MDDRW –

Model-Driven Development in the Real World

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Prolog:

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I would have talked **about other stuff** otherwise.

Prolog:

such as:

- Architecture Modeling
- Textual DSLs
- Product Lines, Feature Modeling and the integration with "models"
- AO Modeling, Model Weaving
- Eclipse Modeling, openArchitectureWare

1 Comments on the CfP

> … MDSD is a clear opponent to a community which declares software engineering should be code-centric.

Isn't MDSD (or DSLs) just a different kind of code?

> … and there are no further implementation decisions, as they are already fixed by the existing transformations

But you can parametrize or configure the transformation.

> … unclear how to best specify the executable semantics of software in a universal manner than in code.

How do we handle (formal) semantics of today's programming languages?

Do we?

2 Some general thoughts

So, are we doing the

same-old stuff?

Programming == Modeling?

I don't think so.

Domain orientation
(# solution orientation)

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Precision
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Different stakeholders
(# just programmers)
We build languages ourselves
(# buying a “standard”)

Problem Dimensions

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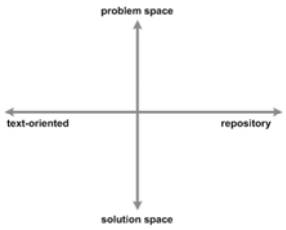

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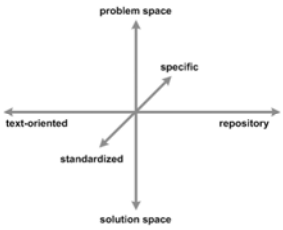

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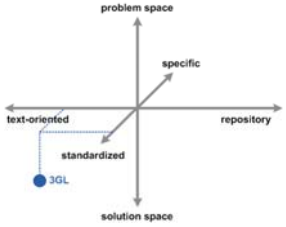

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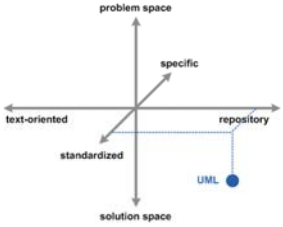

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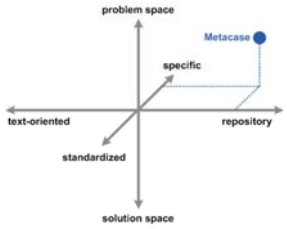

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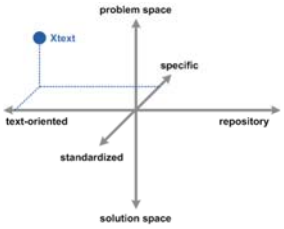

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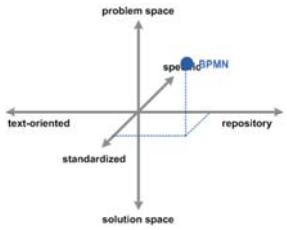

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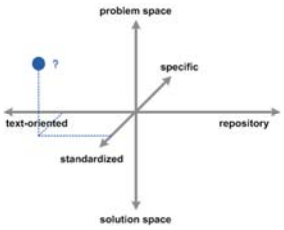
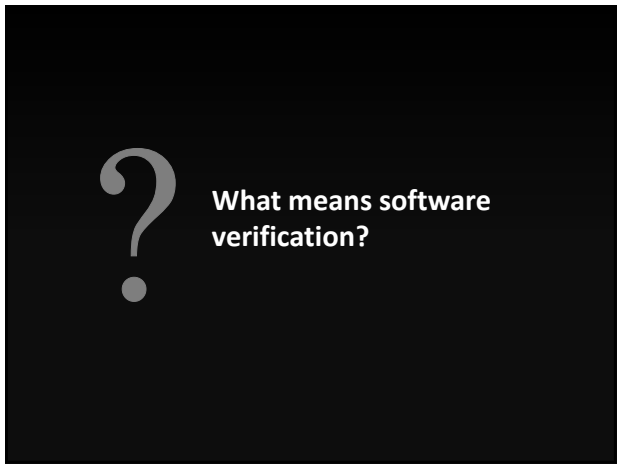


3 Answers to the questions

? **How to come to the meta-model and to the transformations?**

Iteration
Experience
Inspiration
Feedback



Meta Models
Models
Transformations
Generators

For the rest?
Do we really need it?

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Where?

Where?
Automotive?
Space?
Intensive Care?

AFAIK, no!

How to evolve meta models and their related instance models?

Conceptual Challenges
vs.
Tooling Challenges

No problems!
Deprecation
Sensible Defaults
Errors in case of conflict
Graceful!

Automatic Migration?

Do we have that for code? Not really.

Good:
MetaEdit+
Intentional
Xtext

Bad:
EMF?
GMF!

Storage Format
!=
Metamodel

make version
a first class
concept

Don't generate
tooling –
interpret!

Load
View
Check
Modify
Reason

?

What are suitable ways to define and maintain large models (on the meta and instance level)?

This includes the question whether a textual syntax or a graphical notation is more suitable?

Repository
vs.
Files?

I am undecided!

Textual DSLs:
File-based.
Just like code.

We know how to do that!
Good Starting point.
Simple Integration with Code.

For other notations:
Repository
Unlike Code.

We know how to do that…
… but we don't have good tools.

Don't mix!

Textual Stuff in Repositories…
Graph notations in (XML) files.

What is a repository in the first place?

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RDBMS? OODBMS?
Btrees? Text files + Index?

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Store models in files
Build (persistent) index file(s)
for searching and linking.

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(works especially well for textual DSLs,
but also works for other syntaxes)

Textual DSLs
vs.
Graphical

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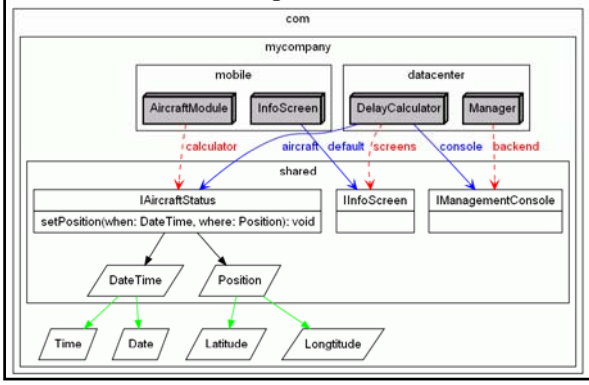
vs.
Graphical
vs.
Visualization

Via M2M
Read-Only
Auto-Layout
Drill-Down

Graphviz



Prefuse

> … it becomes clear that to make MDSD working in real-world projects major research effort from various fields of software engineering is needed.

Really?

Remember:
Don't have to be better than today with text (code)!

Tooling/Engineering problems – not research areas.

Best Practice Approaches available –
IMPLEMENT THEM!

Thank you.

Questions?
Criticism?
Tomatoes?