NWCSAF/GEO- Cloud Properties Product Release Announcement

We are pleased to announce the operational release of three high-frequency, satellite-based convective weather products over the Indian Ocean region, generated using MSG-9 SEVIRI imagery and GFS model through the NWCSAF/GEO v2.3 software developed by EUMETSAT. These products are available at 15-minute intervals and provide essential insights into cloud characteristics, convective evolution, and rainfall potential for operational and R&D applications.

Released Products:

- **Cloud Type (CT)**
- **Cloud Top Phase (CMIC)**
- **Convective Rainfall Rate (CRR)**

Products Availability:

All products are in WMO compliant NetCDF format and are available for download through the User order processing System (UOPS) for the registered users of MOSDAC. (https://mosdac.gov.in/uops/)

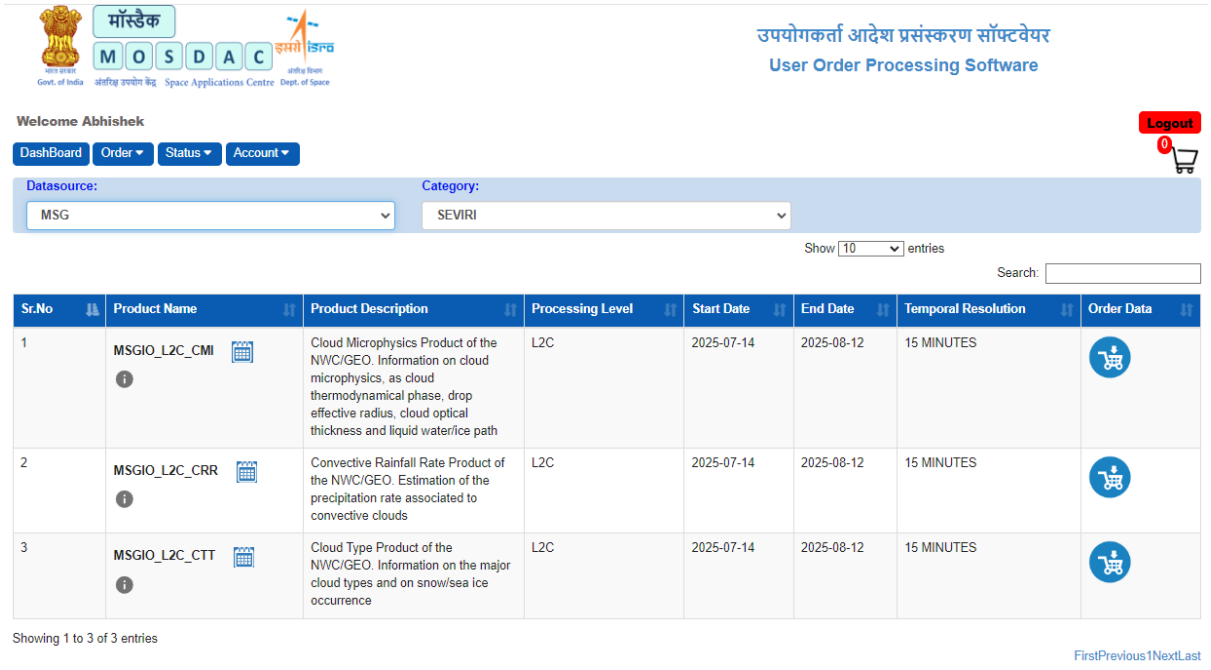

Figure 1: MSG products available for download at Data Order section

Products Visualisation:

- These products can also be **visualized interactively** using the **Galleries→ Satellite Products** section on MOSDAC at (https://mosdac.gov.in/gallery/)
- Products can also be visualised using the MOSDAC interactive WebGIS based visualisation and analysis application LIVE (https://mosdac.gov.in/live)

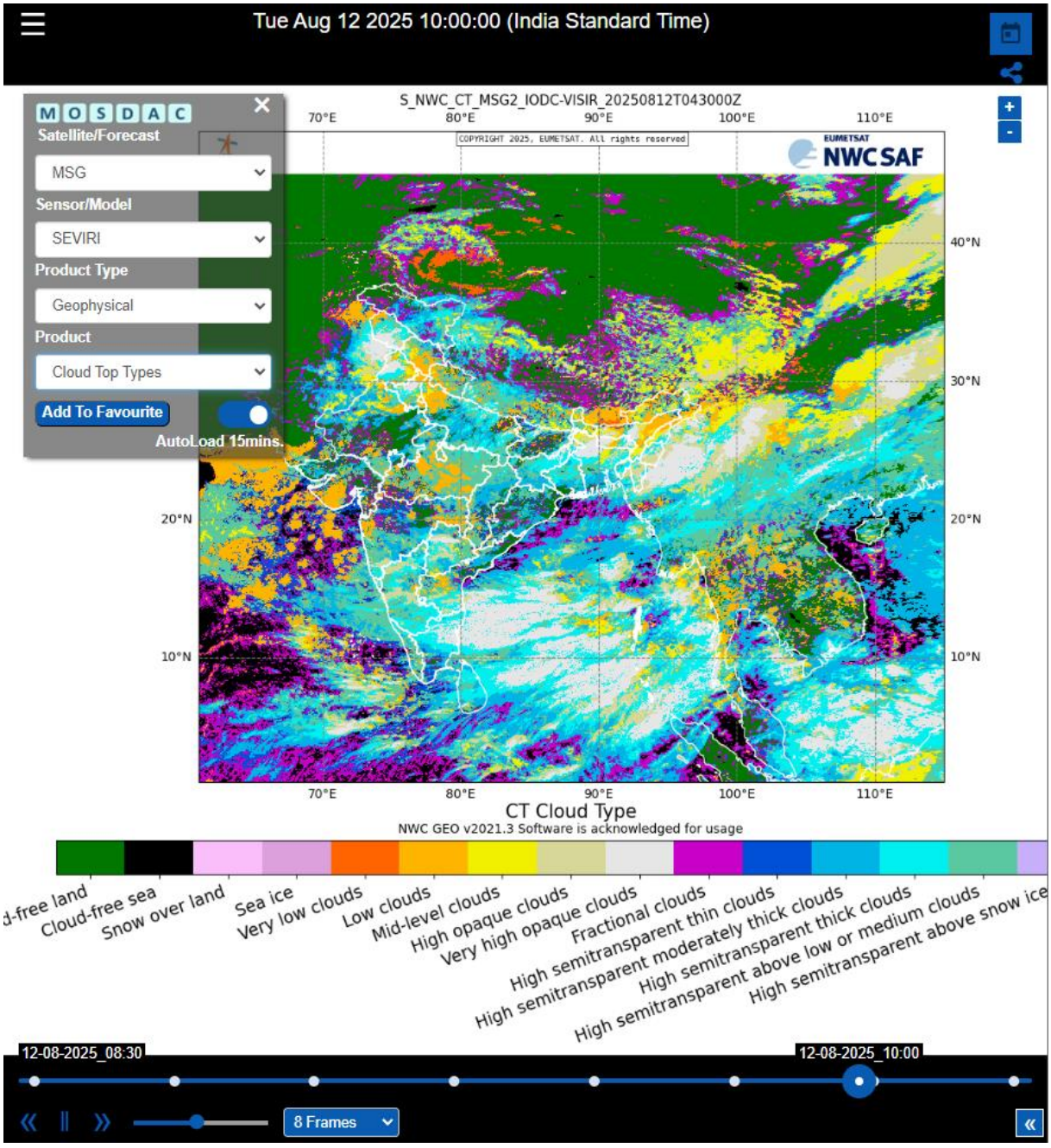

Figure 2 NWCSAF products visualisation from image gallery

Product Descriptions and Sample Outputs

1. Cloud Top Types (CT)

This product classifies each pixel into one of 15 cloud categories, including cloud-free land/sea, low/mid/high-level clouds, opaque clouds, and fractional or semi-transparent variants. It is derived from multi-spectral SEVIRI data and GFS-based atmospheric profiles. The CT product is especially useful for identifying convective cloud structures, their vertical extent, and the potential severity of storm systems.

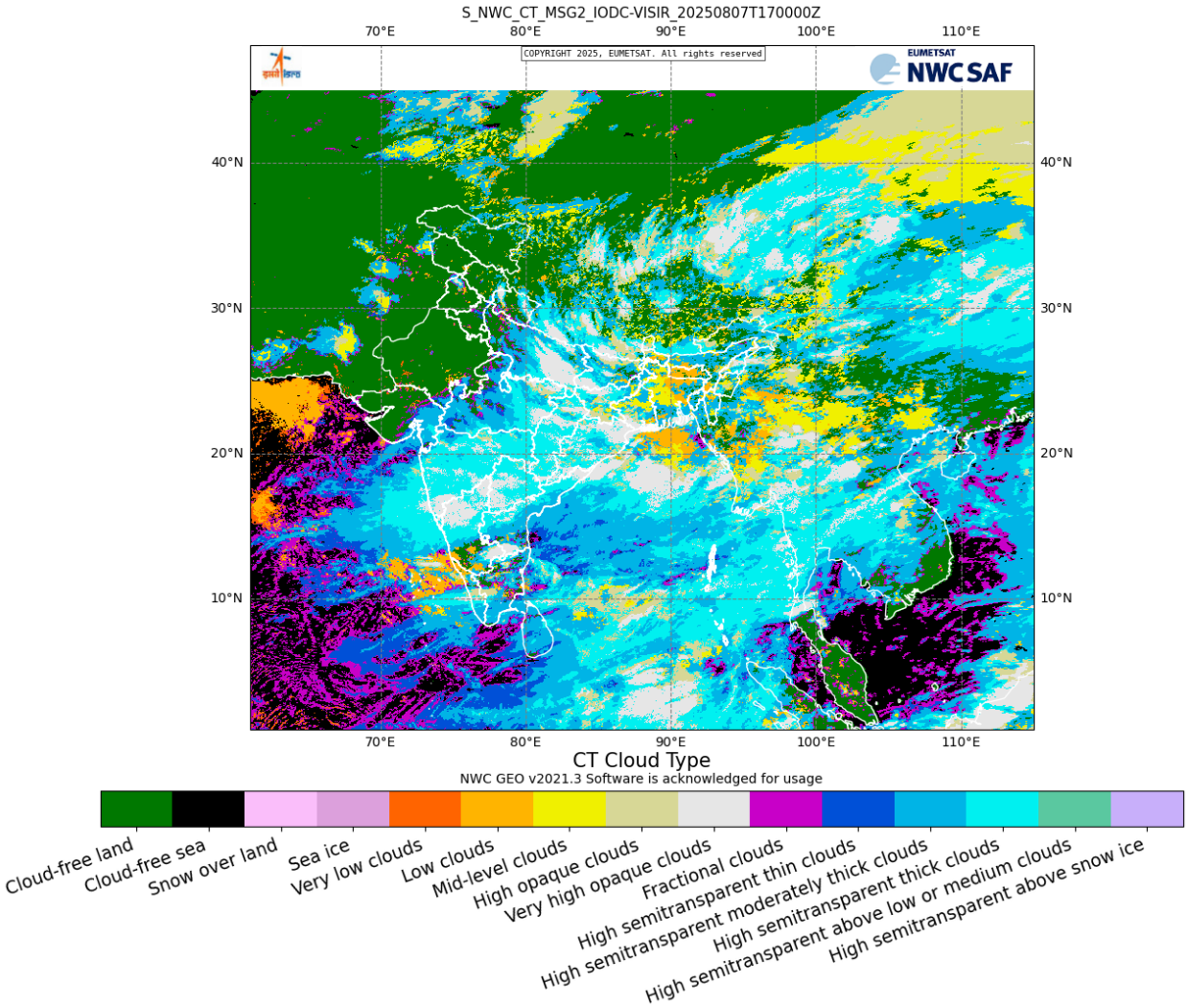

Figure 3: Cloud Type image highlighting different cloud types over Indian Ocean region

2. Cloud Top Phase (CMIC)

This product identifies the phase of cloud tops—liquid, ice, mixed-phase, or uncertain—providing key insights into cloud microphysics and precipitation potential. It uses thermal infrared channel data and contextual cloud and temperature information to assess storm maturity. Cloud phase classification is essential in identifying severe weather systems and monitoring evolving convective towers.

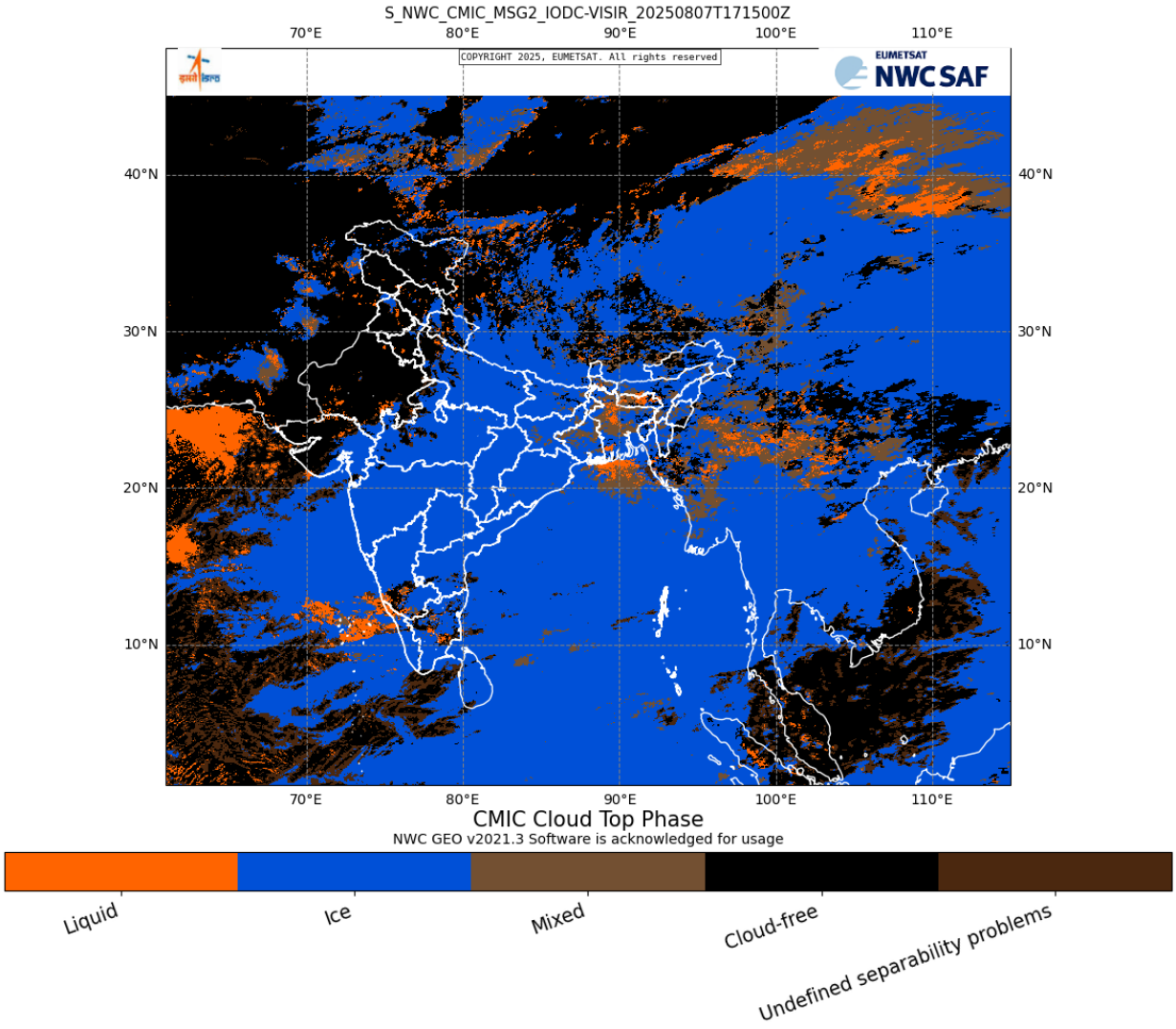

Figure 4: Cloud Top Phase from CMIC product showing cloud phase information over Indian Ocean region

3. Convective Rainfall Rate (CRR)

The CRR product estimates convective rainfall rates (in mm/h) based on infrared-derived cloud-top properties. It is optimized for detecting rainfall from deep convection and is especially useful for identifying intense precipitation cores and associated severe weather, particularly in regions with sparse radar coverage.

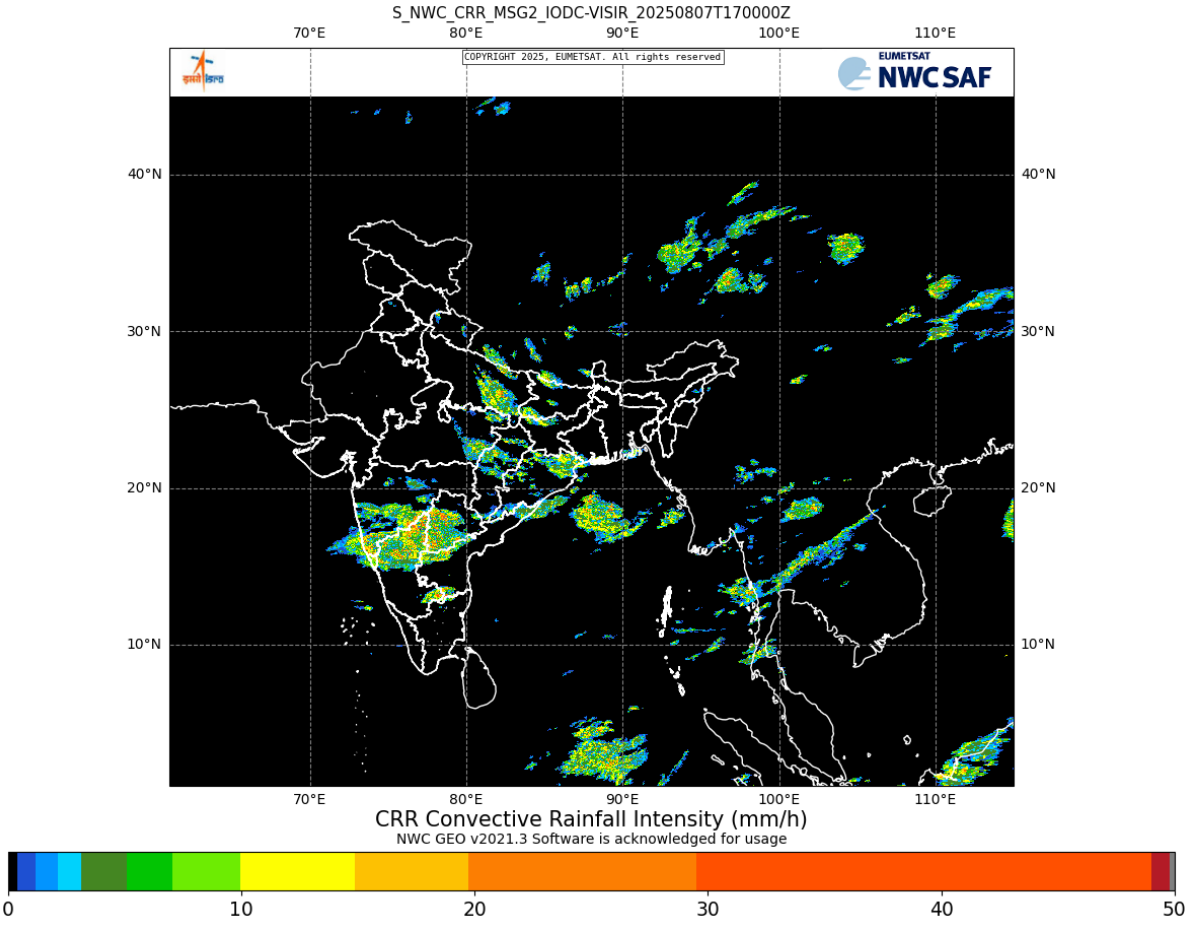

Figure 5: Convective Rain Rate Intensity from NWCSAF-GEO over Indian Ocean region

This product suite supports tropical convection monitoring, storm diagnostics, and real-time forecasting across South Asia and surrounding oceanic regions. For technical documentation or API access, please contact the developer team.