

Complete Bypassing Portfolio

More and more microcontrollers in vehicle electronic control units (ECUs) provide an on-chip debug interface such as Nexus, JTAG/OCDS, JTAG/SDI, AUD, and NBD. These can also be used for bypassing purposes in function design. dSPACE Release 5.0 will include an extension to the RTI Bypass Blockset based on the generic serial interface DCI-GSI1. DCI-GSI1 can be used for simultaneously bypassing, measuring, and calibrating, so it is simple to reuse in different development phases. The RTI Bypass Blockset supports dialog-based configuration of bypass interfaces and bypass hooks in MATLAB®/Simulink®.

Large Selection of Bypass Interfaces

dSPACE is an experienced provider of tools for developing and optimizing control algorithms (rapid control prototyping) based on external bypassing. This involves the calculation of selected ECU functions on the

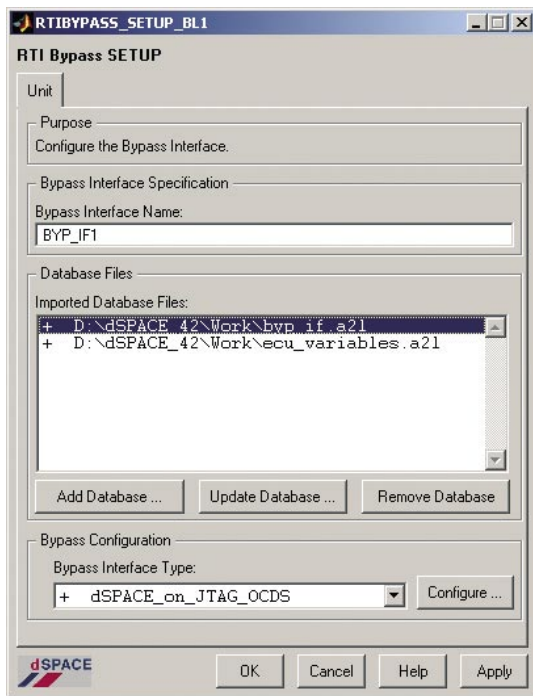
ware and comprehensive software support, there are suitable tools for any application case, using either dual-port memory (DPMEM), XCP on CAN, or on-chip debug interfaces. There are two basic bypassing methods: address-based bypassing via code patches and service-based bypassing via service calls in the ECU code. The dSPACE prototyping hardware guarantees minimum latencies in data communications with the ECU, the greatest possible flexibility in development, and real-time behavior even with large function models.

Current Microcontrollers Supported

The support given to service-based bypassing for on-chip debug interfaces via the generic serial interface DCI-GSI1 is tailored to current and future processors used in ECUs. Whether you use a Freescale MPC5500, Infineon TriCore, or Renesas SH2 / M32R, the easy-to-use RTI Bypass Blockset software lets you configure bypass interfaces and perform tasks such as assigning variable names for service-based bypassing to ECU addresses. A browser with search options and hierarchical display helps you to select input and output variables for the bypass functions from the associated ASAP2 files (ASAM-MCD 2MC). As with all dSPACE bypassing solutions, powerful, vehicle-capable prototyping hardware is available, with extensive I/O interfaces to compute the bypassing algorithms.

- **Simultaneous bypassing, measurement, and calibration**
- **Powerful real-time hardware**
- **Bypassing for today's generation of microcontrollers**

▼ *Even more features with dSPACE Release 5.0: Support of current microcontrollers (selection)*



▲ *Configuring bypass interfaces with the RTI Bypass Blockset for MATLAB/Simulink.*

prototyping hardware, while the remainder of the code continues to run, unmodified, on the existing ECU in the vehicle. With powerful prototyping hard-

On-Chip Debug Interface	Microcontroller
Nexus	Freescale MPC55xx, Freescale MPC56x
JTAG/OCDS	Infineon TriCore
JTAG/SDI	Renesas M32R
AUD	Renesas SH2
NBD	NEC V85x, Renesas M32R

For release dates see www.dspace.de/goto?releases