CVS - Compositional Verification of Simulink Models

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**Job description:** The goal of this project is to build upon previous work in Prof. Tripakis’ group on compositional verification of Simulink models. Simulink is a modeling and simulation tool for embedded control systems, widespread in several domains, in particular, automotive. We are building a tool chain that checks Simulink models w.r.t. various correctness criteria, based on the refinement calculus theory for reactive systems [EMSOFT 2014]. The goal of this project is to connect the existing tool chain developed in Matlab and Python (parsing and code generation from Simulink models) to external solvers and theorem provers such as dReal, Z3, and Isabelle, which will perform the actual verification. The tool will be evaluated on real-life Simulink models provided by Toyota. Experience in programming is required for this project. Experience in Matlab/Simulink is desirable, but not required.

**Additional information:** [EMSOFT 2014] Refinement Calculus of Reactive Systems. EMSOFT 2014