

Meteosat Third Generation (MTG) Programme Status

FCI-MAG meeting #5

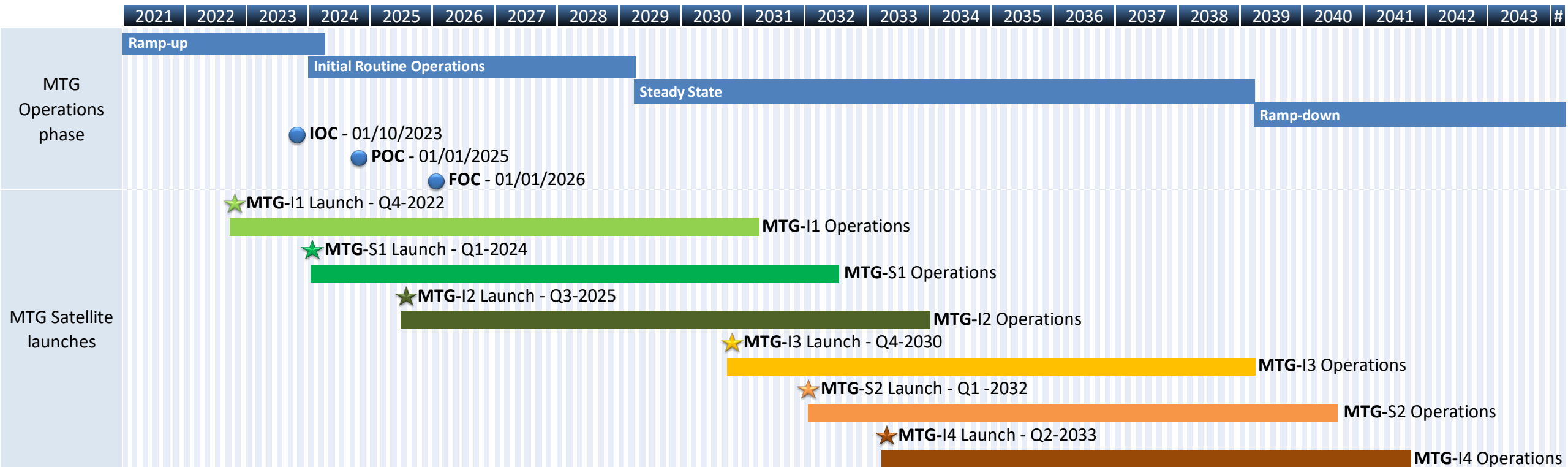
1 October 2021

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Overall Programme Schedule and Status

- For the Imager mission (MTG-I):
 - Integration and verification testing of the first system version (V1.0) completed beginning of September 2021,
 - Ramp-up for Operations has started,
 - System version will be upgraded to the launch ready version V1.1 supporting EUMETSAT Launch and Operations Readiness Review (LORR) in April 2022
 - MTG-I1 launch in December 2022
- For the Sounder mission (MTG-S): The phase of upper level Critical Design Reviews (CDRs) is also ending with the System and Ground Segment CDR planned to conclude end September 2021



MTG Program Status – Space Segment (MTG-I)

- MTG-I Satellite Status
 - FCI Proto-Flight Model delivered July and mated with the satellite beginning of August 2021
 - Satellite Thermal Vacuum Test in October 2021
 - MTG-I Satellite Qualification and Flight Acceptance Review (QAR) in Summer 2022
- Flexible Combined Imager (FCI)
 - ***See separate presentation by D. Aminou (ESA)***
 - Request for Deviation status (RFD) => ***see separate presentation by G. Fowler***
- Lightning Imager
 - Many performance problems flagged at the LI instrument CDR have been resolved – with good subsystem performances many RFDs have been withdrawn at instrument level.
 - The final performance for the PFM will only be available in a consolidated form in Q1/2022



Mating of the FCI PFM with MTG-I PFM satellite (picture by Thales Alenia Space)

MTG Program Status – Space Segment (MTG-S)

- MTG-S Satellite Status
 - MTG-S Proto-Flight Model (PFM) platform completed and integrated with IRS and UVN Structural Thermal Models for further testing
 - MTG-S Satellite Qualification and Flight Acceptance Review (QAR) in Summer 2022
- InfraRed Sounder (IRS)
 - Instrument Proto-Flight Model integration started with delivery of last subsystems
 - EUMETSAT analysis shows the impact of released RFDs on the level 1 and 2 products is acceptable.
 - IRS delivery to the satellite planned in summer 2022
- Sentinel-4/Ultraviolet-Visible-Near-infrared (S4/UVN)
 - Proto-Flight Model Instrument activities progressing well: optics system successfully aligned in vacuum, integrated into main instrument module; delivery planned February 2022.

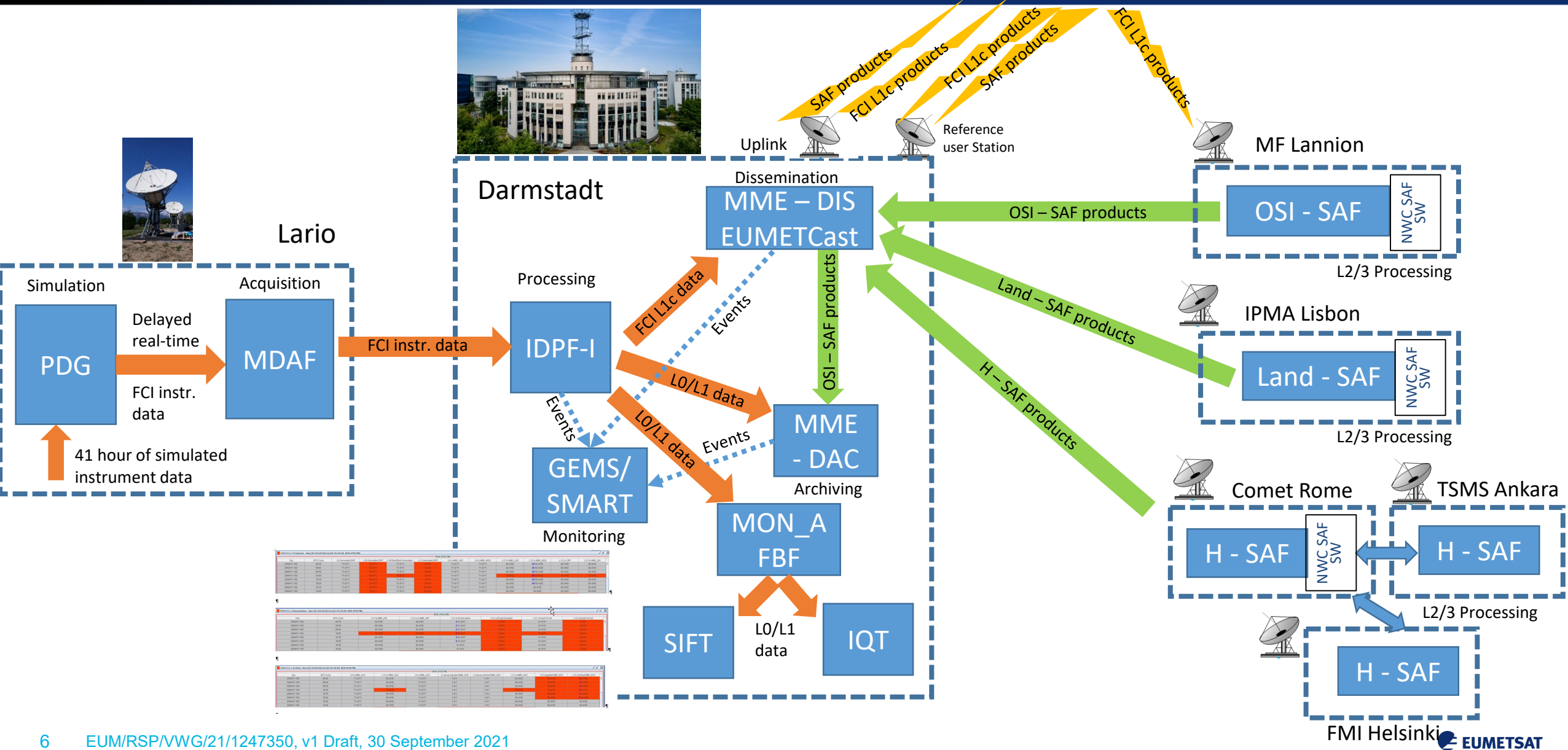


IRS and UVN Structural Thermal Models (STM) integrated with MTG-S PFM satellite (picture by OHB System)

MTG Status Report – Ground Segment (data processing)

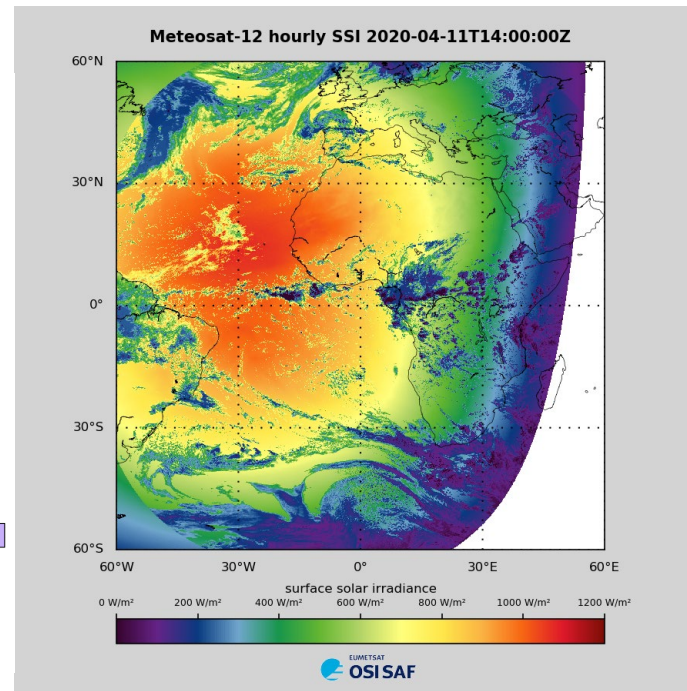
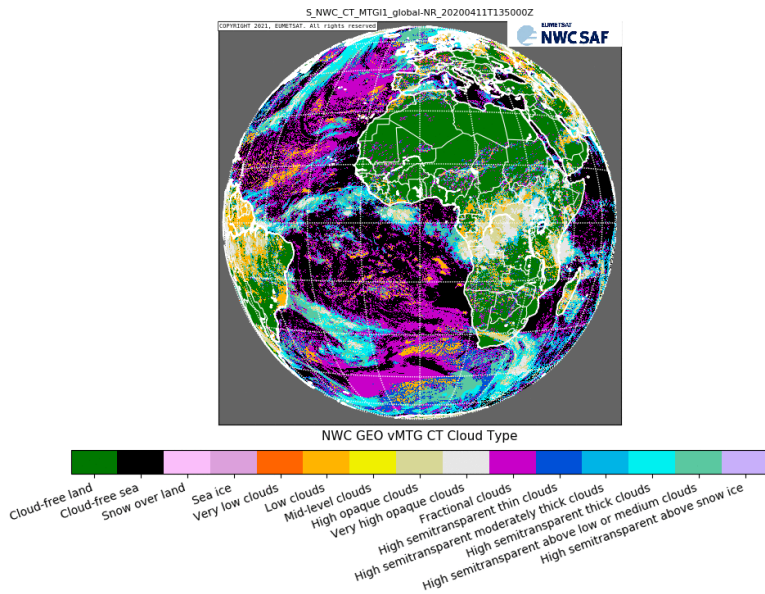
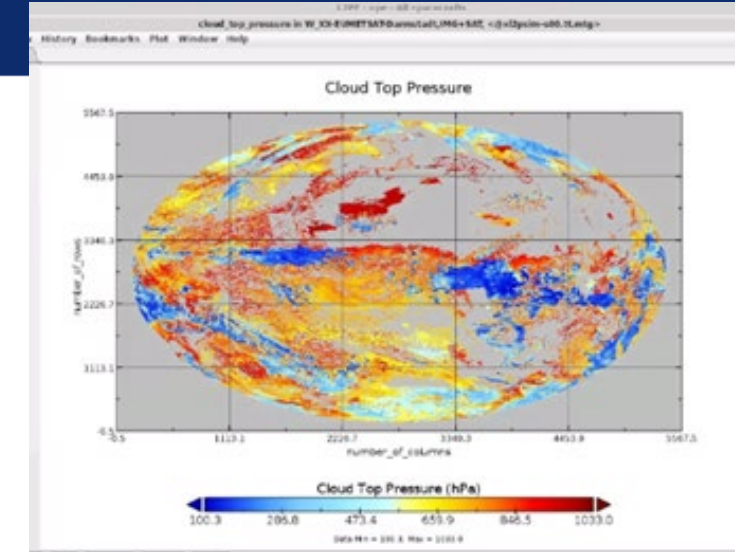
- Instrument Data Processing Facility for MTG-I (IDPF-I)
 - V3.1 received in February 2021, intensively used for a SAF end-to-end testing campaign – stable 72 hours production of FCI L0 and L1 products achieved
 - V4 delivered in July 2021 for completion of the data processing chain testing for System version 1.0
 - V5 final version expected mid 2022
- Level-2 Processing Facility (L2PF) V2.8 delivered August 2021, final version for MTG-I (V3) expected end 2021
- Instrument Data Processing Facility for MTG-S (IDPF-S)
 - Deliveries split in two versions for IRS and UVN chain
 - V1 (IRS) planned October 2021; V1a (UVN) planned end 2021
 - CDR for IRS-dedicated version currently ongoing
- Level-2 Processing Facility (L2PF) first version for MTG-S expected beginning Q2 2022

MTG SAF End-to-end Test

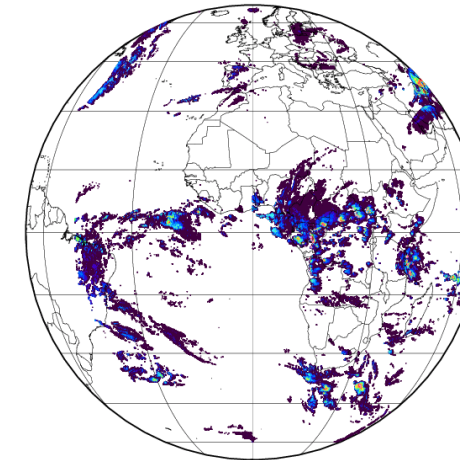


MTG Program Status – System

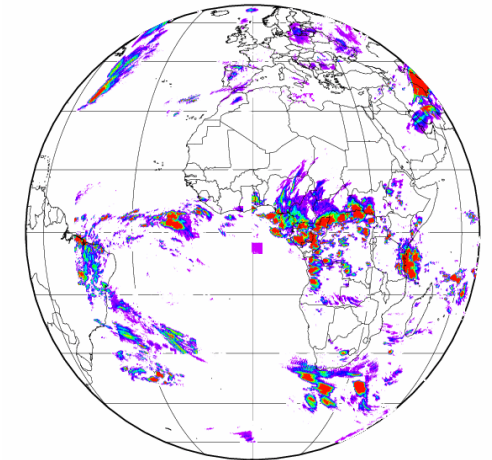
- System IVV
 - Test result of the SAF testing demonstrated that timeliness from end to end, i.e. at reception by users via EUMETCast, is well inside the MTG EURD/SRD performance requirements (results see below)
 - Integration of EUMETSAT data processing chain integration (L0 to L2) also progressing, IDPF-I V4.0 FCI L1C product has been successfully ingested into L2PF V2.4 (see result at the right)
- Preparation of the MTG-I satellite and system commissioning and Cal/Val activities is well advanced – several workshops have been performed, schedule timelines are defined and first procedures written and tested



EUMETSAT H SAF P-IN-FCI (H40)
Precipitation rate at ground by GEO/IR
supported by LEO/MW and MTG FCI h42_20200411_1640



EUMETSAT H SAF P-AC-FCI (H42 prel.)
Accumulated precipitation at ground
by blended MW and IR and MTG FCI h42_20200411_1800_24_idk



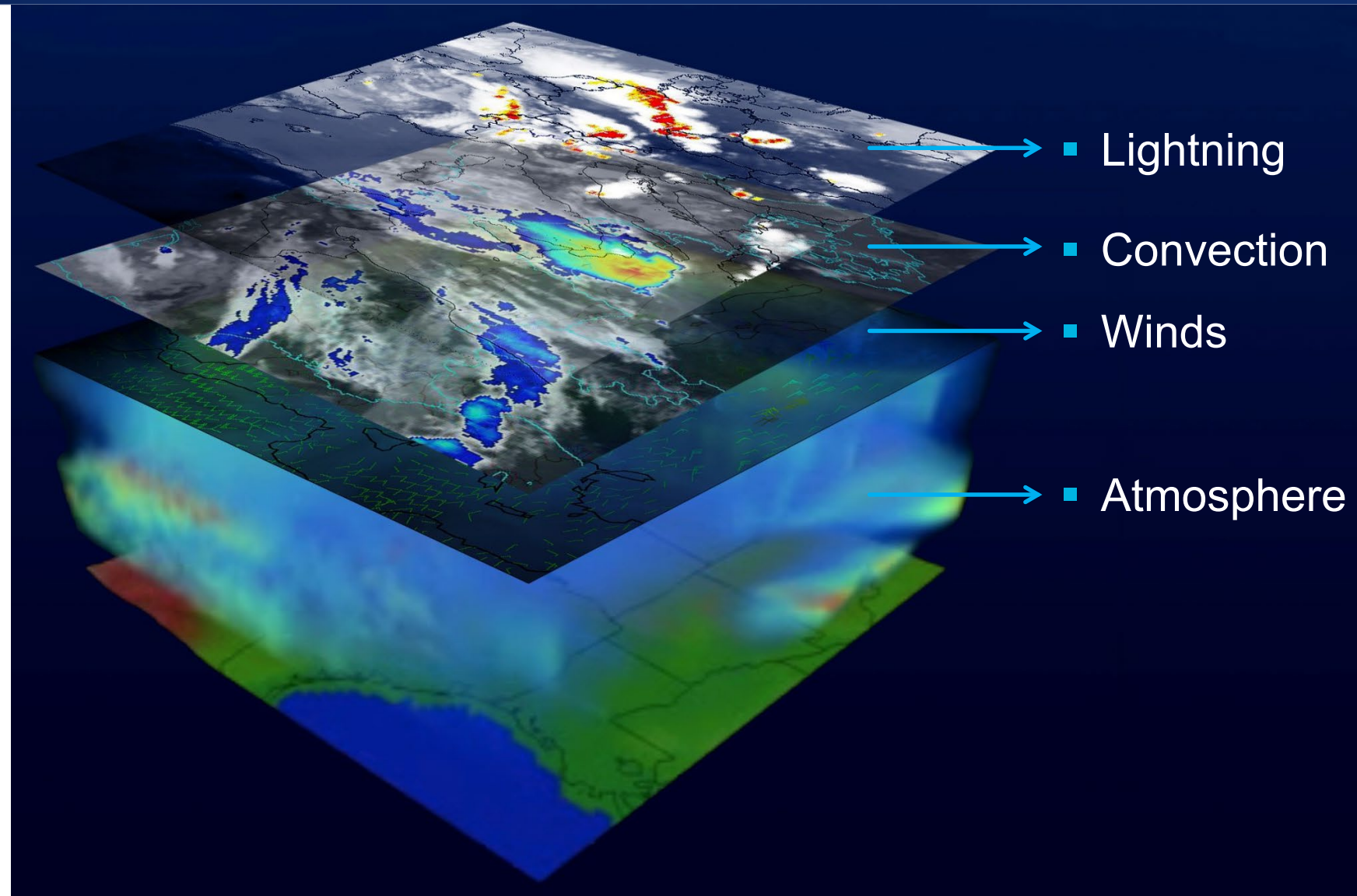
MTG Programme status – Launcher & User Preparation

- Launcher Service
 - MTG-I1 will be launched with the last Ariane 5 – final satellite fit check and separation test in Q2 2022
 - MTG-S1 will be on Ariane 64, Preliminary Mission Analysis kicked off in July 2021
 - MTG-I2 launch service agreement signed for Ariane 64
- User Preparation
 - Test data for users and SAF available through EUMETSAT web page
 - MTG User preparation project was run in 2020 and 2021 with online User Preparation Webinars
 - EUMETSAT User Days 2022: Focus on next-generation meteorological satellites (MTG and EPS-SG), 31 May - 2 June 2022, Darmstadt (Darmstadtium Conference Centre), Germany

Observation Mission	Webinar Dates
IRS	13-14 Oct 2020
LI	16-17 Feb 2021
FCI	8-10 Jun 2021
UVN/UVNS	Q2/2022

Conclusion

- MTG-I1 satellite and system are on track for a launch in Q4 2022 and an operational system for the full disk mission on in end 2023
- There are still challenges ahead in finalising the satellite and system testing for MTG-I in parallel to the preparation of MTG-S which also in its final phase



FCI MAG #5: Summary of User Related Activities

01/10/2021



FCI related Webinars in 2021

- User Preparation Webinar on Next-Generation Spectral Imagers (FCI, METimage), June 2021
 - [Presentations](#)
 - [Recordings](#)
- Webinar: [Meteosat Third Generation in Africa, organised by EUMETSAT, the African Union Commission and the African Ministerial Conference on Meteorology, 31 March 2021.](#)

EUMETSAT Meteorological Satellite Conference 2021

EUM Contributions related to FCI:

- [Schmid: Meteosat Third Generation \(MTG\) Programme Status](#)
- [Meraner et al.: MTG-FCI Level-1c simulated enhanced and non-nominal datasets for SAFs and Users](#)
- [Lekouara et al.: MTG-FCI Offline Tools for the validation of level 1 and level 2 products during commissioning](#)
- [Gutierrez et al.: MTG FCI Level-1 Test Dataset from Payload Data Generator and Level 1 Prototype Processor](#)
- [Gutierrez et al.: MTG FCI Level-1c Test Data from MTG SAF System Test Readiness Review](#)
- [Just et al.: Geometrical Quality Assessment Tool for Level 1 Product Monitoring](#)

FCI Test Data Plans

Last published:

- FCI L1C Enhanced and Non-Nominal Products for User Familiarisation based on GFS v4A and FCIL1FS, v4B (MTGTD-272)
- [FCI L1 Product Use Guide\(PUG\), v1J](#)
- [Africa Product User Guide, v2B](#)

Planned:

- SRF for NWP SAF (MTGTD-xxx)
- SRF for FCI for Users (MTGTD-285)
- FCI 1C Enhanced 26-Hour Test Data for Users based on GFS v4A and FCIL1FS, v4C (MTGTD-298) – re-formatting of MTGTD-272
- FCI-1C Derived from HYGEOS Datacube (MTGTD-360)
- FCI L1 PUG Update (SRF, GSICS, reduce TBDs)

FCI Video
(not published yet)