

# Report 2001-02-27 to ARTES of progress and plans in "Mobility from Industry to KTH"

Carl-Erik Strandberg

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Carl-Erik Strandberg

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## Contents

- The areas of interest of the course material
- The structure of the course material
- Types of information, books, references, web formats, etc.
- Accomplished 2001-02-26
- Plans for the Future

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## Areas of Interest 1(2)

- Safety Management
  - Terminology for Dependability and Safety
  - Hazards and Risks Identification and Analysis Techniques (PHA, FTA, FMECA)
  - Requirements and Design for Safety — Risk Controls
- Quality Management
- Product Life Cycle Model (ISO 15288)
- Software Life Cycle Model (ISO 12207)
- Safety and Quality Awareness and Concerns Throughout the entire Life Cycle

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## Areas of Interest 2(2)

- Development Models
  - History (Waterfall, Spiral, V-model, etc.)
  - Modern Development Models and Methods
    - Iterative Development
    - Early Project Risk Elimination
    - Change Control
    - Graphical Modeling and Simulation Tools
    - Automated Regression Testing
    - Reuse of solutions
    - Teamwork — Mixed Competences
    - etc.

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## Some Important Advice on Strategies

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- Use standards!
- Reuse already existing solutions!
- Work in Mixed Competence Teams!
- Consult Expertise!
- Be aware of and handle Safety and Quality aspects in every phase and activity!
- Create flexible and changeable solutions!

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## Generic Course Material

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- Course Material
  - Areas
    - Chapters
      - Sections
        - Components, that implement different versions of a section
- Courses
  - Sessions, a chronological sequence of material
    - Units — Each unit define which components are used for a session in a specific course

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## Composition of a Course

- A specific course may be composed from selected, applicable parts of the course material
- Examples:
  - A short course on Life Cycle Models may be composed from the short versions of selected sections of the Life Cycle Area
  - An in-depth course on Safety Management may be composed from the long versions of all sections of the Safety Management Area

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## Types of information

- Lectures will consist of presentation of facts and theories supported by simple examples.
- For each major session of lectures the students will be assigned a set of small exercises to be solved and reported.
- In each course the students will be assigned one or two (depending on the size of the course) project like exercises to be solved and reported.
- In some exercises the students will work individually and in some exercises in small groups (2 - 3)

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## Course Books

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- One or a few books will be recommended or required.
  - "Safety Critical Computer Systems" by N. Storey
  - "Safeware" by N. G. Leveson (maybe)

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## Other Supporting Material

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- Summaries / "Quick References"
- Copies of articles, reports and book extracts
- List of literature references
- List of web references
- Glossaries of terms
  - FDA Glossary of Computer Science Terms
  - Supplementary Glossary

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## Web Formats

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- As much as possible of the material will be converted to platform independent formats (HTML, PDF, PostScript, etc.) suitable for the web and published on the intranet of KTH

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## Accomplished 2001-02-26

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- Studied descriptions of already existing courses at KTH in the areas of interest.
- Studied books suggested by DAMEK personnel.
- Discussed with Strategic Specialist from FMV (Ingalill B-R)
- Studied handbook from FMV (Ingalill B-R)
- Discussed with "Center for Safety Research" (Lars Olsson)
- Discussed with DSV (Terttu Orci)
- Studied some applicable standards  
ISO 15288, ISO 12207, MIL-STD-882D, etc.
- Developed the basic structure for the course material
- Started developing detailed material for a "Safety Management Course"

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## Plans for the Future

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Develop course material and give some courses to M.Sc. Students.

15/3, 22/3      Safety Management

29/3, 5/4      Life Cycle

19/4, 26/4      Product Development

3/5, 10/5      Extra course days for follow up

The days in between will be used to develop the course material and to support students.

*Note: This plan is **very** preliminary and must be discussed with DAMEK.*

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