dSPACE Calibration System

New Features and Migration

CalDesk 1.2 – June 2005
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: http://www.dspace.de
http://www.caldesk.com

General Technical Support: support@dspace.de
+49 5251 1638-941
http://www.dspace.de/goto?support
support.caldesk@dspace.de
+49 5251 1638-363

How to Contact dSPACE Support

dSPACE recommends that you use dSPACE Support Wizard to contact dSPACE support.
It is available

• On your dSPACE CD at \Diag\Tools\dSPACESupportWizard.exe
• Via Start – Programs – dSPACE Tools (after installation of the dSPACE software)
• At http://www.dspace.de/goto?supportwizard
You can always find the latest version of dSPACE Support Wizard here.

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.de/goto?support for software updates and patches.

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Technologiepark 25
33100 Paderborn
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Contents

Warning 5

About This Document 7

New Features of CalDesk 1.2.0 9
  General Features ................................................................. 10
  New Project and Experiment Management Features ................... 11
  New Devices and Device Management Features .......................... 13
  New Measurement and Recording Features ................................ 16
  New Variable Management Features ........................................ 18
  New Instruments and Instrumentation Features ............................ 20
  New Data Set Management Features ........................................ 25
  New Documentation Features ............................................... 26

Migrating to CalDesk 1.2.0 27
  How to Migrate an Experiment for an ECU with DCI-GME1 Created
  with CalDesk 1.0.0 .................................................................. 28
  How to Restore the Display of the Plotter Legend in the German
  CalDesk Version ...................................................................... 30
  How to Migrate an Experiment for an ECU with DCI-GME1 .......... 31
  How to Migrate an Experiment for an ECU with XCP on CAN..... 32
Warning

Using the CalDesk software can have a direct effect on networked electronic systems connected to it.

**Improper or negligent use of CalDesk can result in serious injury and/or damage.**

This danger also exists when CalDesk is used via the automation interface of the CalDesk Automation Module. When this is done, CalDesk is part of the overall calibration system and may not be visible to the end user. It nevertheless produces a direct effect on electronic systems within the overall calibration system.

**Only persons who are qualified to use this software, and who have been informed of the above dangers and possible consequences, are permitted to use this product.**
CalDesk complies with the ASAM-MCD 2MC standard, and therefore provides suitable measures for avoiding dangerous situations, including but not only by specifying limits for the system’s parameters. The user can and should take such measures to minimize the danger involved in influencing the system.
About This Document

This document provides you with a brief overview of the major new features of CalDesk 1.2.0 since CalDesk 1.1.0.

Using the CalDesk software can have a direct effect on networked electronic systems connected to it. Refer to Warning on page 5.

New features and enhancements
For a description of the key features, and a summary of the major enhancements made since CalDesk 1.1.0, refer to New Features of CalDesk 1.2.0 on page 9.

Migration
In addition, this document provides you with information on the changes you may have to perform when you migrate from a previous release to CalDesk 1.2.0. Refer to Migrating to CalDesk 1.2.0 on page 27.
Legend

The following symbols are used in this document.

⚠️ Warnings provide indispensable information to avoid severe damage to your system and/or your work.

💬 Notes provide important information that should be kept in mind.

💡 Tips show alternative and/or easier work methods.

🔍 Examples illustrate work methods and basic concepts, or provide ready-to-use templates.
New Features of CalDesk 1.2.0

CalDesk 1.2.0 comes with the following new features and enhancements since CalDesk 1.1.0:

- General Features on page 10
- New Project and Experiment Management Features on page 11
- New Devices and Device Management Features on page 13
- New Measurement and Recording Features on page 16
- New Variable Management Features on page 18
- New Instruments and Instrumentation Features on page 20
- New Data Set Management Features on page 25
- New Documentation Features on page 26
General Features

CalDesk 1.2.0 provides the following general features:

**Progress bar**
CalDesk 1.2.0 has a progress bar displaying the progress of the current process. The progress bar is used for the following operations:

- Starting CalDesk

- Loading projects and experiments

- Closing projects and experiments
New Project and Experiment Management Features

CalDesk 1.2.0 provides the following enhancements for managing projects and experiments:

Configuring the folder settings

CalDesk 1.2.0 allows you to configure the folder settings for the currently open project, for example, to specify where files are stored and which folders and files are displayed in the Project Manager.

You can also add new folders via the context menu of a project.

For details, refer to Advanced: How to Configure Folder Settings in the CalDesk Calibration Guide.
Default names for projects and experiments

CalDesk 1.2.0 provides automatic naming for projects and experiments. By default, a new project (experiment) is named 'Project_nnn' ('Experiment_nnn'), where 'nnn' stands for a number that is incremented if the name already exists as a file name in the project root directory.

For details, refer to Defining Projects and Experiments in the CalDesk Calibration Guide.
New Features and Device Management Features

CalDesk 1.2.0 provides the following new devices and features for managing devices:

**New CAN Data Output device**
You can use the new CAN Data Output device to define and transmit CAN messages, for example, to stimulate an ECU or trigger external measurement devices. For information on configuring the device and CAN messages to be transmitted by the device, refer to Configuring a CAN Data Output Device in the CalDesk Calibration Guide.

**New IPETRONIK FIM modules device**
The new IPETRONIK FIM modules device allows CalDesk to access FireWire-based FIM measurement modules from IPETRONIK GmbH & Co. KG. For information on configuring the device, refer to How to Configure an IPETRONIK FIM Module in the CalDesk Calibration Guide.

**New dSPACE ECU Flash Programming Tool**
CalDesk 1.2.0 allows you to create HEX, MOT, and S19 files from any data set, and to program them to the ECU flash memory using the new dSPACE ECU Flash Programming Tool. This is a stand-alone utility that supports the DCI-GME1 and DCI-GSI1 and can be integrated into CalDesk. Flash programming via XCP on CAN and CCP is currently under development.

For details and instructions, refer to the ECU Flash Programming document.
New Features of CalDesk 1.2.0

New DCI-GSI1 device features

The DCI-GSI1 device in CalDesk 1.2.0 provides the following new features:

- Support of quick start measurements on ECUs. For details and instructions, refer to Performing Quick Start Measurements in the CalDesk Calibration Guide.
- Offline check and display of allocation status of overlay RAM for calibration parameters.

For details, refer to Calibration Features in the DCI-GSI1 Feature Reference.

New XCP on CAN device features

The XCP on CAN device in CalDesk 1.2.0 provides the following new features:

- Resume mode support for quick start measurements on ECUs. For details and instructions, refer to Performing Quick Start Measurements in the CalDesk Calibration Guide.
- Support of data page freezing. Refer to Activate Data Page Freezing in the CalDesk Calibration Reference.
- Support of checksum DLLs and seed and key DLLs. Refer to Operational Reliability Features in the XCP Feature Reference.
- Support of static and dynamic DAQ lists. Refer to Measurement Features in the XCP Feature Reference.
<table>
<thead>
<tr>
<th><strong>New CCP device features</strong></th>
<th>The CCP device in CalDesk 1.2.0 provides the following new features:</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Resume mode support for quick start measurements on ECUs. For details and instructions, refer to <em>Performing Quick Start Measurements</em> in the <em>CalDesk Calibration Guide</em>.</td>
<td></td>
</tr>
<tr>
<td>■ Support of data page freezing. Refer to <em>Activate Data Page Freezing</em> in the <em>CalDesk Calibration Reference</em>.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>New prototyping device features</strong></th>
<th>The DS1005 device and the MicroAutoBox device in CalDesk 1.2.0 provide the following new features:</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Option to reload variable description files. Refer to <em>Reload Variable Description</em> in the <em>CalDesk Calibration Reference</em>.</td>
<td></td>
</tr>
<tr>
<td>■ Option to refresh the interface connection if there are deadlocks on the connected prototyping system. Refer to <em>Refresh Interface Connection</em> in the <em>CalDesk Calibration Reference</em>.</td>
<td></td>
</tr>
<tr>
<td>■ Variable paths displayed in the Configure Measurement dialog for fast finding of variables for raster selection. Refer to <em>Configure Measurement</em> in the <em>CalDesk Calibration Reference</em>.</td>
<td></td>
</tr>
</tbody>
</table>

| **New CSM ScanMess Modules device feature** | CalDesk supports the xx-SCAN Config configuration tool from CSM GmbH, so you can easily configure a CSM ScanMess Module in CalDesk. Refer to *How to Configure a CSM ScanMess Module* in the *CalDesk Calibration Guide*. |

| **Access to dSPACE CAN interfaces without CalDesk** | You can access dSPACE CAN interfaces (Calibration Hub and DCI-CAN1) in your own applications, using the dSPACE CAN API. For details, refer to the *dSPACE CAN API C Reference*. |
New Measurement and Recording Features

CalDesk 1.2.0 provides the following new features for measuring and recording data:

**Bookmarks**

CalDesk 1.2.0 offers the following new features for handling bookmarks:

- CalDesk 1.2.0 can insert bookmarks into measurements automatically on various events, for example, after data set activation or any kind of trigger event. Automatic bookmarks are visualized by a rhombus, manual bookmarks by a triangle.
- In the measurement data pool, you can open a window that lists the bookmarks in the measurement data files.

- Bookmarks are now visible in the Plotter printout.

For details and instructions, refer to *Advanced Practices: Working with Bookmarks* in the CalDesk Calibration Guide.
New Features of CalDesk 1.2.0

Hardware polling measurement rasters
CalDesk 1.2.0 offers a set of predefined hardware polling rasters for ECUs or prototyping devices. The rasters allow you to perform measurements on ECUs that have no synchronous measurement raster implemented. For details, refer to Measurement Rasters in the CalDesk Calibration Guide.

Automation interface for recorded data files
You can use the Measurement Data API for interfacing recorded data files, for example, to select individual variables and time sections and save the information to a separate file. The Measurement Data API is a COM interface that lets you access recorded data via Python, Microsoft Visual Basic, or C++. The Measurement Data API, however, is not an interface for automating CalDesk. It provides no access to CalDesk’s recording features and CalDesk’s measurement data pool. For details, refer to the CalDesk Measurement Data API Reference.

Utility to split large IDF files into parts
CalDesk 1.2.0 provides a command line utility for splitting large recorded data files (IDF files) into parts and converting them into CSV or MAT files. For details, refer to How to Extract Data from a Recorded Data File in the CalDesk Calibration Guide.
New Variable Management Features

CalDesk 1.2.0 provides the following new features for managing variables:

**Measurement arrays**

CalDesk 1.2.0 provides the measurement array variable type for measurement variables that have the optional MATRIX_DIM or ARRAY_SIZE A2L keyword. Measurement arrays consist of a 1-dimensional array of measurement variables. CalDesk displays variable lists with entries for the measurement array itself and for each array element.

Using a measurement array variable improves the performance of recording complete arrays, for example, in RAM monitoring tasks.

For details, refer to Measurement Configuration and Measurement Data Pool in the CalDesk Calibration Guide.

**Support for ADDRESS_MAPPING keyword**

CalDesk 1.2.0 supports the ADDRESS_MAPPING keyword of A2L files. This keyword is used to map the addresses of the parameters in the ECU flash memory to the corresponding addresses in the ECU RAM.

ECU Image files contain the ECU parameters together with their flash memory addresses. CalDesk therefore uses the flash memory addresses to access ECU parameters. However, there are ECUs whose drivers expect the ECU parameters to be located in the ECU RAM. Mapping between the parameter addresses in the ECU flash memory and the ECU RAM is possible via the ADDRESS_MAPPING keyword. The keyword can be specified for each memory segment. CalDesk supports one address mapping for each memory segment.
CalDesk supports linear address mapping only. It uses an offset value to map the addresses in the ECU flash memory to the corresponding addresses in the ECU RAM.

Address mapping cannot be applied to memory segments you added to the experiment via the Memory Segments command.

CalDesk supports the ADDRESS_MAPPING keyword for ECUs with CCP only.
New Instruments and Instrumentation Features

CalDesk 1.2.0 provides the following new instruments and features for managing instruments:

**New MultiState LED instrument**

A new LED instrument displays status information, for example, the value of status bits, thresholds, and range violations.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Instrument Settings on LED States Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>MultiState LED: SignalGenOutput</td>
<td><img src="image" alt="Instrument Settings on LED States Page" /></td>
</tr>
</tbody>
</table>

For details, refer to *How to Visualize Variable States* in the *CalDesk Calibration Guide*. 
New Plotter features

The Plotter in CalDesk 1.2.0 offers a variety of new features.

- Several signals can be displayed without overlapping at the push of a button. The signals and their y-axes can be vertically “stacked” one above the other. For details, refer to How to Change Plotter Settings in the CalDesk Calibration Guide.

- The Plotter legend provides additional signal information like mean value, standard deviation, and maximum and minimum values over the selected time interval. For details, refer to How to Configure the Plotter Legend in the CalDesk Calibration Guide.
The new scroll bar below the plotting area lets you navigate through the measurement buffer and define the time interval for visualization and signal analysis. For details, refer to *How to Zoom into the Plotter* in the *CalDesk Calibration Guide*.

The Plotter lets you move the intersection points of XY cursors on different signals for data analysis. For details, refer to *XY Cursors Visible / XY Cursor* in the *CalDesk Calibration Reference*.

The new downsampling feature reduces the number of data points to be plotted and allows signals with high sampling rates to be displayed during measurement. The number of data points to be recorded is not affected by this. For details, refer to *How to Enhance the Visualization Performance of the Plotter* in the *CalDesk Calibration Guide*. 
Several curves and maps in one Table Editor

In the Table Editor, multiple curves and maps can be connected to one instrument. This lets you save layout space and compare different maps and curves directly. For details, refer to Basics of Handling the Table Editor in the CalDesk Calibration Guide.

**Table Editor**

<table>
<thead>
<tr>
<th>Data Axis</th>
<th>X Axis</th>
<th>Y Axis</th>
</tr>
</thead>
<tbody>
<tr>
<td>simple2 Cosby 1</td>
<td>simpleColumn M</td>
<td>simpleColumn M</td>
</tr>
</tbody>
</table>

Displaying reference values

You can display reference values in calibration instruments while the working page is active. For details, refer to How to Display Reference Values When Calibrating in the CalDesk Calibration Guide.

Individual colors for variables

You can group variables by defining individual foreground and background colors. For details, refer to Variables Page in the CalDesk Calibration Reference.
Abbreviation rules for variable names

You can define abbreviation rules for variable names that are too long to display in an instrument. For details, refer to Advanced: How to Define Abbreviation Rules for Variable Names in the CalDesk Calibration Guide.

Indication of variables in the measurement signal list

A yellow chain symbol in the variable list and the Configure Measurement dialog indicates that a variable is in the measurement signal list without being visualized on a layout. For details, refer to How to Activate Variables for Measurement and Recording in the CalDesk Calibration Guide.
New Data Set Management Features

CalDesk 1.2.0 provides the following new features for managing data sets:

**Creating an ECU Image file**
You can use a data set to create a new ECU Image file, stored in the HEX, MOT, or S19 format. The created file can be used for programming the flash memory of an ECU. For details, refer to How to Create an ECU Image File in the CalDesk Calibration Guide.

**Easier handling of ECUs with one memory page**
CalDesk 1.2.0 provides more intuitive data set handling for devices with one memory page. For example, inappropriate downloading commands are disabled. Refer to How to Define a New Working or Reference Data Set in the CalDesk Calibration Guide.

**Selection of data sets via checkboxes**
The Data Set Manager offers checkboxes to select data sets for comparison. Refer to How to Compare Data Sets in the CalDesk Calibration Guide.
New Documentation Features

CalDesk 1.2.0 provides the following new documents:

- **Document for dSPACE Calibration and Bypassing Service**
  The *dSPACE Calibration and Bypassing Service Implementation* document provides information on implementing the dSPACE Calibration and Bypassing Service in your ECU code, and on configuring the service.

- **Application note for DCI-GSI1**
  *DCI-GSI1 Setup Application Note* describes initial steps in connecting the DCI-GSI1 (dSPACE Calibration Interface – Generic Serial Interface) to an ECU. It also shows how to configure the DCI-GSI1 and optimize its configuration, and provides information on adapting an A2L file to use the DCI-GSI1 with CalDesk.

  This application note is currently only available as a PDF document. Refer to %DSPACE_ROOT%\Doc\Print\DCIGSI1ApplicationNote.pdf.
Migrating to CalDesk 1.2.0

To migrate to CalDesk 1.2.0 and reuse existing experiments, you may have to carry out additional migration steps. The table below shows the cases in which this is necessary.

<table>
<thead>
<tr>
<th>From CalDesk Version</th>
<th>1.0.0</th>
<th>1.0.1</th>
<th>1.0.2</th>
<th>1.1.0</th>
<th>1.1.1</th>
<th>1.2.0</th>
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<td></td>
<td>Yes</td>
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<tr>
<td>1.0.2</td>
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<td>Yes</td>
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<tr>
<td>1.1.0</td>
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<td></td>
<td></td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>1.1.1</td>
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<td></td>
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<td></td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

1) Refer to:
   • How to Migrate an Experiment for an ECU with DCI-GME1 Created with CalDesk 1.0.0 on page 28
   • How to Restore the Display of the Plotter Legend in the German CalDesk Version on page 30

2) Refer to:
   • How to Migrate an Experiment for an ECU with DCI-GME1 on page 31

3) Refer to:
   • How to Migrate an Experiment for an ECU with XCP on CAN on page 32
How to Migrate an Experiment for an ECU with DCI-GME1 Created with CalDesk 1.0.0

To work with an ECU with DCI-GME1 together with CalDesk 1.0.1 and later, you must adapt the ECU’s A2L file if you created the file for use with CalDesk 1.0.0 or earlier. Then, you must migrate the experiment.

Updating A2L files when using the DCI-GME1 is necessary only if you migrate from CalDesk 1.0.0 to a later CalDesk version.

DCI-GME1: updating A2L files
CalDesk 1.0.1 and later provide a new version of the interface-specific description (IF_DATA) block for the DCI-GME1. To reuse A2L files created for use with CalDesk 1.0.0, you must update them to this new version by adding a number (0x00010100) manually. This number represents the version number of the new IF_DATA block in the DCI-GME1-specific AML file.

Declaration in the AML file
CalDesk 1.0.1 and later install a new dci_gme1.aml file in the %DSPACE_ROOT%/dsdd/a2l/aml folder. The AML file contains the declaration of the interface-specific description (IF_DATA) block for the DCI-GME1.

In some cases you also find a declaration of this block in the A2L file. You must replace this with the new declaration in the AML file.

The version number of the new AML file is 1.1.0 and can be found in the comment area of the file.
Method

To migrate an experiment for an ECU with DCI-GME1 created with CalDesk 1.0.0

1. Remove all dci_gme1.aml files from your file system, except for the new one installed by CalDesk 1.0.1 and later in %DSPACE_ROOT%\dsdd\a2l\aml.

2. Open the A2L file for the ECU with DCI-GME1 in a text editor, and search for TP_BLOB in the IF_DATA block for the DCI-GME1.

3. At the beginning of this TP_BLOB section, add a new line for a version number and type 0x00010100.

   /begin TP_BLOB
   0x00010100
   0x00080000 /* start address of special variables */

4. If the A2L file contains the AML declaration of the IF_DATA block for the DCI-GME1, you must replace its TP_BLOB section with the content of the corresponding TP_BLOB section of the new AML file.

5. From CalDesk’s View menu, select General Properties to open the CalDesk Properties dialog.

6. On the Project page of the dialog, enter a new project root directory.

For details, refer to How to Specify a Project Root Directory in the CalDesk Calibration Guide.
7 Define a new project and a new experiment, using the new project root directory.

The experiment must have the same name as the one you want to migrate. Use the modified A2L file in the experiment.

CalDesk creates a new Data Dictionary file in the project folder. It is named: <CalDeskProjectName>_<ModuleNameInA2LFile>.DD.

8 Copy the new Data Dictionary file to the project folder of the experiment that you want to migrate.

The old Data Dictionary file is overwritten.

Result
You have updated an A2L file for use with the DCI-GME1. Then, you have migrated the experiment for use with CalDesk 1.0.1 or later.

For details on creating new projects and experiments, refer to Managing Calibration Projects and Experiments in the CalDesk Calibration Guide.

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How to Restore the Display of the Plotter Legend in the German CalDesk Version

If you open an experiment saved with CalDesk 1.0.0, the columns of the Plotter legend may be displayed incorrectly in the German versions of CalDesk 1.0.1 and later.

Restoring the Plotter legend display is necessary only if you migrate from CalDesk 1.0.0 to a later CalDesk version.

Workaround
To repair an incorrect display of the Plotter legend, you have to open the experiment in an English version of CalDesk 1.0.1 or later, and save it again. You have to perform the following steps.

Method
To restore the Plotter legend in the German CalDesk version

1 Start CalDesk.
2 From the View menu, choose General Properties to open the CalDesk Properties dialog.
Select the Language page.

In the Language for the user interface drop-down list, select English.

Close CalDesk and open it again. CalDesk now starts with the English user interface.

Open the experiment you want to update.

From the File menu, choose Save Project + Experiment.

From the View menu, choose General Properties.

Select the Language page.

In the Language for the user interface drop-down list, choose Deutsch.

Close CalDesk and open it again.

Result

CalDesk opens with the German user interface. The columns of the Plotter legend are now displayed correctly.

How to Migrate an Experiment for an ECU with DCI-GME1

To reuse an experiment for an ECU with DCI-GME1 with CalDesk 1.2 or later, you must migrate the experiment if you created it for use with CalDesk 1.0.2 or earlier.
## Migrating to CalDesk 1.2.0

### Method

To migrate an experiment for an ECU with DCI-GME1

1. Open the experiment in CalDesk 1.1.x.
2. Save the experiment in CalDesk 1.1.x, then close it.
3. Open the experiment in CalDesk 1.2.0.
4. From the Devices menu, select Start Online Calibration to start online calibration, or press Ctrl+F7, or click .
5. Save the experiment in CalDesk 1.2.0.

### Result

You have migrated an experiment for an ECU with DCI-GME1 for use with CalDesk 1.2.0 or later.

### How to Migrate an Experiment for an ECU with XCP on CAN

To work with an ECU with XCP on CAN together with CalDesk 1.2, you must adapt the ECU's A2L file if you created it for use with CalDesk 1.1.1 or earlier, and if the A2L file contains no memory page information.

#### CalDesk 1.2: Enhanced memory page handling

**Up to CalDesk 1.2 ...**

Up to CalDesk 1.2, CalDesk's memory page handling for ECUs with XCP on CAN was adapted only to ECUs with two physical memory pages. On the host PC, CalDesk automatically created a working page and a reference page, even for ECUs with only one physical memory page.

**CalDesk 1.2 and later ...**

CalDesk 1.2 and later provide enhanced memory page handling for ECUs with XCP on CAN that is adapted to the ECU-specific memory page concept. For example, for ECUs with only one physical memory page (in a read/write area), CalDesk creates a working page only.

#### Page information required in A2L file

To support enhanced memory page handling, CalDesk 1.2 and later require memory page information, such as the number of pages, in the ECU's A2L file. The information must be specified within the A2L file's MEMORY_SEGMENT definitions of DATA type. It must be consistent with the configuration of the XCP service that is implemented in the ECU code.
A2L files based on old CalDemo.a2l files

If you used the CalDemo.a2l file provided by CalDesk 1.1.1 or earlier as a template A2L file for your specific ECU with XCP on CAN, you also have to adapt the A2L file by adding the required information to the A2L file manually.

To migrate an experiment that you created or saved the last time with CalDesk 1.1.x requires no adaptation of the A2L file as long as you do not add another A2L file to the XCP on CAN device or reload the file.

The instructions below describe how to specify two ECU memory pages: a read/write working page and a read-only reference page.

Method

To migrate an experiment for an ECU with XCP on CAN

1 If you created or saved the experiment the last time with CalDesk 1.0.2 or earlier, open it in CalDesk 1.1.x, save and close it.

2 Open the A2L file in a text editor.

3 Search for the first MEMORY_SEGMENT definition of DATA type.

The definition may look like this:

```
/begin MEMORY_SEGMENT FlashMemory
  "Description of the Memory Segment"
  DATA
  FLASH
  EXTERN
  0x3a00d000
  0x7E4
  -1 -1 -1 -1 -1
/end MEMORY_SEGMENT
```

4 Add the following text before the /end MEMORY_SEGMENT declaration:

```
/begin IF_DATA XCP
/begin SEGMENT
  0 /* segment logical number */
  0x02 /* number of pages */
  0x00 /* address extension */
  0x00 /* compression method */
  0x00 /* encryption method */

  /* reference page */
  /begin PAGE
    0x00 /* page number */
@end PAGE
/end SEGMENT
@end IF_DATA XCP
```

*/

/*end MEMORY_SEGMENT
*/
The keywords you use to describe memory page properties depend on the configuration of the XCP service in the ECU code.

5 Repeat steps 3 and 4 for all MEMORY_SEGMENT definitions of DATA type in the A2L file. Increment the segment logical number for each MEMORY_SEGMENT definition. The segment logical number entries for the following two MEMORY_SEGMENT definitions therefore must be:

   0x01 /* segment logical number */

and

   0x02 /* segment logical number */

6 Save the A2L file and close it.

7 Open the experiment in CalDesk 1.2.

8 From the context menu of the XCP on CAN device, select Add Variable Description.

9 Specify the updated A2L file as the device’s variable description.

10 Save the experiment.

Result You added memory page information to an A2L file for an ECU with XCP on CAN. The information specifies two memory pages: a working page (with number 0x01) in a read/write memory area and a reference page (with number 0x00) in a read-only area. The XCP service and the ECU code always access the same memory page at a time. You use the updated A2L file as the device’s variable description in CalDesk 1.2.
Consistency check  If the XCP service in the ECU code supports the relevant optional XCP commands, CalDesk checks whether the A2L file’s memory page information and the information read from the XCP service are consistent. Consistency is checked the next time the device changes to the ‘connected’ state. If CalDesk detects inconsistencies, you may need to adapt the information you added to the A2L file according to the error message provided by CalDesk.