

A Framework for SOA-based Cross-Domain Interoperability

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Abstract

The variety and heterogeneity of information communication standards in different application domains are the main sources of complexity in interoperability provision among these application domains. The maturity of application domains can be assessed by the ease of communication of terms between different stakeholders in the same domain, which is central in defining standards for communication of information among organizations. Currently, most research activities are focused towards standardization and interoperability among information systems within the same domain. However, an emerging challenge is to address the exchange of information among heterogeneous applications in different domains, such as healthcare and insurance. This requires data extraction to obtain common subsets of information in the collaborating domains. Next, the intra-domain and inter-domain semantic interoperability are provided through proprietary and shared ontology systems. In this context, we address the above challenges through description of a framework that employs both the healthcare standard development framework and clinical terminology systems to achieve semantic interoperability among distributed systems in these domains. A real world case study, which addresses message-oriented integration of business processes between healthcare and insurance, is presented.