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Metis

In-Flight Commissioning & Calibration

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- **Timeline and Operative constrains**
- **Goals**
- **Measurements descriptions**





Metis Commissioning and calibration activities are distributed over two mission phases NECP and CRUISE

- **NECP T0 + 1w → t0 + ~3m**
- **CRUISE T0 +3m → T0 + 23m**

Detailed sequence of operations are planned accordingly to several constraints:

- **Mission (Ground station passes, maneuvers)**
- **safety and cleanliness (cap ejection, HV usage)**
- **Operational (Real time, TM latency, parallel ops)**
- **Specific needs (S/C maneuvers)**





Graphical representation of the NECP timeline:



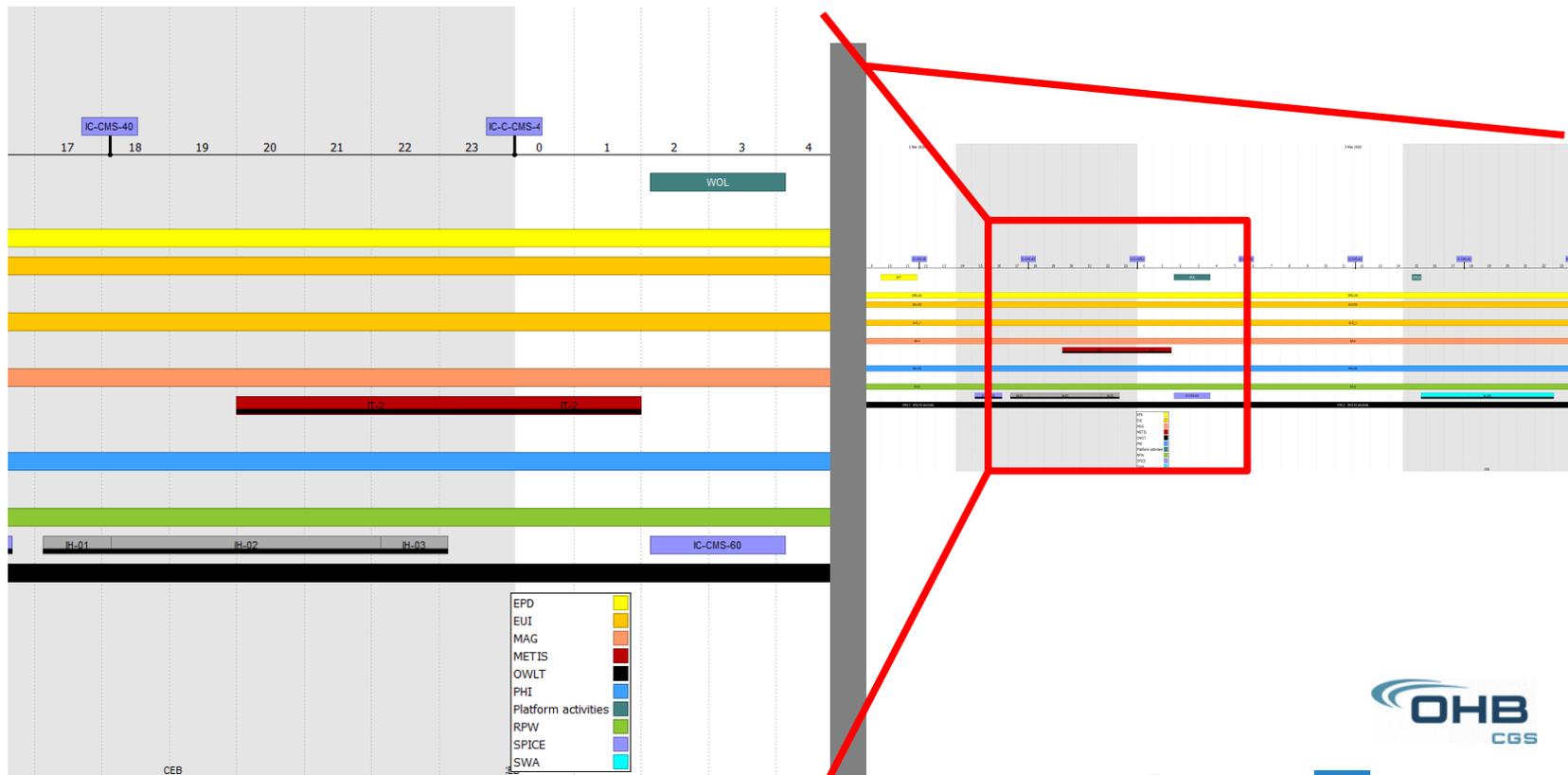


Graphical representation of the NECP timeline:





Graphical representation of the NECP timeline:





Timeline & Goals

Metis C&C NECP operations are concentrated in 7+1 operative windows.



Block	Time	Goals
#01	T0 + 16d	First switch-on; Health check
#02	T0 + 27d	VL&UV Dark, VLD Annealing
#03	T0 + 31d	Cap ejection
#04	T0 + 55d	FIRST LIGHT UV Offset map, HV ramp up&down, VL Boresight verification, <u>Compression efficiency</u>
#05	T0 + 64d	tB verification, Cosmic Ray algo verification
#06	T0 + 78d T0 + 80d	Straylight characterization (S/C rolls) Optional: IO Optimization (S/C rolls)
#07	T0 + 83d	Diffraction/Alignment characterization (S/C slews) Polarimetric characterization (S/C rolls)
#08	T0 + TBD	Backup slot



Operations will be planned and performed by using

- **In-flight procedures for switch-on/off and instrument configuration and mode changes**
 - **Specifics TC sequences for acquisition configurations and execution**
- ... and formalised via PDOR**





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C&C Goals

Verification and/or characterization of

Dark current

Boresight and co-alignment

Radiometric (?)

Straylight (incl. of IO alignment verification),

Polarimetric

Functional:

Observing modes

Compression efficiency

Cosmic ray removal algo & other thresholds & coefficients

WIP: Sun Disk Monitor and CME Flag





Four Remote Sensing Check-out Windows are planned during cruise:

- **RSCW1: Jun 2020 (0.52-0.51AU) - 5 days**
- **RSCW2: Feb 2021 (0.5-0.54 AU) - 5 days**
- **RSCW3: Mar 2021 (0.69-0.71AU) - 3 days**
- **RSCW4: Sep 2021 (0.60-0.63AU) - 8 days**

Nominal mission planning approach and tools (SOOP → MISO) and formalized via IOR





Verification and/or characterization of :

Radiometric

Dark current

Straylight

Polarimetric (Malus Curve)

Functional:

Standard Scientific modes

Compression efficiency (TM allowing)

WIP: CME Flag (?)

