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**Apply for** oral presentation in WIOMSA 2005

**Title** Knowledge base on coral Systematics of the Mascarene archipelago :  
computer sciences meet systematics needs

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**Abstract** In the process of monitoring, managing and conserving biodiversity, certain biologists have become experts and have developed a unique know-how in the inventorying of species. These experts are not simply living encyclopedias to be found in Museums, but also individuals with first hand experience, trained intuitions and reasoning powers applicable to decision making (naming, classifying, identifying a specimen) in particular domains of knowledge.

But expertise in Systematics is at a turning point, it is becoming rare. For future biodiversity studies relying on species identification, environmental technicians and researchers will only be left with monographic descriptions and collections in museums.

This is the reason why a knowledge base on the scleractinian corals of the Mascarene Archipelago is being developed. Based on the Gerard Faure's collection of approximately 4000 specimens (13 families) gathered in the Mascarene, this project rely on a computer-based application. This software, called Iterative Knowledge Base System (IKBS), provides assistance for the description, classification and for a better knowledge and more reliable identification of *Scleratinia*.

The use of IKBS applies the scientific method in biology (conjecture and test) with a natural process of knowledge management :

1/ acquisition of a descriptive model and related descriptions from collection specimens,

2/ processing of this knowledge for classification and identification,

3/ experimentation and validation.

The product of such a tool can evolve and be connected to distributed databases (bibliographic, photographic, geographic, taxonomic, etc.) that will yield information on species.

Through the two preceding phases, 4 Scleratinian families ( *Pocilloporidae*,

*Siderastreidae, Fungiidae, Astrocoeniidae*) have been processed. This third phase will imply 3 families more (*Faviidae, Acroporidae, Mussidae*), and a *Scleratinia* model for identification from order to families. For the current step (2004-2007), we will pay a great attention to environmental education issues and partnerships with other Indian Ocean environmental organisations.