

**dSPACE Release**

# **New Features and Migration**

**For RCP and HIL Software**

**Release 6.1 – March 2008**



## How to Contact dSPACE

Mail:	dSPACE GmbH Technologiepark 25 33100 Paderborn Germany
Tel.:	+49 5251 1638-0
Fax:	+49 5251 66529
E-mail:	info@dSPACE.de
Web:	<a href="http://www.dSPACE.com">http://www.dSPACE.com</a>

## How to Contact dSPACE Support

There are different ways to contact dSPACE Support:

- Visit our Web site at <http://www.dSPACE.com/goto?support>
- Send an e-mail or phone:
  - General Technical Support:  
support@dSPACE.de  
+49 5251 1638-941
- Use the dSPACE Support Wizard:
  - On your dSPACE DVD at \Diag\Tools\dSPACESupportWizard.exe
  - Via **Start – Programs – dSPACE Tools** (after installation of the dSPACE software)
  - At <http://www.dSPACE.com/goto?supportwizard>

You can always find the latest version of the dSPACE Support Wizard here.

dSPACE recommends that you use the dSPACE Support Wizard to contact dSPACE Support.

## Software Updates and Patches

dSPACE strongly recommends that you download and install the most recent patches for your current dSPACE installation. Visit <http://www.dSPACE.com/goto?support> for software updates and patches.

## Important Notice

This document contains proprietary information that is protected by copyright. All rights are reserved. Neither the documentation nor software may be copied, photocopied, reproduced, translated, or reduced to any electronic medium or machine-readable form, in whole or in part, without the prior written consent of dSPACE GmbH.

© Copyright 2008 by:  
dSPACE GmbH  
Technologiepark 25  
33100 Paderborn  
Germany

This publication and the contents hereof are subject to change without notice.

AutomationDesk, CalDesk, ConfigurationDesk, ControlDesk and TargetLink are registered trademarks of dSPACE GmbH in the United States or other countries, or both. Other brand names or product names are trademarks or registered trademarks of their respective companies or organizations.

# Contents

<b>About This Document</b>	5
<b>General New Features</b>	7
<i>Supported MATLAB Releases</i> .....	7
<i>Supported Operating Systems</i> .....	8
<i>New Key Features</i> .....	9
<i>General Enhancements and Changes</i> .....	10
<b>New Features of RCP and HIL Software in dSPACE Release 6.1</b>	11
<i>New Implementation Features of RTI</i> .....	11
<i>New Features of the RTI Bypass Blockset</i> .....	12
<i>New Features of the RTI CAN MultiMessage Blockset</i> .....	13
<i>New Features of the RTI LIN MultiMessage Blockset</i> .....	14
<i>New Features of Automotive Simulation Models</i> .....	15
<b>Migrating from Previous Releases</b>	19
<i>Migrating the Implementation Software</i> .....	20
<i>Migration to Python 2.5</i> .....	21
<i>Migrating Automotive Simulation Models</i> .....	21
<i>Migrating Applications Created with ConfigurationDesk 1.1.2 or     Earlier to ConfigurationDesk 1.3.1</i> .....	23
<i>Migrating to Real-Time Testing 1.3.1</i> .....	25
<i>Migrating from dSPACE Release 6.0 or Earlier</i> .....	26
<b>Index</b>	27



# About This Document

---

## Contents

dSPACE Release 6.1 contains all the software from dSPACE on one DVD:

- Rapid control prototyping (RCP) and hardware-in-the-loop (HIL) software

**RCP and HIL software** is a software item containing several dSPACE software products, for example RTI, ControlDesk, AutomationDesk, ConfigurationDesk, MotionDesk, ModelDesk, SystemDesk.

- CalDesk 2.0
- TargetLink 2.3
- Model Compare 1.0



### Product use prohibited in United States

You are not licensed to use Model Compare in the United States. You are not allowed to use or permit others to use this product in the United States or in any way that violates the laws of the United States.

- SystemDesk 1.0

This document gives you a brief overview of the major new features of the RCP and HIL software in dSPACE Release 6.1.

Where to go from here

Information in other sections

<b>General New Features</b>	7
Describes the new features of dSPACE's RCP and HIL products.	
<b>New Features of RCP and HIL Software in dSPACE Release 6.1</b>	11
Describes the key features and summarizes the major enhancements made since the previous release.	
<b>Migrating from Previous Releases</b>	19
Gives you information on the changes you may have to perform when you migrate from previous releases to dSPACE Release 6.1.	
For information about CalDesk and TargetLink, refer to the following documents: <b>dSPACE Calibration System New Features and Migration</b> Provides a brief overview of the major new features of the dSPACE Calibration System, information on the changes you may have to make when you migrate from a previous release, and information on the limitations that apply to CalDesk. <b>TargetLink New Features and Migration</b> Provides a brief overview of the major new features of TargetLink 2.3 and information on the changes you may have to make when you migrate from a previous release.	

---

# General New Features

---

**Objective** Describes all the new features of dSPACE's RCP and HIL products in dSPACE Release 6.1.

---

**Where to go from here** Information in this section

<b><i>Supported MATLAB Releases</i></b>	7
<b><i>Supported Operating Systems</i></b>	8
<b><i>New Key Features</i></b>	9
<b><i>General Enhancements and Changes</i></b>	10

## Supported MATLAB Releases

---

**Supported MATLAB releases**

The RCP and HIL software in dSPACE Release 6.1 offers full compatibility with the following releases of MATLAB from The MathWorks:

- MATLAB R2007b
- MATLAB R2007a+
- MATLAB R2006b
- MATLAB R2006a+

For detailed information on compatibility, refer to [www.dspace.com/goto?Compatibility](http://www.dspace.com/goto?Compatibility) on the dSPACE Web site.

## Supported Operating Systems

### Supported operating systems

The RCP and HIL software in dSPACE Release 6.1 supports the following operating systems:

- Windows 2000 with Service Pack 4
- Windows XP (32-bit version) with Service Pack 2
- Windows Vista (32-bit version)


Windows XP Professional x64 Edition and Windows Vista (64-bit version) are not supported by dSPACE Release 6.1.

For an overview of which dSPACE product of which dSPACE Release supports which operating system, refer to [www.dspace.com/goto?os\\_compatibility](http://www.dspace.com/goto?os_compatibility).

### Limitations when working with Windows Vista (32-bit)

**MATLAB support** Under Windows Vista, the dSPACE software supports only MATLAB versions since MATLAB R2007a+.

**Sleep mode not supported** The dSPACE software does not support Windows Vista's sleep mode for power saving. When restarting the PC from the sleep mode, you must reboot it to restore communication with the dSPACE hardware.

To avoid the automatic sleep mode, you must disable it. Refer to *How to Disable Windows Vista's Sleep Mode* ( *Software Installation and Management Guide*).

**Fast user switching not supported** The dSPACE software does not support the fast user switching feature of Windows Vista.

**Closing dSPACE software before PC shutdown** The modified shutdown procedure of Windows Vista causes some required processes to be aborted although they are still being used by dSPACE software. To avoid data loss, you must terminate the dSPACE software manually before performing a PC shutdown.

**Allowing communication via additional firewall rules** During installation of the dSPACE software, two additional Windows Vista firewall rules are automatically installed. The first rule allows communication with a dSPACE expansion box, for example, AutoBox. The second rule allows MotionDesk to receive motion data from a network channel.

The rules are created by the following commands:

- `advfirewall firewall add rule name="dSPACE Net Service" service=any dir=in action=allow profile=any protocol=icmpv4:0, any description="Allow the dSPACE Net Service to connect to a dSPACE expansion box via network."`
- `advfirewall firewall add rule name="dSPACE MotionDesk" program="%dspace_root%\MotionDesk\Bin\MotionDesk.exe" dir=in action=allow profile=any description="Allow dSPACE MotionDesk to receive motion data via network."`

**Connecting/disconnecting DCI-GSI1 via USB causes a bluescreen** If you use a DCI-GSI1 in connection with the RTI Bypass Blockset, repeatedly connecting and disconnecting the DCI-GSI1 via USB to the host PC can cause a bluescreen on the host PC.

## New Key Features

### Implementation software

The new key features of the implementation software are:

#### RTI

- Support of model referencing for single-processor systems
- Enhancements for specifying the Timer Interrupt block

For details, refer to *New Implementation Features of RTI* on page 11.

#### RTI Bypass Blockset

- Support of bypassing via XCP on UDP/IP
- Enhancements for working with ECU variables
- Enhancements for using workspace variables

For details, refer to *New Features of the RTI Bypass Blockset* on page 12.

#### RTI CAN MultiMessage Blockset

- New inport and outports for the RTICANMM ControllerSetup block
- Enhancements for handling the RTICANMM MainBlock
- Support of floating-point signals
- Enhancements of the tutorial

For details, refer to *New Features of the RTI CAN MultiMessage Blockset* on page 13.

### RTI LIN MultiMessage Blockset

- Support of event-triggered frames

For details, refer to *New Features of the RTI LIN MultiMessage Blockset* on page 14.

## General Enhancements and Changes

<b>Objective</b>	The following new features concern several dSPACE products.
<b>Python 2.5</b>	<p>Since dSPACE Release 6.0, all dSPACE products working with Python support Python 2.5. This affects the following dSPACE products: ControlDesk, AutomationDesk (including Real-Time Testing), ModelDesk, SystemDesk.</p> <p>For information on how to migrate from a previous Python version, refer to <i>Migration to Python 2.5</i> on page 21.</p>
<b>White spaces in path names</b>	You can use white spaces in the installation and work paths of all the dSPACE software products and in the installation path of MATLAB.
<b>Microtec PowerPC C Compiler</b>	<p>Since dSPACE Release 6.0, the new Microtec PowerPC C Compiler version 3.3 is used with DS1005, DS1103, DS1104, MicroAutoBox, and RapidPro Control Unit with MPC5554.</p> <p>For information on how to migrate from a previous PowerPC compiler version, refer to <i>Migrating the Implementation Software</i> on page 20.</p>
<b>Release update</b>	The printed user documentation is not delivered with dSPACE Release 6.1 if you receive the release as an update for your existing dSPACE release. Use the digital user documentation, for example, dSPACE HelpDesk, to obtain information about new features, enhancements, and the current safety precautions of your products.

---

# New Features of RCP and HIL Software in dSPACE Release 6.1

---

Where to go from here

Information in this section

<b><i>New Implementation Features of RTI</i></b>	11
<b><i>New Features of the RTI Bypass Blockset</i></b>	12
<b><i>New Features of the RTI CAN MultiMessage Blockset</i></b>	13
<b><i>New Features of the RTI LIN MultiMessage Blockset</i></b>	14
<b><i>New Features of Automotive Simulation Models</i></b>	15

## New Implementation Features of RTI

---

**Support of model referencing**

You can now use Model blocks to insert models in other models. Each instance of a Model block represents a reference to another model. This feature is called model referencing and is available for all single-processor platforms.


---

**New sample time parameter for Timer Interrupt block**


The Timer Interrupt block offers a new edit field for defining the block's sample time used for Simulink simulation. This allows to better control the blocks behavior for Simulink simulations. The defined sample time does not affect real-time simulation, and it can differ from the defined timer period.

### Related topics

Basics

- [Referencing Models](#) ( *RTI and RTI-MP Implementation Guide*)

References

- [Timer Interrupt Block](#) ( *RTI and RTI-MP Implementation Reference*)

## New Features of the RTI Bypass Blockset

### Support of bypassing via XCP on UDP/IP

The RTI Bypass Blockset now supports service-based bypassing via XCP on UDP/IP.

Bypassing via XCP on UDP/IP is possible with the following dSPACE hardware:

- Modular system based on a DS1005 or DS1006 with DS4121 ECU Interface Board
- MicroAutoBox with a ECU Type 1 board



For XCP on UDP/IP, an LVDS Ethernet link cable is required. Contact dSPACE for an appropriate LVDS Ethernet link cable.

### Enhancements for working with ECU variables

**Viewing variables properties** The Variable Selector, which lists the available ECU variables defined in the imported database file, lets you now view the properties. To obtain information on a variable, open the Variable Properties dialog via the variable's context menu.

**Creating custom variables** In the Variable Selector, you can now add custom variables and view and edit the custom variables' properties. To obtain information on a custom variable or to specify the settings, open the Edit/View Custom Variables Properties dialog via its context menu.

### Using MATLAB workspace variables

You can now specify the following options globally for the entire model by using MATLAB workspace variables:

- Relative path offset of all imported database files
- Local IP addresses (for XCP on UDP/IP only)

---

**Working with models from RTI Bypass Blockset versions 2.0, 2.1 and 2.2**

dSPACE Release 6.1 comes with RTI Bypass Blockset 2.4, which is compatible with earlier blockset versions 2.x. However, the format of the data dictionary was changed in comparison to RTI Bypass Blockset versions 2.0, 2.1 and 2.2. The data dictionaries of Simulink models built with blockset versions 2.0, 2.1 and 2.2 are automatically converted to the format used by RTI Bypass Blockset 2.4.



If you have a model that was saved with RTI Bypass Blockset 2.4 and want to use it with an earlier 2.x version of the RTI Bypass Blockset, you must first delete the model's data dictionary (the name and path of the data dictionary can be found in the Info block) and import the ASAM-MCD 2MC (A2L) file again. The RTI Bypass Blockset then automatically creates a data dictionary according to the appropriate format.

---

**Limitation when using the Variable Editor**

You cannot open the Variable Editor via the RTIBYPASS\_SETUP block of the RTI Bypass Blockset if you have installed CalDesk 2.0. You can open the Variable Editor via the RTIBYPASS\_SETUP block only if you have installed CalDesk 1.4.1 or earlier.

## New Features of the RTI CAN MultiMessage Blockset

---




**Enhancements of the tutorial**

The RTI CAN MultiMessage Tutorial now comes with three new lessons and a glossary. The new lessons guide you through the following scenarios step by step:

- Working with variants of a CAN controller
- Working with a J1939-compliant DBC file
- Defining CAN communication via a user-defined database (for example, via an M-file)

The tutorial is modular, i.e., you can choose exactly which scenario you want to work through. Refer to RTI CAN MultiMessage Tutorial.


---

<b>New inport and outports for the RTICANMM ControllerSetup block</b>	The RTICANMM ControllerSetup block now provides one new inport and ten new outports. The inport lets you remove the CAN controller from the bus. The outports provide status information on the CAN controller and the bus, for example, the number of stuff bit errors. By default, the inport and outports are disabled. You can enable them on the new <i>Options Page (RTICANMM ControllerSetup)</i> (  <i>RTI CAN MultiMessage Reference</i> ).
<b>Reset the RTICANMM MainBlock settings via the model</b>	You now can reset all the settings of the RTICANMM MainBlock to the default values via the model. You can enable a <b>Reset</b> inport on the <i>Code Options Page (RTICANMM MainBlock)</i> (  <i>RTI CAN MultiMessage Reference</i> ) for this purpose.
<b>Multiselection on the TX ID page</b>	The TX ID page of the RTICANMM MainBlock now allows the multiselection of messages to specify the adjust option of all the selected messages simultaneously (see <i>TX ID Page (RTICANMM MainBlock)</i> (  <i>RTI CAN MultiMessage Reference</i> )).
<b>Changed page names</b>	The names of the TX Signals page and the RX Signals page of the RTICANMM MainBlock are changed to Model Signals (TX) and Model Signals (RX), respectively.
<b>Support of floating point signals</b>	The RTICANMM MultiMessage Blockset now supports Float32 and Float64 signals.

---

## New Features of the RTI LIN MultiMessage Blockset

---

<b>Support of event-triggered frames</b>	The RTI LIN MultiMessage Blockset now supports event-triggered frames. The RTILINMM MainSetup block provides new pages that let you specify settings of event-triggered frames to be transmitted and received via the bus. If you work with LIN 2.1, you can specify collision resolver schedules on a separate page. Refer to <i>Eventtriggered Frames Page (RTILINMM MainSetup)</i> (  <i>RTI LIN MultiMessage Reference</i> ).
<b>Changed page names</b>	The names of the TX Signals page and the RX Signals page of the RTILINMM MainSetup block are changed to Model Signals (TX) and Model Signals (RX), respectively.

---

## New Features of Automotive Simulation Models

---

### ASM Utilities

**ASM\_1D\_LOOKUP** Enhanced derivative calculation: the derivative is now interpolated linearly.

**ASM\_2D\_LOOKUP** Enhanced derivative calculation: the derivative is now interpolated linearly.

**FirstOrderDynamics, SecondOrderDynamics** A reset signal for integrators has been added.

**ASM\_SHIFTTABLE\_LOOKUP block** The ASM\_SHIFTTABLE\_LOOKUP block has been added. The block provides a 2-D lookup table and calculates the maximum gear. If the difference between two gear values is less than one, the block sets the maximum gear to the lower value. For example, if the gear axle is [-1,0,1,2,3,4,5,5.05,5.1,...], the maximum gear is 5. Additionally, the block calculates the recommended gear for the gear shifter. The recommended gear is obtained from the current transmission output speed and the lookup table, assuming that the accelerator pedal position is zero.

---

### ASM Vehicle Dynamics

**SENSOR\_MOTION block** There are now two lateral acceleration signals available at the SENSOR\_MOTION block. One lateral acceleration signal ignores the acceleration of gravity (a\_y\_Sensor\_CoorSys\_V signal), the other lateral acceleration signal takes the effect of the acceleration of gravity into account (a\_y\_Total\_Sensor\_CoorSys\_V signal). Both signals are part of the ASMSignalBus.

When you connect an ABS/ESP system (i.e. an ECU) to the sensor's signals, for example, for hardware in the loop (HIL) simulation, you must be careful to use the correct lateral acceleration from the SENSOR\_MOTION block. If the ECU itself compensates the acceleration of gravity, connect it to the a\_y\_Sensor\_CoorSys\_V signal. If it does not, connect it to the a\_y\_Total\_Sensor\_CoorSys\_V signal.

**Reset signal for several blocks** The following blocks now have an inport for resetting their integrators:

- TIRE\_MODEL\_MAGIC\_FORMULA\_FL,  
TIRE\_MODEL\_MAGIC\_FORMULA\_FR,  
TIRE\_MODEL\_MAGIC\_FORMULA\_RL,  
TIRE\_MODEL\_MAGIC\_FORMULA\_RR
- STEERING
- SUSPENSION\_COMPLIANCE\_FRONT,  
SUSPENSION\_COMPLIANCE\_REAR
- ENGINE\_BASIC
- ESP\_TORQUE\_INTERVENTION\_SLOW,  
ESP\_TORQUE\_INTERVENTION\_FAST
- BRAKING\_CIRCUIT\_BASIC
- BRAKE\_HYDRAULICS\_BASIC

**TORQUE\_CONVERTER** The input of the efficiency map has been corrected. It was changed from  $\Omega_{\text{pump}} / \Omega_{\text{Turbine}}$  to  $\Omega_{\text{Turbine}} / \Omega_{\text{pump}}$ . This improves vehicle start-up.

---

#### ASM Drivetrain Basic

**GEAR\_SHIFTER** The new ASM\_SHIFTTABLE\_LOOKUP block from the ASM Utilities library has been included (see above). Changes in the downshift table are now automatically considered in the calculation of the maximum gear and the calculation of the recommended gear.

**SOFTECU\_TRANSMISSION** The new ASM\_SHIFTTABLE\_LOOKUP block from the ASM Utilities library has been included (see above). Changes in the downshift table are now automatically considered in the calculation of the maximum gear.

---

#### ASM Turbocharger

**TURBINE\_SAEJ922 block** The TURBINE\_SAEJ922 block uses SAE J922-compliant data, which provides a better approximation. The new implementation is based on 6 maps for mass flow and efficiency as functions of pressure ratio and turbine speed. It is interpolated between the results of these maps depending on the actual position of the variable turbine geometry.

---

**ASM Environment**

**GEAR\_SHIFTER** If the brake and accelerator were depressed at the same time in driver mode, the selector lever position toggled between Neutral and Drive state. This bug has been fixed.

**ROAD** The ROAD block can now simulate user roads with more than 25 segments. The matrix dimensions for the user roads were decreased. It contains only data and road segments which are actually used.

**MANEUVER\_SCHEDULER** The matrix dimensions for the user maneuver were decreased. It contains only data and segments which are actually used.

---

**Related topics**

Basics

- *Migrating Automotive Simulation Models* on page 21



# Migrating from Previous Releases

---

**Objective** After you install dSPACE Release 6.1, it may be necessary to carry out additional steps.

---

**Where to go from here** Information in this section

<b><i>Migrating the Implementation Software</i></b>	20
Gives important points for migrating the implementation software to dSPACE Release 6.1 from the previous release.	
<b><i>Migration to Python 2.5</i></b>	21
Since dSPACE Release 6.0, dSPACE products that use Python work with Python 2.5.	
<b><i>Migrating Automotive Simulation Models</i></b>	21
Gives important points for migrating the Automotive Simulation Models.	
<b><i>Migrating Applications Created with ConfigurationDesk 1.1.2 or Earlier to ConfigurationDesk 1.3.1</i></b>	23
Working with ConfigurationDesk 1.3.1 requires the migration of applications that were created with former ConfigurationDesk versions.	
<b><i>Migrating to Real-Time Testing 1.3.1</i></b>	25
Gives important points for migrating to the current Real-Time Testing version.	
<b><i>Migrating from dSPACE Release 6.0 or Earlier</i></b>	26
To migrate from dSPACE Release 6.0 or earlier to dSPACE Release 6.1, you also have to perform the migration steps of the intervening dSPACE Releases.	

## Migrating the Implementation Software

**Objective** Note the following points when migrating from a previous release to dSPACE Release 6.1:

**Migrating Simulink models** When a Simulink model containing RTI blocks from a previous release is opened under dSPACE Release 6.1, it is migrated automatically. However, the following warning may appear in the MATLAB Command Window:

Warning: In instantiating linked block '<BlockPath>' for parameter '<BlockParameterName>'.

You can ignore this warning, because it does not affect the functionality of your Simulink model.

**Modifications for Microtec PowerPC C Compiler 3.3** Since dSPACE Release 6.0, the Microtec PowerPC C compiler 3.3 is used. You must note the following points when migrating from earlier releases:

■ Compiler optimization

Optimization Level	Old Option	New Option
Maximum optimization	-O5	-Ot -Oi -Or -Ox
Minimum optimization	-O1 ... -O4	-O
No optimization	-O0	-nO

User-defined compile options of your Simulink model will be migrated automatically. A dialog containing some information about the general build options opens before the migration starts. For further information on the build options, refer to *RTI and RTI-MP Implementation Guide*.

■ Volatile variables

With older compiler versions, it was possible to assign a volatile variable to a pointer of a nonvolatile type. Now the compilation stops with an error message. You must cast the variable before assigning.

- Float32/double

If you assign a Float32 variable to a pointer of a double variable, the compiler creates a warning but does not stop the compilation. Because a double variable is of Float64 data type, this assignment can lead to erroneous results in your application.

---

**New makefiles**



Since dSPACE Release 6.0, the makefiles used with `BldLib.bat` and `Downxxxx` have been updated to new requirements. They were not only renamed but also restructured.

For further information, refer to the *RTLlib Reference* of your processor or controller board.

## Migration to Python 2.5

---

**Migrate Python scripts**

You must note some points when migrating Python scripts from Python 2.2 to Python 2.5. For details, refer to *Migrating Python Scripts from Python 2.2 to Python 2.5* ( *ControlDesk Automation Guide*) or *Migrating Python Scripts from Python 2.2 to Python 2.5* ( *AutomationDesk Guide*).

## Migrating Automotive Simulation Models

---

**Migrating to ASM 1.5**

**From ASM 1.2, ASM 1.3 or ASM 1.4** Projects developed using ASM 1.2, ASM 1.3 or ASM 1.4 are automatically migrated when you open the related Simulink model from MATLAB.

**From ASM 1.0 or ASM 1.1** You can migrate your projects developed using ASM 1.0 or ASM 1.1 by calling a command in the MATLAB Command Window:

```
>> asm_migrate_manual
```

This updates your project including, for example, initializing new parameters and establishing new connections to block inputs or outputs. More detailed information on the changes in the components of ASM is given below.



If the changes in the blocks conflict with the model behavior in the project, you can also replace the new blocks by the old ones, see the **Former versions** subsystems in the relevant ASM component library.

If you parameterize your models using ModelDesk, you must generate new real-time code after model migration.

### Migrating to ASM Vehicle Dynamics Blockset 1.1.3

Some signal labels have been corrected in the following blocks. Signal labels used at former projects are renamed automatically during migration of the model.

**VEHICLE\_MOVEMENT\_INFO\_CAR block** The units in the signal labels at the Acceleration subsystem have been corrected from [mls2] to [radls2]. The signal selection for the relative acceleration of the right rear wheel has been corrected.

**RELATIVE\_POSITION\_FRONT block** The blank characters at the end of the signal labels Pos\_FL\_Wheel and Pos\_FR\_Wheel have been deleted.

**RELATIVE\_POSITION\_REAR block** The blank characters at the end of the signal labels Pos\_RL\_Wheel and Pos\_RR\_Wheel have been deleted.

**SENSOR\_MOTION block** The unit in the signal label at the **Sensor** subsystem has been corrected from [mls] to [radls]. Additionally, the acceleration of gravity is now taken into account.

**WHEEL\_SPEED block** The units in the signal labels of the wheel speeds have been corrected from [Nm] to [radls].

**STEERING block** The unit in the signal label of the generalized forces and torques has been corrected from [Nm] to [N].

# Migrating Applications Created with ConfigurationDesk 1.1.2 or Earlier to ConfigurationDesk 1.3.1

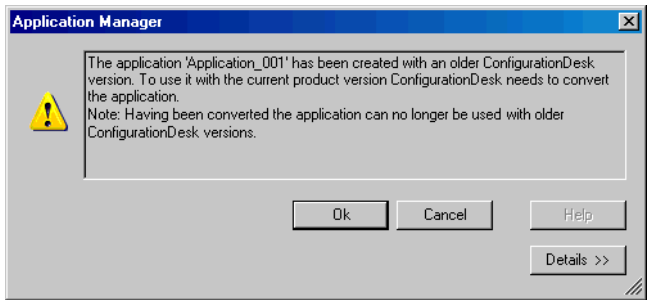
**Objective** Applications created with ConfigurationDesk 1.1.2 or earlier are not compatible with ConfigurationDesk 1.3.1.

**Upward compatibility** ConfigurationDesk can convert these applications to achieve upward compatibility. Downward compatibility is not implemented.

Application Created with ...	Compatible with ConfigurationDesk 1.1.2 or Earlier	Compatible with ConfigurationDesk 1.2 or Later
ConfigurationDesk 1.1.2 or earlier	Yes	Yes, after migration
ConfigurationDesk 1.2 or later	No	Yes

**Migrating an old project/application**

When you open a project that contains an old application, or when you import an old application, ConfigurationDesk prompts you to convert the application:



If you cancel the conversion, the application and its old subfolders are shown in the Project Manager, but disabled. You cannot modify the application. Its hardware topology is not loaded. However, you can restart conversion via **Activate** in the application's context menu.

After an old project has been loaded and converted, you can configure its applications and add new ones.

### Creating application based on old hardware data

When you are creating a new application and the Project Wizard prompts you to add the hardware topology, you cannot use an old HTF file as the data source. The same applies when the Project Wizard prompts you to add the configuration settings. You cannot use an old HCF file as a data source either. It is therefore recommended to migrate only complete projects or applications.



If you only have an old HTF or an old HCF file which is part of a project or an (exported) application, contact dSPACE Support.

### Files affected by migration

An old application (ConfigurationDesk 1.1.2 or earlier) comprises a hardware topology file (HTF file) and in some cases a hardware configuration file (HCF file) depending on whether configuration settings were specified. During migration, ConfigurationDesk converts an HTF file to a new HTF file. An HCF file is copied, and the copy is converted to a CDS file. The project's folder structure is not affected by migration. Thus, all the files are stored in the same subfolders as before.



For ConfigurationDesk 1.1.2 or earlier, the parameters of the user-configurable circuits of a module are stored in HCF files. Since ConfigurationDesk 1.2 these parameters are stored in HTF files. As a result, if an application that does not comprise an HCF file is converted, the parameters of the user-configurable circuits are lost.

Name	Size	Type
HardwareConfiguration.cds	551 KB	CDS File
HardwareConfiguration.hcf	573 KB	HCF File
HardwareTopology.htf	179 KB	HTF File


The screenshot shows a file explorer window with a tree view on the left and a file list on the right. The tree view shows a folder named 'Project\_converted' containing subfolders 'Application\_001', 'Hardware Configuration', 'ProjectPlans', and 'Specifications'. The file list on the right shows three files: 'HardwareConfiguration.cds' (551 KB, CDS File), 'HardwareConfiguration.hcf' (573 KB, HCF File), and 'HardwareTopology.htf' (179 KB, HTF File).

CDL files (application) and CDP files (project) are also modified during migration.

## Migrating to Real-Time Testing 1.3.1


### Switching to Python 2.5

As of Real-Time Testing 1.3, Python 2.5 is uniformly used for scripts running on both the real-time hardware and the host PC. Real-Time Tests previously written with Python 2.4 have to be ported to Python 2.5 to be used with Real-Time Testing 1.3.1. For information on changes between Python 2.4 and Python 2.5, refer to <http://docs.python.org/whatsnew/whatsnew25.html>. The real-time application also has to be built with Real-Time Testing 1.3.1 to integrate the real-time Python 2.5 interpreter.


PC Python scripts for Real-Time Testing (for example, for test management or result evaluation) also have to be migrated from Python 2.2 to Python 2.5. For details, refer to *Migrating Python Scripts from Python 2.2 to Python 2.5* ( *AutomationDesk Guide*).

### Version control

Real-Time Testing checks all components for version compatibility when RTT sequences are created.

If a real-time application is built and real-time testing is enabled (see *How to Prepare the Real-Time Application* ( *Real-Time Testing Guide*)), a Python interpreter is integrated in the real-time platform. The version of the Python interpreter integrated in the real-time application and the version of Python installed on the PC for BCG file generation must be equal, as follows:

- Python 2.4 for Real-Time Testing 1.0 to Real-Time Testing 1.2
- Python 2.5 for Real-Time Testing 1.3 and higher.

If an RTT sequence (PY file) is compatible with the version of the Python interpreter on the real-time platform but its BCG file was generated for another Python version, you must generate its BCG file again. For details, refer to *rttbytecodegenerator Module* ( *Real-Time Testing Library Reference*).

# Migrating from dSPACE Release 6.0 or Earlier

---

**Objective** To migrate from dSPACE Release 6.0 or earlier to dSPACE Release 6.1, you also have to perform the migration steps of the intervening dSPACE Releases. All of the required migration steps can be done with dSPACE Release 6.1 installed.

---

**Example** For example, if you want to migrate from dSPACE Release 5.1 to dSPACE Release 6.1, you have to follow the migration steps described in:

1. New Features and Migration of dSPACE Release 5.2
2. New Features and Migration of dSPACE Release 5.3
3. New Features and Migration of dSPACE Release 5.4
4. New Features and Migration of dSPACE Release 6.0
5. Finally, the migration steps in *Migrating from Previous Releases* on page 19.

---

**Previous release documents** The New Features and Migration documents for previous releases are available via Internet and on the dSPACE DVD:

- Download them from [www.dspace.com/goto?migration](http://www.dspace.com/goto?migration).
- Read them from the dSPACE DVD (see the \Doc folder). The PDF files are called `NewFeaturesAndMigrationxx.pdf`, where xx stands for the release number.

**A**

Automotive Simulation Models  
new features 15

**C**

ConfigurationDesk  
migration to Version 1.3.1 23

**G**

general enhancements and changes 10

**K**

key features 9

**M**

Microtec PowerPC C Compiler 3.3 10  
migrating  
Automotive Simulation Models 21  
from dSPACE Release 6.0 or earlier 26  
implementation software 20  
Real-Time Testing 1.3.1 25  
migration  
to ConfigurationDesk 1.3.1 23

**N**

new features  
Automotive Simulation Models 15  
RTI 11  
RTI Bypass Blockset 12  
RTI CAN MultiMessage Blockset 13  
RTI LIN MultiMessage Blockset 14

**P**

Python 2.5 10

**R**

RTI  
new features 11  
RTI Bypass Blockset  
new features 12  
RTI CAN MultiMessage Blockset  
new features 13  
RTI LIN MultiMessage Blockset  
new features 14

**S**

supported MATLAB releases 7  
supported operating systems 8

**W**

White space support 10  
Windows Vista  
limitations 8

