*Activity*    *Cluster Integration*

# Adaptive Resource Management for Consumer Electronics

*Activity leader : Gerhard Fohler (MDH)*

# Objectives

resource demand: stream
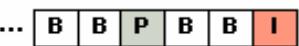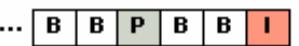
resource availability
NW bandw.

resource availability
CPU, cache, bus.

Video stream

... | B | B | P | B | B | I |

Video stream

... | B | B | P | B | B | I |

Video stream

... | B | B | P | B | B | I |
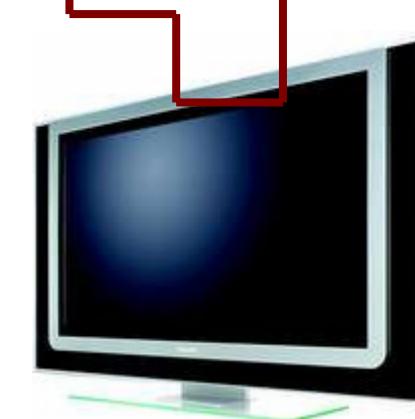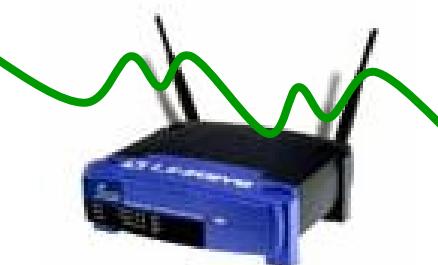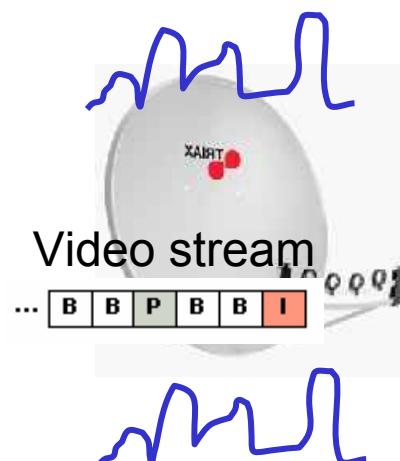
"end-to-end"

# Achievements & Ongoing Work

- **Meetings**

  - ➢ Meetings within cluster

  - ➢ Collaboration with Philips, Ericsson, Visual tools

  - ➢ Workshop with FRESCOR project (Paris, June 2006)

- **Application requirements**

  - ➢ End-to-end Temporal Constraints for Video streaming

  - ➢ impact of devices/components

# Achievements & Ongoing Work, ctd.

- **Adaptive Management of Multiple Resources**

  - Integrated real-time scheduling and cache management

  - Server Based Flexible Scheduling

  - Adaptive resource management for networks

  - Resource availability prediction

- **QoS Middleware**

  - Port HOLA QoS on top of Shark and Marte OS

  - High-level resource management for maximizing output quality

# Plan for the next 18 months

## ▪ Structural changes in the activity

  ➢ to be merged with the activity on Flexible Scheduling into "Flexible Resource Management"

  ➢ broaden scope to Media processing

  ➢ possibility to collaborate with NXP

  ➢ Integration of resource management of multiple resources

  ➢ Integration of approaches - evaluation on platform within Cluster for QoS middleware

  ➢ Provide inputs to activities on QoS Aware Components and Platforms

# Restructuring the activities
# of the ART cluster

**Real-Time Languages**

**Middleware: QoS Management**

**Adaptive Real-Time and Control**

**Dynamic and Pervasive Networking**

**Flexible Resource Management**

**Common OS Infrastructure**
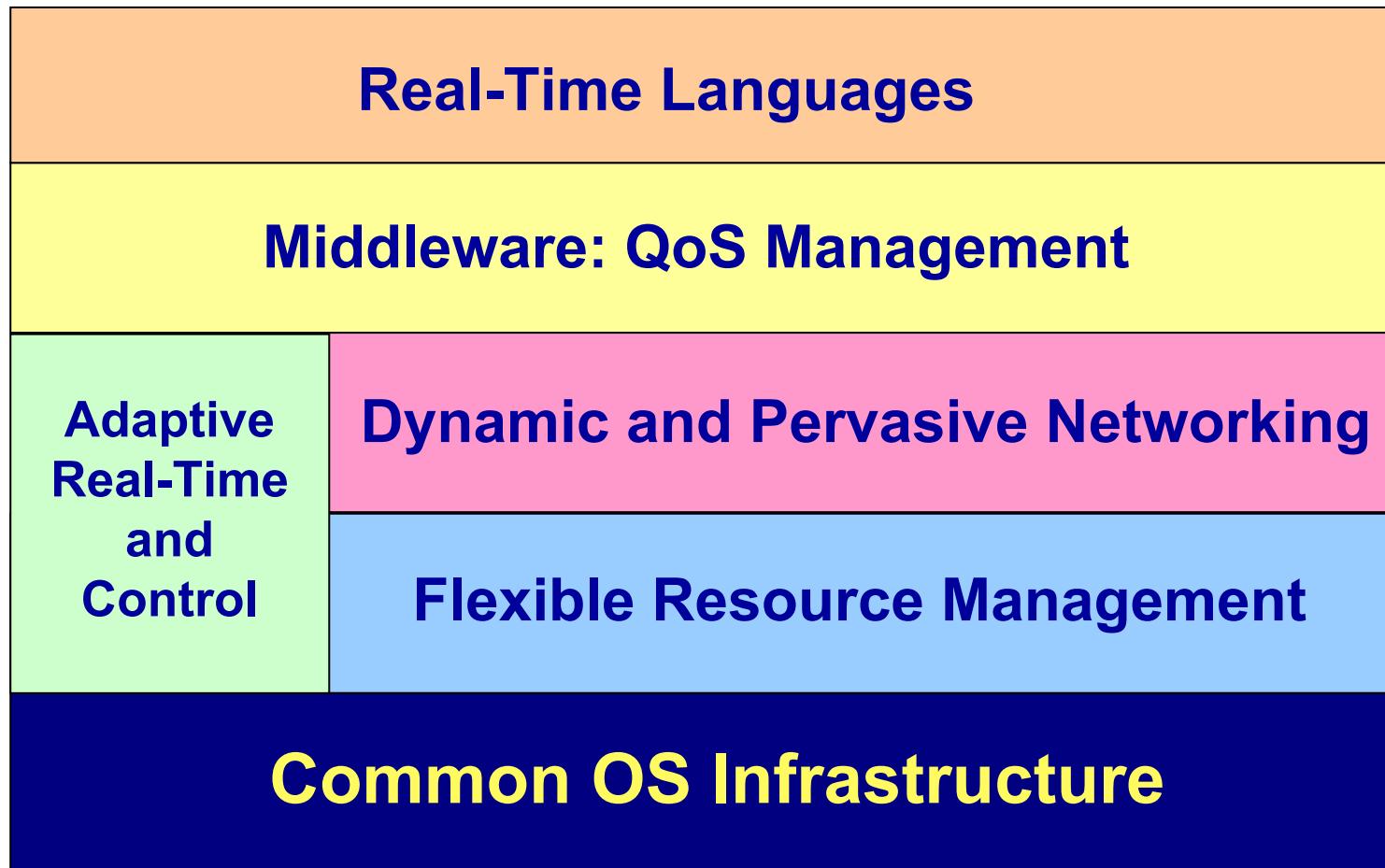
# Proposals for Spreading Excellence

➢ **Second European Lab on RT Embedded Systems**

  – In conjuction with ECRTS (Pisa, July 9-13, 2007)

➢ **Course on OSEK RTOSs and tools**

  – February-March 2007 – 3 days (OSEK, tools, practice)

➢ **Second Summer School on RT Scheduling and Adaptive Resource Management**

  – 5 days in September 2007, Catania, Italy

➢ **Web-based course on real-time systems**

  – Invited lectures recorded and linked into an interactive web course available in the ARTIST2 repository

  – Start on adaptive real-time, then expand if successful