



COCO2 PRESENTATION DAY

Introduction

Richard Engelen ECMWF

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 958927.





CoCO2 aims



The "Prototype system for a **Co**pernicus **CO**₂ service" (**CoCO2**) project will deliver the prototype systems for a new European anthropogenic CO₂ emissions monitoring and verification support capacity that can be implemented within the Copernicus programme as a (pre-)operational service element.



Timeline of CAMS Emission Services





Work packages





Feedback from External Expert Group - November 2021

Impressed with technical progress

• Many of the technical concerns at close of CHE are being addressed

User interaction

- Still looking for a user who says "Yes! I need this!"
- Approaches and user-base evolve with UNFCCC approaches
- Keep reaching out for others' experiences (perhaps a community of practice? IG3IS?)

• International links

- Time for all of us to pick these up again
- Might need to include more private sector and civil society contacts

Miscellaneous

- Is methane a first-class citizen?
- What arrangements are in place or possible for end-to-end verification of the system?
- There is an EU commitment to support reporting from developing countries. Will the Prototype Service target support?
- Energy system dynamics may pose new and subtle problems (e.g., the interaction between cloudiness (hence satellite sampling) and solar power output)



Feedback from reviewers – April 2022 (a selection)

- It will be interesting to see whether plume detection studies are going to be promoted relatively independently for the purpose of detecting point-sources, or whether it will be linked to national- or continental-scale emission monitoring system in the future (that may not yet be clearly indicated at this time).
- CoCO2 is strongly integrated with many other projects leading to the overall policy objective. This aspect is important and should continue to be emphasised to ensure that all participants clearly understand the long-term priorities and how these relate to individual tasks.
- Although atmospheric GHG data coverage has been significantly improved by satellite observations as well as ground stations, satellite data acquisition rates are still not high in tropical and high latitude regions. Observation networks including ground stations, ships, and aircraft still have some gaps in the world, and the heterogeneity in the data coverage might cause some barriers to reducing uncertainty in the global and continental scale inversion analyses.



Aim of CoCO2

Where are we on our path towards the CO2MVS?

Table 1 - Technology Readiness Levels as defined in the General Annexes of the Horizon Europe work programme

TRL 1	Basic principles observed
TRL 2	Technology concept formulated
TRL 3	Experimental proof of concept
TRL 4	Technology validated in a lab
TRL 5	Technology validated in a relevant environment (industrially relevant environment in the case of key enabling technologies)
TRL 6	Technology demonstrated in a relevant environment (industrially relevant environment in the case of key enabling technologies)
TRL 7	System prototype demonstration in an operational environment
TRL8	System completed and qualified
TRL9	Actual system proven in an operational environment (competitive manufacturing in the case of key enabling technologies, or in space)



Collaboration within H2020 and Horizon Europe





Relevance & visibility





COP27 – Earth Information Day & ICOS side event





Today's agenda

Session 1: 10:00 – 12:30 CET (UTC+1)

Time	Торіс	Presenter(s)
10:00 - 10:20	Welcome & introduction	Richard Engelen
10:20 - 10:45	WP2 - Prior and ancillary information	Hugo Denier van der Gon
10:45 - 11:10	WP3 - Global Modelling and data	Wouter Peters & Anna
	assimilation	Agustí-Panareda
11:10 - 11:35	WP4 - Local and regional modelling and	Dominik Brunner & Gregoire
	data assimilation	Broquet
11:35 - 12:00	WP5 - Connecting scales and	Marko Scholze & Sander
	uncertainties	Houweling
12:00 - 12:30	Discussion	

Session 1: 14:00 – 16:00 CET (UTC+1)

Time	Торіс	Presenter(s)
14:00 - 14:25	WP6 - Integration, testing, application and initial validation of prototype systems	Frédéric Chevallier & Nicolas Bousserez
14:25 - 14:50	WP7 - Observations	Werner Kutsch & Julia Marshall
14:50 - 15:15	WP8 - User engagement	Glen Peters & Roxana Petrescu
15:15 - 15:30	WP9 - Coordination, Dissemination, Exploitation and International Liaison	Tanya Warnaars & Richard Engelen
15:30 - 16:00	Discussion	





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