Multilevel Modelling of Coloured Petri Nets

Alejandro Rodríguez\(^1\)
Adrian Rutle\(^1\)
Francisco Durán\(^2\)
Lars Michael Kristensen\(^1\)
Fernando Macías\(^1\)

\(^{1}\)Western Norway University of Applied Sciences, Norway
\(^{2}\)Universidad de Málaga, Spain

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Model-driven software engineering (MDSE) tackles the increasing complexity of software with modelling techniques.
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MDSE and MLM

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Coloured Petri Nets

Graphical language for distributed systems.

Combine classical Petri nets (PNs) with a programming language.
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Combine classical Petri nets (PNs) with a programming language.
Implicit levels of abstraction.
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CPN Tools

CPN model and simulation

Level 0

Ecore

Level 1

CPN Metamodel

Level n-1

CPN Model

Level n

Simulation

MLM approach for CPNs
Token instantiation - Potency

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Separation of concerns

Data type declarations

CPN Tools

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Declarations

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MLM approach for CPNs
Current CPN Tools lacks in extending concepts and rules tailored for specific domains.

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- Creation of editors for such new definitions (semi-)automatically.
- Flexible mechanism to define several supplementary hierarchy for data types.

![Diagram](image-url)
Behaviour is specified with Multilevel Coupled Model Transformations (MCMTs).
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Future work

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- Better creation of DSMLs editors on-the-fly.
- Implement a mechanism for the evaluation of expressions.
- Better engine for proliferation and code generation.
Questions?

Alejandro Rodríguez Tena

arte@hvl.no

www.linkedin.com/in/alertena