



## **Coordinating earth observation data validation for RE-analysis for CLIMate ServiceS – CORE-CLIMAX**

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The purpose of the CORE-CLIMAX project is to coordinate the identification of available physical measurements, which can be reconciled with previously existing data records, to form long time series. In this way the project contributes to monitoring the climate system; detect and attribute climate change; and assess impacts of, and support adaptation to, climate variability and change. As such the project will help to substantiate how COPERNICUS observations and products can contribute to climate change analyses, by establishing the extent to which COPERNICUS observations complement existing Climate Data Records.

Since reanalyses are important for improving and synthesizing historical climate records, and for providing regional detail in a global context necessary for policy development and implementation, CORE-CLIMAX will identify the integration of Essential Climate Variables (ECVs) into the reanalysis chain by proposing a feedback mechanism ensuring that the results of the re-analysis process get appropriately reflected into updates of the ECVs. Together with inter-comparing different reanalyses, CORE-CLIMAX will eventually contribute to establish a European truly coupled gridded re-analysis which incorporates full exchanges and interactions between atmosphere, ocean and land, including the hydrological cycle.

The CORE-CLIMAX project coordinates the identification of available and future physical measurements, which can be reconciled with previously existing data records, to form long time series. One of the major objectives of the CORE-CLIMAX project is the identification of the capability of ongoing activities, contribute to the formulation of the Copernicus climate service (<http://www.copernicus.eu/>) and lay the observational basis for service activities.

Therefore the project consortium has developed the System Maturity Matrix (SMM); a metric to analyze the so called maturity of the ECV production systems considering the scientific, engineering, information preservation and usage domains. Special attention was paid to the applicability of the metric to ECV climate data records derived from in situ and satellite data as well as delivered through NWP model-based reanalysis. In addition, a new, still experimental, metric (the so-called Application Performance Matrix, APM) has been developed to assess the suitability of an ECV climate data record for a specific application. The objective of this APM is to try and answer the user question whether a data record is suitable for the application in mind.

In this contribution first results will be presented that address the following objectives:

1. A systematic self-assessment of existing ECV climate data record capacities using in situ and satellite data as well as reanalysis by the data record providers represented through the workshop participants;
2. A systematic independent assessment of the same climate data records by the CORE-CLIMAX project consortium applying the same metric;
3. To facilitate an analysis of the assessment results and the metric applied among major European projects and initiatives.
4. The results include the above-mentioned assessments in different domains including in situ and satellite data as well as reanalysis data.