



**User Manual**  
**CoDeSys Service Tool CST**

**Document Version 3.0**

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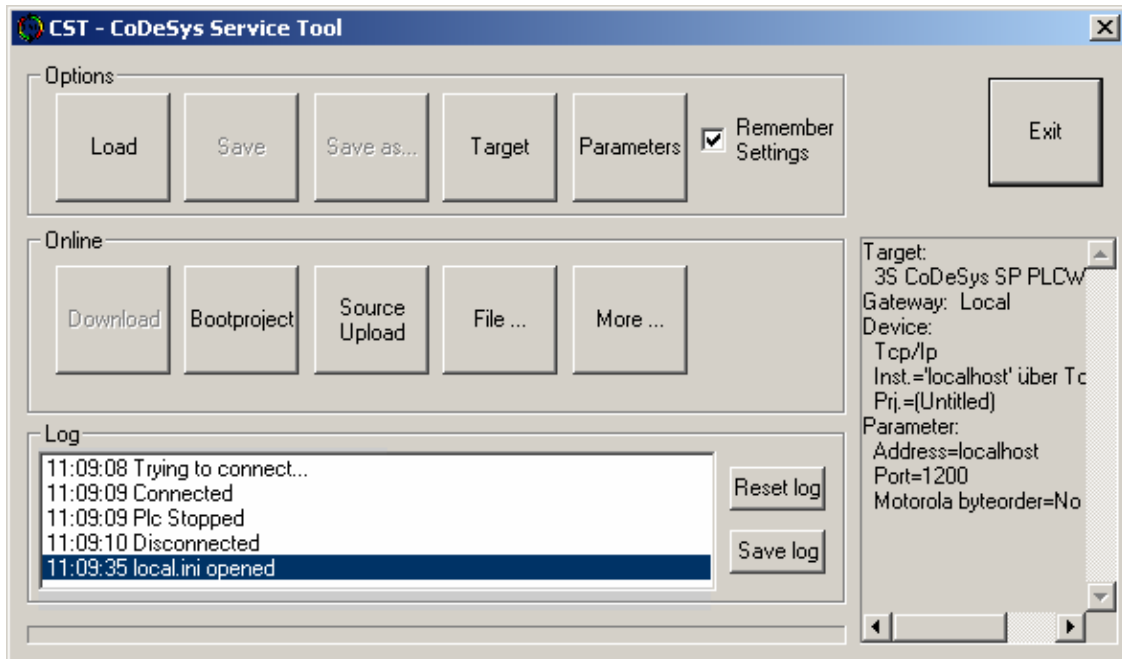
## 1 Overview

The CoDeSys Service Tool CST can be used to perform actions concerning the application program on a defined controller (target), such as program and file downloads resp. uploads, resets and boot project creation. Thus certain options known from the Online Menu of the CoDeSys Programming System are available without having opened the programming system.

The CST can also be controlled via command line options, see Chapter 3.

## 2 Usage of the CST dialog

The CST starts with the following dialog:



There are options for setting up the connection to the target controller, Online functions concerning the application program and other files on the controller and the Log window for watching the performed actions.

The Options section contains buttons for configuring the connection with the controller:

- Load:** Loads from a CST-ini-file (\*.ini) the settings of the Options field, which had been stored there previously via the Save-function.
- Save: / Save as.....:** The currently set parameters of the Options field can be stored in a ini-file. With 'Save' automatically the last used ini-file-name will be reused. With 'Save as' you can define the ini-file-name. So you can create ini-files for various targets and reload as required (see below 'Load').
- Target:** Opens the 'Target' dialog where you can set the desired target (controller) and connection parameters.  
**Targets:** Select the desired target system. It will be displayed in the text field on the right side of the main dialog together with the currently set communication parameters.
- Timeout:** This time (milliseconds) should be used to establish a connection to the controller. After timeout is reached, the trials will be stopped. The result of the trials will be displayed in the log window.
- Download-Timeout (ms):** This time (milliseconds) should be used to perform a download (see below, Online section) to the controller. The result of the trials will be displayed in the log window.
- Tries:** Number of further tries to establish a connection to the controller after the Timeout (see above) has been reached.
- Parameter:** Opens the 'Parameters' dialog to set the gateway parameters for the currently defined target (see above, 'Target'). The dialog corresponds to the 'Communication Parameters' dialog used in the programming system. See the CoDeSys User Manual for a description of how to use this dialog.
- Remember Settings:** If this option is activated, CST will store the current configuration settings of Options field. So they will be available when the program will be restarted later.

The Online section contains buttons for the following actions on the connected controller:

**Download:** Downloads a binary version (\*.bin) of a program that was created in CoDeSys to the controller. Existing programs on the controller will be deleted!

As from CoDeSys V2.3.6.1: If a file <projectname>vis.txt (describes the paths of the Web- resp. Target-Visualization files), is found in the same directory as \*.bin, and if these visualization files are also available in this directory (only file names are evaluated, not the paths!), they will be loaded to the controller.

**Regard:** The download function is available for the following targets:

- Motorola 68k
- Infineon C16x

**Bootproject:** This feature can place a boot project on the controller. The dialog for Opening a file will be opened where a boot project file (\*.prg) – previously created by the CoDeSys Programming System - can be selected.

Regard:

1. The controller must run
2. The .chk-file must also be available in the folder from which the boot project file is fetched, and automatically will be copied also (not necessary for Infineon C16x).
3. If there is already a boot project on the controller, it will be overwritten!

The result of the action will be displayed in the Log window.

If option  Download SDB to Target is activated in the File-Open dialog, automatically the SDB symbol file also will be downloaded to the controller.

In each case, even if this function is not activated, the SDB-file will be loaded to the Gateway. If this fails, a message will be displayed in the Log window.

As from CoDeSys V2.3.6.1: If a file <projectname>vis.txt (describes the paths of the Web- resp. Target-Visualization files), is found in the same directory as \*.prg, and if these visualization files are also available in this directory (only file names are evaluated, not the paths!), they will be transferred at a download (use 'Project' 'Rebuild All') to the controller.

**Regard:** The boot project function is supported for the following targets:

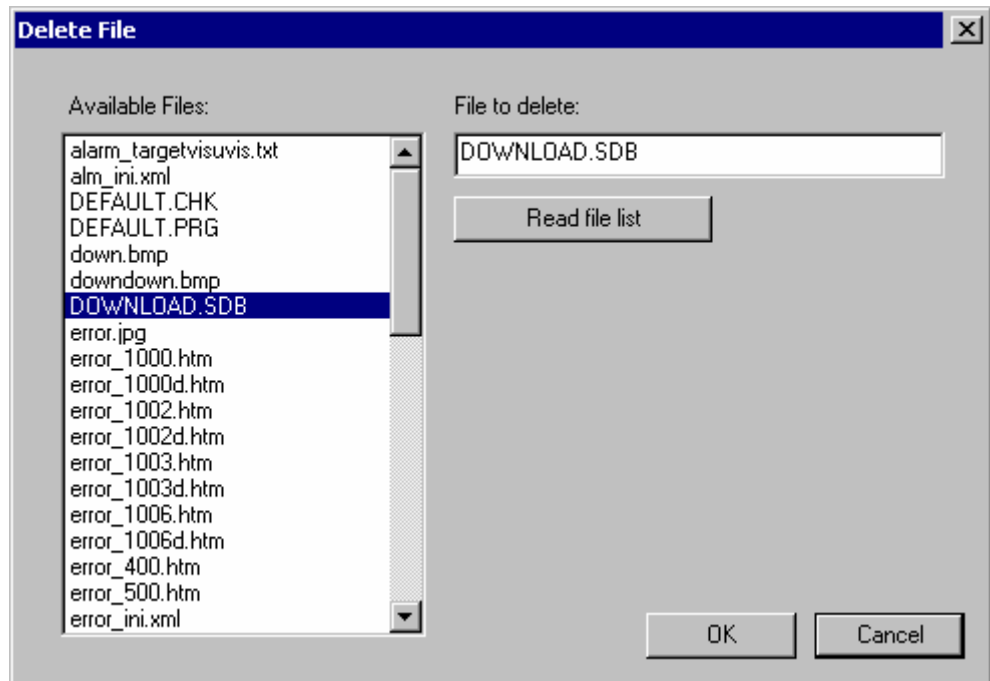
- Intel StrongARM
- PowerPC
- MIPS III
- Infineon C16x (before creating the boot project the binary file (\*.bin) must be downloaded; via project option "Create binary file of application".)
- Hitachi SH
- Hitachi H8S
- Intel 386 compatible
- Intel 186 compatible

**Source Upload:** Uploads the source code, that has been downloaded before with CoDeSys, to a specified folder. A dialog will open, where this folder is to be selected. If this folder is not empty, at upload a dialog will open, where you will be asked whether the existing files really should be overwritten. The uploaded file will automatically be named "upload.pro".

**File...:** **Upload:** Uploads a file from the controller. The dialog for saving a file will be opened. Enter the name of the file you want to get from the controller in the File name field and browse for the folder where this file should be stored.

**Download:** Downloads a file to the controller. You get the dialog for opening a file to select the desired file.

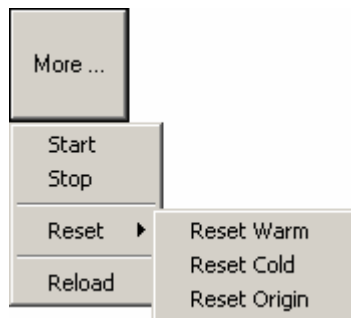
**Delete:** Deletes a file from the controller. The dialog Delete File gets opened for this purpose:



Via button **Read file list** under **Available Files** all files will be listed which are currently available on the controller. The file to be deleted must be selected in the list in order to get it displayed in field **File to delete**. By **OK** this file will be deleted.

**More....:**

Opens a window with the following options:



**Start:**

Starts the application program on the controller.

**Stop:**

Stops the application program.

**Reset:**

Resets the controller. See a description of the reset types in the CoDeSys User Documentation.

**Reload:**

Reloads the boot

project.

In the Log window the performed actions will be listed, each in a line preceded by a timestamp.

**Reset Log:** The Log window will be emptied.

**Save Log:** The content of the Log window can be stored in a file (\*.log). The default dialog for saving a file will open where you can specify an appropriate file.

### 3 CST Command Line Functions

CST can also be controlled using the command line. If command line arguments are passed to the CST.exe file, the dialog window will not open. The program executes the given tasks and returns a result value as exit code.

The following options are supported:

-pf [PATH]	The desired CST-ini-file *.ini for defining the connection to the controller, specified by [PATH], will be opened. <b>This option must be set for each action.</b>
-sta	Start
-sto	Stop
-rw	Reset Warm
-rc	Reset Cold
-ro	Reset Origin
-rl	Reload
-d [PATH]	Downloads the binary file specified by [PATH]. <b>Attention:</b> Only possible for "Motorola 68k" and "Infineon C16x".
-b [PATH]	Loads the boot project specified by [PATH] to the controller. ( [PATH] is not needed for "Infineon C16x", because there the bin-file must be already available on the controller)
-dv [PATH]	Supported as from CoDeSys V2.3.6.1: [PATH] defines the path of <projectname>.bin or <projectname>.prg. If a file <projectname>.vis.txt is found there, and if the Web- resp. Target-Visualization files defined in this text file also are available in the same directory, those visualization files will be transferred at a download (use 'Project' 'Rebuild All') to the controller. (see chapter 2, options 'Download' resp. 'Bootproject')
-bs [PATH]	Loads the boot project specified by [PATH] and the SDB-file to the controller. (not supported for "Infineon C16x")
-su [PATH]	Source Upload to the folder specified by [PATH].
-fu [PATH]	File Upload of the file specified by [PATH].
-fd [PATH]	Download of the file specified by [PATH].

If a file path includes spaces, the whole path has to be in quotation marks.

The given commands are executed within one connection period (with the controller) in the same sequence as they are positioned in the command line. For example you can download a bin file, create a boot project, reset, and start the controller in the given sequence with the following line:

```
"C:\Programs\3S Software\CoDeSys Service Tool\CST.exe" -pf d:\proj\sp.ini -d
c:\xy.bin -b "d:\3S projects\abc.prg" -rw -sta
```

```
"C:\Programs\3S Software\CoDeSys Service Tool\CST.exe" -pf d:\proj\sp.ini -d
c:\xy.bin -b "d:\3S projects\abc.prg" -dv "d:\3S projects\abc.prg" -rw -sta
```

**Return Values:**

If all given actions have succeeded, the program exits with the exit code 0. If an error occurs during the execution, the execution will be aborted and the appropriate exit code will be returned:

<b>Return Value</b>	<b>Description</b>
1	The configuration file was not found. No actions were executed.
2	The action "start" failed.
3	The action "stop" failed.
4	The action "Reset Warm" failed.
5	The action "Reset Cold" failed.
6	The action "Reset Origin" failed.
7	The action "Download" failed.
8	The action "Bootproject" failed.
9	The action "Source Upload" failed.
10	No Source was found on the controller. Upload failed.
11	The action "File Upload" failed.
12	The action "File Download" failed.
13	The SDB-File could not be found
14	The download of the SDB-File failed
15	The action "Reload" failed.
100	Unknown Error.
101	Unknown Target.
102	The File could not be found.
103	The connection to the controller could not be established.
104	The selected target does not support this feature.



**Change History**

<b>Version</b>	<b>Description</b>	<b>Editor</b>	<b>Date</b>
1.0	Issued	TP	02.08.2004
2.0	Rework: Description extended; new template	MN	23.06.2005
2.0	Review: Chap.2: „Tries“ instead of „Number of Tries“, Chap.3, -b and -bs: Bootproject is not created but loaded; Quotation marks in example not correct.	SM	30.08.2005
2.0	Rework according to Review, Release	MN	31.08.2005
2.1	Rework chapters 2 and 3 (#5961, with CoDeSys V2.3.6.1) according to released German document version; Release	TP, MN	28.02.2006
2.2	#6026: Chap. 2: Loading Visu-files by Bootproject-Option Dateien only possible after ‚Project‘ ‚Rebuild All‘ (download).	MN	21.08.2006
2.2	Review according to reviewed German Version, Release (with CoDeSys V2.3.7.0)	MN	28.08.2006
2.3	#6110 (Bootproject with 68K and C16x), #7906 (File functions), Download-Timeout; with CoDeSys V2.3.8.0	MN	07.12.2007
3.0	Release after rework according to reviewed German version (with CoDeSys V2.3.9.0)	MN	13.12.2007