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# Multimedia-Systems: Applications

Prof. Dr.-Ing. **Ralf Steinmetz**

Prof. Dr. **Max Mühlhäuser**

**MM:** TU Darmstadt - Darmstadt University of Technology,  
 Dept. of of Computer Science

TK - Telecooperation, Tel.+49 6151 16-3709,

Alexanderstr. 6, D-64283 Darmstadt, Germany, [max@informatik.tu-darmstadt.de](mailto:max@informatik.tu-darmstadt.de) Fax. +49 6151 16-3052

**RS:** TU Darmstadt - Darmstadt University of Technology,

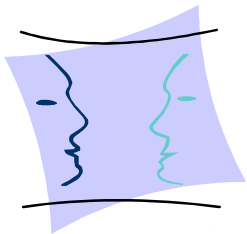
Dept. of Electrical Engineering and Information Technology, Dept. of Computer Science

KOM - Industrial Process and System Communications, Tel.+49 6151 166151,

Merckstr. 25, D-64283 Darmstadt, Germany, [Ralf.Steinmetz@KOM.tu-darmstadt.de](mailto:Ralf.Steinmetz@KOM.tu-darmstadt.de) Fax. +49 6151 166152

GMD -German National Research Center for Information Technology

httc - Hessian Telemedia Technology Competence-Center e.V.



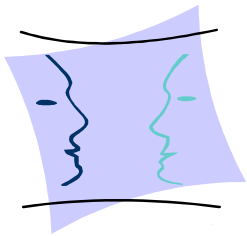
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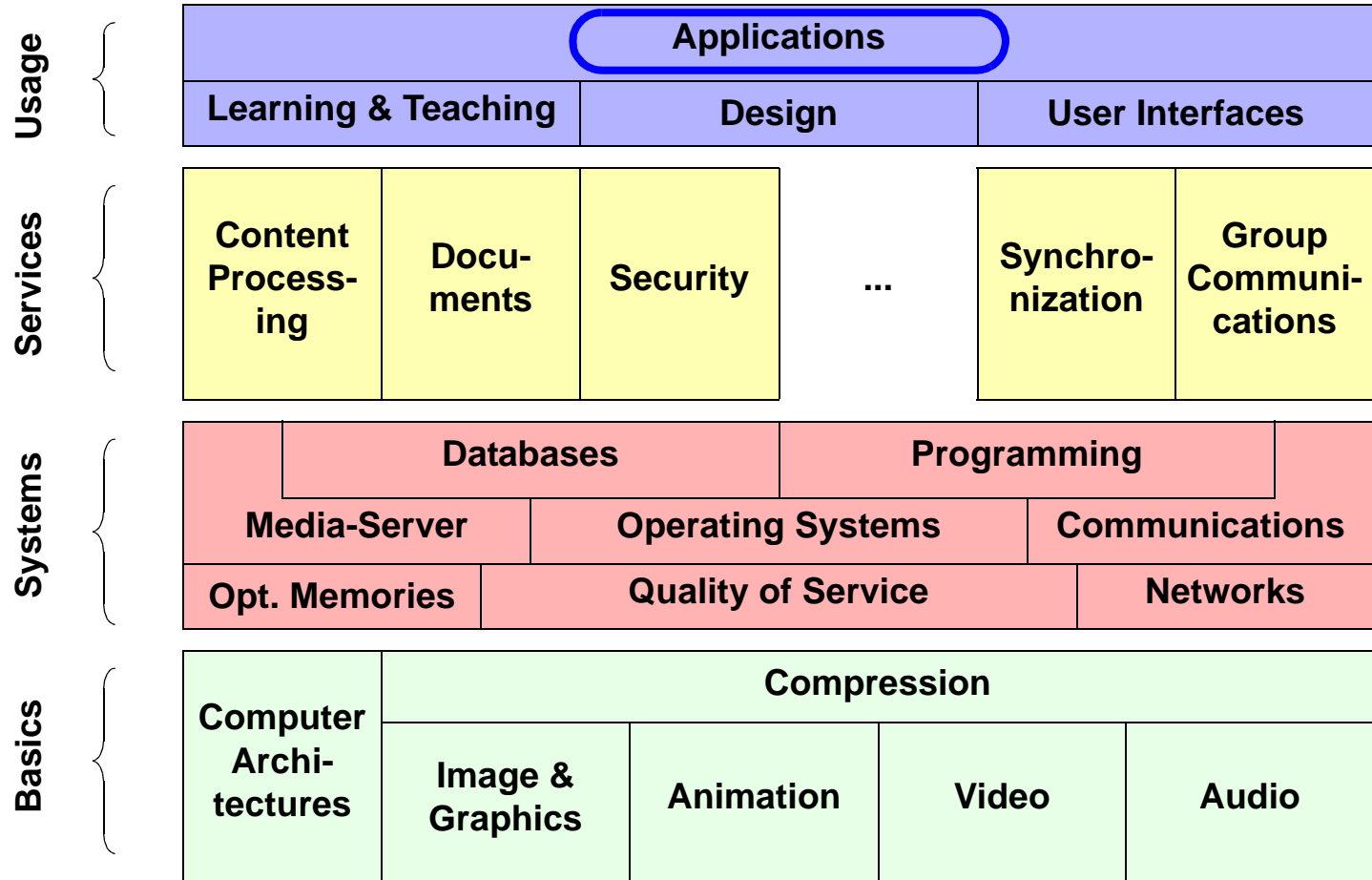
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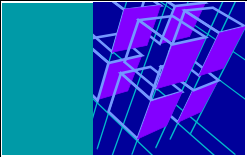
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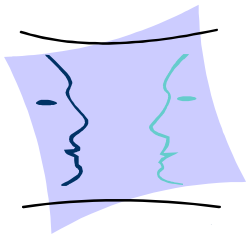




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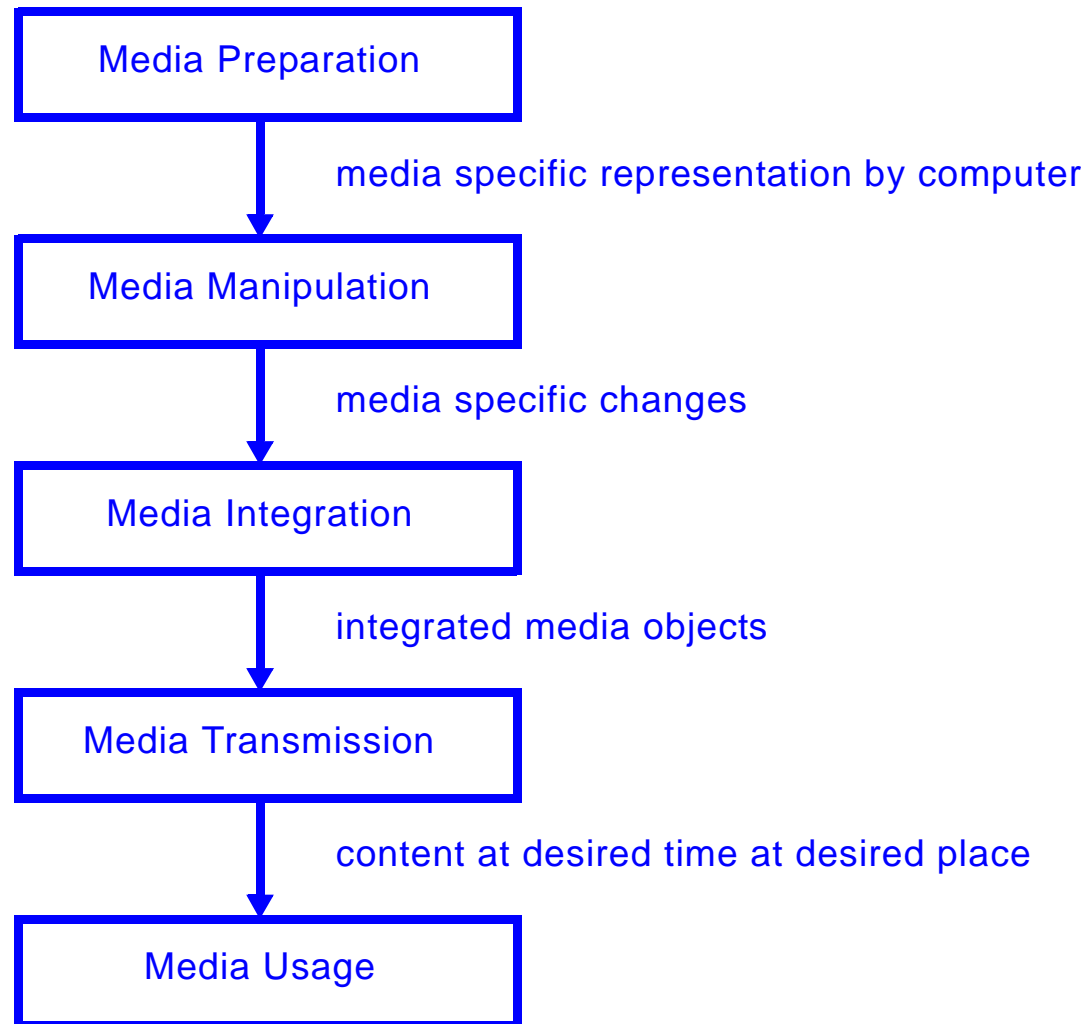
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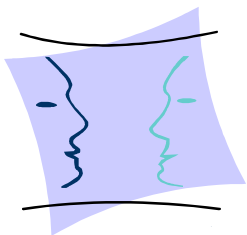
1. Overview
2. An inside look at the Aspects
  - Media Preparation / Media Manipulation
  - Change data by editing single medium
  - Media Integration
  - Media Transmission
  - Media Usage
3. Case Study
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4. Case Study: "Ubiquitous Computing"
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# 1. Overview



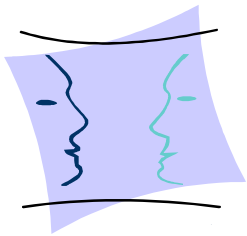
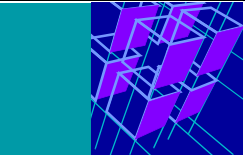
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## 2. An inside look at the Aspects

### Media Preparation / Media Manipulation

#### Media Capture or Data Generation

- **Audio**
- **Video**
- **Text, Still and Motion Graphics**
- **2D / 3D**
  - **Tools:**
    - using (special) hardware, device driver and system SW or dedicated applications

#### Change data by editing single medium

- **Text**
- **Pictures**
- **Graphics**
- **Animation**
- **Audio**
- **Video**
  - **Tools:**
    - large variety media specific editors (Photoshop, GIMP, SoundTools ...)

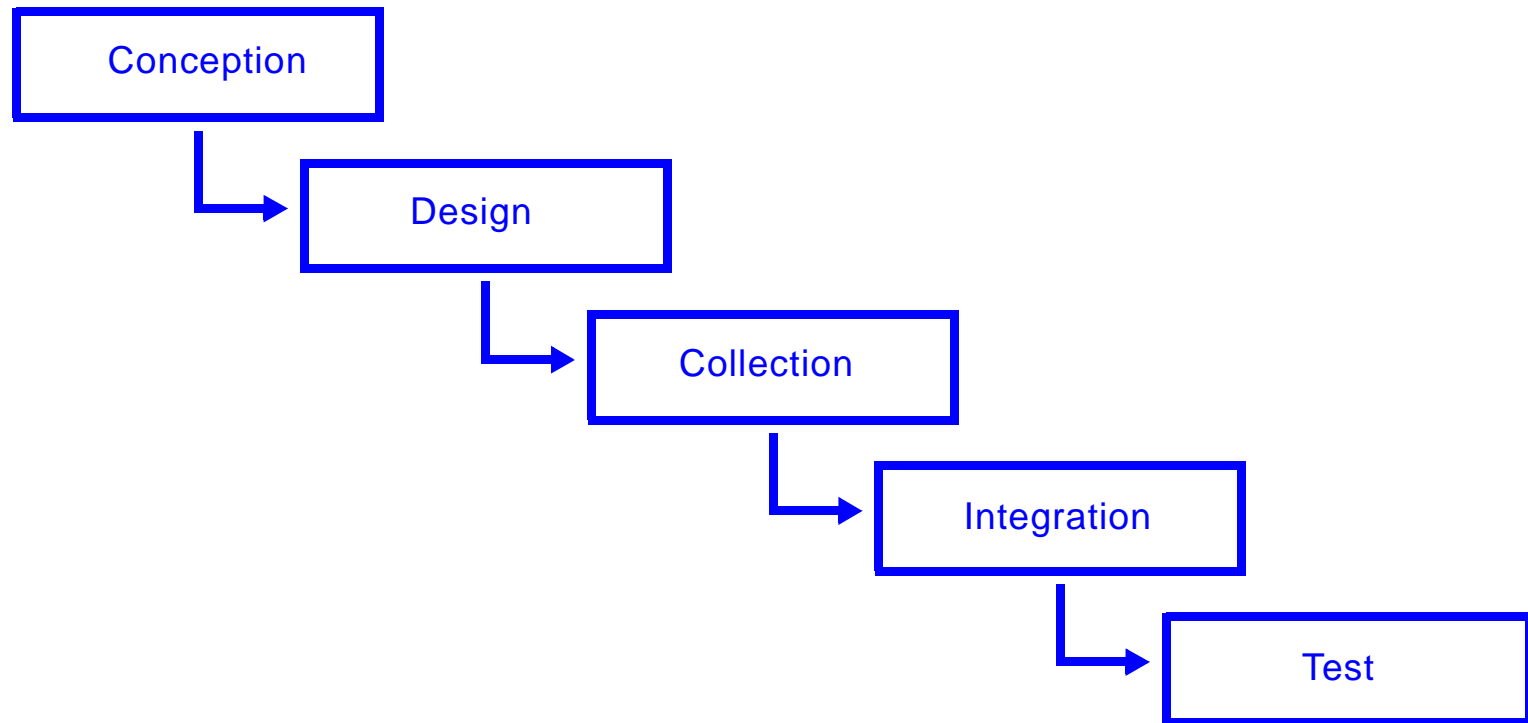
# Media Integration

Now step forward to an integrated view

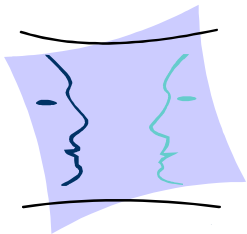
- **Multimedia Editors**
- **Hypermedia-/Hypertext Editors**
- **Authoring Tools**

Important task within overall process

- here it becomes Multi-media



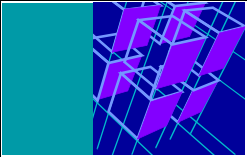
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# Media Transmission

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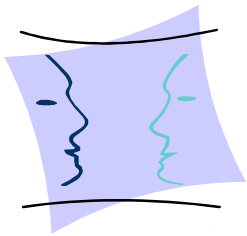
## Major Categories:

- **Interactive Services**
  - Conversation Services
  - News Transmission Services
  - Inquiry Services
  - Tele-Action Services
- **Distribution Services**
  - Pay-per-View
  - Near Video-on-Demand
  - True Video-on-Demand

## Strong relationship to Communication /QoS

- **Bandwidth**
- **Response Time**
- **Symmetric vs. Asymmetric Channels**
- ...

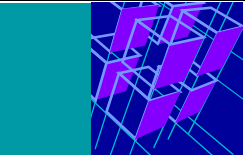
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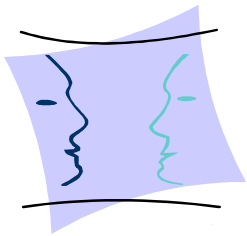
# Media Usage

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**Large variety of applications, we picked up only a few**

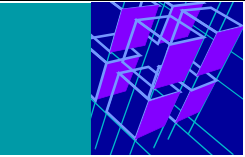
- **Electronic Newspapers and Books**
- **Kiosk Systems**
- **Tele Shopping**
  
- **Entertainment**
  - Virtual Reality
  - Interactive Video
  - Interactive Audio
  - Computer Games
  - ...



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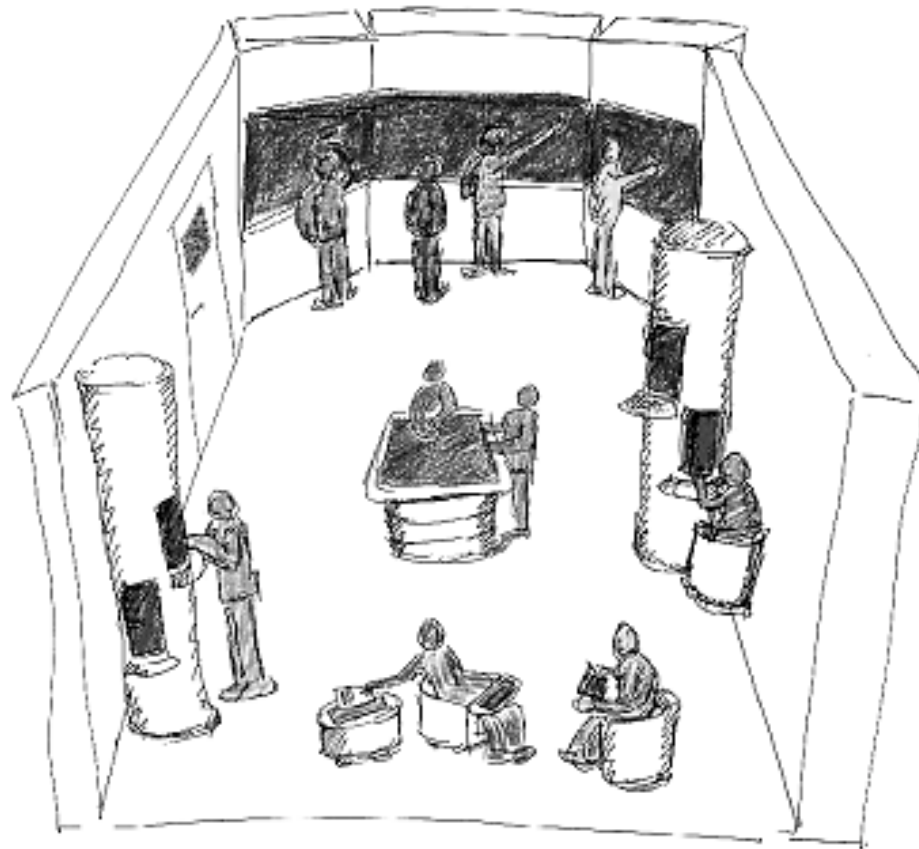
## 3. Case Study

# Cooperative Work using i-Land

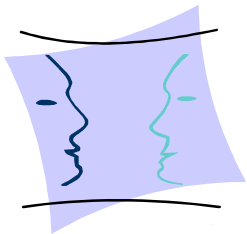
### Motivation

Tools (Hardware and Software)  
to support

- Creative Processes
- Cooperative Work
- Interactivity
- Adaptivity
- ...



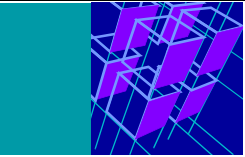
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# i-Land (cont.)

## Roomware

- to integrate computer components into a room

## DynaWall

- drag / drop
- throw
- ...

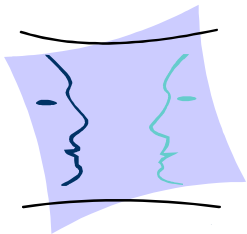


## InteracTable

- no strict up / down
- place and manipulate
- ...



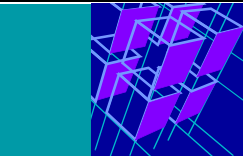
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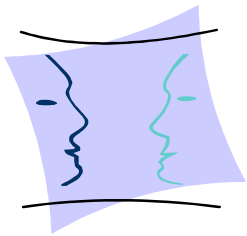
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## i-Land (cont.)

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### CommChair

- **integrated computers or laptop “docking”**
- **communication via wireless LAN**
- **user profiles**
- ...



### Components (HW + SW)

- **form Dynamic Offices**
- **working environments of the future ?**



## 4. Case Study: "Ubiquitous Computing"

### Ubiquitous Computing vs. Virtual reality

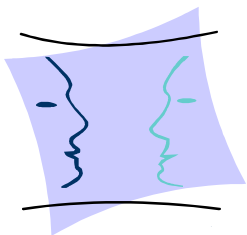
- **Computer in the world vs. world in the computer**
- **invisible (very many) computers**
- **e.g. towards "Body Area Networks"**
- **devices distribute information, to anybody in small range**

### Example "MediaCup Project"

- (<http://www.teco.uni-karlsruhe.de/>)
- **MediaCup is an ordinary coffee cup augmented with**
  - sensing, processing and communication capabilities,
  - to collect and communicate general context information in a given environment



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## 5. Future Trends

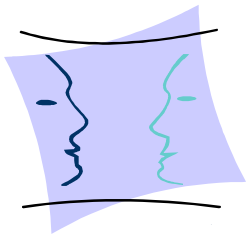
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### Major issues:

- **Towards Distributed Applications**
- **Need Portability and System-Independence**
- **Better Support for User Activity**
  - e.g. Interactive TV, ...
  - to passively consume things => to actively change and influence things
- **leads to:**
  - **Bi-directional Flow of Information**

### Variety of new (still undiscovered) Application Domains

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