

# Building Context-Aware Applications in Mundo

Gerhard Austaller

gerhard@tk.informatik.tu-darmstadt.de

Telecooperation Group  
Prof. Dr. Max Mühlhäuser  
Department of Computer Science  
Darmstadt University of Technology, Germany  
[www.tk.informatik.tu-darmstadt.de](http://www.tk.informatik.tu-darmstadt.de)

## Overview

- Scenario / Motivation
- Research Topics
- Context-Stack
- Implementation
- Technical Issues
- Non Technical Issues

# Motivation - Scenario

[kolloquium] Einladung zum Kolloquium am 5.8.2002 - Termin

Datei Bearbeiten Ansicht Einfügen Format Extras Aktionen ?

Speichern und schließen Teilnehmer einladen...

Termin Terminplanung

Betreff: [kolloquium] Einladung zum Kolloquium am 5.8.2002

Ort: Raum 51 15/133

Beginnt um: Mo 05.08.2002 16:15  Ganztägig

Endet um: Mo 05.08.2002 17:45

Erinnerung: 30 Minuten Anzeigen als:  Mit Vorbehalt

RMV.DE - Microsoft Internet Explorer

Datei Bearbeiten Ansicht

Zurück

Adresse http://www.rmv.de/

Google

Fahrplanauskunft

von

Ort/Stadt Darmstadt

Haltestelle Alexanderstraße

nach

Ort/Stadt Darmstadt

Haltestelle Luisenplatz

Datum 05 08  
02

Uhrzeit 16 15

Abfahrt  Ankunft

MEHR OPTIONEN >>>

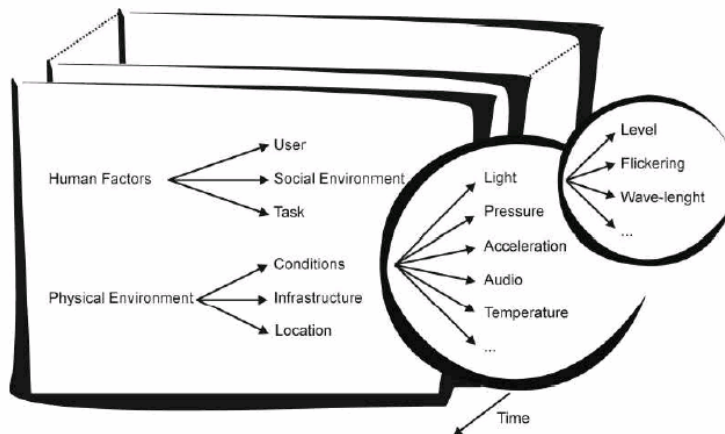
ABFRAGEN >>>



2. Darmstadt Alexanderstraße/TU	<input checked="" type="checkbox"/>	Mo.05.08.	ab 16:06	00:04
Darmstadt Luisenplatz			an 16:10	

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# Context...



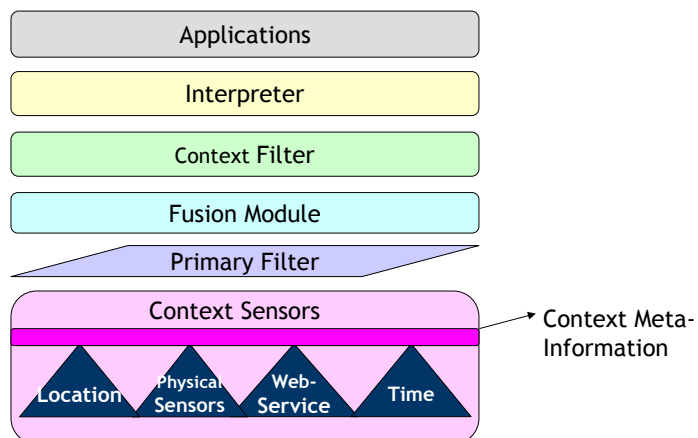
# Research Objectives

- Terminology
  - To be able to talk about context-aware systems
- Methodology
  - Design process for building context-aware systems
- Context Representation and Retrieval System
  - Still most times physical sensor paradigm, but more complex context is needed
- Context Data Fusion, Filtering and Interpretation
  - Several sensors represent one context
  - Person enters/leaves a room
  - People on one place, noise level -> meeting, lesson
- Scalability
  - Many context producers, many consumers
- Application
  - New programming paradigm

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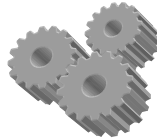
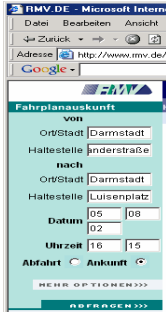
# General Model For Context Aware Systems



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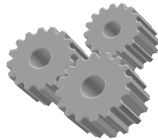
# Implementation of a Context Aware Calendar



Calendar



O<sub>2</sub>-  
Handyfinder



RMV-Time-  
table

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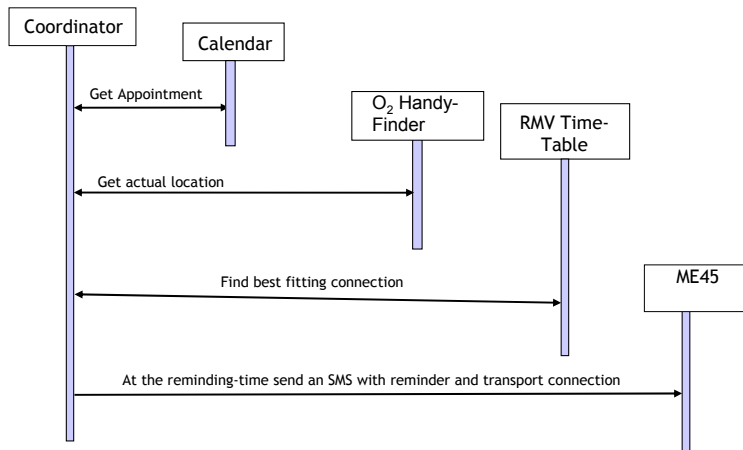
Cellular Phone



Nokia D211

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# Logic Sequence Diagram



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## Hurry Up!



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## Application of our Model

Application	Automatic reminder with public transport connections
Interpreter	Logic
Context Filter	Significant context change
Fusion Module	Translation of formats
Primary Filter	Frequency of requests
Context Sensors	O <sub>2</sub> Location Service, calendar, RMV, time

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## Technical Issues

- **Standardization:**
  - Interfaces, Services
  - Context-aware service discovery
  - Common (Context-) Model
- **Costs:**
  - Power
  - Money

## Non-Technical Issues

- **Privacy Issues:**
  - Who gets information about my current context?
    - Location based services need my location to process but I don't want them to be able to track me.
    - I don't want my boss to know how much time I spend per day in the coffee kitchen.
- **Usability Issues:**
  - "A Context-Aware Systems should make my life easier but if it makes mistakes I'm are angry with it and the second time it does something wrong I turn it off (forgetting the many times it was working correctly...)"
- **Society Issues:**
  - Many people are concerned about "technical progress".

# Summary

- Got an idea
  - How to build context-aware applications
  - Problems we have to face to
- Future work
  - Cost models
  - Better integration
  - Other applications

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Erwin to continue...

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