Making Requirements Measurable

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Background

Eliciting and specifying customer requirements in a precise and unambiguous way is critical to the success of a project. However anyone who has done any requirements engineering also knows that it is a very difficult activity involving many diverse skills. An important reason for the degree of difficulty is that requirements engineering involves many different people. Each person has his own opinion of what is or is not a requirement. Customers often find it difficult to articulate their requirements and for large, complex systems these requirements are often conflicting.

Tutorial Content

This is a *full-day* tutorial that focuses on guiding participants through the *requirements definition process*. After presenting an overview of requirements engineering activities, the emphasis of this exercise is on making requirements measurable so that they can be negotiated, communicated and traced throughout the project. A requirement is measurable if there is an unambiguous way of determining whether a given solution fits that requirement.

Participants in this tutorial *examine requirements measurability by building a requirements specification* for a familiar (but nevertheless complex) system. A requirements template is used as a guide for the tutorial. The tutorial concludes with a discussion of how measurable requirements can be used to build a requirements quality filter. The tutorial combines a presentation of issues and techniques in an interactive, participative format that encourages "hands-on" learning of requirements definition and specification.

The tutorial has five main components:

(1) An introduction to the tutorial and to the field of requirements engineering. *[60 minutes]*

(2) An introduction to making requirements measurable and to the case study. *[60 minutes]*

(3) Interactive, participative exercise of requirements specification based on case study. *[120 minutes]*

(4) Review of exercise by both participants and instructors. *[60 minutes]*

(5) Discussion and conclusion of issues raised and lessons learned. *[60 minutes]*

Participants are provided with notes, copies of transparencies and a copy of the requirements template. After the tutorial, the instructors will amalgamate all the requirements specified by the different participants into a composite requirements specification which is then made available to all attendees.

Instructors' Biographies

Bashar Nuseibeh is a Lecturer and Head of the Software Engineering Laboratory in the Department of Computing, Imperial College, London. He is the Chairman of the BCS Requirements Engineering Specialist Group and an Editor-in-Chief of the Automated Software Engineering Journal. His research interest are in Distributed Software Engineering, including requirements engineering, process modelling and technology, and technology transfer. His current work is on supporting multiple views and managing inconsistencies in software development. Bashar holds a B.Sc. in Computer Systems Engineering from the University of Sussex, and an M.Sc. and PhD in Software Engineering from Imperial College.

Suzanne Robertson is a teacher and consultant specialising in modelling techniques for system development. She has over 30 years of development and consulting experience and has co-authored courses on systems analysis and software design for both procedural and object-oriented systems, requirements engineering, quality assessment and problem solving. Suzanne is currently developing techniques for identifying and reusing requirements patterns. She is one of seven Principals of the Atlantic Systems Guild - a New York and London based think-tank, researching and communicating system development techniques. She studied Information Processing at the New South Wales Institute of Technology.

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References

1. Nuseibeh, B., From Requirements to Satisfied Customer: A road map, *Keynote Address, DTI workshop on "RE - Connecting with the Customer"*, Gloucester, UK, Sep 95.
2. Robertson, S. and Robertson, J. *Complete Systems Analysis: The Workbook, The Textbook, the Answers*, Dorset House, UK, 1994.

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