

Summary of recommendations and discussions about CAMS and the new CO₂ emissions service element

Detailed interactions could not be at the same level as in a “physical” workshop, but there were many questions and the morning sessions of 12 June were an opportunity for ECMWF to provide detailed insight into the state-of-play of the discussions with the European Commission regarding CAMS and the new CO₂ emissions service element for the period 2021-2027.

In the discussions and in the poll, a clear support was expressed by Member States for all the main proposed evolutions. This was of course hoped for, as ECMWF had engaged with the Member States and the Copernicus User Forum since the beginning of 2019 and had taken onboard all the comments received on the way. Nevertheless, it was important to have a checkpoint at this moment in time and that all the priorities could be confirmed -subject to sufficient budget availability.

Recommendations:

The following high-level comments came across in the questions and discussion:

- The uptake of Sentinel-4, -5 and CO₂M for delivering the CAMS/CO₂ operational products is the first priority and “raison d’être” in a programme like Copernicus. Dealing with possible delays must be dealt with in the way the implementation will be organised, in order to minimise the duration between availability of Level-2 EO data meeting the operational quality standards and their effective use in CAMS/CO₂ production.
- The importance of collaborating with Member States was stressed. In particular, there is a strong and repeated support for the proposed “national collaboration scheme”, which will directly involve the Member States in the downscaling of CAMS air quality information. In turn, this will allow meeting a long outstanding (and repeated) user requirement of increasing the resolution of CAMS products over Europe. This will feed into all dissemination channels of CAMS, including through smartphone applications. This scheme could be extended to other topics, including CO₂ emissions, of course, where there is a clear roadmap to work hand-in-hand with national agencies officially mandated to report to UNFCCC, e.g. for the global stocktake exercises.
- While the CO₂ service element is primarily focusing on anthropogenic emissions of CO₂, the fact that it will be implemented within CAMS, which has already a portfolio of products about greenhouse gases, means that there will be a coherent offer encompassing the carbon cycle and methane in particular. The proposed new line of observation-based emission products in CAMS also means that short-lived climate forcers like aerosol and tropospheric ozone precursors will be covered.
- It is important not to neglect aspects connected to LULUCF in the new CO₂ service element, in collaboration with JRC, EEA and the relevant national actors.
- It is essential to keep connected at European (ICOS, IAGOS...) and international level (EMEP, WMO/GAW/IG3IS and GAFIS...) for the CO₂ service element but also for the whole of CAMS: access to in situ observations is critical for the quality of the products that will be offered.
- The role that Horizon Europe has to play for CAMS/CO₂ service evolution is essential for providing an influx of R&D delivering “out-of-the-box” / next generation solutions, which are critical to operate at the best possible level internationally. Member States have an important role to play in supporting CAMS/CO₂ to provide guidance and help define the areas where research is most needed and relevant.
- Synergies and economies of scale by working together with C3S are encouraged, including the provision of CAMS/CO₂ “climate-proof” datasets to C3S.

- Evaluation and Quality Control will be more harmonised across the various CAMS service elements. This generally follows the C3S approach, although specific CAMS requirements will be taken into account.
- If funding permits, adding an operational regional deposition component (working with EMEP in particular) would be useful in addition to the extension of the global service.

ECMWF would like to thank all the participants for their active engagement and insightful questions, which will be an asset for the final set of negotiations with the European Commission.