How can MBUI help me? Web of Things and Multimedia

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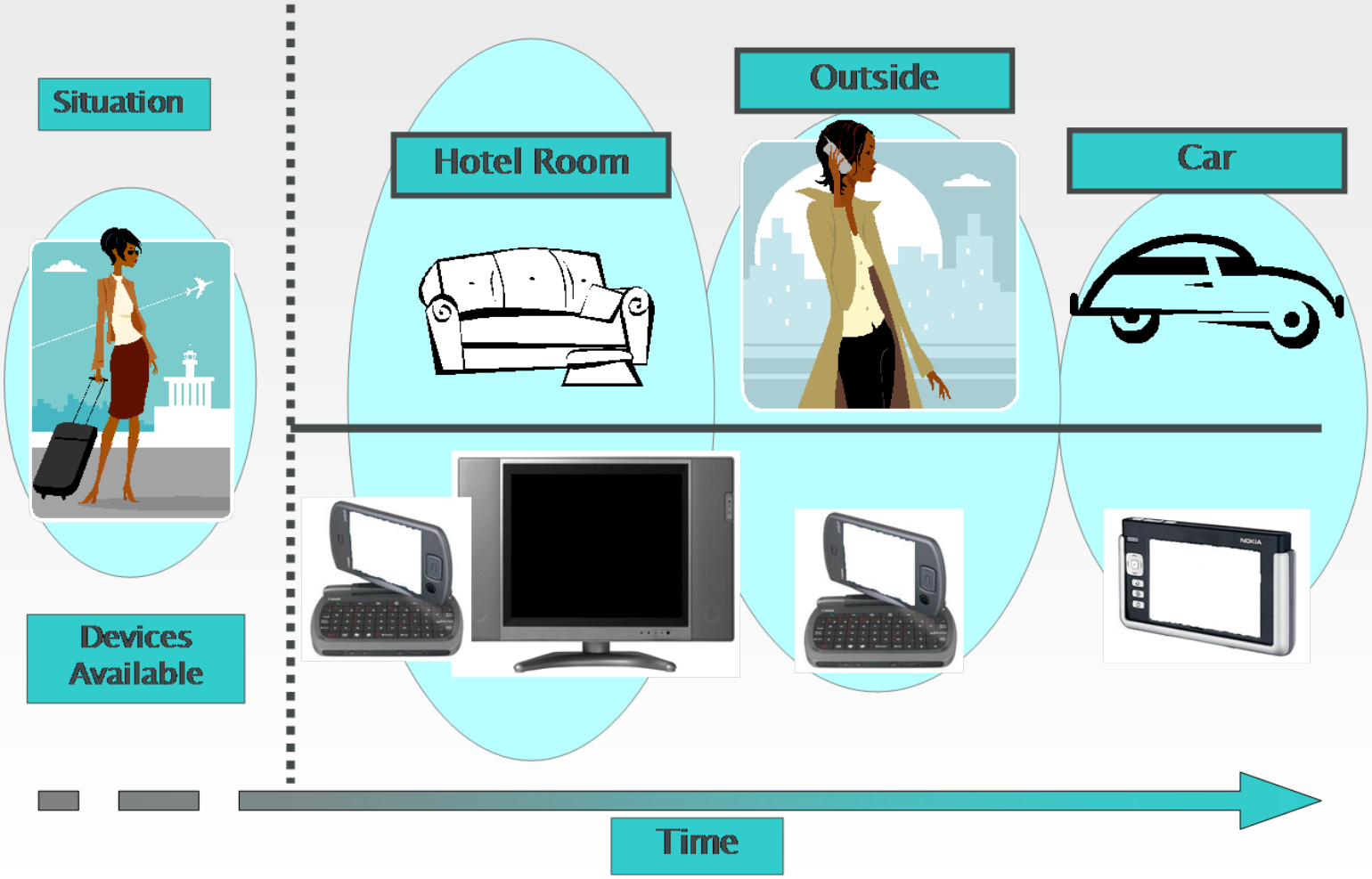
Some Open Source Projects

MDCS: Public Spaces

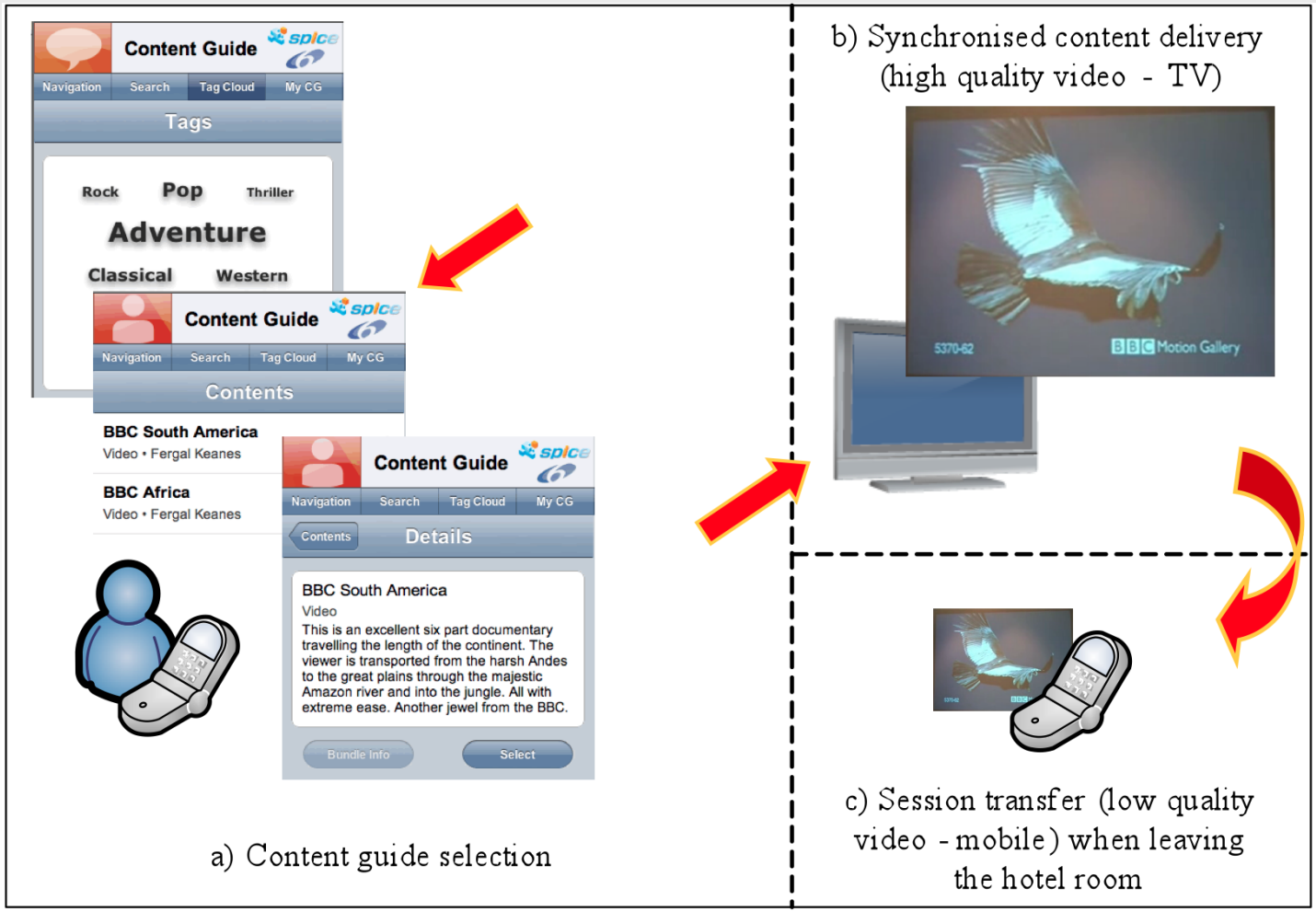
- **IEEE Multimedia. Special issue on Mobile and Ubiquitous Multimedia April 2010**

Intelligent Multimedia Presentation in Ubiquitous Multi-Device Scenarios
This intelligent multimedia adaptation and delivery framework tailors to ubiquitous environments, so that users can experience multimedia content using multiple devices in various mobility situations.

MDCS: One Scenario



MDCS: Scenes


Content Guide
Navigation
Search
Tag Cloud
My CG
Tags
Rock
Pop
Thriller
Adventure
Classical
Western
Content Guide
Navigation
Search
Tag Cloud
My CG
Contents
BBC South America
Video • Fergal Keanes
BBC Africa
Video • Fergal Keanes
Content Guide
Navigation
Search
Tag Cloud
My CG
Contents
Details
BBC South America
Video
This is an excellent six part documentary travelling the length of the continent. The viewer is transported from the harsh Andes to the great plains through the majestic Amazon river and into the jungle. All with extreme ease. Another jewel from the BBC.
Bundle Info
Select
a) Content guide selection
b) Synchronised content delivery (high quality video - TV)
BBC Motion Gallery
c) Session transfer (low quality video - mobile) when leaving the hotel room

MDCS: Design

The Multimodal Decision and Control System (MDCS) focuses on:

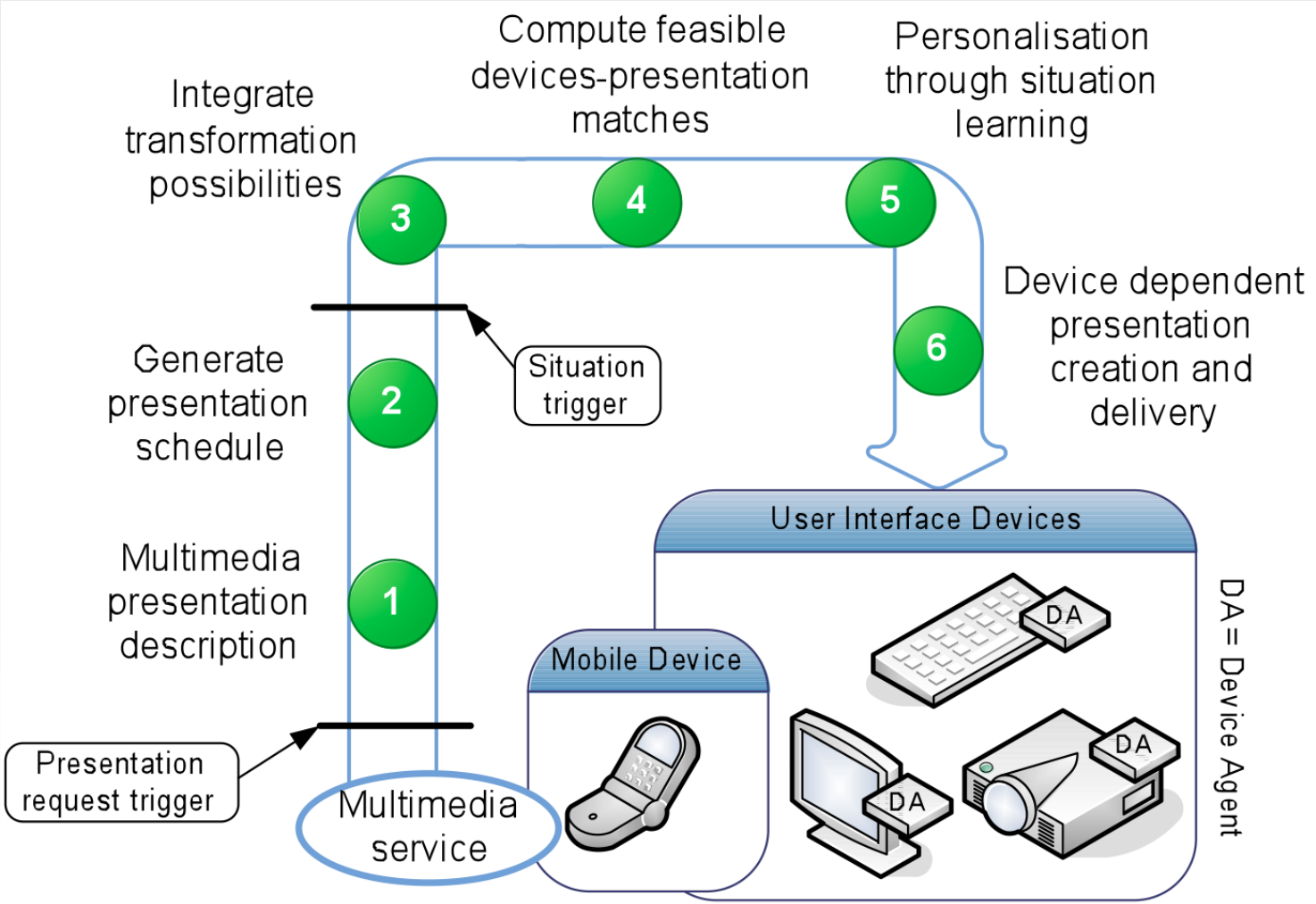
1) deciding how to deliver a particular service to a particular user, using available resources

- Defining the user's Distributed Communication Sphere
- Modeling service sessions through "Bindings"

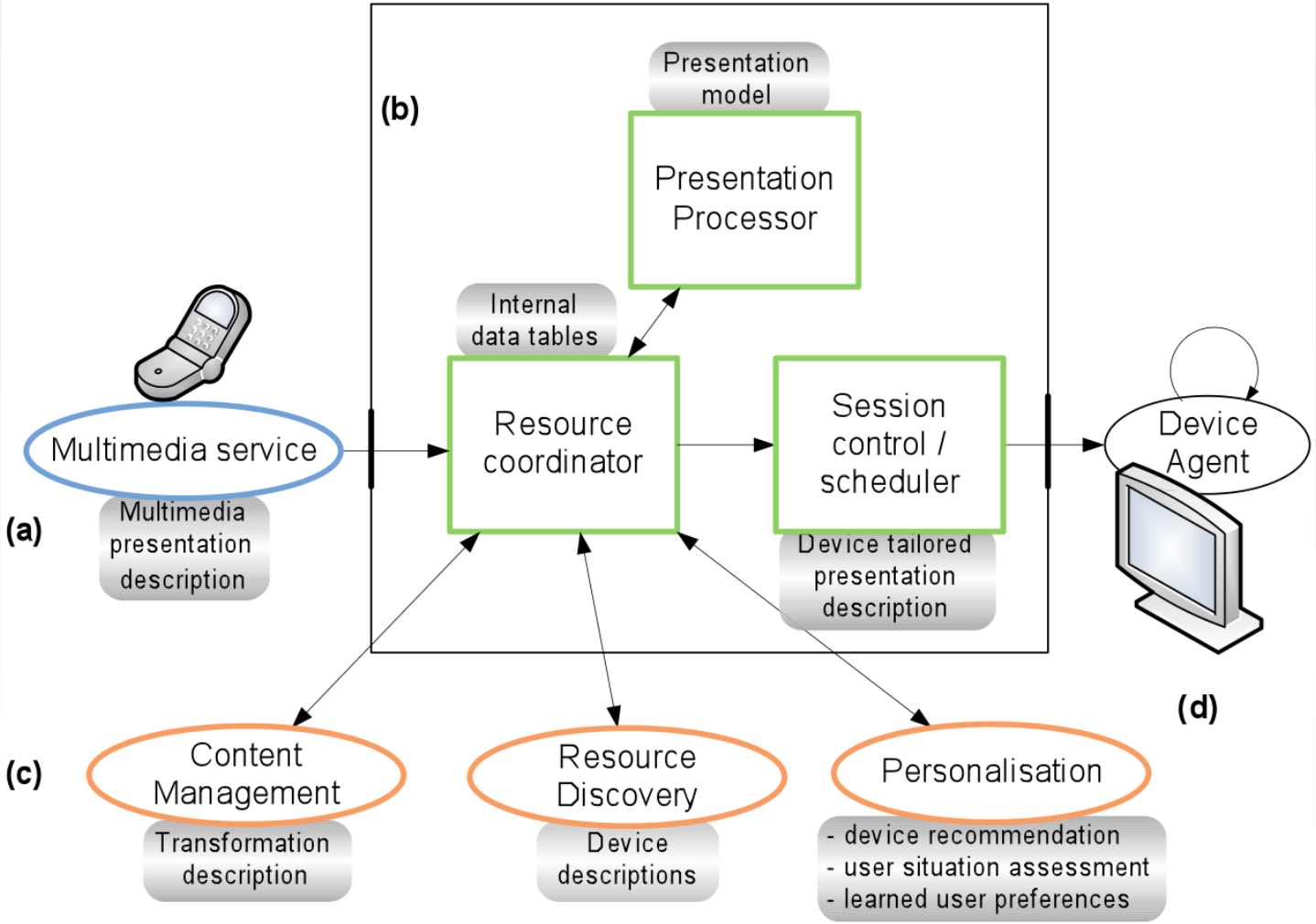
2) enforcing these decisions through

- non-monolithic rendering,
- multimodal interaction,
- and session mobility.

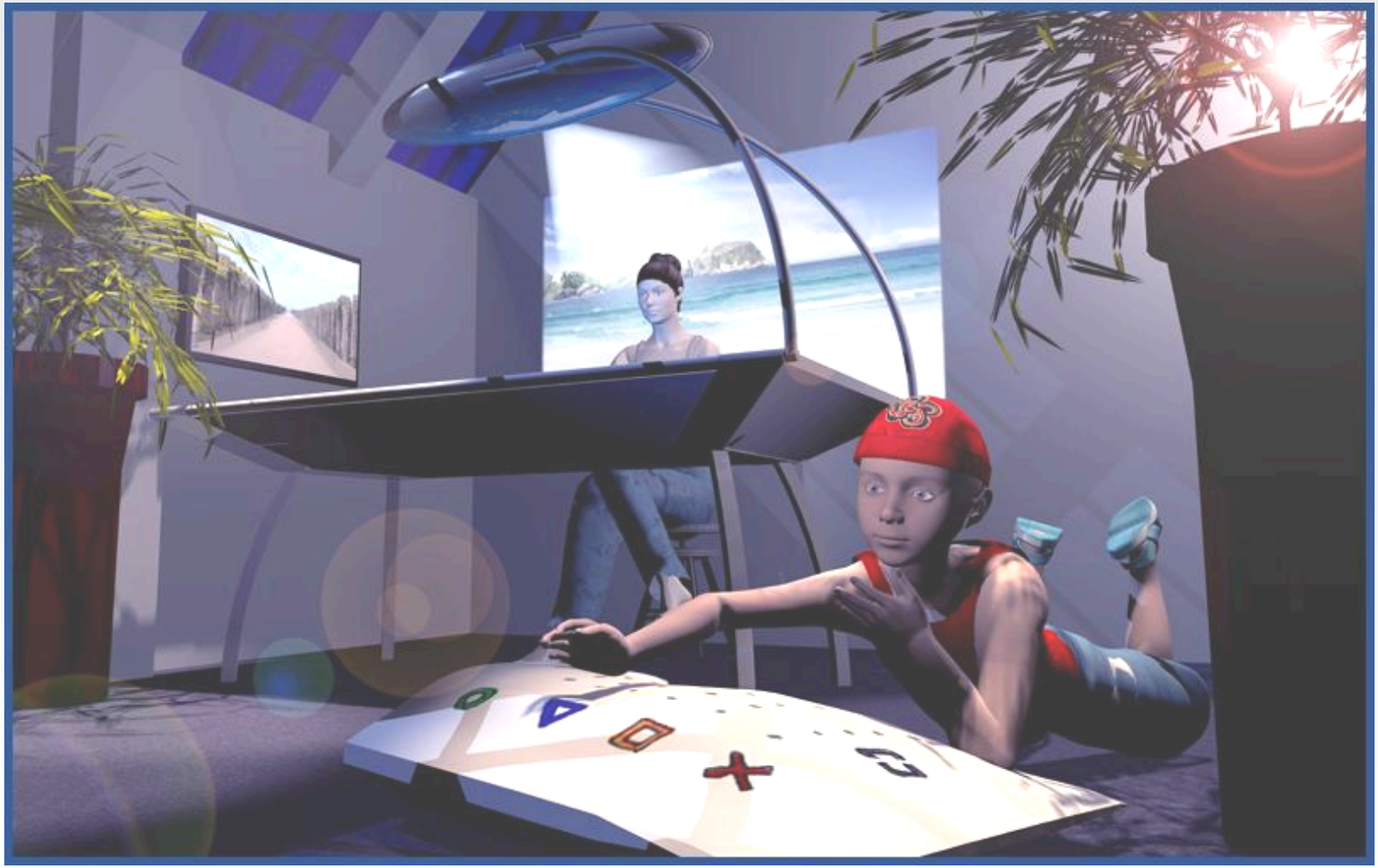
MDCS: Steps


Compute feasible devices-presentation matches
Personalisation through situation learning
Integrate transformation possibilities
3
4
5
Device dependent presentation creation and delivery
6
Generate presentation schedule
2
Situation trigger
User Interface Devices
Multimedia presentation description
1
Mobile Device
DA
DA
DA
DA = Device Agent
Presentation request trigger
Multimedia service

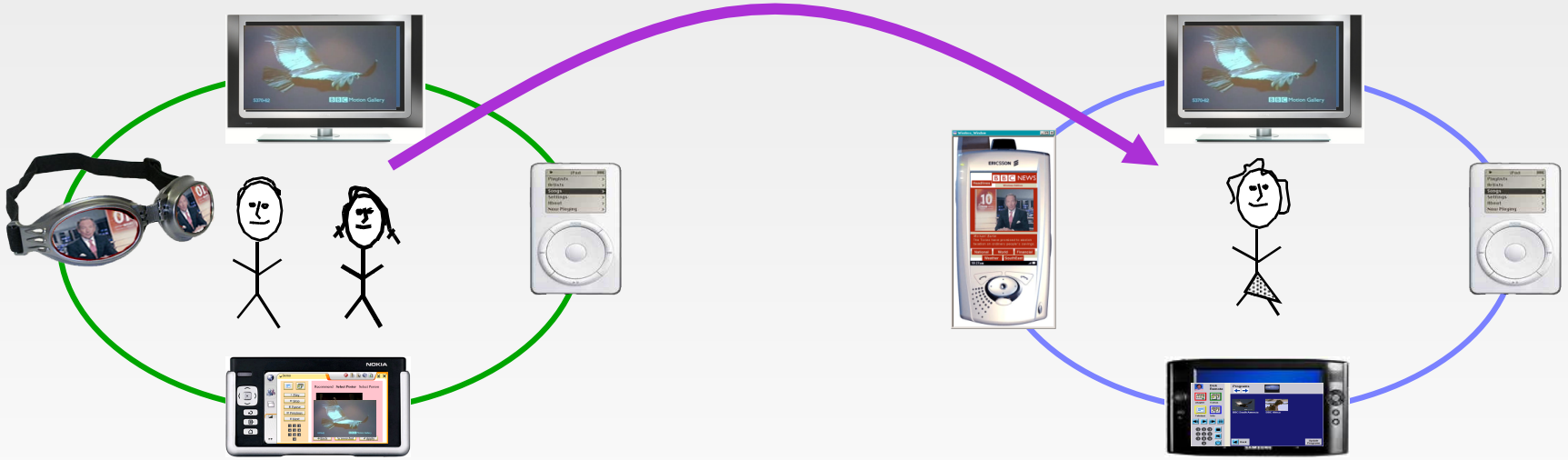
MDCS: Architecture



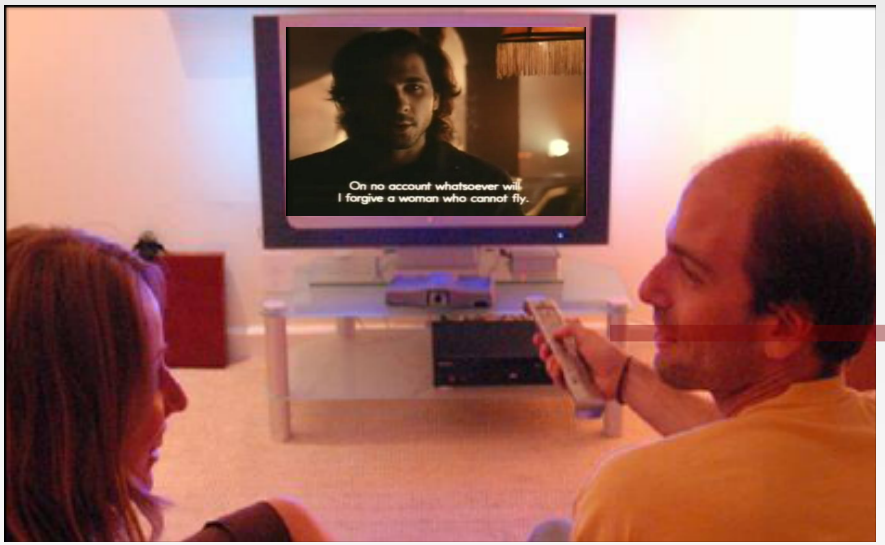
Ambulant Annotator: Home



Ambulant Annotator: Secondary Screens



Ambulant Annotator: Secondary Screens



Social Viewing

Personal viewing:

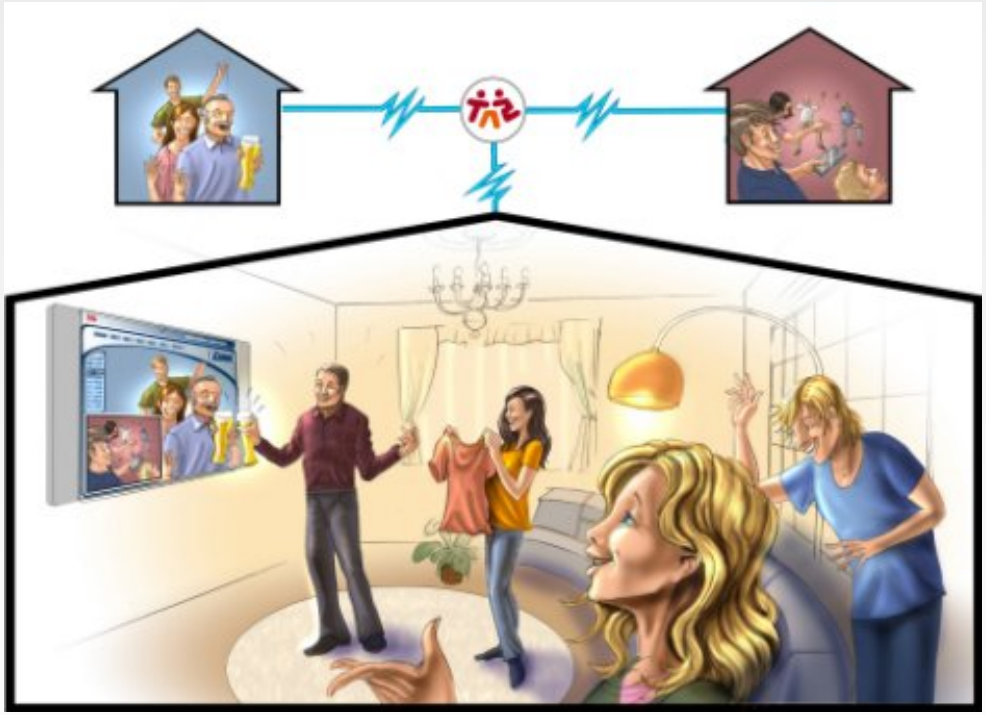
- **Extra information**
- **Content browsing**
- **Lightweight authoring**

Future: Tele-immersion

- Solutions
  - Teeve in the USA (NSF)
  - Three active nodes in the USA
  - CWI might act as the next node
- Issues
  - Real-time transmission of 3D scenes
  - 3D synchronization
  - 3D rendering of the scenes
  - User Interaction?

Future: Orchestrated RT Communication

- Home video conference + activity
  - Family games
  - Bed time stories
  - Learning skills
- User Interaction
  - Activity user interaction
  - Ad-hoc devices
  - Scene analysis
  - Gestures
  - Voice activity



Future: Web of Things

- Idea
  - Mobility beyond mobile phone
  - Connected devices
  - Services in the real-world objects
- (some) Challenges
  - Service front-ends decision
  - Capabilities analysis (objects)
  - Synchronization across objects

How can MBUI Help me?

- **Web of Things**
  - Runtime: complex decisions due to the number of options
  - What if we use cameras and other devices to analyze the context of user?
  - Are extensions to MBUI required for accommodating new requirements?
- **Multimedia & Synchronization**
  - Keeping synchronization is important, how to model it?
  - User events – state machines – are only one part of the game
  - What about other events, such as time?
- **Can we combine temporal models, multi-modality models, and user interface models?**

Thanks!

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