

Modelling of User Interfaces based on State-Charts to Ease the Test and Evaluation of Multimodal Interactions

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Basic Question

How to **model** Interactions that span **Modes** and **Media** ?

Why modeling?

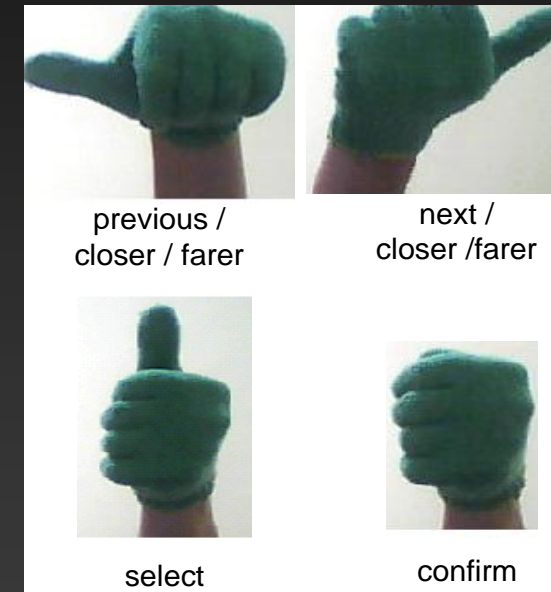
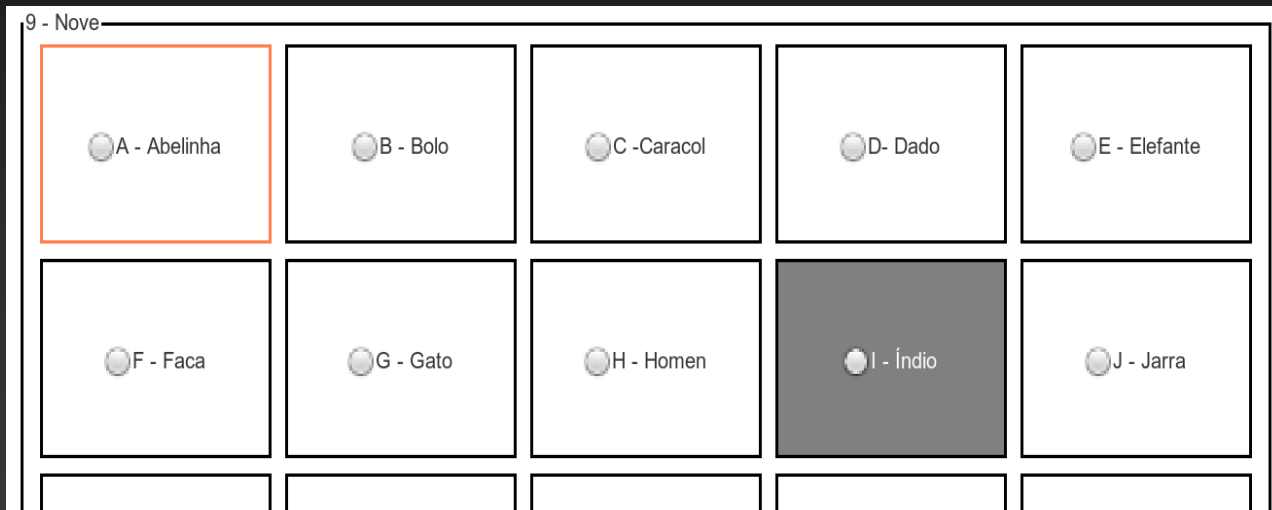
- One (visual) language that
 - is declarative and precise to discuss & execute
 - Is located between Tool and Code
 - Supports different forms of interaction and flexible multimodal prototyping
 - Supports paradigm design

What is **Out of scope** ?

- No transformations, no process !
 - Anticipation, long processes, complex transformations, foreign process
 - Instead: Interactor assembly like GUI building
 - System Design vs. Application Design
- Tools
 - Visual language -> Tool support

Use Case: Test and Evaluation

Gesture-based Interface Navigation

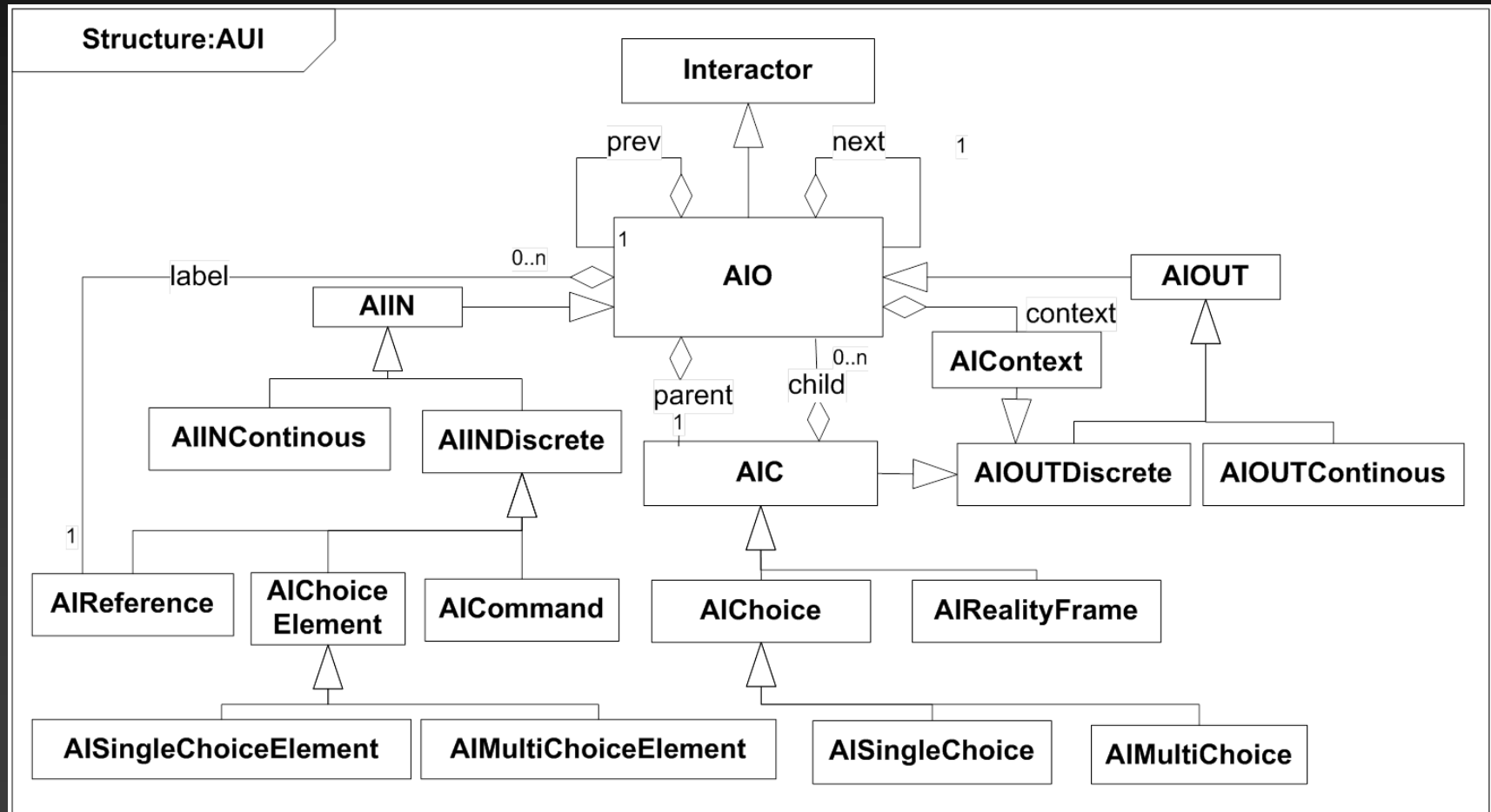


- Rapid model-based Design and Comparison of three variants

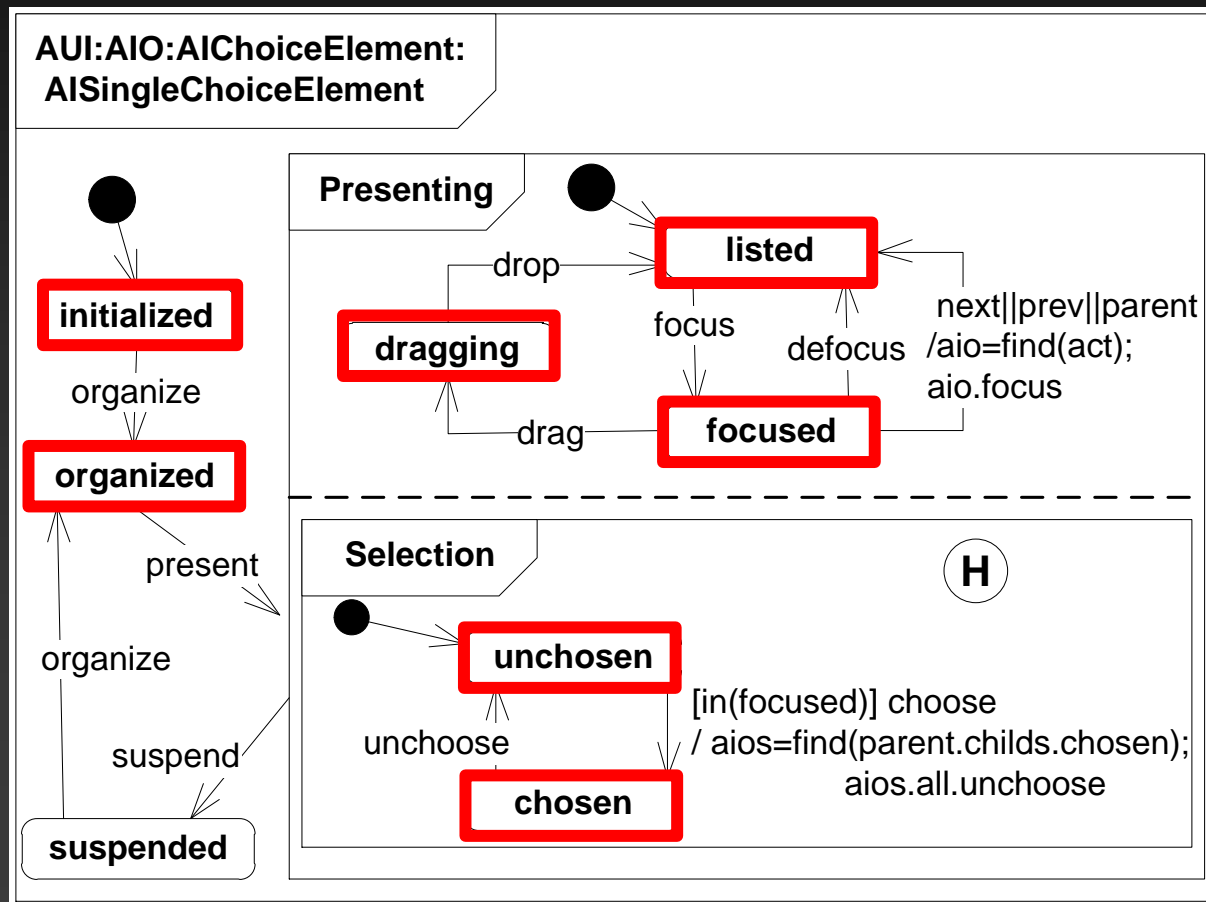
How to **model**?

- Models
 - Interactors (Abstract & Concrete Media, Mode)
 - Static: class diagram, Behavior: state-chart
 - Mappings Mode-To-Media Synchronization
 - Custom Notation

Abstract Media Model

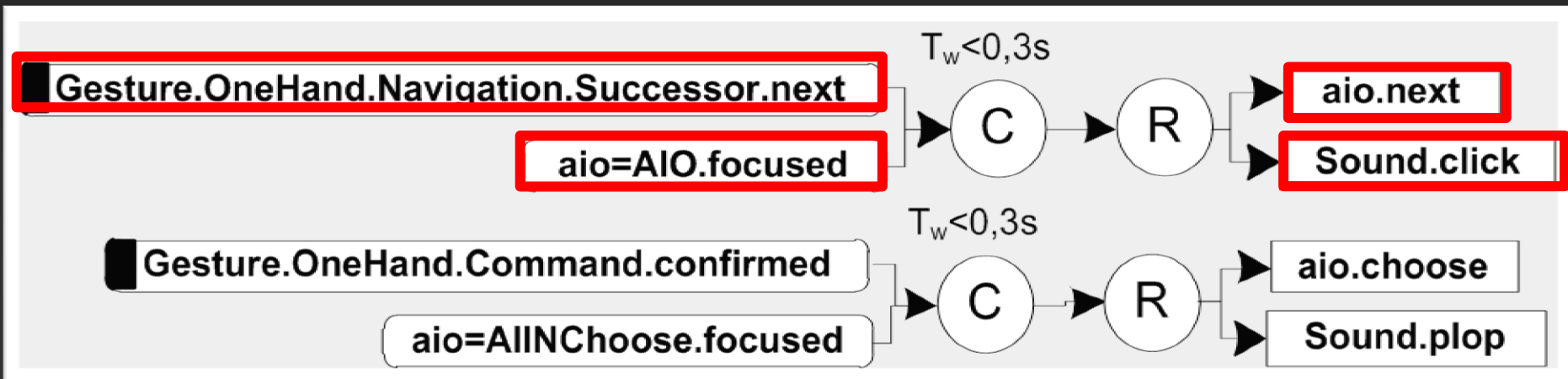


Abstract Behavior Model



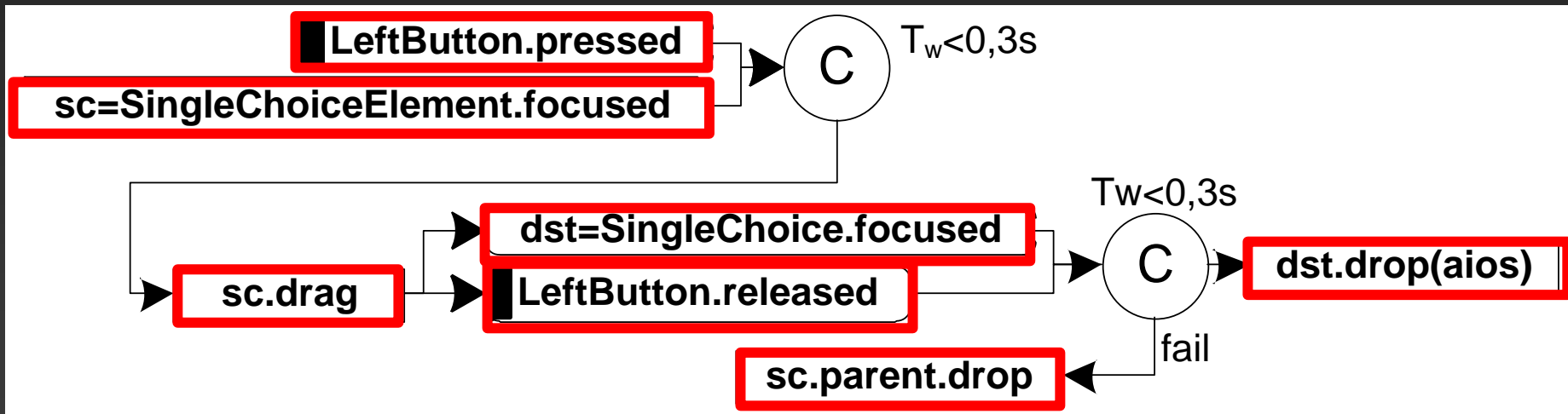
Multimodal Mapping

(Combining Mode with concrete Media)



Multimodal Mapping

The Drag-and-Drop (abstract)



What's the advantage?

- Detailed Modeling of Multimodal Interactions (Media, Mode) including Behavior
- Paradigm Design
- No gap between Design- and Runtime
- No foreign process

Focus on:

- Fusion
- Paradigm Design
- Formalization
- Tools
- MINT Framework

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Multimodal Interaction
Smart Environments