



MTG - I 1

Meteosat Third Generation

Weather from Space : A Game Changer for Africa

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EUMETSAT Webinar — 12 May 2026



Outline

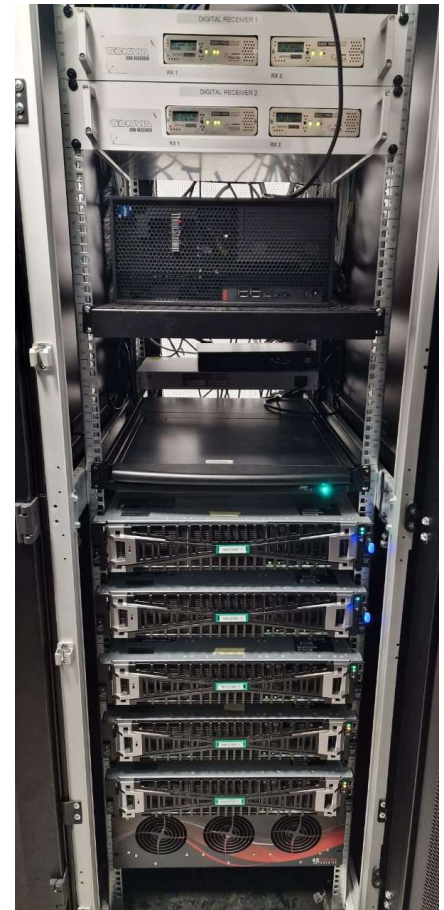
- 01 MSG to MTG Transition — Infrastructure and Strengthening
- 02 MSG vs MTG — Technological Leap in figures
- 03 Use Case 1 — Chefchaouen Wildfires, 12 August 2025
- 04 Use Case 2 — Convective Anticipation with the Lightning Imager
- 05 Internal Developments — WMS, HR Archive, RGB Inspector AI Agent
- 06 Regional Role — VLab Centre, DRC Training, Workshop 2026



MSG to MTG Transition

Strengthening the satellite infrastructure of Meteo Maroc

Reception	Processing	Training	Services
Ku + C bands	MSG chain maintained	Teams trained on new tools	High-capacity archiving
EUMETCast Africa stream	New MTG chain	MTG-FCI / LI modules	Visualization, 100+ sessions
SEVIRI / FCI + LI data	Native RGB generation	RGB interpretation	Internal DGM distribution
NWC / LAND / H-SAF data	Automatic hot-backup	Dedicated EUMETSAT courses	Enhanced availability



Key approach: MTG is deployed **in parallel with the existing MSG system** — ensuring operational continuity and gradual onboarding



MSG vs MTG

The technological leap — what changes for the forecaster

x3

RESOLUTION

1 km VIS vs 3 km MSG

+33%

REFRESH RATE

10 min vs 15 min

1st

Onboard LIGHTNING IMAGER

Lightning Imager - brand new

Impact - CONVECTION

- ▶ Earlier detection of convective initiation
- ▶ Cumulus glaciation visible (Cloud Phase RGB)
- ▶ Fine discrimination of cloud layers (Cloud Type RGB)
- ▶ Continuous tracking of cells with LI: cloud-to-ground AND intra-cloud lightning
- ▶ **Lead-time gained: +5 to +10 min on warnings**

Impact - WILDFIRES

- ▶ Hot spots < 1 km² now detectable (vs invisible at 3 km MSG)
- ▶ Fire Temperature RGB: active vs burnt areas, at a glance
- ▶ FRP: radiative energy quantification - brand new
- ▶ **True Color at 1 km: smoke plume tracking in near real time**

Use Case 1 - Chefchaouen Wildfires

12 August 2025 - What MTG shows that MSG could not

Before

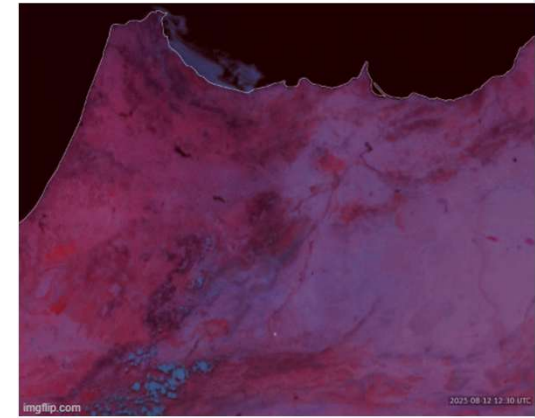


After



Fire Temperature RGB

R=3.9um G=2.2um B=1.6um
 Hot spots in bright red, burnt areas in black
 MSG: no dedicated fire RGB product available



FRP - Fire Radiative Power

Radiative energy quantification per hot spot Input for smoke dispersion models
 MSG SEVIRI: systematic under-estimation



True Color + Flames

True Color background + active hot-spot overlay with terrain context, wind, propagation: intuitive reading
 MSG: not possible at this resolution



Use Case 2 - Convective Anticipation

Lightning Imager - a capability MSG did not have at all

AF

**Accumulated
Flashes**

Accumulated flash
density

AFA

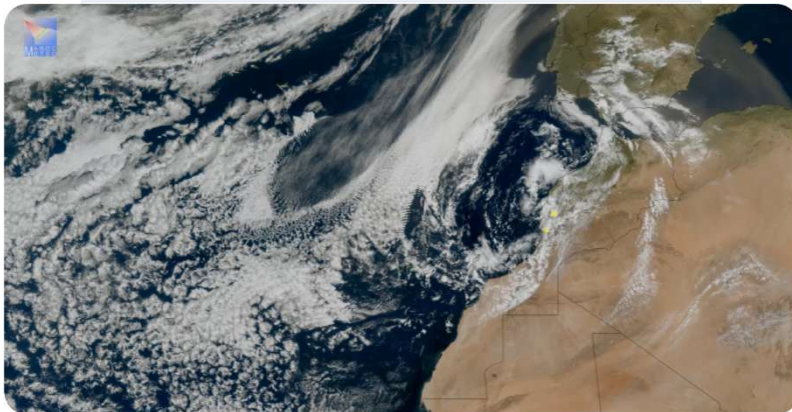
**Accumulated
Flash Area**

Active electrical
surface

AFR

**Accumulated
Flash Radiance**

Cumulative flash
energy / radiance



LI + FCI = 0-2h nowcasting

Total lightning detection

Coverage: Morocco + Atlantic + Sahel

Warning 15-30 min before convective peak



Internal Developments

Proprietary WMS - NWC-SAF MTG - HR Archive - RGB Inspector AI Agent

MTG WMS Server - In-house

- ▶ On-the-fly FCI RGB generation - OGC HTTP
- ▶ Latency < 2 min - token-based auth
- ▶ Feeds: portal, mobile, QGIS, dashboard, VLab

NWC-SAF Software Update - MTG Version

- ▶ Generates NWC-SAF MTG products locally
- ▶ Cloud, precipitation, convection on 16 FCI channels
- ▶ Sovereignty: full in-house control of the chain

High-Resolution Archive

Full-resolution FCI imagery - detailed analysis of past weather, case studies and training

AI Agent - RGB Inspector

EDUCATIONAL Tool

For training our forecasters - not operational

Technology

Vision-LLM + RAG (Retrieval-Augmented Generation)

Knowledge base: EUMETSAT, NWC-SAF guides

Sources cited, not memorised

Two-level reasoning

1. RGB colour -> physical property
2. Property -> operational meteo phenomenon

Human-in-the-Loop loop

Forecaster feedback -> re-indexing -> refined AI

VLab Morocco – Training and Regional Cooperation

DGM Morocco - VLab Centre of Excellence for Africa



VLab Centre

MTG courses delivered

- ▶ MTG-FCI, LI, RGB modules
- ▶ Maintenance and interpretation
- ▶ Internal training
- ▶ Distribution via ASMET

DRC Training

In preparation

- ▶ MTG training action
- ▶ South-South cooperation
- ▶ Period confirmed
- ▶ South-South cooperation

Workshop 2026

Casablanca, 29 June - 3 July

- ▶ DGM / EUMETSAT co-organisation
- ▶ Focus on MTG data services
- ▶ African participants
- ▶ Data exploitation from scratch

Our goal: every African NMHS should fully benefit from the MTG technological leap

Conclusion

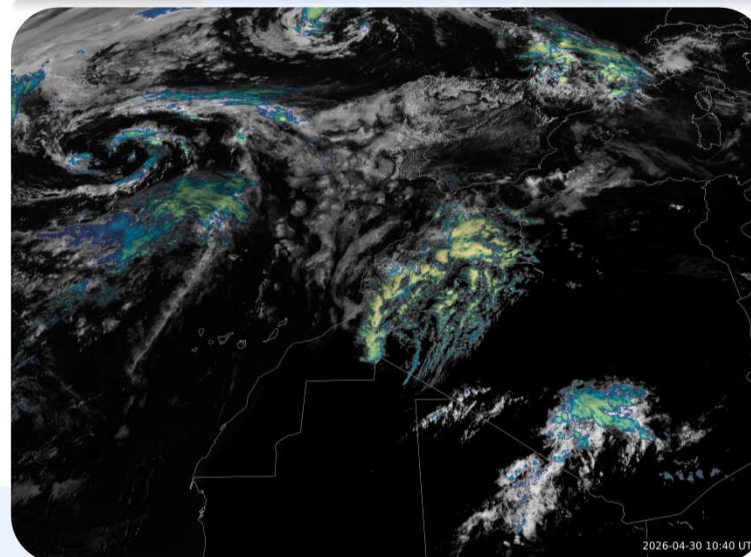
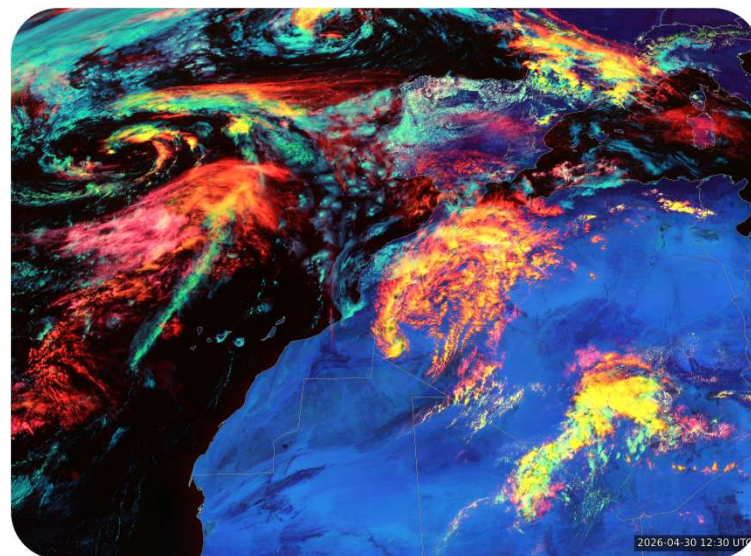
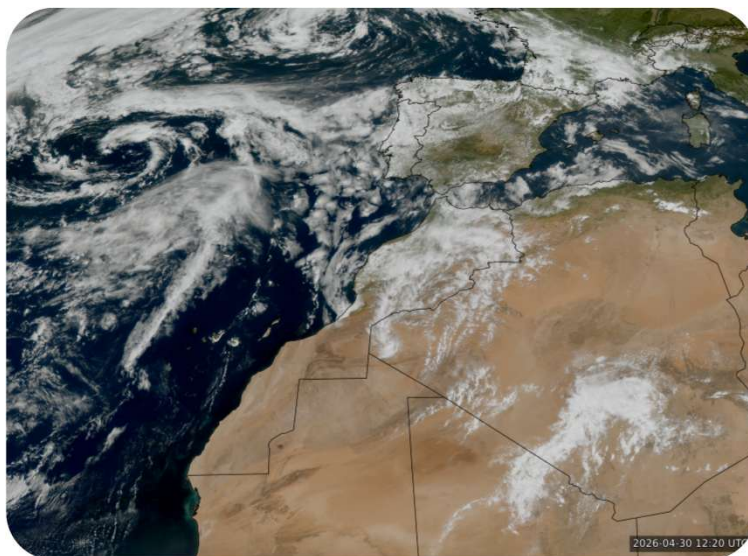
Strengthened infrastructure

Brand-new capabilities

Demonstrated use cases

Educational innovation

Active regional hub



MTG is not just new data - it is a new way of forecasting weather.