

It's About Time

Shorten The Time From Concept to Production

The ReasonProX™ software suite integrates diagnostics early in the development cycle by integrating the powerful Hybrid Diagnostic Engine (HyDE) from NASA with the widely used Matlab/Simulink environment. It also eases the transition to deployment by providing tools that create runtime instances ready for use in the ultimate target system.

Knowing how a system could fail allows you to design a better solution right from the start. With ReasonProX, sensor data from the system being diagnosed is used to track the state of the system over time, including changes in state indicative of faults.

Application developers can leverage existing physical/dynamic Matlab models, or create new ones. As part of the diagnostic lifecycle, they also create new hybrid (combined discrete and continuous) diagnostic models and integrate them with the physical models using ReasonProX.

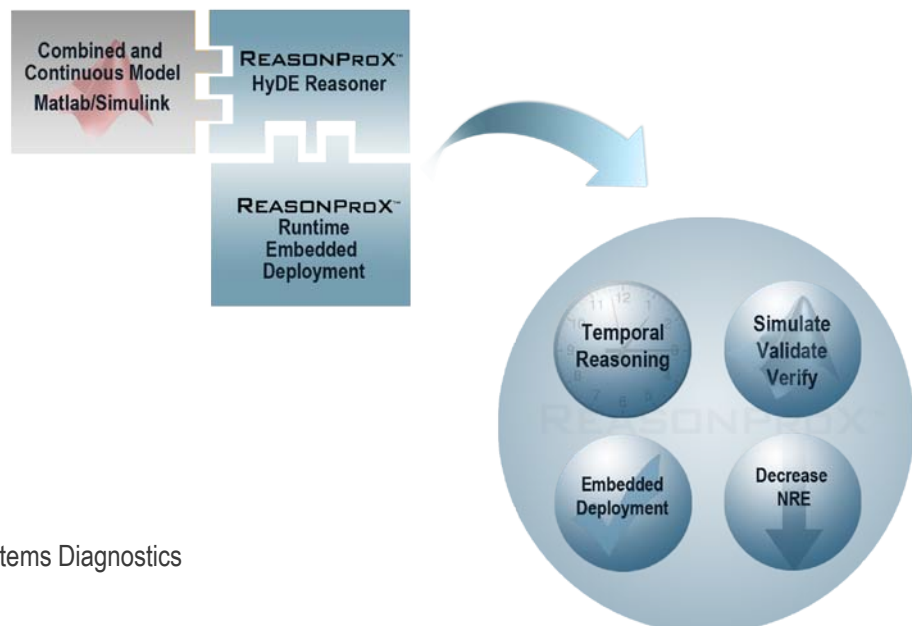
ReasonProX seamlessly integrates with Matlab/Simulink allowing developers to stimulate, validate and verify their diagnostic models. Once the diagnostic model is verified, ReasonProX provides tools to ease the deployment of the resulting diagnostic engine to the target physical system.



Applications:

ReasonProX is a tool built for systems that control and monitor:

- Green/Smart Buildings
- Printers
- Automobiles
- Test-Beds
- Electrical Power
- Power Generation
- Automated Drilling
- Robotic Autonomy
- Spacecraft Engine/Propulsion Systems Diagnostics
- Your System
- And Many More...



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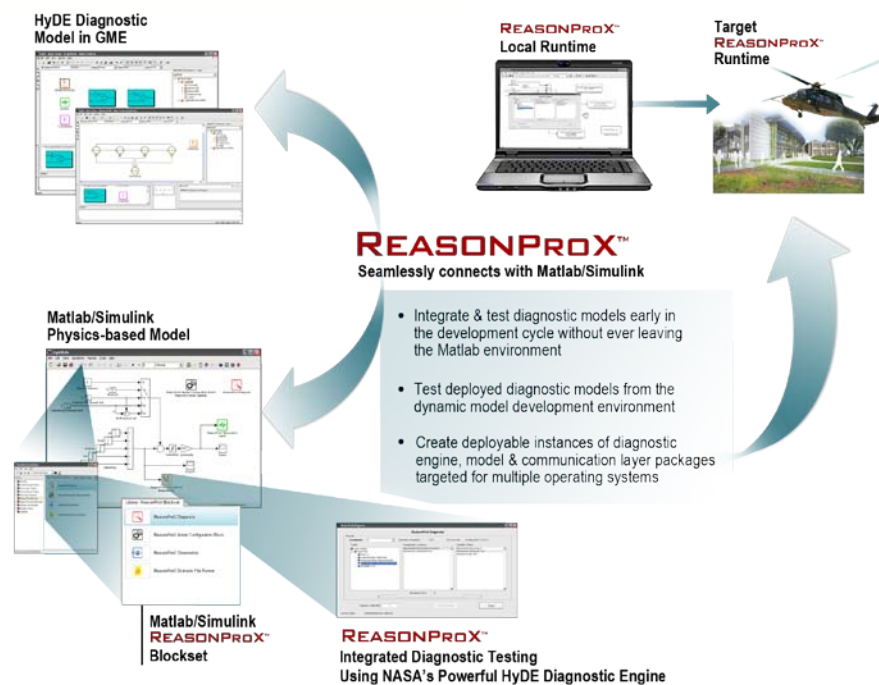
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Key Benefits:

- **Familiar Interface** – ReasonProX's model-based development environment provides a familiar interface to those who have worked with Simulink. Our easy to follow tutorials will get you integrating your diagnostic and dynamic models in no time.
- **Integration** - Fully integrates HyDE diagnostic models with Matlab/Simulink dynamic physical models.
- **Co-simulation** - Ability to seamlessly monitor Matlab/Simulink components and feed time-based signals and commands to and receive diagnoses back from HyDE.
- **Efficiency** – Leverages existing Simulink system models to improve the process of diagnostic model development, simulation, validation, and verification.
- **Lifecycle** - Supports physical AND diagnostic model development lifecycle.
- **Deployment** – Ability to create instances of the ReasonProX Runtime targeted for deployment on multiple supported operating systems for remote and local testing.

Key Features:

- Model-based- Application developers build diagnostic models in the HyDE Paradigm for GME which are then run through the reasoning algorithms.
- Diagnosis of multiple discrete faults, characterized as instantaneous, unintended persistent changes in the operating mode of the physical system.
- Handles hybrid system behavior, using models that can contain both discrete and continuous variables.
- Temporal reasoning, with the capability to determine the time at which faults or transitions in a hybrid system occurred.
- Handles qualitative (Boolean or finite-domain) and quantitative (floating-point or interval) data.
- Stochastic reasoning, including sensor noise, prior probabilities of faults and posterior probabilities of candidate diagnoses.



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