



ParaMagic® - SysML Parametrics for MagicDraw

The ParaMagic® plugin makes MagicDraw SysML models come alive! Using the constraint relationships displayed in SysML parametric diagrams, engineers and analysts used to working on individual spreadsheets now have a collaborative tool to explore system performance, verify requirements, and estimate cost using the best model-based systems engineering (MBSE) practices.



ParaMagic® can handle complex SysML model structures that challenge other parametric solvers. Created by the Georgia Tech team that helped write the SysML parametric spec, ParaMagic® has been production tested by the leading practitioners in modern systems engineering. High speed interfaces with powerful mathematical solvers make large trade studies and Monte Carlo simulations practical from the earliest stages of system development. *And, in ParaMagic® 18.0, a new Java API puts all this power in the hands of your own plug-in developers.*

ParaMagic® is packaged as a plugin to the MagicDraw UML/SysML tool and is available for separate purchase by new and existing MagicDraw customers. Price is \$999/€699. *NEW: Starting with ParaMagic® 18.0, users can get the Wolfram Player Pro math solver bundled with ParaMagic® plugin at a very low incremental price.*

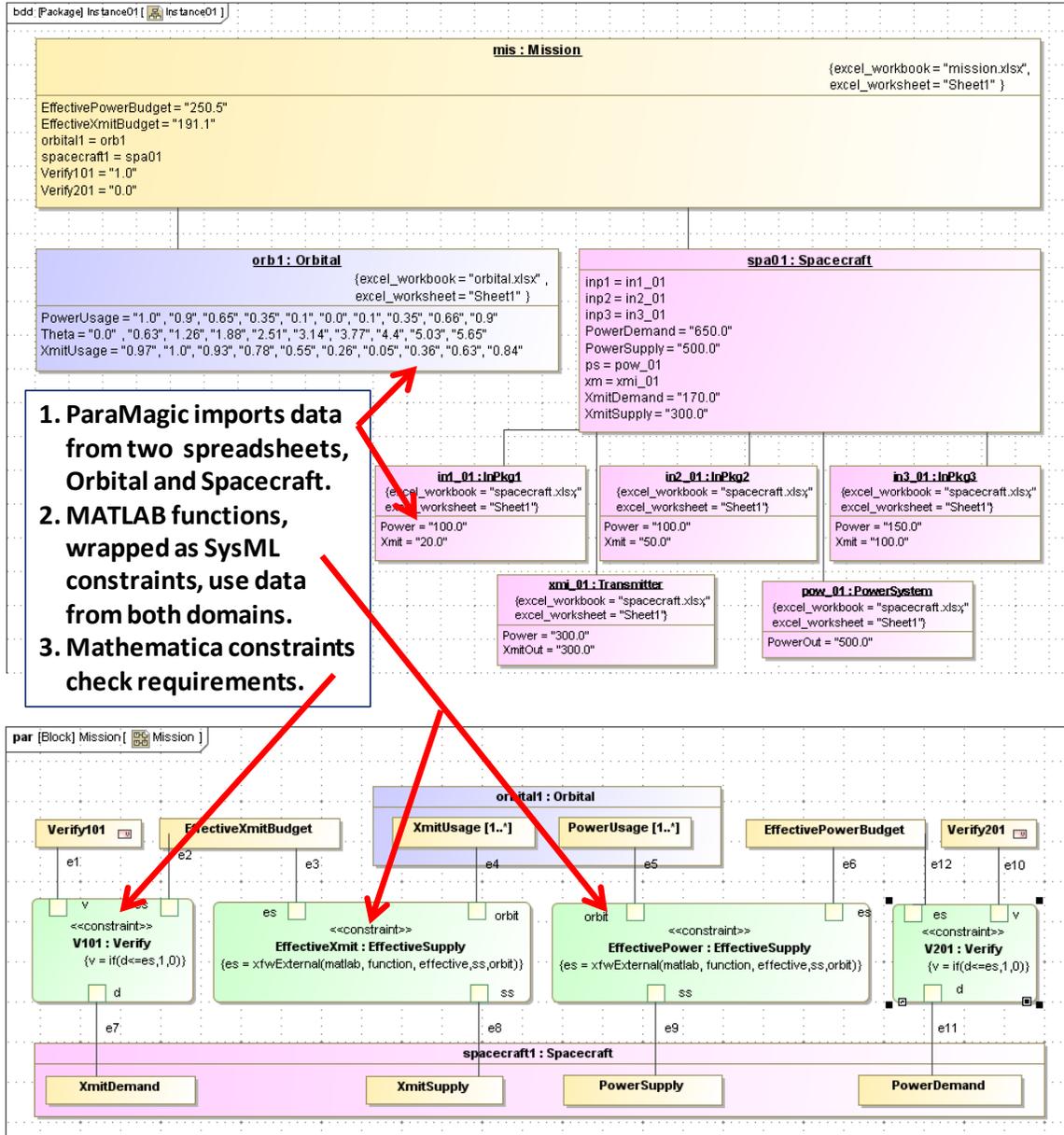
Model-Based Systems Engineering

ParaMagic® is part of a broader approach to system development, linking the SysML model to other engineering software tools. General purpose mathematical solvers like Mathematica®/Player Pro® (Wolfram Research), MATLAB Symbolic Math Toolkit® (The Mathworks) and OpenModelica (open source) handle general constraint network solving. Legacy models in Mathematica®, MATLAB® and Simulink® can be treated as constraints within those networks. Links between SysML and Excel® make it easy to import and export data, create reports and generate graphs and charts. Developers leveraging MagicDraw's UPDM and business modeling capabilities can add parametric simulation using SysML sub-models for defense planning, business process analysis and computational finance.

Features	MagicDraw SysML + ParaMagic®
Basic algebraic, trigonometric and statistical functions	✓
Acausal Solving - run-time exchange of inputs and outputs	✓
Simultaneous Equations, Recursion, Redefinition, Complex Aggregates	✓
Microsoft Excel import and export	✓
MATLAB, Simulink, and Mathematica models treated as constraints	✓
Batch execution and reporting of trade studies	✓
ParaMagic® Silent (Java API) - invoke ParaMagic from your own plugins	✓

Examples of SysML Diagrams and ParaMagic® Results

A simple example shows how ParaMagic® combines Excel, MATLAB and Mathematica to integrate spacecraft engineering and orbital mechanics data in a MagicDraw SysML model, calculate system performance, and check that performance against system requirements.



Questions?

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