

*Application for the PhD course "Ontology & Lexicon - Theory and Applications",  
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### **PhD project: Integration and standardized communication of cross-domain knowledge using Topic Maps**

Isolated websites with data based on an ontology or an ontology-like model of a defined domain are increasingly common on the internet today. While such semantic portals are well structured internally, they do not normally "know" about each other's existence externally. This holds true even in cases where two or several portals, to any given extent, cover the same domain.

The general aim of this project is to propose a way of aggregating content across domains and make it available to a user in a semantically rich and communicatively standardized way. This is approached by developing a model with two aspects. One is to represent the *high-level* information that can be used as a starting point for merging information contained within specific domain ontologies, and the other is to model a semantic representation of the implicit communicative structures at work behind the visual and contextual disposition of information resources in a given portal. This model is to be used as a starting point for extracting and contextualizing domain specific information from several portals, and for adapting this body of knowledge to a given communicative situation on the internet.

Thus, the project will have two main theoretical focal points: One is related to the necessary integration of domain knowledge from two or several portals. The other is to identify and model a useable presentational ontology which can be used for standardized communication. The resulting ontologies will be formalized by applying the knowledge representation standard of Topic Maps. A prototype implementation for testing purposes is planned to take place in the project's last year.