Bachelor Thesis
Architectural Patterns in Enterprise Architecture Decision Making
Beginning: WS 2012 or earlier
(Thesis may be written in English or German)

Background
Architectural patterns capture good development practices in human-readable documents and are well-accepted in by developers [1, 2, 3]. The approach has also been extended to more abstract enterprise architectures [4]. On this level, the idiosyncrasies of application implementation specifics are hidden. Instead, the overall application landscape of a company and the support for a company’s business cases regarding data elements and service levels are considered. With the evolution of cloud computing, new service levels are introduced on the infrastructure, runtime platform, and software layer. On each of these layers, provider-supplied IT offerings can now be consumed as-a-Service rather than designing and building offerings specifically for a company’s requirements. The behavior of such cloud offerings has been captured in an architectural pattern format and is available online: http://www.cloudcomputingpatterns.org. Many of the cloud computing concepts, such as multi-tenancy or eventual data consistency have a high impact on the usability of such offerings in business cases and should, therefore, be considered during the enterprise architecture modeling of a company.

Tasks
The main objective of this thesis is to review existing architectural patterns and analyze their impact on other enterprise architecture patterns as well as enterprise architecture management (EAM) concepts. This objective includes the following tasks:

- Review of EAM techniques, such as TOGAF® or ITIL.
- Mapping of EAM requirements to existing patterns in the domain of cloud computing.
- Development of a recommendation tool to identify architectural patterns applicable with respect to EAM requirements.

Requirements
We assume a basic understanding of modeling and meta-modeling concepts. Existing knowledge regarding enterprise architecture management is beneficial but not required.

Literature

Contact
Dipl.-Inf. Christoph Fehling
+49 711 685-88486
christoph.fehling@iaas.uni-stuttgart.de

Supervisor
Prof. Dr. Frank Leymann