

MTG Programme Status

11th IRS MAG Meeting

08 June 2021

Alexander Schmid, MTG Programme Manager

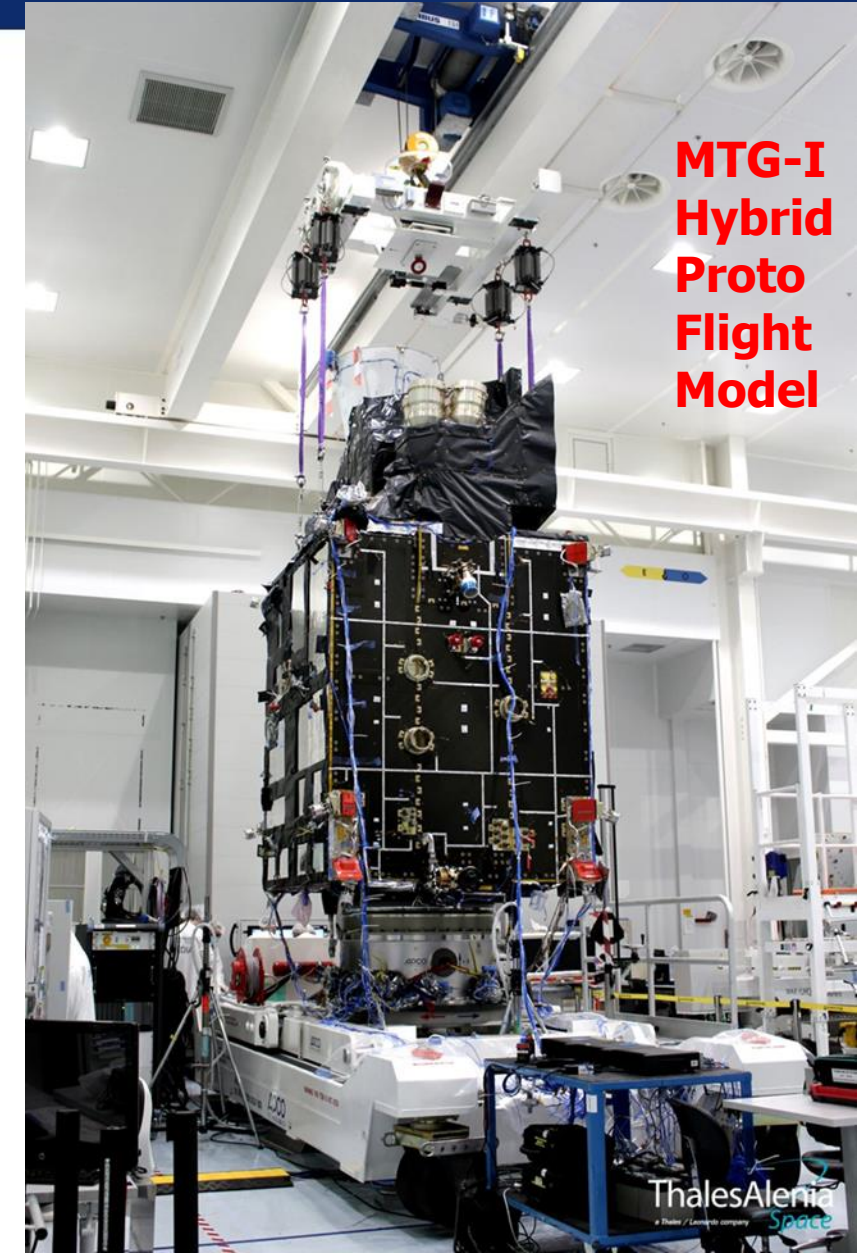


MTG Status Report – Programme Management

- COVID-19 pandemic still impacts the MTG programme mainly through travel restrictions requiring to re-plan and re-shuffle activities:
 - Space segment:
 - Assembly, Integration and Test (AIT) activities the MTG-I Hybrid Proto Flight Model (H-PFM) re-shuffled
 - Lightning Imager (LI) Proto Flight Model (PFM) mechanical testing moved to Italy.
 - Ground segment development and system Integration, Verification and Validation (IV&V)
 - delayed hardware and software installation – activities performed by EUMETSAT teams with remote suppliers support
 - blocked Backup System Control Centre (BSCC) installation in Fucino/Italy.
- Schedule
 - MTG-I1 launch in December 2022, with some weeks margin
 - MTG-S1 launch in January 2024, with recovered 2 months margin
- Next Milestones
 - MTG-S System and Ground Segment CDR kick-off in July, closure in September
 - MTG-I Operational Scenario Validation Readiness Review (OSVRR) kick off in October, closure in December

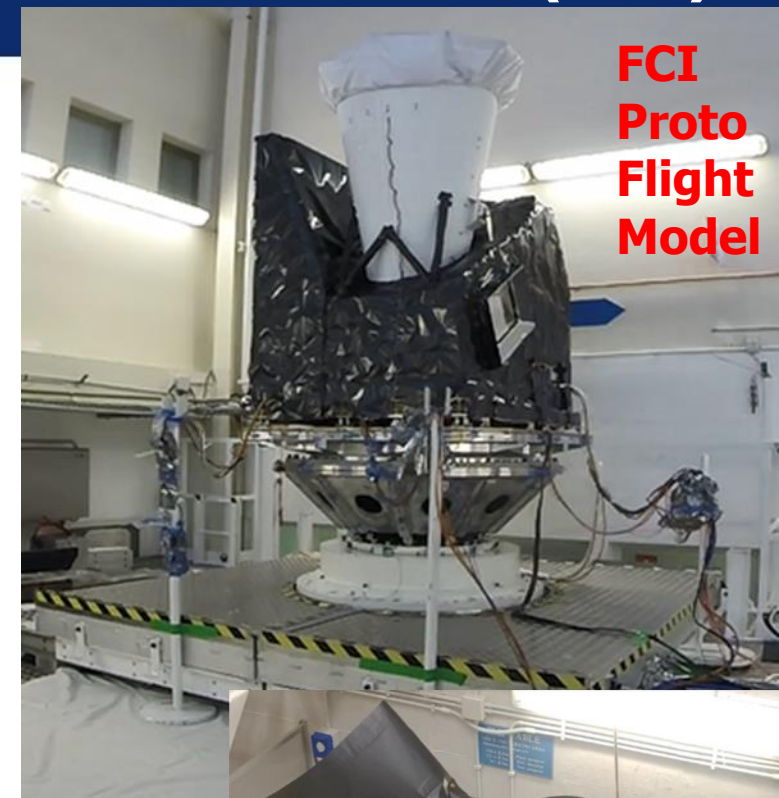
MTG Status Report – Space Segment / Satellites Status

- Common platform
 - Platform Software (SCSW) Qualification Review in June
 - Production of all recurring platforms is going on nominally
- MTG-I1
 - Proto-Flight Model (PFM) Assembly Integration and Test activities are running for Hybrid-PFM which has been removed from the critical path
 - Satellite Intermediate Qualification Check Point (IQCP) to be concluded in July
 - FCI PFM is on the critical path, only optical vacuum test remaining before delivery to the satellite in July
 - MTG-I Qualification and Flight Acceptance Review (QAR) in June 2022 for launch in December 2022
- MTG-S1
 - Satellite MTG-S CDR closed-out end of May
 - IRS instrument on the critical path, driven by the delayed Interferometer Assembly delivery
 - Launch term agreed with ESA and Arianespace Q1 & Q2 2024



MTG Status Report – Space Segment / Instruments (1/2)

- Flexible Combined Imager (FCI)
 - FCI Qualification Review is on-going with some remaining actions.
 - FCI PFM is being prepared for the optical vacuum testing which is the last step before delivery to the satellite mid-July.
 - FCI recurrent - the modified NIR Detection Assembly is available and passing qualification.
 - Re-run of EUMETSAT Earth Stray Light analysis based on complete data so far confirms previous acceptability statements
- Lightning Imager (LI)
 - Lightning Optical Head (LOH) Optical Channel #1 (OC#1, coverage area of Northwest Atlantic or Southwest Indian Ocean) contamination issue:
 - Taking the approx. 100 particles of ~10 pixels in diameter this works out to be ~0.7% of the pixels for OC#1
 - ESA indicated a limited impact – detailed assessment report on-going.
 - Assessment of the impact on the products by EUMETSAT started on the basis of the information currently available.
 - Coupling between the optical heads and the PFM electronics revealed problems - SW fix should be available, but this is taking time and resources.
 - ESA and Industry have implemented alternatives to the MTG-I PFM testing which will give the LI time until October to recover the situation.



**FCI
Proto
Flight
Model**



**LI Optical Head
Proto Flight Model**

MTG Status Report – Space Segment / Instruments (2/2)

- Infrared Sounder (IRS):
 - LWIR (Long Wave InfraRed) detector:
 - LWIR Detector Assembly for the FM2 available;
 - In addition, two flight spares have been identified.
 - IRS PFM critical path is driven by:
 - Detection & Electronic Assembly (DEA) delivered mid-March.
 - Interferometer Assembly (IA) is still not delivered, last inspection, just before shipment planned early May, showed silicon contamination on the corner cubes, NRB is on-going, possibility of cleaning is being analysed;
- Sentinel-4/Ultraviolet-Visible-Near-infrared (S4/UVN)
 - Instrument electronics delivered
 - PFM Instrument AIT activities progressing well: optics system successfully aligned in vacuum, integrated into main instrument module; delivery planned February 2022.
 - S4 checkpoint with ESA S4 and ESA MTG teams concluded that significant progress has been demonstrated.



IRS DEA Proto Flight Model



UVN Proto Flight Model optics

MTG Status Report – Ground Segment

- Telemetry, Tracking & Commanding Facility (TTCF) Mission Data Acquisition Facility (MDAF)
Ground Stations under warranty & maintenance
 - MDAF V2 civil works finished in Lario and Leuk, Factory Acceptance of antenna feed in May.
 - TTC 3/4/5 Design key points for refurbishment of MSG stations passed for all 3 stations
- Mission Operations Facility (MOF)
 - Advanced integration version V1.0.1 available since March recovering the functions having problems
 - Final version for Preliminary Acceptance (PAR) V1.0.2 under testing at contractor side
- Instrument Data Processing Facility for MTG-I (IDPF-I)
 - V3 received in December and V3.1 patch in February, intensively used by System IVV – stable 72 hours production of FCI L0 and L1 products achieved
 - A pre-delivery of the V4 expected in June to de-block IVV activities completion for System version 1.0
- Level-2 Processing Facility (L2PF) V2.4 delivered in December with all HW environments - successfully run in 72 hours test
- Instrument Data Processing Facility for MTG-S (IDPF-S)
 - Deliveries split in two versions for IRS and UVN chain
 - V1 (IRS) planned July 2021; V1a (UVN) planned end 2021
 - CDR for IRS-dedicated version planned mid-2021
- Level-2 Processing Facility (L2PF) Delta-CDR successfully closed

MTG Status Report – System

- System Validation Tests I1-v2 in April
 - Very good results in the LEOP week demonstrated:
 - Stability of LEOP Ground Segment
 - Solid operational knowledge for the LEOP
 - Suitability of deliverables from EUMETSAT and space segment)
 - Good results in EUMETSAT week demonstrated:
 - Stability of EUMETSAT Ground Segment
 - Solid operational knowledge of EUMETSAT team
 - Suitability of deliverables from space segment
- System Integration Verification and Validation
 - System 1.0 Intermediate Checkpoint concluded in February that the system Integration Verification and Validation is in good shape
 - First System end-to-end test including SAFs under preparation to start in July

