



# Quality-Aware Rapid Software Development



## From Scientific Manager's pen

Welcome to the third issue of the Q-Rapids newsletter. The three-year research and innovation action has been in full speed since November 2016, and we have already begun publishing the preliminary results of the project.

As the scientific manager on the project, I am happy to report that the research activities have had a very strong and promising start. The project has already presented at the REFSQ'17 conference on a data-driven, quality-aware RSD framework in which quality and functional requirements are managed together. Several other publications have been submitted, and additional manuscripts are being prepared.

The theoretical background of the early results of the project is based on the extensive research experience of the research partners: Fraunhofer IESE, the Universitat Politècnica de Catalunya (the GESSI group) and University of Oulu (the M3S Unit). The empirical work has been carried out in several in-depth workshops with the industrial companies as well as in numerous interviews with experts at the industrial partners of the consortium (Bittium, ITTI, Nokia and Softeam).

We will actively participate in the Just-in-Time Requirement Engineering workshop in the RE'17 conference in September in Lisbon. Please also join us at the QuASD – the 1<sup>st</sup> International Workshop on Managing Quality in Agile and Rapid Software Development Processes, scheduled for November 29 at the PROFES 2017 conference in Innsbruck.

Best regards,

Markku Oivo  
Scientific Manager

## An industrial journey to Agile and Lean WoW

During RE'17 <http://re2017.org/> in a panel at the main conference on *"RE in the age of continuous deployment"*, an industrial approach especially highlighting experiences of Bittium while developing Lean and Agile way of working (WoW) will be introduced. Jari Partanen will also tell about Bittium experiences of requirements management changes during the Lean and Agile journey emphasising the development targets for Q-Rapids project.

At the same conference, also a paper about *"Data-driven Requirements Engineering in Agile Projects: The Q-Rapids Approach"* will be presented in the JIT RE workshop. The paper will introduce the ongoing research undertaken in Q-rapids project highlighting use the concept of blocking situation to exemplify the Q-Rapids approach.



Figure 1. JIT RE the 2<sup>nd</sup> just in time requirements workshop.

## Welcome to the 1<sup>st</sup> QuASD Workshop

We are proud to organise QuASD 2017 – the 1<sup>st</sup> International Workshop on Managing Quality in Agile and Rapid Software Development Processes joint with the 18<sup>th</sup> International Conference on Product-Focused Software Process Improvement (PROFES 2017). The workshop is co-organized by the three researchers from Q-Rapids research organisations: Claudia Ayala (Universitat Politècnica de Catalunya), Silverio Martínez (Fraunhofer IESE) and Pilar Rodríguez (University of Oulu). Moreover, Nokia provides the industry flavour for the workshop by giving a keynote as part of the



workshop's program. The organization of workshops on topics related to Q-Rapids is a key instrument for discussing scientific progress and gathering useful insights.

The focus of QuASD is on investigating product and process quality in the context of agile and rapid software development. Particularly, the workshop aims at exchanging challenges, experiences, and solutions among researchers and practitioners in the aforementioned area. The workshop includes topics such as relation between agile and rapid software development practices and product quality, quality requirements management in agile and rapid software development and integration and measurement of quality in agile and rapid processes during development and at runtime.



Figure 3. See you in Innsbruck on November!

As part of the workshop, Merja Jokiniiva, 5G R&D release manager at Nokia, will give a keynote titled *"Agile and rapid software development at Nokia Base Station R&D"*. Merja leads content and schedule planning tasks as well as progress follow up of Base Station software deliveries. Therefore, she has a unique view on the way in which quality is managed in an agile approach at Nokia Base Station R&D.

QuASD 2017 will take place in Innsbruck (Austria), November 29<sup>th</sup>, 2017. More information is available at <http://www.quasd.org/>. You are more than welcome!

## The first steps towards Q-Rapids platform

The well designed and developed integration of software components into the Q-Rapids framework is crucial for the success of the project. There are various aspects that should be taken into consideration, such as usability, maintainability, flexibility and expandability. Each of those must be carefully analysed from different perspectives before the appropriate technology will be chosen. Particularly, the first question is the size and complexity of the project that is to be integrated. Often a heavy and complex integration framework is not needed, but only simple message exchange mechanism (e.g. publish-subscribe, or message queue) can be used.

Another problem is the amount and type of the data the integrated elements would be likely to exchange. Therefore, at the beginning, it is crucial to anticipate this data volume and type and to ensure that the adapted integration framework can handle it, either by default or via additional extensions (e.g. plugins).

These issues are currently considered by Q-Rapids WP4. Now, we are in the early stages of the integration process and for us, it is now important to select appropriate technology that will guarantee the project success. Some candidate technologies have already been chosen (such as Apache Kafka see Figure 2) and the key requirements have been defined. However, further discussion, bilateral meetings and in-depth analysis are required to avoid Q-Rapids platform architecture pitfalls.

Figure 2. An idea about Q-Rapids platform.

