Events

Upcoming trainings

- Software Quality (ISO/IEC 25000, SQUARE), week 6/2017

Work group meetings

- FiSMA SPIN, November/2016
- FiSMA Standards & Quality, Q1/2017
- Scope Manager Forum, December/2016.

Details of the events could be checked in the web www.fisma.fi when final dates have been confirmed.

Contact

Interested in software processes, international standards or joining FiSMA?
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FiSMA current activities in IT standardisation

FiSMA has been since its beginning responsible in software and systems engineering standardisation in Finland, in arrangement with SFS (Finnish Standards Association). Practical work is done in ISO/IEC JTC1/SC7 working groups and in management bodies at subcommittee SC7 level.

FiSMA has to prioritize use of resources in standardization, mostly based on FiSMA community needs and national focus areas. Members want to get benefits from investments in standardization, by proactive knowledge of future standards and/or higher performance level when using them. Software and system engineering standards in SC7 are mostly management, quality or method oriented and need interpretation to be usable in business. Many FiSMA members are education and research institutions, and their interest in standards is mainly as “knowledge packages”. FiSMA Forums are our way to share experiences with members and discuss about use of standards. Use of SPICE, software functional sizing and scope management in IT projects are typical topics in our forum meetings.

Focus in software and systems engineering standards is changing both at global level and in Finland. Global organizations can develop new frameworks, which may be considered as de-facto standards like DevOps. Growing areas of interest within SC7 are agile and lean development methods, Smart Cities and systems of systems thinking.

Many communities need standards, for example in safety and business critical domains. Standard is often the only widely accepted reference to measure current quality or performance level and assess compliance. Measurement and benchmarking of software development performance and productivity with ISO standards is relatively widely used in Finland. High interest is in multi-model frameworks, in which for example safety and security are integrated.

One important issue in standardization is to know proactively what is needed in future. The best way is to participate in research activities and projects, which are near to standards. They may apply current standards, and feedback/experiences can be used in future work. Also more radical openings are needed to keep the current, respected position of ISO/IEC standards in software and system engineering domain. Participation in new research projects is our main approach.

FiSMA is an active participant in several new research projects, which are now in application and review phase. If they are accepted, then we get more resources to work in agile and lean development, resilience of cybersecurity threats and other software/system quality topics. We are already a partner in project .Maintain (see more in page 4).

By senior advisor Risto Nevalainen

FiSMA is a partner in both ISBSG and MAIN networks
FiSMA participates in the Finnish SAFIR2018 Research Programme on Nuclear Power Plant Safety. Within the programme, SAUNA research project develops models, methods and tools to support assessment of systems and software engineering processes in the nuclear domain. FiSMA is the main contributor to the Nuclear SPICE® process assessment method that is now extended to systems engineering based on the new 15288:2015 standard. The method aims to ensure trustworthy systems development by identifying risks related to the development processes, and to increase confidence and trust between acquirers, suppliers and authorities. The overall goal is to establish a domain specific interpretation of process quality that sustains achievement of safety goals in systems engineering. Definitely, the nuclear domain represents the highest safety-criticality that needs to be addressed with the process assessment approach as well.

The on-going research has been published in various working reports and research papers. This year, two conference papers were published and presented, one in Quatic and another in EuroSPI.

The first paper presents some considerations, how assurance needs could be met with a process assessment method, including both the assessment process and assessment model. The nuclear power domain and its requirements are used as examples. The main result is an analysis of the assurance case for systems and software engineering, and how a process assessment method and results can be used as evidence in safety assurance. The aim is to develop an integrated approach to manage assessment and assurance related evidence in an efficient way.


The second paper describes a conceptual experiment to define safety critical software development context using situational factors. Eleven such factors are identified, with some of the factors requiring elaboration beyond the detail presently available in the generic situational factors model. The selected factors are applied to medical device and nuclear power domains. Selected situational factors can be used as a high level profile and starting point for more detailed process and safety assessment. Discussion about potential use cases and further development needs is also presented.


Both Nuclear SPICE and the research results will be discussed at FiSMA Safety Panel 23.11.2016, 12:30-16:00, Innopoli 2, Espoo. Further information: http://www.fisma.fi/uutiset/artikkeli/2665/
Research article: How the Company Manages Critical Success Factors in SPI Initiatives

Researcher from Lappeenranta University of Technology Jaana Pekki published research article at EuroSPI 2016 conference.

Abstract from the paper: Software process improvement (SPI) has had its roots primarily in software engineering, nowadays this approach has grown and covers management of software companies - SPI is widely used in software companies to improve quality, stakeholders' satisfactions, reduce time-to-market, and introduce cost savings within the company. The current literature widely reports certain critical success factors (CSFs) of SPI initiatives; however, the number of publications concerning the topic of management of CSFs is limited. The objective of this paper is to identify and systemize critical success factors presented in the literature as well as to study how the case company manages CSFs in SPI. The case company evaluated the importance and current status of CSF of SPI activities and reported on management work toward performance improvement of CSFs. The main conclusion of this pilot study shows that proper management of CSFs increase usefulness of offering SPI to its key beneficiaries, thus stakeholders' values are taken into consideration.

Future search based on this paper will focus on the following issues: (1) systematic literature review on software process improvement success factors in small- and medium sized enterprises (SMEs); (2) wide exploratory study on SPI success factors within SMEs; (3) study on stakeholders’ value management & improvement as SPI success factor.

Project: .Maintain—Assessing Software Quality

Maintain-project supports testing, deployment and maintenances; Support for these later phases of the software lifecycle is required because according to the Gartner report (The Four Laws of Application, Total Cost of Ownership, 4-2012) systems with lifespan from 10 to 15 years, 8 % of the investment costs are used during earlier phases of the software lifecycle (e.g. planning, specification, implementation, etc.) and 92 % of the investment costs are used during maintenance (new features, testing and deployment, fixing faults, etc.).

In the market very few products support maintenance phase of the lifecycle and almost no embedded tools exist. In the TUTL-project researchers of the Lappeenranta University of Technology (LUT) develop embedded .Maintain-product that supports testing, deployment and maintenance aka support the phase of the life cycle that covers 92 % of the total investment costs. The .Maintain-product is based on the latest research results of LUT and on the ISO/IEC (International Organization for Standardization/International Electrotechnical Commission) –standards.

The project is funded by the Tekes TUTL-framework, and it will run from 08/2016 to 08/2018. More information and contact information available at http://www2.it.lut.fi/projects/maintain/.

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