere monitoring -> Health warning





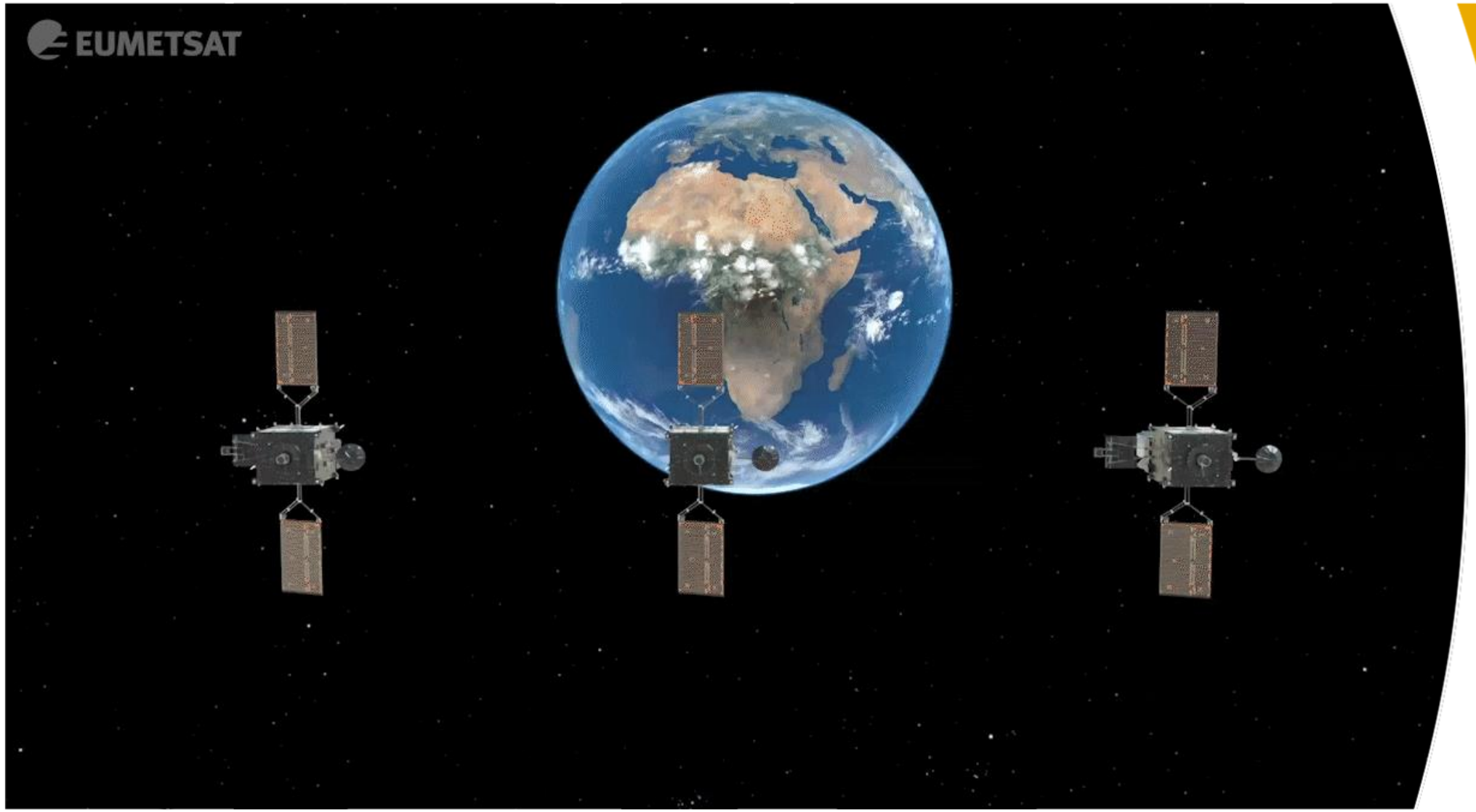


40 years of satellite observations -> Climate Monitoring



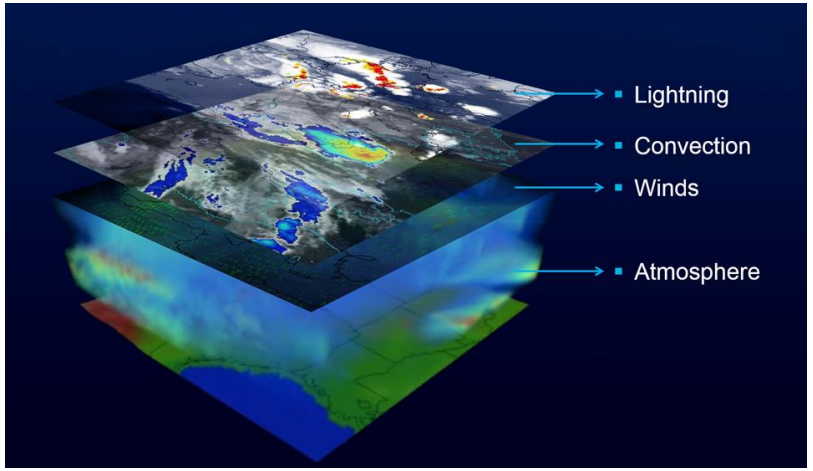
PARIS2015
UN CLIMATE CHANGE CONFERENCE
COP21·CMP11

New for next 20 years: Meteosat Third Generation

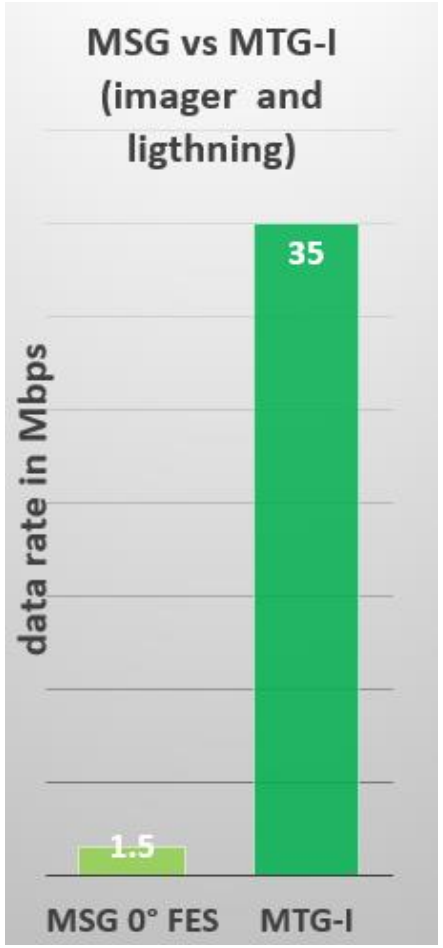


Three-satellite configuration

Benefits and challenges



- Continuity with MSG
- Numerous additional capabilities:
  - Lightening imager (transport safety, etc)
  - Improved time and spatial resolution (fire, severe weather, etc)
- Discussion since 2016 with WMO RAIDEG on priorities
- Need for increased capacity in Africa (human and infrastructure)



Overview

What is MTG

Benefit and challenges of the Meteosat Third Generation for Africa

MTG events at the 15th UFA

Policy, technical and cultural perspective

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MTG events at the 15th EUMETSAT User Forum in Africa

- Policy event on 12 September 2022
  Dar es Salaam High Level Statement

- Cultural event on 12 September 2022

Memory of today, Memory of the Future

by
- Michel Ekeba (Congo RDC)
- Géraldine Tobé (Congo RDC)
- Jean David Nkot (Cameroun)

- Plenary session on MTG on 13 September 2022

Dar es Salaam – High Level Statement

- Recall the Abidjan Declaration on the new generation of satellites products for weather and climate services in Africa
  - Smooth transition to new MTG satellites
  - Establish an AMSAF (African Meteorological Satellite Application Facility)

- Note
  - Integrated African strategy on Meteorology (weather, climate and water services)
  - Maputo Ministerial Declaration "Bridging Gap between Early Warning and Early Action"

- Ask
  - Free of charge data access for Africa users
  - Resources mobilisation for a MTG-AMSAF programme in Africa
  - Part of the Europe – Africa regional actions on Space, Earth observation in support to Green Transition and Digitalisation

- Signed by AMCOMET, AUC and Tanzania (as host)

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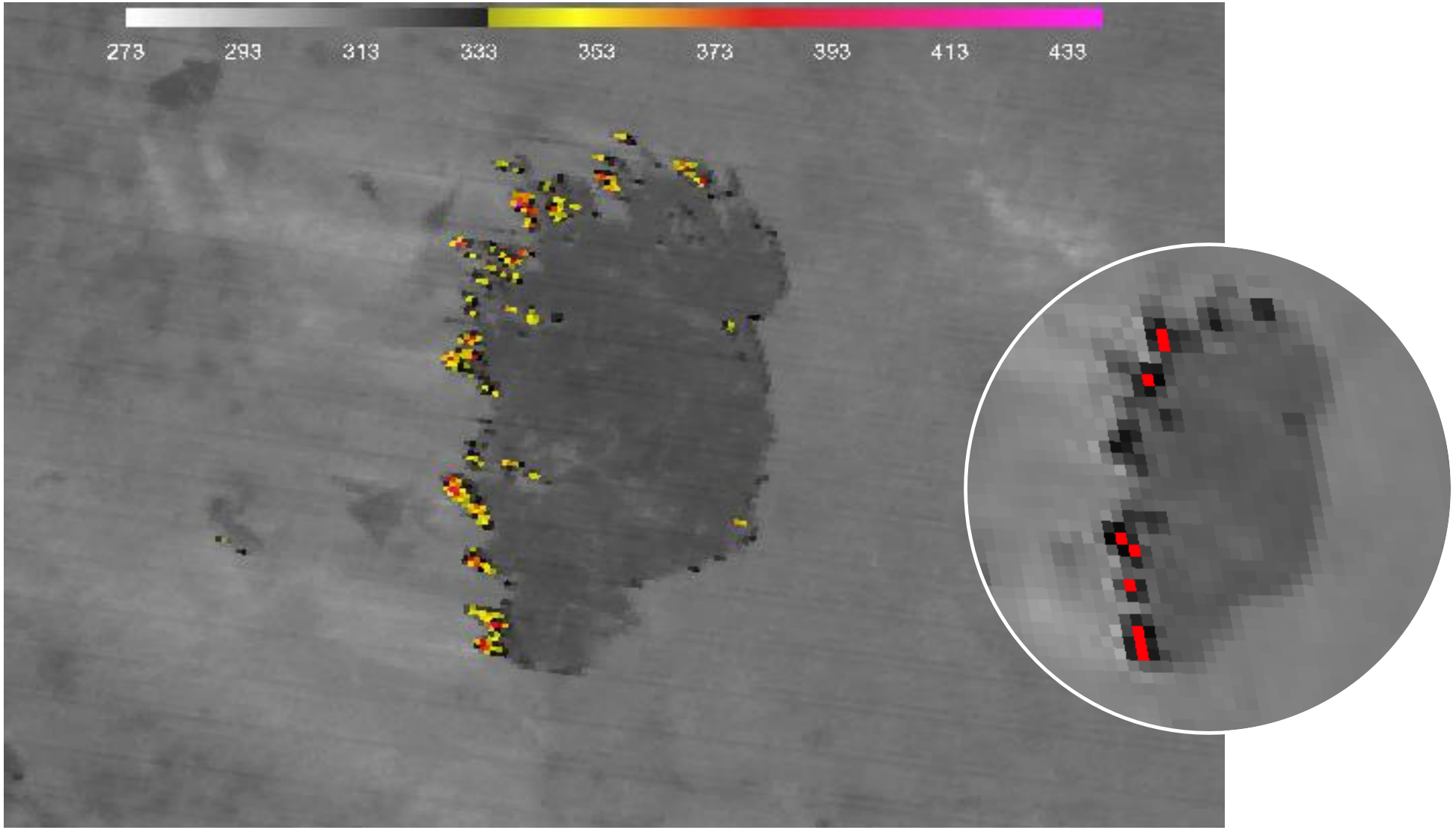
Session #2 – Meteosat Third Generation and AMSAF

- 14:00 MTG programme — *Katja Hungershoefer, EUMETSAT*
- 14:30 Main benefits of MTG for Africa — *Sarah Kimani, RAIDEG*
- 14:45 Transition 2023-2025
  - data access: upgrade of the PUMA stations — *Jolly Wasambo, AUC*
  - training: overview of activities — *Vesa Nietosvaara, EUMETSAT*
- 15:20 Report of the Technical Sessions — *Jolly Wasambo, AUC*
- 15:30 Meteosat for aerial navigation safety — *Hama Hamidou, EAMAC*
- 15:45 Q&A (15')
- 16:45 Proposal for a MTG-AMSAF programme — *Mariane Diop Kané, AMCOMET*
- 17:00 Open discussion

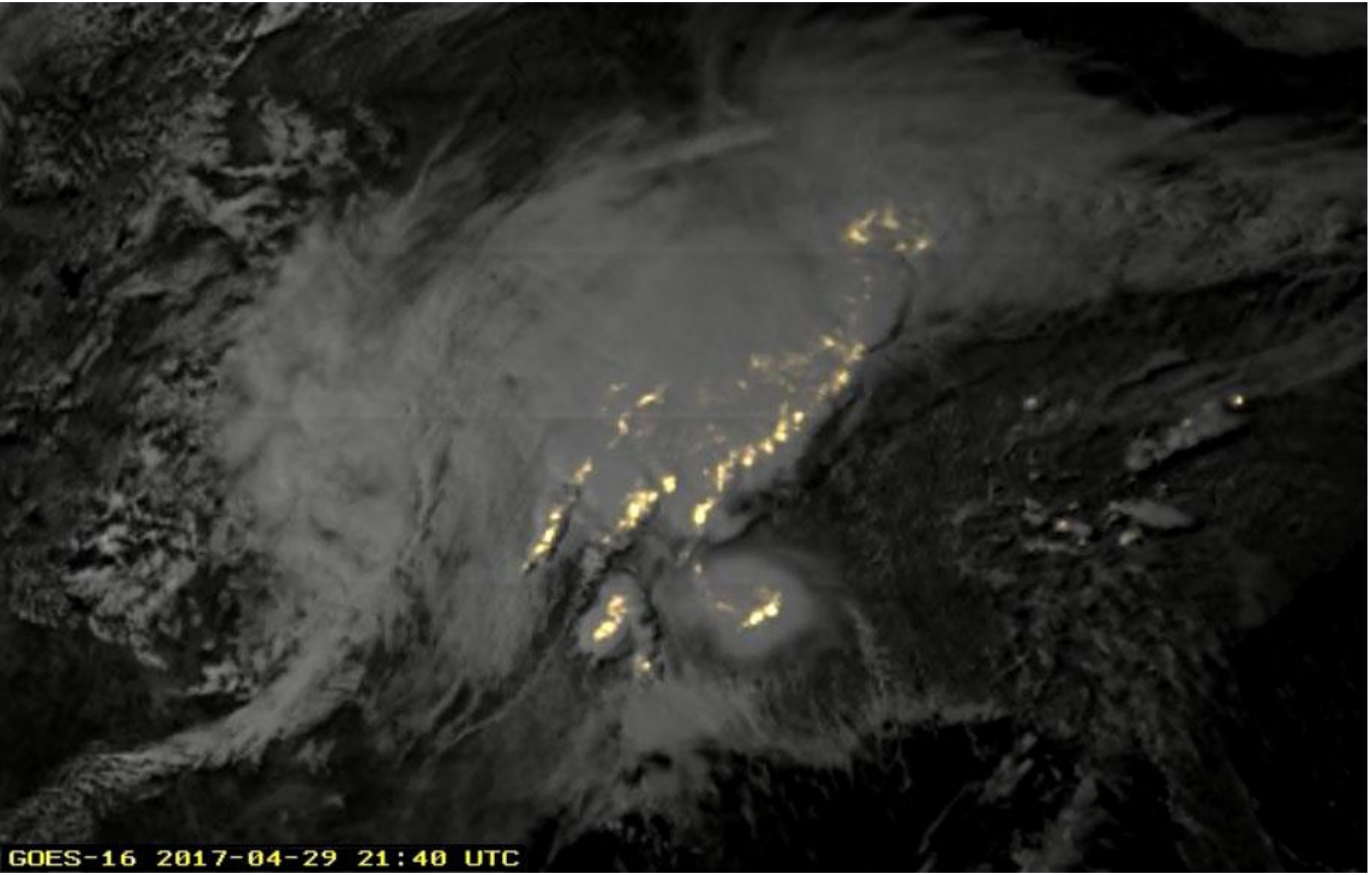
MTG – new prospects for fire detection and monitoring



Botswana,
August 2008.

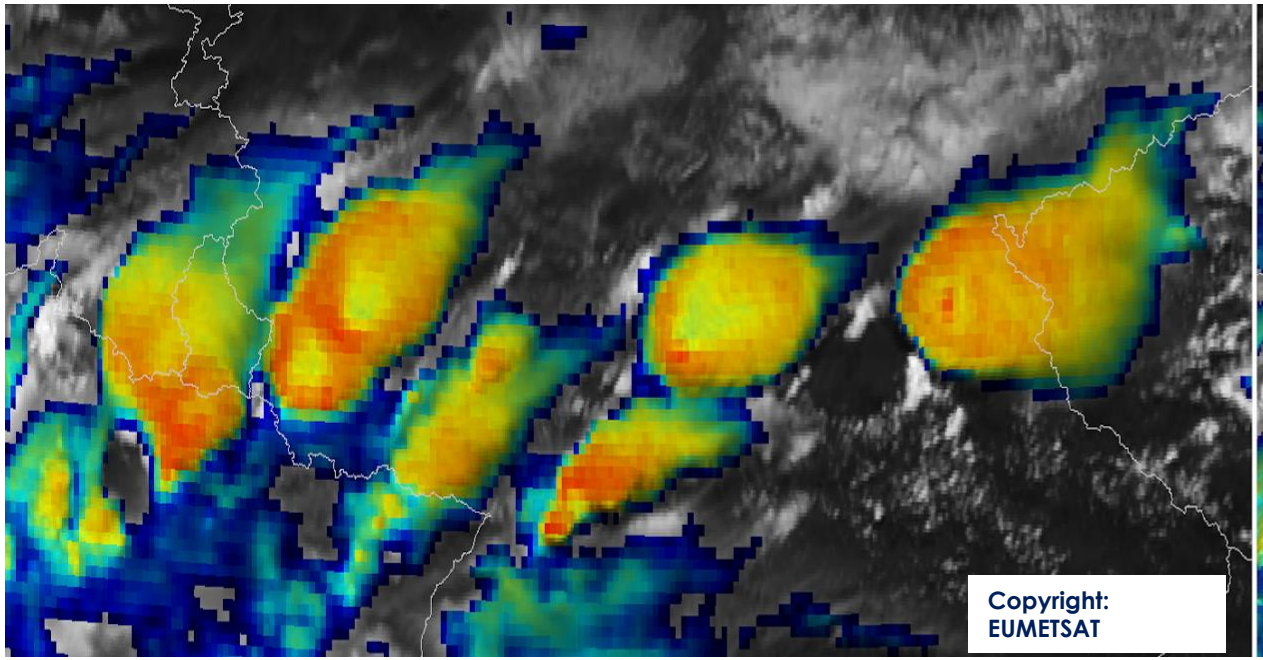
Higher spatial and temporal resolution; more sensitive 3.9µm and new 2.2µm channel for improved fire detection

Lightning imager



Fills gaps between Radar or in areas without Radar coverage

Improved spatial and spectral resolution



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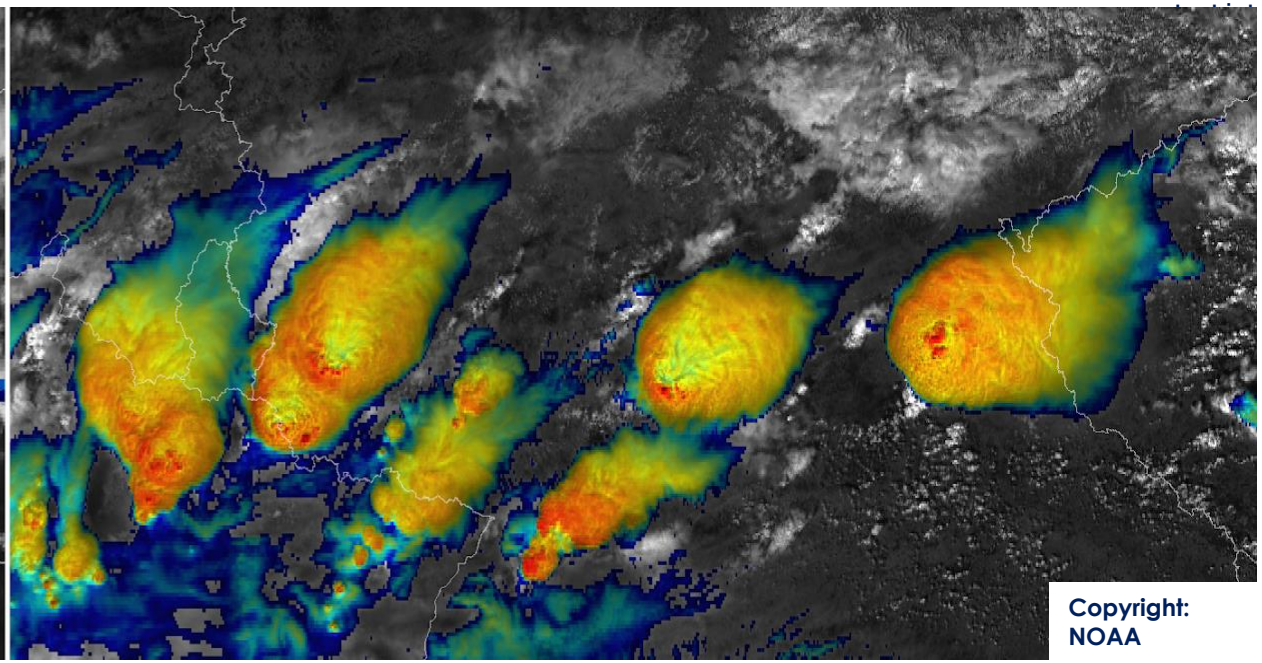

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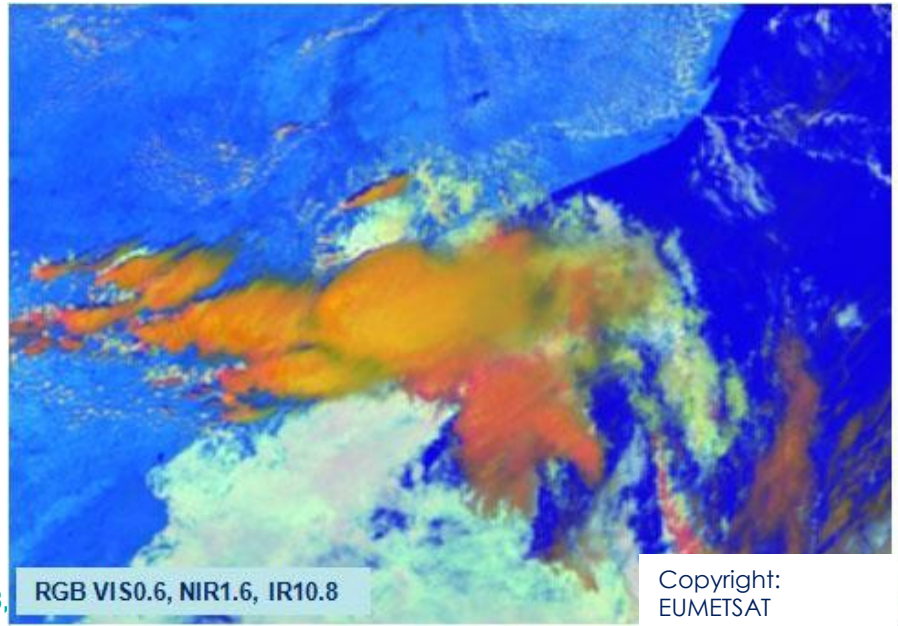

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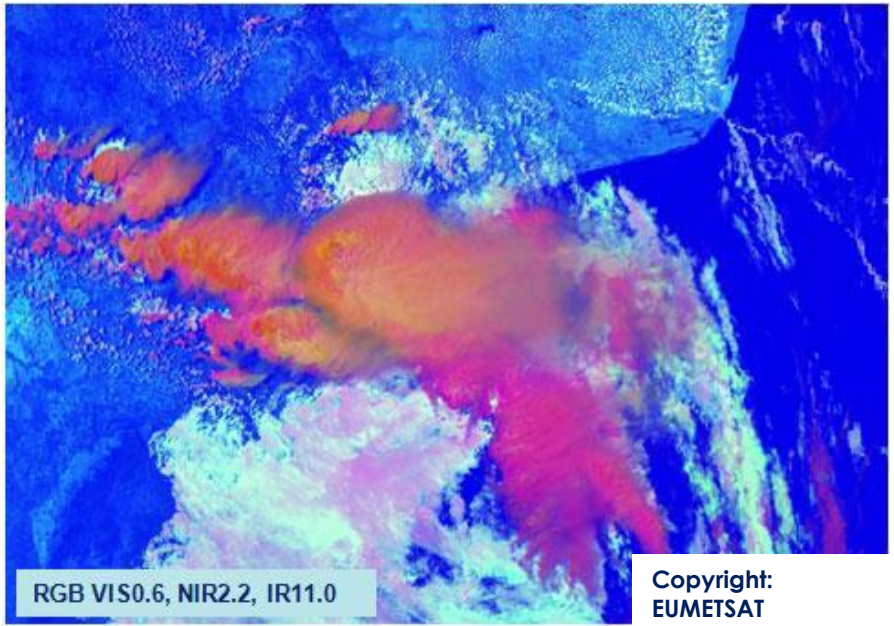

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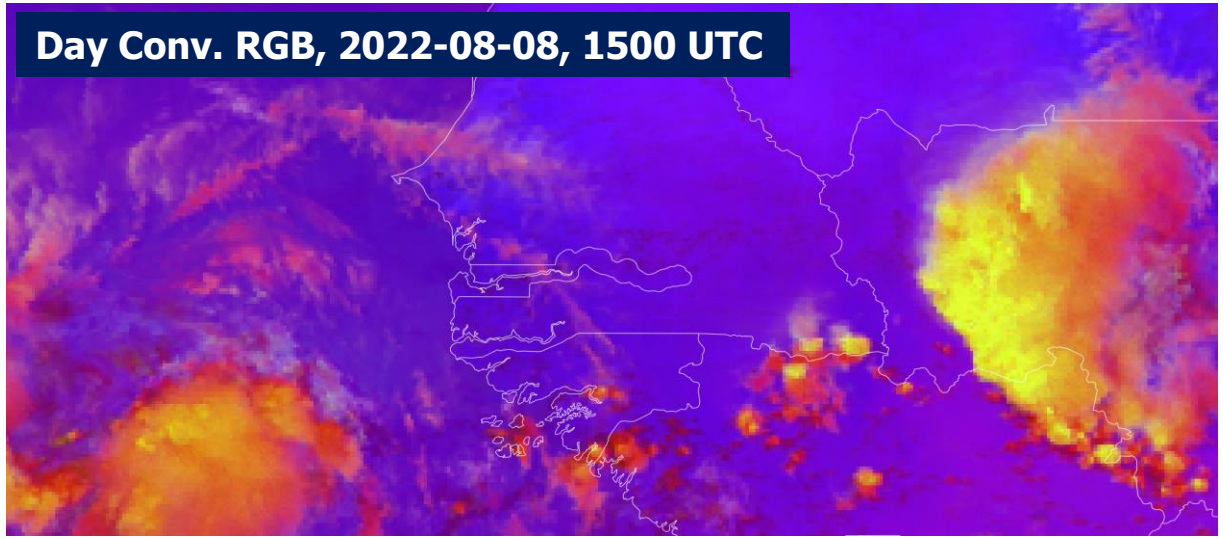
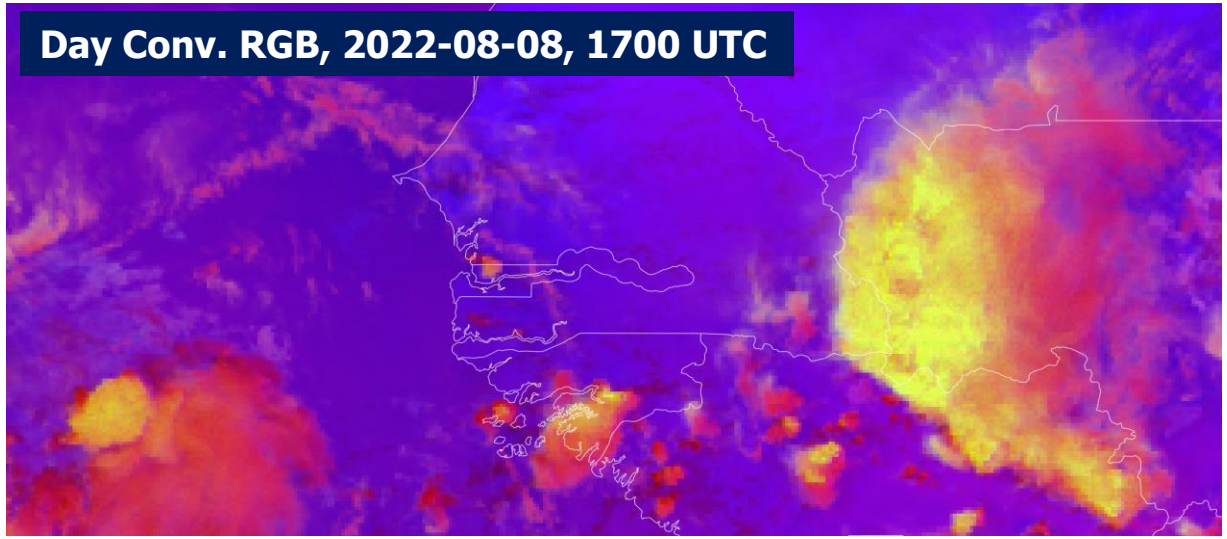
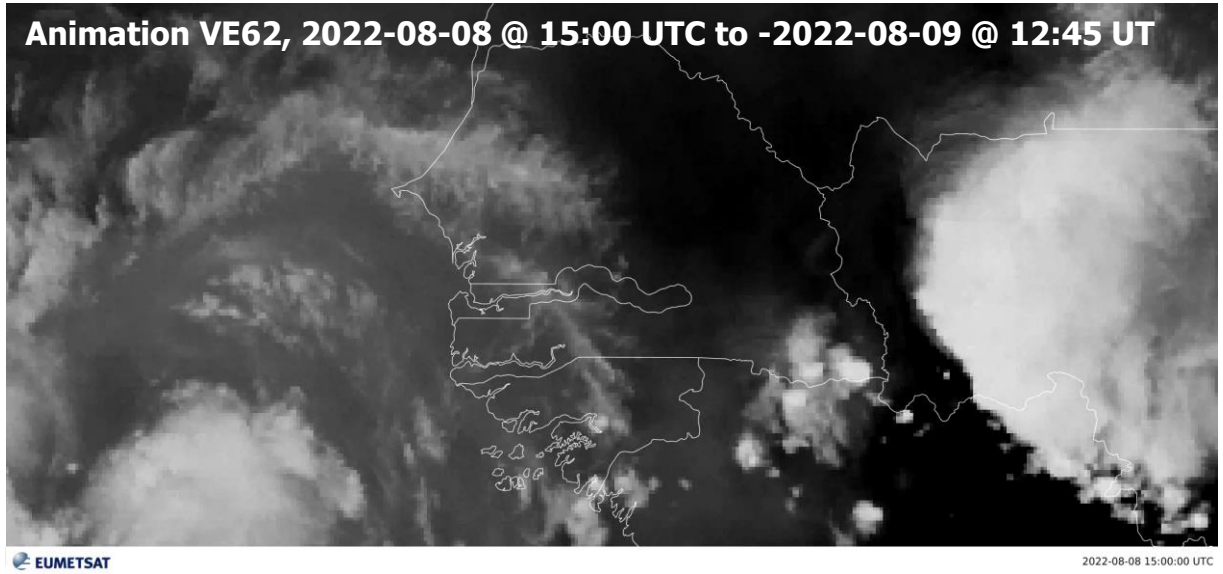
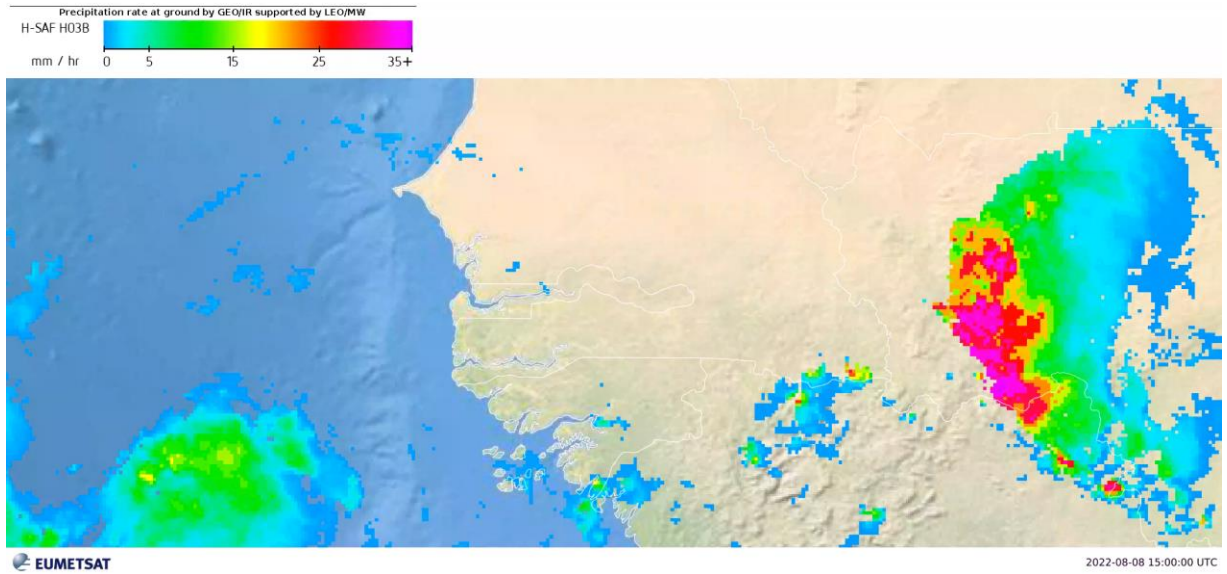
Monitoring hazardous/significant weather phenomena for aviation from Satellite

❑ Monitoring Convection









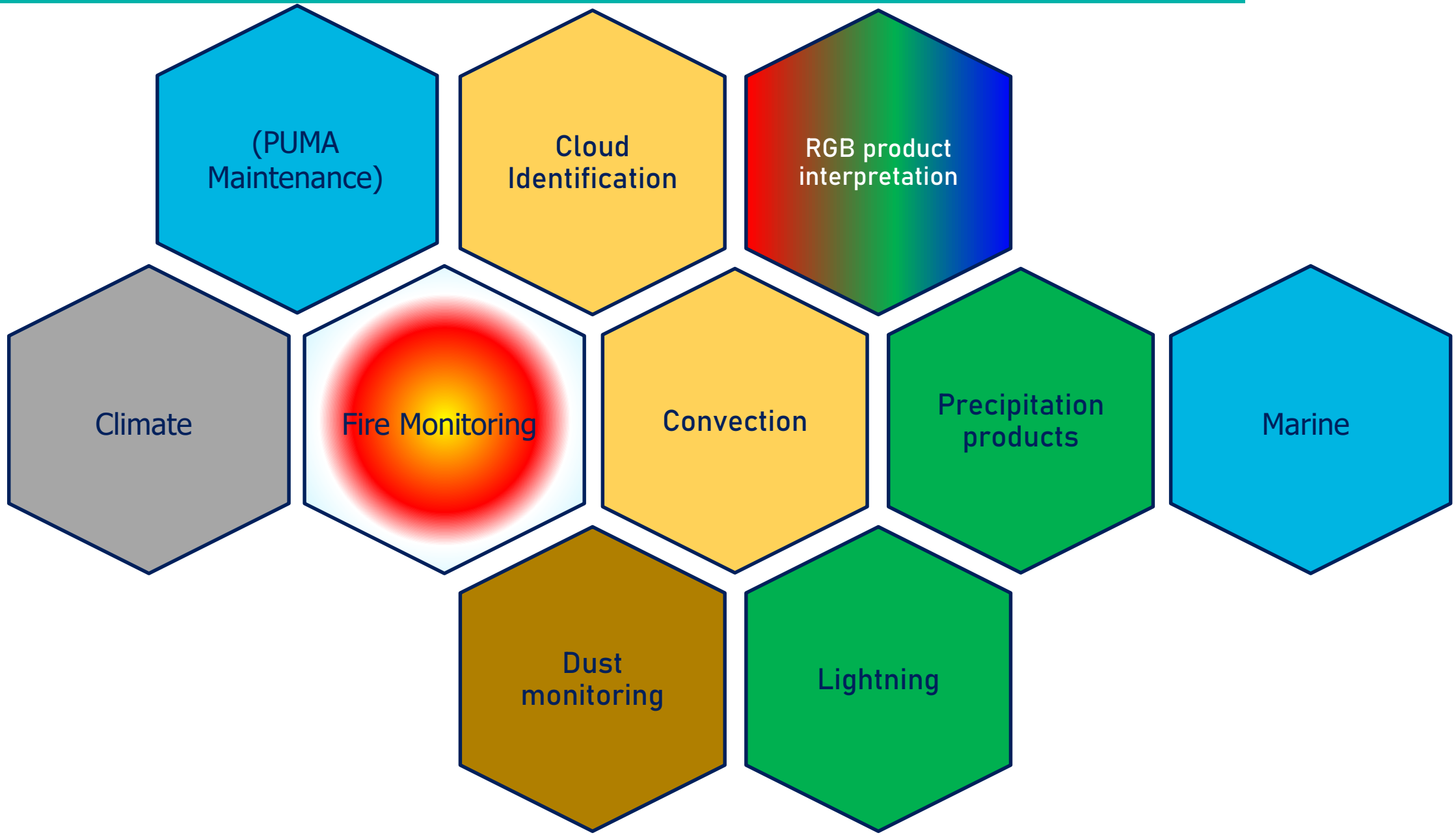
ClimSA
INTRA-ACP CLIMATE SERVICES AND RELATED APPLICATIONS PROGRAMME
An initiative of the Organisation of African, Caribbean and Pacific States funded by the European Union

African Union

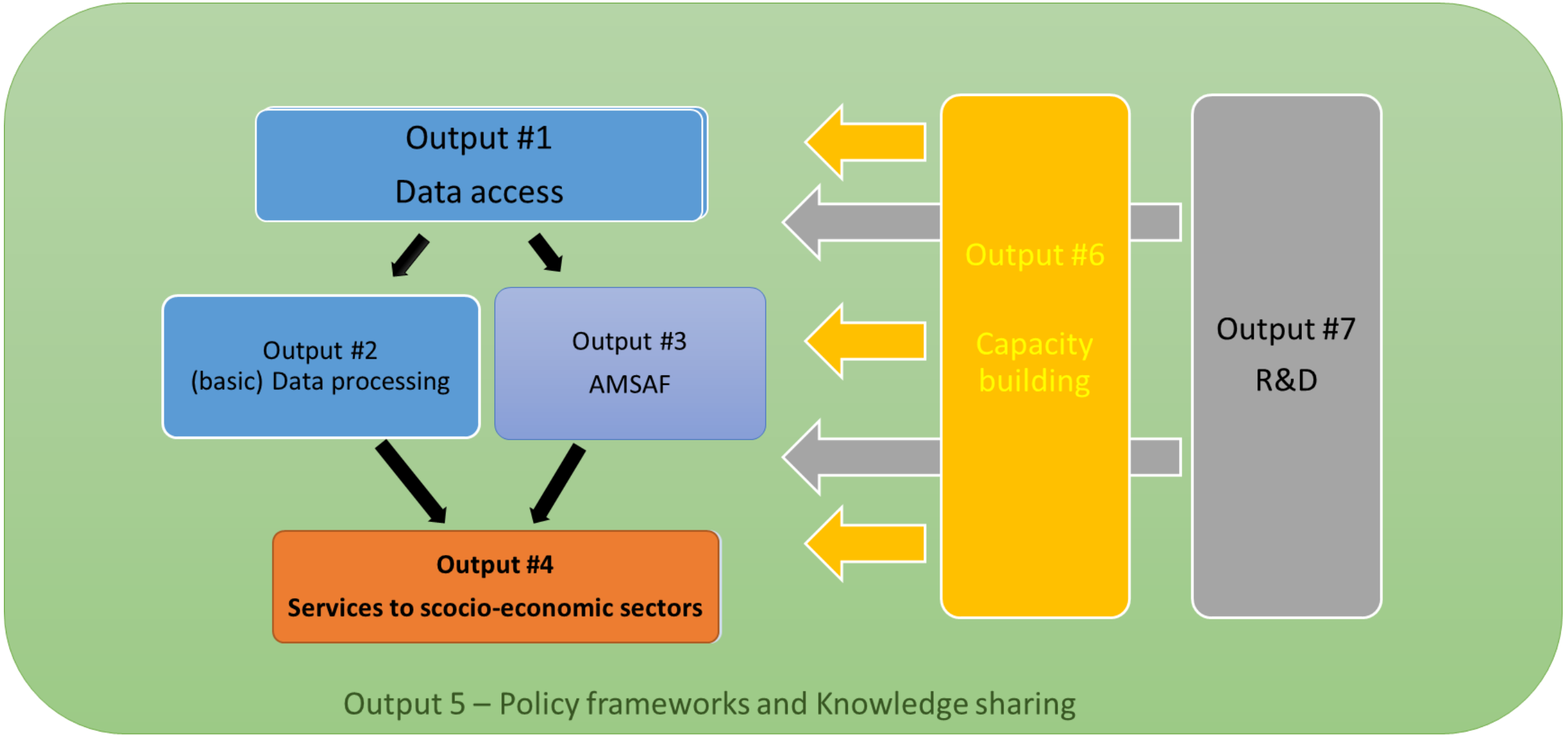
Procurement & Deployment

- The AUC will publish an open tender to select the contractor to supply the Climate and PUMA-202X Stations
- **Beneficiaries**
  - PUMA Stations : RCCs and the 49 African ACP countries/NMHSs
  - Climate Stations : RCCs, 33 countries/NMHSs excl. SADC countries
  - Two WMO Regional Training Centres
  - Helpdesk

The broadest training needs on MTG



Initial Concept for MTG – AMSAF Programme



Key messages

- EUMETSAT is preparing specific MTG-Afirca products to ease dissemination to Africa
- MTG benefits for Africa are numerous
  - A must for the monitoring of severe weather events and raising Early Warning
  - Benefits to Food Security, Water Management, Aviation, Disaster Resilience (Early Warning)
- Transition to MTG shall be completed by 2025
- AUC is planning deployment of new MTG-compatible reception station in each sub-Saharan African NMHS
- Training elements are under preparation via the WMO Vlab Centre of Excellence
- Need support to strengthen added-value services, based on MTG, in synergy with Copernicus to several climate-sensitive sectors

Main recommendations

- Support to Dar es Salaam Statement: funding to strengthen African capacities:
  - to receive and use the data
  - to improve current weather, climate and water services (**build innovative new services**)

- *Data access*: accelerate deployment of new MTG-compatible EUMETCast reception stations:
  - AUC procurement for Sub-Saharan Africa, as part of ClimSA
  - Technical support to North Africa NMHS

- *Training*: increase of training sessions to reach critical mass during transition period

- AMSAF: support to two precursors
  - Drought and Vegetation Data Cube
  - Nowcasting SAF at regional level to support Severe Weather events forecast

- New MTG-AMSAF programme is necessary for Africa to succeed transition and fully benefit from MTG on the long term

Thank you!

Questions are welcome.