University of Applied Sciences and Arts Northwestern Switzerland
School of Engineering
i4DS | Centre for Requirements Engineering | © Prof. Dr. Samuel Fricker

Requirements Engineering
How to solve big challenges with small products

Lecturers

Lead

Prof. Dr. Samuel Fricker
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Deputy

Prof. Dr. Norbert Seyff
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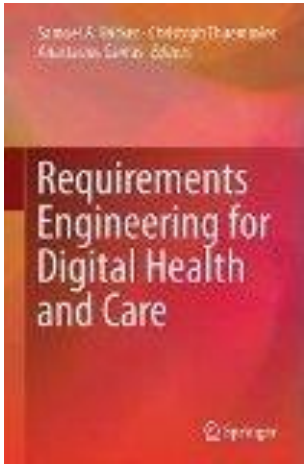
Prof. Dr. Samuel Fricker

Professor of Requirements Engineering
- Requirements Engineering
- Software Product Management

Doctoral Students
- Farnaz Fotrousi: KPI for Software Products
- Indira Nurdiani: Flexibility of IT Organizations

Flagship Projects 2015
- Future Internet for European Healthcare
  www.fi-star.eu
- European Requirements Engineering Conference REFSQ 2015
  www.refsq.org

fi-star



fi-star is on YouTube

LEARN ABOUT THE **PROJECT USE CASE TRIALS**

Tromsø, **Norway**

Tele-health network for Diabetes patients: The Norwegian Centre for Integrated Care and Telemedicine (NST) in Tromsø, Norway, is a well established telemedicine centre providing care to a rural community north of the Arctic Circle. They will improve and extend the existing telehealth network for Diabetes patients, aiming at the development of smart phone based multi channeling allowing for streaming of different data at the same time (sensor data and audio and video).

Munich, **Germany**

Virtualization of operating theatre environments and real time data integration for monitoring and reduction of errors: Klinikum Rechts der Isar, in Germany, is the major teaching hospital for Technical University Munich, and will implement the virtualization of operating theatres use case trial to develop innovative methodologies for minimal invasive operating theatre environments.

Leeds, **UK**

2-D bar-coding for real time reverse medicament supply chain: Medichem is a SME Pharmacy whole seller in Leeds, UK, and will implement the 2-D bar-coding use case trial to offer real time reverse supply chain modelling to prevent error and counterfeiting and create interfaces to additional third party services.

Krakow, **Poland**

Interactive online facilities for access and quality of care: John Paul II Hospital, in Krakow, is one of the leading e-health applying hospitals in Poland, and will improve the access to and quality of care by designing improved interactive online facilities for their cancer patients, involving dedicated hardware (life monitoring sensors, tablets, cameras) and software (knowledge portal – also web based, treatment diary, mobile application, video conferencing client).

Basque Country, **Spain**

New Interactive Future Internet based services for people with Mental Health problems: Osakidetza, in Spain, is a health care organization providing healthcare for more than 2 Million people, and will implement tis use case trial with the objective of improving access to the care and to apply the FI-PPP core platform to other already existing services successively.

Bucharest, **Romania**

Online Cardiology service for people with heart failure: University of Medicine and Pharmacy "Carol Davila" from Bucharest, in Romania, through its teaching hospitals, it provides acute care to the 2 Million inhabitants of Bucharest, and will establish the online cardiology service for people with heart failure, and in particular for people after myocardial infarction, by testing software applications in the integration experimentation site, real-time vital parameters internet-monitoring, improvement of physical training and improvement in secondary prevention programs.

Emilia-Romagna, **Italy**

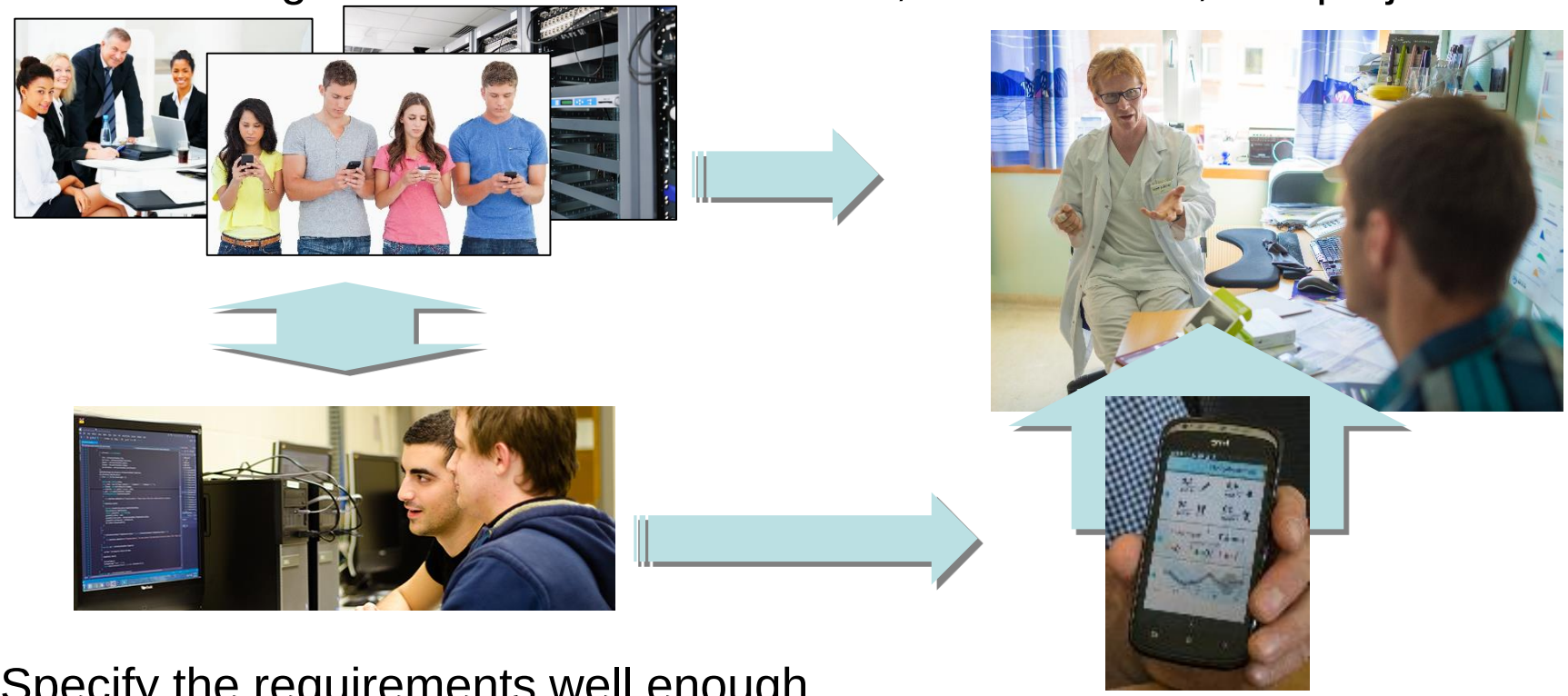
Provision of a network capable to connect different applications and devices: CUP 2000, in Italy, ICT company of the Emilia Romagna region, develops new healthcare networks to allow general practitioners, specialists and healthcare professionals to share the assisted person's healthcare and disease data in real-time, allowing citizens to know and access healthcare data at anytime from anywhere. The use case will implement, in collaboration with Local Health Authority of Ferrara, a regional socio-Health administrative framework where necessary medical information is collected and elaborated according to specific logics, and to the potential of the FI-WARE platform, tested with patients affected by Chronic obstructive pulmonary disease (COPD).

Prof. Dr. Norbert Seyff

Requirements Engineering

Goals of Requirements Engineering:

- Achieve an agreement between customer, stakeholders, and project team



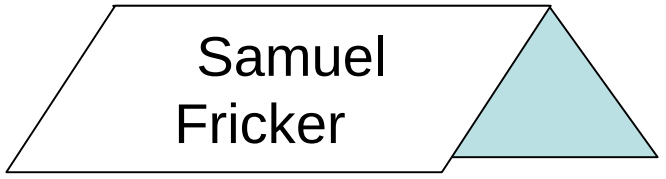
- Specify the requirements well enough

About You

Please write on a sheet of paper:

- Your name
- What is your background in software projects?
  (What software did you develop so far? Did you do the work in a company? Did you work in a team? Etc.)
- Why is requirements engineering important for you?
  (or why it might be important)
- What do you expect from this course?
  (What do you want us to deliver?)

Once done: please writ your name on a name plate.



Learning Objectives

Knowledge and understanding

- Motivation, concepts, and methods for RE

Abilities and skills

- Analysis of as-is-situation
- Proposal of a software that achieves stakeholder goals
- Planning of software releases

Judgment and behaviour

- Evaluate an existing or a proposed software
- Evaluate requirements engineering and its results

Soft skills: planned systematic work within a team

Schedule (W = week, NS = Norbert Seyff, * = guest lecturer possible)

W1 (NS): Einführung, Motivation, Definitionen und Schlüsselideen der Anforderungstechnik
W2: Kundenvision, Marktanalyse und Positionierung einer Software
W3 (*): Kreativität und Stakeholders
W4: Kontext- und Anforderungsermittlung
W5 (NS): Businessanalyse
W6: Low-Fi Prototypen
W7 (NS): Anforderungskataloge in natürlicher Sprache
W8, W9 (NS): Bekannte Systemmodelle: UML, SA und Zielemodelle
W10 (*): Validierungsworkshops
W11: Qualitätsanforderungen
W12: Inspektion einer Anforderungsspezifikation
W13: Aufwandschätzung und Priorisierung
W14: Requirements Management
W15 (NS): Forschung in der Anforderungstechnik

RE Mini-Project

Goal: you specify a mobile app that helps users achieve their goals better than with existing alternatives. The app is as simple as possible, and you have developed evidence that it is better than the existing alternatives.

Approach:

- Guided implementation of a requirements engineering project.
- Interaction with real people.
- Requirements specification according to established standards.

Deliverables:

- Requirements document.
- Evidence used to evaluate acceptance and impact of software.

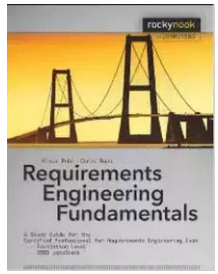
Learning Support

Electronic material on course portal: http://fastandpragmatic.com/rehs2015

- Slides, selected extracts from books, papers
- Selected extracts from
  Fricker et al: Requirements Engineering for Digital Health. Springer.
- Questions and Answers

Book

- Pohl, Rupp: Requirements Engineering Fundamentals. Rocky Nook.
  COMPULSORY READING



RE Mini-Project

- Direct support, Skype ID: samuelfricker
- Feedback on your requirements engineering approach and
  results (requirements specification document, video recordings, etc.)

Examination

RE Mini-Project

- Team work with 5 members (exceptions to be granted by Samuel Fricker)
- Requirements specification document and video-recordings
- Grades 1, 2, 3, 4 (pass), 5 (good), 6 (excellent)
- Weight 50%
- Members with insufficient contributions risk working alone

RE Exam (“abgesetzte Modulschlussprüfung”)

- Individual, written exam
- Grades 1, 2, 3, 4 (pass), 5 (good), 6 (excellent)
- Weight 50%

Questions & Answers