Towards a Universal Declarative User Interface Definition Language

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Abstraction Levels and Transformations

Reverse

Task and Object

Abstract Interface

Concrete Interface

Forward
The ConcurTaskTrees Notation for Task Models

Hierarchical structure

Temporal relations

Task Allocation
Towards a Universal Declarative User Interface Definition Language
Relevant Projects

- **ServFace** aims to create a *model-driven service engineering methodology* for
  - the design of user interfaces for applications based on web services (primary goal); and
  - the composition and integration of user interfaces for applications based on web-services (secondary goal)

- **OPEN** aims to deliver seamless and transparent support to users in carrying out their tasks when changing services and/or devices, even in multi-user applications
  - Migration = Device Change + Adaptation + Continuity

- **MyMobileWeb**
  - An open source platform for fast developing Mobile Web applications and portals
Current Initiatives

- W3C Ubiquitous Web Applications
  http://www.w3.org/2007/uwa/

- New W3C Group
  http://www.w3.org/2005/Incubator/model-based-ui/charter/

- The invitation to contribute issued by NEXOF-RA in this particular area
Universal Declarative Language

- Digital TV (Java)
- Vocal interfaces (VoiceXML)
- Direct Manipulation XHTML/SVG
- Form-based XHTML
- Mobile XHTML MP
- Multi-touch Iphone
- Gestural & Graphical C#
Research Agenda

- **End-User Development**
  - Web 2.0 mainly limited to user-generated content
  - The border between use, design and development is not rigid
  - People need to focus on the relevant concepts without being confused by low-level details
  - Trade-off between expressiveness and usability depending on the actual user

- **Multi-User Interfaces and Social Aspects**
  - Flexible Coordination Mechanisms
  - Applications able to exploit various personal sensors

- **Natural Interaction**
  - Incremental formalization, e.g. through sketching, programming-by-example, use of natural language (also with vocal or multimodal interfaces)
  - Application and extension of innovative interaction techniques (semantic feedback, two-hand interactions, tangible interfaces …)