



PhD Thesis Proposal

MAP-I 2007/2008

**Title:**

Multi-staged Domain Specific Modeling for Software Product Lines: An Insurance Ontology Analysis

**Scope:**

The increasingly difficult challenges that confront IT managers and even entrepreneurs who are related to the development of software makes it a crucial and critical component to the basic functioning of most modern enterprises. There is a need to specialize in a specific domain. There is an underlying multi-stage effort needed to achieve such specialization. This can be noticed in the development of large-scale software for specific domains, starting in the ontological perspective, passing to the domain engineering, the generation of the corresponding meta-model and the derived models through the mass production of the customized software products.

Ontology defines a common vocabulary for researchers who need to share information in a domain and it is used to reason about the objects within that domain. There can be pointed several possible advantages from adopting an ontology to analyze and reason about a specific subject, ranging from the basic sharing of knowledge of the information among people or even software agents that are realized in the domain, through the reuse of that same knowledge. The same applies to the formalization of the domain knowledge: the separation from the operational knowledge to the domain-explicit knowledge is fundamental.

There is a gap between the software product lines architecture and the ontological-derived analysis that can be properly fulfilled by the adoption of a method that bridges both ends and delivers a sustainable approach to the market-responsive business objectives at the same time that is tailored to meet each customer specific needs. The resulting ontologically sustained process will serve as a roadmap to deliver the final architecture.

**Goals:**

- Customize the IAA ontological reference to the Portuguese insurance domain
- Mapping of the IAA extended-subset into an insurance software product line framework
- Characterize and assess a real case
- Establish a roadmap to support ontology-derived software product line architectural specifications

**Supervisor:**

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