

eODL and SDL in combination for components

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Overview

- Motivation
- Mission
- Used modeling technologies
- Development Architecture
- Mappings
- Outlook



Motivation

- Component development:
 - Abstract methods
 - Code-generation
 - Model Driven Architecture (MDA)
 - Separation of aspects related and unrelated to a specific platform
 - Platform Independent Model (PIM)
 - UML 2.0
 - eODL in combination with SDL
 - Problems with Z.130 mapping
 - Different component platforms
- ➔ New eODL-SDL mapping



Mission

- Define development architecture following the MDA approach with eODL-SDL as PIM
- Select a target component platform
- Use Meta-Modeling as far as possible

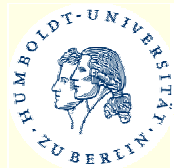
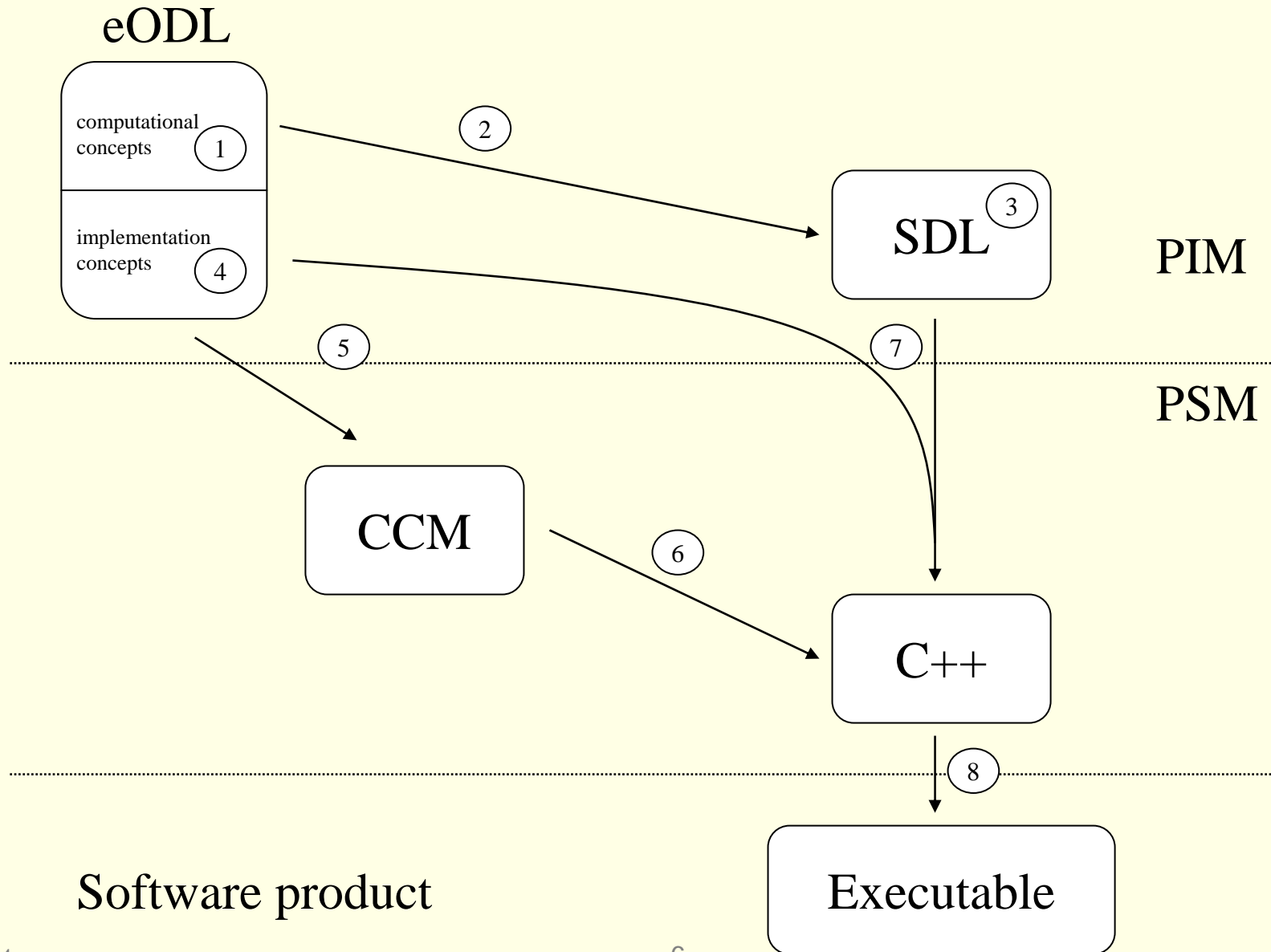


Used modeling technologies

- Model Driven Architecture (MDA)
- Meta Object Facility (MOF)
- Mapping rules
 - Try to establish relation between source and target model
- Implementation language mapping
- “traditional” English Text



Development Architecture

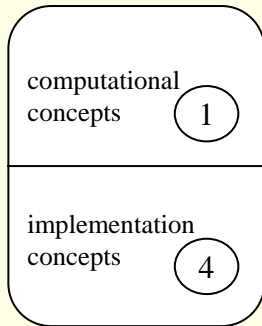


Meta-Models

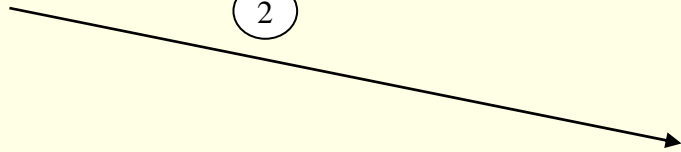
- eODL
 - Full Meta-Model, all view points are covered
- SDL
 - Ongoing work, diploma thesis, structural aspects
- CCM
 - Full Meta-Model for computational and implementation aspects
 - So far none for deployment and target environment
- C++
 - None



eODL



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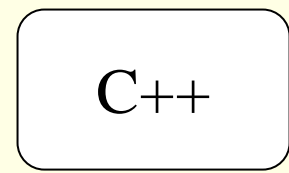
PIM



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PSM



eODL to SDL mapping

- CO-Type
 - SDL-Agent-Type
- Interface
 - SDL-Interface
 - Boost the concept Interface in SDL
- Provided Port
 - SDL-Gate
- Used Port
 - SDL-Interface-Variable
- Interaction elements



Enrichment of mapped SDL

- Only structural aspects from eODL
- Behavioral aspects have to be added
- Provision of all Interaction elements
 - RPC, transitions for consumed signals
- Use of environment functionality via Interface-Variables
 - Call to and output to
- Sub-structuring of Agent-Type possible

SDL to C++/CCM mapping

- CCM implementation Qedo (C++)
 - CCM to IDL 2.6 mapping
 - Implementation Skeletons for business code
 - User sections
- Integration of generated C++ code
 - Using the user sections
 - Data type mapping
 - Direct invocation of procedures not possible
 - Signal exchange, for preservation of SDL-semantic



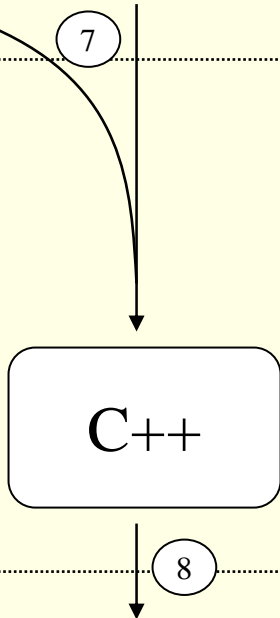
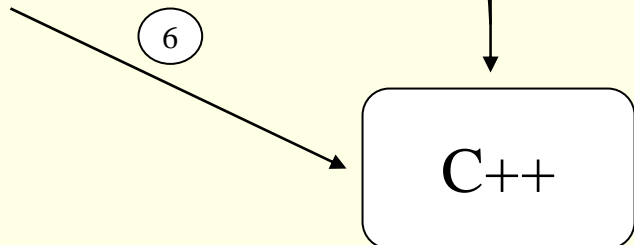
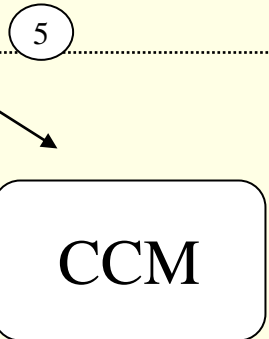
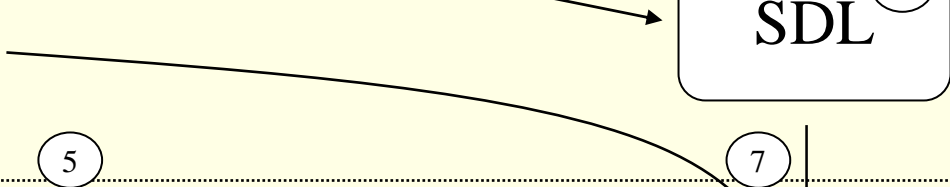
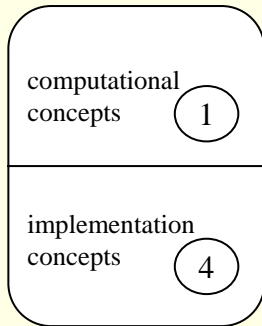
Outlook

- Deployment view point mappings
 - SDL, CCM
- Completion of Meta-models
 - SDL, CCM
- Tools

Discussion



eODL



PIM

PSM

Software product

