Hva er modell-drevet arkitektur?

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**Architectures**

Architecture = the fundamental organization of a system embodied in its components, their relationships to each other, and to the environment, and the principles guiding its design and evolution. [IEEE 1471-2000]

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<th>Architecture hierarchy:</th>
<th>Building analogy:</th>
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<td>Documented system</td>
<td>![New home with documentation]</td>
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<td>System architectural description</td>
<td>![Architectural description of new home]</td>
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<td>Methodology for developing system architecture</td>
<td>Rules and conventions for developing the architecture of homes</td>
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<td>MDA framework</td>
<td>![Building laws and regulations]</td>
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The MDA framework

- IEEE 1471-2000
- Specialization of IEEE 1471
- Terminology
  - Library of reusable elements
  - Methodology
    - Compliance
    - Artifact description
    - Conformance
- Pervasive services
- Domain specifications
- Transparencies
- Qualities of service
**Models**

**Model** = a representation of part of the function, structure, and/or behaviour of a system.

**Platform** = technological and engineering details that are irrelevant to the fundamental functionality of a software component.
Viewpoints

**View** = a representation of the whole system from the perspective of a related set of concerns.

**Viewpoints** = a specification of the conventions for constructing and using a view.

**Abstraction** = description that omits details that are not relevant to the purpose of the abstraction.
**Refinement**

**Refinement** = a more detailed description that conforms to another (its abstraction).

**Refinement relation** = described using a model, defining abstraction observations in terms of realization observations while maintaining certain guarantees of the abstraction.
Model transformation

Model transformation = the process of converting one model into another model of the same system.

Mapping = a set of rules and techniques used for this modification.
Transformation

- Documentation
  - creates
    - Transformation
    - Mark assignment
    - Mapping
    - Model
  - 1
  - 1

Mark assignment

- input
- output
Refinement ≠ transformation

Refinement relation
criteria for when a model is a realization of another model.

Transformation
the process of constructing one model from another model.

Mapping
rules and techniques to be used in a transformation process.

Refinement pattern
special case of mapping, defined in accordance with a refinement relation.
“Model driven” — a definition

A system development process is model driven if:

- the development is mainly carried out using conceptual models at different levels of abstraction and using various viewpoints.

- it distinguishes clearly between platform independent and platform specific models.

- models play a fundamental role, not only in the initial development phase, but also in maintenance, reuse and further development.

- models document the relations between various models, thereby providing a precise foundation for refinement as well as transformation.