

## CALL FOR PAPERS

### REQUIREMENTS ENGINEERING (RE) JOURNAL

#### SPECIAL ISSUE ON

#### **Quality Requirements Engineering for Systems and Software Architecting: Methods, Approaches, and Tools**

**Guest Editors: Rafael Capilla, M. Ali Babar, Oscar Pastor**

A quality attribute is a Non-Functional Requirement (NFR) of a system such as reliability, modifiability, performance, and usability. It is widely recognized that quality attributes of large scale systems largely depend on the overall architecture of such systems. Hence, it is important to pay significant attention to quality requirements for systematically designing and rigorously analyzing system and software architectures. However, there are continuous reports about the architecting challenges and problems because the required quality attributes are informally stated during requirements elicitation and analysis, are often contradictory, can be difficult to enforce during architecture design and implementation, and are not easy to validate when the software system is ready for delivery.

Lack of supportive methods, and tools for systematically eliciting, specifying, and representing the desired set of quality attributes can be considered one of the major reasons of dealing with quality attributes during architecting in an ad-hoc, intuitive, and experience-based manner. Moreover, there is no synthesis of the research and practice reporting methods, approaches, and tools to support quality attributes elicitation, specifications, and modelling for designing and evaluating software and system architectures.

The aim of this special issue is to provide an authoritative source of reference on methods, approaches, and tools for eliciting, specifying and modelling quality requirements for supporting the design and evolution of a software or system architecture. This issue seeks papers that are primarily focused on (i) case studies demonstrating the practical use of a particular approach or tool to support requirements engineering activities from architecting perspective (ii) describing and reflecting upon industrial experiences in dealing with the challenges caused by quality attributes elicitation, specification or modelling for architecting (iii) the use of tooling support for precisely specifying and using quality attributes for evaluating and selecting a particular COTS or OSS platform or framework for application domains such as real-time, mobile software, and web applications, (iv) novel approaches and tools aimed to facilitate the elicitation, prioritization, and management of software requirements for supporting system and software architecting.

The submitted papers should describe theoretical foundations, empirical evaluation, and practical applications of methods, approaches and tools dealing with one of the following (but not limited to) topics:

- Specification and evaluation of the multiple levels of quality attributes in Service-oriented architectures and systems, MDA, and Aspect-oriented approaches.
- Role of quality attributes in designing, realizing, and evolving architectures for single or family or systems; and identifying and managing common and variability quality requirements for the reusable assets.
- Eliciting, specifying, and modelling quality attributes from known and unknown stakeholders to support the architecting process of large scale software intensive systems and ultra-large systems (ULS).
- Establishing and maintaining connections between different types of requirements (e.g.: FR, NFR, business) to support the design and evolution of system and software architectures.
- Representation of quality attributes in software and system architecture engineering tools and/or various architectural modelling profiles (e.g.: SysML, RM-ODP, TOGAF, etc.).

#### IMPORTANT DATES:

Deadline for submission: 15 December 2010

Date of notification to authors (first round): 15 March 2011

Guidelines for submitting manuscripts: <http://www.springer.com/computer/swe/journal/766>

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