Why using Scilab Open Source Software for Numerical Computation in Model-Based Development
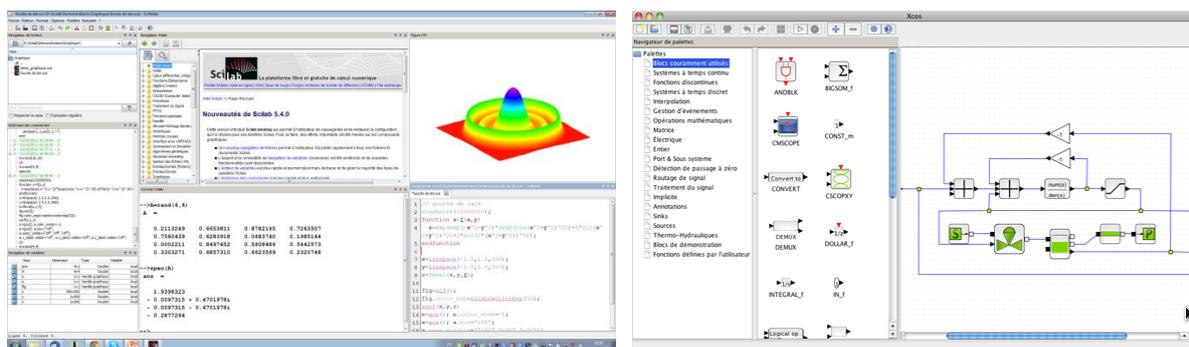
MODPROD 2015
February 2015

www.scilab.org
www.scilab-enterprises.com

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There is the need to have a free software for numerical computation. For that Scilab is the reference free numerical computation software for engineering and scientific applications. Originally based on research at Inria (the French Research Institute for Computer Science and Automatic Control), Scilab software is now developed and published in an exclusive way by Scilab Enterprises Company: this Company provides all kinds of services to help industrial people to use Scilab.

In the presentation we first explain the organization and the business model of Scilab Enterprises and how it is possible and important to have an organization in charge of free software.

Second, for many problems, numerical computation is not enough and a tool for modeling and simulating dynamical systems is needed. For that, Xcos module, included into Scilab, can do the job. But this tool was first based on block diagrams with causal modeling. This is not enough and we will present the extensions of Xcos including FMI interface and the possibility to use Modelica language.

So we can have in the same software package full numerical computation which can drive parametric models using both causal and acausal representation in order to simulate scenarii of control/command and physical systems models.

Dr. Claude Gomez was graduated from the École Centrale Paris in 1977. He was a senior scientist researcher at Inria (The French National Institute for Research in Computer Science and Automatic Control). He is co-author of books about Computer Algebra and about Scilab. He was the leader of the Scilab Research and Development team since it was created in 2003 at Inria and he was the Director of Scilab Consortium since its integration in the DIGITEO foundation in 2008. Since 2011 he is the CEO of Scilab Enterprises Company.