



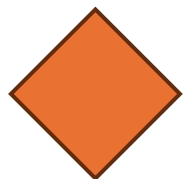
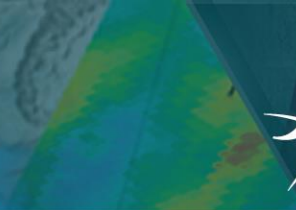
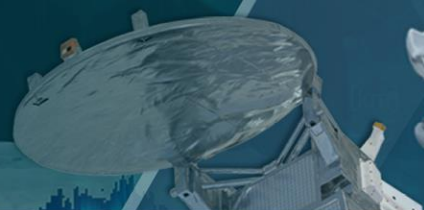
EarthCARE In-Orbit Validation Workshop

Dirk Bernaerts

ESA – Earth Explorers Missions Programme Manager

1st ESA-JAXA EarthCARE In-Orbit Validation Workshop
14 – 17 January 2025 | VIRTUAL EVENT

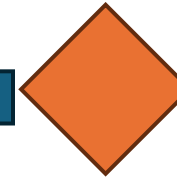
428 days ago...



170 days

29

428 days



13 Nov 2023

EarthCARE Pre-Launch Science and Cal/Val Workshop

EarthCARE Status esa

1st May 2024

< 6 months

170 days

ESA | JAXA

EarthCARE

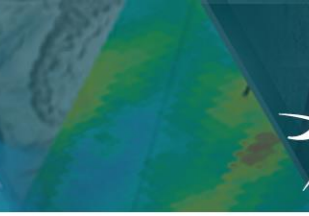
The graphic shows a satellite in orbit over Earth. It includes the ESA and JAXA logos and the EarthCARE logo.

14 Jan 2025

EarthCARE In-Orbit Validation Workshop

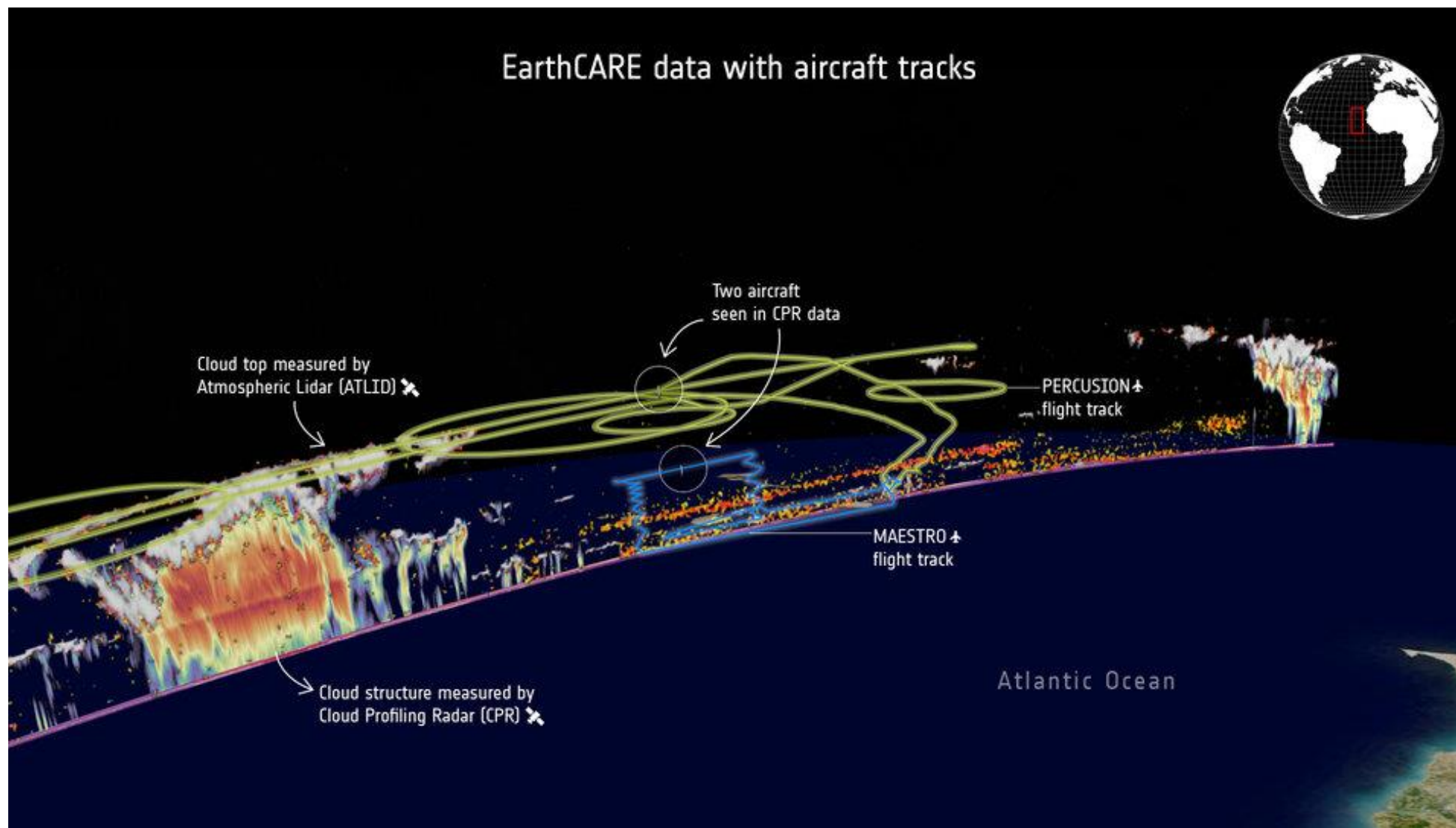


234 days ago...

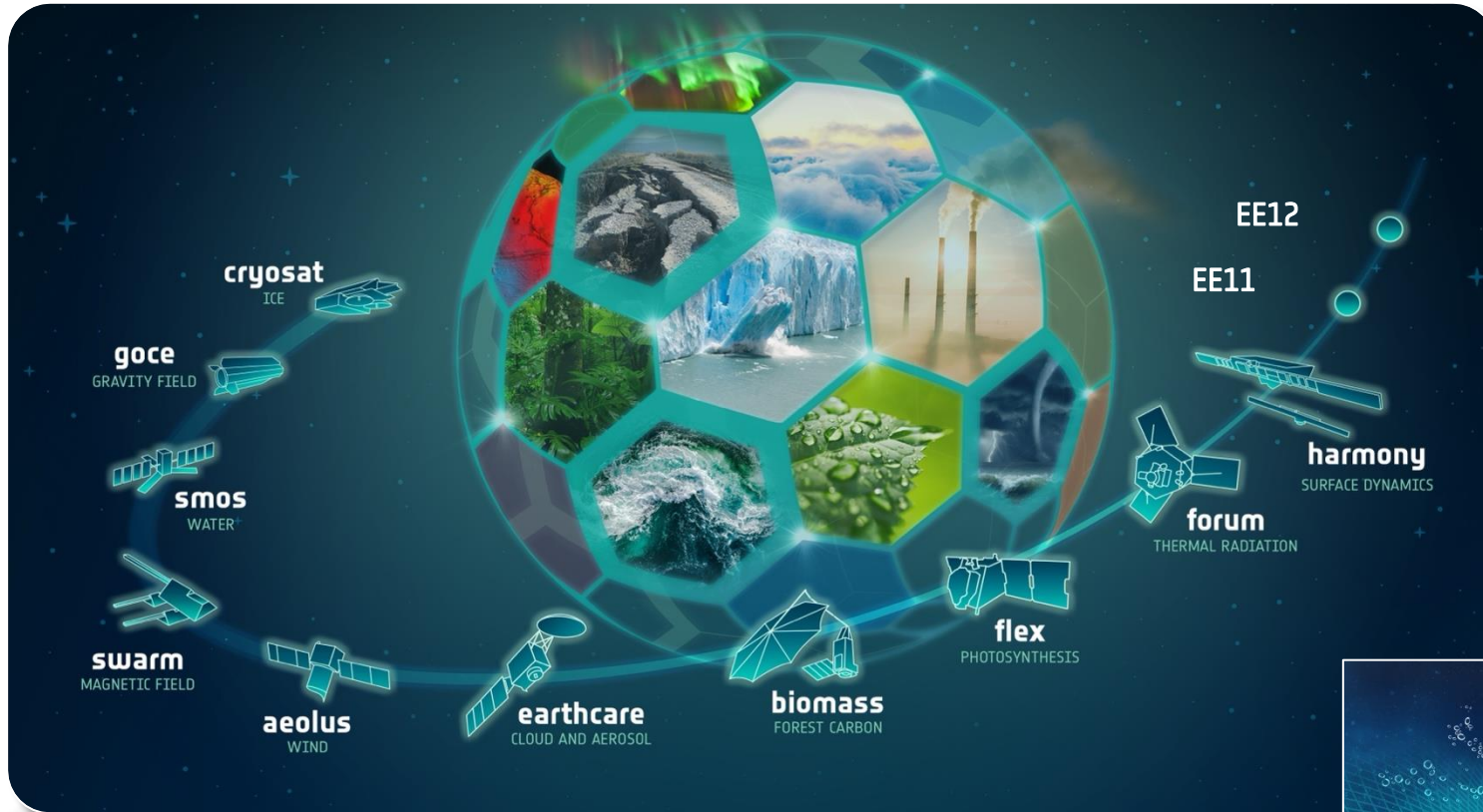


https://www.esa.int/ESA_Multimedia/Videos/2024/06/EarthCARE_highlights

Since then...



Part of Future EO... but challenging development



Many challenges had to be overcome

- 8.5 years development delays
- At 133% implementation cost (ESA level)



Was it worth it ?



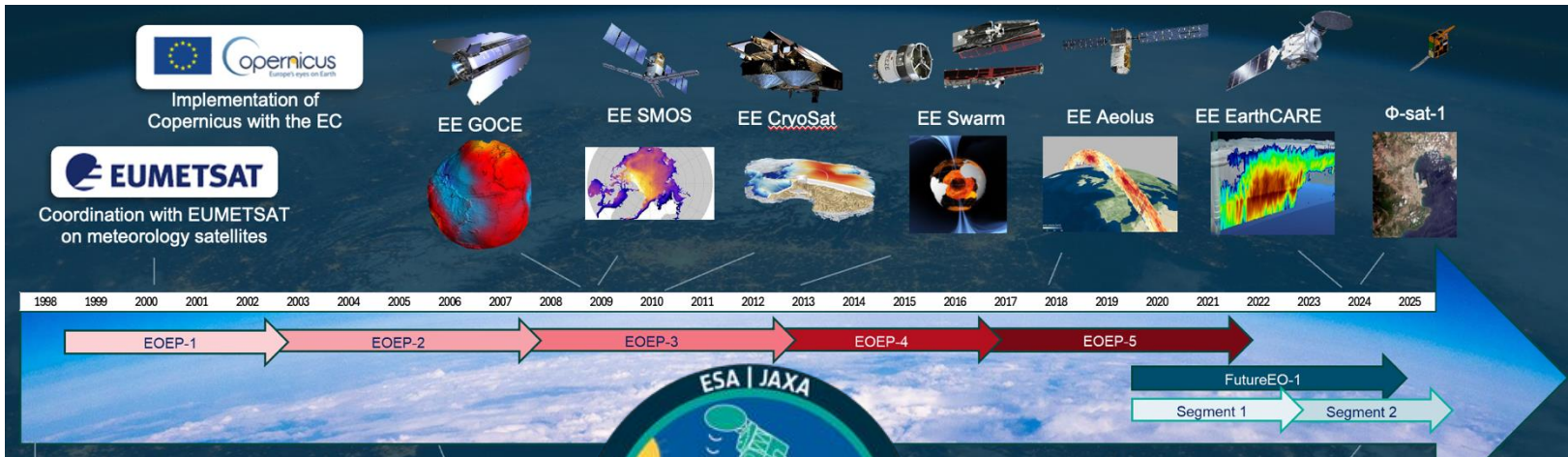
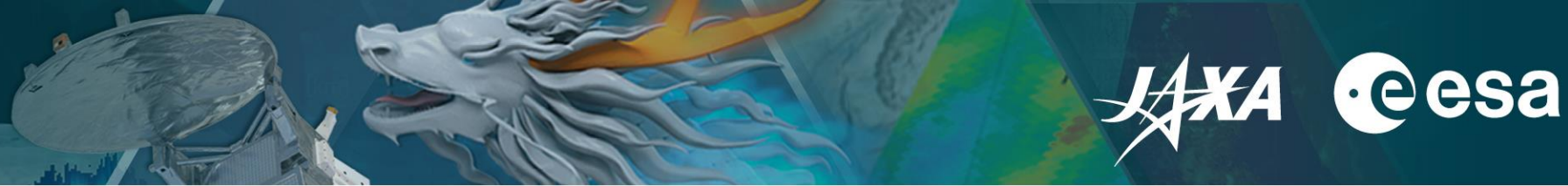
“While major advances in the understanding of cloud processes have increased the level of confidence and decreased the uncertainty range for the cloud feedback by about 50% compared to AR5, clouds remain the largest contribution to overall uncertainty in climate feedbacks (high confidence).”
(IPCC, 2021)



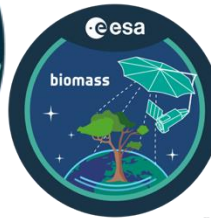
“EarthCARE [...] will give us a step change in terms of how we represent the clouds.”
(R.Forbes, ECMWF, in New Scientist, “We’re finally solving the puzzle of how clouds will affect our climate”, 7-Sep-2024)



Was it worth it ?



CM-25 proposal for Future-EO



2018

2024

2025

2026

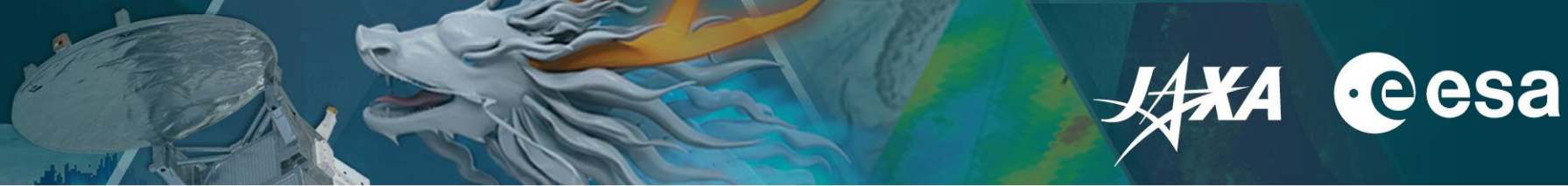
2027

2028

2029

2030

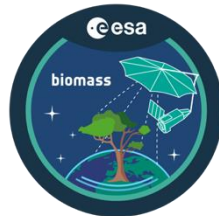
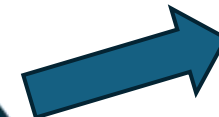
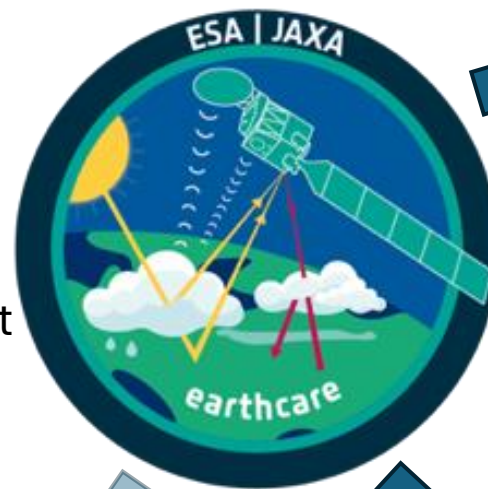
Was it worth it ?



Design lessons learnt

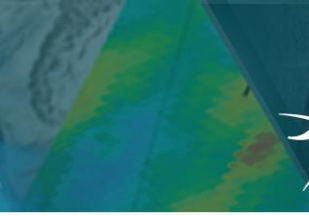


In-Orbit lessons learnt



EE11 candidate

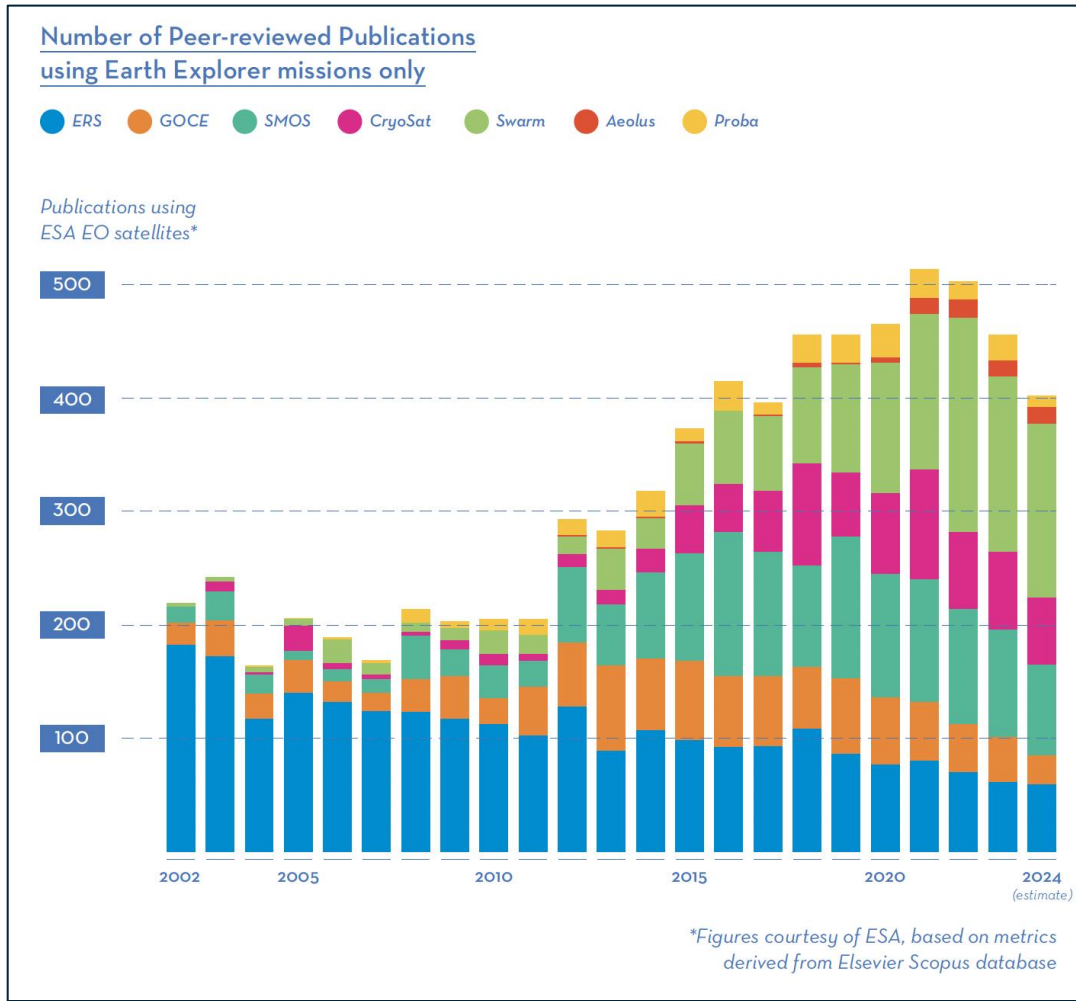
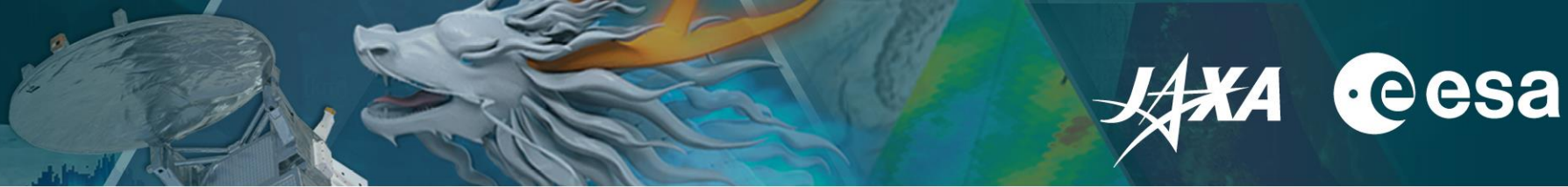
Was it worth it ?



Cooperation



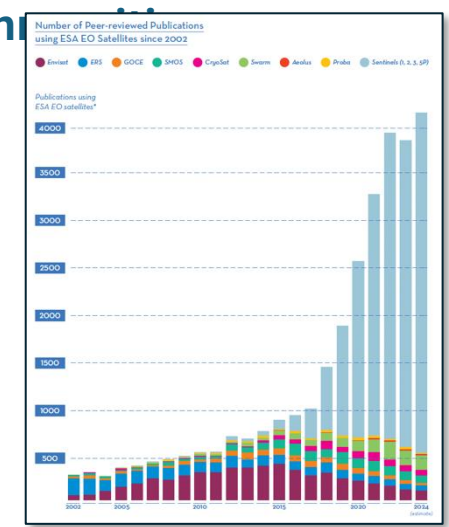
Was it worth it ?



What will be EarthCARE's Scientific Return ?

Big expectations for EarthCARE exploitation to further increase Earth Explorers impact !

-> Validation and Science com...



Figures from soon to be released "Earth Observation Groundbreaking Science Discoveries" Committee European Space Sciences

Thanks !



and many more in ESA,
JAXA, Industry,
Validation...