



## **ECOMS-UDG. A User-friendly Data access Gateway to seasonal forecast datasets allowing R-based remote data access, visualization-validation, bias correction and downscaling**

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Seasonal forecasting data from state-of-the-art forecasting systems (e.g. NCEP/CFSv2 or ECMWF/System4) can be obtained directly from the data providers, but the resulting formats, aggregations and vocabularies may not be homogeneous across datasets, requiring some post processing. Moreover, different data policies hold for the various datasets —which are freely available only in some cases— and therefore data access may not be straightforward. Thus, obtaining seasonal climate forecast data is typically a time consuming task.

The ECOMS-UDG (User Data Gateway for the ECOMS initiative) has been developed building in the User Data Gateway (UDG, <http://meteo.unican.es/udg-wiki>) in order to facilitate seasonal (re)forecast data access to end users. The required variables have been downloaded from data providers and stored locally in a THREDDS data server implementing fine-grained user authorization. Thus, users can efficiently retrieve the subsets that best suits their particular research aims (typically surface variables for certain regions, periods and/or ensemble members) from a large volume of information. Moreover, an interface layer developed in R allows remote data exploration, access (including homogenization, collocation and sub-setting) and the integration of ECOMS-UDG with a number of R packages developed in the framework of ECOMS for forecast visualization, validation, bias correction and downscaling.

This unique framework oriented to climate services allows users from different sectors to easily access seasonal forecasting data (typically surface variables), calibrating and/or downscaling (using upper air information from large scale predictors) this data at local level and validating the different results (using observations). The documentation delivered with the packages includes worked examples showing that the whole visualization, bias correction and/or downscaling tasks requires only a few lines of code and are fully reproducible and adaptable to different regions, since the necessary data is available for all ECOMS users and the R packages are freely available. This framework can be easily extended to other projects or initiatives thus providing a flexible solution to the development of climate services.

More information in <http://meteo.unican.es/trac/wiki/udg/ecoms>