

Framework and Scope of the Review

CCI Programmatic Review
9 December 2024

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APPLICATIONS

sentinel-1

Radar vision for Copernicus



Sentinel-1C lofted to space and Vega-C returns to flight 5 December 21:20z

- Flawless job by Vega-C
- S1C LEOP finished yesterday morning 07:00z
- Both are excellent news for us all

EarthCARE – a confirmed powerhouse for climate research



Featuring data from 18 September, this animation shows EarthCARE's great capability to provide synergistic measurements of clouds and aerosols

EO Science Strategy published and actively used!



Earth Science in Action for Tomorrow's World

Earth Observation Science Strategy

Frontier Science and Discovery:
a strong foundation

From Science to Benefits:
meeting society's needs

Reducing critical knowledge gaps:
taking immediate action

Filling critical observation gaps:
preparing for tomorrow starts today

**Science Questions and their Relevance to
International Treaties, Agreements & Conventions**

Endorsed by September PB-EO



- Strengthen relations with EU
- Reinforce and strengthen science ambitions including earth sciences
- Play a key role in support to policies
- Boost commercialisation, make Europe a hub for space commercialisation (ref Draghi Report)
- Develop Resilience, Safety and security domain activities

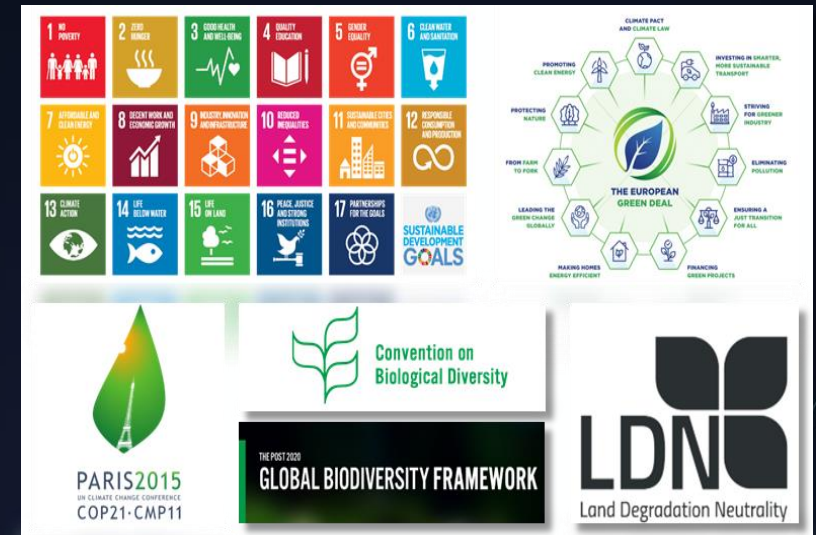
Drivers for CM25 Proposals

Starting point

EO programmes provide critical information to understand and address major climate and environmental challenges from global to citizen level

Objectives

- strengthen **science excellence** and **worldwide leadership in EO infrastructure** while ensuring operational mission continuity
- ensure **availability and uptake of valorised EO data & information** products to better understand climate, environmental and natural resources crises
- further develop **space solutions to enable Earth action**
- promote worldwide **European industrial competitiveness in the EO market** and lead on uptake of technology innovation and synergies with other digital domains
- **simplify** programme offering and georeturn management



- ❑ EO Foundations (evolution of Foundations and Concepts block)
- ❑ EO Missions and Data (integrating Research Missions and Mission Management blocks)
- ❑ Earth Action (integrating EO Science for Society block, ClimateSpace and GDA EarthWatch programme elements)

In order to

- ✓ Reinforce FutureEO as **beating heart of ESA EO**
- ✓ Reinforce FutureEO's ability to **target activities and investment in climate- and environment-related solutions**
- ✓ **Increase synergies** between activities and use of resources

Earth Action (Pillar 3) - the approach



Review questions

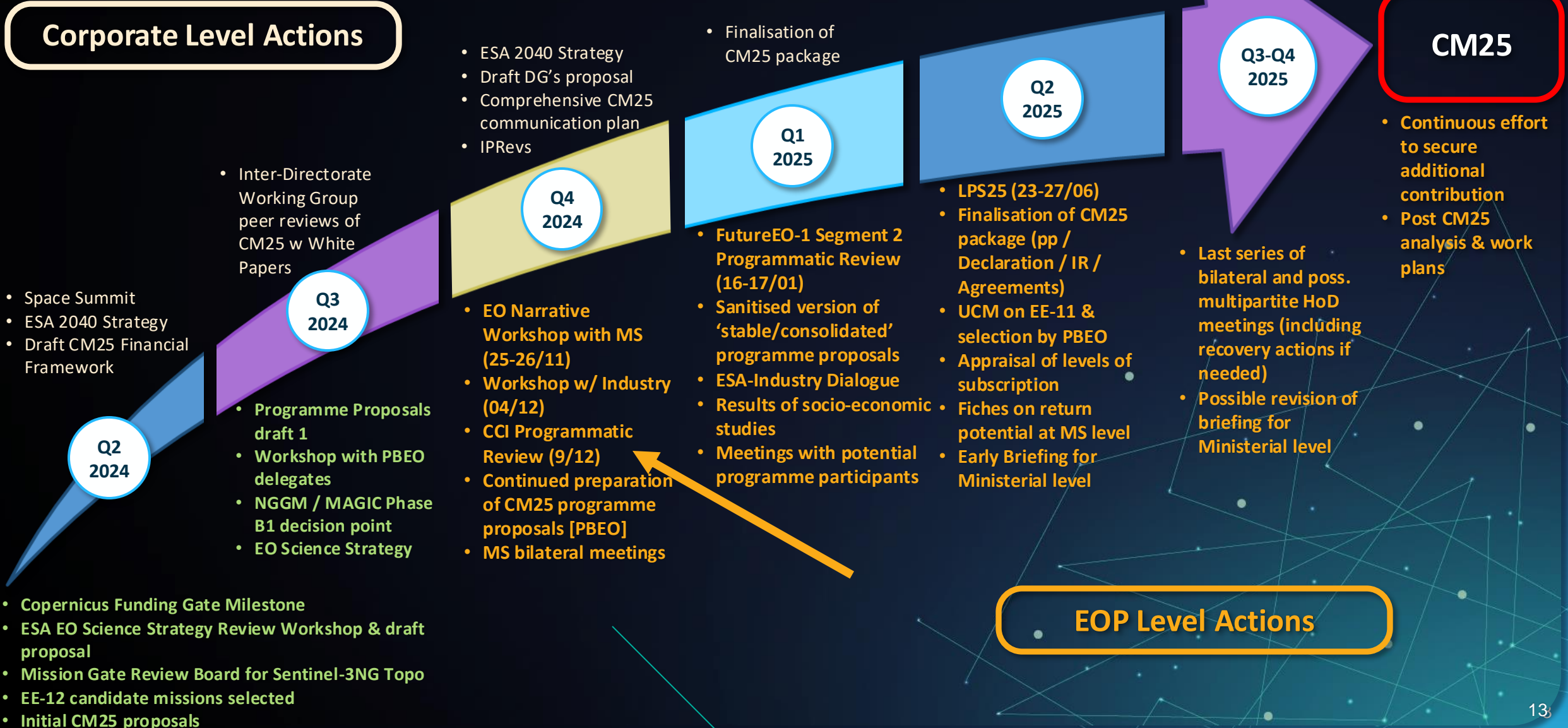
- ❑ Is CCI providing the relevant information to **global climate policies such as UNFCCC and IPCC**, to drive climate ambition as part of Earth Action?
- ❑ Is CCI taking full advantage of Earth Observations, provided by ESA and other institutional or private providers, and multi-disciplinary scientific expertise to **create high quality climate records**?
- ❑ Is CCI addressing new science questions, as formulated through **GCOS and WCRP** and based on the experience from **IPCC assessment report #6**, in an innovative way and taking a leading role in science development through building an active climate community?

- Is CCI striving towards providing **actionable climate information**, e.g. through initiatives such as ESA's accelerator Space For Green Future (**S4GF**)?
- Is CCI actively fostering the **link between climate observations and the climate modelling community**?
- Is CCI adequately connected and responsive to the needs of the **international climate research programmes and communities**, e.g. including GCOS, WCRP, CEOS, CGMS, SCO, GEO, Future Earth etc?

- Is CCI complementary to other relevant ECV development activities in Europe and supporting the transfer into **operational climate services**?
- Is CCI developing **best practice for climate data record creation**, including uncertainty estimation, cross-ECV consistency, data standards and validation?
- Is the **Knowledge Exchange Strategy** successfully raising awareness of the ground-breaking science being performed by CCI and enhancing activities in the domains of communication, education and outreach?

Road to CM25 – EOP Viewpoint

Corporate Level Actions



- Space Summit
- ESA 2040 Strategy
- Draft CM25 Financial Framework

Q2 2024

- Inter-Directorate Working Group peer reviews of CM25 w White Papers

Q3 2024

- Programme Proposals draft 1
- Workshop with PBEO delegates
- NGGM / MAGIC Phase B1 decision point
- EO Science Strategy

Q4 2024

- EO Narrative Workshop with MS (25-26/11)
- Workshop w/ Industry (04/12)
- CCI Programmatic Review (9/12)
- Continued preparation of CM25 programme proposals [PBEO]
- MS bilateral meetings

- Finalisation of CM25 package

Q1 2025

- FutureEO-1 Segment 2 Programmatic Review (16-17/01)
- Sanitised version of 'stable/consolidated' programme proposals
- ESA-Industry Dialogue
- Results of socio-economic studies
- Meetings with potential programme participants

Q2 2025

- LPS25 (23-27/06)
- Finalisation of CM25 package (pp / Declaration / IR / Agreements)
- UCM on EE-11 & selection by PBEO
- Appraisal of levels of subscription
- Fiches on return potential at MS level
- Early Briefing for Ministerial level

Q3-Q4 2025

- Last series of bilateral and poss. multipartite HoD meetings (including recovery actions if needed)
- Possible revision of briefing for Ministerial level

CM25

- Continuous effort to secure additional contribution
- Post CM25 analysis & work plans

EOP Level Actions

- Copernicus Funding Gate Milestone
- ESA EO Science Strategy Review Workshop & draft proposal
- Mission Gate Review Board for Sentinel-3NG Topo
- EE-12 candidate missions selected
- Initial CM25 proposals



How will the review be used?

- ❑ Summary and recommendations to be prepared by ESA following the discussion at the CCI programmatic review. This will include an implementation plan.
- ❑ Together with the FutureEO programmatic review in January 2025, this input will inform the Executive's CM25 programme proposal
- ❑ Climate Science Advisory Board (CSAB) will discuss the proposed implementation of the review recommendations end of January 2025, prior to presentation to PB-EO in Feb 2025

ENABLING ACTION FOR EARTH

www.esa.int

Earth Action: A New Pillar of FutureEO,

Combines knowledge/expertise/experience gained from Block 4, CCI/Climate-Space/GDA and PhiLab

Addresses the full life cycle of data exploitation under a single programmatic umbrella

Responds to “all” relevant policy frameworks, Int. and Eur. climate/sustainability legislation & Sevilla resolution

...and of course the EO2040 strategy



Earth System and Climate Science → *frontier science that only ESA can address across six over-arching themes; expert system models for future digital twins, green solutions; climate science (cross-ECVs, extreme events, tipping points)*

Enabling policies → *ESA addressing complex, inter-linked policy framework at international, European and national levels*

Readiness for global action and partnerships → *strengthens ESA EO role ; EU: widening across DG CLIMA, RTD, ENV, INTPA, AGRI, EUROSTAT; UN: UNEP, UNSD; International Financial Institutions; etc.*

Industrial competitiveness → *fundamental to develop competitiveness of EO sector, resilience/security strong drivers*

Transversal elements → *disruptive/digital innovation, open calls, SUP, knowledge exchange, education and training, open innovation, space for a green future accelerator*

Seville & Brussels Resolutions

Seville 2023 Space Summit Resolution on

“Lifting Europe’s Ambitions for a *Green and Sustainable Future*, Access to Space and Space Exploration”



ESA mandated to:

- Continue next gen EO missions, incl. Copernicus
- provide EO (demonstrators of) green solutions

EO programme strategy driven by Green/Digital solutions
Leverage decades of public investments via Accelerators



Brussels 2024 Space Council Resolution on

“Strengthening Europe’s Competitiveness through Space”



Affirmation of the importance of the space programme for Europe’s strategic policies and actions and for strengthening the competitiveness and resilience of our space industry.

