Update: The paper titled " DEVSML 2.0: The Language and the Stack " was presented at DEVS Symposium, Spring Simulation Multiconference 2012 at Orlando, FL and the latest version of DEVSML 2.0 is here .

DEVSML is an acryonym for DEVS Modeling Language. This work is built on the JAVAML research done by Vladimir for DEVSML. It was pursued independently by Jose Luis Martin that resulted in DEVSML with small behavioral support. The present work aims to integrate these two approaches and provide complete behavioral support to DEVSML by implementing the proposed universal Atomic and Coupled DEVS schemas at Dunip. We look forward towards standardization of these schemas with DEVS Standardization committe so that models across the web can participate in Dynamic Modeling & Simulation over Net-centric web services.

DEVSML is a novel way of writing DEVS models in XML language. This DEVSML is built on JAVAML, which is infact, XML implementation of JAVA. The current development effort of DEVSML takes its power from the underlying JAVAML(earlier work by Vladimir) that is needed to specify the behavior of atomic models. We now have the capability to write DEVS models in DEVSML, both atomic and coupled through the developed DTDs. The DEVSML models are tranformable back'n forth to java and to DEVSML. It is an attempt to provide interoperability between various models and create dynamic scenarios. The key concept is shown in the figure below:

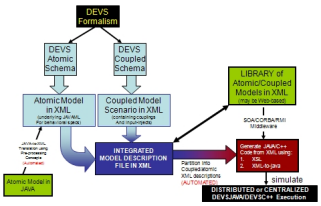

Figure 1: Basic concept with respect to Automation of DEVS models using DEVSML

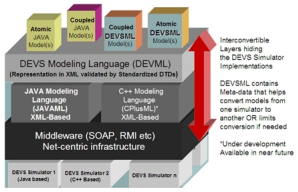

Figure 2: DEVS Transparency &Net-centric Model Interoperability using DEVSML Layered Architecture

The concept shown above is based on DEVSML Layered architecture that promotes DEVS transparency. The basic concept is a part in overall web enabled infrastructure where such atomic models are dynamically coupled and simulated over SOA. Development is underway to make the DTDs SOA capable. The figure below shows various other acronyms like DoDAF, which is Department of Defense Architecture Framework. The present work aims to empower DoDAF with a repository of 'interoperable' models defined under DEVS Formalism. More details on the approach can be found in references section.

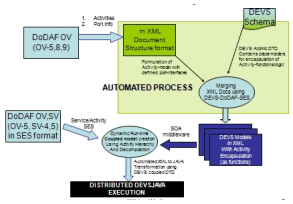

Figure 3: Process Methodology showing how automated modeling using XML can provide M&S to DoDAF documents

Finall this work is a part of the overall DEVS-DODAF Testing & Evaluation Strategy where M&S is integrated enough to be a part of design process.

The initial concept (done in 2006) is available at DEVSML-Automation using XML for DEVS-Based Testing and Evaluation

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- C.7: Saurabh Mittal, JL Risco Martin, Bernard P. Zeigler, DEVS-Based Web Services for Net-centric T&E , Summer Computer Simulation Conference (SCSC'07), San Diego, July 2007

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- C.5: JL Risco-Martin, Saurabh Mittal, et.al, A W3C XML Schema for DEVS Scenarios ,

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- C.4: Saurabh Mittal, Amit Mitra, Amar Gupta, Bernard P. Zeigler, Strengthening OV-6a Semantics with Rule-Based Meta-models in DEVS/DoDAF Based Life-cycle Architecture Development , IEEE-Information Reuse and Integration (IRI06) Conference, Special section on DoDAF, Hawaii September2006

- C.3: Bernard P. Zeigler, Saurabh Mittal, Enhancing DoDAF with a DEVS-based System Lifecycle Development Process , In Proceedings of IEEE International Conference on Systems, Man and Cybernetics, SMC05, Hawaii 2005