

DEVS SPECIFICATION AND IMPLEMENTATION OF SIMAN BLOCKS USING MODELICA LANGUAGE

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ABSTRACT

Modelica is a general object-oriented simulation language mainly based on non-causal modeling with mathematical equations. The aim of our work is to develop a Modelica library, ARENALib, for discrete process-oriented system modeling with comparable functionalities to Arena Basic Process panel. It will provide, combined with the current Modelica components for continuous system modeling, a good tool for modeling hybrid systems. A first version of the library, with basic capabilities, is freely available under GPL license. In this contribution a specification of the Create, Dispose, Queue, Seize, Delay and Release SIMAN blocks using DEVS formalism is presented. The implementation, in Modelica, of SIMANLib library is based on these specifications. Create, Process and Dispose modules of ARENALib have been reimplemented using SIMANLib blocks. A single server system model is also discussed. Future work will consist of the development of more SIMAN blocks to complete ARENALib modules and functionalities.