EUMETSAT

Potential benefits of using CLARREO Pathfinder data for inter-calibration from a EUMETSAT perspective

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Geostationary Missions

- Meteosat Second Generation ➔ SEVIRI instrument
  - Meteosat-9 to 11 ➔ Priority : Medium
  - VIS0.6 / VIS0.8 / NIR1.6 / HRV

  ➔ Targets: Moon + PICS + DCC

- Meteosat Third Generation
  - Imager platforms (1st launch end 2022)
    - FCI: 8 bands ranging from 0.444μm to 2.250 μm ➔ Priority : High

      ➔ Of particular interest VIS0.9 + NIR1.3 (absorbing channels)
    - LI ➔ nice to have. Benefit for such a very narrow band? Priority = low

    ➔ Targets: Moon + PICS + DCC

Low-Earth Orbit Missions

- EPS – Metop-B and C:
  - GOME2 Priority : Medium
    - ➔ Targets: Moon + PICS + DCC (+ ray matching TBC due to pixel resolution)

- EPS Second Generation (1st launch early 2024)
  - 3MI: bands ranging from 0.410µm to 2.130µm / no on-board calibration ➔ Priority : High
    - ➔ Of particular interest 0.91µm + 1.37µm (absorbing channels)
    - ➔ Targets: PICS + DCC + ray matching
  - METimage: bands ranging from 0.443µm to 2.250µm ➔ Priority : High
    - ➔ Of particular interest 0.91µm + 1.37µm (absorbing channels)
    - ➔ Targets: Moon + PICS + DCC + ray matching

Low-Earth Orbit Missions – Third Party Programs

- Sentinel-3:
  - OLCI: 21 bands ranging from 0.400μm to 1.020 μm
    - Benefits for narrow channels at ~760nm?
  - SLSTR: 6 bands ranging from 0.555μm to 2.250 μm

  ➔ Targets: Moon + PICS + DCC + ray matching

- Sentinel-4 (GEO – MTG-S : 1st launch early 2024) / Sentinel-5 (LEO – EPS-SG-A1: 1st launch early 2024):
  - UVN / UVNS ➔ need to aggregate channels to map CLARREO PF

  ➔ Targets: Moon + PICS + DCC

- CO2M:
  - MAP (Multi-Angle Polarimeter): 7 bands ranging from 0.410μm to 0.865 μm
  - CLIM (Cloud Imager): 3 bands ranging from 0.670μm to 1.370 μm

    ➔ Targets: Moon + PICS + DCC + ray matching
  - CO2I spectrometer ➔ need to aggregate channels to map CLARREO PF

  ➔ Targets: Moon + PICS + DCC

PICS – Desert Targets

- 18 Saharan + Arabian desert targets as in Cosnefroy 1996
- Priority in the list of site?
- CEOS recommended sites?
- Focus on a limited set of PICS to get a BRDF spectrally described

  ➔ Benefits to all instruments using Vicarious Calibration with PICS

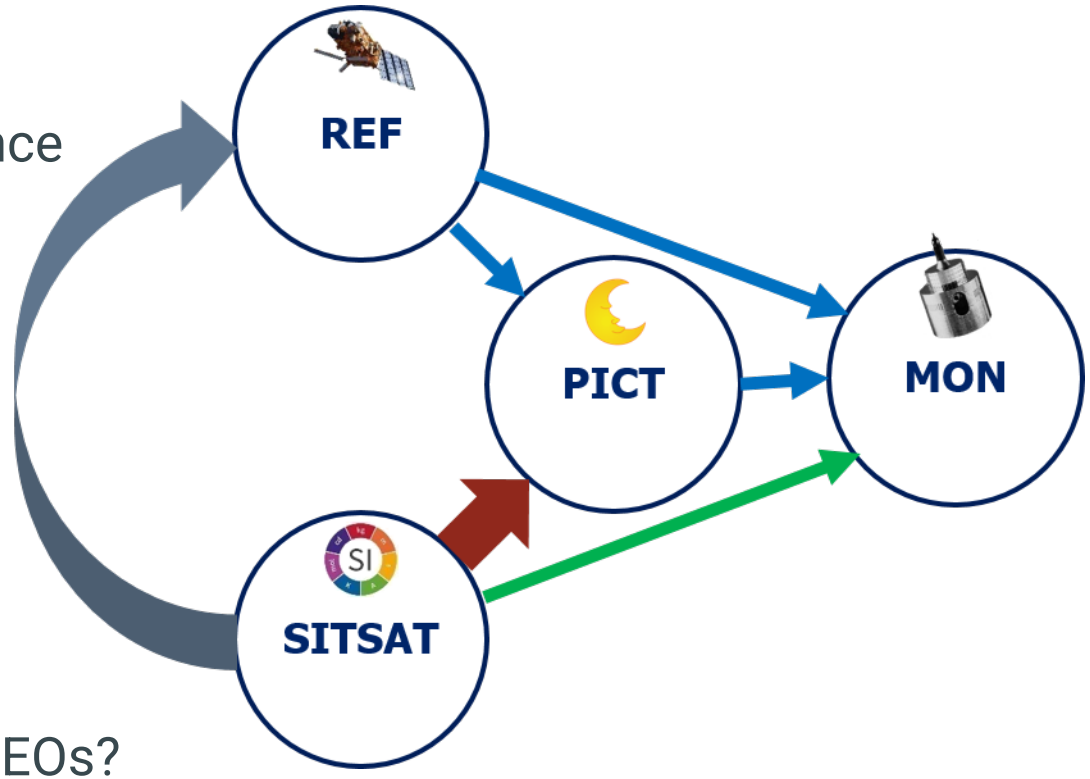
- Cross benefits to Meteosat and all polar satellites using PICS within Meteosat Field Of View

  ➔ Saharan + Arabian deserts

Summary

Priorities

1. Moon
2. NOAA-20 VIIRS ➔ absolute calibration / GSICS reference
3. EPS-SG (3MI + METimage)
4. PICS (dedicated set of targets including Libya-4)



- Question: what is easier to achieve between GEOs and LEOs?
- What about polarisation and CLARREO measurements?
- Rayleigh:
  - How to deal with cloud/aerosol contamination?
  - What in the context of planning dedicated acquisitions with CLARREO PF?

Thank you!

Questions are welcome.