

CSM to GSPN translator: user guide

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This document is a minimal user guide for the tool that translates the Core Scenario Model [3] (CSM) into Generalized Stochastic Petri nets [1] (GSPN). This tool is included in the Performance by Unified Model Analysis [4] (PUMA) architecture. In particular, the tool implements the C2P step in Figure 1. The tool can be downloaded from <http://webdiis.unizar.es/~jmerse/csm2pn.html>.

In the rest of this document we explain: the operations to be carried out before using the tool, the use of the tool and the performance analysis of the model generated by the tool.

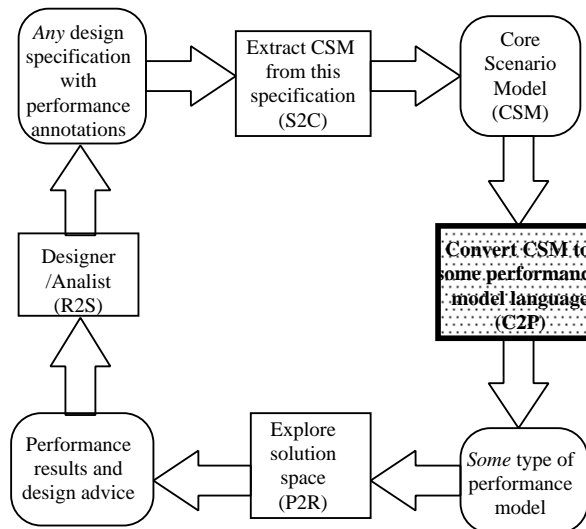


Figure 1: PUMA architecture

Previous operations:

Obviously, to translate a CSM to any analyzable performance model it is required a document describing the CSM to translate. This CSM can be generated from a design specification with performance annotations such as Use Case Maps (UCM) or UML diagrams. In Figure 1, this is the operation S2C. We refer the reader to <http://www.sce.carleton.ca/rads/puma/> to get help about creating the CSM that will be the input to the presented translator.

However, for users that just want to test the tool before including it in the PUMA architecture, we provide a CSM document as example. It can be downloaded from <http://webdiis.unizar.es/~jmerse/CSM2PN/example.csm>. Any case, we have taken advantage of the well-defined interface between the S2C and C2P operations to integrate the tool in the PUMA framework.

Translator usage:

Once the XML file of the CSM has been obtained, the user can follow the next steps:

1. Create a new folder, for example *CSM-PNtranslator*.
2. Save the CSM document inside *CSM-PNtranslator*.
3. Download the tool from
<http://webdiis.unizar.es/~jmerse/CSM2PN/CSMtoPN.jar>
4. Save the tool in *CSM-PNtranslator*.
5. Open a terminal or console, and set *CSM-PNtranslator* as working directory.
6. Type in the console `java -jar CSMtoPN.jar example.csm`

After these steps, the system has created four files in the *CSM-PNtranslator* folder. Three of them represent a GSPN in GreatSPN tool format, the ones with *.net*, *.def* and *.eti* extensions. The last file, with *.xml* extension represents a GSPN in TimeNET tool format.

Performance evaluation:

In this moment, we have a performance model in two formats: GreatSPN and TimeNET. Now, it is time to apply the PUMA step P2R, *explore solution space*, and eventually get performance results. To do this, we refer the user to the GreatSPN [2] and TimeNET [5] documentation.

References

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- [2] The GreatSPN tool. <http://www.di.unito.it/~greatspn>.
- [3] D. Petriu and M. Woodside. An intermediate metamodel with scenarios and resources for generating performance models from UML designs. *Software and Systems Modeling (SoSyM)*, 6(2):163–184, June 2007.

- [4] M. Woodside, D. Petriu, D. Petriu, H. Shen, T. Israr, and J. Merseguer. Performance by unified model analysis (PUMA). In *Fifth International Workshop on Software and Performance (WOSP'05)*, pages 1–12, Palma, Spain, July 2005. ACM.
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