

Embedded Operating Systems

Project Phase

Operating Systems and Middleware
Prof. Dr. rer. nat. Andreas Polze

Organization

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■ Projects

- Proposals are welcome!
- Email until 15.11.; Names, Environment, Problems, Approach
- Approval at Th, 17.11.

■ Teams

- 3-4 students
- Presentations of progress

■ Schedule

- DCL: Th 13:30-17:00
- MobileApps: Tu 15:00-17:00; Th 13:30-17:00

Distributed Control Lab
real-time experiments and
distributed logistic scenarios

Jan-Arne Sobania, Uwe Hentschel

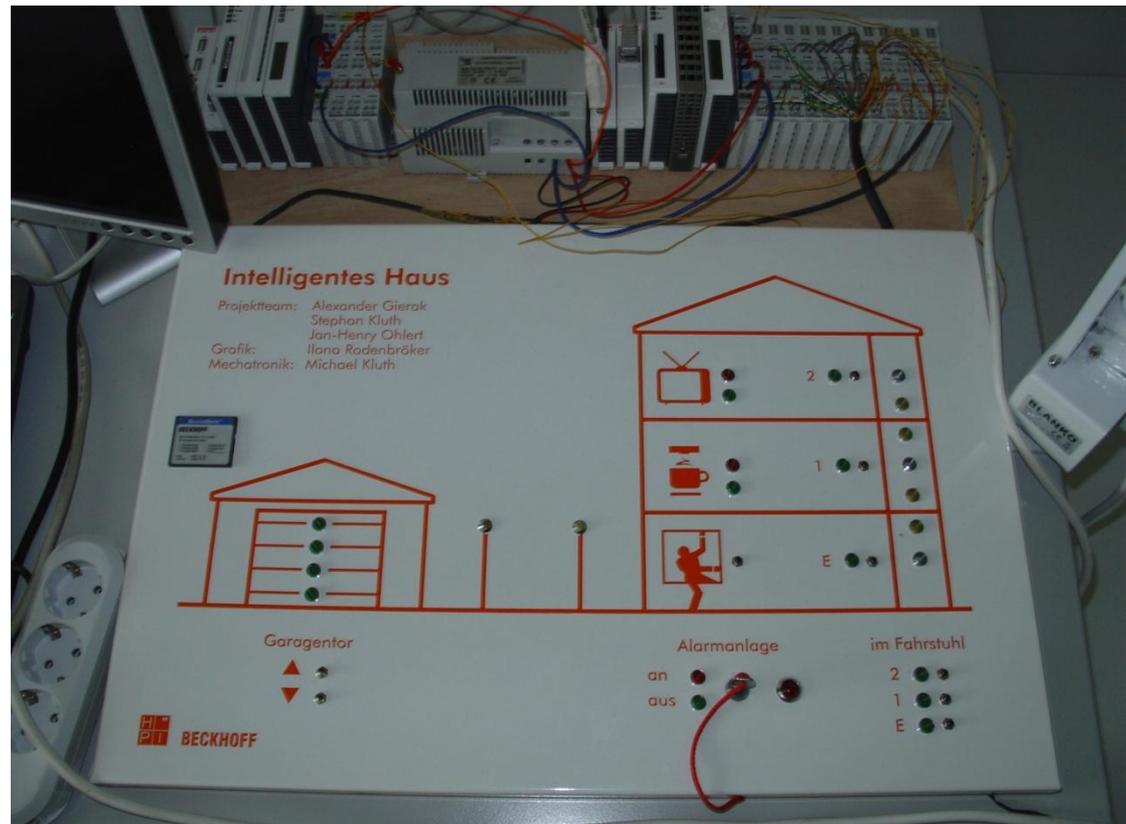
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Project Ideas

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■ SPS – Controlling a virtual intelligent house:

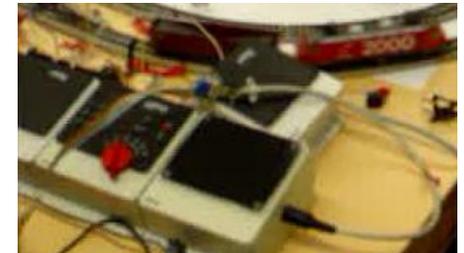
- Elevator
- Garage door
- Lighting
- Alarm system
- Coffee maker
- TV



Project Ideas

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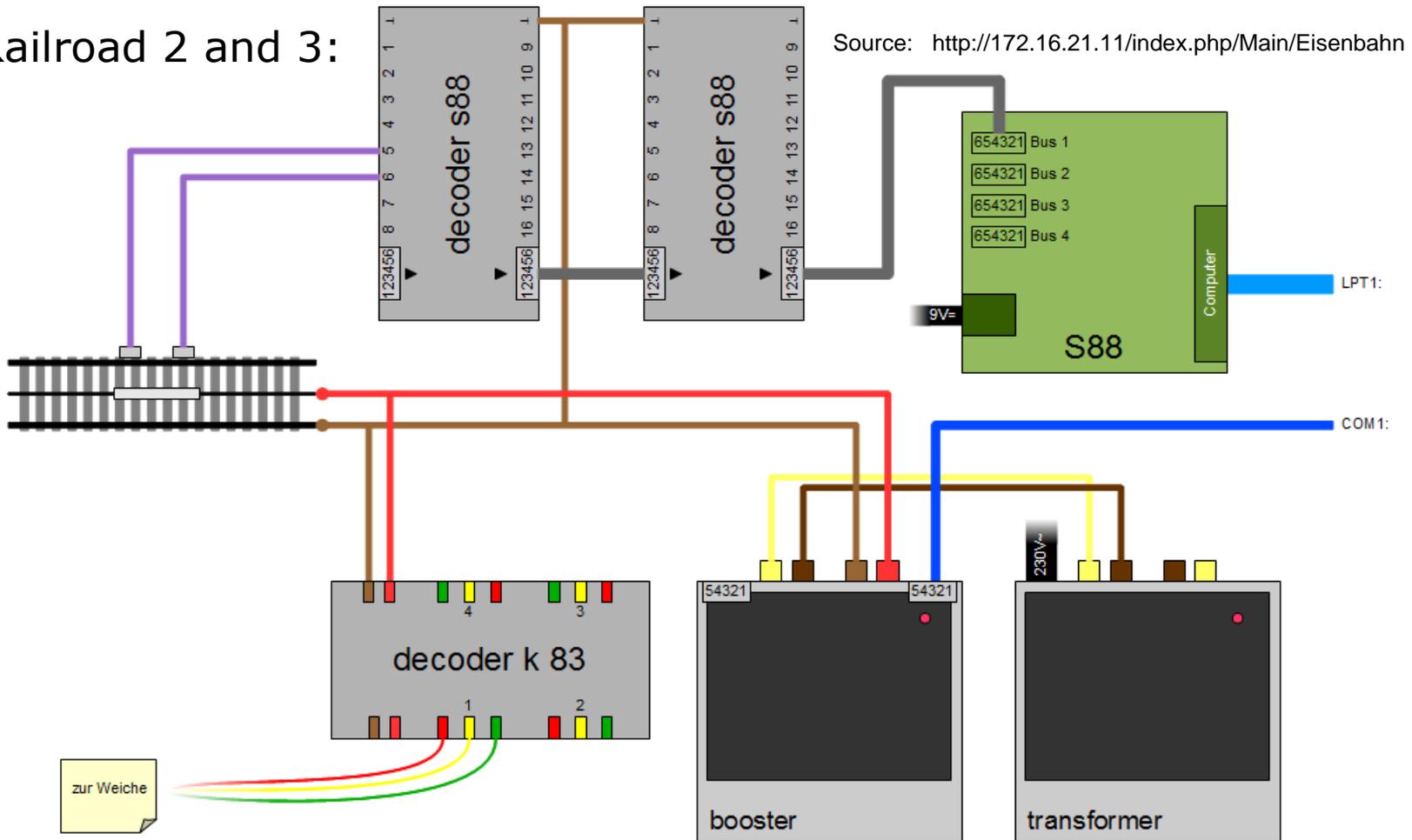
- Railroad 1:
 - Controlling trains via PC and Märklin control unit (management of independent trains within the same rail segment)



Project Ideas

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■ Railroad 2 and 3:



Project Ideas

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- LEGO Mindstorms NXT
 - Develop your own small operating system – thread management and scheduling



Source: <http://shop.lego.com/en-DE/LEGO-MINDSTORMS-NXT-2-0-8547>

Android, WP7, WinMobile, iOS
app development for state-of-the-art
embedded systems

Alexander Schacht, Frank Feinbube

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Mobile Devices

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New Opportunities

- Powerful CPU, huge main memory, SSD
- Standardized hardware: GPS, Motion Sensor, Camera,...
- Mature development and debugging support

New Challenges

- Connectivity is unreliable
- Energy is scarce
- App Hub: Approval process, security, restrictions
- Responsiveness instead of Real-Time

- Apps für Deutschland **Open-Data-Wettbewerb**
 - apps4deutschland.de
 - Data:
 - www.opendata-showroom.org, offenedaten.de
 - Election results, education, location of waste glass containers, radioactivity, population data, ...

- **Cardea**: The Health App
 - Implementation of a single User Story / scenario
 - „the allergic“, „the diabetic“, „the heart disease“, „the pregnant“, ...

Cardea

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Figure 3: Design study for the role model Paula

Organization

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