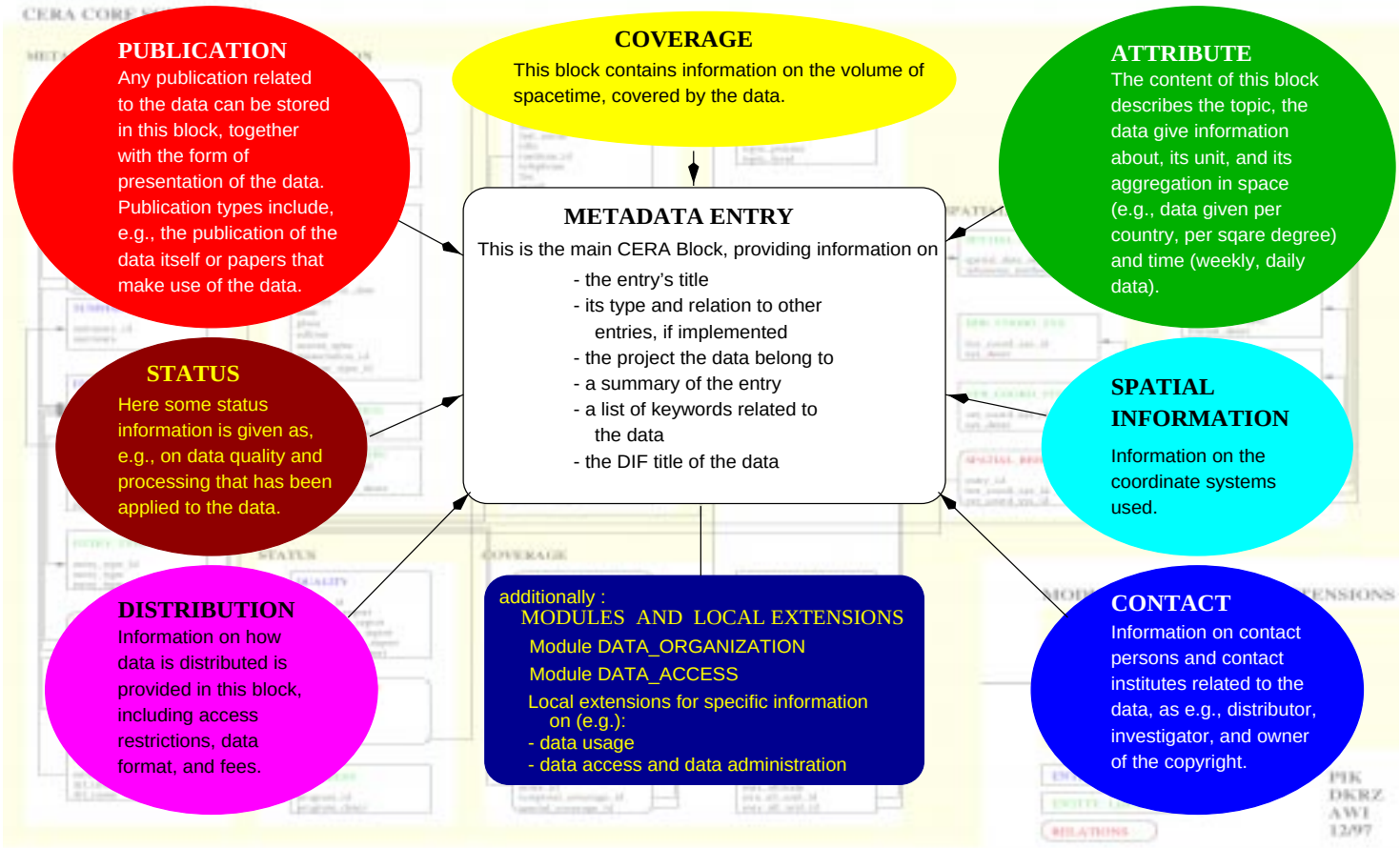
A Combined Data and Metadata Model
C E R A - 2

The scientific exploration of the planet earth has lead to rapidly growing amounts of spatial data. They are highly inhomogeneous and of increasing complexity. Therefore it is impossible to build-up a consistent common data model. Accordingly, there is vital necessity for a coordinated construction of a meta database (MDB) to store information about data structure, quality, availability, and storage. Scientists also shall be able to retrieve the data directly, independent of its physical location.
The main requirements for a coupled MDB of this kind are:

- development and implementation of a *common flexible* meta data structure, allowing for *very different data types* to be described,
- *transparent web access* to the unclassified meta data of all institutes involved in the project,
- *open structure*, allowing for detailed, institute specific data description and their inclusion into the data model,
- *compatibility* to data standards (e.g., CSDGM of FGDC or DIF of NASA) and functional standards.



The CERA Data Base

The relational CERA DB at PIK is running on the basis of an Oracle™ DBMS and consists of about 60 tables. Its new structure was developed in close collaboration with the Deutsches Klimarechenzentrum (DKRZ) and Alfred-Wegener-Institut (AWI). It is based on the Climate and Environmental Data Retrieval and Archiving System (CERA), already in use at the DKRZ. The MDB is accessible via Oracle tools and SQL requests that are generated and forwarded to the server by a WorldWideWeb graphical user interface. → AFRI / IDA

The data definition language, needed to create a CERA data base and to maintain it, can be downloaded from the CERA Central webpage at PIK, as well as some user interfaces for data input and data survey. Only little revision is necessary to adapt this software to the requirements of any other site.

Structure

To enhance its flexibility, the CERA data model is divided into a core part (CERA Core) and different modules, containing the data, that are not relevant to all institutions using CERA.
The tables of the CERA Core are structured as eight blocks, each consisting of several tables, each referring to a certain field of information (see Fig.).

Prospects

The development and implementation of the CERA Core scheme and two of the CERA Modules is finished. Further modules dedicated to storage of GIS data and model input are planned. The MDBs of the partner institutes have to be coupled to allow mutual meta data access. Additionally, data browsing display and download for data selected in the MDB (where adequate) will be possible.

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