BESQ-Blekinge Engineering Software Qualities
SERL-Software Engineering Research Lab

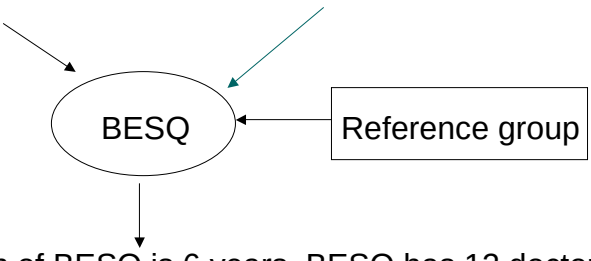
Samarbete mellan industri, KK och BTH
Ericsson, DanaherMotion, UIQ Technology, Volvo IT,
ABB Automation Technology mfl.

Department of Software Engineering and Computer Science
Blekinge Institute of Technology

Structure of BESQ

KK-Foundation
36 MSEK

Industrial participation
46 MSEK (matching funds)



The duration of BESQ is 6 years. BESQ has 12 doctoral projects with 16 participants from BTH and in addition industrial participation.

Research in BESQ

New methods, techniques and tools to improve the quality attributes and trade-off between them for software products through four main research areas:

- Use-Orientation
- Computer Systems and Software
- Software Architecture
- Processes and Methods in Development

”Research in the real-world”

The research is conducted in close cooperation with industry:

1. Observation of the present situation
2. Analysis of improvement opportunities
3. Development of a new method, technique or tool
4. Evaluation of it (lab environment and industrial environment)
5. Conclusions (go to 1)

The Challenge

- International competitive research
- Research based on industry needs

  Applied research of
  high international standard

Output:

- Contribute to industrial improvement
- Research results and people with a research education
- Improvement of education within the area

Course in Requirements Engineering

- Overview of Goals and Realization

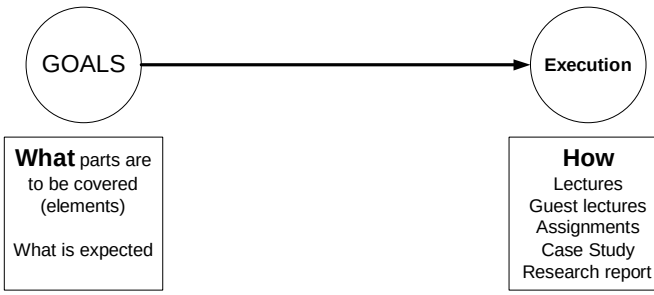
Tony Gorschek
PhD Student

2003-06-06
Department of Software Engineering and Computer Science
Blekinge Institute of Technology

PAD001, D-level (graduate course), 5 credits
Lecturers: Mikael Svahnberg
PhD Student
Tony Gorschek
PhD Student

Disposition

- **Course in Requirements Engineering**
  - **Spanning over 10 weeks (half-time studies)**
  - **Course literature**
    - **G. Kotonya and I. Sommerville. Requirements Engineering - Processes and Techniques. John Wiley & Sons Ltd (1998) 400 pages. ISBN 0471982088**
  - **Reference literature**
    - **K.E. Wiegers. Software Requirements, Microsoft Press (1999), 350p. ISBN 0735606315**
    - **S. Robertson, J. Robertson. Mastering the Requirements Process, Addison-Wesley, 400p. ISBN 0201360462**



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Course Elements

- **Overview of the requirements engineering process**
- **Usage of a requirements specification**
- **Overview and techniques of the following areas:**
  - **Elicitation**
  - **Analysis**
  - **Validation**
  - **Prioritization**
  - **Specification and documentation**
  - **Packaging and dependencies**
  - **Requirements Management**
  - **Traceability**
  - **Functional Requirements and Quality Requirements**
- **Some process evaluation and improvement**
- **Theory and practice - Reflection on ones own experiences**
- **Some insight in to state-of-the art in research**

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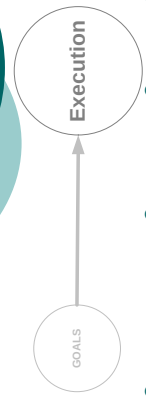
Small individual Assignments (x3)



- ***General***
  - ***Individual assignment, 2 A4 pages using IEEE format, No chances for complements***
- **Assignment 1 – Requirements Specification**
  - **Find 2 good and 2 bad requirements**
  - **Motivate why they are considered good/bad with criteria from lectures as a basis**
- **Assignment 2 – Requirements Process Inspection**
  - **Reflect on the RE process of your own LTSE Project, covering all aspects, e.g. elicitation, A&N, management, testing, specification, traceability…**
  - **What was good/bad, consequences in the project, what could be improved**
- **Assignment 3 – SME RE Process Introduction**
  - **Assume company with no/inadequate RE process**
  - **Present plan for investigation of the companies needs, suggestions for improvement (intro of a RE process), plan for introducing the improvements and a budget for this**

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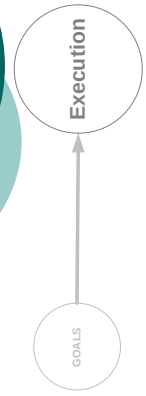
Industry Case Study



- ***General***
  - ***Groups of 4, at most 6 A4 pages using IEEE format, One chance for complements***

1. **Find company**
2. **Plan case study to investigate RE process and their practices for specifying requirements**
3. **Conduct case study**
4. **Report from case study**
5. **Reflect upon the findings and relate to literature**
6. **Suggest improvements**

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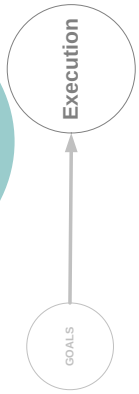
Research Report



- ***General***
  - ***Groups of 4, at most 15 A4 pages using IEEE format, One chance for complements***

1. **Pick topic**
2. **Relate to relevant literature (at least 4 books)**
3. **Relate to relevant research articles (at least 4 per person)**
4. **Relate to experiences from LTSE project**
5. **Relate to case study**
6. **Reflect and discuss**
7. **Come to a conclusion and generate report**

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Process Evaluation, Improvement and Evolvement - Requirements Engineering -

Tony Gorschek
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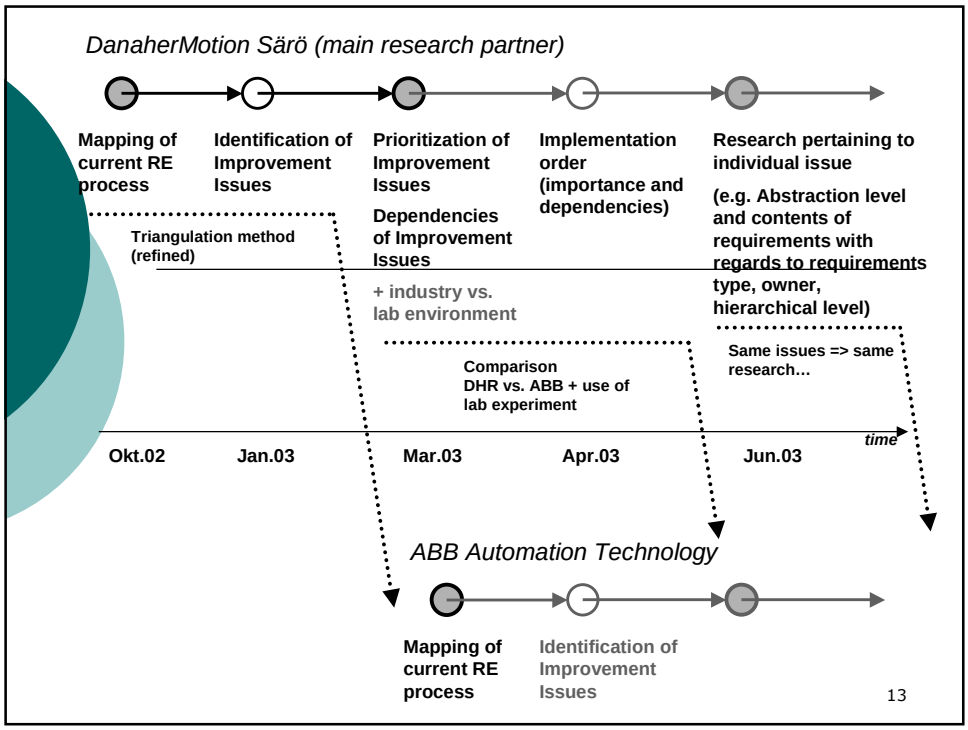
DanaherMotion Särö (main research partner)
Mapping of current RE process
Identification of Improvement Issues
Prioritization of Improvement Issues
Dependencies of Improvement Issues
+ industry vs. lab environment
Implementation order (importance and dependencies)
Research pertaining to individual issue
(e.g. Abstraction level and contents of requirements with regards to requirements type, owner, hierarchical level)
Triangulation method (refined)
Comparison DHR vs. ABB + use of lab experiment
Same issues => same research…
time
Okt.02
Jan.03
Mar.03
Apr.03
Jun.03
ABB Automation Technology
Mapping of current RE process
Identification of Improvement Issues
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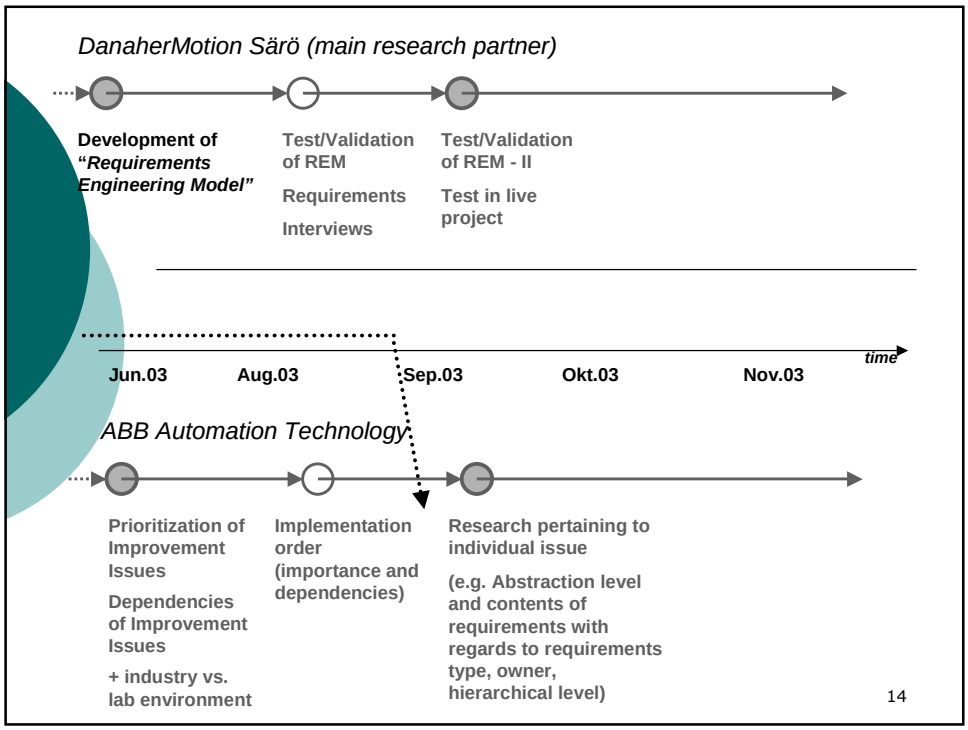
DanaherMotion Särö (main research partner)
Development of "Requirements Engineering Model"
Test/Validation of REM
Requirements
Interviews
Test/Validation of REM - II
Test in live project
time
Jun.03
Aug.03
Sep.03
Okt.03
Nov.03
ABB Automation Technology
Prioritization of Improvement Issues
Dependencies of Improvement Issues
+ industry vs. lab environment
Implementation order (importance and dependencies)
Research pertaining to individual issue
(e.g. Abstraction level and contents of requirements with regards to requirements type, owner, hierarchical level)
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Per Jönsson: Bakgrund

- Magister i Programvaruteknik från Blekinge Tekniska Högskola
- Doktorand sedan augusti 2002
- SERL-gruppen
- Handledare: Claes Wohlin
- Industriell partner: Ericsson AB, Karlskrona
- Forskningsområde: arkitektur och kravhantering

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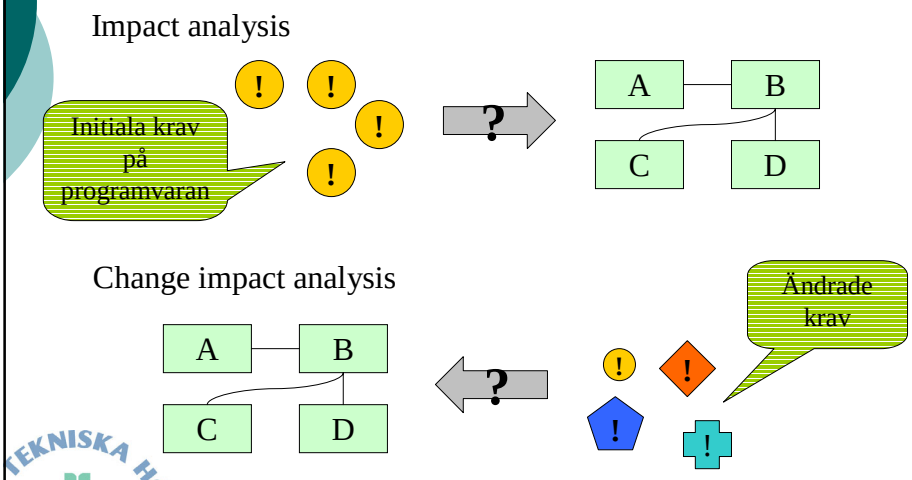
Per Jönsson: Arkitektur + kravhantering



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Patrik Berander

patrik.berander@bth.se

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Historia och Forskning

- Magisterexamen i Programvaruteknik (inriktning management) från BTH (2002)
- Påbörjade forskarutbildning i augusti 2002
- Handledare: Claes Wohlin
- Tillhör forskningsgruppen SERL (Software Engineering Research Laboratory)
- Ingår i BESQ-projektet på BTH
- Industrisamarbete med Ericsson, Charging Systems
- Forskar inom kravhantering med fokus på att göra rätt saker
  - Framtagning
  - Prioritering/Beroende
  - Paketering/Releaseplanering

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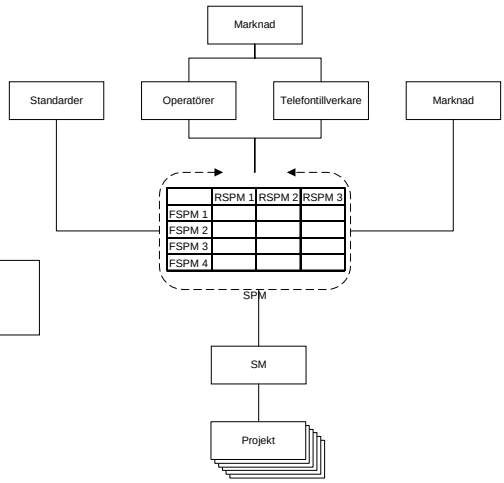
Ericssons struktur



SPM = Strategic Product Manager
SM = System Manager
FSPM = Functional Strategic Product Manager
RSPM = Release Strategic Product Manager

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