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A Model Library Tool for Holistic Embedded Software Design

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- Introduction
- Concept of the model library
- Model library design and realization
- Summary and future work

Motivation and state of the art

- Increase of system complexity
- Shorter development times

- ➢ Increase reusability

- Version and configuration management
- Difficult in Model-Based Design

- ➢ Currently no holistic, universal solution

Lower Saxony Future Lab Mobility
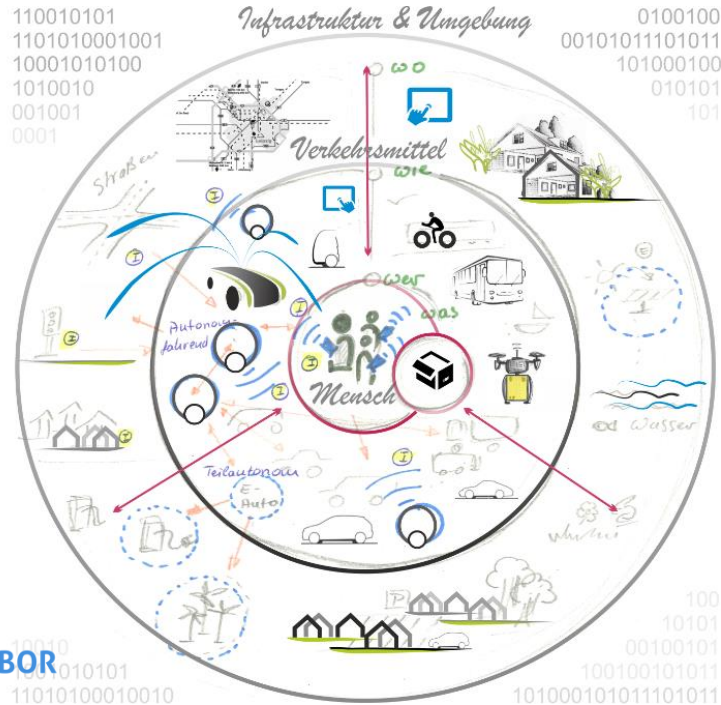
Key data

- 10/2019 - 09/2024

- 3.700.000 €

- 4 Subprojects

- 15 scientific partners

- More than 25 practical partners

Founding:

Development methodology and platform

- Holistic RCP-process
  - Model based
  - Seamless tool supported
  - Highly automated

- LoRra approach
 - Open-Source Software
  - Microcontroller

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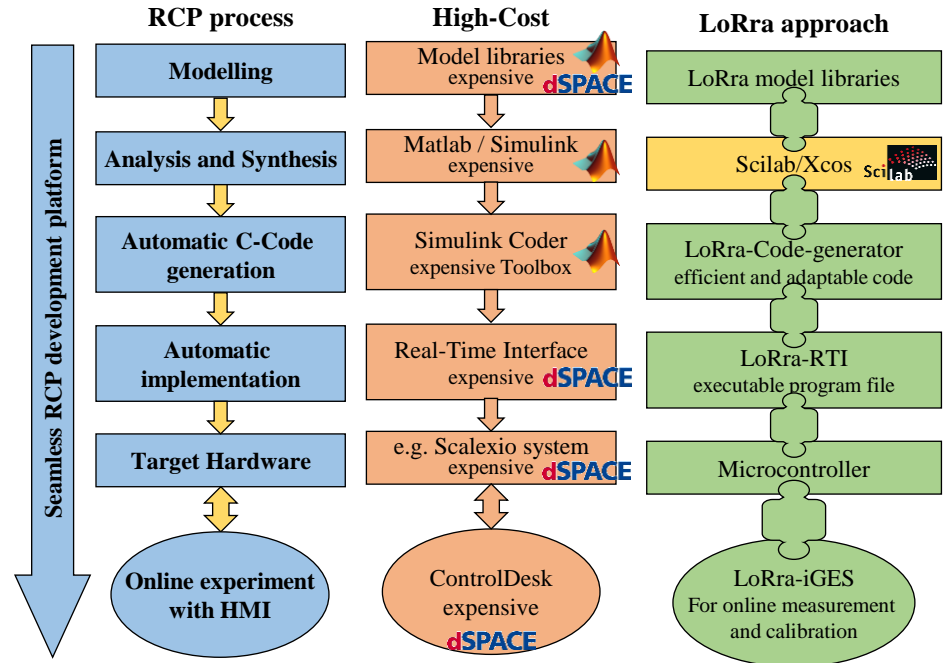
Human Machine Interface development approaches

- Independence from the runtime environment

- Architecture pattern

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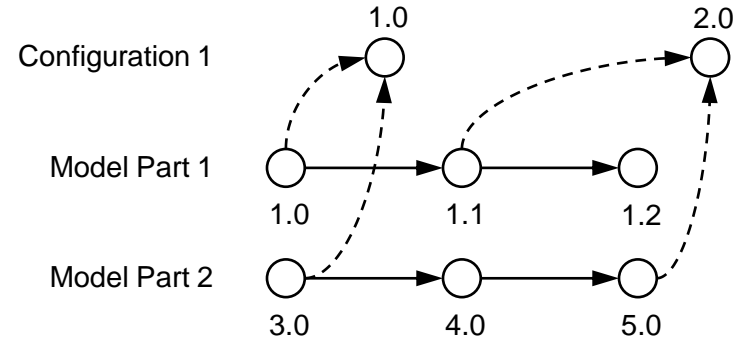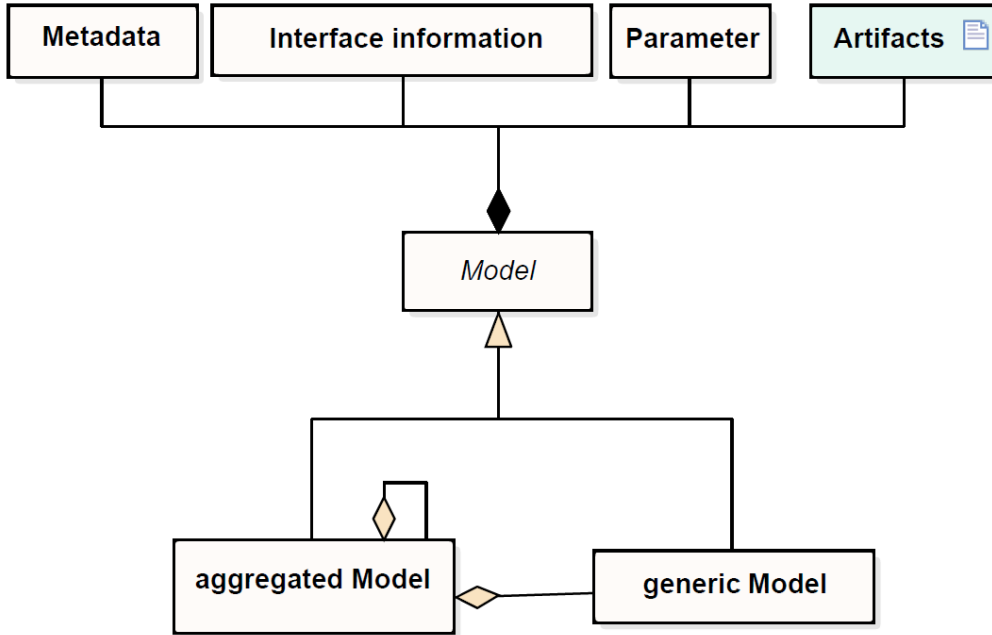Wissenschaften
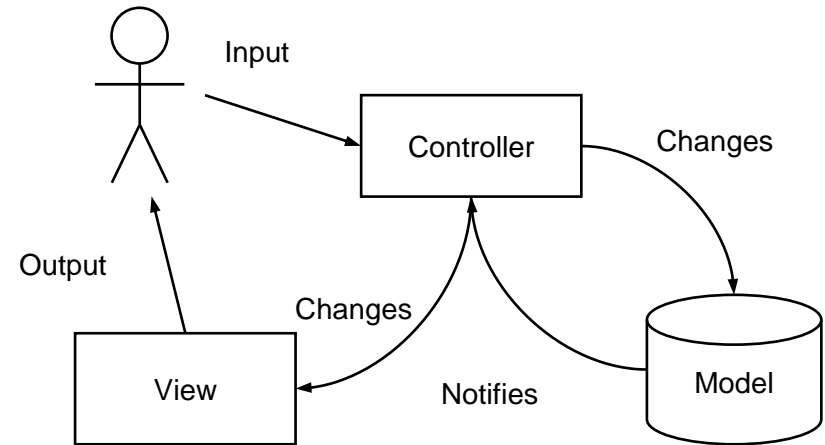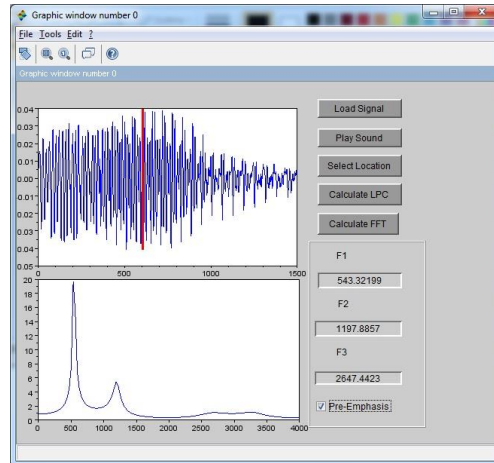
Model library requirements

- User Groups
  - Users
  - Administrators

- Data management of hierarchical models
  - Version management
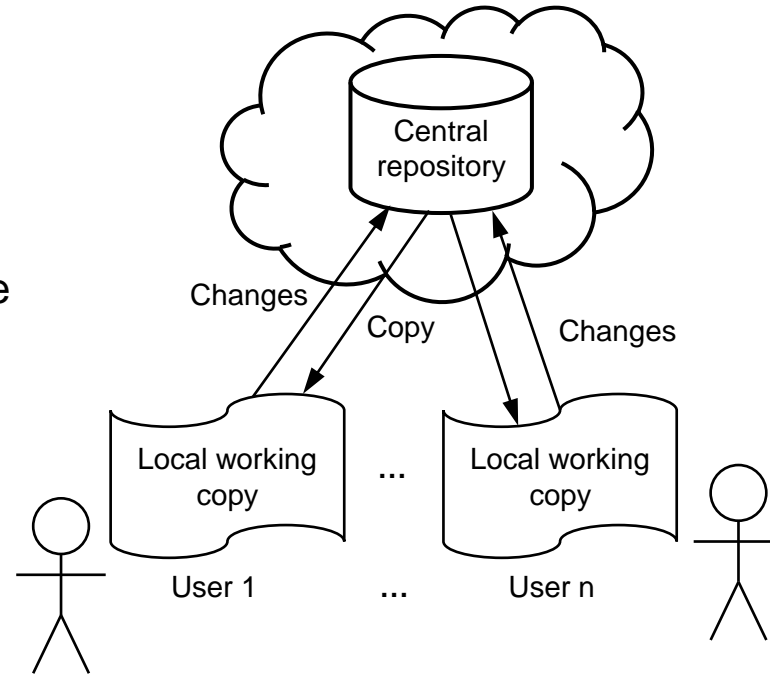 - Configuration management
  - Variant management
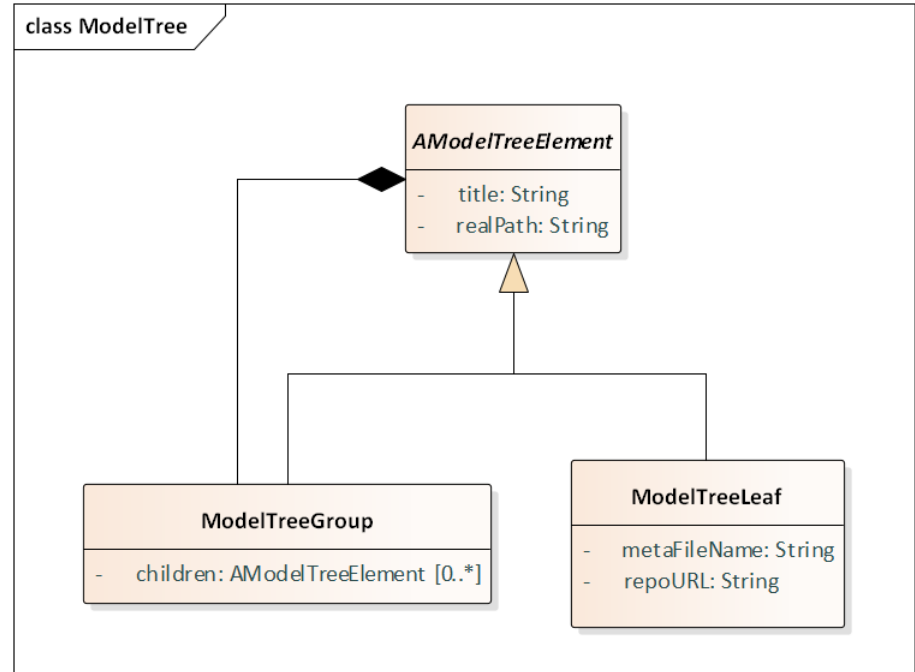 - …
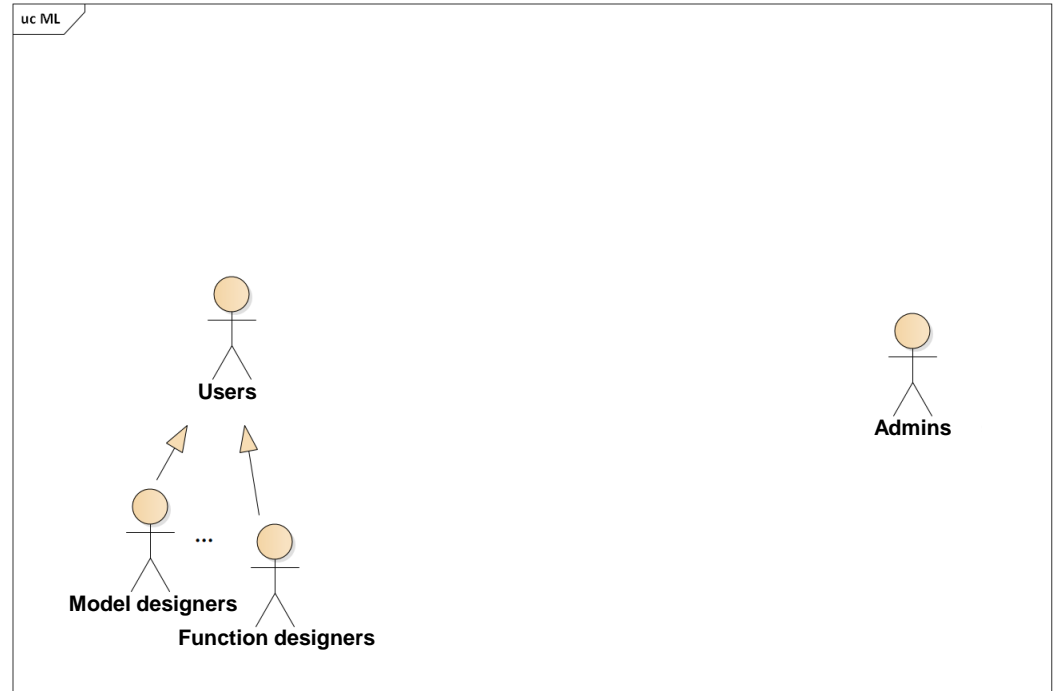
Basic idea of the concept

Basic idea of the concept

- Working in distributed teams

- Approach:
  - Local working copy
  - Central repository as cloud storage

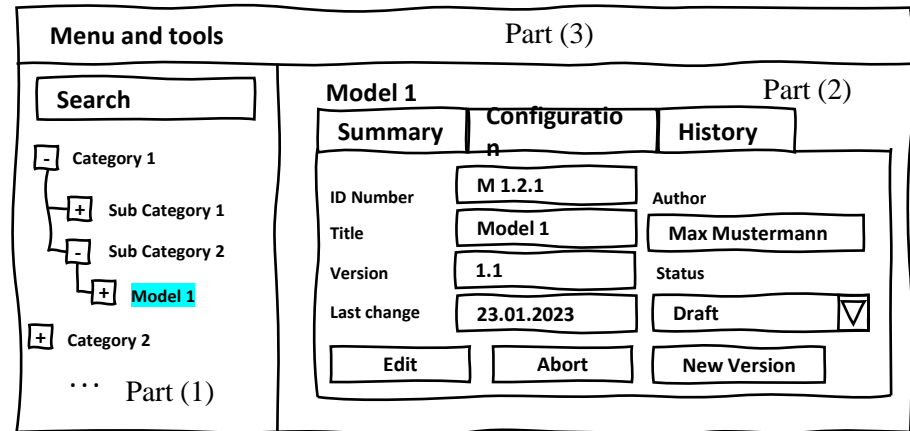 - Operation-based change management

Data structures and management

- Object-oriented
- MVC-Approach

- Configuration and version management using GIT
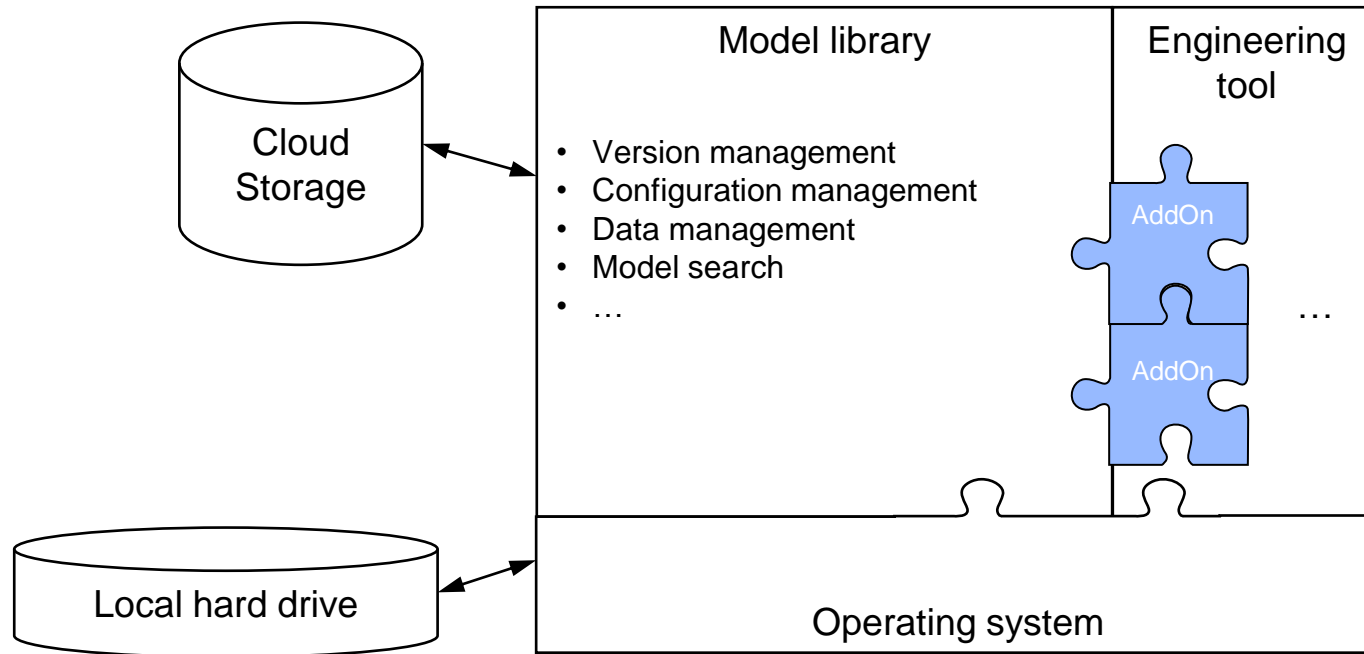- Release management
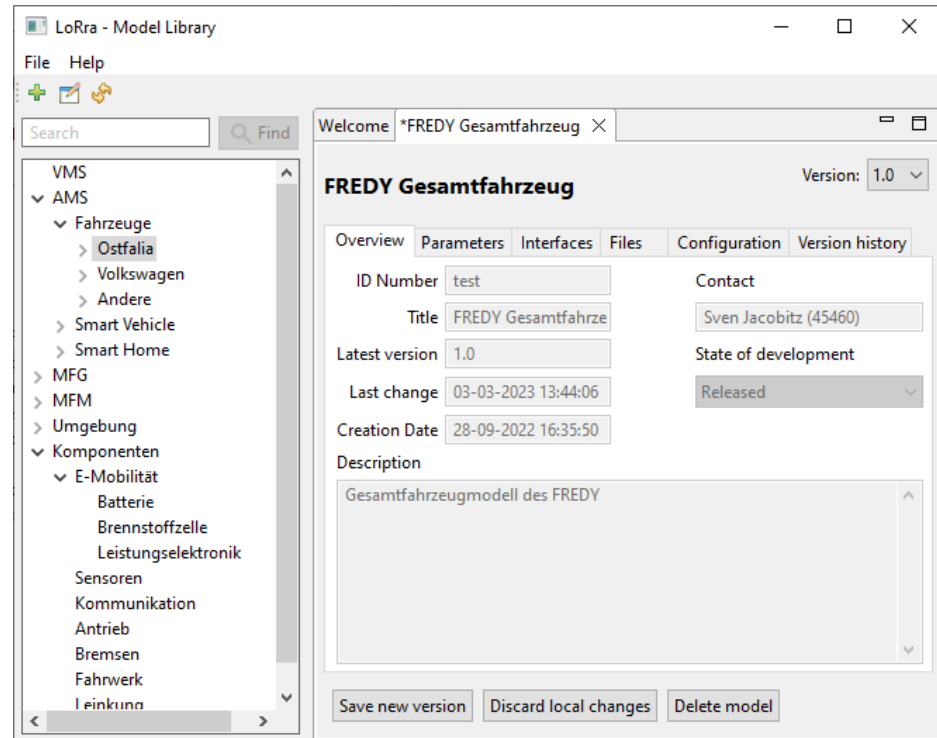
Graphical user interface

- Simplify usage processes

- Find models easily

- Edit metadata

- View model history

- Release processes

- …

Realization

- Holistic model library
  - Version management
  - Configuration management

- Not bound to specific engineering tool

- Further functions

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