



Tempus

Development of Embedded System Courses with implementation of
Innovative Virtual approaches for integration of Research,
Education and Production in UA, GE, AM

Presentation of P02

Ilmenau University of Technology

Karsten Henke

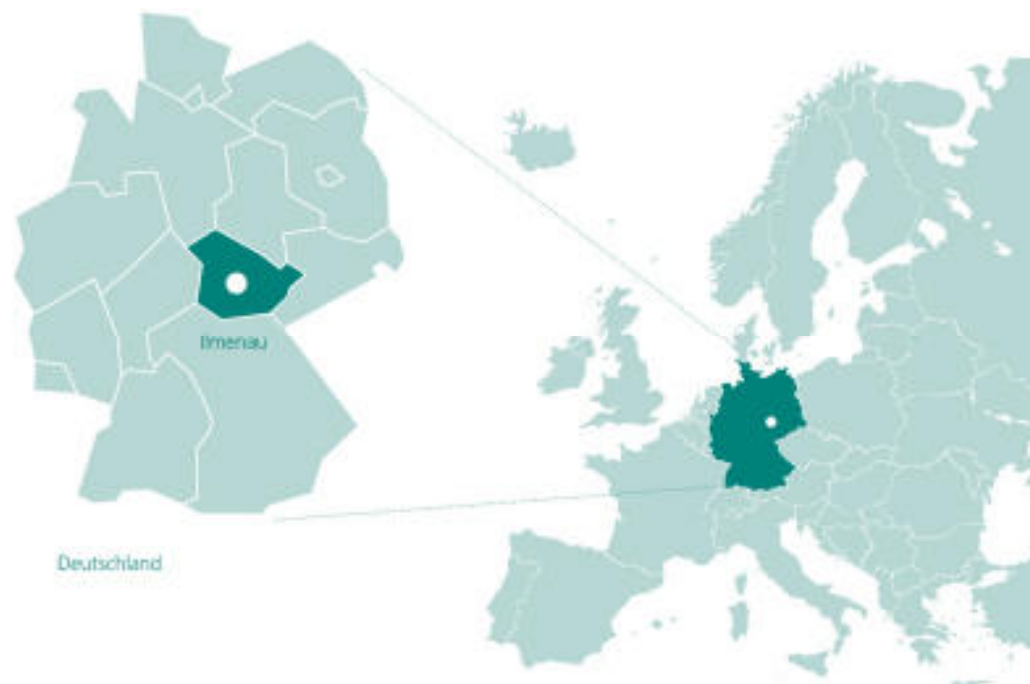
IUT, Integrated Communication
SystemsGroup

28-30 January, 2014



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Ilmenau
Thuringia
Germany





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Thuringian Forest





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th TECHNISCHE
UNIVERSITÄT
ILMENAU

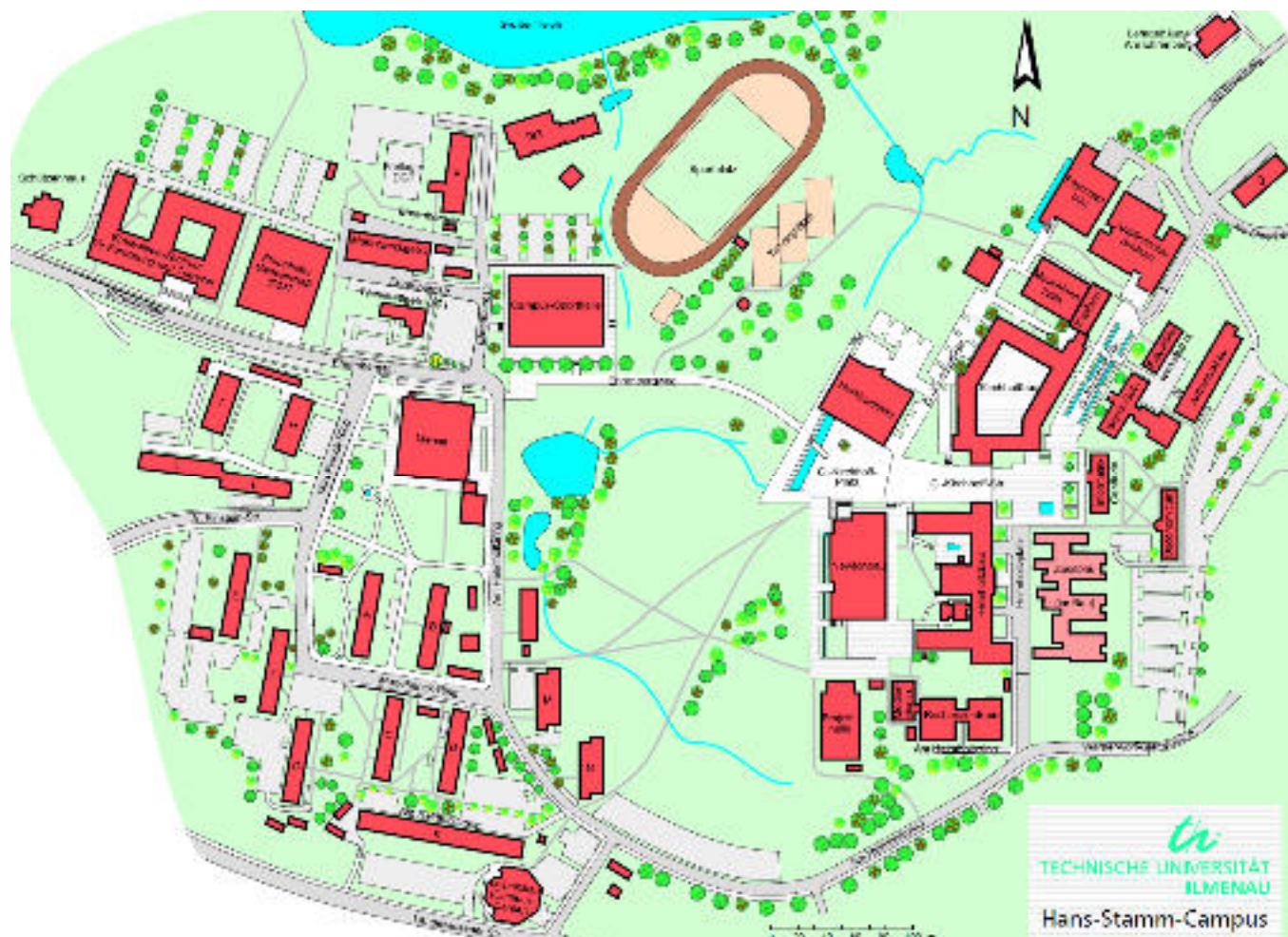
- Campus University
- 6.500 students





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TMM – Campus De Nayer,
28-30 January, 2014

Ilmenau University of Technology



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Faraday Building



Curie Building





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Röntgen Building





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Helmholtz Building



Kirchhoff Building



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Zuse Building

Fotos: Sebastian Stern, Jens Hauspurg





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Newton Building (Building for Faculty of Mechanical Engineering)

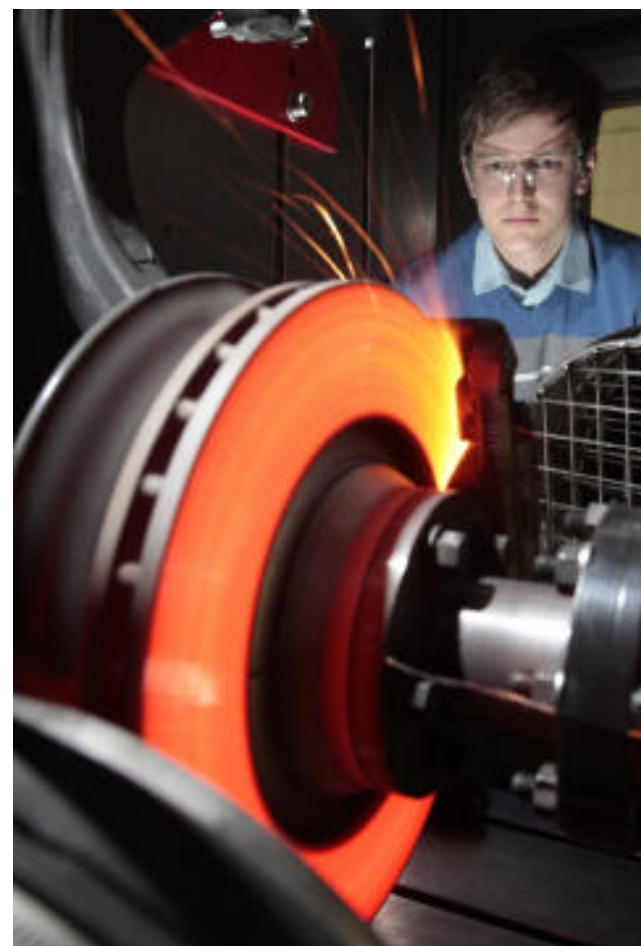


Foto: Michael Reichel (ari)



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Abbe-Centre for research and transfer

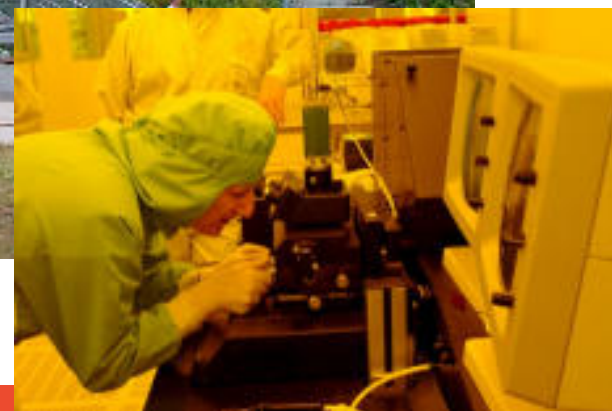


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Centre for Micro- and Nanotechnology





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Leibniz Building with
Patents Information Centre and
Online-Services (PATON) and
University Library





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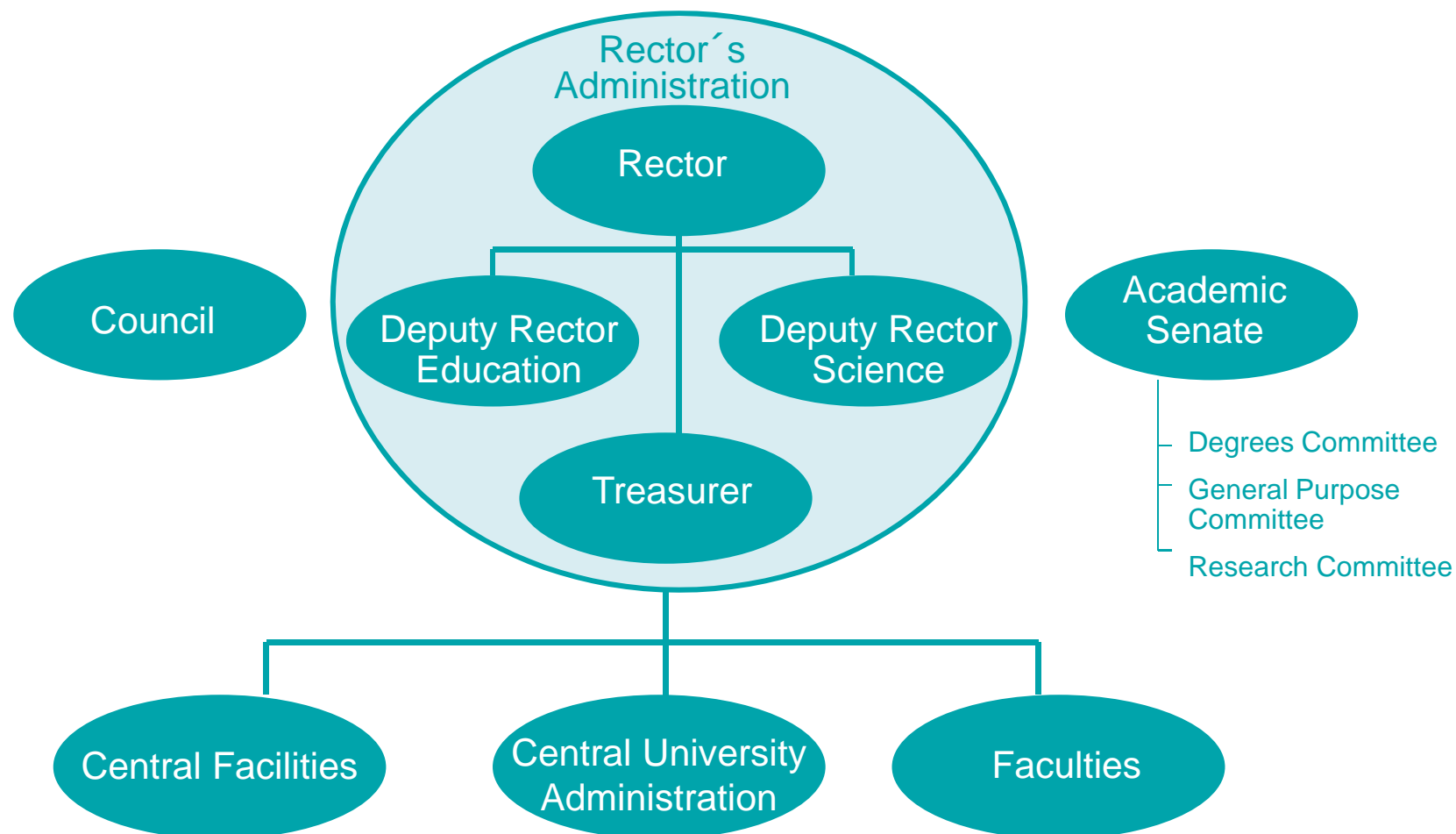


Canteen and Dormitories



- 1894 Opening of the „Thüringer Technikum“
- 1953 Beginning of academic education: „Hochschule für Elektrotechnik“
- 1963 Transformation in „Technische Hochschule“
- 1992 Establishment of the Technical University







- Faculties: 5
- Professors: 104
- Staff 01.12.2012: 1.300 (scientific: 850)
- Number of students 2013/14: 6692
- Foreign Students: 875



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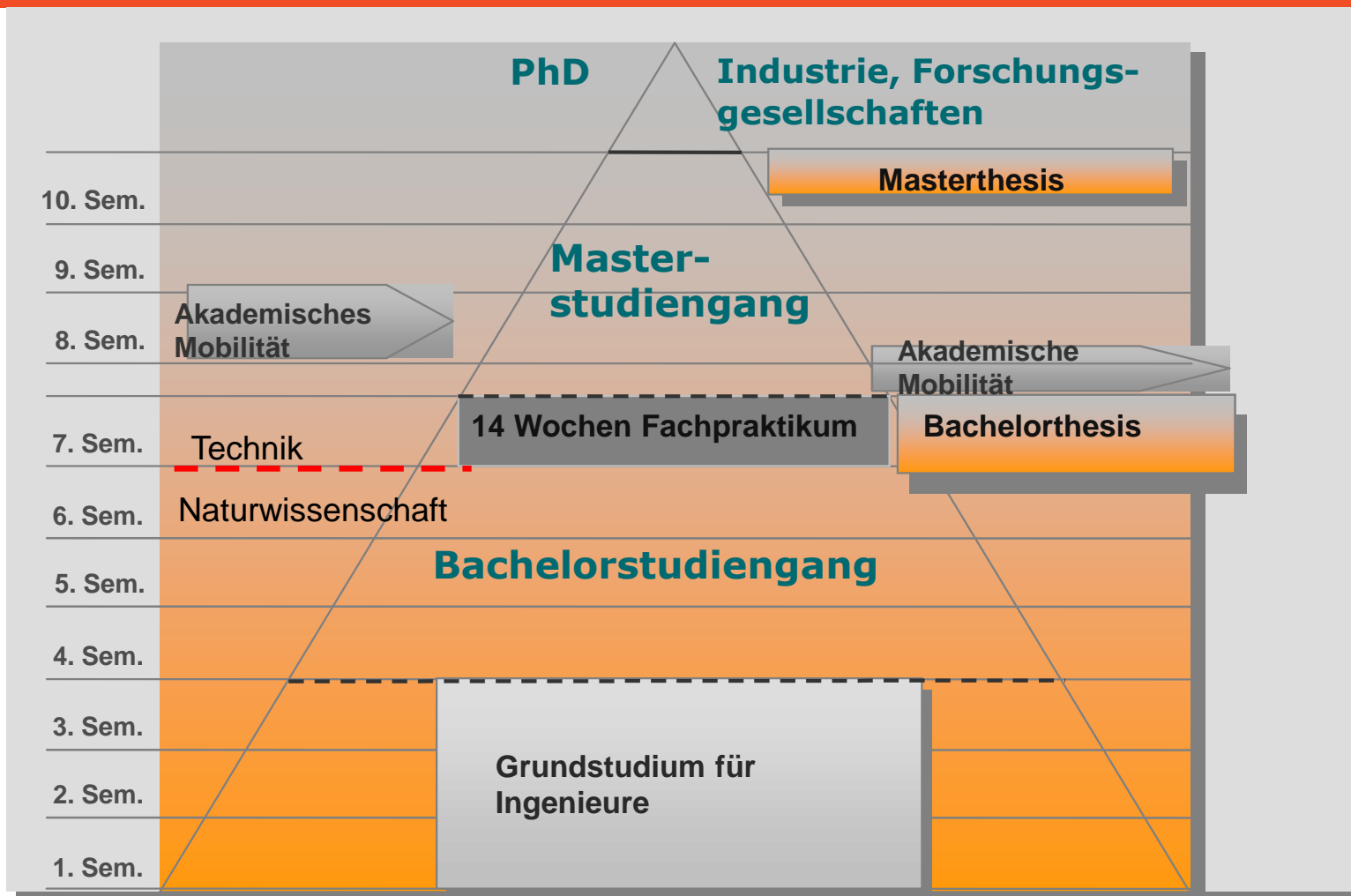
DesIRE

- **Faculty of Electrical Engineering and Information Technology**
- **Faculty of Computer Science and Automation**
- **Faculty of Mechanical Engineering**
- **Faculty of Mathematics and Natural Science**
- **Faculty of Economics Sciences and Media**
- ❖ **6 Inter-Faculty Instituts**
- ❖ **SFB 622 „Positioning and Measurement in the Nanometre Range“**
- ❖ **5 TU Ilmenau International Schools**



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➤ Engineering Sciences

- Automotive Engineering (BSc/MSc)
- Biomedical Engineering (BSc/MSc)
- Communications and Signal Processing (MSc)
- Computer Engineering (BSc/MSc)
- Electrical Engineering and Information Technology (BSc/MSc)
- Electrical Power and Control Engineering (MSc)
- Mechanical Engineering (BSc/MSc)
- Mechatronics (BSc/MSc)
- Media Technology (BSc/MSc)
- Optronics (BSc/MSc)
- Research in Computer and Systems Engineering (MSc)



➤ Mathematics and Natural courses

- Computer Science (BSc/MSc)
- Materials Science (BSc/MSc)
- Mathematics and Business Mathematics (MSc)
- Micro- and Nanotechnologies (MSc)
- Miniaturised Biotechnology (MSc)
- Renewable Energy Technology (MSc)
- Technical Physics (MSc)
- Technical Cybernetics and System Theory (BSc)



➤ Business and Social Studies

- Applied Media and Communications Science (BSc)
- Commercial Information Technology (BSc/MSc)
- General Business Administration (MSc)
- Industrial Engineering and Management (BSc/MSc)
- Media and Communication Science (MSc)
- Media Economics (BSc(MSc))



„Doktor“ = the German PhD

- Dr.- Ing.
- Dr. rer. nat.
- Dr. rer. pol.
- Requirements: German „Diplom“ or MoS.
 - » Statement of a Supervisor
 - » Proof of adequate competence in German or English Language



Research Activities

- Nanoengineering
- Precision Engineering and Precision Measurement Technology
- Technical and biomedical assistance systems
- Drive, Energy and Environment Technology
- Digital Media Technology
- Mobile Communication



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Jenoptik Jena, Carl Zeiss Jena, Sony, Philips, Daimler, Bosch, Telekom etc.



SCHOTT
TOTAL CUSTOMER CARE

OPEL

ZEISS

EADS

FEM



BOSCH



sartorius

JENOPTIK
JENA

brüel
Kjaer & Skov

FhG

GILDEMEISTER

ThyssenKrupp Stahl

multicar
Mehr als ein Transporter

TETRA

MERCK



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Our partner universities

- More than 100 universities in
 - Eastern, West and Central Europe,
 - Asia, Africa
 - America



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Integrated Communication Systems Group

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TECHNISCHE UNIVERSITÄT
ILMENAU

Contact Person

Prof. Dr.-Ing. habil. Andreas
Mitschke-Thiel
Phone: +49 3677 1 65 2019
Send email

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Degree of wounds

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Integrated Communication Systems Group



Holistic system view

We consider communication systems in a holistic way i.e. including their architecture, management and cross-layer interdependencies, rather than single protocols or protocol layers.

Research focus

Our research focus is on future communication systems that

- integrate heterogeneous network and radio technologies and
- operate in a self-organized manner.

News

News

15.01.2014

Mündliche Prüfung
Technische Informatik 1,
Integrierte Hard- und
Softwaresysteme 1

15.01.2014

Mündliche Prüfungen
Integrierte Hard- und
Softwaresysteme 2 & 3

08.01.2014

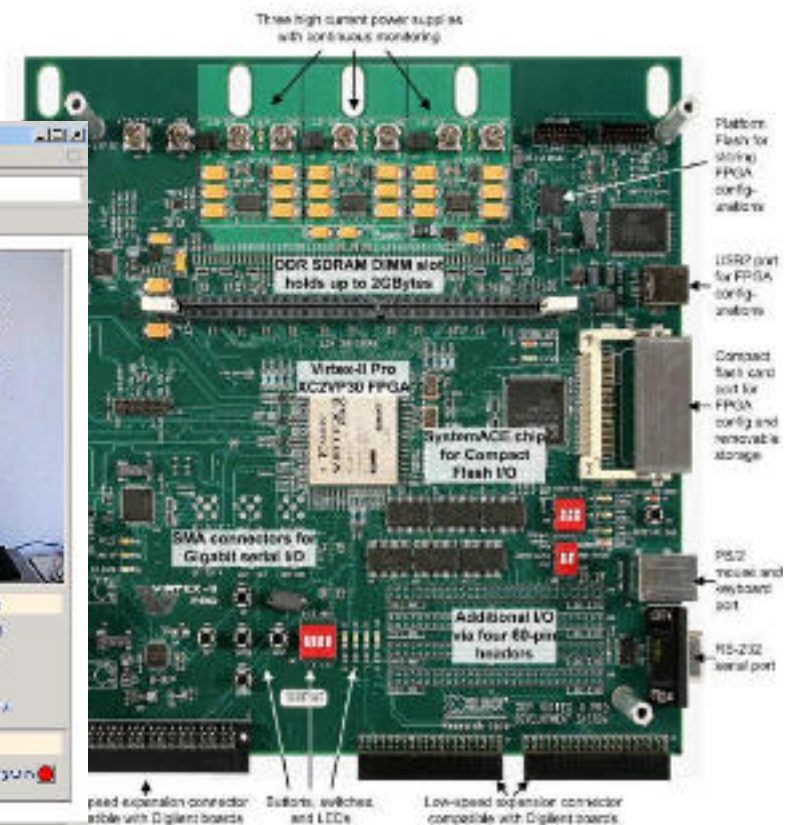
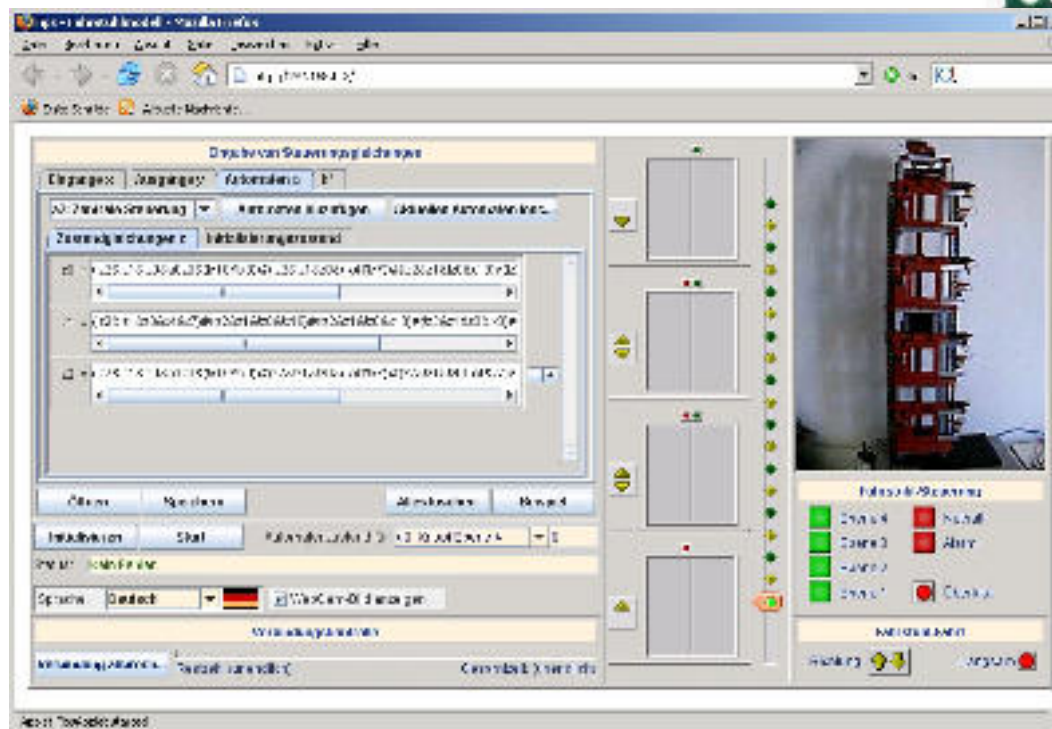
Mündliche Prüfung Mobile
Communication Networks /
Adv. Mobile Communication
Networks

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- Remote engineering
- Remote lab
- Quadrocopter lab
- SoC design and embedded Linux

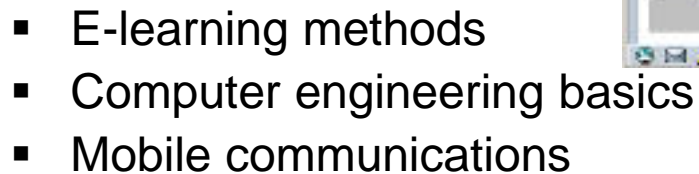
Integrated HW/SW Systems

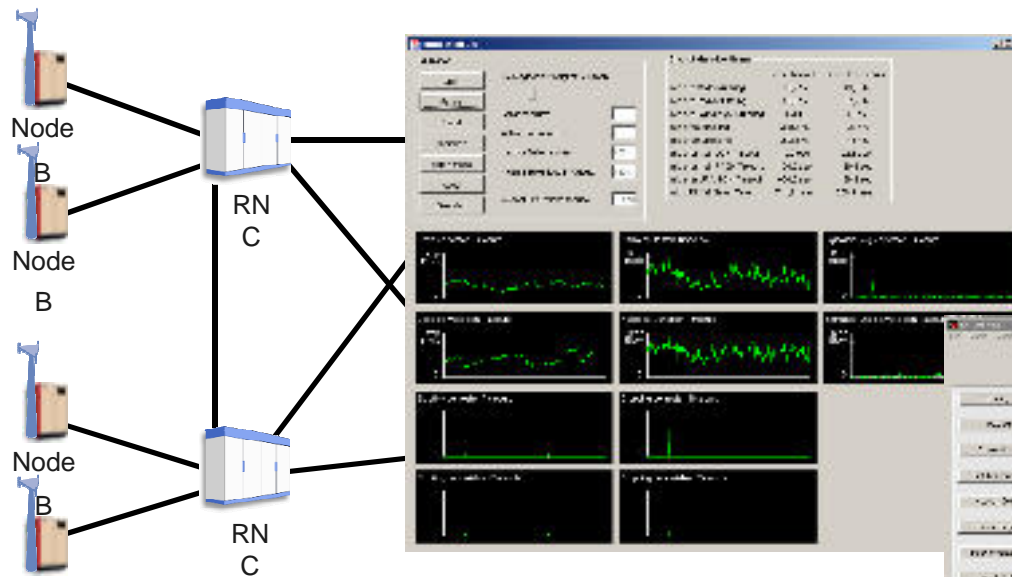




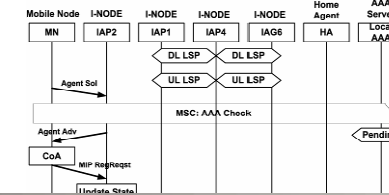
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E-Learning

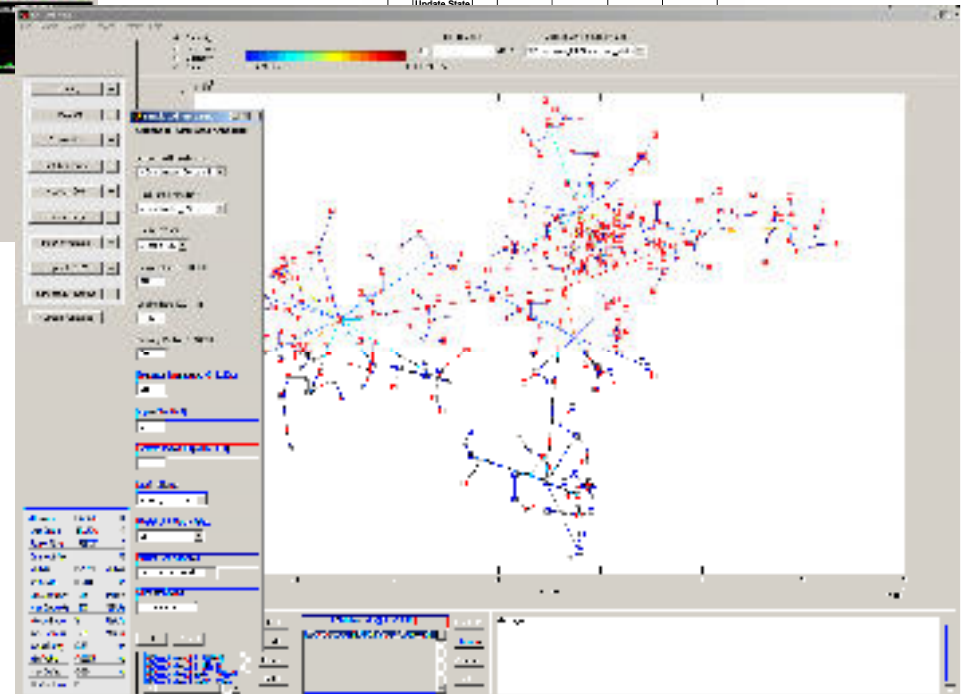




Mobile Communications



- Network architectures
- Mobility & QoS protocols
- Resource and capacity optimization
- Ad hoc networking
- Protocol engineering
- Self-organized network management
- Various labs





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Dr.-Ing. Karsten Henke, Dieter Wuttke

Integrated Communication Systems Group
Ilmenau University of Technology

Tel: +49 (0)3677 69 2829

Fax: +49 (0)3677 69 4823

E-mail: karsten.henke@tu-ilmenau.de
dieter.wuttke@tu-ilmenau.de

Website: www.tu-ilmenau.de/ics

