

ESA CLIMATE OFFICE

News and updates on CCI+ implementation

→ OBSERVING | OUR CLIMATE | OUR FUTURE

Susanne Mecklenburg

9 September 2020



CCI colocation, 9-11 September 2020, online

- ✓ Thematic consultation sessions (CCI&C3S collaboration, EO for Paris Agreement, AI etc)
- ✓ Feedback on current implementation of programme and potential future activities from CCI science leads

CCI mid-term review with PBEO planned for 26 (-27) November 2020

- ✓ Review implementation of programme and achievements
- ✓ Gather feedback and recommendations from member states
- ✓ Present first ideas for new climate programme
- ✓ Possibly taking place online in which case 2 half days 26-27 November 2020
- ✓ First draft of MTR available and speakers invited

New climate programme

- ✓ Consultation process on-going
- ✓ Initial ideas to be presented to ESA member states – February 2021
- ✓ New programme at ESA Ministerial Council – End 2022

- **Part I: Current programme status**

- Quantifying ECVs for the (theme i & ii) in relation to water, energy and carbon cycle
- Integrating ECVs into Climate Models
- Addressing scientific questions
 - Cross ECVs: IMBIE, SLBC, Reccap-ESA
- Across-ECV topics
 - Uncertainty quantification
 - Consistency across ECVs
 - Data quality, standards, tools and access
- Communication and outreach

All science leads should actively attend!

- **Part II: Looking ahead**

- Key challenges in climate research and monitoring (panel discussion with UNFCCC, IPCC, GCOS, WCRP, Future Earth, C3S, climate modelling community etc)
- Elements of a New ESA Climate programme

Theme i) New Essential Climate Variables – contracts placed

- Water Vapour
- Salinity
- Sea State
- Snow
- Permafrost
- HR Land Cover
- Lakes
- Biomass
- Land Surface Temperature

Theme ii) Additional R&D on ECVs included in CCI – contracts placed

- Aerosol
- Cloud
- Fire
- Glaciers
- GHG
- Ice sheet Antarctica
- Ice Sheet Greenland
- Land Cover
- Ocean Colour
- Ozone
- Sea Ice
- Sea Level
- Soil Moisture
- SST

Theme iii) Cross-ECV

- Climate Modelling User Group – contract placed
- IMBIE project office - procurement ongoing
- Sea Level Budget Closure-2 - ITT planned Q2/3 2020
- RECCAP-2 – KO June 2020
- Fellowship call – released, deadline 8 August 2020
- Additional cross-ECVs projects

→ Session 3

→ Session 2

Theme iv) Knowledge Exchange – contract placed

Preparing for a new Climate programme

- EO support for UNFCCC Paris Agreement
 - Scoping study – contract placed
 - Demonstrator project – ITT 2021
- Preparation for new ECVs

Note: CCI+ phase 2 implementation will be based on outcome and recommendations from CCI+ mid-term review

Implementation status CCI+ phase 1/ phase 2

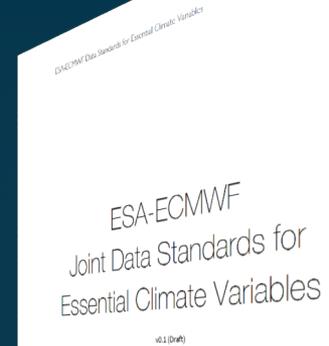
Contract	CCI+ phase 1 Start	End	CCI+ phase 2 Procurement
Theme i) New ECVs and additional activities	mid 2018	mid-2021	Direct negotiation, RFQ in Q1/2 2021
Theme ii) R&D for existing ECVs	Q2/3-2019	mid 2022	ITT, release Q3/4 2021
Theme iii) Cross-ECV <i>CMUG</i> <i>IMBIE PO</i> <i>SLBC-2</i> <i>RECCAP-2</i> <i>CCI fellowship</i> <i>1st call (May 2020)</i> <i>2nd call (May 2023)</i> <i>Additional activities</i>	10-2018 04-2020 asap 06-2020 Q1 2021 Q1 2024 TBC	09-2022 03-2023 +2 years 12-2021 2 years 2 years	direct negotiation, RFQ in Q2/2022 Phase 2: TBD Phase 2: TBD Phase 2: TBD ITT in 2021
Theme iv) Knowledge Exchange	09-2019	08-2022	direct negotiation, Q1/2 2022
Preparing for new climate programme			Pilot and demonstrator studies to start asap

More news

Workshops on

- R&D Gap Analysis and common interests
- Joint ESA-ECMWF Data Standards for Satellite-Based ECVs
- Dataset Mapping Between C3S & CCI
- Harmonising C3S & CCI Toolboxes

→ See discussion in Session 5



- **WCRP is changing**
 - 2018 Review of WCRP by co-sponsors (ISC-WMO-IOC)
 - 2019 WCRP Strategic Plan 2019-2028 published and implementation currently discussed
- **As part of this change, WCRP is looking for a new host for the CMIP project office**
 - Coupled Model Inter-comparison Project (CMIP) is a WCRP flagship programme and unifying theme
 - Focal point for the leading national and international entities on global climate projections worldwide
 - Unique example of science experimental design, data sharing, policy, protocols, infrastructure, formats and standards in support of research, but also growingly policy and services
- **Future of CMIP**
 - Further consolidating and sustaining the many elements of CMIP
 - Strengthening support to and coordination of the community
 - Prepare 7th cycle (timeline, design, infrastructure, models, priorities, regional dimension, etc)
 - Need to bring models and observations (including Earth Observations) closer together
 - Well placed to contribute to Digital Earths topic (one of the new WCRP Lighthouse activities)
 - Framework could further inspire, support and help organizing the broader modelling activities across the programme
- **Due to its strategic nature, ESA plans to submit a bid to host the WCRP CMIP Project Office mid-September 2020**

Status:

26 applications received from 9 countries

Terrestrial 12

Ocean 7

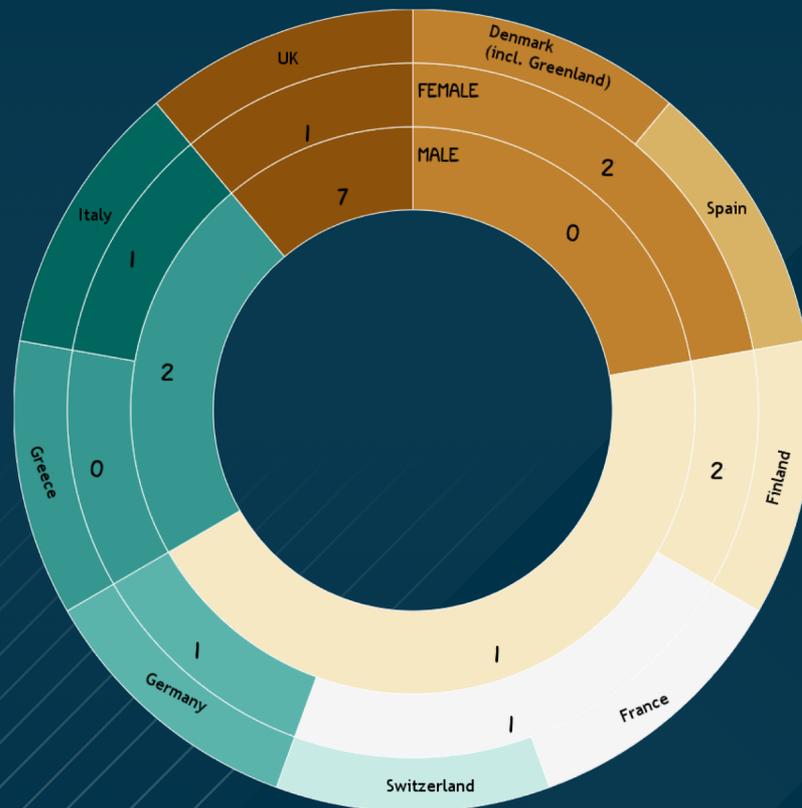
Atmosphere 3

Cryosphere 4

Evaluation on-going, decision expected in October 2020

~up to 10 fellowships available

Fellowships to start in Q1/2 2021



Objective: to clarify necessary **satellite data requirements** to monitor the climate system's resilience to **tipping points**, constrain models and build on the ESA CCI programme as a foundation for a future abrupt change **early warning system**

Forum at ISSI, Bern, 27-29 January 2021
With Future Earth AIMES project





WHAT IS THE CLIMATE CHANGE INITIATIVE?

The CCI aims to realise the full potential of the long-term global Earth Observation archives that ESA has established over the past 30 years, as a significant and timely contribution to the ECV databases required by UNFCCC.

Monitoring and Tracking Climate Change

"Scientific evidence for warming of the climate is unequivocal (IPCC Fifth Assessment Report, 2013)"

- What is climate change? →
- Climate from space: the evidence →
- Satellite-based discoveries →
- Space for understanding climate →



How are satellites helping to understand Earth's climate and its change

Learn More



Access global climate data produced through the ESA's Climate Change Initiative

Learn More



Access ESA climate change learning resources for schools and universities

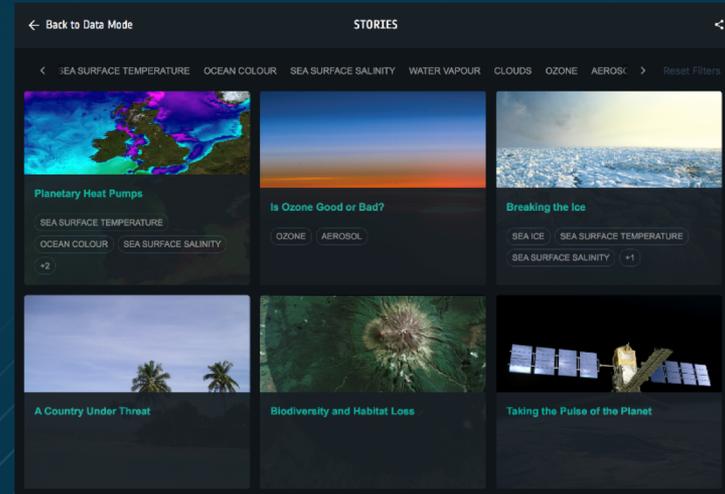
Learn More



Software tool for ingesting, operating & visualising CCI data

Learn More

NEW Climate Office Webpage & Climate from Space App now released



Climate.esa.int

Are you ready to discover more?



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Instructions for Session 1 participation



- 1. Turn off your cameras and microphones please**
- 2. Our 4 panelists present for 5-10 mins**
- 3. Speakers: you have a 2 min warning bell & whistle when time is up**
- 4. Direct your questions using '@<NAME>' in Webex chat box**
- 5. After all the presentations: discussion time for questions**
 - *Type* in Webex chat box
 - Use 'virtual hand up' and wait for facilitator to invite your verbal questions or comments (**you need to unmute then mute afterwards**)
- 6. Any technical Issues:** email a.hilbich@designdata.de Tel: +49 151 19336598



virtual
hand up

Seed questions for panel discussions



- How can ESA CCI contribute
 - to the new WCRP strategy and its implementation
 - to the GCOS revised implementation plan
 - to the CEOS/CGMS WG Climate activities?
- Should ESA CCI contribute as a programme collectively to IPCC Assessment Reports?
- What new data can CCI provide to achieve SDG and climate resilience and adaptation activities?