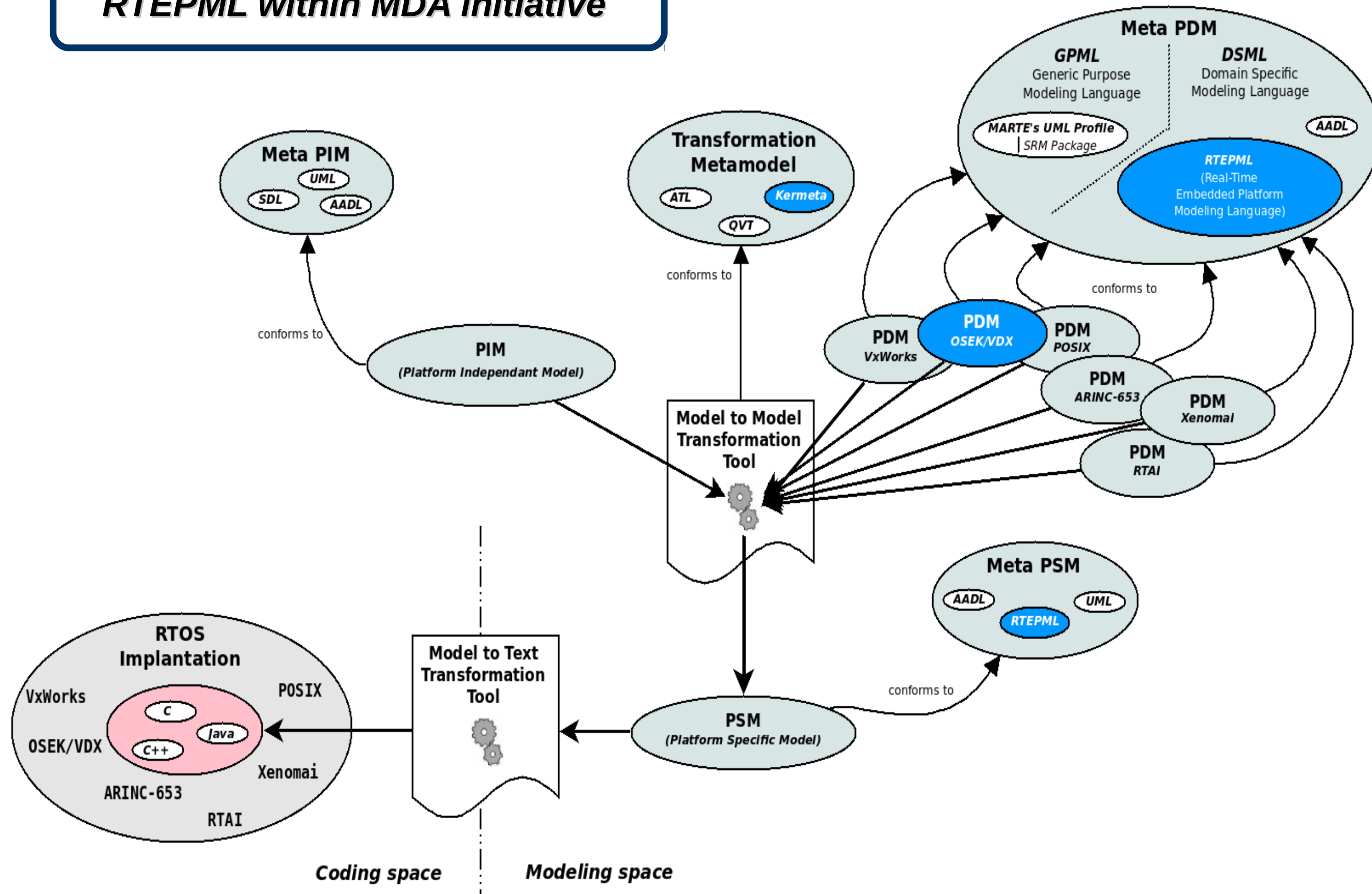


Towards a Behavioral Modeling of Real-Time Kernel in a Model Driven Development Approach

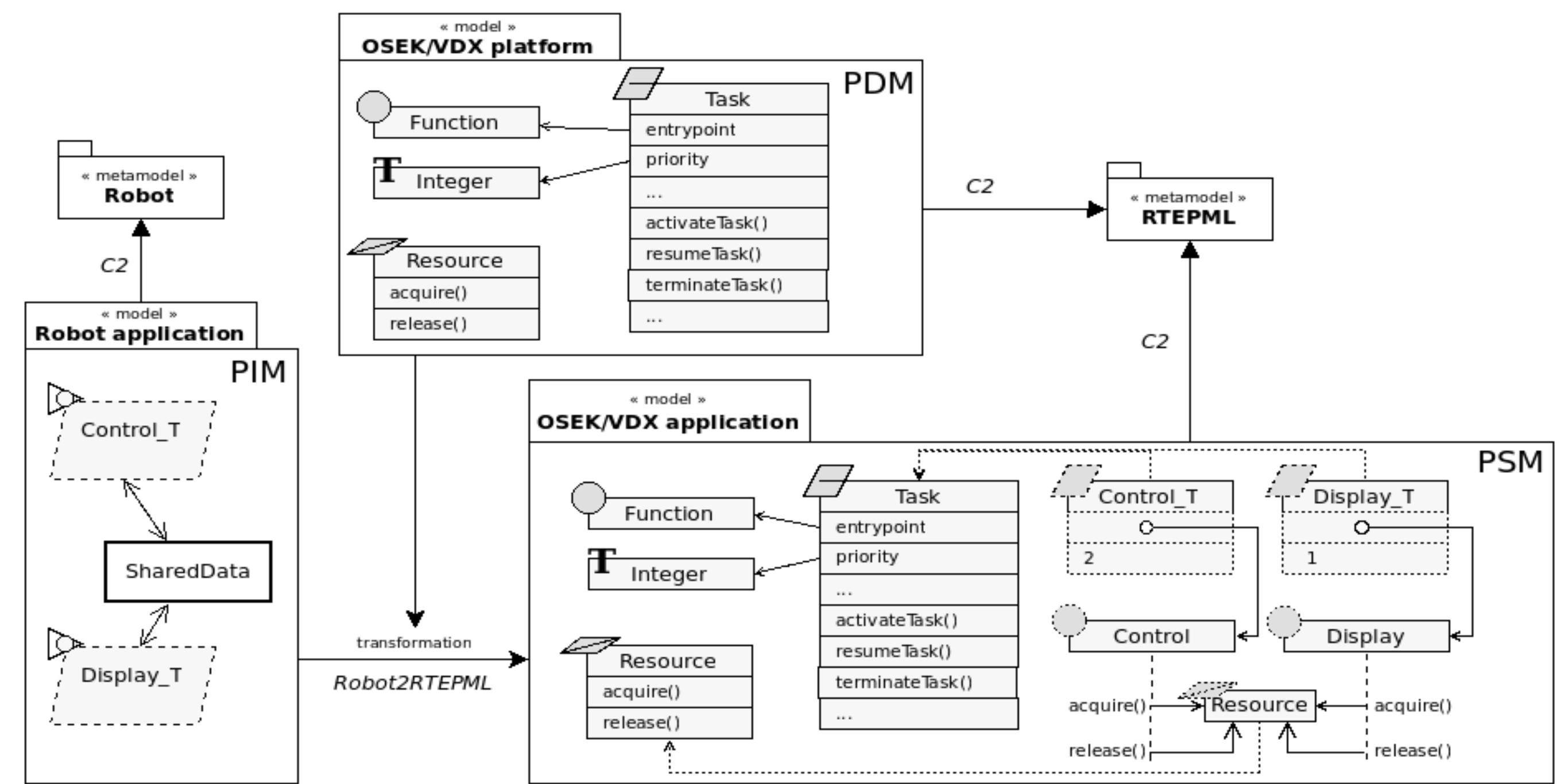
Generating a Real-Time application for several Real-Time Operating Systems (RTOS)

... with a Model Driven Development (MDD) approach

RTEPML within MDA initiative



Example of Robot's application for OSEK/VDX's application with RTEPML



Software Platform Modeling Language

80% of resources and services covered. But behavior non-existent

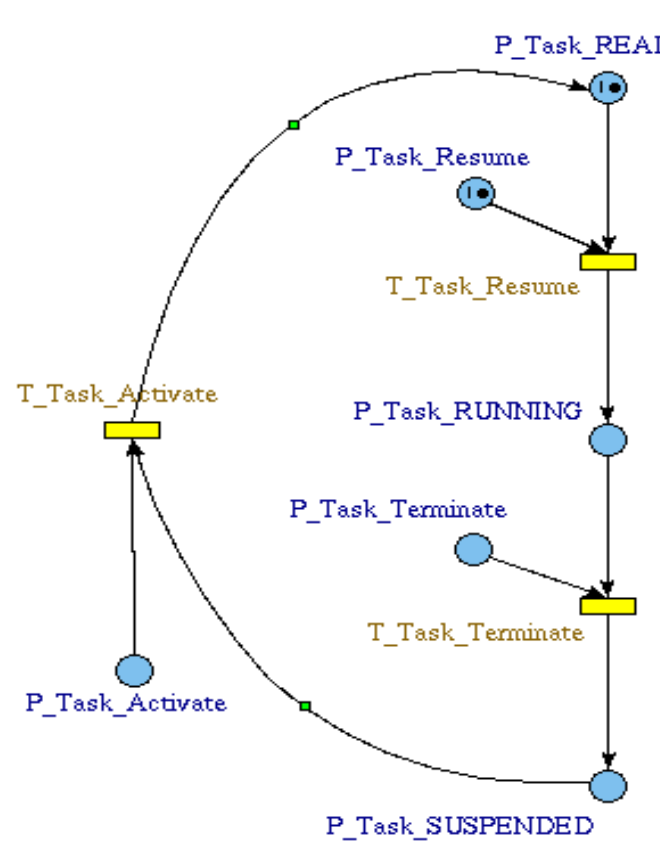
Enrich RTEPML with Behavioral Patterns

A six-month experimentation relying on OSEK/VDX (AUTOSAR OS)...

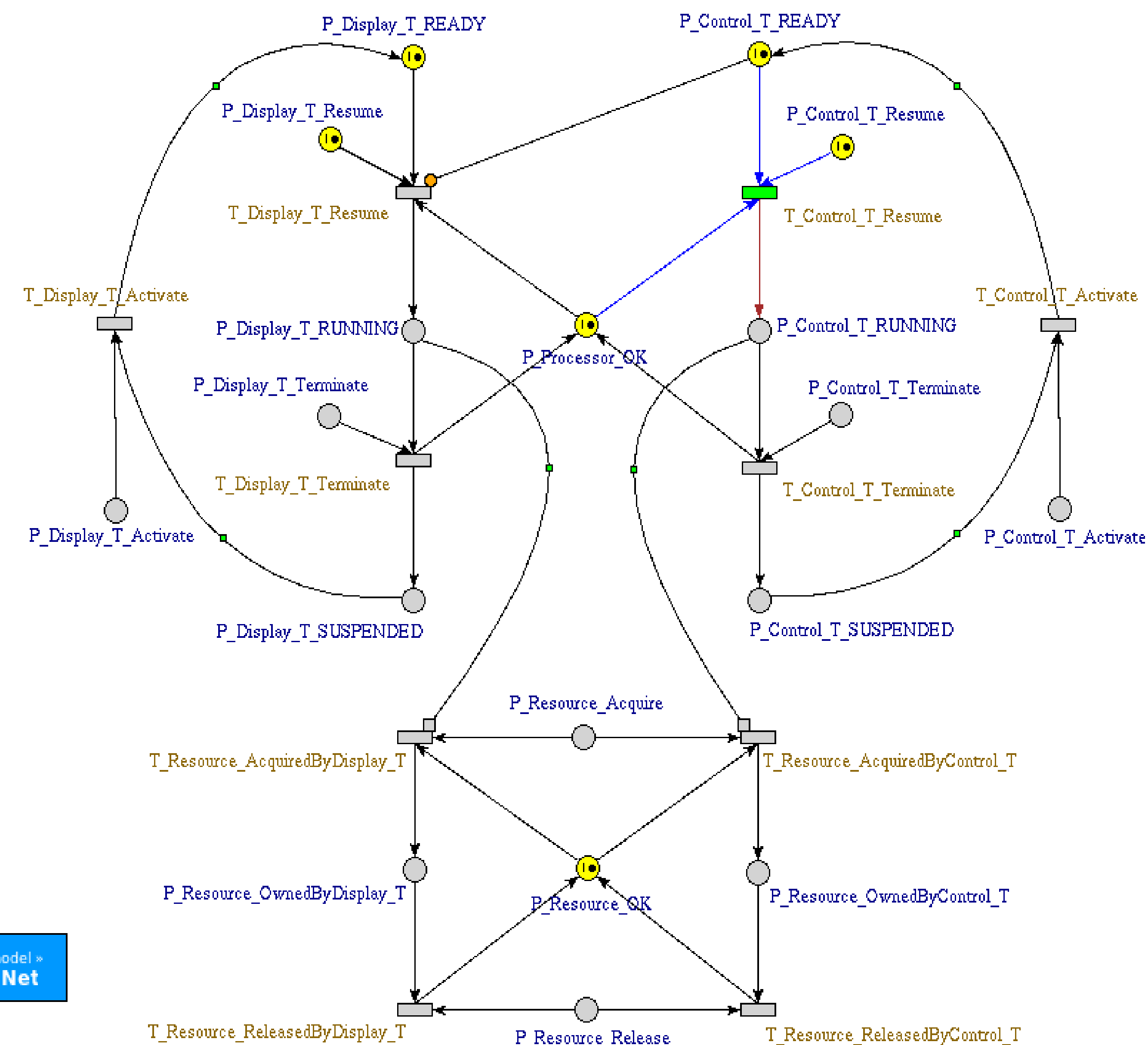
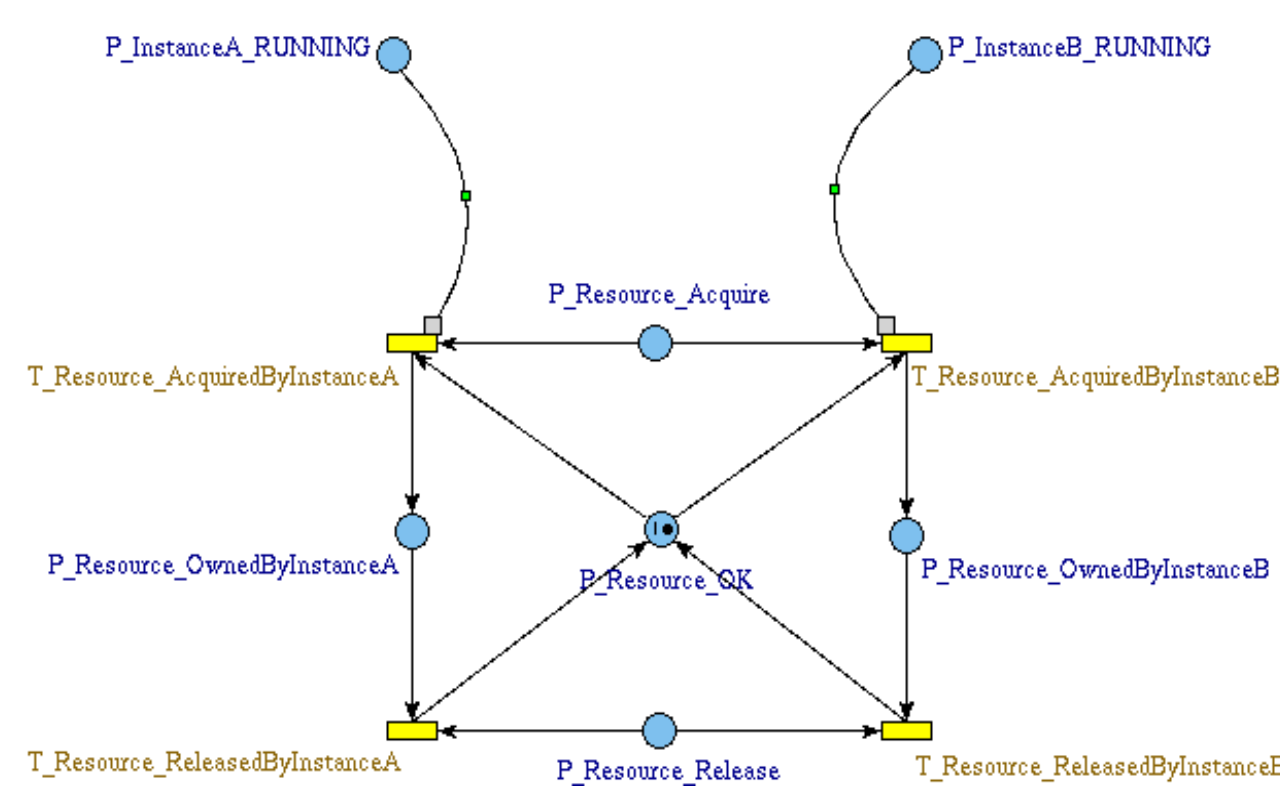
Behavioral patterns of RTOS's concepts and their services

70% of OSEK/VDX's concepts and their services have been formalized in in Petri Nets

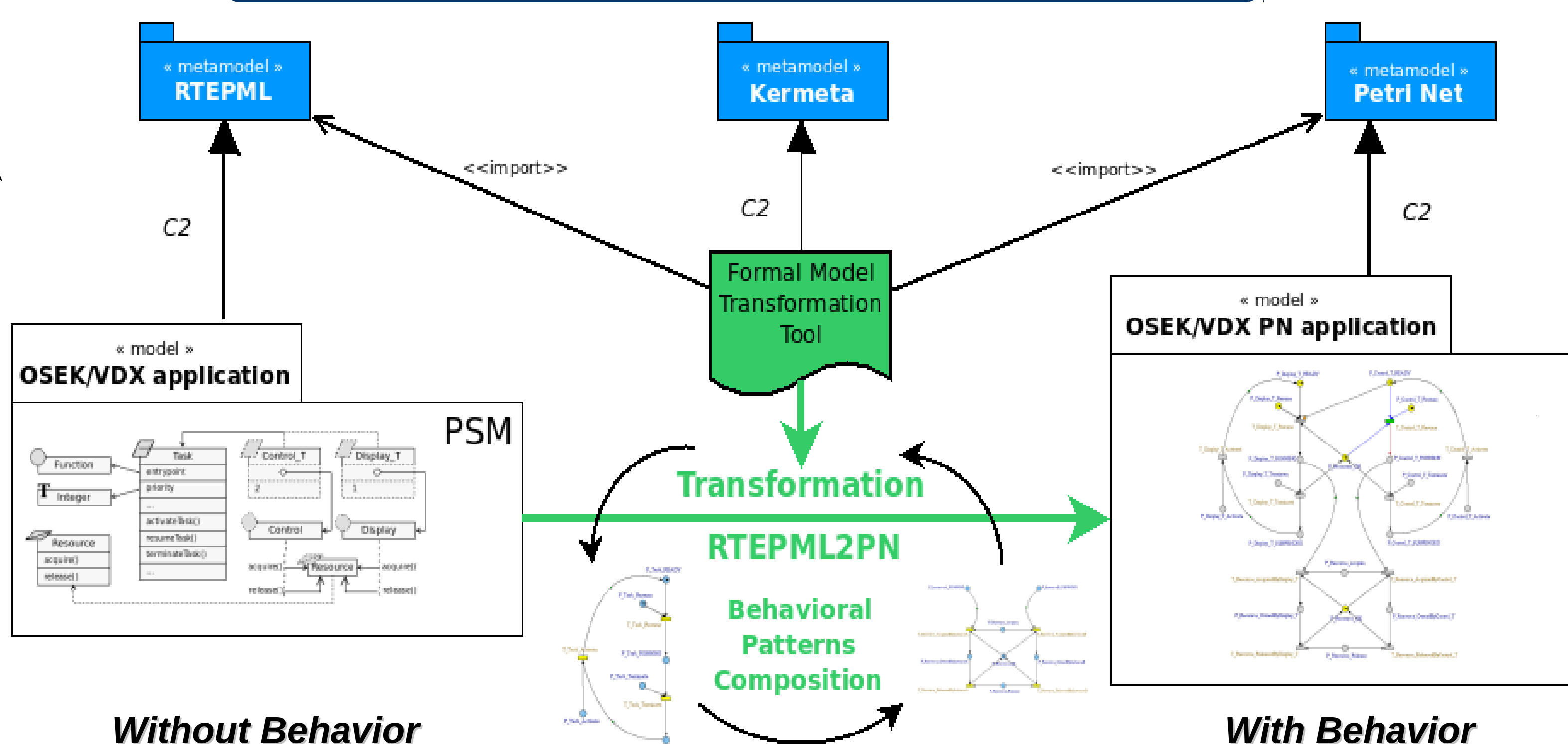
Task scheduling



Semaphore sharing



RTEPML to Petri Net transformation prototype



Petri Net generated for validation and verification with ROME0*

*IRCCyN's Tool: <http://romeo.rts-software.org/>