



More people than ever now have a need to discover the results of climate models in order to prepare for and mitigate against the potentially severe impacts of global climate change. But climate modeling is a complex process, which requires accurate and complete metadata (data describing data) in order to identify, assess and use the climate data stored in digital repositories.

The main objective of Metafor was to develop a Common Information Model (CIM) to describe climate data and the models that produce it in a standard way, and to ensure the wide adoption of the CIM. Metafor also developed, deployed, and evaluated a prototype infrastructure that allows key data and models to be discovered and compared between distributed digital repositories.



CLIMATE MODELLING • METADATA • CIM

The METAFOR Project

Project title: Common Metadata for Climate Modelling Digital Repositories (Metafor)

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Project participants:

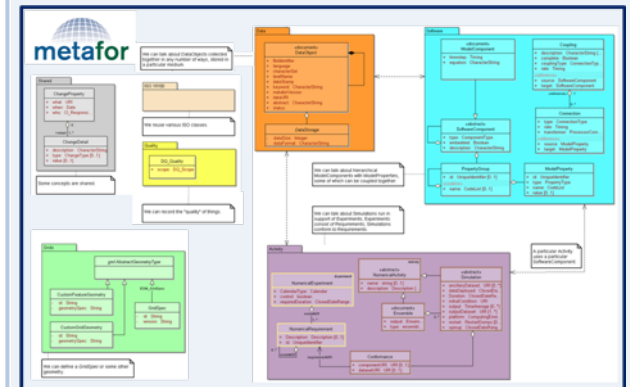
UREAD	UK
BADC	UK
CERFACS	FR
MPG	DE
CNRS/IPSL	FR
UNIMAN	UK
UKMO	UK
NMA	RO
MeteoF	FR
CLIMPACT	FR
PrinceU	US
Univ.Cantabria	ES

Watch the Metafor and Team Digital Preservation cartoon at
<http://www.youtube.com/watch?v=76MCRXK4Itc>



Common Metadata for Climate Modelling Digital Repositories

The Common Information Model (CIM) and the CMIP5 Metadata questionnaire



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METAFOR: The Common Information Model (CIM) and the CMIP5 metadata questionnaire

METAFOR

... has been charged by the Working Group on Coupled Modelling (WGCM) via the Coupled Model Inter-comparison Project (CMIP) panel to define and collect model and experiment metadata for the CMIP Phase 5 (CMIP5) project.

...has developed a web-based questionnaire to collect information and metadata from the CMIP5 modeling groups on the details of the models used, and how they conform to the CMIP5 experiment requirements.

The questionnaire is primarily a tool to document models in sufficient detail so that the CMIP5 data can be compared in a scientifically meaningful way.



e-infrastructure

The CMIP5 questionnaire

...is an ambitious metadata collection tool and will help scientists to provide the most comprehensive metadata of any climate model inter-comparison project.

... allows users to enter descriptions of components which are not already specified by the questionnaire controlled vocabulary.

... XML output complies with the Metafor Common Information Model (CIM), allowing tools and services developed using the CIM to be applied to the questionnaire outputs

The core archive of model data produced by CMIP5 will be used for the next Intergovernmental Panel on Climate Change (IPCC) assessment, due in 2013.

In METAFOR, we have engaged with the climate modeling community by collecting controlled vocabulary from domain experts, via a series of interviews with climate modelers.

The results of the interviews are interactively summarised in mind maps, allowing us to not only build up the lists of controlled vocabulary, but also build a structure for the way the information is collected.

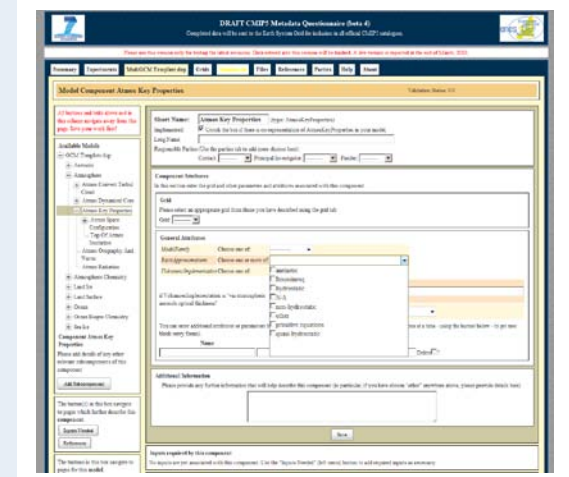
The controlled vocabulary lists and structure resulting from these interviews will eventually be governed independently from the Metafor project, providing a valuable resource for the climate modelling community.

The mind maps then feed directly into the questionnaire and feedback from scientists about the questionnaire content can be integrated quickly without exposing the questionnaire code.

...aims to collect enough detail to allow users to easily...

- browse the archive & find desired datasets
- easily differentiate between the "genealogy" (related models & experiments) of datasets

... will populate the CIM repository with CIM instances complying with the CIM ontology



Screenshot of the questionnaire