Requirements Engineering for Large and Very Large Scale Systems
Part I - Processes and Tooling

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Abstract

Requirements engineering processes in the large are very different from those on small to medium size systems. Most texts on requirements engineering, for example tend to describe small or medium scale systems (up to about 5K requirements), or if the systems are large, describe the processes associated with product development and product lines. Industrial projects, however, start at 20K requirements and up. The creation of scalable processes that will support a large infrastructure project of the kind we are reading about in the headlines today (e.g. "shovel ready") can be a daunting prospect. This tutorial will present some of the challenges associated with the requirements engineering of such large and very large projects, and describe how to setup processes and tooling to support such projects.

This is part one of a two part tutorial. The morning session describes how to set up processes and tooling for very large industrial projects, typically dealing with 50 thousand or more requirements. The afternoon session describes the unique nature of requirements engineering processes for contract based projects. Either session may be taken independently, but the attendee will get the most out of the tutorial by attending both sessions.

Biographies

Brian BERENBACH is a senior consultant with the Siemens Requirements Engineering Global Technology Center, headquartered at Siemens Corporate Research in Princeton.

Mr. Berenbach is an ACM distinguished engineer. He has published widely on requirements engineering, and his book, "Software and Systems Requirements Engineering: In Practice" recently won a Prose finalist award for best Computing & Information Sciences text.

Jane CLELAND-HUANG is an Associate Professor at DePaul University's School of Computing. She currently serves at North American Director of the Center of Excellence in Software Traceability. She holds a PhD from the University of Illinois at Chicago. She conducts research in the area of Requirements Traceability and has published numerous related conference and journal papers. Dr. Cleland-Huang is currently serving as Program Chair for the 2010 IEEE Requirements Engineering Conference and serves on the editorial board for Springer Verlag's Requirements Engineering Journal. Her traceability research has focused on the application of information retrieval and machine learning techniques to automate the requirements traceability process. Dr. Cleland-Huang is also co-author of the book "Software by the Numbers: Low-Risk, High-Return Development".