# The definition of a formal ontological framework aimed at semantic interoperability: the case for fishery domain.

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Specialized distributed systems are the reality of today's information systems architecture. Developing specialized information systems/resources in response to specific user needs and/or area of specialization has its own advantage in fulfilling the information needs of target users.

However, such systems usually use different knowledge organization tools such as vocabularies, taxonomies and classification systems to manage and organize information.

Although the practice of using knowledge organization tools to support document tagging (thesaurus-based indexing) and information retrieval (thesaurus-based search) improves the functions of a particular information system, it is leading to the problem of integrating information from different sources due to lack of semantic interoperability that exists among knowledge organization tools used in different information systems.

The different fishery information systems and portals that provide access to fishery information resources are one example of such scenario.

We are involved in a project aimed at building an ontology in the fishery domain. The ontology will support semantic interoperability among existing fishery information systems and will enhance information extraction and text marking, envisaging a fishery semantic web.

The ontology is being built through the conceptual integration and merging of existing fishery terminologies, thesauri, reference tables, and topic trees. Integration and merging are shown to benefit from the methods and tools of formal ontology.

The overall research issue is to provide a unified methodology of ontology integration and merging based on formal ontologies, ontology library design, topic trees building and maintainance, and efficient web search and indexing.