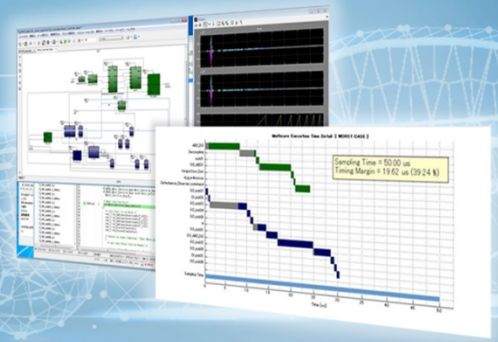
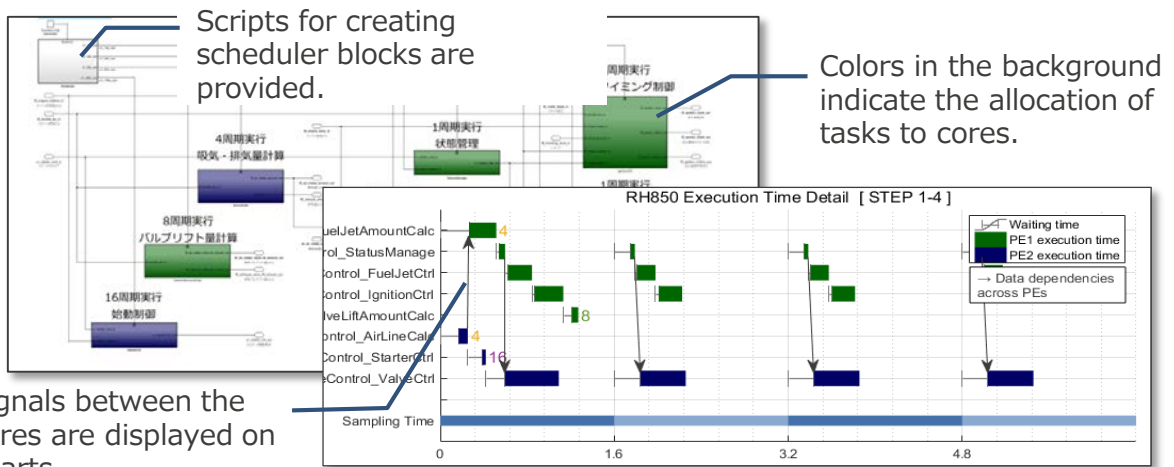


# RH850 Model-Based Development Environment Multi-Rate Control (Leading Presentation) Embedded Target for RH850 Multicore



## ■ Outline of the Presentation

- This tool significantly reduces the burden of developing multicore software to handle multi-rate control.
- It conforms with the *de-facto* standard JMAAB control modeling guidelines for automotive model-based development.
- Overall operational verification of ECUs in which multiple systems are combined is also possible.

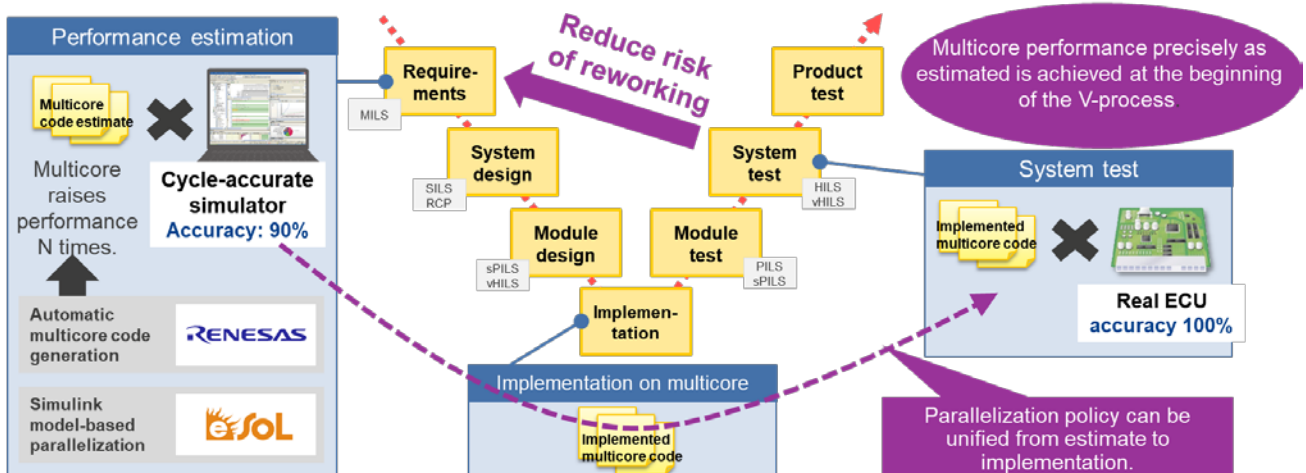


Signals between the cores are displayed on charts.

## ■ Related Product

- Cycle-accurate simulator for RH850/P1H-C devices in the CS+ integrated development environment (released in the summer of 2018)

## Acquire accurate estimate based on MCU information with multicore MBD environment : Reduce risk of reworking



# Multicore Model-Based Environment

Using a Simulink model to verify the execution of multicore RH850 devices prevents the need for reworking in the form of returning to previous processes.

## Features

- **Automatic creation of multicore code, even for multi-rate control**  
Even for multi-rate control models with multiple control periods, automatically structuring parallel code in a PILS environment can significantly reduce the burden of multicore software development.
- **Designing multicore performance at the beginning of the V-process**  
The provided Simulink scheduler block, conformant with the JMAAB guidelines, simplifies the evaluation of MCUs with single task systems.
- **Verifying the overall operation of ECUs in which multiple systems are combined**

Multicore execution is visualized with the acquisition of accurate execution times by running systems with multiple control periods in a highly accurate simulator.

## Solutions

(1) Example of Multirate Control for Engine

(3) Example of the Visualization of Multicore Execution

Multicore performance is designed at the beginning of the V-process.

Multicore code is automatically generated, even for control systems with multiple control periods.

Accumulated execution data is displayed on charts.

(2) MATLAB and the target code of the simulator are executed in cooperation.

Products covering multi-rate control will be released in the fall of 2018.