

**A SPECIFIC METHOD OF MODELING AND DESIGNING
ENVIRONMENTAL INFORMATION SYSTEMS. THE EXAMPLE OF
SIEREM, AN ENVIRONMENTAL INFORMATION SYSTEM FOR
WATER RESOURCES**

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The Hydrosociences Montpellier Research Unity suggests studying hydrological variability on the African continent. The regional scale and the consideration of physical elements of the environment (soil, vegetations, geology, etc.), impose to lean on one environmental database.

Analytical method chosen as the realization of this knowledge base, is the method called POLLEN. This method is an adaptation of the OMT method (Object Modeling Technique) specific to the environmental information systems design.

The main part of the analysis consists in modeling data what implies to identify the objects of the system, to define their structure and their behavior and to describe their relations.

For every type of data, an object diagram and a data dictionary is provided. The diagram object is a graphic model giving a synthetic vision of the object classes, the data dictionary is a textual description of all the data and their relations.

Then the system of information is described according to the various services, which it has to provide. This allows to define treatments asked by the users and to supply a functions and algorithms descriptions. System is so cut in sub-systems. Each of them is described according to its interface, the implementation software, the object classes, which it uses, returned services and the relations with the other sub-systems.

Tools software packages developed are two types: the tools of treatment and constitution of data and/or they're putting at disposal. Their development takes place in the phase of conception, which goes through the adaptation of the model object to logical and physical constraints, conception and validation of algorithms, the interface modelling and choice of software packages and materials for every sub-system. The main tools software packages chosen divide into three categories, DBMS, GIS and tools of construction of interface.

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ABSTRACTS

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