U-QASAR

The main objective of U-QASAR is to create a flexible Quality Assurance, Control and Measurement Methodology to measure the quality of Internet-related software development projects and their resulting products. The methodology will be supported by an Internet solution composed of several knowledge services based on open standards that will be able to **detect** changes in the scope and requirements of an Internet application (or changes in its development process) and provide the adequate set of assessments to deliver an accurate measurement of the quality of the process and product at any time. U-QASAR methodology and platform will be validated and assessed in real business cases.

AT A GLANCE

Project title:
Universal Quality Assurance & Control Services for Internet Applications with Volatile Requirements and Contexts

Project coordinator
INNOPOLE, S.L.
Ronda Buenavista 24, Bl10, 4A.
45005 TOLEDO (SPAIN)
Tel:+34 925 283665
http://www.innopole.net
Project Coordinator: Mr. Fernando Ubieta

Partners:
MTP, Métodos y Tecnología de Sistemas y Procesos, S.L (Spain).
ATB, Institut für angewandte Systemtechnik Bremen GmbH (Germany)
SINTEF (Norway)
Aalto University (Finland)
CONTACT Software GmbH (Germany)
INTRASOFT International, S.A. (Luxembourg)
Vaibmu Oy. (Finland)

Duration: 36 months

Total cost: 4.009.314 €

Website: http://www.uqasar.eu

Context of U-QASAR

U-QASAR methodology and platform will provide objective quality measures of Internet-related software development projects and their resulting products. Methodology and platform will be used indistinctively by software engineers, designers, developers, testers and managers alike for different purposes. In that sense software engineers, developers and testers will be able to rapidly correct inadequate trends in design, development and testing, project managers will be able to schedule deliveries with the agreed level of quality and IT directors will be able to forecast the cost and quality of future projects.

This will introduce a high level of automation in the Software Quality Management (SQM) process avoiding the traditional problems of data gathering and analysis in traditional measurement and SQM processes which are:

- Difficulty in demonstrating the completeness, accuracy and integrity of the data used.
- Presumable lack of objectiveness.
- Lack of stability in the processes.

U-QASAR Solution

U-QASAR proposes the creation of a methodology and a collaborative framework for gathering and exploiting data about the progress and quality of software development projects adaptable to any type of development life-cycle (traditional waterfall processes, V-lifecycle, iterative development processes such as RUP or agile development environments) and new architectures and development paradigms (Service Oriented Architectures or Distributed Systems), enabling gathering of data and monitoring of events in distributed teams.

The U-QASAR platform will model the software quality assurance process taking into account diverse software development paradigms. This modelling will be made by means of ontologies in order to offer knowledge-based services (K-services) to the end-users of the platform. Some of these K-services will be :

U-QASAR monitoring services, to monitor the contexts of the development life cycle and the product to be aware of any potential change that may have an effect on Quality Requirements.

U-QASAR enhancement services, to propose specific updates of the Quality Requirements and new assessments to verify its fulfilment depending on the changes detected in the context by the U-QASAR monitoring services.

U-QASAR analytical services, to analyse the development history data of the company in order to propose specific values for weights and thresholds of each of the concepts that will be evaluated during the assessment activities.

U-QASAR reporting services, to produce reports offering a quantified view of the quality of the process and product. The reports will provide different abstraction levels depending on the targeted audience (development team, project management, customers).

The collaborative platform proposed by U-QASAR will have the following characteristics:

Distributed, U-QASAR K-services could be hosted in different application servers, internal or external to the company in order to support cross platform, cross enterprise, collaborative development

Adaptive, since the K-services will have to give a response to the needs of all the actors in the development and deployment processes.

Interoperable, in order to ensure communication among the different systems and actors in and out the company, thus enabling collaborative business intelligence.

Secure, since the Integrity and Confidentiality of K-services outputs is necessary to prevent dissemination of project information to competitors and maintain the discipline and cohesion of software development teams.

Impact of U-QASAR

U-QASAR intends to explore one of the major problems regarding the software development: how can Software Development Companies of any type (large or SMEs) incorporate Quality to the whole software development lifecycle in a fast, easy and low cost way. In other words, how can Quality Management processes incorporate the special needs and requirements of actual software developers acting in a globalized playground where distributed teams and infrastructures are becoming a trend. U-QASAR consortium will validate and assess the outcomes of the project in 2 real business cases representative of different paradigms and development environments so as to demonstrate the validity of the U-QASAR methodology and platform in different contexts.

Title of the publication