

A Domain Specific Modeling Language Semantic Model for Artefact Orientation

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Abstract : Since the process of transforming user requirements to modeling constructs are not very well supported by domain-specific frameworks, it became necessary to integrate domain requirements with the specific architectures to achieve an integrated customizable solutions space via artifact orientation. Domain-specific modeling language specifications of model-driven engineering technologies focus more on requirements within a particular domain, which can be tailored to aid the domain expert in expressing domain concepts effectively. Modeling processes through domain-specific language formalisms are highly volatile due to dependencies on domain concepts or used process models. A capable solution is given by artifact orientation that stresses on the results rather than expressing a strict dependence on complicated platforms for model creation and development. Based on this premise, domain-specific methods for producing artifacts without having to take into account the complexity and variability of platforms for model definitions can be integrated to support customizable development. In this paper, we discuss methods for the integration capabilities and necessities within a common structure and semantics that contribute a metamodel for artifact-orientation, which leads to a reusable software layer with concrete syntax capable of determining design intents from domain expert. These concepts forming the language formalism are established from models explained within the oil and gas pipelines industry.

Keywords : control process, metrics of engineering, structured abstraction, semantic model

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