Meteosat Third Generation

Mariane Diop Kane
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

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
- 21 December 2005: Meteosat-9
- 5 July 2012: Meteosat-10
- 15 July 2015: Meteosat-11
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
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

Summary of the MTG session
Main elements and recommendations
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)
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

Summary of the MTG session
Main elements and recommendations
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
  - training: overview of activities
  Jolly Wasambo, AUC
  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
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
Monitoring hazardous/significant weather phenomena for aviation from Satellite

Monitoring Convection

Day Conv. RGB, 2022-08-08, 1500 UTC

Day Conv. RGB, 2022-08-08, 1700 UTC

Animation VE62, 2022-08-08 @ 15:00 UTC to -2022-08-09 @ 12:45 UT
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

- Cloud Identification
- RGB product interpretation
- Fire Monitoring
- Convection
- Precipitation products
- Marine
- Dust monitoring
- Lightning

(PUMA Maintenance)

Climate
Initial Concept for MTG – AMSAF Programme

Output 5 – Policy frameworks and Knowledge sharing

Output #1
Data access

Output #2
(basic) Data processing

Output #3
AMSAF

Output #4
Services to socio-economic sectors

Output #6
Capacity building

Output #7
R&D
Key messages

• EUMETSAT is preparing specific MTG-Africa 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.