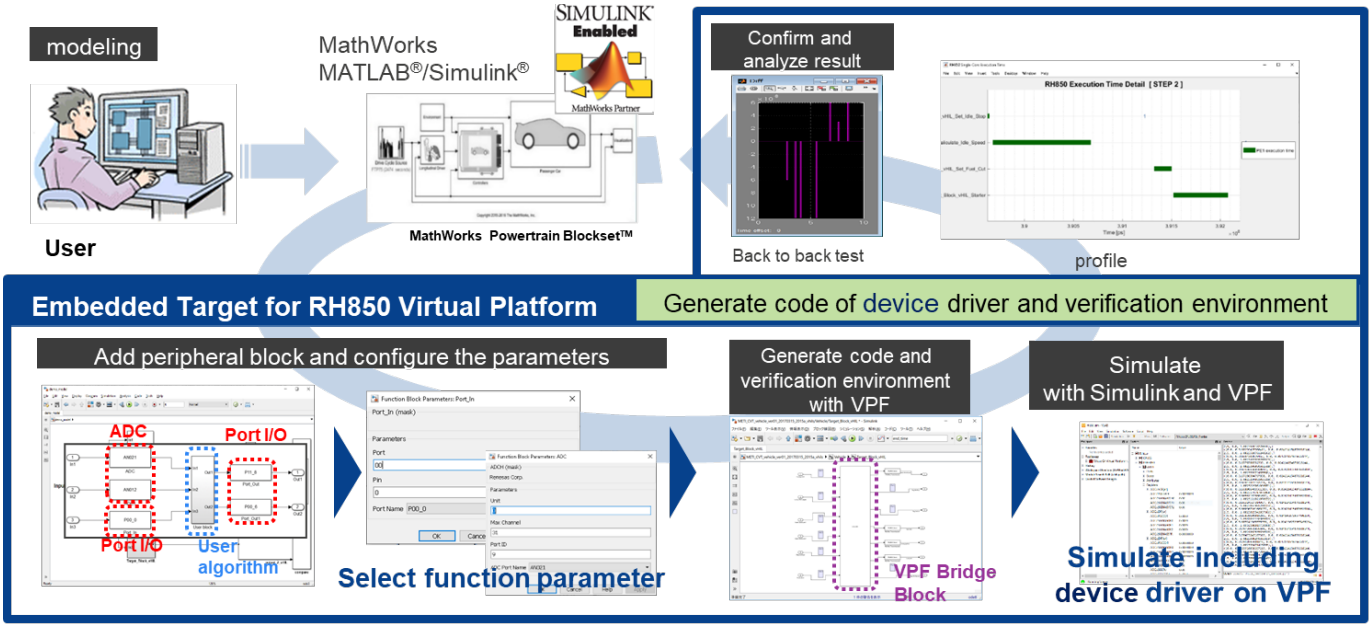
Early system verification environment without real device

RH850, R-Car Model-Based Environment

Product introduction page: https://www.renesas.com/mbd-rh850-rcar-vpf

Verification of automatically generated peripheral and apps code on virtual platform for the device selection and prototype design in a short period

Embedded Target for Virtual Platform is a development environment that generates peripheral code for target devices from Simulink® models and enables cooperative verification as Virtual Hardware In the Loop Simulation (vHILS) in a virtual environment with Simulink.



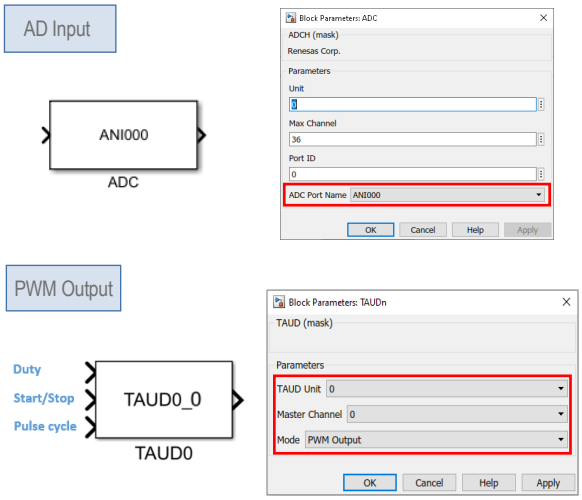
"5 things you can do" to accelerate model-based development

①	Peripheral code is generated from Simulink models, along with the algorithm code	Making it easy to confirm the operation and the performance of the application including peripheral functions for device selection and prototyping, even if you are not familiar with device specifications.
②	Using a virtual environment that allows simulation of microcontroller core and peripheral functions.	The use of a virtual environment enables early verification, even before getting the device or completing the board.
③	Provides peripheral blocks compatible with device peripheral functions	Supports Port, ADC, CAN, UART, PWM for RH850 and GPIO, CAN, Ethernet for R-Car, allowing basic system construction without coding peripheral code.
④	Automatically builds a vHIL Simulation verification environment using a virtual environment	No virtual environment operations are required, and automated application verification of Simulink and virtual environments is possible.
⑤	Feedback of vHIL Simulation execution results to Simulink	By comparison with Model In the Loop Simulation (MILS) execution results enables back-to-back testing as recommended by ISO 26262.

Functions

1. Peripheral Blocks

Peripheral blocks for Simulink that support the peripheral functions of the microcontroller enable basic settings such as ports, channels, and operating modes.
Detailed settings can be changed by the linked Smart Configurator.



2. Code Generation

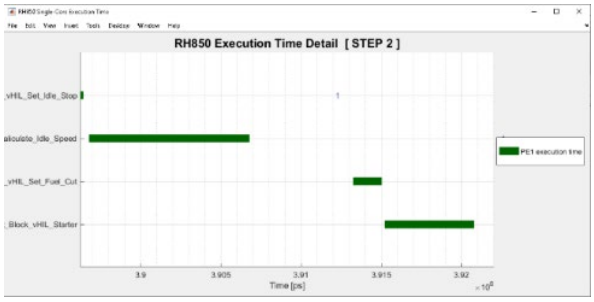
Embedded Coder® automatically generates code from the model for algorithms and peripheral blocks.

3. vHIL Simulation

After building the code generated from the model, a collaborative verification environment is automatically built between Simulink and the virtual environment, and vHIL Simulation is executed.

4. Execution status

The time measurement function of the virtual environment acquires the execution time of each Atomic subsystem and displays the execution status graphically.



Functions list

License/ Product name	Functions			
	Peripheral Code Generation	vHIL Simulation	Time Measurement	Supported Compilers
Embedded Target for RH850 Virtual Platform	✓	✓*1	✓	Renesas
Embedded Target for R-Car Virtual Platform	✓	✓*2	✓	Green Hills Software (for G4MH core), ARM (for CR52 core)

*1 : Use VLAB of Australian Semiconductor Technology Company
*2 : Use VDK of Synopsys

Supported devices

Family/Series	Products
RH850/F1x	RH850/F1KM-S1, RH850/F1KM-S4
RH850/U2x	RH850/U2B
R-Car	R-Car S4, R-Car V4H

Operating environment

Windows® 10 (64-bit version)

Related tools

Model-Based Tools : MATLAB®, MATLAB Coder™, Simulink, Simulink® Coder™, Embedded Coder™
Virtual Environments : VLAB (for RH850), VDK (for R-Car)
Code Generation Tool : Smart Configurator (for RH850), MCAL (for R-Car)

For details, please refer to the Operating Environments on the product introduction page.

Contact

For other installation and details, please contact the distributor or our sales representative.

www.renesas.com/buy-sample/japan

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FAQ https://ja-support.renesas.com/knowledgeBase

Community https://japan.renesasrulz.com/cafe_rene/

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