



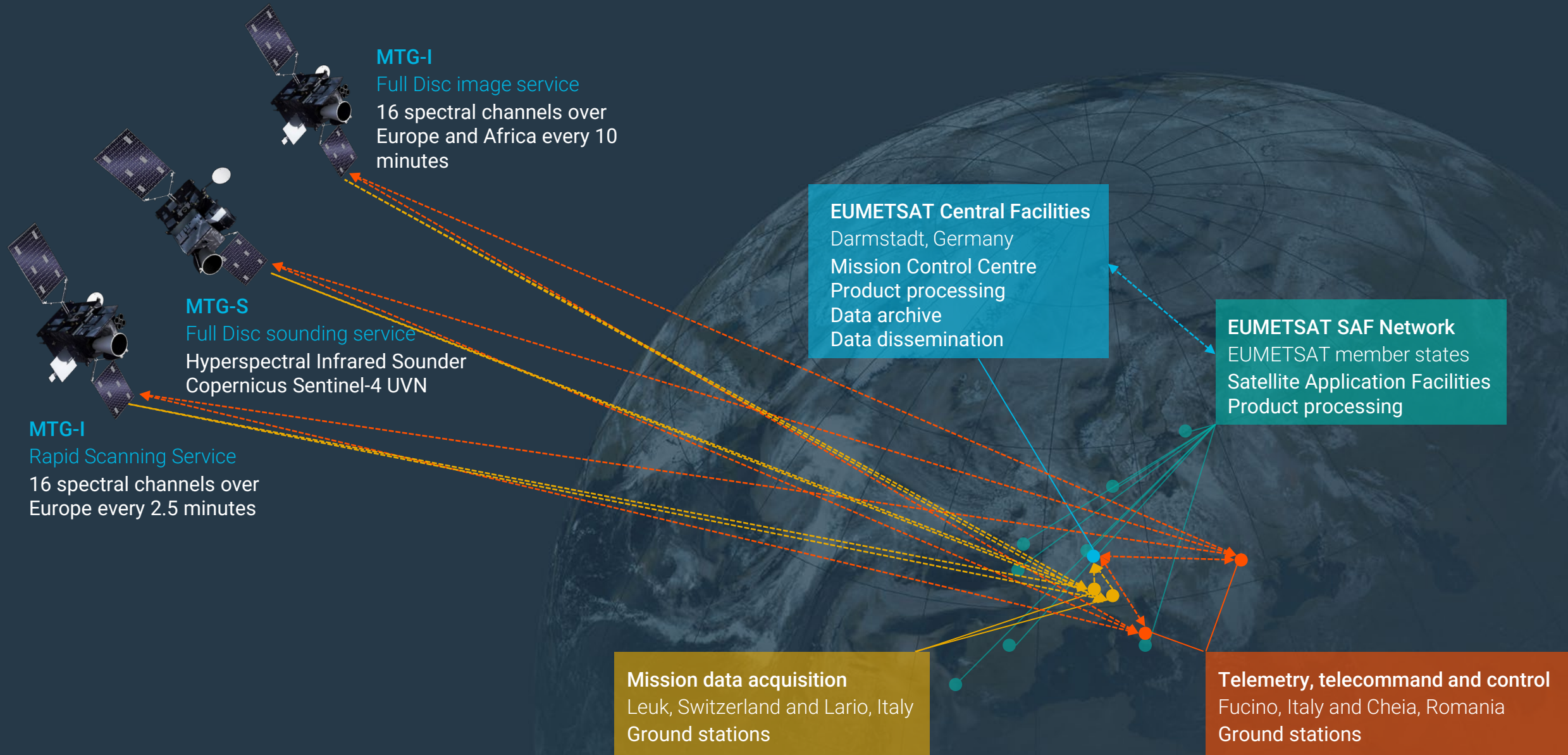
# Meteosat Third Generation (MTG) Programme Status

**Alexander Schmid, MTG Programme Manager**

*Living Planet Symposium, Bonn, 25 May 2022*

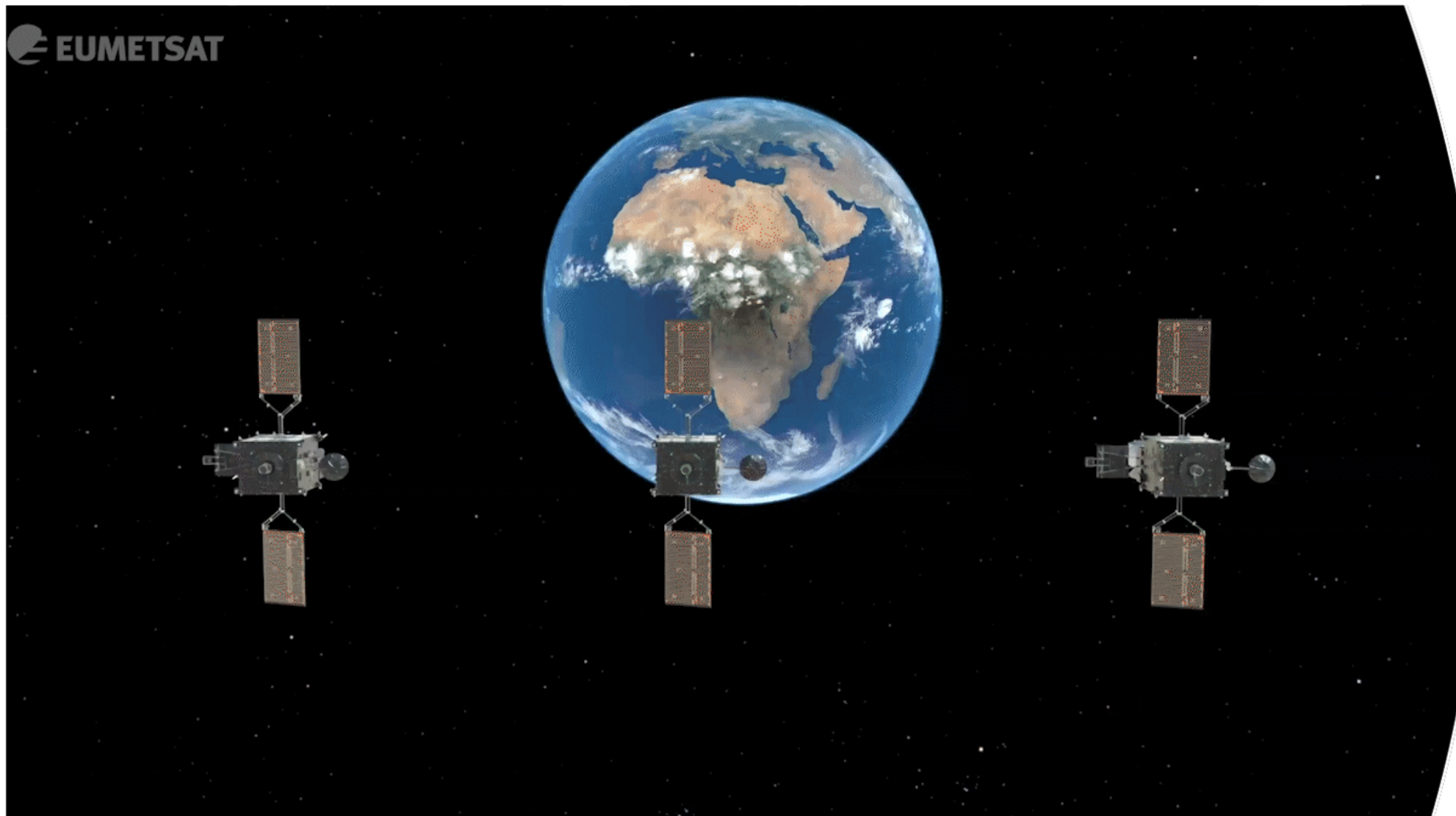


# MTG system overview





# MTG in orbit configuration



Three satellites configuration

Combination of an imaging mission (2 MTG-I) and a sounding mission (1 MTG-S)

## MTG-I

- First launch in 2022
- Operational exploitation: 2023-2044

## MTG-S

- First launch in 2024
- Operational exploitation: 2024-2043



# MTG Programme Introduction – Responsibilities

## Overall System and Ground Segment responsibility



MDAF antennas in Lario, Italy  
TTCF antenna in Fucino, Italy  
MDAF antennas in Leuk, Swiss  
TTCF antenna in Cheia, Romania

**EUMETSAT**

6x Launch Services

**Ground Stations**



6x LEOP Services



**EUMETSAT GEO Mission & Backup Control Centres**



**8 Satellite Application Facilities (SAF)**

## Space Segment – twin satellite concept based on common 3-axis platform under responsibility of



Lightning Imager (LI)

Sentinel-4 Ultra-Violet, Visible & Near-Infrared (UVN)  
Developed from Copernicus programme

InfraRed Sounder (IRS)

Data Collection & GEOSAR (D&G)

Flexible Combined Imager (FCI)

**MTG-I**  
4 Satellites  
20 years operations

**MTG-S**  
2 Satellites  
15,5 years operations



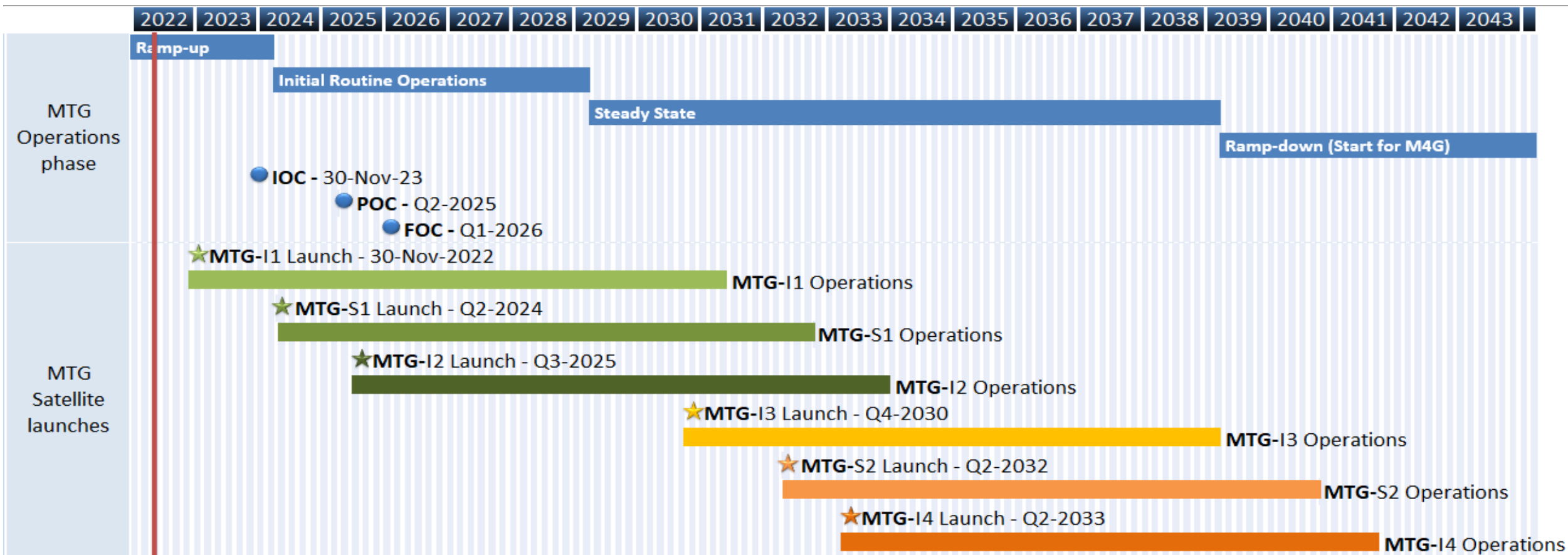
# Overall programme schedule

## For the Imager mission (MTG-I):

- Launch & Operations Readiness Review-I1 (LORR) part 1 for Launch ready system Version V1L on 21-22-23 June 2022;
- LORR part 2 for System commissioning Version V1C on 20-22-26 September;
- Consent to Ship after satellite Qualification and flight Acceptance Review (QAR) on 28 September 2022;
- Launch planned end November 2022.

## For the Sounder mission (MTG-S):

- System and Ground Segment Critical Design Review September 2021;
- Integration, Verification and Operations Preparation activities started with first Sounder specific facilities deliveries end 2021;
- MTG-S1 launch planned in H1 2024.





# MTG Programme Status – Space Segment

## MTG-I Satellite Status

- Satellite Thermal Vacuum (TVAC) and mechanical test campaign successfully completed;
- Final functional test on-going;
- MTG-I Satellite Qualification & Flight Acceptance Review (QAR) kick-off 04 July, QAR board and Consent to Ship (CTS) on 28 September 2022;

## MTG-S Satellite Status

- MTG-S Proto-Flight Model (PFM) platform completed
- InfraRed Sounder (IRS) Proto Flight Model ambient performance and mechanical testing completed - delivery to satellite end 2022;
- Sentinel-4/Ultraviolet-Visible-Near-infrared (S4/UVN) Proto-Flight Model (PFM) calibration campaign at RAL (UK) started, delivery planned September 2022;
- MTG-S Satellite Qualification & Flight Acceptance Review (QAR) Autumn 2023 for a lunch within launch period in H1 2024.



*Complete MTG-I PFM satellite and its launch adapter after separation test (picture by Thales Alenia Space)*



# MTG Programme Status – Ground Segment

MDAF, Lario/Italy



## Telemetry, Tracking & Commanding Facility (TTCF) Mission Data Acquisition Facility (MDAF)

- All stations installed and under maintenance, TTC partly used by MSG.
- MDAF 3<sup>rd</sup> antenna supporting MTG-I2 recently installed.

## Mission Operations Facility (MOF)

- Launch ready version V1.1 installed, Back-up Satellite Control Center (BSCC) deployed;
- First version supporting MTG-I and S in parallel under test.

## Instrument Data Processing Facility for MTG-I (IDPF-I)

- Launch ready version V4.B under test;
- Version V5 supporting commissioning expected in July.

## Level-2 Processing Facility (L2PF) V3 delivered December 2021, Preliminary Acceptance Review (PAR) closed in April

## Instrument Data Processing Facility for MTG-S (IDPF-S)

- First Version V1 accepted
- First implementation of UVN “Gap filler” mitigating late availability UVN Level 1 processor delivered

## Level-2 Processing Facility (L2PF) for MTG-S

- First version expected in July 2022
- Dedicated version for UVN Level 2 Operational Processor (L2OP) developed by ESA in November 2022

MDAF, Leuk/Swiss



BSCC, Fucino/Italy



# MTG Programme Status – Launch & LEOP Services

www.eumetsat.int

Agreement on launch slot

Today

Agreement on launch date

FRR

LRR

Final Mission Analysis Review

Launch Slot

## MTG-I1 launch service

- Launcher adapter fit check and separation test completed
- Launch slot – formalised and confirmed by Arianespace  
*Launch slot: 01st – 30th November / target launch date: 30th November*
- Final Mission Analysis Review (FMAR) kicked-off on 13 May

## MTG-S1 launch service

- Preliminary Mission Analysis Review (PMAR) concluded in December 2021
- Availability of Ariane 64 for MTG-S1 launch expected in H1 2024.

Today

LSRR-I1  
(L – 4 m)

LSR-I1  
(L – 2w)

LEOP preparation and validation

Sim #1

Sim #2

## Launch and Early Orbit phase (LEOP) Services

- Hand-over from LEOP service to EUMETSAT Operations tested, LEOP Ground Segment test with all 7 LEOP Ground Stations completed.
- LEOP Operations Validation started in April, activity will continue into June.
- First LEOP simulation campaign to start 30 May for LEOP Service Readiness Review 04 August.





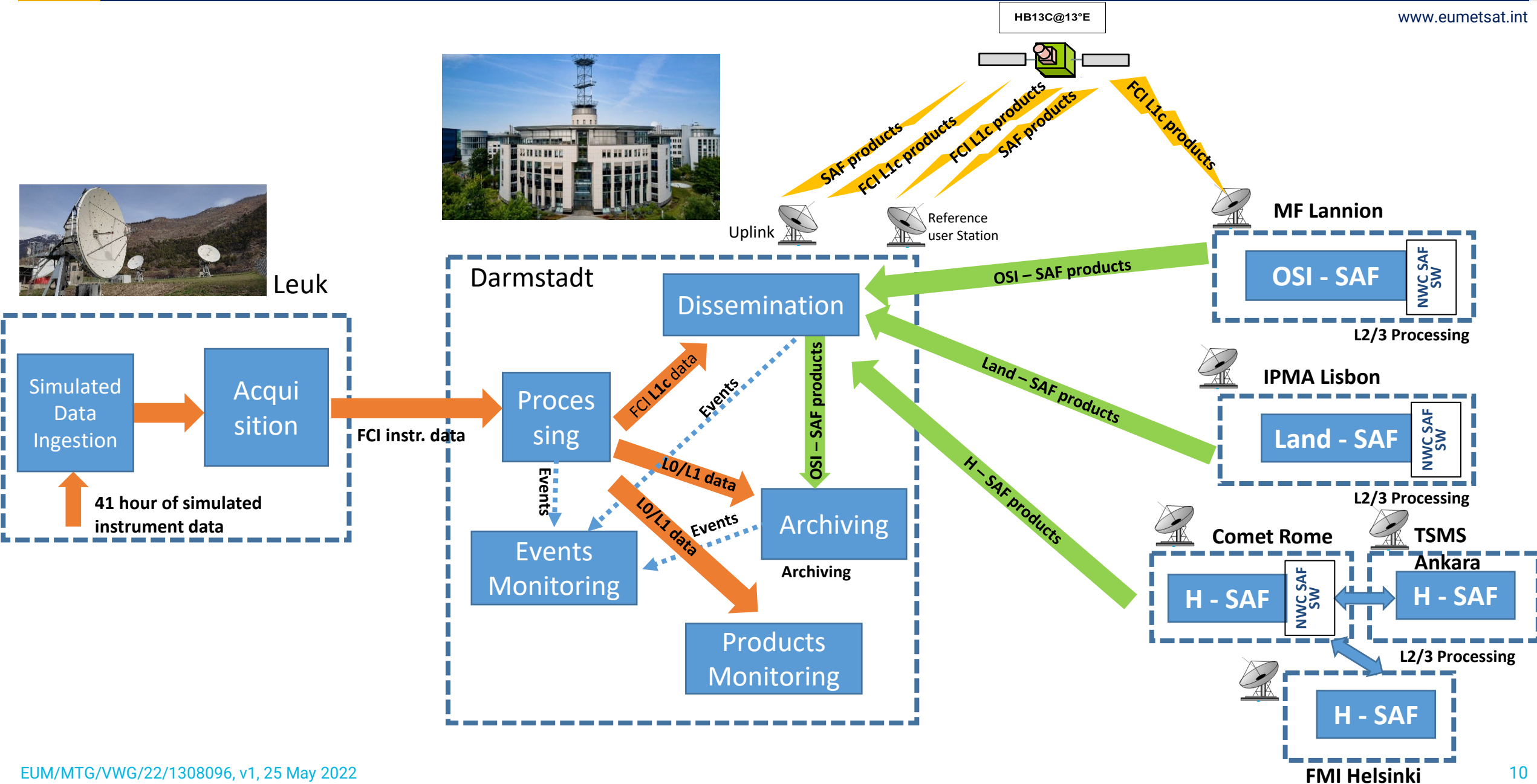
## MTG-I:

- **Integration Verification and Validation activities for System Version V1L reviewed at Launch and Operations Readiness Review (LORR) part 1 scheduled 21-23 June 2022**
  - ❖ Data processing 41 hours end-to-end test including Satellite Application Facilities performed in July 2021
  - ❖ System endurance: 6 days achieved for Mission Control chain, 72 hours for data processing chains, 6 day test for data processing under preparation
- **Final System Validation Test (SVT-I1-v3) of EUMETSAT and LEOP ground segments with MTG-I1 PFM satellite scheduled for 2 weeks from 11-23 July 2022**
- **LORR part 2 scheduled in September, covering readiness for commissioning.**
- **User preparation on-going**
  - ❖ Several webinars performed in 2021, test data available on EUMETSAT website
  - ❖ EUMETSAT User Days 2022: Focus on Next-generation Meteorological Programmes (MTG & EPS-SG) from 31 May to 02 June 2022

**System MTG-S Operational Scenario Validation Readiness Review (OSVRR) in May 2023**

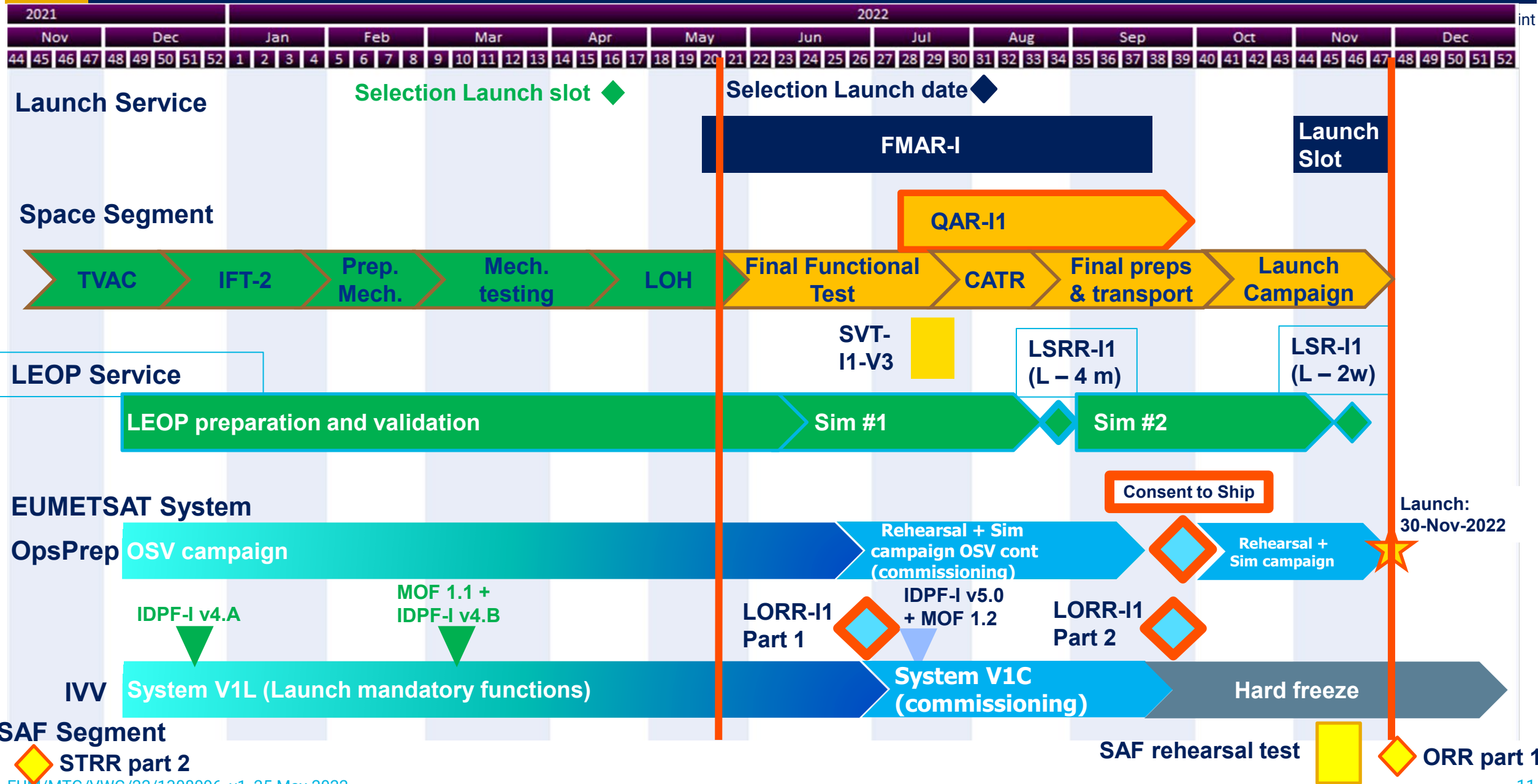


# MTG science data flow – from acquisition to end users



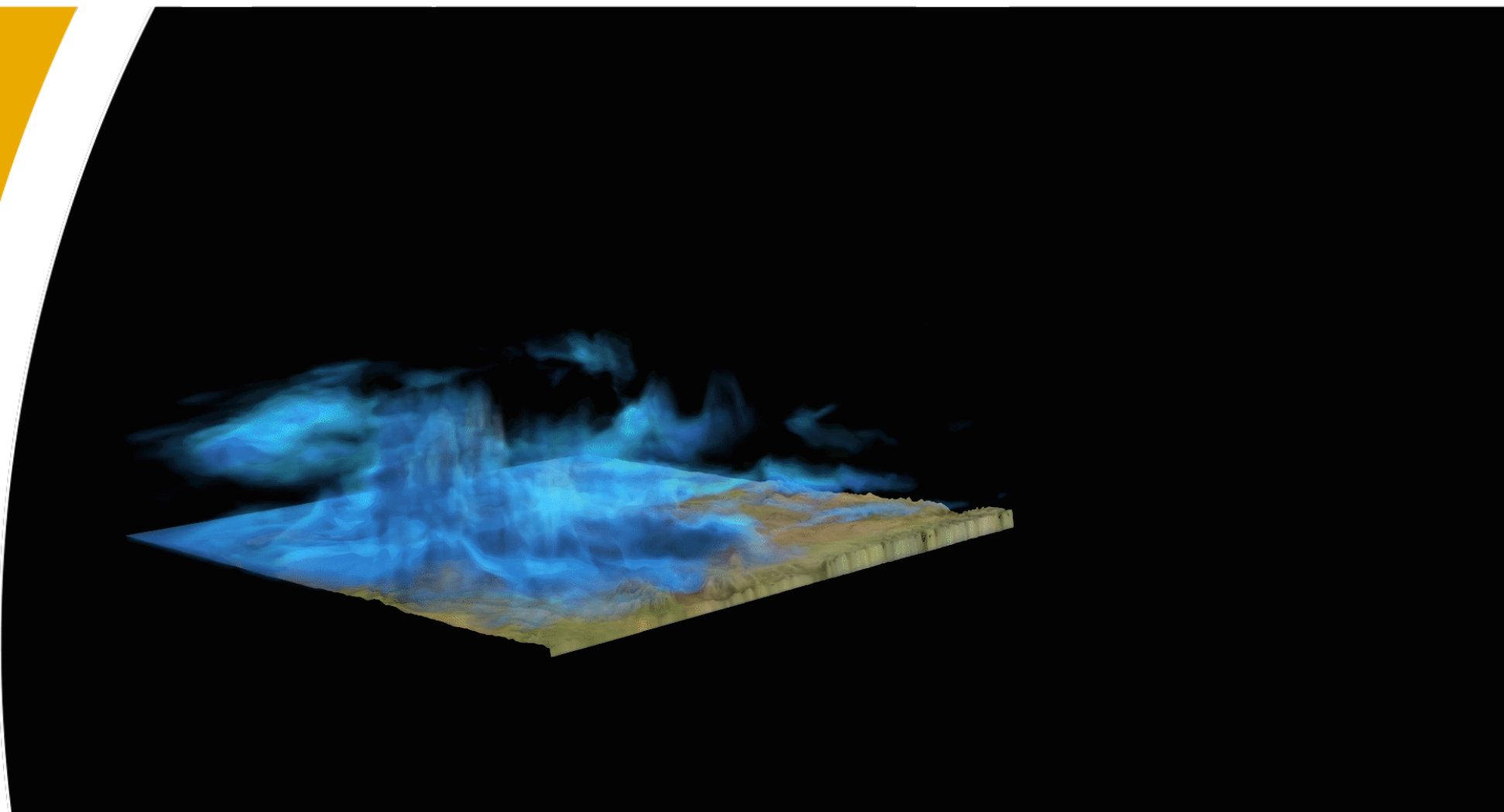


# MTG-I1 System Schedule run up to Launch





The “4D weather cube”, enabled by MTG instruments, will for the first time enable forecasters to simultaneously track meteorological phenomena, such as convection, winds and lightning, to more accurately detect and forecast rapidly developing high-impact weather.





**Thank you!**