Extensible Graphical Editors for Palladio

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Graphical PCM Editors

Motivation  ➤  Foundations  ➤  New Editors  ➤  Extensibility  ➤  Exemplary Extensions  ➤  Conclusion

Software Design and Quality Group
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Why Change a Running System?

- No extensibility
- Regeneration and manual changes
- GMF barely maintained
  - Last release in 2014
  - Almost no issues resolved since then
- Outdated information
- New frameworks emerging

Motivation ➔ Foundations ➔ New Editors ➔ Extensibility ➔ Exemplary Extensions ➔ Conclusion
Foundations

Metamodel

Model Code

generate

instantiation

Models

Editors

Graphical Editor Frameworks

Motivation

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Extensibility

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Foundations

Model Code

Metamodel

Editors

Graphical Editor Frameworks

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Exemplary Sirius Editor

Motivation  Foundations  New Editors  Extensibility  Exemplary Extensions  Conclusion
New PCM Editors

- Sirius-based
- Feature complete (except Signature editing)
- Currently being polished
How to get?

- Included in the upcoming 5.0 stable release (Spring 2017)
- Currently available on nightly update site:
Usage

Motivation

Foundations

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Conclusion
User Benefits

- Improved saving and synchronization
- Layers
- Better layouting out of the box
- Graphical editing of DataTypes
Development Benefits

- Efficient (DSL-based approach)
- Dynamic evaluation
- Sirius is actively maintained
- Lively community
- Extensible

Motivation  Foundations  New Editors  Extensibility  Exemplary Extensions  Conclusion
Extensibility

- Metamodels are extensible
- Editor “extensibility” in the past
  - Fork editor
  - New editor
  - No editor
- Now
  - Sirius editors can be extended
  - Bundle extension in plugin
Extensibility

PCM

KAMP

Business Processes

Dataflow

Eclipse plugin

Dataflow Security

visualizes
visualizes
visualizes
visualizes
visualizes

Metamodels Editors

PCM

KAMP

Business Processes

Dataflow

Dataflow Security

visualizes
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Eclipse plugin
Editor Extension

- Technical realization: diagram extension
  - Non-intrusive
  - Compatibility of independent extensions
- Masters thesis [Junker16]
  - Guidelines
  - Categorization of extension types
  - Mapping from metamodel to editor extension types

Editor Extension Types

- Toolbar Button
- Palette Entry
- Annotation
- Sub-element
- Connection
- Compartment
- Context Dependent Menu Button
- Node/Container
- Change of Appearance

and some more [Junker16]
Mapping of Extension Types

Meta-Model Extension Types

- Containment
- Attribute
- Relation
- Meta-Class

Editor Extension Types

- Node/Container
- Annotation
- Toolbar Button
- Connection
- Properties Entry
- Palette Entry
- Change of Appearance
- Compartment

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[Junker16]
Extension: IntBIIS

- Model and simulate interaction between business processes and software systems
- Additive extension of the UsageModel
Extension: KAMP

- Predict change impact in software maintenance
- Altering extension of the Repository and System editor

Motivation  ➔  Foundations  ➔  New Editors  ➔  Extensibility  ➔  Exemplary Extensions  ➔  Conclusion
Conclusion

- Main benefits
  - Efficient development and maintenance
  - Extensible
  - Built on up-to-date technology
- Not yet as mature as GMF editors
- How to get
  - Nightly update site
  - Upcoming stable release
BACKUP
Sirius Architecture
odesign Development