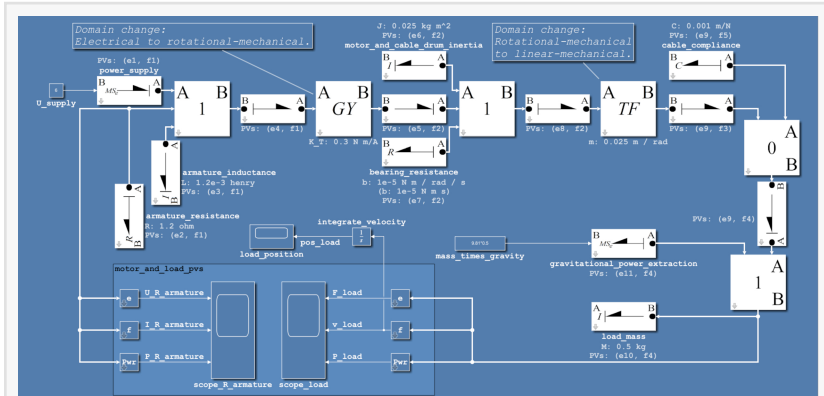


Simbus Launches Product Family for Intuitive Modeling of Multidomain Physical Systems using Bond Graphs

Simbus Launches Product Family for Intuitive Modeling of Multidomain Physical Systems using Bond Graphs in the MATLAB and Simulink Platforms

GLASGOW, SCOTLAND, UNITED KINGDOM, August 25, 2022

/EINPresswire.com/ -- Simbus Ltd (<https://simbus.com/>) has launched the first release (SR2022.0.0.1) of its product family. This includes Simbus Bondgraphs (https://simbus.com/products/simbus_bondgraphs/) for intuitive, energy-based modeling of multidomain physical systems in the MATLAB® and Simulink® platforms from MathWorks®.



A bond graph of an electromechanical DC hoist system in Simbus Bondgraphs software for MATLAB and Simulink.

Simbus Bondgraphs enables engineers in multidisciplinary teams to develop integrated models easily using a domain-neutral, energy-based notation, in a common modeling framework. Simbus Bondgraphs implements the bond graph notation for dynamic systems representation.

Simbus Bondgraphs provides:

- An intuitive library of blocks for the rapid creation of multidomain physical system bond graph models in Simulink;
- A toolbox of supporting MATLAB functions that provides a powerful scripting capability for interacting with bond graph models;
- Support for linear, nonlinear, and data-driven modeling;
- Easily-accessible documentation suitable for engineering practitioners, academics, and students;
- A substantial collection of examples to get engineering teams started quickly.

Bond graphs were formulated at the Massachusetts Institute of Technology and have been

adopted worldwide by academic, teaching, and research institutions as well as in industries as diverse as aerospace, marine, automotive, public transportation, robotics, energy production and transmission, material and chemical processing, heavy machinery, agriculture, and biological and health sciences.

The development of Simbus Bondgraphs has been motivated by the need to supplement model-based systems engineering (MBSE) in teaching, research, and industry with physical modeling capability. Increased adoption of MBSE means that engineers from different disciplines are working together more closely than ever, especially in early-stage design. Simbus Bondgraphs lowers the barriers between these disciplines and aids multidisciplinary collaboration with increased productivity.

Simbus Bondgraphs can be used for developing physical models to aid in the design and evaluation of control systems, prognostic and diagnostic systems, fault-recovery and isolation systems. Simbus Bondgraphs can also be used for failure modeling, system architecture design, parameter optimization, and also for developing elements of digital twin models. Simbus Bondgraphs also aids greatly in the teaching and learning of physical systems modeling at the undergraduate and graduate levels due to its intuitive, energy-based representations.

Simbus products are currently compatible with the R2021b and R2022a MATLAB and Simulink product families running on Windows® 10, Windows® 11, Ubuntu® 18.04 LTS, and Ubuntu® 20.04 LTS. Support for Apple® platforms is planned for a future product release.

LICENSING SIMBUS PRODUCTS

Simbus offers annual commercial, academic, and student licenses for from its online store (<https://simbus.com/store/>). Run-time licenses for those who only need to run models created with Simbus products are also available. Special introductory pricing is currently available for early adopters of Simbus products.

ABOUT SIMBUS

Simbus is a young, independent, company that makes engineering software products that integrate with the MATLAB and Simulink platforms from MathWorks. Simbus also provides product training and services in the areas of modeling and simulation, control systems, algorithm design, and systems engineering.

Simbus' expertise originates in aerospace engineering and its staff have worked on a diverse portfolio of projects including spacecraft dynamics and control, renewable energy, power transmission and distribution, force protection, combat systems, robotics, autonomous and public transportation, flight and propulsion control systems, onboard diagnostic and prognostic systems, and propulsion systems for maritime and naval.

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