



## **Developing a Common Information Model for climate models and data**

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The Metafor project, funded under the EU Framework Programme 7, proposes a Common Information Model (CIM) to describe in a standard way climate data and the models and modelling environments that produced this data. To establish the CIM, Metafor first considered the metadata models developed by other groups engaged in similar efforts in Europe and worldwide, such as the US Earth System Curator, explored fragmentation and gaps as well as duplication of information present in these metadata models, and reviewed current problems in identifying, accessing or using climate data present in existing repositories.

Based on this analysis and on different use cases, the first version of the CIM is composed of 5 packages. The "data" package is used to describe the data objects that can be collected and stored in any number of ways; the "activity" package details the simulations and experiments and related requirements that were performed with numerical (possibly coupled) models described with the "software" packages. Both data and models can be associated with numerical grids represented by the "grid" package and finally the "shared" package gathers concepts shared among the other packages. The CIM is defined and implemented in the Unified Modelling Language (UML) and application schema have been generated in XML schema.

Aiming at a wide adoption of the CIM, Metafor will optimize the way climate data infrastructures are used to store knowledge, thereby adding value to primary research data and information, and providing an essential asset for the numerous stakeholders actively engaged in climate change issues (policy, research, impacts, mitigation, private sector).