Modular Design of Modelling Languages

ProMoBox

concrete syntax: describes how models are viewed and manipulated by modeller
abstract syntax: describes how the internal structure of models is represented
semantics: describes the meaning of the models in terms of a semantic domain

domain-specific layer

K \(_r\) (rendering function): renders a visual representation of models from the internal structure
\(\pi\) (parsing function): parses visual representations to internal structures of models
dependency relation showing that requirements formalism uses concepts of design formalism

base formalisms

checks whether modelled system satisfies properties by means of e.g., model checking

modelling language engineering
model design AND requirements, using ProMoBox

PhoneApps
ProMoBox

PhoneApps design formalism

statecharts / object diagrams
linear temporal logic

debugging

behaviour

layout

How are new languages created by reducing and modifying existing formalisms?
How can we create languages that map to many existing formalisms?
How are all existing languages related?

goal: re-use of modelling languages

Bart Meyers
bart.meyers@ua.ac.be
http://msdl.ca.mcgill.ca/people/bars/