An Evaluation Framework for Service-Oriented Requirements Engineering

Results in Brief

Optimising selection of service-oriented requirements engineering methods

A large part of the software development market is focused on the delivery of services. Scientists have developed important tools to assess the applicability of software to various service sectors, addressing a critical need.

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Engineering, in a broad sense, is the application of scientific and mathematical principles to the design and manufacture of practical systems. The emerging field of service-oriented requirements engineering (SoRE), in its logical extension, is the specification, analysis and validation (engineering) of services to be provided by software.

In general, the services refer to the wealth of web services available to software developers in a shift from commercial off-the-shelf software. However, choosing the best service to fit the user requirements from the many available is a challenging task. Evaluating SoRE methods for specific applications is currently lacking. Scientists initiated the EU-funded EFRASYS project to fill this gap, strengthen the effectiveness of SoRE methods and broaden their application domain.

The EFRASYS empirical evaluation framework developed within the context of the project combines theoretical (ontology- and cognitive psychology-based) and empirical (e.g. simulation-based) approaches. Groundwork also covered the analysis of novel SoRE methods, and the definition of quantitative and qualitative measures from both customer and provider perspectives. The resulting three-part framework will evaluate the suitability of an approach, changes in measures (quality attributes) due to paradigm changes and guidelines. The guidelines will cover the design and report of observational and experimental studies. Application to the home care domain enabled validation of the principles and further work will investigate applications in other areas.

EFRASYS has provided an important framework to evaluate the effectiveness and suitability of application of various SoRE methods to service-oriented sectors such as home care. Given the increasing popularity of service-oriented software, the framework has the potential to become an essential tool in the software developers' repertoire. Successful implementation will place the EU at the forefront of an exciting new race.

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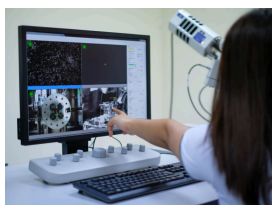
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Project Information

EFRASYS

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