

Adaptation for Device Independent Authoring

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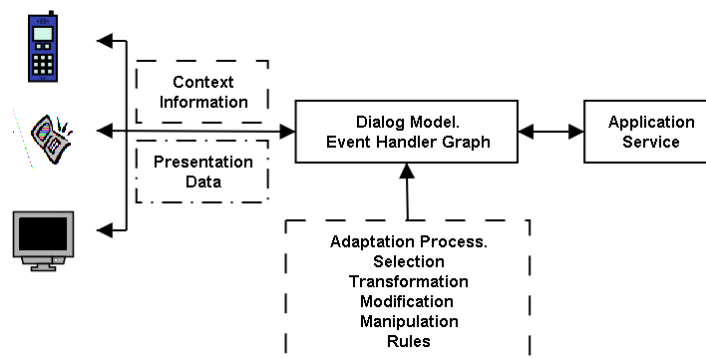
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Device Independent Authoring

- **Scenario of device independent authoring**



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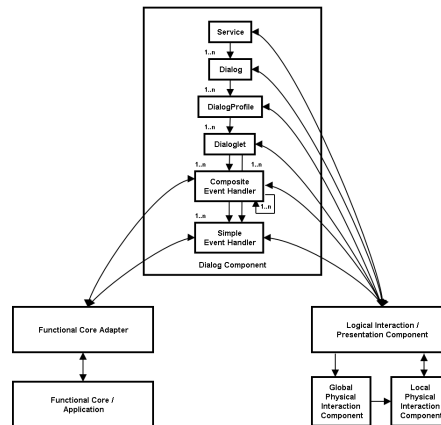
Multi User Interface Single Application - MUSA

- **Declarative Language**
 - Event Handler Graph XML (EGXML) is interaction oriented service description.
- **Infrastructure**
 - MUSA system supports
 - Adaptation to user's preferences
 - Adaptation to device screen size

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MUSA Model

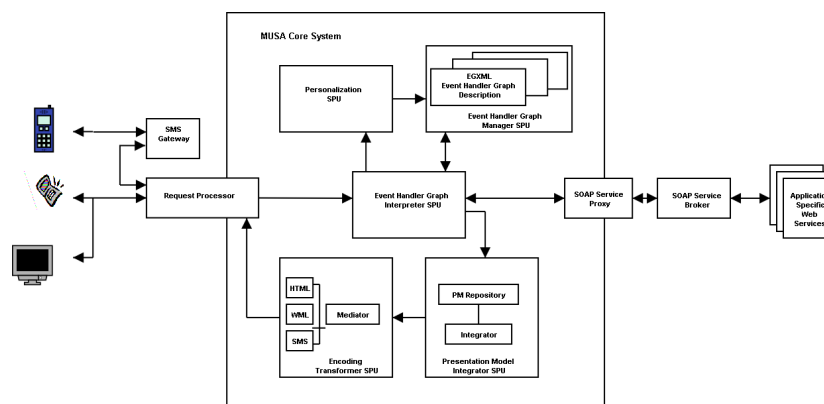
- MUSA Model**
 - Division of the functionality, a standard decomposition of a problem.



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MUSA System: Infrastructure

- High-level architecture of MUSA System**

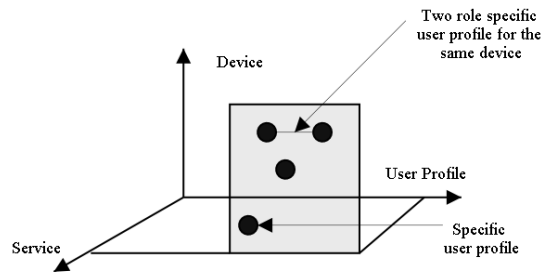


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Adaptive User Interface Generation I

• Adaptation by direct Manipulation

- The same service can be used on different devices.
- For each device, there are different user profiles, accounting for the different usage of the service on different devices.
- For the same device there are different user profiles, accounting for the different role, in which a user accesses a service.

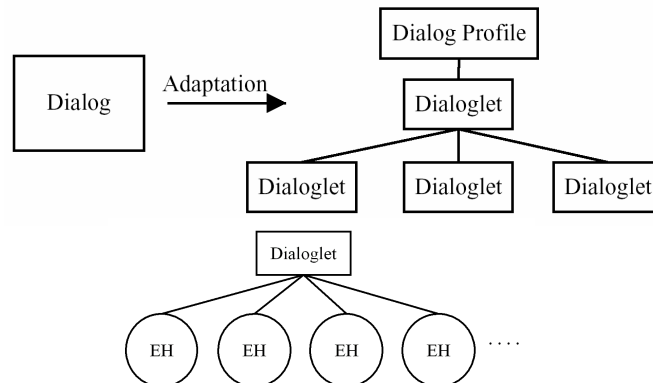


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Adaptive User Interface Generation II a

• Adaptation to Device Screen Size

- Objective: Screen-size adapted presentation



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Adaptive User Interface Generation II b Adaptation and Context

- **Non-Contextual**
 - Local technique that groups EH into EH-regions regardless of any semantic dependencies between them.
- **Contextual**
 - Global techniques depend very much on the detailed specification of a task model.
- **Question**
 1. How to incorporate low-level task model information into the dialog model ?
 2. How to adapt the dialog model respecting the task model information ?

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Adaptive User Interface Generation II c

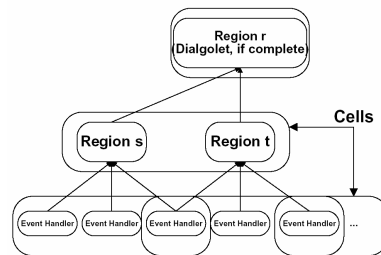
- **Adaptation Process**
 - Building Phase
 - **Grouping.** EH-Regions of level i are grouped into EH-regions of level $i+1$ within the boundaries of their cell and satisfying a predicate P .
 - **Separating.** EH-Regions that fail to group are separated.
 - **Splitting.** Large-sized EH-regions, especially when they contain a single EH, are split.
 - **Relinking.** The user should be able to navigate from one EH-region to the next region. To ensure usability, EH-regions are relinked by integrating additional navigation EHs.
 - Transformation Phase
 - The resulting EH-regions are eventually transformed into a set of "small" windows.

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Adaptive User Interface Generation II d

- **Grouping Process**

- Dialog model adaptation is the process of grouping EH of the dialog model into a set of non-intersecting EH-regions, such that each EH-region satisfies a homogeneity predicate.

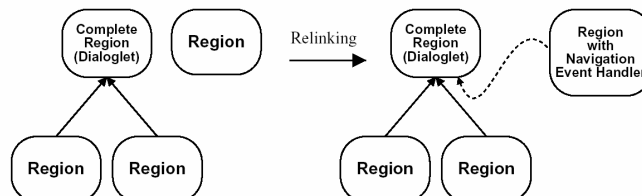


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Adaptive User Interface Generation II e

- **Relinking Process**

- A region containing a single navigation EH will replace a complete EH-region. The new EH-region takes part in the building phase on behalf of the complete EH-region.



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Thank you for your attention

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