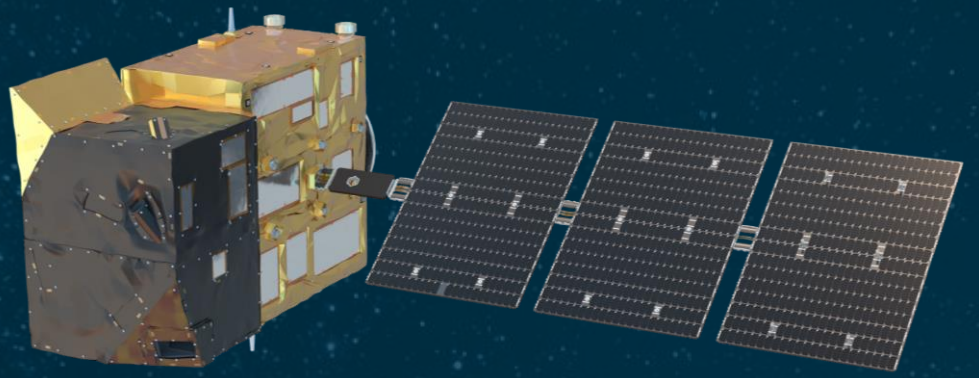


Anthropogenic Grenhouse Gas Monitoring with the Copernicus CO_2 Monitoring (CO2M) Mission

Yasjka Meijer, ESA

19th AC-VC, Bruxelles

Copernicus CO2M Mission – Status

Project status:

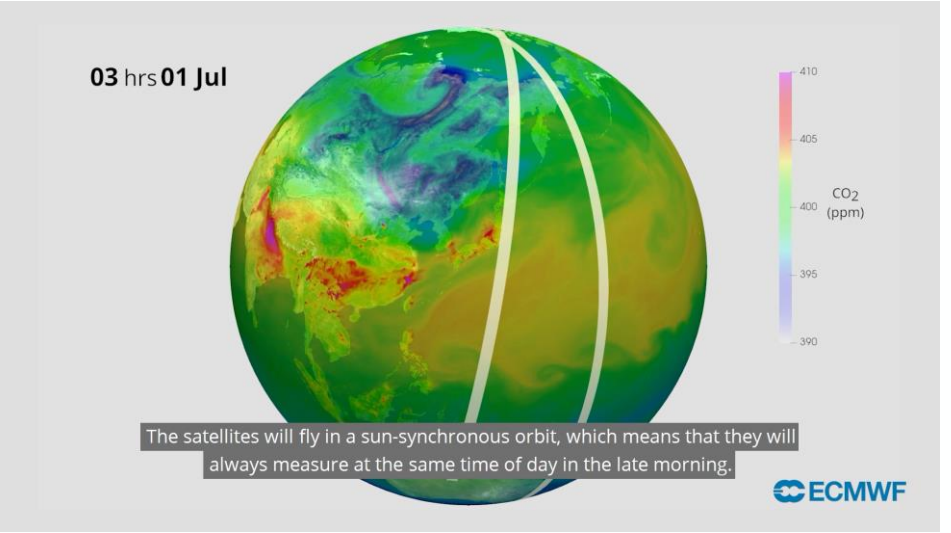
- Critical Design Review (end Phase C):
  - payload **just started & ends in 2024**
  - satellite **in early 2024**
- **Constellation** of satellites
- Each satellite **>250 km swath**
- First and second satellite will have their Flight Acceptance expected **early 2026**
- Possible **3rd satellite** pending EC decision

Copernicus data is made freely available to any person and organisation around the world

EUMETSAT performs operational data processing and will operate the mission

EUMETSAT

Product	Spatial	Precision, (bias)
CO_2	4 km^2	0.7 ppm, (<0.5 ppm)
CH_4	4 km^2	10 ppb, (<5 ppb)
NO_2	4 km^2	1.5 10^{15} molecules cm^{-2}
Vegetation SIF	4 km^2	0.7 mW m^{-2} sr^{-1} nm^{-1}
Aerosol params	16 km^2	0.05 AOD, 500 m LH
Cloud fraction	1%	Water clouds & cirrus

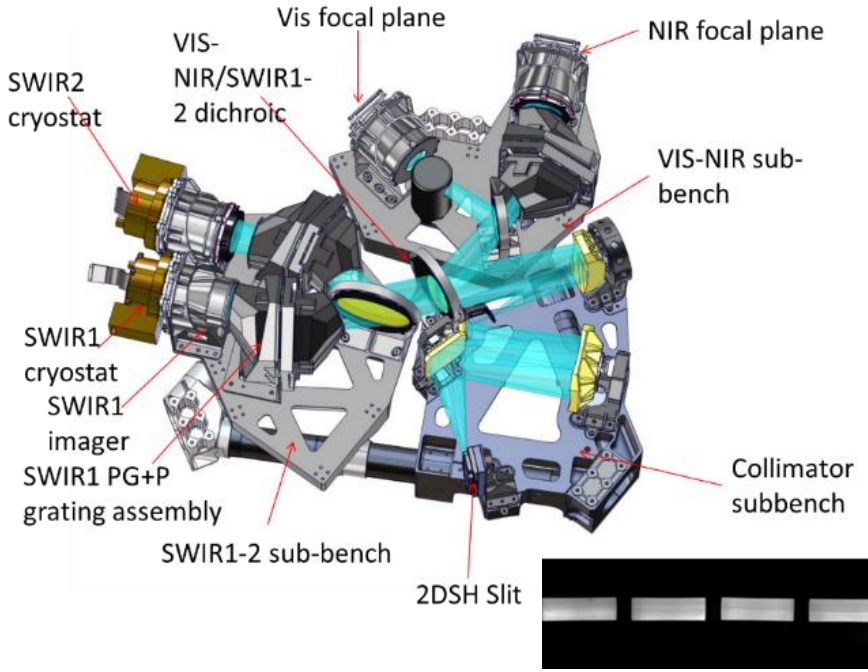


Credits: EMPA


PROGRAMME OF THE
EUROPEAN UNION
opernicus
Europe's eyes on Earth
co-funded with
esa
CO2M
Copernicus Anthropogenic
Carbon Dioxide Monitoring
EUMETSAT
THANK YOU

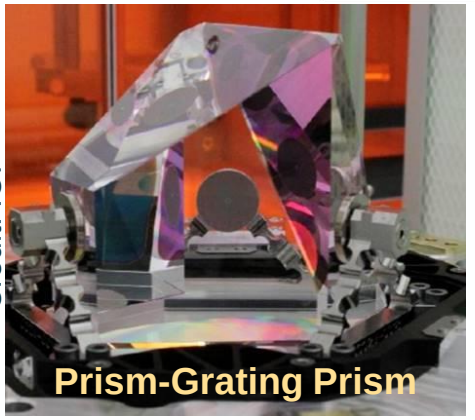
CO2M Payload

Push-broom imaging spectrometer



Credit: TAS-F

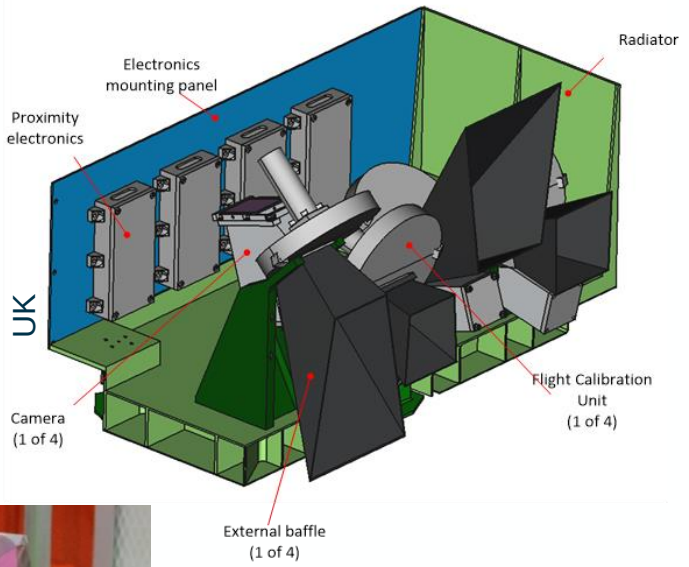
Band	Spectral range
VIS	405–490 nm
NIR	747–773 nm
SWIR-1	1590–1675 nm
SWIR-2	1990–2095 nm



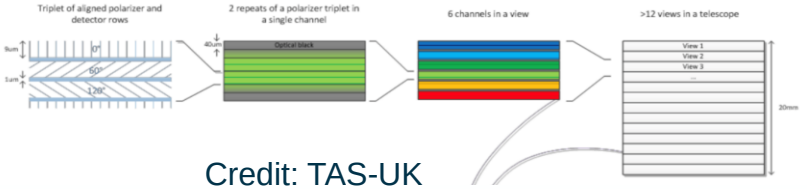
Credit: IOF

Multi-Angle Polarimeter (MAP)

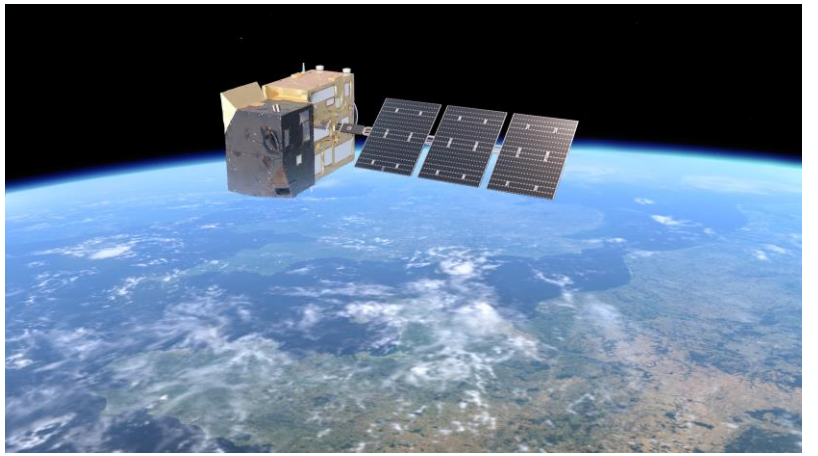
Four identical, simple cameras each 12 views and 7 spectral bands. A TE2V CIS-120 detector, patterned with multi-spectral filter and micropolarizers



Credit: TAS-UK

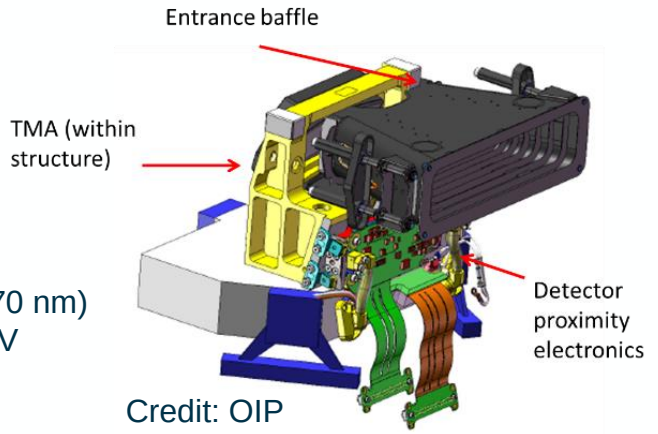


Credit: TAS-UK



Cloud Imager

Three band (670, 753, 1370 nm) imager based on PROBA-V



Credit: OIP

Optical Bench Structural Model