

TargetLink

Tool and Utility Reference

For TargetLink 5.1

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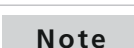



About This Reference

Contents

This reference provides information on the tools and utilities available in TargetLink®.

Symbols

dSPACE user documentation uses the following symbols:

Symbol	Description
	Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
	Indicates a hazardous situation that, if not avoided, could result in death or serious injury.
	Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.
	Indicates a hazard that, if not avoided, could result in property damage.
	Indicates important information that you should take into account to avoid malfunctions.
	Indicates tips that can make your work easier.
	Indicates a link that refers to a definition in the glossary, which you can find at the end of the document unless stated otherwise.
	Precedes the document title in a link that refers to another document.

Naming conventions

dSPACE user documentation uses the following naming conventions:

%name% Names enclosed in percent signs refer to environment variables for file and path names.

< > Angle brackets contain wildcard characters or placeholders for variable file and path names, etc.

Special folders

Some software products use the following special folders:

Common Program Data folder A standard folder for application-specific configuration data that is used by all users.

%PROGRAMDATA%\dSPACE\<InstallationGUID>\<ProductName>

or

%PROGRAMDATA%\dSPACE\<ProductName>\<VersionNumber>

Documents folder A standard folder for user-specific documents.

%USERPROFILE%\Documents\dSPACE\<ProductName>\<VersionNumber>

Local Program Data folder A standard folder for application-specific configuration data that is used by the current, non-roaming user.

%USERPROFILE%\AppData\Local\dSPACE\<InstallationGUID>\<ProductName>

Accessing dSPACE Help and PDF Files


After you install and decrypt dSPACE software, the documentation for the installed products is available in dSPACE Help and as Adobe® PDF files.

dSPACE Help (local) You can open your local installation of dSPACE Help:

- On its home page via Windows Start Menu
- On specific content using context-sensitive help via **F1**

dSPACE Help (Web) You can access the Web version of dSPACE Help at www.dspace.com.

To access the Web version, you must have a *mydSPACE* account.

PDF files You can access PDF files via the  icon in dSPACE Help. The PDF opens on the first page.

TargetLink Tools

About TargetLink Tools

TargetLink tools generally have their own graphical user interface and provide you with a convenient way for performing specific tasks. You, as the user, interact with the graphical user interface. You can access the TargetLink tools via the toolbar or Tools page of the TargetLink Main Dialog or the relevant block dialog pages. Some tools can also be accessed via API functions.

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Autoscaling Tool

About Autoscaling Tool

The Autoscaling Tool lets you calculate worst-case ranges and scaling parameters for output, state and parameter variables of TargetLink blocks.

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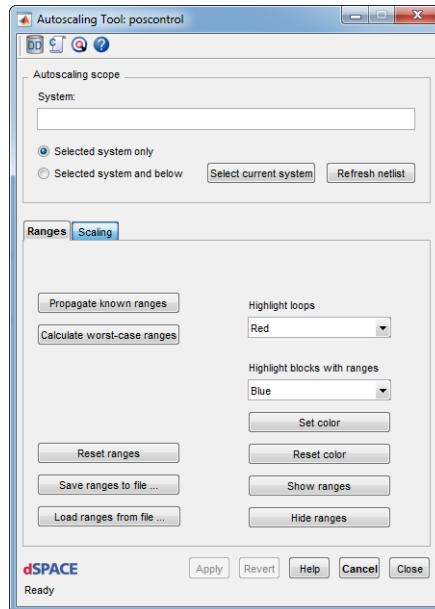
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Information in other sections

[Introduction to Scaling and the Autoscaling Tool \(📖 TargetLink Preparation and Simulation Guide\)](#)

Autoscaling Tool Description

GUI



Purpose

To calculate worst-case ranges and scaling parameters for output, state and parameter variables of TargetLink blocks.

Access

You can access the Autoscaling tool as follows:

Button	Autoscaling button on the Tools page of the TargetLink Main Dialog block
API function	tl_autoscaling_dlg in the MATLAB Command Window

Description

The Autoscaling tool calculates data type, LSB, and offset for the variables of blocks of a specific model part. The following input data is required:

- A variable's range, to be determined via:
 - Simulation, or
 - Worst-case range calculation
- Scaling parameters known in advance (optional)

The Autoscaling tool calculates the scaling parameters of a block with respect to the scaling parameters of neighboring blocks.

In addition, the Autoscaling tool can determine a variable's range according to a worst-case calculation. Blocks with user-defined range limits are used as data points to calculate the worst-case ranges of neighboring blocks.

Scope Settings

Purpose	To specify the blocks to be calculated or scaled.
Autoscaling Scope	<p>System Lets you enter and indicates the name of the subsystem that is to be processed.</p> <p>Selected System Only Indicates that no underlying subsystems and blocks are considered.</p> <p>Selected System and Below Indicates that underlying subsystems and blocks are considered, too.</p> <p>Select Current System Copies the name of the subsystem clicked in the model into the Subsystem edit field.</p> <p>Refresh Netlist Generates a netlist of the related TargetLink subsystem. A netlist is a specific representation of the related TargetLink subsystem which is compliant with the Autoscaling tool.</p>

Status Bar

Purpose	To display the number of processed blocks.
Status data	<p><x> blocks in scope Indicates the number of blocks that will be processed by the Autoscaling tool.</p> <p><x> with range Indicates the number of blocks whose range data is already known (constrained limits or calculated worst-case limits).</p> <p><x> of <y> scaled Indicates the number of blocks that have been scaled so far and the number of blocks to be scaled at all.</p>

Ranges Page

Purpose	To propagate known ranges and calculate worst-case ranges.
Settings	Propagate Known Ranges Propagates known range limits to neighboring blocks, as far as possible – within the specified scope.

Calculate Worst-Case Ranges Calculates and propagates worst-case ranges for all supported blocks within the specified scope.

Reset Ranges Clears all worst-case range data stored temporarily in the Autoscaling Data Structure.

Save Ranges to File Lets you save worst-case range data to file if a netlist is available. If you do not save worst-case range data to file, it is stored only temporarily in the *Autoscaling Data Structure*.

Load Ranges from File Lets you load worst-case range data from file if a netlist is available.

Highlight Loops Lets you choose the color used to highlight blocks that make up a loop.

Highlight blocks with ranges Lets you choose the color used to highlight blocks already processed (worst-case range calculation).

Set Color Highlights the blocks according to the current color settings.

Reset Color Stops the highlighting of blocks.

Show Ranges. Shows the results of the worst-case range calculation beneath the icons of the blocks in the block diagram. The range limits are automatically appended to any value set by the user in the Attribute formats string field (MATLAB R12.1) or on the Block Annotation pane (MATLAB R13 or later) of the Block Properties dialog.

Hide Ranges Removes the results of the worst-case range calculation from the block diagram. That is, the range string that is appended to the Attribute formats string field (MATLAB R12.1) or to the edit field of the Block Annotation pane (MATLAB R13 or later) of the Block Properties dialog is removed.

Scaling Page

Purpose	To propagate known scaling parameters and autoscale output, state or parameter variables.
Settings	<p>Inherit Scaling Inherits known scaling parameters to neighboring blocks, as far as possible – within the specified autoscaling scope.</p> <p>Start Autoscaling Performs the following actions:</p> <ol style="list-style-type: none"> 1. Inherits known scaling parameters to neighboring blocks, as far as possible – within the specified autoscaling scope.

2. Scales, if specified, outputs, states, and parameters within the selected subsystem.

Default variable width Defines both the default and maximum variable width.

Scale Outputs Indicates that the Autoscaling tool scales all outputs – within the specified scope.

Scale Data Dictionary variables Indicates that the Autoscaling tool scales all Data Dictionary variables – within the specified scope. The Data Dictionary is updated accordingly

Note

The Autoscaling tool can scale Data Dictionary variables only if these variables have a LocalScaling object.

Scale States Indicates that the Autoscaling tool scales all states – within the specified scope.

Scale Parameters Indicates that the Autoscaling tool scales all parameters within the specified scope.

Select Data type Sign Indicates that the data type chosen for a parameter contains a sign only if the current value of the parameter is negative.

Minimize Wordsize Indicates that the word length of the data type is adapted to the current value of a parameter.

Use Simulation Ranges Indicates that range data identified via simulation is used as basis for the autoscaling routine.

Use Worst-Case Ranges Indicates that range data identified via worst-case calculation is used as basis for the autoscaling routine (default option).

Reset Scaling Clears all scaling data stored temporarily in the Autoscaling Data Structure.

Highlight scaled blocks Lets you choose the color used to highlight blocks already autoscaled.

Set Color Highlights the blocks according to the current color settings.

Reset Color Stops the highlighting of blocks.

Hide Scaling Hides the autoscaling results.

Show Scaling Shows the autoscaling results.

Message Handling

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Basics and Instructions

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How to Open the Message Browser

Objective

The Message Browser can easily be accessed via TargetLink's Main Dialog or the MATLAB Command Window.

Method

To open the Message Browser

- 1 Click  in the TargetLink Main Dialog.
– Or –

Type `ds_msgd1g` in the MATLAB Command Window.

Tip

The Message Browser appears automatically after a TargetLink tool or utility, such as the Code Generator, has finished (if there are any messages to be displayed).

Related topics

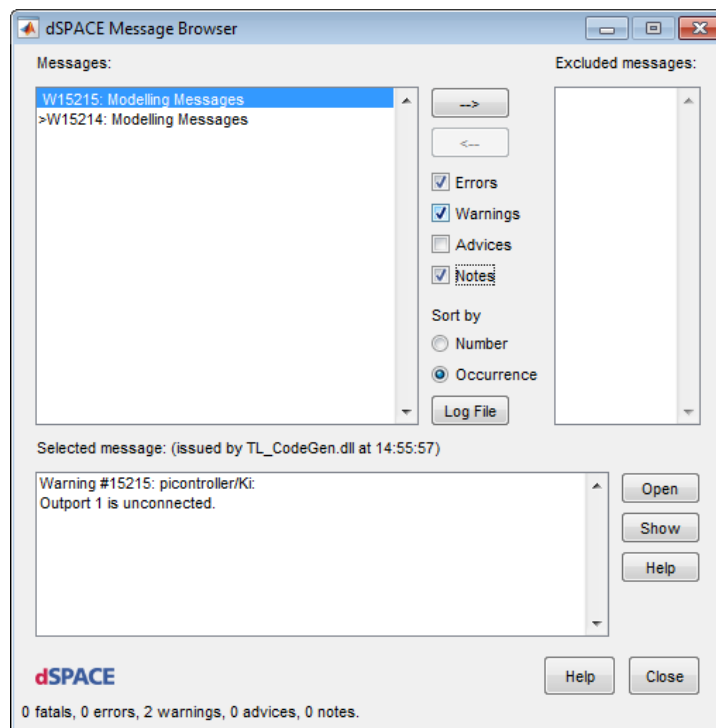
References

Handling Errors and Messages ([TargetLink API Reference](#))
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Display of Messages in the Message Browser

Introduction

The Messages list displays a list of all messages created during model conversion, simulation, autoscaling, upgrading or code generation.



Note

In processor-in-the-loop (PIL) simulation mode, the Messages list displays the messages saved in the target's message buffer. The number of saved messages is limited. If more messages occur than can be saved, an error message dialog opens with the number of messages that could not be displayed. You have to clear the errors corresponding to the displayed messages and rerun the simulation. If the messages displayed the first time do not occur again, the Messages list can display others that the message buffer could not save before.

By default, at most three messages are shown. This setting can be changed by changing `TL_MAX_ERROR_TRACE_EVENT` in the file `<TL_InstRoot>\Matlab\TL\ApplicationBuilder\Generic\tlseh_e t.h`

If you select a message, a detailed description is displayed in the Selected message frame and the angle bracket in front of the message disappears. You can save messages by saving them to a log file.

The Messages list allows you to:

- Sort the messages according to their message numbers or occurrence
- Exclude message groups or types of messages from being displayed

Related topics**References**

Handling Errors and Messages (📖 TargetLink API Reference)
 Message Browser Description..... 28

How to Get Online Help

Objective

You can access associated help about the Message Browser directly from its menu.

Method**To get online help about the Message Browser**

- 1 Click Help on the left of the Close button.

Related topics**References**

Handling Errors and Messages (📖 TargetLink API Reference)

How to Sort the Messages

Objective

You can sort the messages in the Messages list in two different ways:

- According to their message number
- According to their occurrence

Method

To sort the messages

- 1 To sort the list by message number, select **Sort by number**.
– Or –
To sort the list by occurrence, select **Sort by occurrence**.

Related topics

References

[Handling Errors and Messages](#) (📖 TargetLink API Reference)

How to Exclude a Message Group

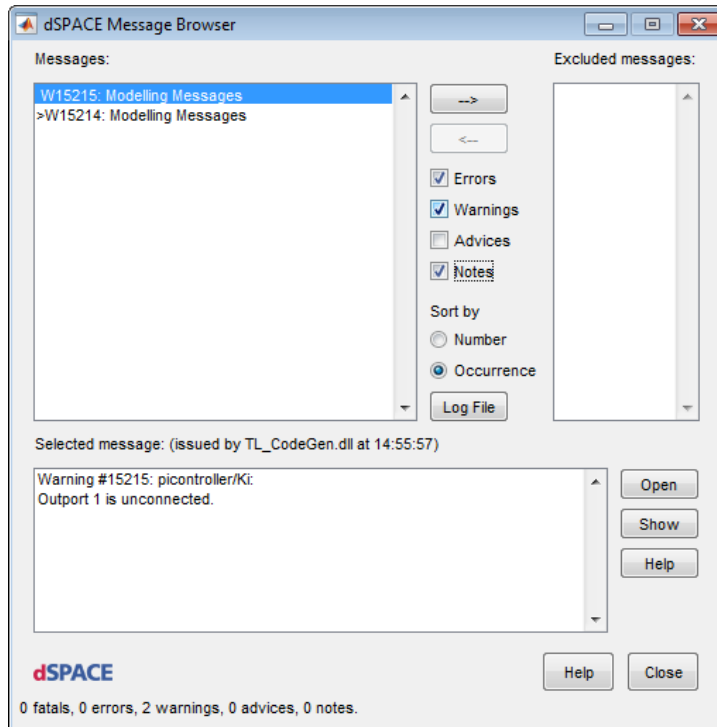
Objective

A message group contains messages with the same message number.

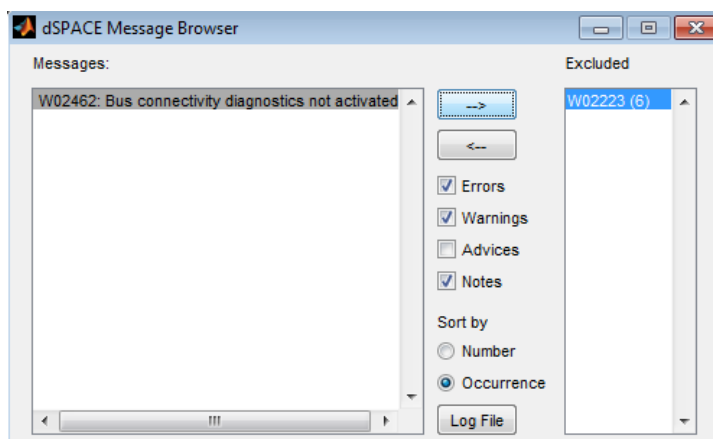
With the Message Browser, it is possible to exclude message groups from being displayed in the Messages list.

Method**To exclude a message group**

- 1 Click the right arrow button to exclude a selected message group.

**Result**

The numbers of excluded messages, if any, are shown in the Excluded list.

**Related topics****References**

[Handling Errors and Messages](#) (📖 TargetLink API Reference)

How to Reinclude a Message Group

Objective You can reinclude message groups which have been excluded from being displayed in the Messages list.

Method **To reinclude a message group**
1 Click the left arrow button to reinclude a selected message group.

Related topics

References

[Handling Errors and Messages](#) (📖 TargetLink API Reference)

How to Select the Type of Message to be Displayed

Objective You can specify the message types which you want to be displayed in the Messages list.

Method **To select the type of messages to be displayed**
1 On the right of the Messages list, select the checkboxes of the message types to be displayed and clear the checkboxes of the message types to be excluded.
 No message can be completely hidden. Messages are always displayed either in the Messages or in the Excluded list. If you reinclude a message, the corresponding checkbox is selected automatically.

Note

After code generation, the Message Browser appears if there are any messages to be displayed. If there are only warnings or notes and all of them are excluded, the Message Browser does not appear. If there are any error or fatal messages, the Message Browser will appear even if you excluded the messages concerned.

Related topics

References

[Handling Errors and Messages](#) (📖 TargetLink API Reference)

How to Save Messages to a Log File

Objective You can save messages from the list to a log file. You have to save them one after the other.

Method

To save messages to a log file

- 1 In the Messages list, select the message you want to save.
- 2 Click Log File.
The message is saved and the current code editor opens, displaying all messages.
- 3 Repeat steps 1 and 2 for each message you want to save.

Result The messages are saved to a log file.

Related topics

References

[Handling Errors and Messages \(TargetLink API Reference\)](#)

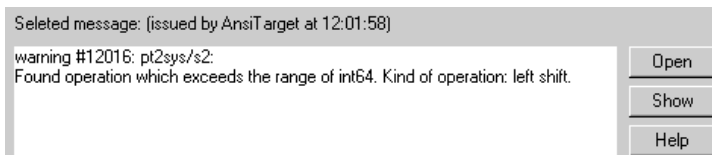
How to Investigate Errors

Objective The Message Browser offers you direct access from a message to the TargetLink or Stateflow object that caused the error, and provides an interface to online help documents with more detailed descriptions of the error messages.

Method

To investigate an error

- 1 Select a message in the Messages list.
The Selected message frame provides a more detailed description of the corresponding error.



If the error is associated with an object which can be displayed or edited, the Open button is enabled.

Note

The following objects can be displayed or edited:

- Simulink blocks
- Stateflow objects
- TargetLink Data Dictionary objects

- 2 Click **Open** to view the corresponding object's dialog.
– Or –
Click **Show** to display and highlight the object.
- 3 Click **Help** on the right of the **Selected message** frame to open dSPACE Help and get further information on the selected message.

Related topics

References

[Handling Errors and Messages \(TargetLink API Reference\)](#)

Reference Information

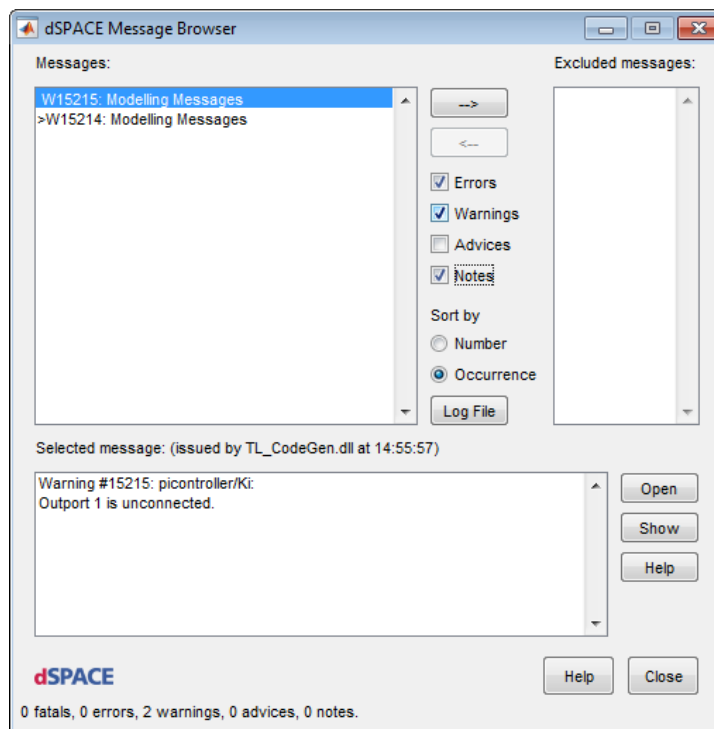
Where to go from here

Information in this section

Message Browser Description.....	28
Dialog Settings.....	29

Message Browser Description

GUI



Purpose

To review TargetLink's (fatal, error, advice, warning and note) messages and if necessary resolve the problems.

Access

You can access this tool as follows:

Automatically	The Message Browser appears automatically after a TargetLink tool or utility, such as the Code Generator, has finished (if there are any messages to be displayed).
Button	Message Browser button in the TargetLink Main Dialog toolbar
API function	ds_msgd1g in M scripts or the MATLAB Command Window

Description

With the Message Browser you can view the messages, get further information about them and click directly to the object (block or Stateflow object) which caused the message.

For a detailed description of the **ds_msgd1g** API function, refer to **ds_msgd1g** ([TargetLink API Reference](#)).

Related topics

HowTos

[How to Open the Message Browser..... 20](#)

References

[ds_msgdlg](#) ( TargetLink API Reference)

[Handling Errors and Messages](#) ( TargetLink API Reference)

Dialog Settings

Settings

The following buttons and displays are available:

Messages Displays fatal, error, note and warning messages issued by TargetLink tools or utilities (Code Generator, TargetLink Data Server, Autoscaling tool, etc.). You can select which type of messages you want to view or exclude. If a message is selected, the angle bracket in front of the message disappears.

Excluded Lists the message numbers that you excluded from the Messages list. The number of excluded messages is indicated in parentheses for each message number. Fatal messages cannot be excluded. You can reinclude excluded messages with the left arrow button.

--> and <-- Lets you exclude or reinclude a specific message number by clicking the right or left arrow, respectively. The right arrow button excludes a selected message number. The left arrow button re-includes the selected message number. If you reinclude a message, the corresponding type checkbox (Errors, Warnings or Notes) is selected automatically.

Errors Indicates whether all error messages issued by tools or utilities (Code Generator, TargetLink Data Server, Autoscaling tool, etc.) are displayed, unless you have excluded them. If cleared, the errors are not shown in the Messages list. Instead, their numbers are displayed in the Excluded list.

Warnings Indicates whether all warning messages issued by tools or utilities (Code Generator, TargetLink Data Server, Autoscaling tool, etc.) are displayed, unless you excluded them. If cleared, the warnings are not shown in the Messages list. Instead, their numbers are displayed in the Excluded list.

Notes Indicates whether all notes issued by tools or utilities (Code Generator, TargetLink Data Server, Autoscaling tool, etc.) are displayed, unless you excluded

them. If cleared, the notes are not shown in the Messages list. Instead, their numbers are displayed in the Excluded list.

Sort by Number Sorts the displayed messages in the Messages list by number.

Sort by Occurrence Sorts the displayed messages in the Messages list by occurrence.

Log File Saves the displayed messages in a log file, which is automatically shown in the code editor.

Selected message Displays a more detailed description (message, reason and solution) of the message selected in the Messages list.

Help (button on the left of the Close button) Displays the help topic for the Message Browser.

Close Closes the Message Browser. All messages and settings are kept.

Open Opens the object that caused that message. For example, the dialog of the respective block or DD object is opened so that you can change the erroneous settings.

Show Displays the block, Stateflow object, or DD object that caused the message. The block or Stateflow object is highlighted in its parent system, while the DD object is selected in the Data Dictionary Manager.

Help (button below the Show button) Displays more information about the message displayed in the Selected message box.

Note

The three buttons Open, Show and Help can also be found on TargetLink's message boxes, which appear if there is only one fatal, warning, error or note message.

Related topics

References

[Handling Errors and Messages](#) ( TargetLink API Reference)

Plot Windows and Table Tools

About plot windows and table tools

Plot windows let you investigate simulation results. Table tools let you implement look-up tables in the production code.

Where to go from here

Information in this section

[Plot Overview Window](#).....

32

To get a quick overview of the simulation results of the various TargetLink blocks.

[Detailed Plot Window](#).....

36

To investigate one or more signals in detail.

[More Infos Plot Window](#).....

40

To give you further information about a single signal and to show the deviation to other signals.

[Signal Comparison Window](#).....

44

To numerically analyze and compare several signals.

[1-D Table Tool](#).....

48

To investigate and alter the implemented table's characteristics (1-D) and to compare these to the original table's characteristics.

[2-D Table Tool](#).....

52

To investigate and alter the implemented table's characteristics (2-D) and to compare these to the original table's characteristics.

[1-D Deviation Plot Window](#).....

56

To compare an implemented 1-D table to the original table.

[2-D Deviation Plot Window](#).....

59

To compare an implemented 2-D table to the original table.

[Worst Case Signals Plot Window](#).....

63

To show the result of the L1-scaling procedure.

[Plot Windows and Table Tools Commands](#).....

67

Overview on the buttons available in the Plot Windows and Table Tools.

Information in other sections

- [How to Analyze Simulation Results \(📖 TargetLink Preparation and Simulation Guide\)](#)

[How to Check the Implementation of a Look-Up Table \(📖 TargetLink Preparation and Simulation Guide\)](#)

Plot Overview Window

Introduction

To get a quick overview of the simulation results of the various TargetLink blocks.

Where to go from here

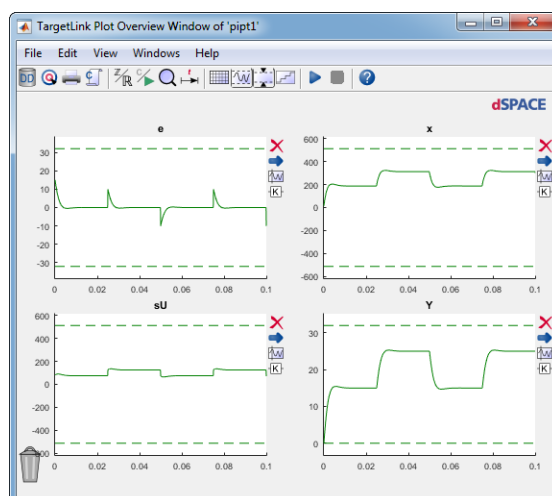
Information in this section

[Plot Overview Window Description.....](#) 32

[Plot Overview Window Commands.....](#) 34

Plot Overview Window Description

GUI




Purpose

To get a quick overview of the simulation results of the various TargetLink blocks, access the various Detailed Plot Windows, and compare the signals via the Signal Comparison Window.

Access

You can access this tool as follows:

Automatically	The Plot Overview Window appears automatically after each simulation, provided that you made TargetLink log and plot at least one signal of the model. For details on how to log signals (block outputs and states), refer to Examples of Logging Simulation Data ( TargetLink Preparation and Simulation Guide).
Button	Plot button in the TargetLink Data Server frame on the Simulation page of the TargetLink Main Dialog Block.

Note


If the Plot Overview Window is already open and minimized, you have to restore it manually.

Description

The Plot Overview Window shows the simulation results of all blocks with signal logging and plotting during simulation enabled.



If you open the Plot Overview Window via the Plot button of the TargetLink Main Dialog's Simulation page, it shows the logged time histories (if any) of the simulation selected in the simulation list.

To compare the signals quickly, simply drag & drop the signals from one subplot to another. Similarly, to remove the signal from the subplot simply, use the mouse to drag & drop the signal from the subplot into the trash can at the bottom left corner of the Plot Overview Window.

For detailed instructions on how to use TargetLink's plot windows, refer to [Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#)).

Related topics

Basics



- [Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))
- [Examples of Logging Simulation Data](#) ( [TargetLink Preparation and Simulation Guide](#))

References



- [TargetLink Main Dialog Block](#) ( [TargetLink Model Element Reference](#))

Plot Overview Window Commands









File menu

Purpose	Refer To	Shortcut	Icon
To close the active plot window or table tool.	Close on page 72	Ctrl + W	None
To investigate the associated block's C source code.	Open Code Editor with Associated Code File(s) on page 72	Ctrl + E	
To print the contents of the active plot window or table tool.	Print Current Figure on page 86	Ctrl + P	

Edit menu

Purpose	Refer To	Shortcut	Icon
To place a screen copy of the active plot window or table tool in the Clipboard.	Copy to Clipboard on page 74	Ctrl + C	None
To open the Property Manager.	Open Associated System in TargetLink Property Manager on page 86	Ctrl + R	
To open the Data Dictionary Manager.	TargetLink Data Dictionary Manager on page 74	Ctrl + D	


View menu

Purpose	Refer To	Shortcut	Icon
To activate / deactivate staircase plot mode.	Activate / Deactivate Staircase Plot Mode on page 70	Ctrl + Y	
To compare the simulation result or the implemented table with the implemented range.	Show Scaling Range on page 92	Ctrl + L	
To show the gridlines.	Show Gridlines on page 77	Ctrl + G	
To display the data in the integer format.	Toggle Between Integer and Float Display Mode on page 87	Ctrl + I	
To show the expected range as specified in the Constrained limits edit fields on the Output page of the respective block dialog.	Show Signal Constraints on page 93	Ctrl + X	
To toggle between showing block names and variable names.	Toggle Between Showing Block Names and Variable Names on page 92	Ctrl + V	
To investigate a specific time interval of the plot.	Set Time Interval on page 97	Ctrl + T	
To investigate a specific part of the plot.	Toggle Zoom Mode on page 98	Ctrl + Z	





Windows menu

Purpose	Refer To	Shortcut	Icon
To bring a currently open TargetLink window to the front.	Windows on page 97	None	None

Help menu

Purpose	Refer To	Shortcut	Icon
To display version information about TargetLink.	About TargetLink on page 70	None	None
To open TargetLink's online help in dSPACE Help.	Open Associated Help Document on page 78	Ctrl + H	

Subplot

Purpose	Refer To	Shortcut	Icon
To remove a subplot from the plot window.	Erase Subplot on page 75	None	
To open the Detailed Plot Window for a subplot.	Open Detailed Plot Window on page 81	None	
To quickly access the block dialog of the block associated with the plot.	Open Dialog of Associated Block on page 82	None	
To open the Signal Comparison Window, if not already open, and add a specific subplot.	Open Signal Comparison Window on page 84	None	

Toolbar

Purpose	Refer To	Shortcut	Icon
To start the simulation after it was stopped.	Start Simulation on page 95	None	
To stop the simulation after it was started.	Stop Simulation on page 96	None	

Detailed Plot Window

Introduction

To investigate one or more signals in detail.

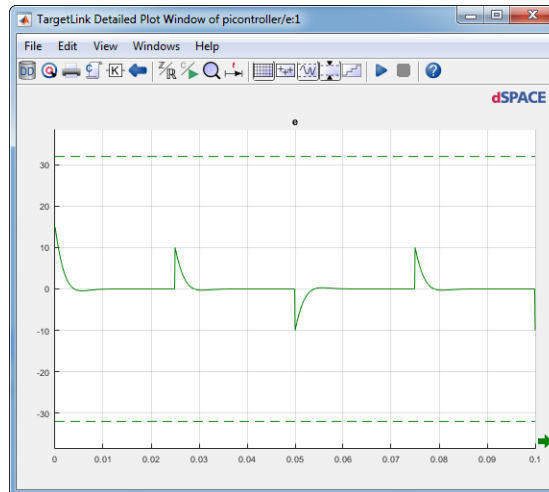
Where to go from here

Information in this section

Detailed Plot Window Description.....	37
Detailed Plot Window Commands.....	38

Detailed Plot Window Description

GUI




Purpose

To investigate one or more signals in detail.


Access

You can access this tool as follows:

Toolbar	 <p>Open Detailed Plot Window command, located to the right of each subplot in the Plot Overview Window.</p>
---------	---

Description

The Detailed Plot Window shows all of the signals included in the corresponding subplot of the Plot Overview Window. If you add/remove a signal to/from a subplot of the Plot Overview Window, this signal will also be included in or removed from the Detailed Plot Window.

For detailed instructions on how to use TargetLink's plot windows, refer to [Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#)).



Related topics

Basics



[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))

Detailed Plot Window Commands










File menu

Purpose	Refer To	Shortcut	Icon
To close the active plot window or table tool.	Close on page 72	Ctrl + W	None
To investigate the associated block's C source code.	Open Code Editor with Associated Code File(s) on page 72	Ctrl + E	
To print the contents of the active plot window or table tool.	Print Current Figure on page 86	Ctrl + P	

Edit menu

Purpose	Refer To	Shortcut	Icon
To place a screen copy of the active plot window or table tool in the Clipboard.	Copy to Clipboard on page 74	Ctrl + C	None
To open the Property Manager.	Open Associated System in TargetLink Property Manager on page 86	Ctrl + R	
To open the Data Dictionary Manager.	TargetLink Data Dictionary Manager on page 74	Ctrl + D	


View menu

Purpose	Refer To	Shortcut	Icon
To activate / deactivate staircase plot mode.	Activate / Deactivate Staircase Plot Mode on page 70	Ctrl + Y	
To investigate a specific part of the plot.	Set Axes Interval Dialog on page 71	Ctrl + A	
To compare the simulation result or the implemented table with the implemented range.	Show Scaling Range on page 92	Ctrl + L	
To show the gridlines.	Show Gridlines on page 77	Ctrl + G	
To display the data in the integer format.	Toggle Between Integer and Float Display Mode on page 87	Ctrl + I	
To show the expected range as specified in the Constrained limits edit fields on the Output page of the respective block dialog.	Show Signal Constraints on page 93	Ctrl + X	
To toggle between showing block names and variable names.	Toggle Between Showing Block Names and Variable Names on page 92	Ctrl + V	
To mark the data points of the simulation.	Show Markers on page 90	Ctrl + M	
To investigate a specific part of the plot.	Toggle Zoom Mode on page 98	Ctrl + Z	


Windows menu

Purpose	Refer To	Shortcut	Icon
To bring a currently open TargetLink window to the front.	Windows on page 97	None	None





Help menu

Purpose	Refer To	Shortcut	Icon
To display version information about TargetLink.	About TargetLink on page 70	None	None
To open TargetLink's online help in dSPACE Help.	Open Associated Help Document on page 78	Ctrl + H	

Subplot

Purpose	Refer To	Shortcut	Icon
To open the More Infos Plot Window for the current detailed plot.	Open More Infos Plot Window on page 82	None	

Toolbar

Purpose	Refer To	Shortcut	Icon
To quickly access the block dialog of the block associated with the plot.	Open Dialog of Associated Block on page 82	None	
To switch back to the window from which the currently active window was opened.	Go Back to Previous Window on page 76	None	
To start the simulation after it was stopped.	Start Simulation on page 95	None	
To stop the simulation after it was started.	Stop Simulation on page 96	None	

More Infos Plot Window

Introduction

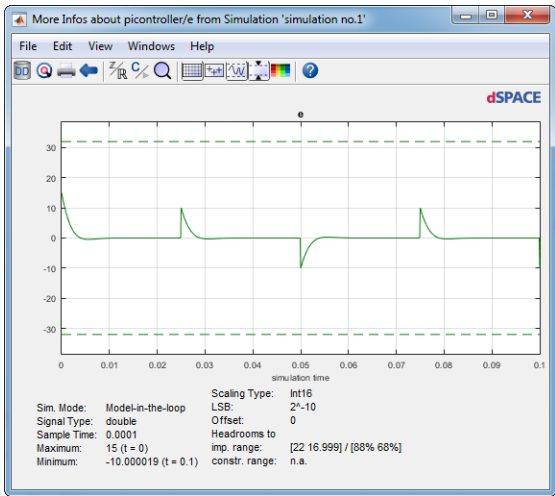
To give you further information about a single signal and to show the deviation to other signals.

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

More Infos Plot Window Description.....	41
More Infos Plot Window Commands.....	42


More Infos Plot Window Description

GUI




Purpose To give you further information about a single signal (for example, its parameters) and to show the deviation to other signals.

Access You can access this tool as follows:


Toolbar	 Open More Infos Plot Window command, located in the bottom right corner of the Detailed Plot Window.
---------	--

Description The More Infos Plot Window shows further information about the selected signal. If the corresponding Detailed Plot Window contains additional signals, the More Infos Plot Window has an additional plot showing the deviation between the selected signal and the additional signal(s). However, the first plot in this window will only show a single signal.

For detailed instructions on how to use TargetLink's plot windows, refer to [Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#)).


Related topics

Basics



[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))

More Infos Plot Window Commands









File menu

Purpose	Refer To	Shortcut	Icon
To close the active plot window or table tool.	Close on page 72	Ctrl + W	None
To print the contents of the active plot window or table tool.	Print Current Figure on page 86	Ctrl + P	

Edit menu

Purpose	Refer To	Shortcut	Icon
To place a screen copy of the active plot window or table tool in the Clipboard.	Copy to Clipboard on page 74	Ctrl + C	None
To open the Property Manager.	Open Associated System in TargetLink Property Manager on page 86	Ctrl + R	
To open the Data Dictionary Manager.	TargetLink Data Dictionary Manager on page 74	Ctrl + D	


View menu

Purpose	Refer To	Shortcut	Icon
To compare the simulation result or the implemented table with the implemented range.	Show Scaling Range on page 92	Ctrl + L	
To show the gridlines.	Show Gridlines on page 77	Ctrl + G	
To display the data in the integer format.	Toggle Between Integer and Float Display Mode on page 87	Ctrl + I	
To show the expected range as specified in the Constrained limits edit fields on the Output page of the respective block dialog.	Show Signal Constraints on page 93	Ctrl + X	
To toggle between showing block names and variable names.	Toggle Between Showing Block Names and Variable Names on page 92	Ctrl + V	
To mark the data points of the simulation.	Show Markers on page 90	Ctrl + M	
To change the color of the selected signal.	Modify Line Color on page 73	Ctrl + O	
To investigate a specific part of the plot.	Toggle Zoom Mode on page 98	Ctrl + Z	


Windows menu

Purpose	Refer To	Shortcut	Icon
To bring a currently open TargetLink window to the front.	Windows on page 97	None	None

Help menu

Purpose	Refer To	Shortcut	Icon
To display version information about TargetLink.	About TargetLink on page 70	None	None
To open TargetLink's online help in dSPACE Help.	Open Associated Help Document on page 78	Ctrl + H	

Toolbar

Purpose	Refer To	Shortcut	Icon
To switch back to the window from which the currently active window was opened.	Go Back to Previous Window on page 76	None	

Signal Comparison Window

Introduction

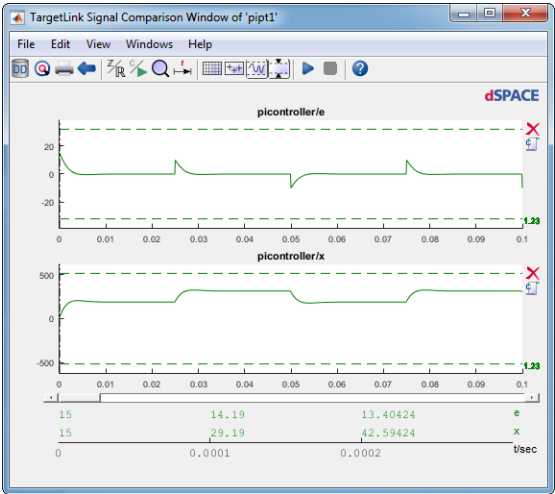
To numerically analyze and compare several signals.

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

Signal Comparison Window Description.....	45
Signal Comparison Window Commands.....	46

Signal Comparison Window Description

GUI




Purpose To numerically analyze and compare several signals.

Access You can access this tool as follows:

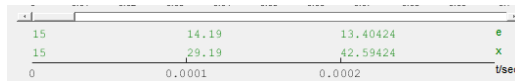
Toolbar	 Open Signal Comparison Window command, located to the right of each subplot in the Plot Overview Window.
---------	---

Description The Signal Comparison Window shows a separate subplot for each Plot Overview Window subplot that you included via the Open Signal Comparison Window. If the included subplot of the Plot Overview Window contains several signals, these signals are also included in the corresponding subplot of the Signal Comparison Window.

For detailed instructions on how to use TargetLink's plot windows, refer to [Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#)).

Dialog Settings The Signal Comparison Window provides the following dialog settings to analyze and compare the signals shown.

Slider Lets you investigate and numerically compare the various signals shown in the window at each time step. The slider is located at the bottom of the window (the example below contains the scale for one single signal).



The signals values at the current cursor position will be shown in the table at the bottom of the window. Move the slider to control the cursor shown on the plots. The data shown in the table will be updated as soon as you release the mouse button. The table will only show the signals selected via the Show Floating Point Signal command (see [Show Signal in Table](#) on page 89).

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows](#) (TargetLink Preparation and Simulation Guide)

Signal Comparison Window Commands









File menu

Purpose	Refer To	Shortcut	Icon
To close the active plot window or table tool.	Close on page 72	Ctrl + W	None
To print the contents of the active plot window or table tool.	Print Current Figure on page 86	Ctrl + P	

Edit menu

Purpose	Refer To	Shortcut	Icon
To place a screen copy of the active plot window or table tool in the Clipboard.	Copy to Clipboard on page 74	Ctrl + C	None
To open the Property Manager.	Open Associated System in TargetLink Property Manager on page 86	Ctrl + R	
To open the Data Dictionary Manager.	TargetLink Data Dictionary Manager on page 74	Ctrl + D	


View menu

Purpose	Refer To	Shortcut	Icon
To investigate a specific time interval of the plot.	Set Time Interval on page 97	Ctrl + T	
To compare the simulation result or the implemented table with the implemented range.	Show Scaling Range on page 92	Ctrl + L	
To show the gridlines.	Show Gridlines on page 77	Ctrl + G	
To display the data in the integer format.	Toggle Between Integer and Float Display Mode on page 87	Ctrl + I	
To show the expected range as specified in the Constrained limits edit fields on the Output page of the respective block dialog.	Show Signal Constraints on page 93	Ctrl + X	
To toggle between showing block names and variable names.	Toggle Between Showing Block Names and Variable Names on page 92	Ctrl + V	
To mark the data points of the simulation.	Show Markers on page 90	Ctrl + M	
To investigate a specific part of the plot.	Toggle Zoom Mode on page 98	Ctrl + Z	




Windows menu

Purpose	Refer To	Shortcut	Icon
To bring a currently open TargetLink window to the front.	Windows on page 97	None	None




Help menu

Purpose	Refer To	Shortcut	Icon
To display version information about TargetLink.	About TargetLink on page 70	None	None
To open TargetLink's online help in dSPACE Help.	Open Associated Help Document on page 78	Ctrl + H	

Subplot

Purpose	Refer To	Shortcut	Icon
To remove a subplot from the plot window.	Erase Subplot on page 75	None	
To investigate the associated block's C source code.	Open Production Code File on page 83	None	
To display the numeric values of a signal below the signal plot in the Signal Comparison window.	Show Signal in Table on page 89	None	

Toolbar

Purpose	Refer To	Shortcut	Icon
To switch back to the window from which the currently active window was opened.	Go Back to Previous Window on page 76	None	
To start the simulation after it was stopped.	Start Simulation on page 95	None	
To stop the simulation after it was started.	Stop Simulation on page 96	None	

1-D Table Tool

Introduction

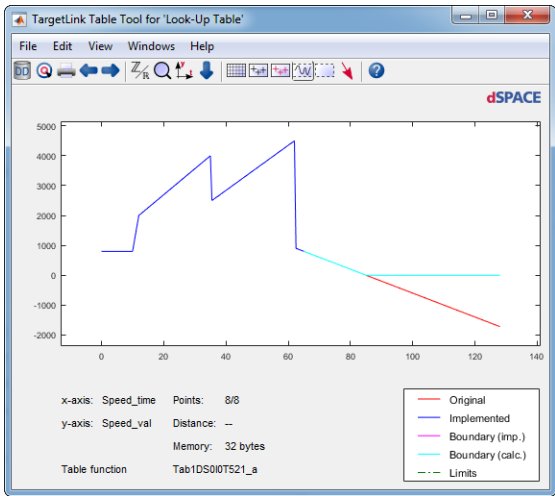
To investigate and alter the implemented table's characteristics (1-D) and to compare these to the original table's characteristics.

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

1-D Table Tool Description.....	49
1-D Table Tool Commands.....	50

1-D Table Tool Description

GUI



Purpose To investigate and alter the implemented table's characteristics and to compare these to the original table's characteristics.

Access You can access this tool as follows:

Button	Launch Table Tool button on the General page of the Look-Up Table Block.
--------	--

Description The table tool shows the implemented table. As an option it can display the original table and the scaling range.

For detailed instructions on using TargetLink's table tools and implementing tables, refer to [Basics on Look-up Tables](#) ([TargetLink Preparation and Simulation Guide](#)).

Related topics

Basics


[Basics on Look-up Tables](#) ([TargetLink Preparation and Simulation Guide](#))

References



[Look-Up Table Block](#) ([TargetLink Model Element Reference](#))

1-D Table Tool Commands










File menu

Purpose	Refer To	Shortcut	Icon
To close the active plot window or table tool.	Close on page 72	Ctrl + W	None
To print the contents of the active plot window or table tool.	Print Current Figure on page 86	Ctrl + P	

Edit menu

Purpose	Refer To	Shortcut	Icon
To place a screen copy of the active plot window or table tool in the Clipboard.	Copy to Clipboard on page 74	Ctrl + C	None
To open the Property Manager.	Open Associated System in TargetLink Property Manager on page 86	Ctrl + R	
To open the Data Dictionary Manager.	TargetLink Data Dictionary Manager on page 74	Ctrl + D	


View menu

Purpose	Refer To	Shortcut	Icon
To investigate a specific part of the plot.	Set Axes Interval Dialog on page 71	Ctrl + A	
To show the gridlines.	Show Gridlines on page 77	Ctrl + G	
To display the data in the integer format.	Toggle Between Integer and Float Display Mode on page 87	Ctrl + I	
To investigate a specific part of the plot.	Toggle Zoom Mode on page 98	Ctrl + Z	
To reduce the memory consumption of the implemented table by removing unnecessary data points.	Optimize on page 85	Ctrl + T	
To mark the data points of the implemented table.	Markers on Implemented Line on page 78	Ctrl + M	
To mark the data points of the original table.	Markers on Original Line on page 79	Ctrl + O	
To show or hide the original table.	Show Original Table on page 91	Ctrl + S	
To compare the simulation result or the implemented table with the implemented range.	Show Scaling Range on page 92	Ctrl + L	




Windows menu

Purpose	Refer To	Shortcut	Icon
To bring a currently open TargetLink window to the front.	Windows on page 97	None	None

Help menu

Purpose	Refer To	Shortcut	Icon
To display version information about TargetLink.	About TargetLink on page 70	None	None
To open TargetLink's online help in dSPACE Help.	Open Associated Help Document on page 78	Ctrl + H	

Toolbar

Purpose	Refer To	Shortcut	Icon
To switch back to the window from which the currently active window was opened.	Go Back to Previous Window on page 76	None	
To open or activate the 1-D Deviation Plot Window or 2-D Deviation Plot Window.	Go Forward to Next Window on page 77	None	
To push the implemented table vectors and matrices into the MATLAB Workspace.	Open Assign Dialog on page 80	None	

2-D Table Tool

Introduction

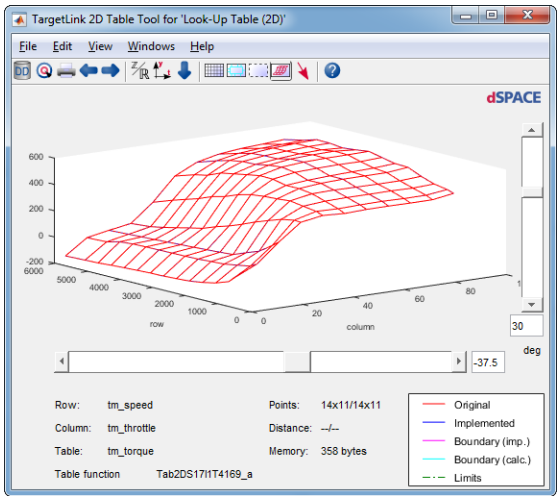
To investigate and alter the implemented table's characteristics (2-D) and to compare these to the original table's characteristics.

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

2-D Table Tool Description	53
2-D Table Tool Commands	54

2-D Table Tool Description

GUI



Purpose To investigate and alter the implemented table's characteristics and to compare these to the original table's characteristics.

Access You can access this tool as follows:

Button	Launch Table Tool button on the General page of the Look-Up Table (2D) Block.
--------	---

Description The table tool shows the implemented table. As an option, it can display the original table, its scaling range, and its boundary area.

For more information on how to implement tables and use TargetLink's table tools, refer to [Basics on Look-up Tables](#) ([TargetLink Preparation and Simulation Guide](#)).

Dialog settings The 2-D Table Tool provides the following dialog settings to analyze and alter the corresponding table.

Azimuth angle slider Lets you view the 2-D table data from a different azimuth angle by moving the slider to the left or the right. The slider is located at the bottom of the 2-D Table Tool.



Elevation angle slider Lets you view the 2-D table data from a different elevation angle by moving the slider to the up or down. The slider is located to the right of the 2-D Table Tool.



Related topics

Basics

[Basics on Look-up Tables](#) (TargetLink Preparation and Simulation Guide)

References

[Look-Up Table \(2D\) Block](#) (TargetLink Model Element Reference)

2-D Table Tool Commands








File menu

Purpose	Refer To	Shortcut	Icon
To close the active plot window or table tool.	Close on page 72	Ctrl + W	None
To print the contents of the active plot window or table tool.	Print Current Figure on page 86	Ctrl + P	

Edit menu

Purpose	Refer To	Shortcut	Icon
To place a screen copy of the active plot window or table tool in the Clipboard.	Copy to Clipboard on page 74	Ctrl + C	None
To open the Property Manager.	Open Associated System in TargetLink Property Manager on page 86	Ctrl + R	
To open the Data Dictionary Manager.	TargetLink Data Dictionary Manager on page 74	Ctrl + D	


View menu

Purpose	Refer To	Shortcut	Icon
To investigate a specific part of the plot.	Set Axes Interval Dialog on page 71	Ctrl + A	
To show the gridlines.	Show Gridlines on page 77	Ctrl + G	
To display the data in the integer format.	Toggle Between Integer and Float Display Mode on page 87	Ctrl + I	
To reduce the memory consumption of the implemented table by removing unnecessary data points.	Optimize on page 85	Ctrl + T	
To show the boundary area for the table.	Show Boundary Area on page 88	Ctrl + B	
To show or hide the original table.	Show Original Table on page 91	Ctrl + S	
To compare the simulation result or the implemented table with the implemented range.	Show Scaling Range on page 92	Ctrl + L	




Windows menu

Purpose	Refer To	Shortcut	Icon
To bring a currently open TargetLink window to the front.	Windows on page 97	None	None

Help menu

Purpose	Refer To	Shortcut	Icon
To display version information about TargetLink.	About TargetLink on page 70	None	None
To open TargetLink's online help in dSPACE Help.	Open Associated Help Document on page 78	Ctrl + H	

Toolbar

Purpose	Refer To	Shortcut	Icon
To switch back to the window from which the currently active window was opened.	Go Back to Previous Window on page 76	None	
To open or activate the 1-D Deviation Plot Window or 2-D Deviation Plot Window.	Go Forward to Next Window on page 77	None	
To push the implemented table vectors and matrices into the MATLAB Workspace.	Open Assign Dialog on page 80	None	

1-D Deviation Plot Window

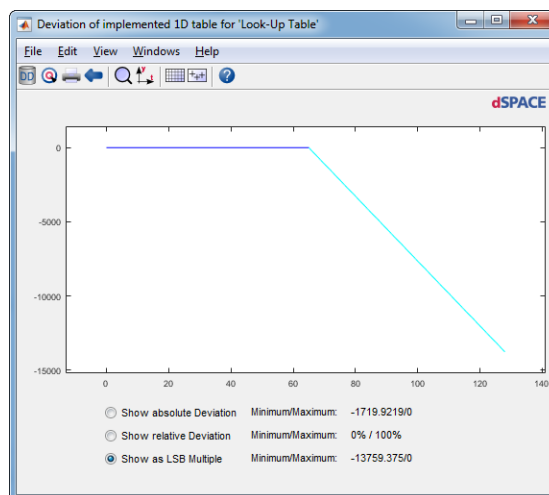
Introduction








To compare an implemented 1-D table to the original table.

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

1-D Deviation Plot Window Description	56
1-D Deviation Plot Window Commands	58


1-D Deviation Plot Window Description

GUI



Purpose	To compare an implemented 1-D table to the original table.
Access	<div>You can access this tool as follows:</div> <div><div>Toolbar</div><div> Go Forward to Next Window on page 77 command, located in the toolbar of the 1-D Table Tool on page 48.</div></div>
Description	<p>The 1-D Deviation Plot Window shows the deviation of the original table from the implemented table.</p> <p>For detailed instructions on how to use TargetLink’s plot windows, refer to Analyzing Simulation Results Using Plot Windows ( TargetLink Preparation and Simulation Guide). For more information on how to implement tables, refer to Basics on Look-up Tables ( TargetLink Preparation and Simulation Guide).</p>
Dialog settings	<p>The 1-D Deviation Plot Window provides the following dialog settings, if it contains more than one signal.</p> <p>Show absolute deviation Displays the absolute deviation of the original table from the implemented table.</p> <p>Show relative deviation Displays the relative deviation of the original table from the implemented table.</p> <p>Show as LSB multiple Displays the deviation of the original table from the implemented table in LSB multiples.</p> <p>See also Basics on Scaling Block Outputs and State Variables ( TargetLink Preparation and Simulation Guide).</p>
Related topics	<div>Basics</div> <div><div>Analyzing Simulation Results Using Plot Windows ( TargetLink Preparation and Simulation Guide)</div><div>Basics on Look-up Tables ( TargetLink Preparation and Simulation Guide)</div><div>Basics on Scaling Block Outputs and State Variables ( TargetLink Preparation and Simulation Guide)</div></div>

1-D Deviation Plot Window Commands





File menu

Purpose	Refer To	Shortcut	Icon
To close the active plot window or table tool.	Close on page 72	Ctrl + W	None
To print the contents of the active plot window or table tool.	Print Current Figure on page 86	Ctrl + P	

Edit menu

Purpose	Refer To	Shortcut	Icon
To place a screen copy of the active plot window or table tool in the Clipboard.	Copy to Clipboard on page 74	Ctrl + C	None
To open the Property Manager.	Open Associated System in TargetLink Property Manager on page 86	Ctrl + R	
To open the Data Dictionary Manager.	TargetLink Data Dictionary Manager on page 74	Ctrl + D	


View menu

Purpose	Refer To	Shortcut	Icon
To investigate a specific part of the plot.	Set Axes Interval Dialog on page 71	Ctrl + A	
To show the gridlines.	Show Gridlines on page 77	Ctrl + G	
To investigate a specific part of the plot.	Toggle Zoom Mode on page 98	Ctrl + Z	
To mark the data points of the simulation.	Show Markers on page 90	Ctrl + M	


Windows menu

Purpose	Refer To	Shortcut	Icon
To bring a currently open TargetLink window to the front.	Windows on page 97	None	None

Help menu

Purpose	Refer To	Shortcut	Icon
To display version information about TargetLink.	About TargetLink on page 70	None	None
To open TargetLink's online help in dSPACE Help.	Open Associated Help Document on page 78	Ctrl + H	

Toolbar

Purpose	Refer To	Shortcut	Icon
To switch back to the window from which the currently active window was opened.	Go Back to Previous Window on page 76	None	

2-D Deviation Plot Window

Introduction To compare an implemented 2-D table to the original table.

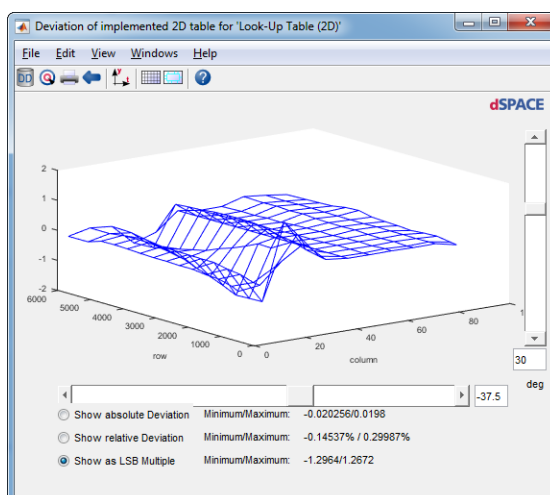
Where to go from here

Information in this section

2-D Deviation Plot Window Description.....	60
2-D Deviation Plot Window Commands.....	61

2-D Deviation Plot Window Description

GUI




Purpose

To compare an implemented 2-D table to the original table.

Access

You can access this tool as follows:

Toolbar	 <p>Go Forward to Next Window on page 77 command, located in the toolbar of the 2-D Table Tool on page 52.</p>
---------	---

Description

The 2-D Deviation Plot Window shows the deviation of the original table from the implemented table. As an option it can also display the boundary area.

For detailed instructions on how to use TargetLink's plot windows, refer to [Analyzing Simulation Results Using Plot Windows](#) ([TargetLink Preparation and Simulation Guide](#)). For more information on how to implement tables, refer to [Basics on Look-up Tables](#) ([TargetLink Preparation and Simulation Guide](#)).

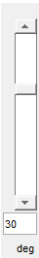
Dialog settings

The 2-D Deviation Plot Window provides the following dialog settings to analyze and alter the corresponding table.

Azimuth angle slider Lets you view the 2-D table data from a different azimuth angle by moving the slider to the left or the right. The slider is located at the bottom of the 2-D Deviation Plot Window.



Elevation angle slider Lets you view the 2-D table data from a different elevation angle by moving the slider up or down. The slider is located to the right of the 2-D Deviation Plot Window.



- Show absolute deviation** Displays the absolute deviation of the original table from the implemented table
 - Show relative deviation** Displays the relative deviation of the original table from the implemented table.
 - Show as LSB multiple** Displays the deviation of the original table from the implemented table in LSB multiples.
- See also [Basics on Scaling Block Outputs and State Variables](#) (TargetLink Preparation and Simulation Guide).

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows](#) (TargetLink Preparation and Simulation Guide)

[Basics on Look-up Tables](#) (TargetLink Preparation and Simulation Guide)



[Basics on Scaling Block Outputs and State Variables](#) (TargetLink Preparation and Simulation Guide)

2-D Deviation Plot Window Commands




File menu

Purpose	Refer To	Shortcut	Icon
To close the active plot window or table tool.	Close on page 72	Ctrl + W	None
To print the contents of the active plot window or table tool.	Print Current Figure on page 86	Ctrl + P	

Edit menu

Purpose	Refer To	Shortcut	Icon
To place a screen copy of the active plot window or table tool in the Clipboard.	Copy to Clipboard on page 74	Ctrl + C	None
To open the Property Manager.	Open Associated System in TargetLink Property Manager on page 86	Ctrl + R	
To open the Data Dictionary Manager.	TargetLink Data Dictionary Manager on page 74	Ctrl + D	


View menu

Purpose	Refer To	Shortcut	Icon
To investigate a specific part of the plot.	Set Axes Interval Dialog on page 71	Ctrl + A	
To show the gridlines.	Show Gridlines on page 77	Ctrl + G	
To show the boundary area for the table.	Show Boundary Area on page 88	Ctrl + B	


Windows menu

Purpose	Refer To	Shortcut	Icon
To bring a currently open TargetLink window to the front.	Windows on page 97	None	None

Help menu

Purpose	Refer To	Shortcut	Icon
To display version information about TargetLink.	About TargetLink on page 70	None	None
To open TargetLink's online help in dSPACE Help.	Open Associated Help Document on page 78	Ctrl + H	

Toolbar

Purpose	Refer To	Shortcut	Icon
To switch back to the window from which the currently active window was opened.	Go Back to Previous Window on page 76	None	

Worst Case Signals Plot Window

Introduction

To show the result of the L1-scaling procedure.

Where to go from here

Information in this section

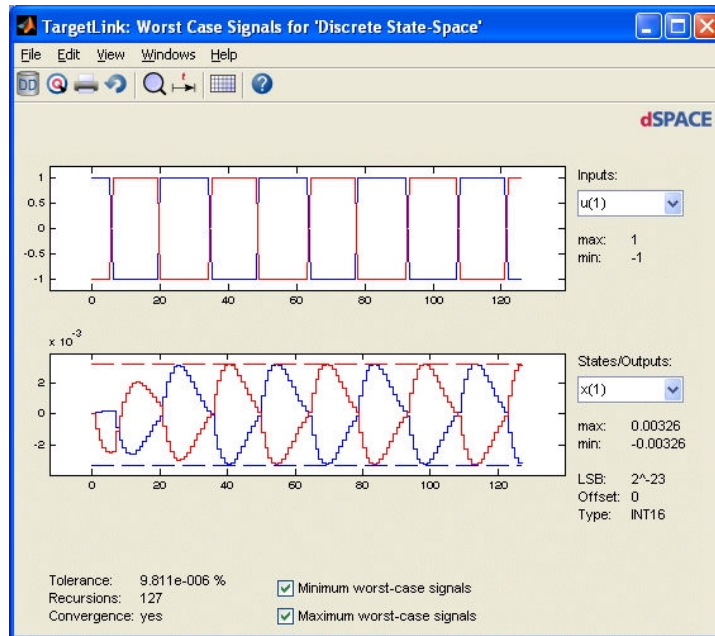
Worst Case Signals Plot Window Description	64
Worst Case Signals Plot Window Commands	65

Information in other sections

How to Verify the Scaling Results (TargetLink Preparation and Simulation Guide)

Worst Case Signals Plot Window Description

GUI



Purpose

To show the result of the L1-scaling procedure.

Access

You can access this tool as follows:

Toolbar	
in the State-Space Scaling tool	

Note



You can only open this window if the following conditions are met:

- A simulation exists
- You have scaled the simulation using the State-Space Scaling tool

Description

The upper plot shows the two worst case input signals, which produce the minimum and maximum state or output values of the state-space system. The blue input signals $u(1)$ or $u(2)$, respectively, excite the blue-colored state in the lower axes, which touches the lower limit. The red input signals $u(1)$ or $u(2)$, respectively, correspond to the red-colored state, which touches the upper limit at the initial state shown in the lower axes.

The lower plot shows the deflection of the corresponding state or output within the calculated physical limits.

For detailed instructions on how to use TargetLink's plot windows, refer to [Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#)) and [Basics on Scaling State-Space Outputs and States via a Scaling Tool](#) ( [TargetLink Preparation and Simulation Guide](#)) .

Dialog settings

The Worst Case Signals Plot Window provides the following dialog settings to analyze and alter the corresponding table:

Maximum worst case signals Indicates whether the maximum worst case signals are shown in both plots.

Minimum worst case signals Indicates whether the minimum worst case signals are shown in both plots.

Inputs Lets you select the input for the upper plot. After you select the input, the minimum and maximum of the input will be shown below the drop-down list.


States/Outputs Lets you select the state/output for the lower plot. After you select a variable, the following information on the variable will be shown beneath the drop-down list: minimum, maximum, LSB, offset and type.

If you change this setting, the upper plot automatically changes to the corresponding input signals because each state or output signal belongs to different worst case input signals.

Related topics


Basics

[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))



[Basics on Scaling State-Space Outputs and States via a Scaling Tool](#) ( [TargetLink Preparation and Simulation Guide](#))

Worst Case Signals Plot Window Commands




File menu

Purpose	Refer To	Shortcut	Icon
To close the active plot window or table tool.	Close on page 72	Ctrl + W	None
To print the contents of the active plot window or table tool.	Print Current Figure on page 86	Ctrl + P	

Edit menu

Purpose	Refer To	Shortcut	Icon
To place a screen copy of the active plot window or table tool in the Clipboard.	Copy to Clipboard on page 74	Ctrl + C	None
To open the Property Manager.	Open Associated System in TargetLink Property Manager on page 86	Ctrl + R	
To open the Data Dictionary Manager.	TargetLink Data Dictionary Manager on page 74	Ctrl + D	


View menu

Purpose	Refer To	Shortcut	Icon
To show the gridlines.	Show Gridlines on page 77	Ctrl + G	
To investigate a specific time interval of the plot.	Set Time Interval on page 97	Ctrl + T	
To investigate a specific part of the plot.	Toggle Zoom Mode on page 98	Ctrl + Z	


Windows menu

Purpose	Refer To	Shortcut	Icon
To bring a currently open TargetLink window to the front.	Windows on page 97	None	None

Help menu

Purpose	Refer To	Shortcut	Icon
To display version information about TargetLink.	About TargetLink on page 70	None	None
To open TargetLink's online help in dSPACE Help..	Open Associated Help Document on page 78	Ctrl + H	

Toolbar

Purpose	Refer To	Shortcut	Icon
To switch back to the window from which the currently active window was opened.	Go Back to Previous Window on page 76	None	

Plot Windows and Table Tools Commands

Introduction

Overview of the buttons available in the Plot Windows and Table Tools. Toolbar icons that are associated with a binary property or on/off property are generated as toggle buttons. If the property is set, the button appears pressed; if not, the button is raised.

Where to go from here

Information in this section

About TargetLink.....	70
To display version information about TargetLink.	
Activate / Deactivate Staircase Plot Mode.....	70
To activate / deactivate staircase plot mode.	
Set Axes Interval Dialog.....	71
To investigate a specific part of the plot.	
Close.....	72
To close the active plot window or table tool.	
Open Code Editor with Associated Code File(s).....	72
To investigate the associated block's C source code.	
Modify Line Color.....	73
To modify the color of the selected signal.	
Copy to Clipboard.....	74
To place a screen copy of the active plot window or table tool in the Clipboard.	
TargetLink Data Dictionary Manager.....	74
To open the Data Dictionary Manager.	
Erase Subplot.....	75
To remove a subplot from the plot window.	
Go Back to Previous Window.....	76
To switch back to the window from which the currently active window was opened.	
Go Forward to Next Window.....	77
To open or activate the 1-D Deviation Plot Window or 2-D Deviation Plot Window.	
Show Gridlines.....	77
To show the gridlines.	
Open Associated Help Document.....	78
To open the dSPACE Help.	
Markers on Implemented Line.....	78
To mark the data points of the implemented table.	
Markers on Original Line.....	79
To mark the data points of the original table.	
Open Assign Dialog.....	80
To push the implemented table vectors and matrices into the MATLAB Workspace.	
Open Detailed Plot Window.....	81
To open the Detailed Plot Window for a subplot.	

Open Dialog of Associated Block.....	82
To quickly access the block dialog of the block associated with the plot.	
Open More Infos Plot Window.....	82
To open the More Infos Plot Window for the current detailed plot.	
Open Production Code File.....	83
To investigate the associated block's C source code.	
Open Signal Comparison Window.....	84
To open the Signal Comparison Window, if not already open, and add a specific subplot.	
Optimize.....	85
To reduce the memory consumption of the implemented table by removing unnecessary data points.	
Print Current Figure.....	86
To print the contents of the active plot window or table tool.	
Open Associated System in TargetLink Property Manager.....	86
To open the associated system in TargetLink Property Manager.	
Toggle Between Integer and Float Display Mode.....	87
To toggle between Integer and Float Display Mode.	
Show Boundary Area.....	88
To show the boundary area for the table.	
Show Signal in Table.....	89
To display the numeric values of a signal below the signal plot in the Signal Comparison window.	
Show Markers.....	90
To mark the data points of the simulation.	
Show Original Table.....	91
To show or hide the original table.	
Toggle Between Showing Block Names and Variable Names.....	92
To toggle between showing block names and variable names	
Show Scaling Range.....	92
To compare the simulation result or the implemented table with the implemented range.	
Show Signal Constraints.....	93
To show the expected range as specified in the Constrained limits edit fields on the Output page of the respective block dialog.	
Start Simulation.....	95
To start the simulation after it was stopped.	
Stop Simulation.....	96
To stop the simulation after it was started.	
Set Time Interval.....	97
To investigate a specific time interval of the plot.	

Windows.....	97
To bring a currently open TargetLink window to the front.	
Toggle Zoom Mode.....	98
To investigate a specific part of the plot.	

About TargetLink

Purpose To display version information about TargetLink.


Access You can access this command via:

Menu bar	Help
Plot window	All
Table tool	All
Keyboard shortcut	None
Toolbar	None

Activate / Deactivate Staircase Plot Mode

Purpose To activate / deactivate staircase plot mode.

Access You can access this command via:

Menu bar	View
Plot window	Plot Overview Window on page 32, Detailed Plot Window on page 36
Table tool	None
Keyboard shortcut	Ctrl + Y
Toolbar	

Result Plots are shown in staircase mode.

Description To deactivate the staircase plot mode carry out the command a second time.

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows \(TargetLink Preparation and Simulation Guide\)](#)

References

Detailed Plot Window	36
Plot Overview Window	32


Set Axes Interval Dialog

Purpose

To investigate a specific part of the plot.

Access

You can access this command via:

Menu bar	View
Plot window	Detailed Plot Window on page 36, 1-D Deviation Plot Window on page 56, 2-D Deviation Plot Window on page 59
Table tool	1-D Table Tool on page 48, 2-D Table Tool on page 52
Keyboard shortcut	Ctrl + A
Toolbar	

Result

This automatically opens a dialog where you can enter the desired axis limits. The plot window or table tool displays the specified interval.

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows \(TargetLink Preparation and Simulation Guide\)](#)

References

1-D Deviation Plot Window	56
1-D Table Tool	48
2-D Deviation Plot Window	59
2-D Table Tool	52
Detailed Plot Window	36

Close

Purpose To close the active plot window or table tool.

Access You can access this command via:

Menu bar	File
Plot window	All
Table tool	All
Keyboard shortcut	Ctrl + W
Toolbar	None

Result The active plot window or table tool closes. If any subordinate windows are open, they are closed as well.

Related topics


Basics

[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))

Open Code Editor with Associated Code File(s)

Purpose To investigate the associated block's C source code.

Access You can access this command via:

Menu bar	File
Plot window	Plot Overview Window on page 32, Detailed Plot Window on page 36
Table tool	None
Keyboard shortcut	Ctrl + E
Toolbar	

Result If the respective C source code file exists, it opens in the editor. If you click this command in the **Detailed Plot Window** and you use an editor that supports this feature, the editor scrolls to the portion of code that relates to the associated

block. You need to set this feature appropriately in TargetLink. The editor actually used can be selected via the Preferences Editor. You can start it using the `tl_pref` API function. For more information, refer to [tl_pref](#) ([📖 TargetLink API Reference](#)).

Related topics

References

Detailed Plot Window	36
Plot Overview Window	32


Modify Line Color

Purpose

To change the color of the selected signal.

Access

You can access this command via:

Menu bar	View
Plot window	More Infos Plot Window on page 40
Table tool	None
Keyboard shortcut	Ctrl + O
Toolbar	

Result

The selected signal is displayed in the chosen color. This also affects the other plot windows ([Plot Overview Window](#) on page 32, [Detailed Plot Window](#) on page 36, [Signal Comparison Window](#) on page 44).

Description

Lets you pick the desired color in the colormap.

Related topics**Basics**

[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))

References

Detailed Plot Window.....	36
More Infos Plot Window.....	40
Plot Overview Window.....	32
Signal Comparison Window.....	44

Copy to Clipboard

Purpose

To place a screen copy of the active plot window or table tool in the Clipboard.

Access

You can access this command via:

Menu bar	Edit
Plot window	All
Table tool	All
Keyboard shortcut	Ctrl + C
Toolbar	None

Result

A bitmap of the active plot window or table tool is copied to the Clipboard.

TargetLink Data Dictionary Manager


Purpose

To open the TargetLink Data Dictionary Manager.

Access

You can access this command via:

Menu bar	Edit
Plot window	All
Table tool	All


Keyboard shortcut	Ctrl + D
Toolbar	

Description The TargetLink Data Dictionary Manager is the graphical user interface to the TargetLink Data Dictionary. Typical user interface functions are available, like copying and pasting properties, loading and saving individual data branches and searching the complete dictionary.

Erase Subplot

Purpose To remove a subplot from the plot window.

Access You can access this command via:

Menu bar	None
Plot window	Plot Overview Window on page 32, Signal Comparison Window on page 44
Table tool	None
Keyboard shortcut	None
Toolbar	

Result The corresponding subplot is removed from the plot window.

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows](#) ( TargetLink Preparation and Simulation Guide)

References

Plot Overview Window	32
Signal Comparison Window	44


Go Back to Previous Window

Purpose

To switch back to the window from which the currently active window was opened.

Access

You can access this command via:

Menu bar	None
Plot window	Detailed Plot Window on page 36, More Infos Plot Window on page 40, Signal Comparison Window on page 44, 1-D Deviation Plot Window on page 56, 2-D Deviation Plot Window on page 59, Worst Case Signals Plot Window on page 63
Table tool	1-D Table Tool on page 48, 2-D Table Tool on page 52
Keyboard shortcut	None
Toolbar	

Result

The calling window opens.

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))


References

1-D Deviation Plot Window	56
1-D Table Tool	48
2-D Deviation Plot Window	59
2-D Table Tool	52
Detailed Plot Window	36
Go Forward to Next Window	77
More Infos Plot Window	40
Signal Comparison Window	44
Worst Case Signals Plot Window	63

Go Forward to Next Window

Purpose To open or activate the 1-D Deviation Plot Window or 2-D Deviation Plot Window.

Access You can access this command via:

Menu bar	None
Plot window	None
Table tool	1-D Table Tool on page 48, 2-D Table Tool on page 52
Keyboard shortcut	None
Toolbar	

Result The respective Deviation Plot Window opens (if not already open) and is made the active window.

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))

References


1-D Table Tool	48
2-D Table Tool	52
Go Back to Previous Window	76

Show Gridlines

Purpose To show the gridlines.

Access You can access this command via:

Menu bar	View
Plot window	All
Table tool	All

Keyboard shortcut	Ctrl + G
Toolbar	

Description To hide the grid, carry out the command a second time.

Related topics

Basics


[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))

Open Associated Help Document

Introduction To open dSPACE Help.

Access

You can access this command via:


Menu bar	Help
Plot window	All
Table tool	All
Keyboard shortcut	Ctrl + H
Toolbar	




Markers on Implemented Line

Purpose To mark the data points of the implemented table.





Access

You can access this command via:


Menu bar	View
Plot window	None
Table tool	1-D Table Tool on page 48
Keyboard shortcut	Ctrl + M
Toolbar	


Result	The data points of the implemented table are marked in the plot.
Description	To hide the markers, carry out the command a second time. For further information on implementing look-up tables, refer to Basics on Look-up Tables ( TargetLink Preparation and Simulation Guide). See also Markers on Original Line on page 79.
Related topics	<div>Basics</div> <div>Analyzing Simulation Results Using Plot Windows ( TargetLink Preparation and Simulation Guide)</div> <div>Basics on Look-up Tables ( TargetLink Preparation and Simulation Guide)</div> <div>References</div> <div><div>1-D Table Tool..... 48</div><div>Markers on Original Line..... 79</div></div>

Markers on Original Line

Purpose	To mark the data points of the original table.										
Access	<div>You can access this command via:</div> <table><tr><td>Menu bar</td><td>View</td></tr><tr><td>Plot window</td><td>None</td></tr><tr><td>Table tool</td><td>1-D Table Tool on page 48</td></tr><tr><td>Keyboard shortcut</td><td>Ctrl + 0</td></tr><tr><td>Toolbar</td><td></td></tr></table>	Menu bar	View	Plot window	None	Table tool	1-D Table Tool on page 48	Keyboard shortcut	Ctrl + 0	Toolbar	
Menu bar	View										
Plot window	None										
Table tool	1-D Table Tool on page 48										
Keyboard shortcut	Ctrl + 0										
Toolbar											
Result	The data points of the original table are marked in the plot, and the toolbar button changes its icon.										
Description	To hide the markers, carry out the command a second time. For further information on implementing look-up tables, refer to Basics on Look-up Tables ( TargetLink Preparation and Simulation Guide). See also Optimize on page 85.										

Related topics**Basics**

Analyzing Simulation Results Using Plot Windows ( TargetLink Preparation and Simulation Guide)

Basics on Look-up Tables ( TargetLink Preparation and Simulation Guide)

References

1-D Table Tool..... 48

Markers on Implemented Line..... 78

Optimize..... 85


Open Assign Dialog

Purpose

To push the implemented table vectors and matrices into the MATLAB Workspace.

Access

You can access this command via:

Menu bar	None
Plot window	None
Table tool	1-D Table Tool on page 48, 2-D Table Tool on page 52
Keyboard shortcut	None
Toolbar	

Result

TargetLink creates Workspace variables that contain the implemented table data.

Description

You can specify the desired names in the dialog that opens. After closing the dialog you can display the table's data vectors/matrix by typing the corresponding names at the MATLAB prompt.

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows \(TargetLink Preparation and Simulation Guide\)](#)

References

1-D Table Tool.....	48
2-D Table Tool.....	52


Open Detailed Plot Window

Purpose

To open the Detailed Plot Window for a subplot.

Access

You can access this command via:

Menu bar	None
Plot window	Plot Overview Window on page 32
Table tool	None
Keyboard shortcut	None
Toolbar	

Result

The Detailed Plot Window opens for the subplot on which this command was carried out.

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows \(TargetLink Preparation and Simulation Guide\)](#)


References

Plot Overview Window	32
--	----

Open Dialog of Associated Block

Purpose To quickly access the block dialog of the block associated with the plot.

Access You can access this command via:

Menu bar	None
Plot window	Plot Overview Window on page 32, Detailed Plot Window on page 36
Table tool	None
Keyboard shortcut	None
Toolbar	

Result The corresponding block dialog opens.

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))


References

Detailed Plot Window	36
Plot Overview Window	32

Open More Infos Plot Window

Purpose To open the More Infos Plot Window for the current detailed plot.

Access You can access this command via:

Menu bar	None
Plot window	Detailed Plot Window on page 36
Table tool	None
Keyboard shortcut	None
Toolbar	

Result The More Infos Plot Window opens for the current detailed plot. If the Detailed Plot Window shows additional signals, the deviation to these signals is also shown.

Description You can carry out this command for any signal shown in the Detailed Plot Window. For each signal line there is a button located in the bottom right corner of the Detailed Plot Window (the button color corresponds to the signal line color). Each signal line belongs to a specific simulation. You can also open the More Infos Plot Window by clicking the line of the signal you want to view.

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))


References


[Detailed Plot Window](#)..... 36

Open Production Code File

Purpose To investigate the associated block's C source code.

Access You can access this command via:

Menu bar	None
Plot window	Signal Comparison Window on page 44
Table tool	None
Keyboard shortcut	None
Toolbar	

Result The respective C source code file opens in the editor. If you use an editor that supports this feature, the editor scrolls to the portion of code that relates to the associated block. You need to set this feature appropriately in TargetLink. The editor actually used can be selected via the Preferences Editor. You can start it using the `tl_pref` API function. For more information, refer to [tl_pref](#) ( [TargetLink API Reference](#)).

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows \(TargetLink Preparation and Simulation Guide\)](#)

References

Signal Comparison Window	44
--	----


Open Signal Comparison Window

Purpose

To open the Signal Comparison Window, if not already open, and add a specific subplot.

Access

You can access this command via:

Menu bar	None
Plot window	Plot Overview Window on page 32
Table tool	None
Keyboard shortcut	None
Toolbar	

Result

If the Signal Comparison Window is not open, it opens with the subplot on which the command was carried out. If the Signal Comparison Window is already open, the subplot is added.

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows \(TargetLink Preparation and Simulation Guide\)](#)


References

Plot Overview Window	32
--------------------------------------	----


Optimize

Purpose To reduce the memory consumption of the implemented table by removing unnecessary data points.

Access You can access this command via:


Menu bar	View
Plot window	None
Table tool	1-D Table Tool on page 48, 2-D Table Tool on page 52
Keyboard shortcut	Ctrl + T
Toolbar	


Result If the optimization is activated, unnecessary data points are removed from the implemented table. The resulting implemented table is shown, and the toolbar button changes its icon.

Description To show the table without optimization, carry out the command a second time. For information on TargetLink's table optimization and on how to implement look-up tables, refer to [Basics on Look-up Tables](#) ( [TargetLink Preparation and Simulation Guide](#)).

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))

[Basics on Look-up Tables](#) ( [TargetLink Preparation and Simulation Guide](#))

References

[1-D Table Tool](#)..... 48

[2-D Table Tool](#)..... 52


Print Current Figure

Purpose

To print the contents of the active plot window or table tool.

Access

You can access this command via:

Menu bar	File
Plot window	All
Table tool	All
Keyboard shortcut	Ctrl + P
Toolbar	

Result

The standard printer dialog will open, which allows you to select and configure the desired printer. When you click the OK button, the contents of the active plot window or table tool will be sent to this printer.


Open Associated System in TargetLink Property Manager

Purpose

To open the associated system in TargetLink Property Manager.

Access

You can access this command via:

Menu bar	Edit
Plot window	All
Table tool	All
Keyboard shortcut	Ctrl + R
Toolbar	


Description

The Property Manager is an effective tool for handling models with many blocks. It is also a rather convenient interface for attaching TargetLink properties to State Machine (Stateflow) variables.

Toggle Between Integer and Float Display Mode

Purpose To toggle between Integer and Float Display Mode.

Access You can access this command via:

Menu bar	View
Plot window	Plot Overview Window on page 32, Detailed Plot Window on page 36, More Infos Plot Window on page 40, Signal Comparison Window on page 44
Table tool	1-D Table Tool on page 48, 2-D Table Tool on page 52
Keyboard shortcut	Ctrl + I
Toolbar	

Result The plot window or table tool toggles between the floating-point representation and the integer representation of the data displayed.

Description TargetLink implements the production code with this data format.

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))


References

1-D Table Tool	48
2-D Table Tool	52
Detailed Plot Window	36
More Infos Plot Window	40
Plot Overview Window	32
Signal Comparison Window	44


Show Boundary Area

Purpose To show the boundary area for the table.

Access You can access this command via:


Menu bar	View
Plot window	2-D Deviation Plot Window on page 59
Table tool	2-D Table Tool on page 52
Keyboard shortcut	Ctrl + B
Toolbar	


Result The boundary area is shown, and the toolbar button changes its icon.

Description To hide the boundary area, carry out the command a second time. For further information on look-up tables and their boundary area refer to [Basics on Look-up Tables](#) ( [TargetLink Preparation and Simulation Guide](#)).

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))

[Basics on Look-up Tables](#) ( [TargetLink Preparation and Simulation Guide](#))

References


[2-D Deviation Plot Window](#)..... 59

[2-D Table Tool](#)..... 52

Show Signal in Table

Purpose To display the numeric values of a signal below the signal plot in the Signal Comparison window.

Access You can access this command via:


Menu bar	None
Plot window	Signal Comparison Window on page 44
Table tool	None
Keyboard shortcut	None
Toolbar	

Result The numeric values of the signal for which this command was carried out are shown in the table at the bottom of the Signal Comparison Window. The button changes its icon.

Description To remove the numeric values from the table, carry out the command a second time. Each signal has its own button located to the right of each subplot. The button might have a different color.

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))

References


Signal Comparison Window	44
--	----

Show Markers

Purpose To mark the data points of the simulation.

Access

You can access this command via:

Menu bar	View
Plot window	Detailed Plot Window on page 36, More Infos Plot Window on page 40, Signal Comparison Window on page 44, 1-D Deviation Plot Window on page 56
Table tool	None
Keyboard shortcut	Ctrl + M
Toolbar	

Result The data points of the simulation are marked in the plot, and the toolbar button changes its icon.

Description To hide the marker, carry out the command a second time.

Related topics

Basics

Analyzing Simulation Results Using Plot Windows (📖 TargetLink Preparation and Simulation Guide)



References

1-D Deviation Plot Window.....	56
Detailed Plot Window.....	36
More Infos Plot Window.....	40
Signal Comparison Window.....	44


Show Original Table

Purpose To show or hide the original table.

Access You can access this command via:


Menu bar	View
Plot window	None
Table tool	1-D Table Tool on page 48, 2-D Table Tool on page 52
Keyboard shortcut	Ctrl + S
Toolbar	 (1-D Table Tool)  (2-D Table Tool)


Result The original table is shown in addition to the implemented table, and the toolbar button changes its icon.

Description To hide the original table, carry out the command a second time. For further information on implementing look-up tables, refer to [Basics on Look-up Tables](#) ( [TargetLink Preparation and Simulation Guide](#)).

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))

[Basics on Look-up Tables](#) ( [TargetLink Preparation and Simulation Guide](#))

References


[1-D Table Tool](#)..... 48

[2-D Table Tool](#)..... 52

Toggle Between Showing Block Names and Variable Names

Purpose To toggle between showing block names and variable names

Access You can access this command via:

Menu bar	View
Plot window	Plot Overview Window on page 32, Detailed Plot Window on page 36, More Infos Plot Window on page 40, Signal Comparison Window on page 44
Table tool	None
Keyboard shortcut	Ctrl + V
Toolbar	

Result The variable names are shown in the Plot Window.

Description To hide the variable names, carry out the command a second time.

Related topics

References



Detailed Plot Window	36
More Infos Plot Window	40
Plot Overview Window	32
Signal Comparison Window	44

Show Scaling Range


Purpose To compare the simulation result or the implemented table with the implemented range.

Access You can access this command via:



Menu bar	View
Plot window	Plot Overview Window on page 32, Detailed Plot Window on page 36, More Infos Plot Window on page 40, Signal Comparison Window on page 44

Table tool	1-D Table Tool on page 48, 2-D Table Tool on page 52
Keyboard shortcut	Ctrl + L
Toolbar	 (plot windows)  (table tools)

Result The Plot Overview Window, Detailed Plot Window, More Infos Plot Window, and Signal Comparison Window show the implemented range of the associated signal. The 1-D Table Tool and 2-D Table Tool show the implemented range of the associated table. The toolbar button changes its icon.

Description To hide the scaling range, carry out the command a second time. TargetLink calculates the implemented range according to the associated scaling parameters. For further information on the scaling of blocks, refer to [Basics on Scaling Block Outputs and State Variables](#) ( [TargetLink Preparation and Simulation Guide](#)).

Related topics

Basics
[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))
[Basics on Scaling Block Outputs and State Variables](#) ( [TargetLink Preparation and Simulation Guide](#))

References


1-D Table Tool	48
2-D Table Tool	52
Detailed Plot Window	36
More Infos Plot Window	40
Plot Overview Window	32
Signal Comparison Window	44

Show Signal Constraints

Purpose To show the expected range as specified in the Constrained limits edit fields on the Output page of the respective block dialog.

Access


You can access this command via:

Menu bar	View
Plot window	Plot Overview Window on page 32, Detailed Plot Window on page 36, More Infos Plot Window on page 40, Signal Comparison Window on page 44
Table tool	None
Keyboard shortcut	Ctrl + X
Toolbar	

Result

The plot shows the expected range, and the toolbar button changes its icon.

Description

To hide the expected range, carry out the command a second time. The command is available in the specified plot windows provided that the scaling range is shown (see [Show Scaling Range](#) on page 92). For further information on constrained limits and expected ranges, refer to [Determining Range Limits of Block Outputs or State Variables](#) ( [TargetLink Preparation and Simulation Guide](#)).

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))


References

Detailed Plot Window	36
More Infos Plot Window	40
Plot Overview Window	32
Signal Comparison Window	44

Start Simulation





Purpose To start the simulation after it was stopped.

Access You can access this command via:

Menu bar	None
Plot window	Plot Overview Window on page 32, Detailed Plot Window on page 36, Signal Comparison Window on page 44
Table tool	None
Keyboard shortcut	None
Toolbar	

Result The simulation starts. The plot appears in the plot window if at least one signal has been logged.


Related topics

- Basics**
- [Analyzing Simulation Results Using Plot Windows](#) ( [TargetLink Preparation and Simulation Guide](#))
- HowTos**
- [How to Simulate in MIL Simulation Mode \(Reference Simulation\)](#) ( [TargetLink Preparation and Simulation Guide](#))
 - [How to Simulate in PIL Simulation Mode](#) ( [TargetLink Preparation and Simulation Guide](#))
 - [How to Simulate in SIL Simulation Mode](#) ( [TargetLink Preparation and Simulation Guide](#))
- References**
- | | |
|--|----|
| Detailed Plot Window | 36 |
| Plot Overview Window | 32 |
| Signal Comparison Window | 44 |
| Stop Simulation | 96 |

Stop Simulation

Purpose To stop the simulation after it was started.


Access You can access this command via:

Menu bar	None
Plot window	Plot Overview Window on page 32, Detailed Plot Window on page 36, Signal Comparison Window on page 44
Table tool	None
Keyboard shortcut	None
Toolbar	


Result The simulation stops.


Related topics


Basics

[Verifying Model and Code in Different Simulation Modes](#) ( [TargetLink Preparation and Simulation Guide](#))

HowTos

[How to Simulate in MIL Simulation Mode \(Reference Simulation\)](#) ( [TargetLink Preparation and Simulation Guide](#))

[How to Simulate in PIL Simulation Mode](#) ( [TargetLink Preparation and Simulation Guide](#))

[How to Simulate in SIL Simulation Mode](#) ( [TargetLink Preparation and Simulation Guide](#))


References

Detailed Plot Window	36
Plot Overview Window	32
Signal Comparison Window	44
Start Simulation	95

Set Time Interval

Purpose To investigate a specific time interval of the plot.

Access You can access this command via:

Menu bar	View
Plot window	Plot Overview Window on page 32, Signal Comparison Window on page 44
Table tool	None
Keyboard shortcut	Ctrl + T
Toolbar	

Result This automatically opens a dialog where you can enter the desired time axis limits. The plot window displays the specified time interval.

Related topics

Basics

[Analyzing Simulation Results Using Plot Windows \(📖 TargetLink Preparation and Simulation Guide\)](#)

References

Plot Overview Window	32
Signal Comparison Window	44

Windows

Purpose To bring a currently open TargetLink window to the front.

Access You can access this command via:

Menu bar	Windows
Plot window	All
Table tool	All
Keyboard shortcut	None
Toolbar	None


Result	The selected TargetLink window is made the active window.
---------------	---

Description	This menu contains a list of currently open TargetLink windows.
--------------------	---

Toggle Zoom Mode

Purpose	To investigate a specific part of the plot.
----------------	---

Access	You can access this command via:
---------------	----------------------------------


Menu bar	View
Plot window	Plot Overview Window on page 32, Detailed Plot Window on page 36, More Infos Plot Window on page 40, Signal Comparison Window on page 44, 1-D Deviation Plot Window on page 56, Worst Case Signals Plot Window on page 63
Table tool	1-D Table Tool on page 48
Keyboard shortcut	Ctrl + Z
Toolbar	

Result	The zoom mode toggles, and the toolbar button changes its icon accordingly.
---------------	---

Description	To zoom a specific part of the plot, you point and left-click the part of the plot that you want to magnify. If you want to zoom out, right-click the plot.
--------------------	---

Related topics

Basics

Analyzing Simulation Results Using Plot Windows ( TargetLink Preparation and Simulation Guide)

References

1-D Deviation Plot Window.....	56
1-D Table Tool.....	48
Detailed Plot Window.....	36
More Infos Plot Window.....	40
Plot Overview Window.....	32
Signal Comparison Window.....	44
Worst Case Signals Plot Window.....	63

Preferences Editor

About Preferences Editor The Preferences Editor lets you view and modify all user-specific preference settings after the installation has finished.

Where to go from here

Information in this section

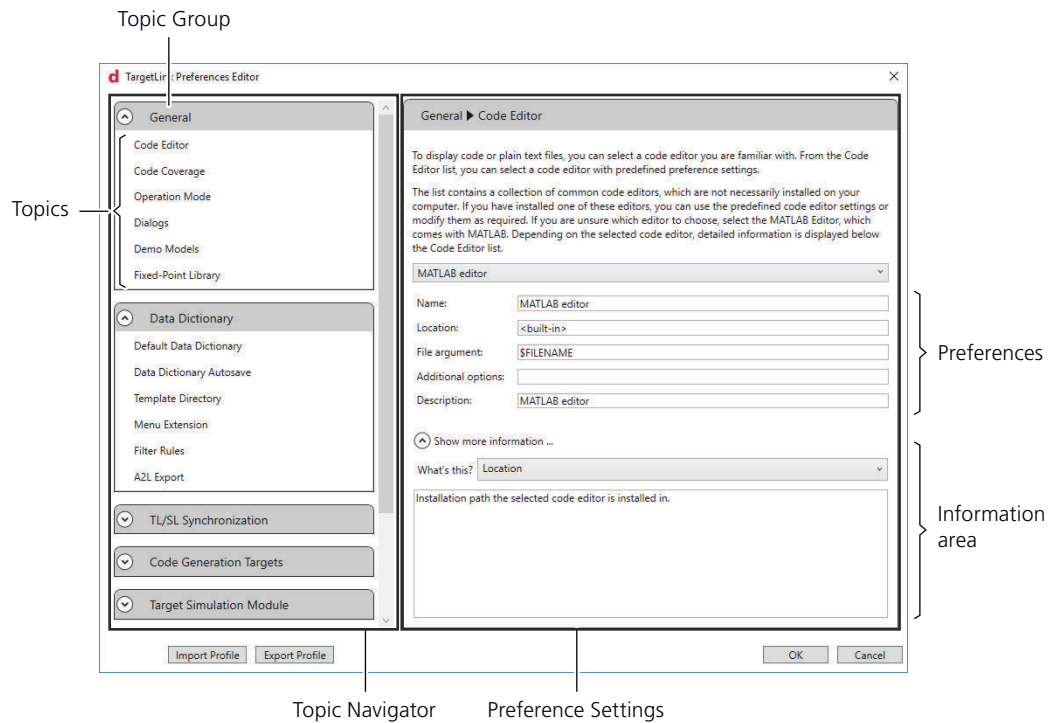
Preferences Editor.....	101
Topic Navigator.....	102
Topic Settings.....	105

Information in other sections

[Basics on Using the Preferences Editor \(📖 TargetLink Customization and Optimization Guide\)](#)

Preferences Editor

GUI



Purpose

To view and modify all user-specific preference settings.

Access

You can access the Preferences Editor as follows:

Preferences ...	Preferences ... button on the Options page of the TargetLink Main Dialog block
API function	<code>t1_pref</code> (without parameter) or <code>t1_pref ('GUI')</code> in the MATLAB Command Window
Windows Start menu	Start – (All) Programs – dSPACE TargetLink <version> – Preferences Editor <version>



Description

With the Preferences Editor, you can view and modify preferences that were set by the installation program. The preferences include such as the Code Editor to be used, the default Data Dictionary to be loaded, or the Code Generation Targets and Target Simulation Module that are to be displayed in the TargetLink Main Dialog. The Preferences Editor provides two panes called Topic Navigator and Preference Settings pane.

The Topic Navigator is divided into topic groups that can be expanded (collapsed) to display (hide) their topics. When you select a topic, all its preference settings are displayed in the Preference Settings pane. If required, you can change the preferences set during the installation, e.g., to customize your TargetLink environment. A general introduction to each topic is displayed at the top of the Preference Settings pane.

Related topics

Basics

[Basics on Using the Preferences Editor](#) ( [TargetLink Customization and Optimization Guide](#))
[Details on Synchronizing Simulink and TargetLink Data](#) ( [TargetLink Preparation and Simulation Guide](#))

References

[tl_pref](#) ( [TargetLink API Reference](#))

Topic Navigator

Purpose

The Topic Navigator is a part of the Preferences Editor and allows you to navigate, expand and collapse topic groups. Expanding a topic group lets you select topics such as the Code Editor, the Target Simulation Module, or the Code Generation Targets.

General

Code Editor This topic accesses various **Code Editor** preference settings, which are displayed in the Preference Settings pane. Selecting a suitable code editor helps you to investigate C code or plain text files with a code editor that is available on your computer and with which you are familiar.

Code Coverage This topic accesses the **Code Coverage** preference setting **Show code coverage level during simulation**, that is displayed in the Preference Settings pane. **Show code coverage level during simulation** lets you control whether code coverage is visualized via a progress bar as a percentage of code lines already executed.

License Mode This topic accesses the **License Mode** preference settings **ModelingOnly** and **Full-Featured**, that are displayed in the Preference Settings pane. These preference settings allow you to switch the operating mode to control whether license-protected TargetLink features such as data logging, block output plotting, and overflow detection are available, or if only modeling is possible.

Dialogs This topic accesses the **Dialogs** preference settings **TargetLink** and **Simulink**, that are displayed in the Preference Settings pane. This preference is

useful if you work with the TargetLink Blockset or use TargetLink in the ModelingOnly operation mode. If you choose TargetLink as the dialog provider, a TargetLink block dialog is displayed when you double-click a TargetLink block. With Simulink as the dialog provider, a Simulink block properties dialog is displayed.

Demo Models This topic accesses the Demo Models preference settings Folder for Demo models and Set default, that are displayed in the Preference Settings pane. This preference lets you place user-specific copies of its demo models in a folder outside the TargetLink installation folder. This allows you to use the demo models without having administrator privileges.

Fixed-Point Library This topic accesses the Fixed-Point Library preference settings Sources and Binaries, that are displayed in the Preference Settings pane. These preferences lets you specify the directories in which you want TargetLink to provide the sources and binaries of the Fixed-Point Library (write access is required).

Data Dictionary

Default Data Dictionary This topic accesses the Default Data Dictionary preference setting Data Dictionary file name, displayed in the Preference Settings pane. You can enter the name of the default Data Dictionary file that is used for models not associated with a model-specific Data Dictionary file.

Data Dictionary Autosave This topic accesses the Data Dictionary Autosave preference setting Save Data Dictionary to file automatically when model is saved, displayed in the Preference Settings pane. This preference setting lets you select whether the Data Dictionary is saved automatically or interactively.

Template Directory This topic accesses the Template Directory preference settings Directory for Data Dictionary templates and Use application data directory, displayed in the Preference Settings pane. You can use the application's data directory or specify the path to your own (user-defined) DD project file templates.

Menu Extension This topic accesses the Menu Extension preference settings Directory for Data Dictionary menu extensions and Use application data directory, displayed in the Preference Settings pane. You can use the application's data directory or specify the path to your own (user-defined) menu commands in one or more menu extension scripts.

Filter Rules This topic accesses the Filter Rules preference settings Directory for Data Model filter rule files and Use application data directory, displayed in the Preference Settings pane. You can use the application's data directory or specify the path to your own (user-defined) filter rule sets.

A2L Export This topic accesses the A2L Export preference settings Directory for A2L style sheets and AML files and Use application data directory, displayed in the Preference Settings pane. You can use the application's data directory or specify the path to A2L style sheets and AML files in order to adapt TargetLink's A2L export module.

TL/SL Synchronization

Synchronization Trigger This topic accesses the Synchronization Trigger preference setting Always synchronize Simulink scaling parameters with TargetLink properties, which is displayed in the Preference Settings pane. Some TargetLink block properties correspond to Simulink block properties. TargetLink property values can be synchronized with their Simulink counterparts during system synchronization by applying specific mapping rules. Simulink data types, which are used for the MIL simulation only, and TargetLink data types, which are used for production code generation only, are an example.

Synchronization Properties This topic accesses various Synchronization Properties preference settings, which are displayed in the Preference Settings pane. Using synchronization properties, you can select or clear certain property groups, for example, output, parameter, and signal scaling. The selected properties are used as the default properties for the System Preparation Tool.

Code Generation Targets

Preselection This topic accesses the Preselection preference settings, which are displayed in the Preference Settings pane. All the code generation targets and Target Optimization Modules (TOM) available on your computer are displayed. You can select the code generation targets or TOMs to display, for example, in the TargetLink Main Dialog or other user interfaces.

Target Simulation Module

TSM Extension Packages This topic accesses the TSM Extension Packages preference settings, which are displayed in the Preference Settings pane. After installation, you can add additional TSM Extension Packages to your Target Simulation Module and specify in which to install them, for example, outside of the TargetLink installation folder.

Preselection This topic accesses the Preselection preference settings, that are displayed in the Preference Settings pane. All the target/compiler combinations available on your computer are displayed. You can select the target/compiler combinations to display, for example, in the TargetLink Main Dialog or other user interfaces.

Compiler Paths This topic accesses the Compiler paths preference settings, which are displayed in the Preference Settings pane. All the compilers, their versions and installation paths available on your computer are displayed. You can adapt the installation path as required.

Default Simulation Target This topic accesses the Default Simulation Target preference setting The default target on this computer is displayed in the Preference Settings pane. Default Simulation Target lets you select the default evaluation board (EVB) used to simulate the generated code in processor-in-the-loop (PIL) simulation mode. The selected default EVB is computer-dependent, i.e., it is a placeholder that can have different values, representing different EVBs on different computers.

Communication Port This topic accesses the Communication Port preference settings Communication port and Baud rate displayed in the Preference Settings pane. You can change the communication port by selecting

another one from the Communication port list and also define a suitable baud rate for communication.

Instruction Set Simulator Paths This topic accesses the Instruction Set Simulator Paths preference settings, that are displayed in the Preference Settings pane. Instruction set simulators are the core part of the virtual evaluation boards that you can use in PIL simulation mode. For each virtual target, the installation path has to be specified via the Path to Instruction Set Simulator option.

Import Profile

This button lets you import a profile you exported previously. This is useful if you want to adopt settings made by a colleague.

Export Profile

This button lets you export a profile you configured previously. This is useful if you want to share your personal settings with your colleagues.

Related topics

Basics

[Basics on Using the Preferences Editor](#) (📖 TargetLink Customization and Optimization Guide)
[Defining Search Paths for Customization Files, Demo Models, TSM Extension Packages, and Instruction Set Simulators](#) (📖 TargetLink Customization and Optimization Guide)

References

[tl_pref](#) (📖 TargetLink API Reference)
[Topic Settings.....](#) 105


Topic Settings

Purpose

The Topic Settings pane is a part of the Preferences Editor and allows you to view and modify preference settings.

General > Code Editor

To display code or plain text files, you can select a code editor with which you are familiar from the Code Editor list. The list contains a collection of common code editors, which are not necessarily installed on your computer. If you have installed one of these editors, you can use the predefined code editor settings or modify them as required. If you are unsure which editor to choose, select the MATLAB Editor, which comes with MATLAB. Detailed information on the selected code editor is displayed below the Code Editor list.

Code Editor list Lets you select the default Code Editor that is accessed, for example, via the  button in the toolbar of the TargetLink Main Dialog.

Name: Product name of the selected code editor.

Location: Installation path the selected code editor is installed in.

File argument: Specifies the call instruction for passing the file that you want to open to the editor. Depending on the code editor, the call instruction and available arguments vary. Generally, the following arguments are available:

- \$FILENAME
- \$LINE
- \$COLUMN
- \$FIRST_BYTE_OF_SELECT
- \$LAST_BYTE_OF_SELECT

For more information on vendor-specific code editor arguments, refer to the respective documentation.

Additional options: Additional command line options the selected code editor is called with. Command line options are code editor call instructions that let you control how the editor is started.

Description: Additional descriptions for the selected code editor.

Show more information ... Toggle button to expand (v) or collapse (^) the Show more information ... area.

What's this? Lets you select a field to display help information on it.

Information area Displays the help strings that briefly describe the selected edit field.

General > Code Coverage

Code coverage tests allow you to find parts of your production code that are not executed and therefore have not been tested adequately. You can check the test quality of your production code and increase code coverage by varying the model's stimulus signals. TargetLink records code coverage data during the simulation of the generated production code (software-in-the-loop (SIL) and processor-in-the-loop (PIL) simulation mode).

Show code coverage level during simulation Displays the progress of a code coverage test in a progress bar as a percentage of code lines already executed. These values are also part of the code coverage test report that you can generate for the test.

General > Operation Mode

If you do not require the TargetLink features to work with your model, you can switch off license checks by selecting **ModelingOnly** as the TargetLink operating mode. The Full-Featured mode enables you to use all TargetLink features, including data logging, block output plotting and overflow detection, during simulation runs.

TargetLink is running in the following mode:

- **Full-Featured**
Features relevant for code generation are available.
- **Modeling Only**
TargetLink features relevant for code generation are *not* available.

General > Dialogs

Lets you control whether a TargetLink block dialog or a Simulink block properties dialog opens when you double-click a TargetLink block. If you work with the *TargetLink Blockset* or use TargetLink in **ModelingOnly** operation mode and prefer to view and set block properties in Simulink dialogs, select **Simulink** from the **Dialog provider for TargetLink blocks:** list. If you want to use TargetLink block dialogs, select **TargetLink** instead.

General > Demo Models

The TargetLink installation provides several demo models in compressed archives. You have to extract the archives to a working folder before you can use the models. The edit field lets you specify the working folder.

Folder for demo models Lets you specify the working folder for the demo models (write access is required).

General > Fixed-Point Library

By default, TargetLink uses its default path to manage the source, header, and binary files of the Fixed-Point Library. If you are an expert user and have to alter and/or manage functions implemented in the TargetLink Fixed-Point Library, you can edit its source, header and binary files. However, you do this at your own risk.

Sources Lets you specify the folder in which you want TargetLink to search for the Fixed-point Library source and header files (write access is required).

Binaries Lets you specify the folder in which TargetLink places the Fixed-Point library binary files.

Data Dictionary > Default Data Dictionary

The TargetLink Data Dictionary (DD) is a central data container that holds all the relevant information for code generation. It is file-based, i.e., when a data dictionary is loaded, its contents are directly mapped into the memory space of the calling process.

Data Dictionary file name The default DD specifies the DD file that is used for models that are not associated with a model-specific DD file.

Data Dictionary > Data Dictionary Autosave

To avoid data loss when loading another *.dd project file or exiting MATLAB, you can specify whether to save the Data Dictionary automatically and how.

Save Data Dictionary to file automatically when model is saved Lets you select an autosave option. The available options are:

- off

If you save the model, load another *.dd file, or exit MATLAB, the current *.dd file is not saved.

- interactive

If you save the model, load another *.dd file, or exit MATLAB, and any data has not been stored yet, you are asked whether the current *.dd file is to be saved.

- on

If you save the model, load another *.dd file, or exit MATLAB, the current *.dd file is saved automatically.

Data Dictionary > Template Directory

To initialize the DD workspace as you require, you can provide your own (user-defined) DD project file templates. To do so, simply put the user-defined templates in the folder that you specify below. If you want to create a new DD project file in a new DD workspace, you can select either a user-defined or a system template in the Select DD Template dialog.

Data Dictionary > Menu Extension

To add custom functionality to the TargetLink Data Dictionary Manager, you can define additional (user-defined) menu commands in one or more menu extension scripts. You can specify the location to search for such scripts via the folder path below. This allows you to show and hide your user-defined menu commands by toggling the folder path below.

Data Dictionary > Filter Rules

To hide specified objects and properties in the Data Dictionary Manager, the Property Manager, or the DD Reference Selection Dialog, you can specify filter rules (filter rule files). Filter rules display objects and properties that are relevant for your work and hide all others. You can specify where to store filter rules via the folder path below.

Data Dictionary > A2L Export

To export calibration and measurement data into an ASAM MCD-2 MC (A2L) file exactly as you require, you can adapt TargetLink's A2L export module via style sheets. These style sheets support additional ASAM MCD-1 interfaces, e.g., ADDRESS, CCP, or DiM, which define the communication layer between an ECU and a measurement and calibration (MC) system connected to the ECU. You can specify the location to search for such style sheets via the folder path below.

If you have to add or modify description files of the ASAM MCD-1 interface-specific parameters (AML files), store these AML files in the same folder.

TL/SL Synchronization > Synchronization Trigger

Simulink data types such as `uint8`, that are used for the MIL simulation only, and TargetLink data types like `UInt8`, that are used for production code generation only, can differ from each other. This can lead to different simulation results. If you select the checkbox, TargetLink synchronizes TargetLink property values with their Simulink counterparts. The synchronization of property values is

configurable and automatically performed by applying specific mapping rules during system synchronization or, if selected here, every time TargetLink block data changes. This also applies to customized synchronization settings.

Always synchronize Simulink scaling parameters with TargetLink properties Indicates whether Simulink scaling parameters are always synchronized with TargetLink properties. Select the checkbox to automatically perform synchronization during system preparation.

TL/SL Synchronization > Synchronization Properties

Synchronization between Simulink and TargetLink takes different properties into account. You can select or clear certain property groups, for example, output, parameter, and signal scaling. The selected properties are used as the default properties for the System Preparation Tool.

Synchronize output scaling data Indicates whether Simulink output scaling data is used to synchronize the corresponding TargetLink production code options, e.g., Type, LSB, Offset, etc., or vice versa.

Synchronize signal scaling data Indicates whether Simulink signal scaling data is used to synchronize the corresponding TargetLink production code options, or vice versa. This option is ignored for libraries.

Synchronize saturation flags Indicates whether Simulink saturation flags (SaturateOnIntegerOverflow) are used to synchronize the corresponding TargetLink production code options (*output.checkmin*, *output.checkmax*), or vice versa.

Synchronize constraint limits Indicates whether Simulink constrained limits (OutMin, OutMax) are used to synchronize the corresponding TargetLink production code options (*output.min*, *output.max*), or vice versa.

Synchronize parameter scaling data Indicates whether Simulink parameter scaling data is used to synchronize the corresponding TargetLink production code options, or vice versa.

Synchronize Stateflow® object scaling data Indicates whether Stateflow object scaling data is used to synchronize the corresponding TargetLink production code options, or vice versa.

Synchronize Stateflow® object compiled scaling data Indicates whether Stateflow object compiled scaling data is used to synchronize the corresponding TargetLink production code options. This option is ignored for libraries.

Synchronize Real-Time Workshop® data Indicates whether Real-Time Workshop® data is used to synchronize the corresponding TargetLink production code options.

Show more information ... Toggle button to expand (v) or collapse (^) the Show more information ... area.

What's this? Lets you select a field to display help information on it.

Information area Displays the help strings that describe the selected edit field briefly.

Code Generation Targets > Preselection	<p>All the code generation targets and Target Optimization Modules (TOM) available on your computer are displayed. If you do not want to display one of the code generation targets in any user interface, clear its checkbox. Selected code generation targets are displayed, for example, in the TargetLink Main Dialog or other user interfaces.</p>
Target Simulation Module > TSM Extension Packages	<p>You can supplement the Target Simulation Module available after the installation of TargetLink with additional TSM Extension Packages provided after the product release.</p> <p>Folder for TSM Extension Packages Lets you specify the folder where TargetLink should search for additional TSM Extension Packages. To make a newly installed TSM Extension Package available in TargetLink user interfaces, e.g., TargetLink Main Dialog, it needs to be activated in the Target Simulation Module > Preselection dialog.</p>
Target Simulation Module > Preselection	<p>The Target Simulation Module (TSM) is a TargetLink software module for integrating evaluation boards (EVBs) to simulate the generated code in processor-in-the-loop (PIL) simulation mode on the target processor. If you have the TargetLink Target Simulation Module, you can select any of the included target/compiler combinations that are available for all supported processors.</p> <p>You can select the target/compiler combinations to display, for example, in the TargetLink Main Dialog or other user interfaces. If you do not want to display a target/compiler combination in any user interface, clear its checkbox.</p>
Target Simulation Module > Compiler Paths	<p>To invoke a target compiler, TargetLink has to know its installation path. All the compilers, their versions, and their installation paths are displayed. If you have to adapt an installation path, enter the new value in the Installation folder: edit field.</p> <p>Installation folder: Installation path of the selected compiler. You can select another root installation path if required. You must not enter the binary directory that contains the compiler executable.</p>
Target Simulation Module > Default Target Simulation Module	<p>The default evaluation board you select is used to simulate the generated code in processor-in-the-loop (PIL) simulation mode. The selected default evaluation board is computer-dependent, i.e., the selected EVB is a placeholder that can have different values, representing different EVBs on different computers.</p> <p>The default target on this computer is: Indicates the selected default evaluation board. If required, you can select another EVB as the default target for your computer.</p>
Target Simulation Module > Communication Port	<p>TargetLink uses (virtual) COM ports for data transfer to/from TargetLink evaluation boards (EVB) during PIL simulations. In consequence, both the serial</p>

communication port used and the communication baud rate to be applied need to be specified here.

Communication port Indicates the serial communication port currently selected. You can select another communication port if required.

Baud rate Indicates the selected baud rate. You can select another baud rate if required. Virtual COM ports support communication baud rates that are 2-, 4-, and 8-times faster than 115,200 but the actual communication baud rate depends on the hardware. The download baud rate is not affected, its maximum limit remains 115,200 (depending on the EVB even less).



Target Simulation Module > Instruction Set Simulator Path

TargetLink supports virtual evaluation boards that consist of an instruction set simulator (ISS) and simulated periphery. All available ISS and the compilers supported for each ISS are displayed here. To be able to use the supported combinations, you have to install the respective ISS. Afterwards, TargetLink and the ISS have to be connected by specifying the installation path of the ISS via the Path to Instruction Set Simulator option.


Path to Instruction Set Simulator Installation path of the instruction set simulator.

Related topics

Basics


Basics on Using the Preferences Editor ( TargetLink Customization and Optimization Guide)
Defining Search Paths for Customization Files, Demo Models, TSM Extension Packages, and Instruction Set Simulators ( TargetLink Customization and Optimization Guide)

References

tl_pref ( TargetLink API Reference)
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Property Manager

About Property Manager

The Property Manager lets you display model hierarchies, view and filter the properties of  [model elements](#) or model element variables, and modify the same TargetLink property of several model elements simultaneously.

Where to go from here

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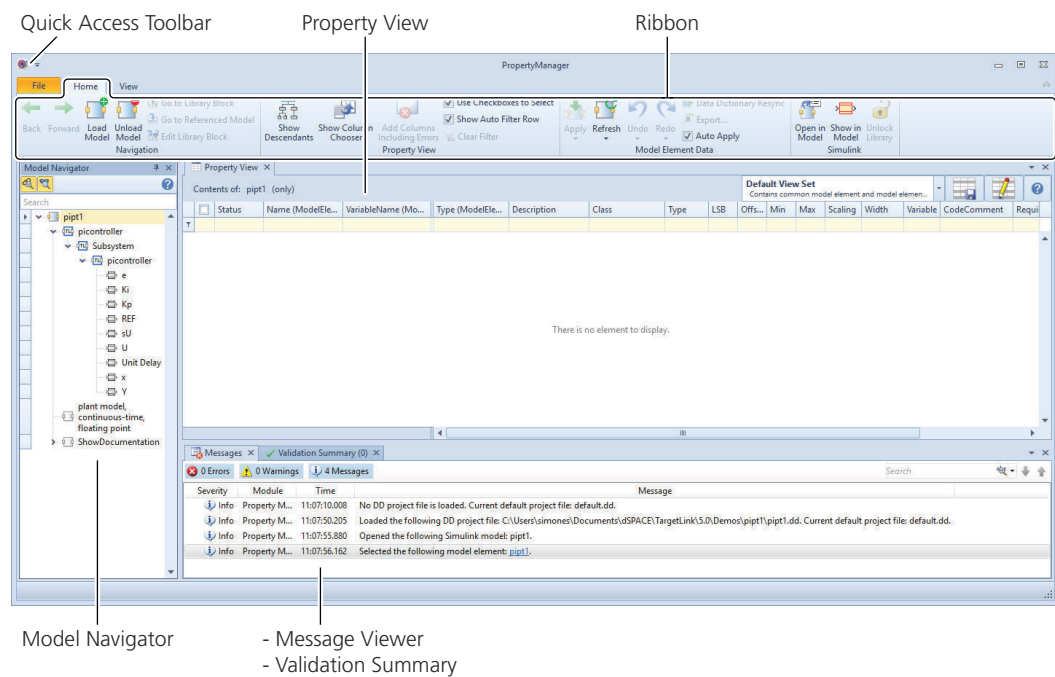
Information in other sections

[Modifying Multiple Properties at Once via the Property Manager
\(!\[\]\(e8fb589d58dad1692debababa5e928b6_img.jpg\) TargetLink Preparation and Simulation Guide\)](#)

Property Manager Description

Property Manager Description

GUI



Purpose

To display model hierarchies, view and filter the properties of model elements or model element variables and to modify the same TargetLink property of several model elements simultaneously.

Access

You can access this tool via:

TargetLink menu in the Simulink Editor	TargetLink - Property Manager
Context menu of	Model elements such as subsystems, blocks, Stateflow charts or MATLAB Function objects - TargetLink - Open Property Manager
Toolbar	Property Manager toolbar button in the TargetLink Main Dialog, any TargetLink block dialog, any plot window.

API function	<ul style="list-style-type: none">▪ tlPropman('Start') - starts the Property Manager without loading a model▪ tlPropman('Load') - starts the Property Manager and loads the already opened model on its root level
--------------	---

Description


The Property Manager displays model hierarchies and the properties of model elements or model element variables. TargetLink blocks and Stateflow/MATLAB function objects (e.g., the Gain block) are referred to as model elements. The Property Manager lets you modify the TargetLink properties of these model elements and their variables. Non-TargetLink properties, such as a block's foreground color, cannot be modified. In addition, it is not possible to carry out structural changes on a model, for example, to add, delete, or connect blocks.

Related topics

Basics

[Basics on the TargetLink Property Manager](#) ( [TargetLink Preparation and Simulation Guide](#))

HowTos

[How to Open the Property Manager](#) ( [TargetLink Preparation and Simulation Guide](#))

Basic Interface

Where to go from here

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About Property Manager

Purpose

To display information about the TargetLink Property Manager version installed on your system.

Access

Ribbon	File – Help
Context menu of	None
Shortcut key	None
Icon	None

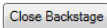
Result

Here you can see the Property Manager's version number.

Close Backstage

Purpose To close the Backstage View.

Access You can access this command via:




Ribbon	File - Help
	
Context menu of	None
Shortcut key	None
Icon	None

Result The Backstage View is closed.

dSPACE Help

Purpose To open the Property Manager's online help in dSPACE Help.

Access You can access this command via:

Ribbon	File - Help
Context menu of	 (Model elements in the Model Navigator and the Property View)
Shortcut key	F1
Icon	
Others	 (at the right side of the ribbon bar)

Result The online help for the Property Manager opens.


dSPACE Log

Purpose

To open the dSPACE Log in the Property Manager's working area.

Access

You can access this command via:

Ribbon	<ul style="list-style-type: none"> View – Show File
Context menu of	None
Shortcut key	None
Icon	

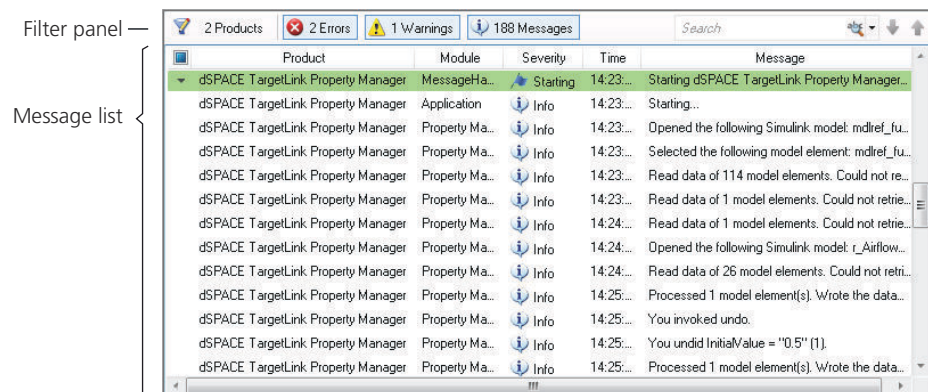
Result

The dSPACE Log Viewer opens. It displays the dSPACE Log.

Description


The dSPACE Log is a collection of errors, warnings, information, questions, and advice issued by all dSPACE products and connected systems over more than one session.


The dSPACE Log Viewer looks like this:



Filter panel


The filter panel lets you filter the message list and search for text in the message list.

Edit Product Filter ( button) Lets you filter the message list according to products.

To apply the product filter, click the button next to the  button.

Show/Hide Errors ( button) Lets you display or hide errors.

Show/Hide Warnings ( button) Lets you display or hide warnings.


Show/Hide other Messages ( button) Lets you display or hide other messages, i.e., infos, advice, and questions.


Search Lets you enter a text string for searching the message list.

You can use the following wildcards in the text string:

- ? (wildcard for one character)
- * (wildcard for any number of characters)




To mask a wildcard, enter the \ character before the wildcard.

To select the next occurrence of the search string, click  next to the edit field, or press the **Enter** key while the search field has the focus.

To select the previous occurrence of the search string, click  next to the edit field.

Message list

The message list provides the following information for each message:

Information	Description
Date ¹⁾	The date the message was issued.
Main Module Number ¹⁾	The main module that issued the message.
Message	The content of the message.
Message Code ¹⁾	The code of the message.
Message Number ¹⁾	The number of the message.
Module ¹⁾	The module that issued the message.
Process ID ¹⁾	The ID of the process in which the message was issued.
Product ¹⁾	The name of the product that issued the message.
Severity ¹⁾	The severity level of the message, indicated by one of the following symbols: <ul style="list-style-type: none"> ▪  errors ▪  warnings ▪  other messages, i.e., infos, advice, and questions
Submodule Number ¹⁾	The submodule that issued the message.
Thread ID ¹⁾	The ID of the thread in which the message was issued.
Time ¹⁾	The time the message was issued.

¹⁾ You can specify whether this information is displayed via the Show Columns command.

Show/Hide Messages of Log Session (Available in the column header) Lets you expand/collapse the messages in the message list according to log sessions. A log session starts when a dSPACE product is started.

Fit Column Width (Available from the context menu of column headers) Lets you optimize the width of the selected column.

Fit All Columns (Available from the context menu of column headers) Lets you optimize the widths of all columns to fit the width of the list.

Show Columns (Available from the context menu of column headers) Lets you add/remove a column to/from the message list.

Reset Columns Lets you reset the display of message list columns to the default.

Copy (Available from the context menu of messages) Lets you copy the selected messages to the Clipboard.

Show Message (Available from the context menu of messages) Lets you display the selected message in a separate dialog.

Show Filter Panel (Available from the context menu of messages) Lets you show/hide the filter panel.


Show Details (Available from the context menu of messages) Lets you display/hide all the details of the currently selected message.

Lock Scrolling (Available from the context menu of messages) Lets you disable the automatic horizontal scrolling mechanism in the viewer.

Exit

Purpose To exit the Property Manager.

Access You can access this command via:


Ribbon	File
Context menu of	None
Shortcut key	Alt+F4
Icon	

Description If you made any changes in the Property Manager, you are prompted to apply them before you exit the session.

Export View Sets

Purpose To export one or multiple custom property view sets as one View Set XML (VSML) file.

Access You can access this command via:

Ribbon	File
Context menu of	None
Shortcut key	None
Icon	

Result The Export View Sets dialog opens. For more information, refer to [Export View Sets Dialog](#) on page 120.

Related topics


References

Export View Sets Dialog.....	120
Import View Sets Dialog.....	122

Export View Sets Dialog

Purpose To export one or multiple custom property view sets as one View Set XML (VSML) file.

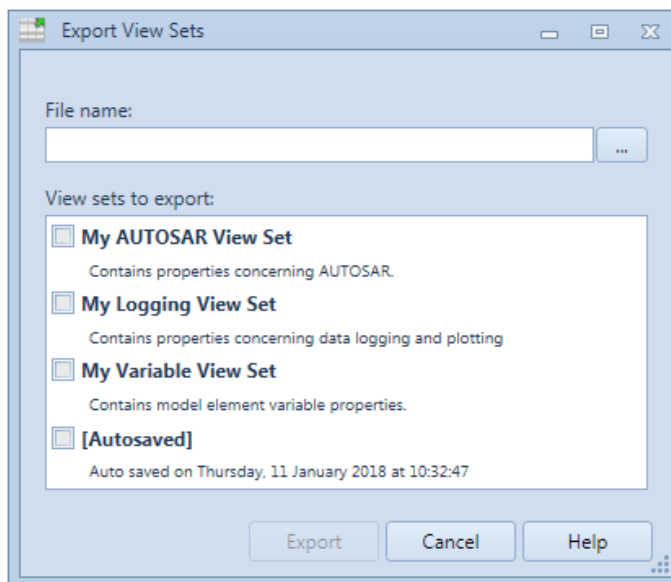
Access You can access this dialog via:

Ribbon	File
Context menu of	None
Shortcut key	None
Icon	

Result The Export View Sets dialog opens.

Description

In the Export View Sets dialog, you can select custom property view sets (including the [Autosaved] view set) and export it as one XML file.



File name Enter a file name for the View Set XML (VSML) file.

Click the Browse button to specify a path and VSML file name to which to save the view sets.

View sets to export In the View sets to export list, all custom view sets are available for selection. You can select one or multiple view sets to export them as a View Set XML file.

Click Export to start the export process.

Related topics**References**

[Import View Sets Dialog.....](#) 122

Help (Backstage View)

Purpose

To provide access to help commands.

Access

You can access this ribbon group via:

Ribbon	File
Context menu of	None

Shortcut key	None
Icon	None

Description

You have access to commands such as:

- [dSPACE Help](#) on page 116
- [Using dSPACE Help](#) on page 126
- [New Features and Migration](#) on page 125


Import View Sets

Purpose

To import one or multiple property view sets from a View Set XML (VSML) file into the Property Manager.

Access

You can access this command via:

Ribbon	File
Context menu of	None
Shortcut key	None
Icon	

Result

The Import View Sets dialog opens. For more information, refer to [Import View Sets Dialog](#) on page 122.

Related topics**References**

Export View Sets Dialog	120
Import View Sets Dialog	122


Import View Sets Dialog

Purpose

To open a dialog for importing one or multiple property view sets from a View Set XML (VSML) file into the Property Manager.

Access

You can access this dialog via:

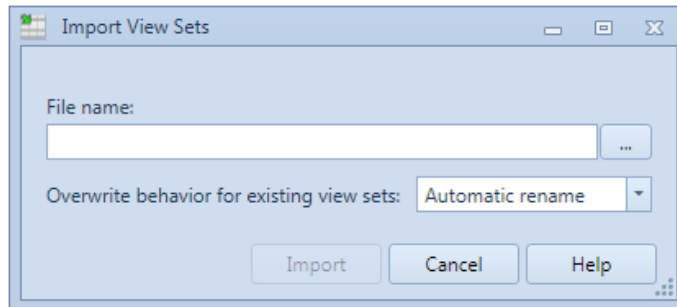
Ribbon	File
Context menu of	None
Shortcut key	None
Icon	

Result

The Import View Sets dialog opens.

Description

In the Import View Sets dialog, you can select a file containing one or multiple previously exported view sets and import it. After the import, the view sets are available in the View Set Chooser. For more information, refer to [View Set Chooser](#) on page 184.



Selecting a file to import Click the Browse button to navigate to the file you want to import and select it.

Selecting an overwrite behavior for existing view sets Select one of the following overwrite behaviors for existing view sets from the list.

Overwrite behavior	Description
Automatic rename	The date and time information is added to the file name as a suffix.
Skip	Existing view sets are skipped. Only new view sets are imported.
Overwrite	Existing view sets are overwritten.
Cancel	The import is canceled if any existing view sets are found.

Click **Import** to start the import process.

Information on the import result is displayed in the **Messages** pane.

Tip

You can also use an API function to import view sets. For more information, refer to `tlPropman('ImportViewSets', FileName, OverwriteBehavior)` or type `help tlPropman` in the MATLAB Command Window.

Related topics**References**

Export View Sets Dialog.....	120
Message Viewer.....	191
tlPropman (📖 TargetLink API Reference)	
View Set Chooser.....	184


Keyboard Help

Purpose

To display the currently active shortcut keys.

Access

You can access this command via:

Ribbon	File - Help
Context menu of	None
Shortcut key	Ctrl + F1
Icon	

Result

The Property Manager opens the Active Keyboard Shortcuts dialog that lists the currently active shortcut keys.

Active Keyboard Shortcuts dialog


Displays a context-dependent list of shortcut keys. They depend on your current working context in the Property Manager.


Copy List Lets you copy the list of keyboard shortcuts to the Clipboard. You can paste them, for example, to a text document and print them.

New Features and Migration

Purpose To display new features and required migration steps for all the products in the current dSPACE Release.

Access You can access this command via:


Ribbon	File – Help
Context menu of	None
Shortcut key	None
Icon	

Result dSPACE Help opens with  [New Features and Migration](#) displayed. Navigate to the specific product information to read about the new features of a specific product. If there are migration steps required, the necessary steps are described.

Open Model

Purpose To open a Simulink model which is available in the file system.

Access You can access this command via:

Ribbon	File
Context menu of	None
Shortcut key	Ctrl + O
Icon	

Result The Open Simulink Model dialog opens.

Description You can browse through the file system and select a Simulink model file. Click Open to open a model. The selected model is opened in Simulink and also loaded in the Property Manager.

Tip

You can open several libraries or referenced models without having the root model to be opened.

Related topics

References

Load Model.....	134
-----------------	-----


Using dSPACE Help

Purpose

To get information on working with dSPACE Help.

Access

You can access this command via:

Ribbon	File – Help
Context menu of	None
Shortcut key	None
Icon	

Result

dSPACE Help opens with Working with dSPACE Help displayed. It provides information on general handling and instructions on using the Search page.

Model Navigator

Where to go from here

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Show Model Navigator.....	139
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Back

Purpose

To return backward to a previously selected [model element](#) in the Model Navigator.

Access

You can access this command via:

Ribbon	Home - Navigation
Context menu of	None

Shortcut key	Alt + Left Arrow
Icon	


Result Every previously selected model element is selected again, step by step.

Description If you unload a model from the Property Manager, selections for model elements that belong to that model will be removed from the Model Navigators selection history list. When you load the same model again, selections for still existing model elements are retained.

Choose Model to Load Dialog

Purpose To load a model in the Property Manager.

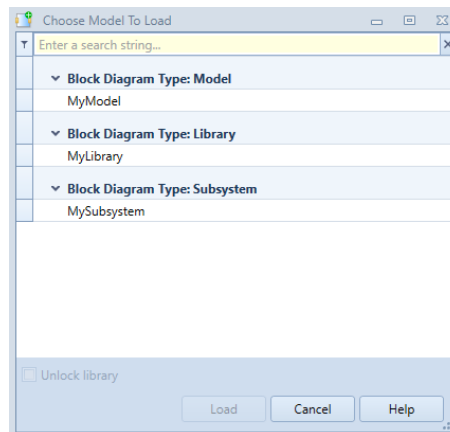
Access You can access this command via:

Ribbon	Home - Navigation
Context menu of	None
Shortcut key	Alt + L
Icon	

Result The Choose Model To Load dialog opens.

Description Via the Choose Model to Load dialog, you can select models, libraries, and referenced subsystems that are already loaded in Simulink but not yet in the Property Manager. This includes:

- Simulink models, libraries, or referenced subsystems. Referenced subsystems are also loaded when the corresponding parent model is loaded in Simulink.
- Simulink models that are not loaded but referenced by a model that is already loaded.



You can enter a search string in the (yellow) text filter at the top of the dialog. Only models with names containing the search string are displayed. The active filter is displayed below the list and you can enable or disable it by selecting or clearing the checkbox. To clear the filter, click the Clear Filter button at the right.

Note

Simulink and TargetLink system libraries are excluded from this list.

To make a locked library editable when it is loaded in the Property Manager, select **Unlock library**. You can also unlock a library after it was loaded by clicking **Unlock Library** in the Simulink ribbon group on the Home ribbon. Refer to [Unlock Library](#) on page 186.

Click the **Load** button. The selected model is loaded and displayed in the Navigator.

Click the **Cancel** button to close the Choose Model To Load dialog without loading an additional model or library.

Related topics

HowTos

[How to Load Models, Libraries, or Referenced Subsystems to the Model Navigator](#)
([TargetLink Preparation and Simulation Guide](#))


References

Load Model	134
Unlock Library	186

Collapse All (Model Navigator)

Purpose To collapse all child objects of a selected model element in the **Model Navigator**.

Access You can access this command via:

Ribbon	None
Context menu of	Model Navigator
Shortcut key	- (OemMinus)
Icon	

Result The displayed subordinate child objects are hidden.

Related topics

References

[Expand All \(Model Navigator\)..... 131](#)

Copy FullName (Model Navigator)

Purpose To copy the absolute path and name of the model element to the Clipboard.

Access You can access this command via:


Ribbon	None
Context menu of	Columns in the Model Navigator .
Shortcut key	Ctrl + Shift + C
Icon	None

Result The absolute path and name of the model element are copied to the Clipboard.

Edit Library Block (Model Navigator)

Purpose To load the associated library and edit the library block or Stateflow chart in the Property Manager.

Access You can access this command via:

Ribbon	Home - Navigation
Context menu of	Property value cells in the Model Navigator
Shortcut key	None
Icon	

Result The library which contains the selected library block (or link chart) is displayed and unlocked if necessary. The corresponding model element is selected.

Related topics


Basics

[Basics on Working with Libraries](#) ( TargetLink Preparation and Simulation Guide)

Expand All (Model Navigator)

Purpose To expand all child objects of a selected model element in the **Model Navigator**.

Access You can access this command via:

Ribbon	None
Context menu of	Model Navigator
Shortcut key	* (Multiply)
Icon	

Result The hidden child objects of the selected model element are displayed.

Related topics


References

[Collapse All \(Model Navigator\)](#)..... 130

Forward

Purpose To return forward to a previously selected [model element](#) in the **Model Navigator**.

Access You can access this command via:

Ribbon	Home - Navigation
Context menu of	None
Shortcut key	Alt + Right Arrow
Icon	


Result Every previously selected model element is selected again, step by step.

Description If you unload a model from the Property Manager, selections for model elements that belong to that model will be removed from the **Model Navigators** selection history list. When you load the same model again, selections for still existing model elements are retained.

Go to Library Block (Model Navigator)

Purpose To load the associated library and to review the library block (or Stateflow chart) in the Property Manager.

Access You can access this command via:

Ribbon	Home - Navigation
Context menu of	Model elements in the Model Navigator
Shortcut key	None
Icon	

Result The library which contains the selected library block (or link chart) is displayed and the corresponding model element is selected.

Related topics**Basics**

Basics on Working with Libraries ( TargetLink Preparation and Simulation Guide)


Go to Referenced Model

Purpose

To select the referenced model for editing in the Property Manager and to open the associated referenced model in Simulink.

Access

You can access this command via:

Ribbon	Home - Navigation
Context menu of	Model elements in the Model Navigator
Shortcut key	None
Icon	

Result

The Property Manager loads the referenced model in the **Model Navigator** and automatically opens the referenced model in Simulink if not done before.


Highlight in Model (Model Navigator)

Purpose

To highlight the  **model element** in Simulink.

Access

You can access this command via:

Ribbon	Home - Simulink
Context menu of	Rows in the Model Navigator
Shortcut key	Ctrl + H
Icon	


Result

The model element in Simulink is highlighted.

Load Model

Purpose To load a model into the Property Manager.

Access You can access this command via:

Ribbon	Home - Navigation
Context menu of	None
Shortcut key	Alt + L
Icon	

Result The Choose Model To Load dialog opens. For more information, refer to [Choose Model to Load Dialog](#) on page 128.

Related topics

HowTos

[How to Load Models, Libraries, or Referenced Subsystems to the Model Navigator](#)
( TargetLink Preparation and Simulation Guide)


References

[Choose Model to Load Dialog](#)..... 128
[Open Model](#)..... 125

Open in Model (Model Navigator)

Purpose To open the  [model element](#) dialog in Simulink.

Access You can access this command via:

Ribbon	Home - Simulink
Context menu of	Rows in the Model Navigator
Shortcut key	Ctrl + I
Icon	

Result The model element dialog is opened in Simulink.

Search (Model Navigator)

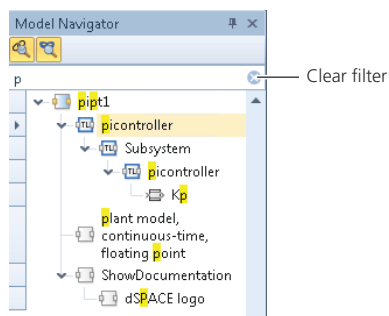
Purpose To search for specific [model elements](#).

Access You can access this command via:

Ribbon	None
Context menu of	None
Shortcut key	Ctrl + F
Icon	None

Result The model hierarchy levels containing model elements with matching names are expanded and the search term is highlighted.

Description In the edit field of the search panel, you can specify a search substring. Immediately, only model elements containing this substring and superordinate model hierarchy levels are displayed. Each occurrence of the substring is highlighted in yellow.



Clear the filter or delete the search term to see the complete model hierarchy again. You can clear the current filter by clicking the Clear filter button.

Related topics

HowTos

[How to Find Model Elements in the Model Navigator](#) ([TargetLink Preparation and Simulation Guide](#))


Show Library Content

Purpose

To show or hide the content of library blocks or LinkCharts in the **Model Navigator** and the properties of the underlying [model elements](#) in the **Property View**.

Access

You can access this command via:

Ribbon	None
Context menu of	None
Shortcut key	None
Icon in the Model Navigator	

Result

The child elements/descendants of linked model elements or linked Stateflow charts are shown or hidden.

If you deactivate **Show library content**, the child elements are hidden. They are not shown in any GUI component and they are not considered during validation. For example, no validation message is shown. The linked model element or the block of LinkChart type itself is still displayed.

Description

If you activate **Show library content**, the Property Manager displays the following data:

- The **Model Navigator** displays all model elements of the loaded Simulink models, including the hierarchy levels below the linked model elements.
- The **Property View** displays the following TargetLink data:
 - Properties of the model element selected in the **Model Navigator**.
 - Properties of the first hierarchy level below the selected model element, if applicable.
 - Properties of all subordinate hierarchy levels of the selected model element if **Show Descendants** is selected in the **Home - Property View** ribbon and if applicable. For more information, refer to [Show Descendants](#) on page 177.



If you deactivate **Show library content**, the Property Manager displays the following data:

- The **Model Navigator** displays the model elements of the loaded Simulink models, including only the linked model elements. The hierarchy levels below the linked model elements are not displayed.
- The **Property View** displays only the TargetLink data of the selected linked model element. The hierarchy levels below the linked model element are not considered. Other than that, the Property View acts the same way as if **Follow links** was active.

Show library content is active by default. The Property Manager saves the setting of Show library content when it is closed.

Blocks of the LinkChart type Linked Stateflow charts, i.e., blocks of the LinkChart type, differ from the other linked model elements because they have no instance in the Simulink model. The Simulink model contains only a reference to the instance of the chart in the original library. Thus, the children of blocks of LinkChart type are not included in the hierarchy of the instantiating model.

To show the children of linked Stateflow charts, you have to execute the following two steps, in no specific order:

- Load the library that contains the linked Chart block into the Property Manager. Refer to [How to Load Models, Libraries, or Referenced Subsystems to the Model Navigator](#) ( [TargetLink Preparation and Simulation Guide](#)).
- Activate Show library content by clicking the  icon in the Model Navigator.

The Property View displays a row for each reference to a Stateflow object in a LinkChart if the following conditions are true:

- Show Descendants is active.
- Show library content is active.
- In the Model Navigator, a subsystem is selected that contains more than one reference to the same block of LinkChart type.

After you loaded the library containing the block of LinkChart type into the Property Manager, you cannot unload it again as long as it is referenced by a model loaded in the Property Manager.

Links to hidden model elements If you click a link to a model element which is currently hidden, for example, in the Messages pane, the Property Manager automatically activates the Show library content and/or the Show masked content option and selects the corresponding model element in the Model Navigator.

Related topics

Basics

[Basics on Working with Libraries](#) ( [TargetLink Preparation and Simulation Guide](#))

HowTos

[How to Load Models, Libraries, or Referenced Subsystems to the Model Navigator](#)
( [TargetLink Preparation and Simulation Guide](#))


References

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Show Masked Content	138

Show Masked Content

Purpose To show or hide the content of masked subsystems and charts in the **Model Navigator** and the properties of the underlying [model elements](#) in the **Property View**.

Access You can access this command via:

Ribbon	None
Context menu of	None
Shortcut key	None
Icon in the Model Navigator	

Result The model elements residing in masked subsystems are shown or hidden.

If you deactivate **Show masked content**, the underlying model elements are hidden. They are not shown in any user interface component and they are not considered during validation. For example, no validation message is displayed. Only the highest hierarchy level of masked subsystems is displayed.

Description If you activate **Show masked content**, the Property Manager displays the following data:

- The **Model Navigator** displays all model elements of the loaded Simulink models, including the content of masked subsystems.
- The **Property View** displays the following TargetLink data:
 - Properties of the model element selected in the **Model Navigator**.
 - Properties of the first hierarchy level below the selected model element, if applicable.
 - Properties of all subordinate hierarchy levels of the selected model element if **Show Descendants** is selected in the **Home - Property View** ribbon and if applicable. For more information, refer to [Show Descendants](#) on page 177.

If you deactivate **Show masked content**, the Property Manager displays the following data:

- The **Model Navigator** displays the model elements of the loaded Simulink models, including only the highest hierarchy level of masked subsystems. The underlying model elements are not displayed.
- The **Property View** does not display the TargetLink data of model elements residing in masked subsystems. The content of masked subsystems is not considered. Other than that, the **Property View** acts the same way as if **Show masked content** was active.

Show masked content is active by default. The Property Manager saves the setting of **Show masked content** when it is closed.

Links to hidden model elements If you click a link to a model element which is currently hidden, for example, in the **Messages** pane, the Property Manager automatically activates the **Show library content** and/or the **Show masked content** option and selects the corresponding model element in the **Model Navigator**.

Related topics

References

Show Descendants.....	177
Show Library Content.....	136


Show Model Navigator

Purpose

To open the **Model Navigator**.

Access

You can access this command via:


Ribbon	View - Show
Context menu of	None
Shortcut key	None
Icon	

Result


The **Model Navigator** is opened and displayed at the last window position you defined for it.

Related topics

Basics

[Basics on the TargetLink Property Manager](#) ( **TargetLink Preparation and Simulation Guide**)

HowTos

[How to Find Model Elements in the Model Navigator](#) ( **TargetLink Preparation and Simulation Guide**)


References

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Unload Model

Purpose To unload the model which hosts the currently selected [model element](#).

Access You can access this command via:


Ribbon	Home - Navigation
Context menu of	None
Shortcut key	Alt + U
Icon	

Result The model is removed from the Property Manager and not longer displayed in the **Model Navigator**.

Unlock Library (Model Navigator)

Purpose To unlock the selected library.

Access You can access this command via:

Ribbon	Home - Simulink
Context menu of	Model elements in the Model Navigator
Shortcut key	None
Icon	

Result Unlocks the selected library and you can edit it. The Property Manager refreshes the library after it is unlocked.

You can also unlock a library directly when you load it into the Property Manager. For more information, refer to [Choose Model to Load Dialog](#) on page 128.

Related topics**Basics**

[Basics on Working with Libraries](#) ( [TargetLink Preparation and Simulation Guide](#))

References

[Choose Model to Load Dialog](#)..... 128

Property View

Where to go from here

Information in this section

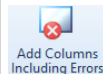
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Add Columns Including Errors

Purpose To add columns that contain at least one row with an error to the Property View.

Access You can access this command via:


Ribbon	Home - Property View
Context menu of	None
Shortcut key	None
Icon	

Result Columns that contain at least one row with an error are added to the Property View.

Apply

Purpose To apply modified data to the Simulink model.

Access You can access this command via:

Ribbon	Home - Model Element Data
Context menu of	None
Shortcut key	<ul style="list-style-type: none"> ▪ Alt + F10 (Apply All) ▪ Ctrl + Alt + F10 (Apply Selected)
Icon	

Result The modified data is written to the Simulink model.

Description You can manually transfer changed property values from the Property Manager to the Simulink model by explicitly clicking the **Apply** button. Via the arrow part of the button, you can access the **Apply All** (same function as **Apply**) and **Apply Selected** submenus. Depending on whether you execute **Apply** or **Apply Selected**, you can apply all modifications in one step or you can apply only selected model elements (the data for model elements is written model element-wise to the model).

Note

You can only apply model elements as a whole. Even if you have selected only two rows of a model element in the **Property View** and you select **Apply Selected**, all properties of that model element are applied to the Simulink model.

For example, you modified 80 bus elements of a bus port block and you select 10 of these modified rows in the **Property View**. If you select **Apply Selected** afterwards, all 80 modifications are applied, not only the 10 selected.

Note

If the **Apply** command fails because an invalid property cannot be written to the model, the Property Manager displays a warning. For more information, refer to W09414.

Related topics**Basics**

Basics on Ribbons (📖 TargetLink Preparation and Simulation Guide)

Updating Property Values (📖 TargetLink Preparation and Simulation Guide)

References

Auto Apply..... 146


Apply Property Value to Selected Rows

Purpose

To copy a property value to several selected rows in the **Property View**. The cell from which the context menu was opened (via right-click), serves as the data source.

Access

You can access this command via:

Ribbon	None
Context menu of	Property value cells in the Property View (only grid panel)
Shortcut key	None
Icon	

Result

The property value is copied to the selected rows.

Auto Apply

Purpose To switch between automatically and explicitly applying modified [model element](#) data.

Access You can access this command via:

Ribbon	Home - Model Element Data
Context menu of	None
Shortcut key	Ctrl + F10
Icon	None

Result If you select the Auto Apply checkbox, any data modifications are applied to the Simulink model immediately after editing a property. The data displayed in the Property View is always up-to-date.

If you clear the Auto Apply checkbox, you have to apply your data modifications explicitly. For more information, refer to [Apply](#) on page 144.


Description You can update the Simulink model automatically after each modification of property values by selecting the Auto Apply checkbox. When enabled, all values are written into the model as soon as you confirmed them, for example, by pressing the **Enter** key. All modifications that you made before activating Auto Apply still have to be applied explicitly via the Apply button. The Property Manager saves the setting of Auto Apply when it is closed. The checkbox is selected by default.

Note

If the Apply command fails because an invalid property cannot be written to the model, the Property Manager displays a warning. For more information, refer to W09414.

Related topics

Basics

[Basics on Working With Large Models](#) ( TargetLink Preparation and Simulation Guide)

[Updating Property Values](#) ( TargetLink Preparation and Simulation Guide)


References

[Apply](#)..... 144

Best Fit (Property View)

Purpose To optimize the width of the selected column.

Access You can access this command via:

Ribbon	None
Context menu of	Column headers in the Property View (only grid panel)
Shortcut key	None
Icon	

Result The width of the selected column is optimized.

Related topics

HowTos

[How to Customize Columns in the Property View and Validation Summary](#)
( TargetLink Preparation and Simulation Guide)

References

[Best Fit All Columns \(Property View\)..... 147](#)

Best Fit All Columns (Property View)

Purpose To optimize the widths of all displayed columns.


Access You can access this command via:

Ribbon	None
Context menu of	Column headers in the Property View.
Shortcut key	None
Icon	None

Result The width of all displayed columns is optimized.

Related topics

HowTos

[How to Customize Columns in the Property View and Validation Summary](#)
( [TargetLink Preparation and Simulation Guide](#))

References

[Best Fit \(Validation Summary\).....](#) 197

Breadcrumb

Purpose

The breadcrumb displays the path of the selected model element of the **Model Navigator**.

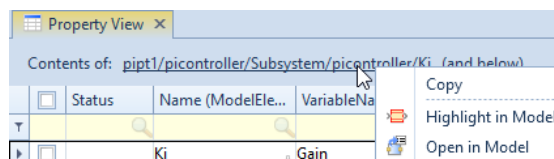
Access

You can access this command via:

Ribbon	None
Context menu of	None
Shortcut key	None
Icon	None
Others	Header of the Property View

Description

By clicking the breadcrumb, you can edit the displayed path. You can copy the path of the model element to the Clipboard or paste a path to change the selection. Invalid paths are indicated. Click **Esc** to close the edit mode of the breadcrumb.



Use the context menu of the breadcrumb for the following actions:

- To copy the path to the Clipboard.
- To highlight the model element. Refer to [Highlight in Model \(Property View\)](#) on page 165.
- To open the model element. Refer to [Open in Model \(Property View\)](#) on page 168.

Related topics**References**

Highlight in Model (Property View).....	165
Open in Model (Property View).....	168




Clear Filter (Property View)

Purpose

To remove active filter criteria.

Access

You can access this command via:

Ribbon	Home - Property View
Context menu of	Column headers in the Property View.
Shortcut key	None
Icon	<ul style="list-style-type: none"> ■  ■  ■ 

Result

The Property View shows the model elements that were filtered out before.

Description

Clear Filter is available only if a filter is set. You can clear all filters in one step by clicking Clear Filter in the Property View. However, this might lead to unexpected results since then also filters of view sets are deleted. For example, filters of Stateflow objects set in the Stateflow View Set are deleted. You can select the view set again to reactivate the included filter settings. For more information, refer to [View Set Chooser](#) on page 184.

If you want to clear only the filter for one column, use the context menu in the header of this column.


Related topics**HowTos**

[How to Filter for Property Values and Validation Errors](#) (📖 TargetLink Preparation and Simulation Guide)

Clear Grouping (Property View)

Purpose To remove all column headers from the group panel to revoke the related grouping of rows.

Access You can access this command via:

Ribbon	None
Context menu of	Group panel in the Property View .
Shortcut key	None
Icon	

Result All column headers are removed from the group panel.

Description Remove columns by selecting and dragging the header cell from the group panel until the red clear icon is displayed.

Related topics

References

Group by This Column (Property View).....	162
Group Summary Editor (Group Panel, Property View).....	162
Hide Group Panel (Property View).....	164
Show Group Panel (Property View).....	178
Ungroup (Property View).....	182

Clear Sorting (Property View)

Purpose To deactivate the sort attribute applied to the selected column.

Access You can access this command via:

Ribbon	None
Context menu of	Column headers in the Property View .
Shortcut key	None
Icon	None

Result Sorting is deactivated in the selected column.

Related topics**HowTos**

[How to Filter for Property Values and Validation Errors \(📖 TargetLink Preparation and Simulation Guide\)](#)

References

[Sort Ascending \(Property View\).....](#) 179
[Sort Descending \(Property View\).....](#) 180


Collapse All (Group Panel, Property View)

Purpose

To collapse all grouped [🔗 model elements](#) in the Property View.

Access

You can access this command via:

Ribbon	None
Context menu of	Group Panel in the Property View
Shortcut key	None
Icon	

Result

All grouped model elements are collapsed.

Related topics**Basics**

[Expand All \(Group Panel, Property View\).....](#) 158


References

[Clear Grouping \(Property View\).....](#) 150
[Hide Group Panel \(Property View\).....](#) 164
[Show Group Panel \(Property View\).....](#) 178

Column Chooser Dialog

Purpose To open a dialog for specifying additional property columns to be displayed.

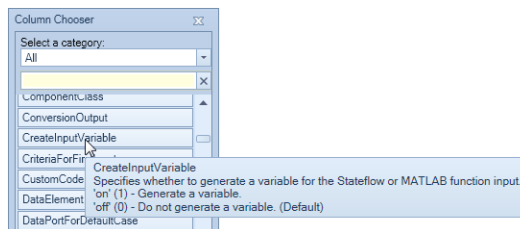
Access You can access this command via:

Ribbon	Home - Property View
Context menu of	Column headers in the Property View
Shortcut key	Shift + F7
Icon	

Result The Column Chooser dialog opens.

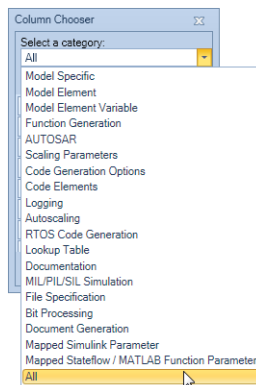
Description With the Column Chooser, you can specify to display additional property columns in the Property View. The column headers listed in the Column Chooser represent the columns that are not displayed in the Property View.

To add a column, drag it from the Column Chooser to the header row of the Property View. You can hover over any selectable property to display specific information in a tooltip.



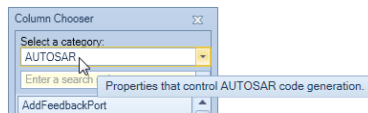
Furthermore, the Column Chooser supports you in finding the correct column by filtering the displayed list according to categories or search strings.

Selecting a category All properties belong to one or more categories. These categories are based on use-cases. You can select a category to display only the associated properties in the Column Chooser.

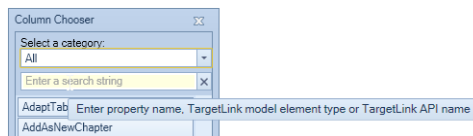


Tip

If you have selected a category, you can hover over it to display specific information in a tooltip.

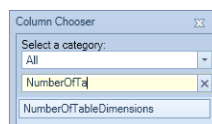


Filtering the list You can enter a keyword (search string) such as the property name, model element type or the API name to filter the list so that only matching properties are displayed in the Column Chooser list.

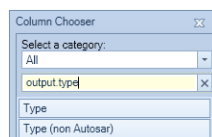


You can enter a search string that is based on the name (or parts of it) of

- The property



- The API function (e.g., `output.type`)



- The model element type (e.g., `TL_Delay`)

Tip

Enter `blockTypeList = tl_manage_blockset('GetValidBlockTypes')` in the MATLAB Command Window to get a complete list of the available model element type names.

Related topics**References**

[Show Column Chooser \(Property View\)..... 176](#)

Copy Full Name (Property View)

Purpose

To copy the absolute path and name of the model element to the Clipboard.

Access

You can access this command via:

Ribbon	None
Context menu of	Columns in the Property View.
Shortcut key	Ctrl + Shift + C
Icon	None

Result

The absolute path and name of the model element are copied to the Clipboard.

Copy Property Value to Clipboard


Purpose

To copy the selected property value to the Windows Clipboard.

Access

You can access this command via:


Ribbon	None
Context menu of	Property value cells in the Property View (only grid panel)

Shortcut key	None
Icon	

Data Dictionary Resync

Purpose To (re-)synchronize Data Dictionary objects.

Access You can access this command via:

Ribbon	Home - Model Element Data
Context menu of	None
Shortcut key	None
Icon	

Result All model elements are re-synchronized with the Data Dictionary.



Description The Data Dictionary Resync control is enabled only when the Data Dictionary was modified, and the automatic synchronization was terminated via the Progress dialog.

DD Reference Selection Dialog (Property Manager)

Purpose To select a reference to a DD object. (A comparable dialog is accessible via various block dialogs and the Data Dictionary Manager. The DD Reference Selection dialog of the Property Manager has the same purpose, but differs in some controls and features.)

Access You can access this command via:

Ribbon	None
Context menu of	Property value cells in the Property View (Select DD object)

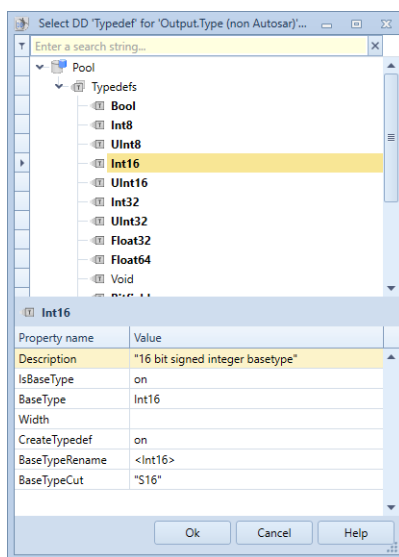
Shortcut key	None
Icon	
Other	 Browse button (available if you select a property value cell)

Result

The DD Reference Selection dialog of TargetLink's Property Manager opens.

Description

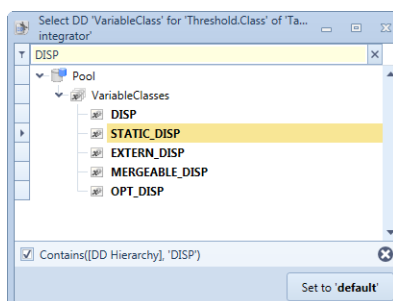
The Property Manager provides the DD Reference dialog for all properties referencing a DD object. Via the DD Reference Selection dialog, you can view the specified values of the selected DD object or reference another DD object that is to be used instead. The currently selected DD object is highlighted (selected).



The DD Reference Selection dialog shows the selected DD object and its associated DD group object (e.g. /Pool/Typedefs or /Pool/VariableClasses).

You can select DD objects for a property if their DD object kind matches the selected property. The matching DD objects are displayed. All DD objects of the DD group object that cannot be selected are displayed in normal font. For DD objects that cannot be selected, a tooltip exist explaining why this DD object cannot be selected. If a property references a DD object whose default value is default and the property currently deviates from this value, you can reset it via the Set to 'default' button. If no matching DD objects could be found, the Property Manager informs you that there are no selectable objects.

The DD Reference Selection dialog supports you finding specific DD objects by filtering the displayed list. Enter the name or a part of the name to find the DD objects you are looking for.



Related topics

HowTos

[How to Multi-Edit Property Values](#) ([TargetLink Preparation and Simulation Guide](#))

References

[Select Object](#) ([TargetLink Data Dictionary Manager Reference](#))

Edit

Purpose

To edit a property value.

Access

You can access this command via:

Ribbon	None
Context menu of	Property value cells in the Property View
Shortcut key	None
Icon	


Description

You can select **Edit** on the context menu of property value cells in the **Property View** to edit multiple properties without selecting **Use Checkboxes to Select**. (In this case, the multiselection is lost if you left-click a cell.)

Edit Library Block (Property View)

Purpose To load the associated library and edit the library block or Stateflow chart in the Property Manager.

Access You can access this command via:

Ribbon	Home - Navigation
Context menu of	Property value cells in the Property View
Shortcut key	None
Icon	


Result The library which contains the selected library block (or link chart) is displayed and unlocked if necessary. The corresponding model element is selected.

Related topics


Basics

Basics on Working with Libraries ( TargetLink Preparation and Simulation Guide)

Expand All (Group Panel, Property View)

Purpose To expand all grouped  **model elements** in the Property View.

Access You can access this command via:

Ribbon	None
Context menu of	Group Panel in the Property View
Shortcut key	None
Icon	

Result All grouped model elements are expanded.

Related topics

Basics

[Collapse All \(Group Panel, Property View\).....](#) 151

References

[Clear Grouping \(Property View\).....](#) 150
[Hide Group Panel \(Property View\).....](#) 164
[Show Group Panel \(Property View\).....](#) 178


Export

Purpose

To export the data currently displayed in the Property View to a *.csv file.

Access

You can access this command via:

Ribbon	Home - Model Element Data
Context menu of	None
Shortcut key	Ctrl + E
Icon	



Filter Editor (Property View)

Purpose

To open the Filter Editor to edit a filter rule.

Access

You can access this command via:

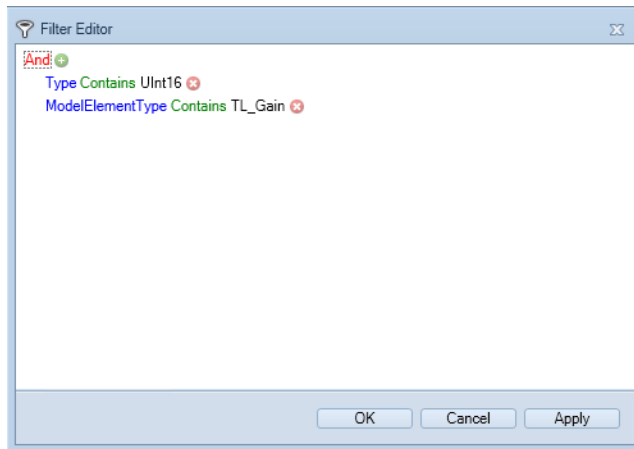
Ribbon	None
Context menu of	Column headers in the Property View.
Shortcut key	None
Icon	<ul style="list-style-type: none"> ▪  ▪ 

Result

The Filter Editor is opened to create and apply a filter rule.

Filter Editor

The Filter Editor provides a tree view for specifying a hierarchical filter rule, for example, by using Boolean operators.



A filter can consist of several conditions that can be combined by a logical operation. In a condition, a column header is compared with a specified value. To specify a filter, the colored words can be modified.

Red word Click the red word to select a logical operator or a command for combining conditions. The following logical operators are available:

Logical Operation	Description
And	All combined conditions must be true.
Or	At least one of the combined condition must be true.
NotAnd	Not all of the combined conditions are true.
NotOr	Neither of the combined conditions is true.

The following commands are available:

Command	Description
Add Condition, +, or Insert	Lets you add a condition.
Add Group	Lets you add a condition group.
Clear All	Lets you clear all conditions.
	Lets you clear a condition.
Remove Group	Lets you remove a group.

Blue word Click the blue word to select a column of the table whose value is then compared with a specified value.

Green word Click the green word to select a relational operator.

You can apply a filter rule by pressing the OK or Apply button. Pressing the OK button closes the editor.

Related topics**HowTos**

[How to Filter for Property Values and Validation Errors \(📖 TargetLink Preparation and Simulation Guide\)](#)

References

[Clear Filter \(Property View\)..... 149](#)


Go to Library Block (Property View)

Purpose

To load the associated library and to review the library block (or Stateflow chart) in the Property Manager.

Access

You can access this command via:

Ribbon	Home - Navigation
Context menu of	Property value cells in the Property View
Shortcut key	None
Icon	

Result

The library which contains the selected library block (or link chart) is displayed and the corresponding model element is selected.


Related topics**Basics**

[Basics on Working with Libraries \(📖 TargetLink Preparation and Simulation Guide\)](#)

Group by This Column (Property View)

Purpose To group the signals according to the entries of the column.

Access You can access this command via:

Ribbon	None
Context menu of	Column headers in the Property View .
Shortcut key	None
Icon	

Result The signals are grouped according to the entries of the column.

Description You can create nested groups. If you selected a column for grouping, you can unselect it via **Ungroup** in the context menu of its column header. Refer to [Ungroup \(Property View\)](#) on page 182.

Related topics

HowTos

[How to Customize Columns in the Property View and Validation Summary](#)
( TargetLink Preparation and Simulation Guide)

References

Group Summary Editor (Group Panel, Property View).....	162
Hide Group Panel (Property View).....	164
Show Group Panel (Property View).....	178
Ungroup (Property View).....	182

Group Summary Editor (Group Panel, Property View)

Purpose To open the Group Summaries editor.

Access You can access this command via:

Ribbon	None
Context menu of	Column headers in the Property View (only group panel)

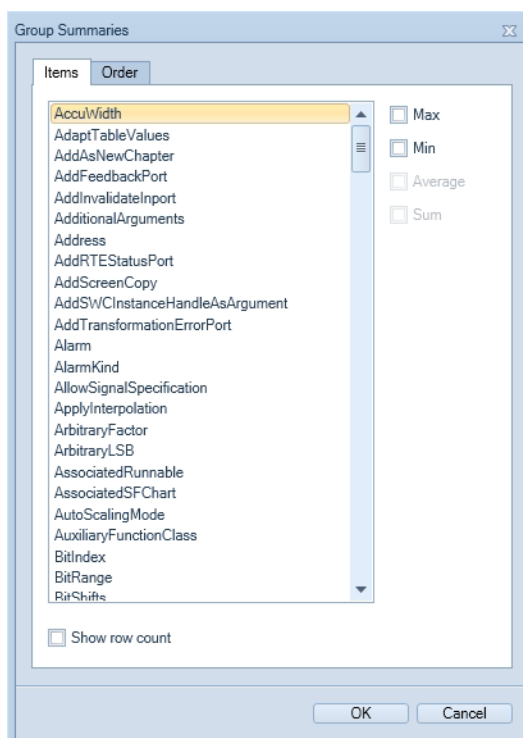
Shortcut key	None
Icon	None

Result

The group summaries editor is opened.

Description

The Group Summaries editor lets you display summary information for selected items in each group row.



Max To display the maximum value (useful only for alphanumeric information).

Min To display the minimum value (useful only for alphanumeric information).

Show row count To display the number of rows per group.

Related topics**References**

Group by This Column (Property View).....	162
Hide Group Panel (Property View).....	164
Show Group Panel (Property View).....	178
Ungroup (Property View).....	182


Hide Group Panel (Property View)

Purpose

To hide the group panel.

Access

This command is available only if the group panel is displayed. You can access this command via:

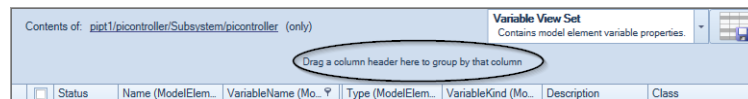
Ribbon	None
Context menu of	Column headers in the Property View (also in the group panel).
Shortcut key	None
Icon	

Result

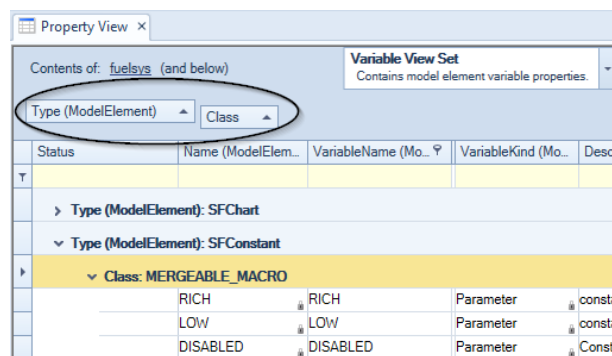
The group panel is hidden.

Description

The group panel is the area above the column headers in the Validation Summary.



The group panel lets you group rows according to selected column headers (e.g., **Type (ModelElement)** and **Class**).



Remove column headers by selecting and dragging them from the group panel until the red clear icon is displayed.

If you want to reset the current configuration of the group panel, use [Clear Grouping \(Group Panel, Validation Summary\)](#) on page 199.

Related topics**References**

Group by This Column (Property View).....	162
Group Summary Editor (Group Panel, Property View).....	162
Show Group Panel (Property View).....	178
Ungroup (Property View).....	182


Highlight in Model (Property View)

Purpose

To highlight the  **model element** in Simulink.

Access

You can access this command via:

Ribbon	Home - Simulink
Context menu of	Rows in the Property View
Shortcut key	Ctrl + H
Icon	

Result

The model element in Simulink is highlighted.

Related topics**References**

Open in Model (Property View).....	168
------------------------------------	-----


Manage Property View Sets

Purpose

To open the **Manage Property View Sets** dialog.

Access

You can access this command via:

Ribbon	None
Context menu of	None
Shortcut key	None
Icon	

Result

The Manage Property View Sets dialog opens. For more detailed information, refer to [Manage Property View Sets Dialog](#) on page 166.


Manage Property View Sets Dialog

Purpose

To edit, save and delete property view sets.

Access

You can access this dialog via:

Ribbon	None
Context menu of	None
Shortcut key	None
Icon	

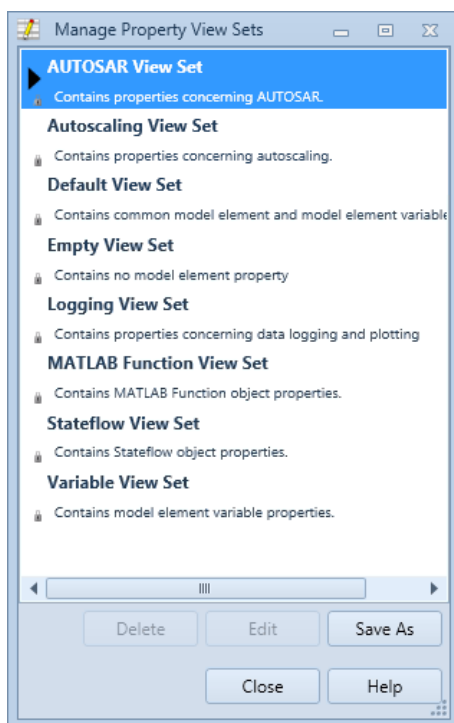
Result

The Manage Property View Sets dialog opens.

Description

The Manage Property View Sets dialog lets configure view sets as follows:

- Delete view sets.
- Rename title and description of view sets via Edit.
- Save a copy with a new name via Save As.



Note

The factory view sets are locked and can neither be changed nor deleted.

Related topics

HowTos

[How to Create Property View Sets \(TargetLink Preparation and Simulation Guide\)](#)


References

Manage Property View Sets.....	165
Save Property View Set As.....	171

Open in Model (Property View)

Purpose To open the  [model element](#) dialog in Simulink.

Access You can access this command via:

Ribbon	Home - Simulink
Context menu of	Rows in the Property View
Shortcut key	Ctrl + I
Icon	

Result The model element dialog is opened in Simulink.

Related topics


References

[Highlight in Model \(Property View\)](#)..... 165

Redo

Purpose To redo the most recent actions which were previously undone.

Access You can access this command via:

Ribbon	Home - Model Element Data
Context menu of	None
Shortcut key	Ctrl + Y
Icon	

Result Any action that was undone via the Undo command is performed once again.

Description The number of redo actions that can be performed depends on how often you carry out the Undo command in succession.

Related topics**References**



[Undo..... 181](#)

Refresh

Purpose To refresh the Property Manager with the current TargetLink data from Simulink so that it displays the current status of the model or the modified data.

Access

You can access this command via:

Ribbon	Home - Model Element Data
Context menu of	None
Shortcut key	<ul style="list-style-type: none"> ▪ Alt + F5 (refreshes the model) ▪ Alt + Shift + F5 (refreshes the selected model elements) ▪ F5 (refreshes the view)
Icon	 Refresh Model / Refresh View  Refresh Selected Model Elements

Result The Property Manager refreshes the displayed data depending on the selected refresh option.

Description

Refresh Model loads the complete model hierarchy, which can take a longer time for large models. Useful if the model structure [or a library] was changed in Simulink after it was loaded in the Property Manager.

Refresh (Selected Model Elements) refreshes only selected model elements. Use this option, for example, if you made some modifications in the Property Manager without selecting Auto Apply and want to overwrite them again with the original values from the Simulink model. In this case, structural changes of the model are not considered.

Note

When model element variables are selected, a Refresh (Selected Model Elements) will refresh the complete model element, e.g., if you select the output variable of a Gain block, the complete Gain Block is refreshed. It is not possible to refresh individual model element variables or properties.

Refresh View refreshes only the content of the Property View. Use this command after you have changed data that is affected by a filter. In this case, the Property Manager applies the filter again. This command does not refresh TargetLink data from the Simulink model.

Related topics**Basics**

Updating Property Values ( TargetLink Preparation and Simulation Guide)


Save Current Property View Set

Purpose

To save a modified view configuration.

Access

You can access this command via:

Ribbon	None
Context menu of	None
Shortcut key	None
Icon in the Property View	

Result

Your changes are saved.

Description

The current settings of the Property View are saved to the selected property view set.

All settings of the Property View are saved:

- Number of columns
- Order of columns
- Grouping of variables (rows) by properties
- Active filters
- Sorting of columns
- Column widths

The previous settings of the view set are overwritten.

The built-in view sets and the Autosaved view set cannot be overwritten. If you modified a read-only property view set, the [Save Property View Set As](#) on page 171 dialog is displayed and you can save the view set under a new name. Initially, it has the name prefix Copy of....

Related topics

HowTos

[How to Create Property View Sets](#) (📖 TargetLink Preparation and Simulation Guide)
[How to Filter for Property Values and Validation Errors](#) (📖 TargetLink Preparation and Simulation Guide)

References

[Manage Property View Sets](#)..... 165
[Save Property View Set As](#)..... 171
[View Set Chooser](#)..... 184

Save Property View Set As

Purpose

To save a copy of an existing property view set with a new name and description.

Access

You can access this command via:

Ribbon	None
Context menu of	None
Shortcut key	None
Icon	<ul style="list-style-type: none"> Save As button in the Manage Property View Sets dialog


Result

A new property view set is created and stored with the name and description you entered in the Manage Property View Sets dialog.

Description

The new property view set is derived from the one currently selected in the View Set Chooser. Via the description edit field, you can enter additional information that describes your property view set in more detail. The column arrangement settings such as filter settings or the sorting order are stored in the new property view set.

Related topics**HowTos**

[How to Create Property View Sets](#) ( [TargetLink Preparation and Simulation Guide](#))

References

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Manage Property View Sets Dialog.....	166
Save Current Property View Set.....	170
View Set Chooser.....	184

Search (Property View)

Purpose

To search a string or number in the **Property View** across multiple columns. The rows with the search results are shown.

Access

You can access this command via:

Ribbon	None
Context menu of	Rows in the Property View
Shortcut key	Ctrl + F
Icon	None


Result

The search results are shown in the **Property View**.

Description


Press **Ctrl + F** to set the focus to the search field in the **Property View**. You can enter a string or number to search it in all visible columns. Instant search is implemented, the first results will be displayed while you are typing. The rows with the search results are shown.

Tip

To search in a specific column, use the Auto Filter Row. Refer to [How to Filter for Property Values and Validation Errors](#) ( [TargetLink Preparation and Simulation Guide](#)).

Related topics

HowTos

[How to Search for Model Elements and Validation Errors](#) ( [TargetLink Preparation and Simulation Guide](#))



Select DD Object

Purpose

To select a reference to a DD object.

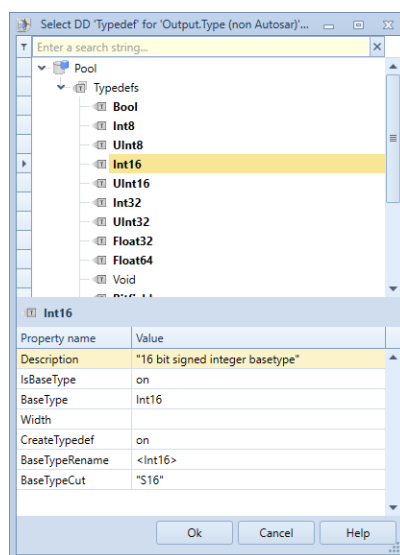
Access

You can access this command via:

Ribbon	None
Context menu of	Property value cells in the Property View (only grid panel)
Shortcut key	None
Icon	
Other	 Browse button (available if you select a property value cell)

Result

The DD Reference Selection dialog opens. For more information, refer to [DD Reference Selection Dialog \(Property Manager\)](#) on page 155.



Related topics

References

[DD Reference Selection Dialog \(Property Manager\)..... 155](#)


Select Model Element in Model Navigator

Purpose

To find the [? model element](#) in the **Model Navigator** that is associated to a row in the **Property View**.

Access

You can access this command via:

Ribbon	None
Context menu of	Property value cells in the Property View
Shortcut key	Ctrl + G
Icon	

Result

The model element is selected in the **Model Navigator**. The **Property View** contains only rows that are associated to this model element.

Description

This function is especially useful for large models as it simplifies the access to the associated model element in the **Model Navigator**, i.e., you do not have to search the model hierarchy.

Show Auto Filter Row

Purpose

To add or remove a filter row at the top of the **Property View**.

Access

You can access this command via:

Ribbon	Home - Property View
Context menu of	None
Shortcut key	None
Icon	None

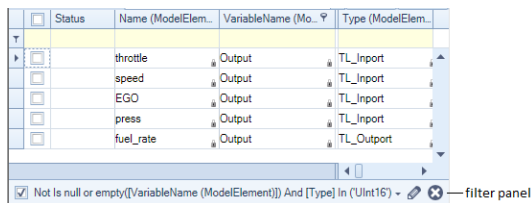
Result

A yellow filter row is displayed at the top of the Property View. Depending on the property, you can filter the column by entering a text or by selecting or clearing a checkbox.

Status	Name (ModelElem..	VariableName (Mode..	Type (ModelEL..	Useful..	CommunicationK..	SoftwareCompo..	FunctionRole	CommunicationMode	DataProtoType
Y									
	throttle	Output	TL_Inport	*	-	-	-	-	-
	speed	Output	TL_Inport	*	-	-	-	-	-
	EGO	Output	TL_Inport	*	-	-	-	-	-
	press	Output	TL_Inport	*	-	-	-	-	-
	fuel_rate	Output	TL_Outport	*	-	-	-	-	-

Description

The Show Auto Filter Row is active when you start the Property Manager for the first time. When you close the Property Manager, it saves its settings. If it is active, you can enter a filter string in each edit field above a column. Only model element variables whose property values meet the filter conditions are displayed in the Property View. If a filter is active, a status bar at the bottom of the Property View shows the current settings.



You can use this status bar to activate or deactivate the filter via selecting or clearing the checkbox on the left.

The last defined filters are also available in a list. Click to expand this list and to select one of the previous filter settings.

Click the Clear Filter button () on the right to clear all filters set. If you activate a new filter, the previous filter settings are available in the list again.

Note


If you have set multiple filters in different columns, all filters in all columns are cleared and the status bar is no longer displayed. If you want to clear a specific filter, do this using the Clear Filter command from the context menu of the respective column. For more information, refer to [Clear Filter \(Property View\)](#) on page 149.

You can also open the Filter Editor via clicking . For more information, refer to [Filter Editor \(Property View\)](#) on page 159.

Tip

If you want to keep your filter configuration, click the Save button in the top right corner of the Property View. For more information, refer to [Save Current Property View Set](#) on page 170.

Related topics**HowTos**

[How to Filter for Property Values and Validation Errors](#) ( [TargetLink Preparation and Simulation Guide](#))


Show Column Chooser (Property View)

Purpose

To open a dialog for specifying additional property columns to be displayed.

Access

You can access this command via:

Ribbon	Home - Property View
Context menu of	Column headers in the Property View.
Shortcut key	Shift + F7
Icon	

Result

The Column Chooser opens. For more information, refer to [Column Chooser Dialog](#) on page 152.

Related topics**References**

[Column Chooser Dialog](#)..... 152


Show DD Object

Purpose

To show where the selected DD object is located in the DD object tree.

Access

You can access this command via:

Ribbon	None
Context menu of	Property value cells in the Property View
Shortcut key	None
Icon	

Result

This command opens the Data Dictionary Manager, expands the DD object hierarchy tree shown in the Data Dictionary Navigator and highlights the selected DD object.


Show Descendants

Purpose

To extend the Property View to [model elements](#) and model element variables of underlying subsystems. Or to limit the Property View to model elements and model element variables of only the current hierarchy level selected in the Model Navigator.

Access

You can access this command via:

Ribbon	Home - Property View
Context menu of	None
Shortcut key	Ctrl + Shift + D
Icon	

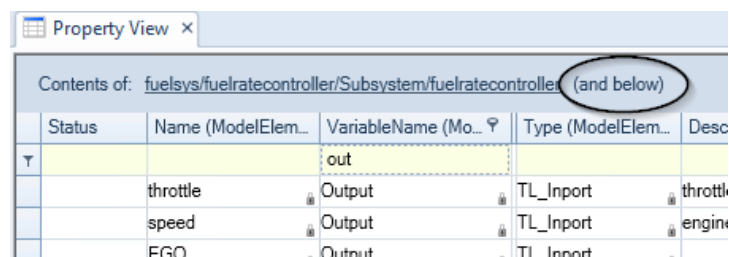
Result

If you activate Show Descendants, the model elements of the hierarchy levels below are displayed additionally.

To restrict the displayed model elements to the currently selected hierarchy level, deactivate Show Descendants.

Description

Click Show Descendants in the Property View group to extend the view to model elements and model element variables of underlying hierarchy levels (indicated by and below versus only).

**Tip**

Disabling Show Descendants minimizes refreshing/loading times.

When you have started the Property Manager for the first time, **Show Descendants** is not active, hence, underlying hierarchy levels are not considered. Afterwards, the setting of **Show Descendants** is saved, every time you close the Property Manager. To reduce loading times, deactivate **Show Descendants** before you exit.

Related topics

Basics

[Display of Properties in the Property View](#) (📖 TargetLink Preparation and Simulation Guide)

HowTos

[How to Navigate from the Simulink Model to the Property Manager](#) (📖 TargetLink Preparation and Simulation Guide)

[How to Open the Property Manager](#) (📖 TargetLink Preparation and Simulation Guide)


Show Group Panel (Property View)

Purpose

To show the group panel.

Access

This command is available only if the group panel is not displayed. You can access this command via:

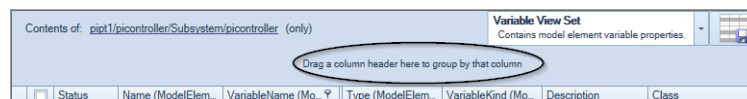
Ribbon	None
Context menu of	Column headers in the Property View .
Shortcut key	None
Icon	

Result

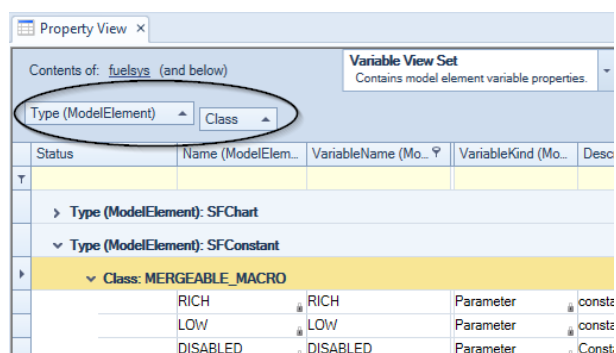
The group panel is displayed.

Description

The group panel is the area above the column headers in the **Property View**.



The group panel lets you group rows according to selected column headers (e.g., Type (ModelElement) and Class).



Add column headers by dragging them to the group panel. If you drag multiple column headers to the group panel, the resulting row grouping is arranged hierarchically.

If you want to reset the current configuration of the group panel, use the [Clear Grouping \(Property View\)](#) on page 150 command.

Related topics

HowTos

[How to Create Property View Sets](#) ([TargetLink Preparation and Simulation Guide](#))

References

Clear Grouping (Property View)	150
Group by This Column (Property View)	162
Group Summary Editor (Group Panel, Property View)	162
Hide Group Panel (Property View)	164
Ungroup (Property View)	182

Sort Ascending (Property View)

Purpose

To sort the entries of a selected column alphabetically or numerically in ascending order.

Access

You can access this command via:

Ribbon	None
Context menu of	Column headers in the Property View .

Shortcut key	None
Icon	

Result


The entries of the selected column are sorted alphabetically or numerically in ascending order. The sort order is indicated by the small icon (▲) in the header cell.

Rows with invisible data are displayed at the bottom.

Description

You can sort a column by using this command from the column header's context menu or by clicking the column header. Use the command from the column header's context menu to sort multiple columns. If you click the column header of a column, the sorting order of the other columns is reset.

Related topics**HowTos**

[How to Filter for Property Values and Validation Errors](#) ( [TargetLink Preparation and Simulation Guide](#))

References

[Clear Sorting \(Property View\)](#)..... 150
[Sort Descending \(Property View\)](#)..... 180


Sort Descending (Property View)

Purpose

To sort the entries of a selected column alphabetically or numerically in descending order.

Access

You can access this command via:

Ribbon	None
Context menu of	Column headers in the Property View.
Shortcut key	None
Icon	

Result The entries of the selected column are sorted alphabetically or numerically in descending order. The sort order is indicated by the small icon (↕) in the header cell.

Rows with invisible data are displayed at the bottom.

Description You can sort a column by using this command from the column header's context menu or by clicking the column header. Use the command from the column header's context menu to sort multiple columns. If you click the column header of a column, the sorting order of the other columns is reset.

Related topics

HowTos

[How to Filter for Property Values and Validation Errors \(📖 TargetLink Preparation and Simulation Guide\)](#)

References


[Clear Sorting \(Property View\)..... 150](#)
[Sort Ascending \(Property View\)..... 179](#)

Undo

Purpose To undo the most recent actions.

Access

You can access this command via:

Ribbon	Home - Model Element Data
Context menu of	None
Shortcut key	Ctrl + Z
Icon	

Result The previously performed user actions to change property values are reversed.

Description Restores previous property values to blocks or Stateflow objects. The number of reverse actions is limited by the number of actions you performed and the

maximum number is 42. Multi-editing a property value for several model elements at once counts as one step.

Related topics

References

[Redo..... 168](#)


Ungroup (Property View)

Purpose

To remove a column header from the group panel to revoke the related grouping of rows.

Access

You can access this command via:

Ribbon	None
Context menu of	Column headers in the group panel
Shortcut key	None
Icon	

Related topics

References

[Clear Grouping \(Property View\)..... 150](#)
[Group by This Column \(Property View\)..... 162](#)
[Group Summary Editor \(Group Panel, Property View\)..... 162](#)
[Hide Group Panel \(Property View\)..... 164](#)
[Show Group Panel \(Property View\)..... 178](#)

Use Checkboxes to Select

Purpose

To use checkboxes to select or clear individual rows in the Property View.

Access

You can access this command via:

Ribbon	Home - Property View
Context menu of	None

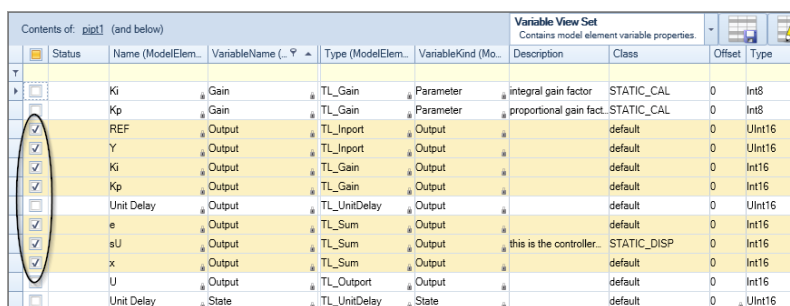
Shortcut key	None
Icon	None

Result

An additional column with checkboxes is added to the Property View. You can use them to select or clear multiple rows.

Description

Select the rows to be modified by selecting the checkboxes in the checkbox column on the very left-hand side, for example:



Status	Name (ModelElem...)	VariableName (...)	Type (ModelElem...)	VariableKind (Mo...)	Description	Class	Offset	Type
<input type="checkbox"/>	Ki	Gain	TL_Gain	Parameter	integral gain factor	STATIC_CAL	0	Int8
<input type="checkbox"/>	Kp	Gain	TL_Gain	Parameter	proportional gain fact.	STATIC_CAL	0	Int8
<input checked="" type="checkbox"/>	REF	Output	TL_Inport	Output		default	0	UInt16
<input checked="" type="checkbox"/>	Y	Output	TL_Inport	Output		default	0	UInt16
<input checked="" type="checkbox"/>	Ki	Output	TL_Gain	Output		default	0	Int16
<input checked="" type="checkbox"/>	Kp	Output	TL_Gain	Output		default	0	Int16
<input checked="" type="checkbox"/>	Unit Delay	Output	TL_UnitDelay	Output		default	0	UInt16
<input checked="" type="checkbox"/>	e	Output	TL_Sum	Output		default	0	Int16
<input checked="" type="checkbox"/>	sU	Output	TL_Sum	Output	this is the controller.	STATIC_DISP	0	Int16
<input checked="" type="checkbox"/>	x	Output	TL_Sum	Output		default	0	Int16
<input checked="" type="checkbox"/>	U	Output	TL_Outport	Output		default	0	Int16
<input type="checkbox"/>	Unit Delay	State	TL_UnitDelay	State		default	0	UInt16

Tip

You can use the **Shift** key for multiselection on the checkbox column. You can use the checkbox in the header row to select or clear the checkboxes of all displayed rows.

The selection is kept if you click anywhere in the Property View.

Use Checkboxes to Select is active when you start the Property Manager for the first time. When you close the Property Manager, it saves the setting of Use Checkboxes to Select.

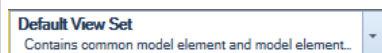
Related topics**HowTos**

[How to Multi-Edit Property Values \(TargetLink Preparation and Simulation Guide\)](#)

View Set Chooser

Purpose To select a preconfigured arrangement of the Property View.

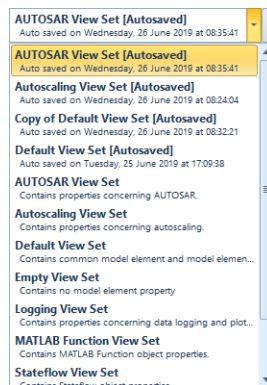
Access You can access this command via:

Ribbon	None
Context menu of	None
Shortcut key	None
Icon	

Result View sets comprise the following settings of the Property View:

- Column selection
- Order of columns
- Grouping of variables (rows) by properties
- Active filters
- Sorting of columns
- Column widths

The grid panel displays the columns (= properties) that relate to this specific arrangement. The Autoscaling View, for example, contains properties concerning autoscaling.



Related topics**HowTos**

How to Create Property View Sets (📖 TargetLink Preparation and Simulation Guide)

How to Customize Columns in the Property View and Validation Summary (📖 TargetLink Preparation and Simulation Guide)

How to Optimize the Property View for Your Use Cases (📖 TargetLink Preparation and Simulation Guide)

References

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Import View Sets Dialog..... 122

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Save Current Property View Set..... 170

Save Property View Set As..... 171

Simulink

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

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Highlight in Model


Purpose

To highlight the  **model element** in Simulink.

Access

You can access this command via:

Ribbon	Home - Simulink
Context menu of	Model elements in the <ul style="list-style-type: none"> ▪ Model Navigator ▪ Property View (only grid panel) ▪ Validation Summary


Shortcut key	Ctrl + H
Icon	

Result The model element in Simulink is highlighted.

Open in Model

Purpose To open the [model element](#) dialog in Simulink.

Access You can access this command via:


Ribbon	Home - Simulink
Context menu of	<ul style="list-style-type: none"> Model elements in the Model Navigator Rows in the Property View Rows in the Validation Summary
Shortcut key	Ctrl + I
Icon	

Result The model element dialog is opened in Simulink.

Unlock Library

Purpose To unlock the selected library.

Access You can access this command via:

Ribbon	Home - Simulink
Context menu of	Model elements in the Model Navigator
Shortcut key	None
Icon	

Result Unlocks the selected library and you can edit it. The Property Manager refreshes the library after it is unlocked.

You can also unlock a library directly when you load it into the Property Manager. For more information, refer to [Choose Model to Load Dialog](#) on page 128.

Related topics

Basics

[Basics on Working with Libraries](#) ( TargetLink Preparation and Simulation Guide)

References

[Choose Model to Load Dialog](#)..... 128

Messages

Where to go from here

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Clear Messages

Purpose To remove all entries from the **Message Viewer**.

Access You can access this command via:

Ribbon	None
Context menu of	Message Viewer - Messages
Shortcut key	None
Icon	None

Result All the entries in the **Message Viewer** are deleted.

Related topics

Basics

[Display of Messages in the Message Browser.....](#) 21

References

[Message Browser Description.....](#) 28

Collapse (Messages)

Purpose To collapse all the subelements of the selected message.

Access You can access this command via:

Menu bar	None
Context menu of	Message Viewer - Messages
Shortcut key	-
Toolbar button	None

Result The subelements of the selected message are hidden.

Related topics

References

[Expand \(Messages\)..... 189](#)

Copy (Messages)

Purpose To copy the selected messages in the **Message Viewer** to the Clipboard.

Access

You can access this command via:

Menu bar	None
Context menu of	Message Viewer - Messages
Shortcut key	Ctrl + C
Toolbar button	None

Expand (Messages)

Purpose To expand all the collapsed subelements of the selected message.

Access

You can access this command via:

Menu bar	None
Context menu of	Message Viewer - Messages
Shortcut key	+
Toolbar button	None

Result The hidden subelements of the selected message are displayed.

Related topics

References

[Collapse \(Messages\)..... 188](#)

Fit All Columns

Purpose To optimize the width of all the displayed columns in the **Message Viewer**.

Access You can access this command via:

Menu bar	None
Context menu of	Column header of the Message Viewer
Shortcut key	None
Toolbar button	None

Fit Column Width

Purpose To resize the selected column to be just a bit larger than the largest column value.

Access You can access this command via:

Menu bar	None
Context menu of	Column header of the Message Viewer
Shortcut key	None
Toolbar button	None

Lock Scrolling

Purpose To disable the automatic vertical scrolling mechanism in the **Message Viewer**.

Access You can access this command via:

Menu bar	None
Context menu of	Message Viewer - Messages
Shortcut key	None
Toolbar button	None

Description

By default, the Message Viewer automatically scrolls to the latest entry that is displayed. Locking it or running the Model Navigator in the foreground enhances performance.


Message Viewer

Purpose

To show the Message Viewer.

Access

The Message Viewer is one of the Property Manager's panes. You can display it via:

Ribbon	View – Show - Messages
Context menu of	None
Shortcut key	None
Icon	

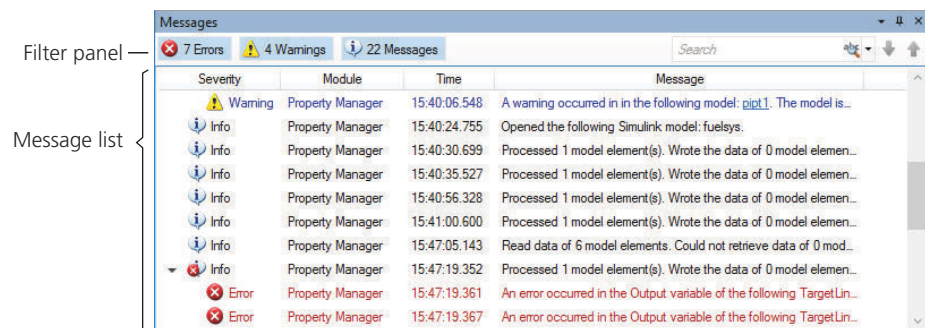
Result

The Message Viewer opens.

Description

The Message Viewer provides a history of all the info, advice, error, and warning messages that occur when you work with the product.

The Message Viewer looks like this:




Filter panel

The filter panel lets you filter the message list and search for text in the message list.

Show/Hide Errors ( **Errors** button) Lets you display or hide errors.

Show/Hide Warnings ( **Warnings** button) Lets you display or hide warnings.


Show/Hide other Messages ( **Messages** button) Lets you display or hide other messages, i.e., infos and advice.


Search Lets you enter a text string for searching the message list.

You can use the following wildcards in the text string:

- ? (wildcard for one character)
- * (wildcard for any number of characters)




To mask a wildcard, enter the \ character before the wildcard.

To select the next occurrence of the search string, click  next to the edit field, or press the **Enter** key while the search field has the focus.

To select the previous occurrence of the search string, click  next to the edit field.

Message list

The message list provides the following information for each message:

Information	Description
Severity	The severity level of the message, indicated by one of the following symbols: <ul style="list-style-type: none"> ▪  Errors ▪  Warnings ▪  Other messages, i.e., infos and advice
Module ¹⁾	The module that issued the message.
Time ¹⁾	The time the message was issued.
Message	The content of the message.
Main Module Number ¹⁾	The main module that issued the message.
Submodule Number ¹⁾	The submodule that issued the message.
Message Code ¹⁾	The code of the message.

¹⁾ You can specify whether this information is displayed via the Show Columns command.

A message can be identified by the combination of message code, main module number and sub module number.

Links to model elements or properties If you click the model element link in the message, the model element is selected in the Model Navigator and displayed in the Property View.

Clicking a property link in the **Message Viewer** also adds the corresponding column in the **Property View**.

Reset Columns

Purpose	To reset the display of message list columns to the default.
----------------	--

Access	You can access this command via:
---------------	----------------------------------

Menu bar	None
Context menu of	Column header of the Message Viewer
Shortcut key	None
Toolbar button	None

Show Columns

Purpose	To add/remove the following columns to/from the message list of the Message Viewer :
----------------	---

- Module
- Time
- Main Module Number
- Submodule Number
- Message Code

You can use the message code (message ID), preceded by an asterisk (*<message code>), to search for a detailed description of the message in dSPACE Help.

Access	You can access this command via:
---------------	----------------------------------

Menu bar	None
Context menu of	Column header of the Message Viewer
Shortcut key	None
Toolbar button	None

Show Filter Panel

Purpose To show or hide the filter panel (refer to [Filter panel](#) on page 192) of the **Message Viewer**.

Access You can access this command via:

Menu bar	None
Context menu of	Message Viewer - Messages
Shortcut key	None
Toolbar button	None

Description The filter panel of the **Message Viewer** lets you filter the message list and search for text in the message list.

Related topics

References

[Search \(Model Navigator\)..... 135](#)

Show Message

Purpose To show a selected message in a separate dialog.

Tip

You can also double-click a line in the **Message** column of the **Message Viewer** to show a message. The dialog provides a **Help** button that opens a detailed description of the message in dSPACE Help.

Access You can access this command via:

Menu bar	None
Context menu of	Message Viewer - Messages
Shortcut key	None
Toolbar button	None

Tree View

Purpose To toggle between flat and hierarchy views of the messages.

Access You can access this command via:

Menu bar	None
Context menu of	Message Viewer - Messages
Shortcut key	None
Toolbar button	None

Validation Summary

Where to go from here


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Best Fit (Validation Summary)

Purpose To optimize the width of the selected column.

Access You can access this command via:

Ribbon	None
Context menu of	Column headers in the Validation Summary
Shortcut key	None
Icon	

Result The width of the selected column is optimized.

Related topics

HowTos

[How to Customize Columns in the Property View and Validation Summary](#)
 [TargetLink Preparation and Simulation Guide](#)

References

[Best Fit all Columns \(Validation Summary\)..... 197](#)

Best Fit all Columns (Validation Summary)

Purpose To optimize the widths of all displayed columns.

Access You can access this command via:

Ribbon	None
Context menu of	Column headers in the Validation Summary
Shortcut key	None
Icon	None

Result The width of all displayed columns is optimized.

Related topics

HowTos

[How to Customize Columns in the Property View and Validation Summary](#)
 (📖 [TargetLink Preparation and Simulation Guide](#))

References

[Best Fit \(Validation Summary\)..... 197](#)



Clear Filter (Validation Summary)

Purpose

To remove active filter criteria.

Access

You can access this command via:

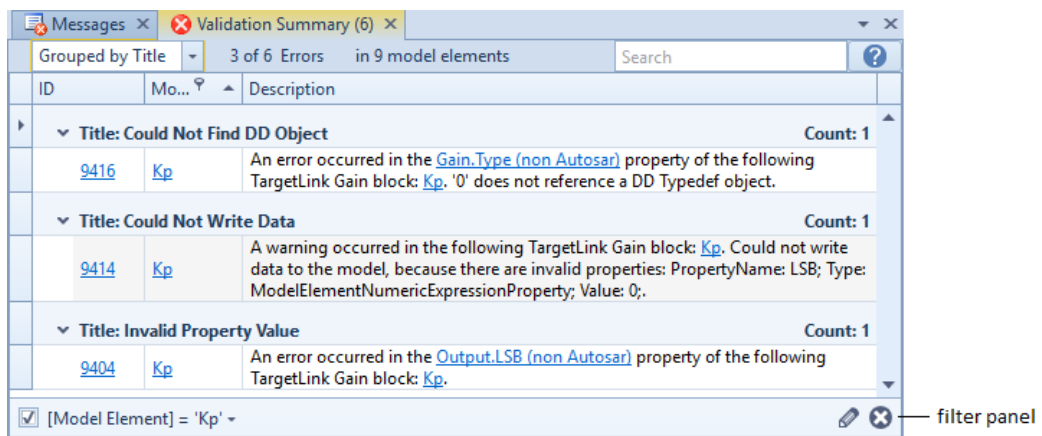
Ribbon	None
Context menu of	Column headers in the Validation Summary
Shortcut key	None
Icon	<ul style="list-style-type: none"> ■  ■ 

Result

The Validation Summary shows the validation errors that were filtered out before.

Description


Clear Filter is available only if a filter is set. You can clear all filters in one step by clicking Clear Filter in the filter panel of the Validation Summary.



If you want to clear only the filter for one column, use the context menu in the header of this column.

Related topics

HowTos

[How to Filter for Property Values and Validation Errors](#) ( [TargetLink Preparation and Simulation Guide](#))

References

[Filter Editor \(Validation Summary\)..... 202](#)


Clear Grouping (Group Panel, Validation Summary)

Purpose

To remove all column headers from the group panel to revoke the related grouping of rows.

Access


You can access this command via:

Ribbon	None
Context menu of	Group panel in the Validation Summary
Shortcut key	None
Icon	

Result

All column headers are removed from the group panel.

Description

Remove columns by selecting and dragging the header cell from the group panel until the red clear icon is displayed. In the **Validation Summary** you can also use the list to switch between group and list view. For more information, refer to [Display of Validation Errors](#) ( [TargetLink Preparation and Simulation Guide](#)).

Related topics

References

[Group By This Column \(Validation Summary\)..... 203](#)
[Hide Group Panel \(Validation Summary\)..... 206](#)
[Show Group Panel \(Validation Summary\)..... 209](#)
[Ungroup \(Validation Summary\)..... 212](#)

Clear Sorting (Validation Summary)

Purpose To deactivate the sort attribute applied to the selected column.

Access You can access this command via:

Ribbon	None
Context menu of	Column headers in the Validation Summary
Shortcut key	None
Icon	None

Result Sorting is deactivated in the selected column.

Related topics

HowTos

[How to Filter for Property Values and Validation Errors](#) (📖 [TargetLink Preparation and Simulation Guide](#))


References

Sort Ascending (Validation Summary)	210
Sort Descending (Validation Summary)	211

Collapse All (Group Panel, Validation Summary)

Purpose To collapse all grouped validation errors in the [Validation Summary](#).

Access You can access this command via:

Ribbon	None
Context menu of	Group Panel in the Validation Summary
Shortcut key	None
Icon	

Result All grouped validation errors are collapsed.

Related topics**References**

Clear Grouping (Group Panel, Validation Summary).....	199
Expand All (Group Panel, Validation Summary).....	202
Hide Group Panel (Validation Summary).....	206
Show Group Panel (Validation Summary).....	209

Copy Cell Value

Purpose

To copy the value of the current cell to the Clipboard.

Access

You can access this command via:

Ribbon	None
Context menu of	Cells in the Validation Summary
Shortcut key	None
Icon	None

Result

The value of the current cell is copied to the Clipboard.

Related topics**References**

Copy Selected Rows.....	201
-------------------------	-----

Copy Selected Rows

Purpose

To copy selected rows with all column headers to the Clipboard.

Access

You can access this command via:

Ribbon	None
Context menu of	Rows in the Validation Summary
Shortcut key	Ctrl + C
Icon	None

Result The selected rows are copied to the Clipboard with all column headers.

Related topics

References


Copy Cell Value..... 201

Expand All (Group Panel, Validation Summary)

Purpose To expand all grouped validation errors in the [Validation Summary](#).

Access

You can access this command via:

Ribbon	None
Context menu of	Group Panel in the Validation Summary
Shortcut key	None
Icon	

Result All grouped validation errors are expanded.

Related topics

References

Clear Grouping (Group Panel, Validation Summary)..... 199
 Collapse All (Group Panel, Validation Summary)..... 200
 Hide Group Panel (Validation Summary)..... 206
 Show Group Panel (Validation Summary)..... 209



Filter Editor (Validation Summary)

Purpose To open the Filter Editor to edit a filter rule.

Access

You can access this command via:

Ribbon	None
Context menu of	Column headers in the Validation Summary


Shortcut key	None
Icon	<ul style="list-style-type: none"> ■  ■ 

Result The Filter Editor is opened to create and apply a filter rule.

Filter Editor The Filter Editor provides a tree view for specifying a hierarchical filter rule. For more information on filter conditions, refer to [Filter Editor \(Property View\)](#) on page 159.

Related topics

HowTos

[How to Filter for Property Values and Validation Errors](#) ( [TargetLink Preparation and Simulation Guide](#))

References


[Clear Filter \(Validation Summary\).....](#) 198

Group By This Column (Validation Summary)

Purpose To group the signals according to the entries of the column.

Access


You can access this command via:

Ribbon	None
Context menu of	Column headers in the Validation Summary
Shortcut key	None
Icon	

Result The signals are grouped according to the entries of the column.

Related topics

HowTos

[How to Customize Columns in the Property View and Validation Summary](#)
( [TargetLink Preparation and Simulation Guide](#))

References

[Hide Group Panel \(Validation Summary\).....](#) 206
[Show Group Panel \(Validation Summary\).....](#) 209
[Ungroup \(Validation Summary\).....](#) 212

Group Summary Editor (Group Panel, Validation Summary)

Access

You can access this command via:

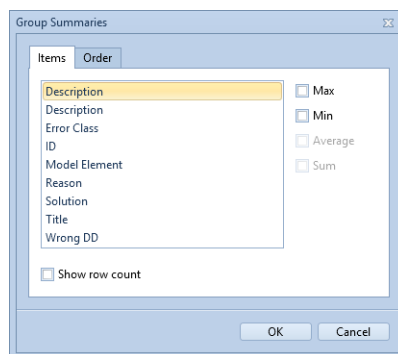
Ribbon	None
Context menu of	Column headers in the Validation Summary (only group panel)
Shortcut key	None
Icon	None

Result

The **Group Summaries** editor is opened.

Description

The **Group Summaries** editor lets you display summary information for selected items in each group row.



Max To display the maximum value (useful only for alphanumeric information).

Min To display the minimum value (useful only for alphanumeric information).

Show row count To display the number of rows per group.

Related topics**References**

Group By This Column (Validation Summary).....	203
Hide Group Panel (Validation Summary).....	206
Show Group Panel (Validation Summary).....	209
Ungroup (Validation Summary).....	212

Help

Purpose

To open dSPACE Help.

Access

You can access this command via:

Ribbon	None
Context menu of	Rows in the Validation Summary (dSPACE Help for the error message)
Shortcut key	F1 (dSPACE Help for the Validation Summary)
Icon	<ul style="list-style-type: none"> ❓ (dSPACE Help for the error message) ❓ (dSPACE Help for the Validation Summary)

Result

dSPACE Help is opened.

Description

To open dSPACE Help for the corresponding validation error, use the dSPACE Help command in the context menu or click the ID of the validation error. Click the dSPACE Help icon beside the search field or use the **F1** shortcut in the **Validation Summary** to open dSPACE Help for the **Validation Summary**.


Hide Group Panel (Validation Summary)

Purpose

To hide the group panel.

Access

This command is available only if the group panel is displayed. You can access this command via:

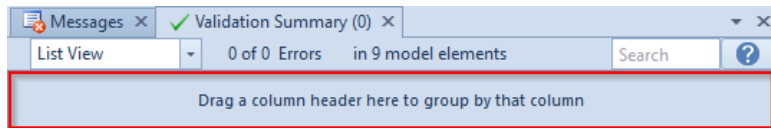
Ribbon	None
Context menu of	Column headers in the Validation Summary
Shortcut key	None
Icon	

Result

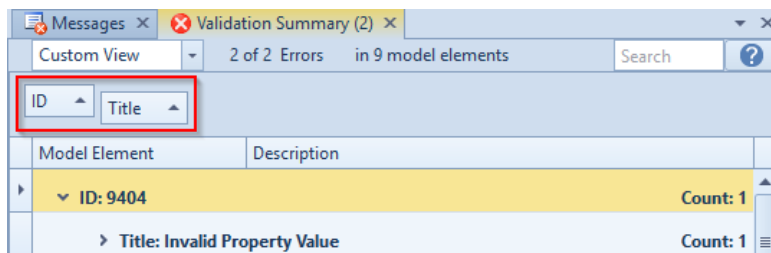
The group panel is hidden.

Description

The group panel is the area above the column headers in the [Validation Summary](#).



The group panel lets you group rows according to selected column headers (e.g., ID and Title).



Remove column headers by selecting and dragging them from the group panel until the red clear icon is displayed.

If you want to reset the current configuration of the group panel, use [Clear Grouping \(Group Panel, Validation Summary\)](#) on page 199 or select List View in the list.

Related topics**References**

Group By This Column (Validation Summary).....	203
Show Group Panel (Validation Summary).....	209
Ungroup (Validation Summary).....	212


Highlight in Model (Validation Summary)

Purpose

To highlight the  **model element** in Simulink.

Access

You can access this command via:

Ribbon	Home - Simulink
Context menu of	Rows in the Validation Summary
Shortcut key	Ctrl + H
Icon	

Result

The model element in Simulink is highlighted.

Related topics**References**

Open in Model (Validation Summary).....	207
---	-----


Open in Model (Validation Summary)

Purpose

To open the  **model element** dialog in Simulink.

Access

You can access this command via:

Ribbon	Home - Simulink
Context menu of	Rows in the Validation Summary
Shortcut key	Ctrl + I
Icon	

Result The model element dialog is opened in Simulink.

Related topics

References


[Highlight in Model \(Validation Summary\)..... 207](#)

Search (Validation Summary)

Purpose To search a string or number in the [Validation Summary](#) across multiple columns. The rows with the search results are shown.

Access

You can access this command via:

Ribbon	None
Context menu of	None
Shortcut key	Ctrl + F
Icon	

Result The search results are shown in the **Validation Summary**.

Description Press **Ctrl + F** to set the focus to the search field in the **Validation Summary**. You can enter a string or number to search it in all visible columns. Instant search is implemented, the first results will be displayed while you are typing. The rows with the search results are shown.

Related topics


HowTos

[How to Search for Model Elements and Validation Errors \(TargetLink Preparation and Simulation Guide\)](#)

Show Column Chooser (Validation Summary)

Purpose To open a dialog for specifying additional property columns to be displayed.

Access You can access this command via:

Ribbon	None
Context menu of	Column headers in the Validation Summary
Shortcut key	Shift + F7
Icon	

Result The Column Chooser opens. For more information, refer to [Column Chooser Dialog](#) on page 152.

Related topics


References

[Column Chooser Dialog..... 152](#)

Show Group Panel (Validation Summary)

Purpose To show the group panel.

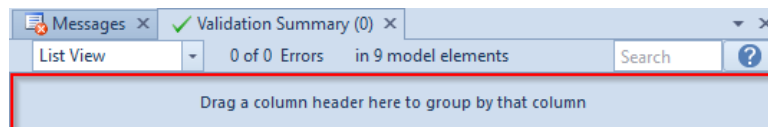
Access This command is available only if the group panel is not displayed. You can access this command via:

Ribbon	None
Context menu of	Column headers in the Validation Summary
Shortcut key	None
Icon	

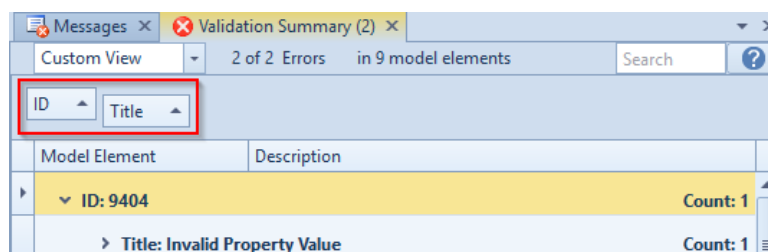
Result The group panel is displayed.

Description

The group panel is the area above the column headers in the [Validation Summary](#).



The group panel lets you group rows according to selected column headers (e.g., ID and Title).



Add column headers by dragging them to the group panel. If you drag multiple column headers to the group panel, the resulting row grouping is arranged hierarchically.

If you want to reset the current configuration of the group panel, use [Clear Grouping \(Group Panel, Validation Summary\)](#) on page 199.

Related topics**References**

Clear Grouping (Group Panel, Validation Summary)	199
Group By This Column (Validation Summary)	203
Hide Group Panel (Validation Summary)	206
Ungroup (Validation Summary)	212

Sort Ascending (Validation Summary)

Purpose

To sort the entries of a selected column alphabetically or numerically in ascending order.

Access

You can access this command via:

Ribbon	None
Context menu of	Column headers in the Validation Summary

Shortcut key	None
Icon	

Result The entries of the selected column are sorted alphabetically or numerically in ascending order. The sort order is indicated by the small icon (↕) in the header cell.

Description You can sort a column by using this command from the column header's context menu or by clicking the column header. Use the command from the column header's context menu to sort multiple columns. If you click the column header of a column, the sorting order of the other columns is reset.

Related topics

HowTos

[How to Filter for Property Values and Validation Errors \(TargetLink Preparation and Simulation Guide\)](#)

References


[Clear Sorting \(Validation Summary\).....](#) 200
[Sort Descending \(Validation Summary\).....](#) 211

Sort Descending (Validation Summary)

Purpose To sort the entries of a selected column alphabetically or numerically in descending order.

Access

You can access this command via:

Ribbon	None
Context menu of	Column headers in the Validation Summary
Shortcut key	None
Icon	

Result The entries of the selected column are sorted alphabetically or numerically in descending order. The sort order is indicated by the small icon (↕) in the header cell.

Description

You can sort a column by using this command from the column header's context menu or by clicking the column header. Use the command from the column header's context menu to sort multiple columns. If you click the column header of a column, the sorting order of the other columns is reset.

Related topics**HowTos**

[How to Filter for Property Values and Validation Errors](#) (📖 [TargetLink Preparation and Simulation Guide](#))

References

[Clear Sorting \(Validation Summary\).....](#) 200
[Sort Ascending \(Validation Summary\).....](#) 210


Ungroup (Validation Summary)

Purpose

To remove a column header from the group panel to revoke the related grouping of rows.

Access

You can access this command via:

Ribbon	None
Context menu of	Column headers in the group panel of the Validation Summary
Shortcut key	None
Icon	

Related topics**References**

[Clear Grouping \(Group Panel, Validation Summary\).....](#) 199
[Group By This Column \(Validation Summary\).....](#) 203
[Hide Group Panel \(Validation Summary\).....](#) 206
[Show Group Panel \(Validation Summary\).....](#) 209

Validation Summary

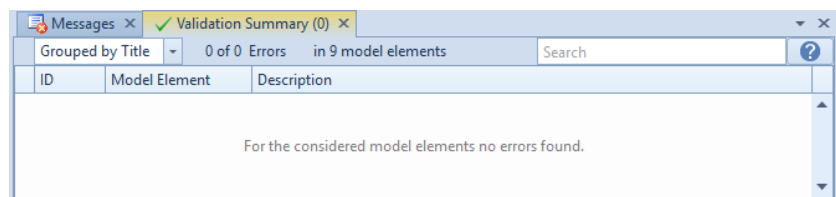
Purpose To show the [Validation Summary](#) and investigate validation errors.

Access The Validation Summary is one of the Property Manager panes. You can display it via:

Ribbon	View - Validation Summary
Context menu of	None
Shortcut key	None
Icon	✓

Result The Validation Summary opens.

Description The Validation Summary shows unresolved validation errors.



You can search, filter, and group for errors. For more information, refer to:

- [How to Search for Model Elements and Validation Errors](#) ([TargetLink Preparation and Simulation Guide](#))
- [How to Filter for Property Values and Validation Errors](#) ([TargetLink Preparation and Simulation Guide](#))
- [How to Customize Columns in the Property View and Validation Summary](#) ([TargetLink Preparation and Simulation Guide](#))

You can use the list to switch between different views:

- **Grouped by Title** ([Grouped by Title](#)).
- **List View** ([List View](#)).
- **Custom View** ([Custom View](#)). This view is automatically used if you drag columns (others than Title) to the group panel.

The Validation Summary displays the number of errors and the number of the selected model elements that are considered. For more information, refer to [Display of Validation Errors](#) ([TargetLink Preparation and Simulation Guide](#)).

Related topics**Basics**

Basics on Validation (Property Manager) (📖 TargetLink Preparation and Simulation Guide)
 Display of Validation Errors (📖 TargetLink Preparation and Simulation Guide)

HowTos

How to Customize Columns in the Property View and Validation Summary (📖 TargetLink Preparation and Simulation Guide)
 How to Filter for Property Values and Validation Errors (📖 TargetLink Preparation and Simulation Guide)
 How to Search for Model Elements and Validation Errors (📖 TargetLink Preparation and Simulation Guide)

Pane Handling


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Close

Purpose To close the selected pane, page or the main window of the Property Manager.

Access You can access this command via:

Ribbon	None
Context menu of	<ul style="list-style-type: none"> ▪ Main window's title bar ▪ Property View (although the command is available, the Property View cannot be closed) ▪ dSPACE Log
Shortcut key	<ul style="list-style-type: none"> ▪ dSPACE Log — none ▪ Main window — Alt + F4
Icon	None
Others	 in the pane's or the page's title bar

Result The selected pane or page in the Property Manager is closed. The Property View cannot be closed.

If you select Close from the main window's context menu, the Property Manager is closed.

Related topics

References

[Close All But This.....](#) 215

Close All But This

Purpose To close all pages except the one selected in the Property Manager and the Property View. The Property View cannot be closed.

Access You can access this command via:

Ribbon	None
Context menu of	<ul style="list-style-type: none"> ▪ Property View ▪ dSPACE Log
Shortcut key	None
Icon	None

Result All pages except the selected one and the Property View are closed.

Related topics

References

[Close.....](#) 215

Customize Quick Access Toolbar / Customize Ribbon / More Commands

Purpose To customize the ribbon and the Quick Access Toolbar.

Access You can access this command via:

Ribbon	None
Context menu of	<ul style="list-style-type: none"> Commands in the ribbon Commands in the Quick Access Toolbar
Shortcut key	None
Icon	None

Result The ribbon and the Quick Access Toolbar are customized according to your settings in the Customize dialog.

Description The Property Manager opens the Customize dialog, which allows you to customize the ribbon and the Quick Access Toolbar.

Tabbed pages The Customize dialog consists of the following pages:

Page	Purpose
Customize Ribbon	To customize the ribbon.
Quick Access Toolbar	To customize the Quick Access Toolbar.

Customize Ribbon To extent the provided standard ribbon by your own ribbon tabs, ribbon groups and commands.

Choose commands from Provides a tree of all commands that are available in the Property Manager's ribbon. You can collapse and expand the tree and select a command that you want to add to your customized ribbon.

Customize the ribbon Provides the tree of your currently configured ribbon, its ribbon tabs, ribbon groups, and commands. Using this tree, you can do the following:

- You can collapse and expand the tree.
- You can select where to add a new tree element.
- You can select a tree element to be removed.

Add >> Lets you add the command you selected in the tree of available commands to the selected ribbon group in your customized ribbons.

<< Remove Lets you remove the selected tree element from your customized ribbon.

Up Lets you move the selected customized ribbon element toward the top of the tree.

Down Lets you move the selected customized ribbon element toward the bottom of the tree.

New Tab Lets you add a new ribbon tab to the tree of customized ribbons.

New Group Lets you add a new ribbon group to the selected ribbon tab.

Rename Lets you rename the selected customized ribbon element. Opens the Rename dialog for you to enter a unique name.

Reset to Factory Settings Lets you reset the ribbon to the state of the first installation.

Initially selected tab Lets you specify which ribbon is selected after the Property Manager is started. You can select it from the list of currently available ribbons and the following keywords:

Keyword	Meaning
(Default)	The Property Manager starts with the Home ribbon tab selected.
(Last Used)	The Property Manager starts with the last selected ribbon tab.

Import Lets you import a formerly exported RIBCUST file containing a ribbon customization. Because an existing ribbon customization will be overwritten, you have to confirm this action before the Import Ribbon Customization dialog is opened that lets you select a RIBCUST file. The configuration of the standard ribbon remains unchanged.

Export Lets you export the settings of your ribbon customization to a RIBCUST file.

Quick Access Toolbar

To customize the Quick Access Toolbar.

Choose commands from Lists all the available ribbons. Lets you select a ribbon to display its commands.

Add >> Lets you add the selected command to the Quick Access Toolbar.

<< Remove Lets you remove the selected command from the Quick Access Toolbar.

Reset to Factory Settings Lets you reset the Quick Access Toolbar to the default.

Show Quick Access Toolbar below the Ribbon Lets you specify whether to display the Quick Access Toolbar above or below the ribbon.

Up Lets you move the selected command toward the top of the list to specify the order of commands on the Quick Access Toolbar.

Down Lets you move the selected command toward the bottom of the list to specify the order of commands on the Quick Access Toolbar.

Related topics

Basics

[Basics on Ribbons](#) (📖 TargetLink Preparation and Simulation Guide)

HowTos

[How to Customize the Quick Access Toolbar](#) (📖 TargetLink Preparation and Simulation Guide)

Dock in Working Area

Purpose To move a pane to the working area.

Access

You can access this command via:

Ribbon	None
Context menu of	Title bars of panes that are not in the working area
Shortcut key	None
Icon	None

Result The pane is moved to the working area as a page.

Dock/Docked

Purpose To place a floating pane at a certain location in the user interface and connect it to its neighbor panes.

Access You can access this command via:

Ribbon	None
Context menu of	<ul style="list-style-type: none"> ▪ Pane's title bar in floating mode
Shortcut key	None
Icon	None


Description The Dock command on the View ribbon is only available for a component that is floating in the main window. If you dock the component, it is moved to a standard location in the user interface and docked to its neighbor panes.

The Docked command from the title bar's context menu is available for a component that is in floating state.

Float/Floating

Purpose To make a pane movable on the entire screen.

Access You can access this command via:

Ribbon	View - Working Area
Context menu of	<ul style="list-style-type: none"> ▪ Pane's title bar in docked mode ▪ Page in the working area
Shortcut key	None
Icon	

Description The Float command on the View ribbon is only available for a component that is docked in the main window. If you float the component, the pane type changes, and you can drag it to any place on your screen, even outside of the user interface. The pane is not docked to other windows.

The Floating command from the title bar's context menu is available for a component that is in docked state.

If you drag a docked pane but do not drop it on a positioning symbol, it is automatically in floating state.

Note

- This command is available only for panes that support floating.
- The *Dock in Working Area* command makes a pane floating, but you can move it only within the working area.



Minimize / Expand the Ribbon

Purpose

To toggle between a minimized and expanded ribbon.

Access

You can access this command via:

Ribbon	None
Context menu of	<ul style="list-style-type: none"> ▪ Commands in the ribbon ▪ Commands in the Quick Access Toolbar
Shortcut key	None
Icon	(on the right of the ribbon)  or 

Result

If the ribbon is minimized, only the ribbon tabs are shown on the user interface.

Description

To access a command when the ribbon is minimized, click a ribbon tab. The commands remain on the user interface until you execute a command from the ribbon.

Reset View Set


Purpose

To reset the view settings in the Property Manager and thus all pane positions to their default state.

Access

You can access this command via:

Ribbon	View-Pane
Context menu of	None

Shortcut key	None
Icon	
Others	None

Result The view settings of the Property Manager and all pane positions are set to their default state.

Related topics


References

[Pane Handling..... 214](#)

Show Panes

Purpose To show or hide panes, for example, the Message Viewer.

Access You can access this command via:

Ribbon	View - Pane
Context menu of	None
Shortcut key	None
Icon	

Result The panes are either shown or hidden.

Show Quick Access Toolbar Above/Below the Ribbon

Purpose To show the Quick Access Toolbar above or below the ribbon.

Access You can access this command via:


Ribbon	None
Context menu of	<ul style="list-style-type: none">Commands in the ribbonCommands in the Quick Access Toolbar
Shortcut key	None
Icon	None

Result The Quick Access Toolbar is shown above or below the ribbon.

Split Horizontally

Purpose To arrange the currently open panes in the Property Manager horizontally.

Access You can access this command via:

Ribbon	View - Working Area
Context menu of	None
Shortcut key	None
Icon	


Result The panes are arranged horizontally.

Description The panes are arranged so that each pane has the same size, initially without overlaps. You can move the child panes, pull them to any size you desire, and overlap them.

Split Vertically

Purpose To arrange the currently open panes in the Property Manager vertically.

Access You can access this command via:

Ribbon	View - Working Area
Context menu of	None
Shortcut key	None
Icon	

Result The panes are arranged vertically.

Description The panes are arranged so that each pane has the same size, initially without overlaps. You can move the child panes, pull them to any size you desire, and overlap them.

State-Space Scaling Tool

About State-Space Scaling Tool

The State-Space Scaling Tool lets you calculate the physical ranges of states and outputs of discrete state-space systems.

Where to go from here

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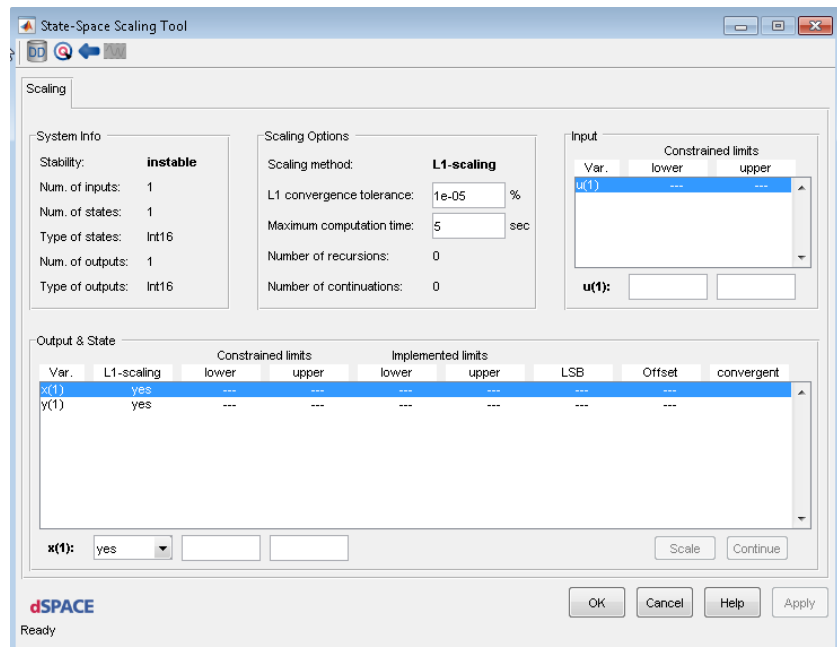
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Information in other sections

[Basics on Scaling State-Space Outputs and States via a Scaling Tool](#) ( [TargetLink Preparation and Simulation Guide](#))

State-Space Scaling Tool Description

User interface of the State-Space Scaling Tool




Purpose	To calculate the physical output ranges and states of discrete state-space systems.
Access	<p>You can access this tool via:</p> <div style="border: 1px solid black; padding: 5px;"> <p>Discrete State-Space block - State-Space Tool button on the Output page</p> </div>

Description	<p>The State-Space Scaling Tool calculates the states and output ranges of discrete state-space systems by finding the specific input vector that produces the worst-case states and outputs via the L1 scaling method. This method helps you calculate the ranges, LSBs, and offsets of the functions and systems.</p> <p>This tool lets you automatically scale the outputs of any discrete state-space blocks for production code generation with TargetLink. With the L1 scaling, the states and outputs can be calculated for the worst case relative to the specified input limits. To see the effects of the performed scaling, the State-Space Scaling tool lets you analyze the corresponding state-space system.</p> <p>You can simulate the TargetLink Discrete State-Space block with the calculated input signals, and thus calculate the worst-case values of the model states and outputs. The Worst Case Signals Plot Window on page 63 shows the results of this calculation.</p>
--------------------	--

Note

For instructions on how to use the State-Space Scaling tool, refer to [Basics on Scaling State-Space Outputs and States via a Scaling Tool](#) ( [TargetLink Preparation and Simulation Guide](#)).

Related topics**Basics**





[Basics on Scaling State-Space Outputs and States via a Scaling Tool](#) ( [TargetLink Preparation and Simulation Guide](#))

References

[Worst Case Signals Plot Window](#)..... 63

User Interface of the State-Space Scaling Tool

Buttons

Button	Description
 Data Dictionary Manager	Opens the Data Dictionary Manager. Refer to TargetLink Data Dictionary Manager on page 74.
 Property Manager	Opens the Property Manager. Refer to Property Manager Description on page 113.
 Block Dialog	Opens the Discrete State-Space Block dialog.
 Plot Results	Opens the Worst Case Signals Plot Window, which shows the calculated worst-case inputs and the corresponding states and outputs of the state-space system within the calculated ranges. Refer to Worst Case Signals Plot Window Commands on page 65.

System Info group box

The settings in this group box are read-only.

Stability Displays whether the system is stable.

Num. of inputs Displays the number of inputs that the state-space system has.

Num. of states Displays the number of states that the state-space system has.

Type of states Displays the type of states that the state-space system has.

Num. of outputs Displays the number of outputs that the state-space system has.

Type of outputs Displays the type of outputs that the state-space system has.

Scaling Options group box

Scaling method Displays the system's active scaling method.


L1 convergence tolerance Lets you specify the desired convergence tolerance value in percent. This is used to limit the number of recursions made during the calculation of the minimum and maximum state and output values.

Maximum computation time Lets you specify the maximum computation time (in seconds). This limits the recursion process if not all states converge.

Number of recursions Displays the number of recursions.

Number of continuations Displays the number of continuations, which corresponds to the number of times that the Continue button (see below) was clicked.

Note

If the increment of the states and outputs do not converge within the L1 convergence tolerance you can continue the scaling procedure at the last recursion step: see [How to Initialize Constrained Limits for Outputs and States](#) ( [TargetLink Preparation and Simulation Guide](#)).

Input group box

Input Displays the physical lower/upper input limits for each variable. You must specify these constrained limits in the edit fields below the list:

- **lower:** Lets you specify the minimum value of the input signal whose row you selected in the list.
- **upper:** Lets you specify the maximum value of the input signal whose row you selected in the list.

Output & State group box

Output & State Displays information about all of the states and outputs in the active state-space system. State variables are indicated by 'x', output variables by 'y'. The list contains the following columns:

Column	Description	
Var	Either the state variables (x) or output variables (y).	
L1-scaling	Displays the selection that was made in the L1-scaling drop-down list.	
Constrained Limits	lower	Lower constrained limit of the variable or calculated by the L1-scaling method.
	upper	Upper constrained limit of the variable or calculated by the L1-scaling method.
Implemented Limits	lower	Lower scaled limit of the variable.
	upper	Upper scaled limit of the variable.
LSB	LSB of the variable.	
Offset	Offset of the variable.	
convergent	Displays whether the variable is convergent or not: yes indicates that the state is within the convergence tolerance; no indicates that the state converges to infinity.	

The constrained limits in the table are displayed in parentheses in the following cases:

- They were inherited from the parent block
- They are preset in the Discrete State-Space Block on the **Output** page and on the **State Page**.
- They are changed by the user in the lower edit fields.

The values are not overwritten by the State-Space Scaling tool.

After you click the Scale button, L1-scaling is performed and the list displays the calculated constrained physical limits, scaled limits, LSBs, offsets, and the convergence.

L1-scaling drop-down list Lets you select whether the variable whose row you selected in the list should have L1-scaling or not. Then you can change the lower/upper limits via the fields described below:

- Select **yes** to have entered or predefined values replaced by the calculation results of the L1-scaling algorithm.
- Select **no** if you do not want to have the entered or predefined values replaced by the calculation results of the L1-scaling algorithm. This lets you compare the calculated value with the pre-set value.

When you click Apply, the values that are currently set in the list are assumed.

lower (constrained limits) Lets you specify the lower constrained limit of the variable whose row you selected in the list. Press the Enter key to apply the value to the Output and State list. Click Apply to transfer the new values to the block dialog.

upper (constrained limits) Lets you specify the upper constrained limit of the variable whose row you selected in the list. Press the Enter key to apply the value to the Output and State list. Click Apply to transfer the new values to the block dialog.

Note

You should specify constrained physical limits for corresponding state and output variables when you have unstable system parts.

Scale Starts the scaling procedure. The amount of recursions performed is shown in the **Number of recursions** edit field (see above).

Continue Continues the recursion with the most recently reached values if any state or output did not convert within the fixed convergence tolerance: see **Number of recursions**.

Related topics**HowTos**

[How to Initialize Constrained Limits for Outputs and States \(📖 TargetLink Preparation and Simulation Guide\)](#)

References

[Discrete State-Space Block \(📖 TargetLink Model Element Reference\)](#)

Transfer Function Scaling Tool

About the Transfer Function Scaling Tool

The Transfer Function Scaling Tool lets you calculate the physical output ranges of discrete transfer function and discrete filter systems.

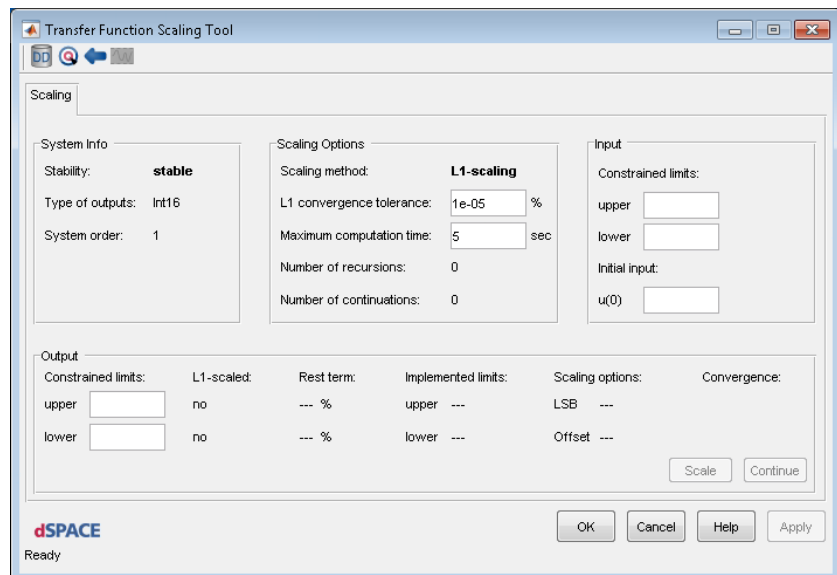
Where to go from here

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Transfer Function Scaling Tool Description

User interface



Purpose

To calculate the physical ranges and outputs of discrete transfer functions and discrete filter systems.

Access

You can access this tool via:

Discrete Transfer Function block & Discrete Filter block
Scaling Tool button on the **Output** page

Description

The Transfer Function Scaling Tool calculates physical output ranges of discrete transfer functions and discrete filter systems. You can specify a specific input vector that produces the worst case outputs via the L1 scaling method. This method helps you calculate the ranges, LSBs, and offsets.

This tool lets you automatically scale the outputs of discrete transfer function and discrete filter blocks for production code generation with TargetLink. With the L1 scaling method, the outputs can be calculated for the worst-case relative to the specified input limits. To see the effects of the performed scaling procedure, the tool lets you analyze the corresponding systems.





You can simulate the blocks with the input signals, and thus calculate the worst-case values of the model outputs. The [Worst Case Signals Plot Window](#) on page 63 shows the results of this calculation.

Related topics**References**

[Worst Case Signals Plot Window](#)..... 63

User Interface of the Transfer Function Dialog

Buttons

Button	Description
 Data Dictionary Manager	Opens the Data Dictionary Manager. Refer to TargetLink Data Dictionary Manager on page 74.
 Property Manager	Opens the Property Manager. Refer to Property Manager Description on page 113.
 Block Dialog	Opens the Discrete Transfer Function Block dialog or the Discrete Filter Block dialog or returns to it if it is currently open.
 Plot Results	Opens the Worst Case Signals Plot Window, which shows the worst-case inputs and the convergence behavior of the corresponding outputs of the transfer function system. Refer to Worst Case Signals Plot Window Commands on page 65.

System Info group box

The settings in this group box are read-only.

Stability Displays whether the transfer function is stable.

Type of outputs Displays the type of outputs that the system has. Possible values are integer base types.

System order Denominator and numerator are polynomials. The value of the system order is the number -1 of the real coefficients of the denominator. The polynomials resulting from the coefficients are represented in the block icon in Simulink. They refer to the coefficients without leading zeros and, in the case of a discrete filter, to any possible filling zeros if the number of coefficients of the numerator is greater.

Scaling Options group box**Scaling method** Displays the system's active scaling method.**L1 convergence tolerance** Lets you specify the desired convergence tolerance value in percent. This is used to stop the calculation if the difference of the output values of two iterations steps are close enough.**Maximum computation time** Lets you specify the maximum computation time (in seconds).**Number of recursions** Displays the number of previously executed recursions.**Number of continuations** Displays the number of continuations, which corresponds to the number of times that the Continue button (see below) was clicked.**Input group box****Input** Displays the physical lower/upper input limits for each variable. You must specify these constrained limits in the edit fields below the list:

- upper: Lets you specify the maximum value of the input signal.
- lower: Lets you specify the minimum value of the input signal.
- Initial input $u(0)$: Lets you specify the initial value of the input signal.

Output group box**Output** Displays information about all of the outputs in the active system. The list contains the following columns:

Column	Description	
Constrained Limits	lower	Lower constrained limit of the variable or calculated by the L1-scaling method.
	upper	Upper constrained limit of the variable or calculated by the L1-scaling method.
L1-scaled	Displays the selection that was made in the L1-scaling. <ul style="list-style-type: none"> ▪ displays yes if the values calculated for the output are from an L1 scaling. ▪ displays no if the values calculated for the output were set manually. 	
Rest term	The rest term is displayed in %. Displays the deviation of the calculated value from the actual convergence value in percent.	
Implemented Limits	lower	Lower scaled limit of the variable.
	upper	Upper scaled limit of the variable.
Scaling options	LSB	LSB of the variable.
	Offset	Offset of the variable.

Column	Description
Convergence	<p>Displays whether the variable is convergent or not:</p> <ul style="list-style-type: none"> ▪ yes indicates that the difference of two iteration steps is within the convergence tolerance. ▪ no indicates that the transfer function converges to infinity.

The constrained limits in the table are displayed in parentheses in the following cases:

- They were inherited from the parent block.
- They are preset in the Discrete Transfer Function dialog or the Discrete Filter dialog.
- They are changed by the user in the lower edit fields.

After you click the Scale button, L1-scaling is performed and the list displays the calculated constrained physical limits, scaled limits, LSBs, offsets and the convergence.

Scale Starts the scaling procedure. The amount of recursions performed is shown in the **Number of recursions** edit field (see above).

Continue Continues the recursion with the most recently reached values if any output did not convert within the fixed convergence tolerance: see **Number of recursions**.

Related topics

References

[Discrete Filter Block](#) ( TargetLink Model Element Reference)

[Discrete Transfer Function Block](#) ( TargetLink Model Element Reference)

System Preparation Tool

Introduction TargetLink's system preparation tool lets you make Simulink systems (block, subsystem, library, model) TargetLink-compliant.

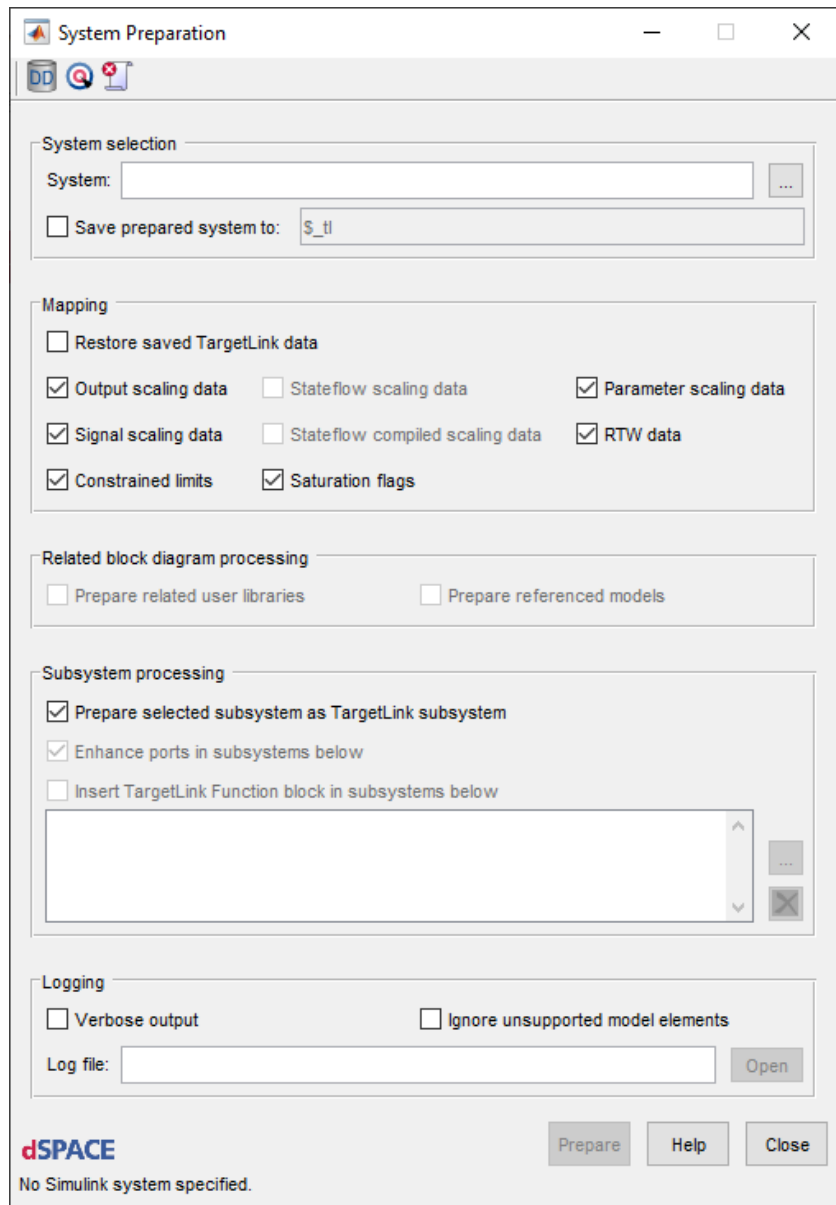
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	Making a Simulink Model TargetLink-Compliant (📖 TargetLink Preparation and Simulation Guide)

System Preparation Dialog

Purpose To prepare a Simulink system (subsystem, library, model) for TargetLink production code generation.

Access	You can access the System Preparation dialog as follows:	
	Buttons	Click the Prepare System button on the Tools page of the TargetLink Main Dialog block.
	API functions	Enter tl_prepare_system in the MATLAB Command Window.

GUI



System selection

System The System edit field allows you to type the FullName of the Simulink system (subsystem, model, or library) you want to select. You can also use the Browse button to select a system. If you do so, the [Select System Dialog](#) on page 244 displays all subsystems of the model in a hierarchical order.

Note

Systems that cannot be prepared are marked blue.

Save prepared system to Indicates that the prepared system is saved as specified in the adjacent text box. You can enter any string that complies with the conventions for C identifiers. The string can also contain the \$, which is a placeholder for the name of the original model.

Mapping

Restore saved TargetLink data Indicates whether TargetLink block properties that were saved during a reconversion (TargetLink → Simulink) are restored.

Note

The following properties override the default values specified via TL/SL Synchronization > Synchronization Properties in the Preferences Editor.

Output scaling data Indicates whether Simulink output scaling data is mapped on corresponding TargetLink production code options. The TargetLink property values are synchronized with the Simulink property values.

Signal scaling data Indicates whether Simulink signal scaling data is mapped on corresponding TargetLink production code options. The TargetLink property values are synchronized with the Simulink property values.

Constrained limits Indicates that Simulink constrained limits are mapped on corresponding TargetLink production code options. The TargetLink property values are synchronized with the Simulink property values.

Stateflow scaling data Indicates that Stateflow scaling data is mapped on corresponding TargetLink production code options. The TargetLink property values are synchronized with the Simulink property values.

Stateflow compiled scaling data Indicates that Stateflow compiled scaling data is mapped on corresponding TargetLink production code options. The TargetLink property values are synchronized with the Simulink property values.

Saturation flags Indicates that Simulink saturation flags are mapped on corresponding TargetLink production code options. The TargetLink property values are synchronized with the Simulink property values.

Parameter scaling data Indicates whether Simulink parameter scaling data is mapped on corresponding TargetLink production code options. The TargetLink property values are synchronized with the Simulink property values.

RTW data Indicates that Real-Time Workshop® data is mapped on corresponding TargetLink production code options. The TargetLink property values are synchronized with the Simulink property values.

Related block diagram processing

Prepare related user libraries This checkbox is available if the selected model contains a block referencing a library. Select the checkbox if you want to prepare the library as well.

Prepare referenced models Indicates whether referenced models are also to be prepared. This checkbox is available if the selected subsystem contains a Model block that references a model.

Subsystem processing

Prepare selected subsystem as TargetLink subsystem Indicates whether the selected subsystem is converted to a TargetLink subsystem. This option is ignored for subsystems in libraries and models.

Enhance ports in subsystems below Indicates whether ports are enhanced in subsystems.

Insert TargetLink function block in subsystems below Indicates whether TargetLink function blocks are inserted in subsystems.

Logging

Verbose output Indicates that more detailed information on the exact parameter mappings during the synchronization process is available in the MATLAB Command Window and the Message Browser.

Ignore unsupported model elements Indicates whether model elements not supported by TargetLink are ignored.

Log file The Log file edit field allows you to type the name of the log file that registers all messages during the process. New entries will be added, i.e., existing content will not be deleted.


Open Opens the specified log file with the default editor.

Prepare


Starts system preparation.

Related topics

HowTos

[How to Prepare Simulink Systems for Code Generation with TargetLink](#)
( [TargetLink Preparation and Simulation Guide](#))

References

[Select System Dialog](#)..... 244
[tl_prepare_system](#) ( [TargetLink API Reference](#))
[Topic Settings](#)..... 105

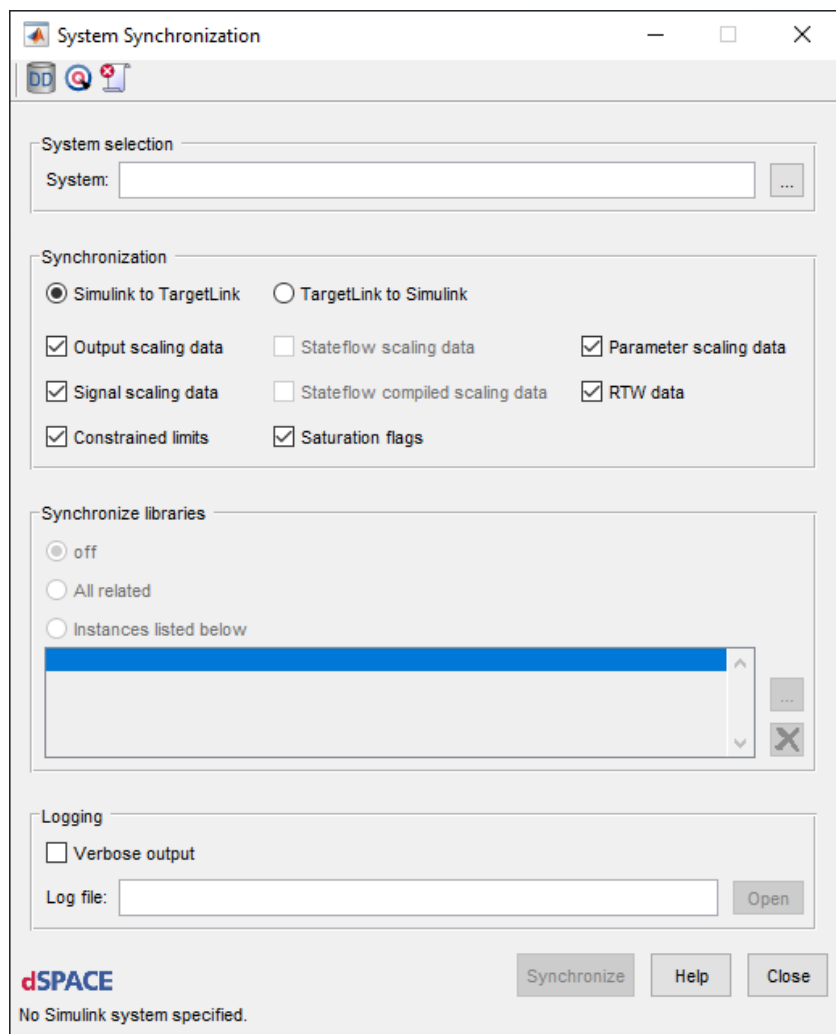
System Synchronization Dialog

Purpose To update TargetLink property values with respect to the values of corresponding Simulink properties, and vice versa.

Access You can access the System Synchronization dialog as follows:

Buttons	Click the Sync System button on the Tools page of the TargetLink Main Dialog block.
API functions	Enter <code>tl_sync_system</code> in the MATLAB Command Window.

GUI



System selection

System The System edit field allows you to type the FullName of the Simulink system (subsystem, model, or library) you want to select. You can also use the Browse button to select a system. If you do so, the [Select System Dialog](#) on page 244 displays all subsystems of the model in a hierarchical order.

Note

Systems that cannot be prepared are marked blue.

Synchronization**Note**

The following two options determine the synchronization orientation (Simulink → TargetLink, or TargetLink → Simulink):

Simulink to TargetLink Indicates whether TargetLink property values are updated.

TargetLink to Simulink Indicates whether Simulink property values are updated.

Note

The following properties override the default values specified via TL/SL Synchronization > Synchronization Properties in the Preferences Editor.

Output scaling data Indicates whether Simulink output scaling data is used to synchronize the corresponding TargetLink production code options, or vice versa.

Signal scaling data Indicates whether Simulink signal scaling data is used to synchronize the corresponding TargetLink production code options, or vice versa.

Constrained limits Indicates whether Simulink constrained limits are used to synchronize the corresponding TargetLink production code options, or vice versa.

Stateflow scaling data Indicates whether Stateflow scaling data is used to synchronize the corresponding TargetLink production code options, or vice versa.

Stateflow compiled scaling data Indicates whether Stateflow compiled scaling data is used to synchronize the corresponding TargetLink production code options, or vice versa.

Saturation flags Indicates whether Simulink saturation flags are used to synchronize the corresponding TargetLink production code options, or vice versa.

Parameter scaling data Indicates whether Simulink parameter scaling data is used to synchronize the corresponding TargetLink production code options, or vice versa.

RTW data Indicates whether Real-Time Workshop data is used to synchronize the corresponding TargetLink production code options, or vice versa.

Synchronize libraries

Off No library processing is performed.

All related Indicates whether related user libraries are also to be synchronized. Enable the radio button if the selected subsystem contains a block that is part of a user-defined library.

Instances listed below Lets you browse for and select a library instance in the model with which to synchronize the system. The synchronized scaling parameters are propagated back to the referenced library block.

Logging

Verbose output Indicates that more detailed information on the exact parameter mappings during the synchronization process is available in the MATLAB Command Window and the Message Browser.

Log file The Log file edit field allows you to type the name of the log file that registers all messages during the process. New entries will be added, i.e., existing content will not be deleted.

Open Opens the specified log file with the default editor.

Synchronize

Starts synchronization.

Related topics**HowTos**

[How to Synchronize Simulink and TargetLink Data](#) (📖 [TargetLink Preparation and Simulation Guide](#))

References

Select System Dialog..... 244
 tl_sync_system (📖 [TargetLink API Reference](#))
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Clear System From TargetLink Dialog

Purpose

To turn a TargetLink system (back) into a pure Simulink system.

Access

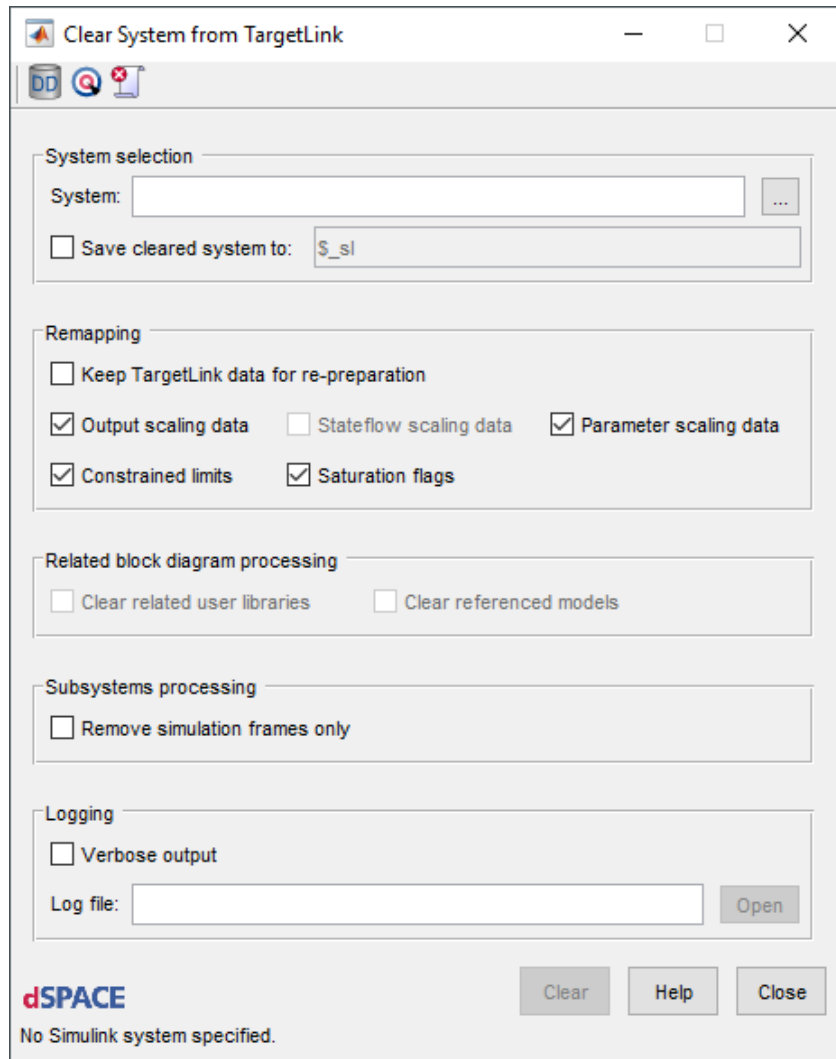
You can access the Clear system from TargetLink dialog as follows:

Buttons	Click the Clear System button on the Tools page of the TargetLink Main Dialog block.
---------	--

API functions

Enter `tl_clear_system` in the MATLAB Command Window.

GUI



System selection

System The System edit field allows you to type the FullName of the Simulink system (subsystem, model, or library) you want to select. You can also use the Browse button to select a system. If you do so, the [Select System Dialog](#) on page 244 displays all subsystems of the model in a hierarchical order.

Note

Systems that cannot be prepared are marked blue.

Save cleared system to Indicates that the cleared system is saved as specified in the adjacent text box. You can enter any string that complies with

the conventions for C identifiers. The string can also contain the \$, which is a placeholder for the name of the original model.

Remapping

Keep TargetLink data for re-preparation Saves TargetLink data to enable re-preparation without data loss. Does not delete TargetLink utility blocks.

Note

The following properties override the default values specified via **TL/SL Synchronization > Synchronization Properties** in the Preferences Editor.

Output scaling data Indicates whether TargetLink production code options are mapped on the corresponding Simulink output scaling data. The Simulink property values are synchronized with the TargetLink property values.

Constrained limits Indicates whether TargetLink production code options are mapped on the corresponding Simulink constrained limits. The Simulink property values are synchronized with the TargetLink property values.

Stateflow scaling data Indicates whether TargetLink production code options are mapped on the corresponding Stateflow scaling data. The Simulink property values are synchronized with the TargetLink property values.

Saturation flags Indicates whether TargetLink production code options are mapped on the corresponding Simulink saturation flags. The Simulink property values are synchronized with the TargetLink property values.

Parameter scaling data Indicates whether TargetLink production code options are mapped on the corresponding Simulink parameter scaling data. The Simulink property values are synchronized with the TargetLink property values.

Related block diagram processing

Clear related user libraries This checkbox is available if the selected model contains a block referencing a library. Select the checkbox if you want to clear the library as well.

Clear referenced models Indicates whether referenced models are also to be cleared. This checkbox is available if the selected subsystem contains a **Model** block that references a model.

Subsystem processing

Remove simulation frames only Indicates whether only the simulation frame is stripped from a TargetLink subsystem, the root level ports still remain enhanced with TargetLink data. A simulation frame represents the interface between Simulink and the TargetLink subsystem for SIL and PIL simulations.

Logging

Verbose output Indicates that more detailed information on the exact parameter mappings during the synchronization process is available in the MATLAB Command Window and the Message Browser.

Log file The Log file edit field allows you to type the name of the log file that registers all messages during the process. New entries will be added, i.e., existing content will not be deleted.

Open Opens the specified log file with the default editor.

Clear Starts system clearance.

Related topics

Basics

[Basics on Clearing TargetLink Data from Simulink Systems](#) (📖 TargetLink Preparation and Simulation Guide)

HowTos

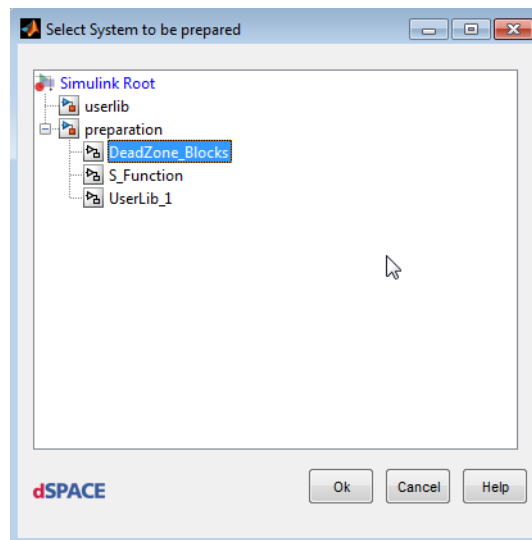
[How to Clear All TargetLink Data](#) (📖 TargetLink Preparation and Simulation Guide)

References

[Select System Dialog](#)..... 244
[tl_clear_system](#) (📖 TargetLink API Reference)

Select System Dialog

Pane








Purpose To display the subsystem hierarchies of all models (including libraries) currently open, that let you select the subsystem that is to be *prepared*, *synchronized*, *cleared*.

Description The Select System dialog shows all subsystems that are open in the model. By default, the child subsystems are hidden.

Note

Non-processable systems are marked blue, e.g., the Simulink Root system.

Icons The icons indicate the type of the tree elements, for example, TargetLink blocks, Stateflow objects, or masked subsystems.

Icon	Description
	Identifies a Simulink root system
	Identifies a subsystem
	Identifies a masked subsystem
TL	Identifies a TargetLink subsystem
f()	Identifies a subsystem that includes a TargetLink function block
SF	Identifies a Stateflow State Machine
	Identifies a Stateflow chart
	Identifies a State Machine function

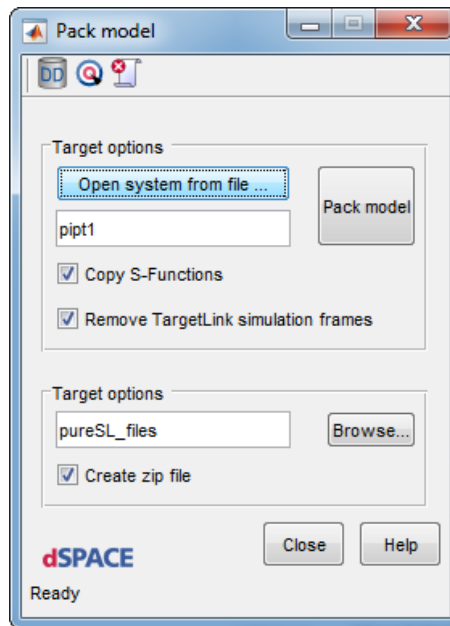
Pack Model Dialog

Purpose To extract all the files from a TargetLink system that it is usable in a non-TargetLink environment.

Access You can access the Pack Model dialog as follows:

Buttons	None
API functions	Enter tl_pack_model in the MATLAB Command Window.

GUI



System

Open system from file Lets you select a TargetLink system (MDL file).

<text field> Shows the name of the selected system (without `.mdl` suffix).

Copy S-Functions Indicates whether all the S-function files are extracted, too. This is mandatory for Custom Code blocks, for example.

Remove TargetLink simulation frames Indicates whether the simulation frames are stripped from TargetLink subsystems, the root level ports still remain enhanced with TargetLink data. A simulation frame represents the interface between Simulink and the TargetLink subsystem for SIL and PIL simulations.

Pack model Starts extraction of files.

Target options

<text field> Shows the folder which the extracted files are stored in. If it does not exist, it is created.

Create zip file Indicates whether the folder which the extracted files are stored in is zipped.

Browse Lets you browse for a parent folder to hold the folder specified in the `<text field>` field. By default, the folder of the TargetLink system is used as the parent folder.

Related topics

References

Clear System From TargetLink Dialog.....	241
tl_pack_model (📖 TargetLink API Reference)	

Create Customization Files Dialog

Create Customization Files Dialog Description

Purpose

To create TargetLink customization files in your working directory.

Access

You can access the Create Customization Files dialog as follows:

API function	<code>tlCustomizationFiles</code>
--------------	-----------------------------------

Description

With the Create Customization Files Dialog you can create customization files in your current working directory.

Related topics**HowTos**

[How to Create Customization Files via the Create Customization Files Dialog](#)
(📖 TargetLink Customization and Optimization Guide)

References

`tlCustomizationFiles` (📖 TargetLink API Reference)

OIL Files Dialog

Where to go from here	Information in this section
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	Export OIL File Dialog..... 250

Import OIL File Dialog

Purpose	To import a selected OIL file.
---------	--------------------------------

Advanced **Import Mode** Lets you select an import mode for the OIL file. The following options are available:



Mode	Description
Merge	All objects such as tasks, events, etc. that are in the TargetLink Data Dictionary but do not exist in the imported OIL file are deleted. If an object to be imported already exists in the TargetLink Data Dictionary, all unspecified properties in the OIL object remain unchanged in the TargetLink Data Dictionary.
Overwrite	All objects for example, tasks, events, etc. in the TargetLink Data Dictionary, which do not exist in the imported OIL file remain unchanged. If an object to be imported already exists in the TargetLink Data Dictionary, all properties which are not specified in the OIL object remain unchanged in the DD.

Related topics

Basics

Exporting OIL Files ( TargetLink Interoperation and Exchange Guide)
 Importing and Exporting OIL Files ( TargetLink Multirate Modeling Guide)
 Importing OIL Files ( TargetLink Interoperation and Exchange Guide)

References

Export as OIL File ( TargetLink Data Dictionary Manager Reference)
 Export OIL File Dialog..... 250
 Import from OIL File ( TargetLink Data Dictionary Manager Reference)

Export OIL File Dialog

Purpose

To export an OIL file.

Dialog settings

Destination Folder Lets you specify a destination folder you can export the OIL file to.

Subsystems You can select subnodes you want to export the OIL file from. If you leave this edit field empty, TargetLink exports the OIL file only from the DataDictionary/Pool subnode. If you want to export the OIL file from both, a subnode and the Pool subnode, you have to select the subsystem and the Export from Data Dictionary Pool checkbox.

OIL Version Lets you select the OIL version you want to use for the exported OIL file.

Create OS Object if it not exists Lets you select to create an OS object if it does not exist.

Export from DataDictionary Pool If you export an OIL file from the Pool subnode, TargetLink reads the OIL objects from the Data Dictionary/Pool subnode and writes them to the OIL file. The Pool subnode stores the OSEK objects which have been imported from an OIL file or which you have created during model creation. If you do not want TargetLink to store objects in the OIL file which are created in the DataDictionary/Subsystems subnode, you must select this checkbox. If you do, only those OSEK objects and their attributes which are user-defined or imported by an OIL file are stored in the exported OIL file.

Use Imported File structure Lets you select to use the structure of an imported OIL file for the OIL file to be exported.

Related topics

Basics

- Exporting OIL Files (📖 TargetLink Interoperation and Exchange Guide)
- Importing and Exporting OIL Files (📖 TargetLink Multirate Modeling Guide)
- Importing OIL Files (📖 TargetLink Interoperation and Exchange Guide)

References

- Export as OIL File (📖 TargetLink Data Dictionary Manager Reference)
- Import from OIL File (📖 TargetLink Data Dictionary Manager Reference)
- Import OIL File Dialog..... 249

Code Coverage Report

Code Coverage Report Dialog

Purpose

To generate reports and overviews of code coverage test results.

Access

You can access the **Code Coverage Report** dialog as follows:

	Options page of the TargetLink Main Dialog block.
---	---

Description

The Code Coverage Report dialog lets you generate reports and overviews of the code coverage analysis results. TargetLink performs a code coverage analysis during simulation. The analysis results of different simulations are stored in a list in the Code Coverage Report dialog. You can select simulations from the list and generate analysis reports for them.

Dialog Settings

The Code Coverage Report dialog has the following dialog settings:

Update Lets you update the Coverage data list storing the simulations you performed a code coverage analysis for.

Remove Lets you remove simulations from the Coverage data list.

Comment Lets you enter a comment for a simulation selected from the Coverage data list.

Rename Lets you rename a simulation selected from the Coverage data list.

Coverage data Lists all simulations you performed a code coverage analysis for.

Include in report Lists all simulations you want to include in a code coverage analysis report.

Report Generates a code coverage analysis report including the results of all simulations you selected to be included in the report.

Overview Generates an overview of the code coverage analysis results for the simulations you selected to be included in the report.

Related topics

References

[TargetLink Main Dialog Block](#) ( [TargetLink Model Element Reference](#))

Code Generator Options


Code Generator Options Dialog

Purpose

To configure the Code Generator for production code generation.

Access

You can access the Code Generator Options dialog as follows:

All Options ...	Advanced page of the TargetLink Main Dialog block.
Edit Code Generator Options ...	Context menu of (or double-clicking) OptionSet objects in the TargetLink Data Dictionary, e.g., TLPredefinedOptionSet. Refer to Edit Code Generator Options ( TargetLink Data Dictionary Manager Reference).

Note

For saving changes of the Code Generator options, refer to Return / OK.

Description

TargetLink allows you to configure the Code Generator for production code generation using a set of options. The Code Generator Options dialog lists all the options available for the Code Generator at one central point.

There are different ways of configuring Code Generator options, depending on the type of code generation unit you want to create production code for. If you want to configure Code Generator options for producing C code for a TargetLink subsystem, a subsystem for incremental code generation, or a referenced model, you can use the Code Generator Options dialog, which is opened via the All Options button on the Advanced page of the TargetLink Main Dialog. You can configure Code Generator options for producing C code for CodeGenerationUnit objects (CGU objects) in the Data Dictionary by specifying OptionSet objects and assigning them to CGU objects. In contrast to the Code Generator options you specify via the TargetLink Main Dialog, an OptionSet object applies only to those CGU objects it is assigned to.

For details, refer to [Configuring the Code Generator for Production Code Generation](#) ( [TargetLink Customization and Optimization Guide](#)) and [Edit Code Generator Options](#) ( [TargetLink Data Dictionary Manager Reference](#)).

Note

Options can be edited, though their settings are automatically overwritten during code generation if they are also specified in the `tl_pre_codegen_hook` hook script.


Use TargetLink's `tlCustomizationFiles('Create',...)` API function or the Create Customization Files dialog to derive customization files from their templates. You can open the dialog by executing the `tlCustomizationFiles` command without arguments. Refer to [Deriving Customization Files From Their Templates](#) ( [TargetLink Customization and Optimization Guide](#)).

Exchanging Code Generator options between TargetLink and the DD

Code Generator options you configured for TargetLink subsystems, subsystems for incremental code generation, or referenced models via the TargetLink Main Dialog do not affect `OptionSet` objects stored in the Data Dictionary and vice versa. TargetLink provides API functions to exchange Code Generator options between TargetLink and the Data Dictionary, and to compare an `OptionSet` object stored in the Data Dictionary with Code Generator options you configured via the TargetLink Main Dialog. The following API functions are available:

- `dsdd_export_optionset` configures the Code Generator options of a TargetLink subsystem, a subsystem for incremental code generation, or a referenced model according to an `OptionSet` object stored in the Data Dictionary.
- `dsdd_import_optionset` reads the Code Generator options of a TargetLink subsystem, a subsystem for incremental code generation, or a referenced model and stores them as an `OptionSet` object in the Data Dictionary.
- `dsdd_compare_optionset` compares the Code Generator options of a TargetLink subsystem, a subsystem for incremental code generation, or a referenced model with an `OptionSet` object stored in the Data Dictionary, and lists the differences found.

Code Generator options

For a complete list of Code Generator options, refer to [Code Generator Options](#) ( [TargetLink Model Element Reference](#)).

Set to Default

Sets the option value back to default.

Explanation

Displays information on the selected code generator option.

Return / OK

Return If you opened the Code Generator Options dialog via the TargetLink Main Dialog, the Return button returns to the Advanced Page.

Note

The changed options are saved permanently, if you leave the TargetLink Main Dialog with OK or Apply. The options are also saved if you start the code generation, a build process, or a simulation via the appropriate toolbar button.

OK If you opened the Code Generator Options dialog using the Edit Code Generator Options command from the context menu of an OptionSet object in the TargetLink Data Dictionary, the OK button returns to the Data Dictionary Manager.

Related topics**Basics**

Basics on Configuring the Code Generator for Production Code Generation
 (📖 TargetLink Customization and Optimization Guide)
 Deriving Customization Files From Their Templates (📖 TargetLink Customization and Optimization Guide)

References

Create Customization Files Dialog Description..... 248
 dsdd_compare_optionset (📖 TargetLink API Reference)
 dsdd_export_optionset (📖 TargetLink API Reference)
 dsdd_import_optionset (📖 TargetLink API Reference)
 Edit Code Generator Options (📖 TargetLink Data Dictionary Manager Reference)
 TargetLink Main Dialog Block (📖 TargetLink Model Element Reference)
 tl_pre_codegen_hook (📖 TargetLink File Reference)
 tlCustomizationFiles (📖 TargetLink API Reference)

TargetLink Mask Parameters Dialog

TargetLink Mask Parameters Dialog

Purpose To provide mask parameters at TargetLink blocks for the Simulink® promote mechanism.

Access You can access the TargetLink Mask Parameters dialog as follows:

API function	t1PromoteProperty ( TargetLink API Reference)
--------------	--

Add Lets you add the selected TargetLink property as mask parameter.

Block Lets you enter the handle of the TargetLink block.

Block selection Lets you select a TargetLink block to provide additional mask parameters.

Current Lets you use the currently selected TargetLink block in your model.

Mask parameters Lists all added mask parameters for TargetLink properties.

Name Lets you enter the name of the new mask parameter.


Prompt Lets you enter the prompt of the new mask parameter.

Remove Lets you remove the selected mask parameter for a TargetLink property.

TargetLink properties Lists all available TargetLink properties of the selected TargetLink block.

Unlock Lets you unlock the library.

Related topics**Basics**

[Basics on Adding Mask Parameters for TargetLink Block Properties](#) ( TargetLink Preparation and Simulation Guide)

References

[tlPromoteProperty](#) ( TargetLink API Reference)

TargetLink Utilities

About TargetLink utilities

TargetLink utilities are useful programs that help you perform or facilitate routine operations, for example, generating documentation. You, as the user, do not necessarily interact with the graphical user interface. You simply start the utility. You can access the TargetLink utilities via the Tools page of the TargetLink Main Dialog or, in some cases, via the relevant block dialog pages. The utilities can also be run via API functions in M-scripts or the MATLAB Command Window.

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Alarm Management Dialog

Purpose To manage OSEK alarms.

Access You can access this utility as follows:

Button	Manage Alarms button on the Task page of the Task block.
--------	--

Dialog settings **Select Alarm Dictionary.** Lists all OSEK alarms specified in the TargetLink Data Dictionary.

Add Lets you add a new OSEK alarm to the Select Alarm list. The OSEK alarm is stored in the **DataDictionary/Pool/RTOS/Alarms** subnode in the TargetLink Data Dictionary after you click Apply.

Delete Lets you delete the OSEK alarm you selected in the Alarm Name list. The OSEK event is deleted in the **DataDictionary/Pool/RTOS/Alarms** subnode in the TargetLink Data Dictionary after you click Apply.

Description Lets you enter a description of the OSEK alarm.

Counter Lets you select a counter connected to the selected OSEK alarm.

Automatic action assignment Lets you choose to have TargetLink assign an action to the selected alarm automatically.

Activate Task Lets you specify to have TargetLink activate a task when the specified alarm expires. You can select a task from the Activate task list.

Set event Lets you specify to have TargetLink set an OSEK event when the specified alarm expires. You can select a task from and an event from the Set event list.

Callback function Lets you specify to have TargetLink call a specific function when the specified alarm expires. You can enter the name of the function to be called in the Callback function edit field.

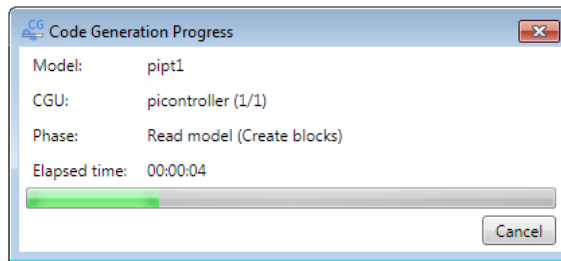
Related topics

References

[Task Block \(TargetLink Model Element Reference\)](#)

Code Generation Progress Dialog

Purpose	Shows the current status of the code generation process and the elapsed time. You can also cancel the code generation process.
Access	The Code Generation Progress dialog opens when you start the code generation.
Description	The Code Generation Progress dialog gives a detailed overview of the running code generation process. It also visualizes the progress and the time elapsed since the code generation started.



Model and CGU The names of the model and code generation unit (CGU) TargetLink currently generates code for are displayed.

Additionally, you can see how many CGUs will be processed overall. For example, (2/4) means that the second of four CGUs is being processed.

Phase The phases of the code generation process are displayed while they are being executed. If a phase is partitioned into several steps, these steps are also displayed in brackets while they are being executed.

In addition, all the code generation hook scripts are displayed as individual phases when they are called during the code generation process. For more information on the different code generation hook scripts, refer to [Code Generation Hook Scripts](#) ([TargetLink File Reference](#)).

Elapsed time and progress bar The elapsed time shows how long the code generation has been running.

The progress bar visualizes the progress of the code generation process regarding all selected CGUs.

The elapsed time and the progress bar are both updated at particular points during the code generation process. Thus, depending on the specific model and the active phase, the update is performed at different intervals.

Note

In batch mode, TargetLink does not display the Code Generation Progress dialog.

Canceling the code generation process

Via the Cancel button, you can stop the running code generation. Canceling the code generation has the same effect as if an error occurred.

Depending on the code generation phase, TargetLink shows one of the following error messages to indicate that the code generation has been aborted:

- F10034
- E02166

Additionally, TargetLink does the following for the code generation unit that is being processed:

- Any generated C files for the CGU that were already written to the hard drive are not deleted. You can inspect them, but should not use them any further. When you generate code again, all the files are renewed.
- The Subsystems area of the current CGU in the Data Dictionary is deleted.

Document Generation Utility

Purpose To generate an HTML or PDF document reporting the Simulink model, the production code generated by TargetLink, and/or the simulation results.

Access You can access this utility as follows:


Button	Generate documentation button on the Tools page of the TargetLink Main Dialog Block.
API function	tldoc in M scripts or the MATLAB Command Window


Related API functions The Document Generation utility comprises the following API functions and subcommands:

API functions	Purpose
tldoc	To generate an HTML document reporting the Simulink model, the production code generated by TargetLink, and/or the simulation results.
tldoc('Create', propertyName, propertyValue, ...)	To create a new document so that subsequent tldoc(...) commands can add information to it.
tldoc('Overview', docFid, propertyName, propertyValue, ...)	To add general information to an existing document.
tldoc('TargetLink Code Generation Units', docFid, propertyName, propertyValue, ...)	To add information about the specified TargetLink subsystems to an existing document.
tldoc('Simulation Results', docFid, propertyName, propertyValue, ...)	To add information about the specified simulation results to an existing document.
tldoc('Convert', propertyName, propertyValue, ...)	To convert the generated documentation from HTML to PDF or RTF.
tldoc('Close', docFid, propertyName, propertyValue, ...)	To close the generated document.


Related topics

Basics


Generating Documentation on Model Characteristics ( [TargetLink Interoperation and Exchange Guide](#))


Using the TargetLink M-Script Interface (API) ( [TargetLink Interoperation and Exchange Guide](#))


HowTos


How to Generate the Documentation ( [TargetLink Interoperation and Exchange Guide](#))


References


TargetLink Main Dialog Block ( [TargetLink Model Element Reference](#))


tldoc ( [TargetLink API Reference](#))


tldoc('Close', docFid, propertyName, propertyValue, ...) ( [TargetLink API Reference](#))

tldoc('Convert', propertyName, propertyValue, ...) ( [TargetLink API Reference](#))

tldoc('Create', propertyName, propertyValue, ...) ( [TargetLink API Reference](#))

tldoc('Overview', docFid, propertyName, propertyValue, ...) ( [TargetLink API Reference](#))

tldoc('Simulation Results', docFid, propertyName, propertyValue, ...) ( [TargetLink API Reference](#))

tldoc('TargetLink Code Generation Units', docFid, propertyName, propertyValue, ...) ( [TargetLink API Reference](#))

File Export Utility

Purpose

To export all necessary files from the TargetLink environment to a specified destination folder in order to build a stand-alone application for the ECU.

Access

You can access this utility as follows:

Button	Export Files button on the Tools page of the TargetLink Main Dialog Block.
API function	tl_export_files in M scripts or the MATLAB Command Window

Result

All generated C source files and corresponding header files are collected in the destination folder you specified.

Description

Files are usually exported after the application is finally validated via simulations and its run-time behavior, memory size and execution time are acceptable.

This command also checks for dependencies to standard header files and libraries, according to the selected target processor and compiler type. The resulting set of files is independent from the TargetLink installation and can be used stand-alone on any computer.


The files in the destination folder can be integrated with any company-specific software environment that often exists for a given ECU.

The following files can be exported to a separate folder:

- Source files necessary to build a stand-alone application with the production code generated by TargetLink
- Standard TargetLink header files and libraries
- Generated documentation

Hook scripts

You can derive the **tl_pre_export_files_hook** and **tl_post_export_files_hook** hook scripts from their templates.

Use TargetLink's `tlCustomizationFiles('Create',...)` API function or the Create Customization Files dialog to derive customization files from their templates. You can open the dialog by executing the `tlCustomizationFiles` command without arguments. Refer to [Deriving Customization Files From Their Templates](#) ( [TargetLink Customization and Optimization Guide](#)).

Related topics

Basics

Deriving Customization Files From Their Templates (📖 TargetLink Customization and Optimization Guide)
 Integrating TargetLink Code in External Applications (📖 TargetLink Interoperation and Exchange Guide)
 Using the TargetLink M-Script Interface (API) (📖 TargetLink Interoperation and Exchange Guide)

HowTos

How to Export Generated Files from the TargetLink Environment (📖 TargetLink Interoperation and Exchange Guide)

References

Create Customization Files Dialog Description..... 248
 Export Hook Scripts (📖 TargetLink File Reference)
 TargetLink Main Dialog Block (📖 TargetLink Model Element Reference)
 tl_export_files (📖 TargetLink API Reference)
 tl_post_export_files_hook (📖 TargetLink File Reference)
 tl_pre_export_files_hook (📖 TargetLink File Reference)
 tlCustomizationFiles (📖 TargetLink API Reference)

Generate Files For Custom Code (Type II) Block Utility

Purpose

To create all the C and M files that are required for enhancing unsupported Simulink blocks to TargetLink Custom Code (type II) blocks.

Access

You can access this utility as follows:

Context menu	TargetLink - Generate files for Custom Code Type II block command in the context menu of library blocks
Button	—
API function	—

Result

The following files are automatically generated in the current MATLAB working folder (exemplary shown for Simulink blocks of **SubSystem** block type):

- subsystem_libmap.m
- enhanceSubSystem.m

- `deenhanceSubSystem.m`
- `prodcode_subsystem.c`

Description

The content of the generated M and C files is as follows, for example, when a subsystem block was processed (refer to [How to Prepare Unsupported Simulink Blocks via Custom Code \(Type II\) Blocks](#) ([TargetLink Preparation and Simulation Guide](#))). The **Parent** property specifies the path of this block.

`subsystem_libmap.m`

```
m = 1;
libmap(m).slblock = 'built-in/SubSystem';
libmap(m).tlblock = 'USE_CUSTOM_CODE_BLOCK';
libmap(m).filterSL2TL = { ...
    'BlockType',      'SubSystem', ...
    'MaskType',      '', ...
    'Parent',        'pipt1_flt/picontroller/Subsystem/picontroller', ...
    'Name',          'SubSystem'};
libmap(m).filterTL2SL = { ...
    'BlockType',      'SubSystem', ...
    'MaskType',      'TL_CustomCode'} ...
    'Name',          'SubSystem'};
libmap(m).funcSL2TL  = 'enhanceSubSystem';
libmap(m).funcTL2SL  = 'deenhanceSubSystem';
```

`enhanceSubSystem.m`

```
tl_set(hBlock, 'codefile', 'prodcode_subsystem.c');
```

`deenhanceSubSystem.m`

```
set_param(hBlock, 'MaskType', '');
```

`prodcode_subsystem.c`

```
<empty>
```

The file contains **fxp** section identifiers but no **flp** section identifiers.

Related topics

Basics

[Preparing Unsupported Simulink Blocks for TargetLink Code Generation](#)
([TargetLink Preparation and Simulation Guide](#))

HowTos

[How to Prepare Unsupported Simulink Blocks via Custom Code \(Type II\) Blocks](#)
([TargetLink Preparation and Simulation Guide](#))

References

[Common TargetLink Context Menu Options](#) ([TargetLink Model Element Reference](#))

Model Checking Utility

Purpose

To check your model for undefined data types and/or invalid blocks.

Access

You can access this utility as follows:


Button	Data types and Invalid blocks buttons on the Tools page of the TargetLink Main Dialog Block.
API function	tl_check_usertypes , tl_check_tlsubsystem_blocks in M scripts or MATLAB Command Window.

Description

You can check your model for undefined data types by clicking the Data type button. The Invalid blocks button checks the model for blocks that are not supported by the TargetLink Code Generator.

Related topics

Basics

[Using the TargetLink M-Script Interface \(API\)](#) ( [TargetLink Interoperation and Exchange Guide](#))

References

[TargetLink Main Dialog Block](#) ( [TargetLink Model Element Reference](#))

Stand-Alone Model Manager

Purpose

To generate a stand-alone S-function for TargetLink subsystems.

Access

You can access the Stand-Alone Model Manager as follows:

Button	Create Stand-Alone S-Fcn button on the Tools page of the TargetLink Main Dialog Block.
API function	tl_build_standalone in the MATLAB Command Window.

Result	TargetLink creates a stand-alone S-function for the specified subsystem or block and replaces the corresponding subsystem or block in the destination system.
Description	TargetLink lets you generate a stand-alone S-function that runs the generated production code in a non-TargetLink environment, such as an RCP system.
Parameters	<p>Destination model name Lets you specify the name of the destination model that the generated stand-alone S-function is to be copied to. TargetLink proposes <code><CurrentModelName>_stand-alone</code> by default.</p> <p>Destination model directory Lets specify the directory to store the destination model in. Use the Browse button to select an existing folder or to create a new one. The folder you specify is used as the working directory during RTI code generation. All files (sources, headers, libraries) needed to build the real-time application are copied to this folder. The RTI user makefile and the user TRC file (if they already exist) are also generated/updated in the folder.</p> <p>Select TargetLink subsystems to be converted Shows the TargetLink subsystems that the source model contains. Select the subsystems you want to convert.</p> <p>Destination block for selected TargetLink subsystem Lets you specify the block or subsystem in the destination model to be replaced by the generated S-function. This parameter must be set separately for each TargetLink subsystem. If more than one TargetLink subsystem is selected, this edit field is disabled.</p> <p>Enable selection of the CodeGenerationUnit objects Shows the DD CodeGenerationUnit objects associated with the source model. Selecting this checkbox lets you to specify DD CodeGenerationUnit objects to be included in the conversion process.</p> <p>Include sub-items for code generation Lets you specify whether production code is generated for nested subsystems, that are configured for incremental code generation or are referenced models.</p> <p>Create definitions for extern global interface variables Lets you specify that TargetLink generates stub code to define those interface variables that are external to the production code but needed for simulation. External global definitions are not part of the production code but are contained in a C module named <code>tlstand-alone_<tlSubsystemName>globals.c</code>. If you want to define interface variables in a user-specified module, you must clear this checkbox to avoid double symbol definitions.</p>

Generate TRC file, show hierarchy of Lets you specify whether a TRC file is to be generated.

The TRC file describes global variables, independently of the TargetLink variable class. It is named `<destinationModel>_usr.trc` and stored in the specified destination model folder.

If a TRC file with the specified name already exists in this folder, it is updated (not overwritten).

You can influence the hierarchy of the TRC file, i.e., you can determine whether the TRC file should reflect the Simulink subsystem hierarchy or the hierarchy of the generated functions.

If an existing TRC file is updated, the original TRC file is copied to `<destinationModel>_usr.trc.old`.

Enable TRC file Generator's fixed-point data support Lets you specify whether all global variables are to be described in the TRC file (option selected) independently of the data type and scaling.

If you clear this checkbox, only global variables with floating-point data type or integer data type without scaling are described in the TRC file.

Update USR makefile for dSPACE RTI Lets you specify whether the `<destinationModel>_usr.mk` file is to be updated.

The `<destinationModel>_usr.mk` file contains the specifications for all necessary source files, libraries and paths to the header files.

If this makefile does not exist, it is created; otherwise, it is updated.

The updated or created user makefile contains an include statement for the `<srcmodel>.mk` file generated by TargetLink. If an existing makefile is updated, the original makefile is copied to `<destinationModel>_usr.mk.old`.

Generate PPC application using dSPACE RTI Lets you specify whether a real-time application using RTI is to be created.

The desired options, system target file, template makefile and make command are set by RTI.

This checkbox is active only if RTI is installed. TargetLink can build an application for the following dSPACE PPC boards:

- DS1104
- DS1005
- MicroAutoBox II

Command buttons


Build Lets you start the build process according to the specified set of parameters.

Close Lets you close the manager.



Help Lets you open this document.

Related topics

HowTos

[How to Prepare the Simulation of Production Code in a dSPACE Prototyping Environment](#) ( [TargetLink Preparation and Simulation Guide](#))

References

[TargetLink Main Dialog Block](#) ( [TargetLink Model Element Reference](#))
[tl_build_standalone](#) ( [TargetLink API Reference](#))

TargetLink FMU Manager

Purpose To generate a Functional Mock-up Unit (FMU) to use in an FMI-compliant tool.

Access You can access this utility as follows:

Button	Export FMU button on the Tools page of the TargetLink Main Dialog Block.
API function	<code>tl_generate_fmu</code> in the MATLAB Command Window.

Result TargetLink generates an FMU.

Description The TargetLink FMU Manager dialog lets you generate an FMU for a TargetLink subsystem that you can use in an FMI-compliant tool.

Generating an FMU consists of two steps:

1. Generating production code:
TargetLink generates production code for the selected subsystem and DD `CodeGenerationUnit` objects.
2. Generating an FMU implementation:
TargetLink collects all the files necessary for compiling and using the production code according to FMI.

Code generation units for FMU export

Select one TargetLink subsystem Lets you select the TargetLink subsystem to generate an FMU for.

Select DD CodeGenerationUnit objects Lets you select one or more DD `CodeGenerationUnit` object(s) whose production code is to be included in the FMU (optional).

Include subitems for code generation Lets you specify whether to generate production code for nested CGUs.

Configuration for FMU export

Destination directory Lets you specify the directory the FMU is generated in.

Include files Lets you specify whether to include binaries for Windows 32-bit, 64-bit and Linux 64-bit and/or source files.

Include system files Lets you specify whether to export header and source files required to build the FMU with a tool other than VEOS Player.

Clear this checkbox when you generate an FMU to build with VEOS Player.

Create definitions for external global interface variables Lets you specify that TargetLink generates stub code to define those interface variables that are external to the production code but required for simulation. External global definitions are not part of the production code but are contained in a C module named `tl_globalsdefs_generated.c`.

If you want to define interface variables in a user-specified module, you must clear this checkbox to avoid double symbol definitions.

UUID of FMU Lets you enter an FMU UUID.

TargetLink displays existing UUIDs or generates a new one that you can change, if required.

UUIDs are stored in the TargetLink subsystem the FMU is generated for. To preserve the UUIDs, save the subsystem after FMU generation.

Command buttons

Export FMU Lets you start the FMU generation process according to the specified parameters.

Note

The following commands (Generate Code and Generate FMU) are steps in the process that you can call via the Export FMU menu button.

Generate Code Lets you start the code generation process for the TargetLink subsystem or code generation units specified in the dialog.

Generate FMU Lets you generate an FMU according to the specified set of parameters.

The FMU is a ZIP file and comprises the production code and all the files necessary for compilation in an FMI-compliant tool.

Close Lets you close this dialog.

Help Lets you open this document.

Related topics

Basics

- Basics on Exporting FMUs from TargetLink (📖 TargetLink Interoperation and Exchange Guide)
- Definition of the FMI Standard and FMUs (📖 TargetLink Interoperation and Exchange Guide)
- Interoperating with FMI-Compliant Tools via FMUs (📖 TargetLink Interoperation and Exchange Guide)

HowTos

- How to Generate an FMU to use in an FMI-Compliant Tool (📖 TargetLink Interoperation and Exchange Guide)

References

- FMU Generation Limitations (📖 TargetLink Limitation Reference)
- TargetLink Main Dialog Block (📖 TargetLink Model Element Reference)
- tl_generate_fmu (📖 TargetLink API Reference)

TargetLink SIC Manager

Purpose To export a [🔗 Simulink implementation container \(SIC\)](#) file.

Access You can access the SIC Manager as follows:

Button	Export SIC button in the Simulation unit export group box on the Tools Page page of the TargetLink Main Dialog block.
API function	tlGenerateSic

Result TargetLink exports an SIC file.

Description TargetLink's SIC Manager lets you export SIC files to use in [🔗 ConfigurationDesk](#) or VEOS Player.

Exporting an SIC file consists of two steps:

1. Generating production code:
TargetLink generates production code for the selected subsystems and DD CodeGenerationUnit objects.

2. Generating SIC file:

TargetLink collects all the files required for use in [ConfigurationDesk](#) or VEOS Player.

Code generation units for SIC export

Select one TargetLink subsystem Lets you select the TargetLink subsystem for which to generate production code and/or an SIC file.

Select DD CodeGenerationUnit objects (optional) Lets you select one or more DD CodeGenerationUnit objects whose production code is to be included in the generated SIC file.

Include subitems for code generation Lets you specify whether to generate [production code](#) for nested CGUs.

Configuration for SIC export

Destination directory Lets you specify the directory the SIC is generated in.

Variable description file format

- TRC - The contents of the file can be sorted in different ways:
 - By the Simulink subsystems hierarchy.
 - By the TargetLink function hierarchy.
- A2L

Include system files Lets you specify to include TargetLink Fixed-Point Library files in the generated SIC file.

Only required for SIC files to use with [ConfigurationDesk](#).

Create definitions for external global interface variables Lets you specify that TargetLink generates [stub code](#) to define those interface variables that are external to the [production code](#) but required for simulation. External global definitions are not part of the production code but are contained in a C module named `tl_globalsdefs_generated.c`.

Applies only if you did not explicitly specify the interface of the model by means of a model port variable.

If you want to define interface variables in a user-specified module, you must clear this checkbox to avoid duplicate symbol definitions.

UUID of SIC Displays the UUID of the SIC file.

Command buttons

Export SIC Lets you export an SIC file.

Note

The following commands (Generate Code and Generate SIC) are steps in the export process that you can call via the Export SIC menu button.

Generate Code Lets you start the code generation process for the TargetLink subsystem/code generation units specified in the dialog.

Generate SIC Lets you generate an SIC file according to the specified set of parameters.

Close Lets you close this manager.

Help Lets you open this document.

Related topics

Basics

[Interoperating with ConfigurationDesk](#) ( [TargetLink Interoperation and Exchange Guide](#))


References

[tlGenerateSic](#) ( [TargetLink API Reference](#))

TargetLink V-ECU Manager

Purpose To export V-ECU implementations.

Access You can access the V-ECU Manager as follows:

Button	Export V-ECU Implementation button on the Tools page of the TargetLink Main Dialog Block ( TargetLink Model Element Reference).
API function	-

Result TargetLink exports a V-ECU implementation.

Description TargetLink's V-ECU Manager lets you export V-ECU implementations to use for offline simulation with VEOS or real-time simulation with SCALEXIO.

Exporting a V-ECU implementation consists of two steps:

1. Generating production code:
TargetLink generates production code for the selected subsystem and DD `CodeGenerationUnit` objects.
2. Generating a V-ECU implementation:
TargetLink collects all the files necessary for compiling.

Code generation units for V-ECU implementation

Select one TargetLink subsystem Lets you select the TargetLink subsystem for which to generate a V-ECU implementation.

Select DD CodeGenerationUnit objects Optional.

Lets you select one or more DD CodeGenerationUnit objects whose production code is to be included in the generated V-ECU implementation.

Include subitems for code generation Lets you specify whether to generate production code for nested CGUs.

Configuration for V-ECU implementation generation

Destination directory Lets you specify the directory the V-ECU implementation is generated in.

Create definitions for external global interface variables Lets you specify that TargetLink generates stub code to define those interface variables that are external to the production code but required for simulation. External global definitions are not part of the production code but are contained in a C module named `tl_globalsdefs_generated.c`.

If you want to define interface variables in a user-specified module, you must clear this checkbox to avoid double symbol definitions.

UUID of V-ECU implementation Lets you enter a V-ECU UUID.

TargetLink displays existing UUIDs or generates a new one that you can change, if required.

UUIDs are stored in the TargetLink subsystem the V-ECU is generated for. To preserve the UUIDs, save the subsystem after V-ECU generation.

Command buttons

Export V-ECU Implementation Lets you export a V-ECU implementation.

Note

The following commands (Generate Code and Generate V-ECU Implementation) are steps in the export process that you can call via the Export V-ECU Implementation menu button.

Generate Code Lets you start the code generation process for the TargetLink subsystem/code generation units specified in the dialog.

Generate V-ECU implementation Lets you generate a V-ECU implementation according to the specified set of parameters.


The V-ECU implementation comprises all the files necessary for V-ECU compilation.

Close Lets you close this manager.

Help Lets you open this document.

Related topics

Basics

Basics on Interoperating with Other dSPACE Tools for Virtual Validation
( TargetLink Interoperation and Exchange Guide)

References

tl_generate_vecu_implementation ( TargetLink API Reference)

Glossary

Introduction

The glossary briefly explains the most important expressions and naming conventions used in the TargetLink documentation.

Where to go from here

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Numerics

1-D look-up table

output value (y).

A look-up table that maps one input value (x) to one

2-D look-up table

output value (z).

A look-up table that maps two input values (x,y) to one

Abstract interface An interface that allows you to map a project-specific, physical specification of an interface (made in the TargetLink Data Dictionary) to a logical interface of a [modular unit](#). If the physical interface changes, you do not have to change the Simulink subsystem or the [partial DD file](#) and therefore neither the generated code of the modular unit.

Access function (AF) A C function or function-like preprocessor macro that encapsulates the access to an interface variable.

See also [read/write access function](#) and [variable access function](#).

Acknowledgment Notification from the [RTE](#) that a [data element](#) or an [event message](#) have been transmitted.

Activating RTE event An RTE event that can trigger one or more runnables. See also [activation reason](#).

Activation reason The [activating RTE event](#) that actually triggered the runnable.

Activation reasons can group several RTE events.

Active page pointer A pointer to a [data page](#). The page referenced by the pointer is the active page whose values can be changed with a calibration tool.

Adaptive AUTOSAR Short name for the AUTOSAR *Adaptive Platform* standard. It is based on a service-oriented architecture that aims at on-demand software updates and high-end functionalities. It complements [Classic AUTOSAR](#).

Adaptive AUTOSAR behavior code Code that is generated for model elements in [Adaptive AUTOSAR Function subsystems](#) or [Method Behavior subsystems](#). This code represents the behavior of the model and is part of an adaptive application. Must be integrated in conjunction with [ARA adapter code](#).

Adaptive AUTOSAR Function A TargetLink term that describes a C++ function representing a partial functionality of an adaptive application. This function can be called in the C++ code of an adaptive application. From a higher-level perspective, [Adaptive AUTOSAR](#) functions are analogous to runnables in [Classic AUTOSAR](#).

Adaptive AUTOSAR Function subsystem An atomic subsystem used to generate code for an [Adaptive AUTOSAR Function](#). It contains a Function block whose AUTOSAR mode is set to **Adaptive** and whose Role is set to **Adaptive AUTOSAR Function**.

ANSI C Refers to C89, the C language standard ANSI X3.159-1989.

Application area An optional DD object that is a child object of the DD root object. Each Application object defines how an [ECU](#) program is built from the generated subsystems. It also contains some experiment data, for example, a list of variables to be logged during simulations and results of code coverage tests.

Build objects are children of **Application** objects. They contain all the information about the binary programs built for a certain target platform, for example, the symbol table for address determination.

Application data type Abstract type for defining types from the application point of view. It allows you to specify physical data such as measurement data. Application data types do not consider implementation details such as bit-size or endianness.

Application data type (ADT) According to AUTOSAR, application data types are used to define types at the application level of abstraction. From the application point of view, this affects physical data and its numerical representation. Accordingly, application data types have physical semantics but do not consider implementation details such as bit width or endianness.

Application data types can be constrained to change the resolution of the physical data's representation or define a range that is to be considered.

See also [implementation data type \(IDT\)](#).

Application layer The topmost layer of the [ECU software](#). The application layer holds the functionality of the [ECU software](#) and consists of [atomic software components \(atomic SWCs\)](#).

ARA adapter code Adapter code that connects [Adaptive AUTOSAR behavior code](#) with the Adaptive AUTOSAR API or other parts of an adaptive application.

Array-of-struct variable An array-of-struct variable is a structure that either is non-scalar itself or that contains at least one non-scalar substructure at any nesting depth. The use of array-of-struct variables is linked to arrays of buses in the model.

Artifact A file generated by TargetLink:

- Code coverage report files
- Code generation report files
- [Metadata files](#)
- Model-linked code view files
- [Production code](#) files
- Simulation application object files
- Simulation frame code files
- [Stub code](#) files

Artifact location A folder in the file system that contains an [artifact](#). This location is specified relatively to a [project folder](#).

ASAP2 File Generator A TargetLink tool that generates ASAP2 files for the parameters and signals of a Simulink model as specified by the corresponding TargetLink settings and generated in the [production code](#).

ASCII In production code, strings are usually encoded according to the ASCII standard. The ASCII standard is limited to a set of 127 characters implemented by a single byte. This is not sufficient to display special characters of different languages. Therefore, use another character encoding, such as UTF-8, if required.

Asynchronous operation call subsystem A subsystem used when modeling *asynchronous* client-server communication. It is used to generate the call of the `Rte_Call` API function and for simulation purposes.

See also [operation result provider subsystem](#).

Asynchronous server call returns event An [RTE event](#) that specifies whether to start or continue the execution of a [runnable](#) after the execution of a [server runnable](#) is finished.

Atomic software component (atomic SWC) The smallest element that can be defined in the [application layer](#). An atomic SWC describes a single functionality and contains the corresponding algorithm. An atomic SWC communicates with the outside only via the [interfaces](#) at the SWC's [ports](#). An atomic SWC is defined by an [internal behavior](#) and an [implementation](#).

Atomic software component instance An [atomic software component \(atomic SWC\)](#) that is actually used in a controller model.

AUTOSAR Abbreviation of AUTomotive Open System ARchitecture. The AUTOSAR partnership is an alliance in which the majority of OEMs, suppliers, tool providers, and semiconductor companies work together to develop and establish a de-facto open industry-standard for automotive electric/electronics (E/E) architecture and to manage the growing E/E complexity.

AUTOSAR import/export Exchanging standardized [software component descriptions](#) between [AUTOSAR tools](#).

AUTOSAR subsystem An atomic subsystem that contains a Function block whose AUTOSAR mode property is set to `Classic`. See also [operation subsystem](#), [operation call with runnable implementation subsystem](#), and [runnable subsystem](#).

AUTOSAR tool Generic term for the following tools that are involved in the ECU network software development process according to AUTOSAR:

- Behavior modeling tool
- System-level tool
- ECU-centric tool

TargetLink acts as a behavior modeling tool in the ECU network software development process according to AUTOSAR.

Autoscaling Scaling is performed by the Autoscaling tool, which calculates worst-case ranges and scaling parameters for the output, state and parameter variables of TargetLink blocks. The Autoscaling tool uses either worst-case ranges or simulated ranges as the basis for scaling. The upper and lower worst-case range limits can be calculated by the tool itself. The Autoscaling tool always focuses on a subsystem, and optionally on its underlying subsystems.

B

Basic software The generic term for the following software modules:

- System services (including the operating system (OS) and the [ECU State Manager](#))
- Memory services (including the [NVRAM manager](#))
- Communication services
- I/O hardware abstraction
- Complex device drivers

Together with the [RTE](#), the basic software is the platform for the [application layer](#).

Batch mode The mode for batch processing. If this mode is activated, TargetLink does not open any dialogs. Refer to [How to Set TargetLink to Batch Mode](#) ([TargetLink Orientation and Overview Guide](#)).

Behavior model A model that contains the control algorithm for a controller (function prototyping system) or the algorithm of the controlled system (hardware-in-the-loop system). Can be connected in [ConfigurationDesk](#) via [model ports](#) to build a real-time application (RTA). The RTA can be executed on real-time hardware that is supported by [ConfigurationDesk](#).

Block properties Properties belonging to a TargetLink block. Depending on the kind of the property, you can specify them at the block and/or in the Data Dictionary. Examples of block properties are:

- Simulink properties (at a masked Simulink block)
- Logging options or saturation flags (at a TargetLink block)
- Data types or variable classes (referenced from the DD)
- Variable values (specified at the block or referenced from the DD)

Bus A bus consists of subordinate [bus elements](#). A bus element can be a bus itself.

Bus element A bus element is a part of a [bus](#) and can be a bus itself.

Bus port block Bus Inport, Bus Outport are bus port blocks. They are similar to the TargetLink Input and Output blocks. They are virtual, and they let you configure the input and output signals at the boundaries of a TargetLink subsystem and at the boundaries of subsystems that you want to generate a function for.

Bus signal Buses combine multiple signals, possibly of different types. Buses can also contain other buses. They are then called [nested buses](#).

Bus-capable block A block that can process [bus signals](#). Like [bus port blocks](#), they allow you to assign a type definition and, therefore, a [variable class](#) to all the [bus elements](#) at once. The following blocks are bus-capable:

- Constant
- Custom Code (type II) block
- Data Store Memory, Data Store Read, and Data Store Write

- Delay
- Function Caller
- ArgIn, ArgOut
- Merge
- Multiport Switch (Data Input port)
- Probe
- Sink
- Signal Conversion
- Switch (Data Input port)
- Unit Delay
- Stateflow Data
- MATLAB Function Data

C

Calibratable variable Variable whose value can be changed with a calibration tool during run time.

Calibration Changing the [calibration parameter](#) values of [ECUs](#).

Calibration parameter Any [ECU](#) variable type that can be calibrated. The term *calibration parameter* is independent of the variable type's dimension.

Calprm Defined in a [calprm interface](#). Calprms represent [calibration parameters](#) that are accessible via a [measurement and calibration system](#).

Calprm interface An [interface](#) that is provided or required by a [software component \(SWC\)](#) via a [port \(AUTOSAR\)](#).

Calprm software component A special [software component \(SWC\)](#) that provides [calprms](#). Calprm software components have no [internal behavior](#).

Canonical In the DD, [array-of-struct variables](#) are specified canonically. Canonical means that you specify one array element as a representative for all array elements.

Catalog file (CTLG) A description of the content of an SWC container. It contains file references and file category information, such as source code files (C and H), object code files (such as O or OBJ), variable description files (A2L), or AUTOSAR files (ARXML).

Characteristic table (Classic AUTOSAR) A look-up table as described by [Classic AUTOSAR](#) whose values are measurable or calibratable. See also [compound primitive data type](#)

Classic AUTOSAR Short name for the AUTOSAR *Classic Platform* standard that complements [Adaptive AUTOSAR](#).

Classic initialization mode The initialization mode used when the Simulink diagnostics parameter Underspecified initialization detection is set to **Classic**.

See also [simplified initialization mode](#).

Client port A require port in client-server communication as described by [Classic AUTOSAR](#). In the Data Dictionary, client ports are represented as DD ClientPort objects.

Client-server interface An [interface](#) that describes the [operations](#) that are provided or required by a [software component \(SWC\)](#) via a [port \(AUTOSAR\)](#).

Code generation mode One of three mutually exclusive options for generating TargetLink standard [production code](#), AUTOSAR-compliant production code or RTOS-compliant (multirate RTOS/OSEK) production code.

Code generation unit (CGU) The smallest unit for which you can generate code. These are:

- TargetLink subsystems
- Subsystems configured for incremental code generation
- Referenced models
- DD CodeGenerationUnit objects

Code output style definition file To customize code formatting, you can modify a code output style definition file (XML file). By modifying this file, you can change the representation of comments and statements in the code output.

Code output style sheets To customize code formatting, you can modify code output style sheets (XSL files).

Code section A section of generated code that defines and executes a specific task.

Code size Amount of memory that an application requires specified in RAM and ROM after compilation with the target cross-compiler. This value helps to determine whether the application generated from the code files fits in the ECU memory.

Code variant Code variants lead to source code that is generated differently depending on which variant is selected (i.e., variant at code generation time). For example, if the Type property of a variable has the two variants Int16 and Float32, you can generate either source code for a fixed-point ECU with one variant, or floating-point code with the other.

Compatibility mode The default operation mode of RTE generators. The object code of an SWC that was compiled against an application header generated in compatibility mode can be linked against an RTE generated in compatibility mode (possibly by a different RTE generator). This is due to using standardized data structures in the generated RTE code.

See also [vendor mode](#).

Compiler inlining The process of replacing a function call with the code of the function body during compilation by the C compiler via [inline expansion](#).

This reduces the function call overhead and enables further optimizations at the potential cost of larger [code size](#).

Composition A structuring element in the [application layer](#). A composition consists of [software components](#) and their interconnections via [ports](#).

Compound primitive data type A primitive [application data type \(ADT\)](#) as defined by [Classic AUTOSAR](#) whose category is one of the following:

- COM_AXIS
- CUBOID
- CUBE_4
- CUBE_5
- CURVE
- MAP
- RES_AXIS
- VAL_BLK
- STRING

Compute-through-overflow (CTO) Calculation method for additions and subtraction where overflows are allowed in intermediate results without falsifying the final result.

Concern A concept in component-based development. It describes the idea that components separate their concerns. Accordingly, they must be developed in such a way that they provide the required functionality, are flexible and easy to maintain, and can be assembled, reused, or replaced by newer, functionally equivalent components in a software project without problems.

Config area A DD object that is a child object of the DD root object. The Config object contains configuration data for the tools working with the TargetLink Data Dictionary and configuration data for the TargetLink Data Dictionary itself. There is only one Config object in each DD workspace. The configuration data for the TargetLink Data Dictionary is a list of included DD files, user-defined views, data for variant configurations, etc. The data in the Config area is typically maintained by a Data Dictionary administrator.

ConfigurationDesk A dSPACE software tool for implementing and building real-time applications (RTA).

Constant value expression An expression for which the Code Generator can determine the variable values during code generation.

Constrained range limits User-defined minimum (Min) or maximum (Max) values that the user ensures will never be exceeded. The Code Generator relies on these ranges to make the generated [production code](#) more efficient. If no

Min/Max values are entered, the [implemented range](#) limits are used during production code generation.

Constrained type A DD Typedef object whose Constraints subtree is specified.

Container A bundle of files. The files are described in a catalog file that is part of the container. The files of a container can be spread over your file system.

Container Manager A tool for handling [containers](#).

Container set file (CTS) A file that lists a set of containers. If you export containers, one container set file is created for every TargetLink Data Dictionary.

Conversion method A method that describes the conversion of a variable's integer values in the ECU memory into their physical representations displayed in the Measurement and Calibration (MC) system.

Custom code Custom code consists of C code snippets that can be included in production code by using custom code files that are associated with custom code blocks. TargetLink treats this code as a black box. Accordingly, if this code contains custom code variables you must specify them via [custom code symbols](#). See also [external code](#).

Custom code symbol A variable that is used in a custom code file. It must be specified on the Interface page of custom code blocks.

Customer-specific C function An external function that is called from a Stateflow diagram and whose interface is made known to TargetLink via a scripting mechanism.

D

Data element Defined in a [sender-receiver interface](#). Data elements are information units that are exchanged between [sender ports](#), [receiver ports](#) and [sender-receiver ports](#). They represent the data flow.

Data page A structure containing all of the [calibratable variables](#) that are generated during code generation.

Data prototype The generic term for one of the following:

- [Data element](#)
- [Operation argument](#)
- [Calprm](#)
- [Interrunnable variable \(IRV\)](#)
- Shared or PerInstance [Calprm](#)
- [Per instance memory](#)

Data receive error event An [RTE event](#) that specifies to start or continue the execution of a [runnable](#) related to receiver errors.

Data received event An [RTE event](#) that specifies whether to start or continue the execution of a [runnable](#) after a [data element](#) is received by a [receiver port](#) or [sender-receiver port](#).

Data semantics The communication of [data elements](#) with last-is-best semantics. Newly received data elements overwrite older ones regardless of whether they have been processed or not.

Data send completed event An [RTE event](#) that specifies whether to start or continue the execution of a [runnable](#) related to a sender [acknowledgment](#).

Data transformation A transformation of the data of inter-ECU communication, such as end-to-end protection or serialization, that is managed by the [RTE](#) via [transformers](#).

Data type map Defines a mapping between [implementation data types](#) (represented in TargetLink by DD Typedef objects) and [application data types](#).

Data type mapping set Summarizes all the [data type maps](#) and [mode request type maps](#) of a [software component \(SWC\)](#).

Data variant One of two or more differing data values that are generated into the same C code and can be switched during ECU run time using a calibratable variant ID variable. For example, the Value property of a gain parameter can have the variants 2, 3, and 4.

DataltemMapping (DIM) A DataltemMapping object is a DD object that references a [ReplaceableDataltem \(RDI\)](#) and a DD variable. It is used to define the DD variable object to map an RDI object to, and therefore also the [implementation variable](#) in the generated code.

DD child object The [DD object](#) below another DD object in the [DD object tree](#).

DD data model The DD data model describes the object kinds, their properties and constraints as well as the dependencies between them.

DD file A DD file (*.dd) can be a [DD project file](#) or a [partial DD file](#).

DD object Data item in the Data Dictionary that can contain [DD child objects](#) and DD properties.

DD object tree The tree that arranges all [DD objects](#) according to the [DD data model](#).

DD project file A file containing the [DD objects](#) of a [DD workspace](#).

DD root object The topmost [DD object](#) of the [DD workspace](#).

DD subtree A part of the [DD object tree](#) containing a [DD object](#) and all its descendants.

DD workspace An independent organizational unit (central data container) and the largest entity that can be saved to file or loaded from a [DD project file](#). Any number of DD workspaces is supported, but only the first (DD0) can be used for code generation.

Default enumeration constant Represents the default constant, i.e., the name of an [enumerated value](#) that is used for initialization if an initial value is required, but not explicitly specified.

Direct reuse The Code Generator adds the [instance-specific variables](#) to the reuse structure as leaf struct components.

E

ECU Abbreviation of *electronic control unit*.

ECU software The ECU software consists of all the software that runs on an [ECU](#). It can be divided into the [basic software](#), [run-time environment \(RTE\)](#), and the [application layer](#).

ECU State Manager A piece of software that manages [modes](#). An ECU state manager is part of the [basic software](#).

Enhanceable Simulink block A Simulink® block that corresponds to a TargetLink simulation block, for example, the Gain block.

Enumerated value An enumerated value consists of an [enumeration constant](#) and a corresponding underlying integer value ([enumeration value](#)).

Enumeration constant An enumeration constant defines the name for an [enumerated value](#).

Enumeration data type A data type with a specific name, a set of named [enumerated values](#) and a [default enumeration constant](#).

Enumeration value An enumeration value defines the integer value for an [enumerated value](#).

Event message Event messages are information units that are defined in a [sender-receiver interface](#) and exchanged between [sender ports](#) or [receiver ports](#). They represent the control flow. On the receiver side, each event message is related to a buffer that queues the received messages.

Event semantics Communication of [data elements](#) with first-in-first-out semantics. Data elements are received in the same order they were sent. In simulations, TargetLink behaves as if [data semantics](#) was specified, even if you specified event semantics. However, TargetLink generates calls to the correct RTE API functions for data and event semantics.

ExchangeableWidth A DD object that defines [code variants](#) or improves code readability by using macros for signal widths.

Exclusive area Allows for specifying critical sections in the code that cannot preempt/interrupt each other. An exclusive area can be used to specify the mutual exclusion of [runnables](#).

Executable application The generic term for [offline simulation applications](#) and [real-time applications](#).

Explicit communication A communication mode in [Classic AUTOSAR](#). The data is exchanged whenever data is required or provided.

Explicit object An explicit object is an object in [production code](#) that the Code Generator created from a direct specification made at a [DD object](#) or at a [model element](#). For comparison, see [implicit object](#).

Extern C Stateflow symbol A C symbol (function or variable) that is used in a Stateflow chart but that is defined in an external code module.

External code Existing C code files/modules from external sources (e.g., legacy code) that can be included by preprocessor directives and called by the C code generated by TargetLink. Unlike [Custom code](#), external code is used as it is.

External container A container that is owned by the tool with that you are exchanging a software component but that is not the tool that triggers the container exchange. This container is used when you import files of a software component which were created or changed by the other tool.

F

Filter An algorithm that is applied to received [data elements](#).

Fixed-Point Library A library that contains functions and macros for use in the generated [production code](#).

Function AF The short form for an [access function \(AF\)](#) that is implemented as a C function.

Function algorithm object Generic term for either a MATLAB local function, the interface of a MATLAB local function or a [local MATLAB variable](#).

Function class A class that represents group properties of functions that determine the function definition, function prototypes and function calls of a function in the generated [production code](#). There are two types of function classes: predefined function class objects defined in the `/Pool/FunctionClasses` group in the DD and implicit function classes (default function classes) that can be influenced by templates in the DD.

Function code Code that is generated for a [modular unit](#) that represents functionality and can have [abstract interfaces](#) to be reused without changes in different contexts, e.g. in different [integration models](#).

Function inlining The process of replacing a function call with the code of the function body during code generation by TargetLink via [inline expansion](#). This reduces the function call overhead and enables further optimizations at the potential cost of larger [code size](#).

Function interface An interface that describes how to pass the inputs and outputs of a function to the generated [production code](#). It is described by the function signature.

Function subsystem A subsystem that is atomic and contains a Function block. When generating code, TargetLink generates it as a C function.

Functional Mock-up Unit (FMU) An archive file that describes and implements the functionality of a model based on the Functional Mock-up Interface (FMI) standard.

G

Global data store The specification of a DD `DataStoreMemoryBlock` object that references a variable and is associated with either a Simulink.Signal object or Data Store Memory block. The referenced variable must have a module specification and a fixed name and must be global and non-static. Because of its central specification in the Data Dictionary, you can use it across the boundaries of [CGUs](#).

I

Implementation Describes how a specific [internal behavior](#) is implemented for a given platform (microprocessor type and compiler). An implementation mainly consists of a list of source files, object files, compiler attributes, and dependencies between the make and build processes.

Implementation data type (IDT) According to AUTOSAR, implementation data types are used to define types on the implementation level of abstraction. From the implementation point of view, this regards the storage and manipulation of digitally represented data. Accordingly, implementation data types have data semantics and do consider implementation details, such as the data type.

Implementation data types can be constrained to change the resolution of the digital representation or define a range that is to be considered. Typically, they correspond to typedef statements in C code and still abstract from platform specific details such as endianness.

See also [application data type \(ADT\)](#).

Implementation variable A variable in the generated [production code](#) to which a [ReplaceableDataItem \(RDI\)](#) object is mapped.

ImplementationPolicy A property of [data element](#) and [Calprm](#) elements that specifies the implementation strategy for the resulting variables with respect to consistency.

Implemented range The range of a variable defined by its [scaling](#) parameters. To avoid overflows, the implemented range must include the maximum and minimum values the variable can take in the [simulation application](#) and in the ECU.

Implicit communication A communication mode in [Classic AUTOSAR](#). The data is exchanged at the start and end of the runnable that requires or provides the data.

Implicit object Any object created for the generated code by the TargetLink Code Generator (such as a variable, type, function, or file) that may not have been specified explicitly via a TargetLink block, a Stateflow object, or the TargetLink Data Dictionary. Implicit objects can be influenced via DD templates. For comparison, see [explicit object](#).

Implicit property If the property of a [DD object](#) or of a model based object is not directly specified at the object, this property is created by the Code Generator and is based on internal templates or DD Template objects. These properties are called implicit properties. Also see [implicit object](#) and [explicit object](#).

Included DD file A [partial DD file](#) that is inserted in the proper point of inclusion in the [DD object tree](#).

Incremental code generation unit (CGU) Generic term for [code generation units \(CGUs\)](#) for which you can incrementally generate code. These are:

- Referenced models
- Subsystems configured for incremental code generation

Incremental CGUs can be nested in other model-based CGUs.

Indirect reuse The Code Generator adds pointers to the reuse structure which reference the indirectly reused [instance-specific variables](#).

Indirect reuse has the following advantages to [direct reuse](#):

- The combination of [shared](#) and [instance-specific variable](#).
- The reuse of input/output variables of neighboring blocks.

Inline expansion The process of replacing a function call with the code of the function body. See also [function inlining](#) and [compiler inlining](#).

Instance-specific variable A variable that is accessed by one [reusable system instance](#). Typically, instance-specific variables are used for states and parameters whose value are different across instances.

Instruction set simulator (ISS) A simulation model of a microprocessor that can execute binary code compiled for the corresponding microprocessor. This allows the ISS to behave in the same way as the simulated microprocessor.

Integration model A model or TargetLink subsystem that contains [modular units](#) which it integrates to make a larger entity that provides its functionality.

Interface Describes the [data elements](#), [NvData](#), [event messages](#), [operations](#), or [calibration parameters](#) that are provided or required by a [software component \(SWC\)](#) via a [port \(AUTOSAR\)](#).

Internal behavior An element that represents the internal structure of an [atomic software component \(atomic SWC\)](#). It is characterized by the following entities and their interdependencies:

- [Exclusive area](#)
- [Interrunnable variable \(IRV\)](#)
- [Per instance memory](#)
- [Per instance parameter](#)
- [Runnable](#)
- [RTE event](#)
- [Shared parameter](#)

Interrunnable variable (IRV) Variable object for specifying communication between the [runnables](#) in one [atomic software component \(atomic SWC\)](#).

Interrupt service routine (ISR) function A function that implements an ISR and calls the step functions of the subsystems that are assigned by the user or by the TargetLink Code Generator during multirate code generation.

Intertask communication The flow of data between tasks and ISRs, tasks and tasks, and between ISRs and ISRs for multirate code generation.

Is service A property of an [interface](#) that indicates whether the interface is provided by a [basic software service](#).

ISV Abbreviation for instance-specific variable.

L

Leaf bus element A leaf bus element is a subordinate [bus element](#) that is not a [bus](#) itself.

Leaf bus signal See also [leaf bus element](#).

Leaf struct component A leaf struct component is a subordinate [struct component](#) that is not a [struct](#) itself.

Legacy function A function that contains a user-provided C function.

Library subsystem A subsystem that resides in a Simulink® library.

Local container A container that is owned by the tool that triggers the container exchange.

The tool that triggers the exchange transfers the files of a [software component](#) to this container when you export a software component. The [external container](#) is not involved.

Local MATLAB variable A variable that is generated when used on the left side of an assignment or in the interface of a MATLAB local function. TargetLink does not support different data types and sizes on local MATLAB variables.

M

Look-up function A function for a look-up table that returns a value from the look-up table (1-D or 2-D).

Macro A literal representing a C preprocessor definition. Macros are used to provide a fixed sequence of computing instructions as a single program statement. Before code compilation, the preprocessor replaces every occurrence of the macro by its definition, i.e., by the code that it stands for.

Macro AF The short form for an [access function \(AF\)](#) that is implemented as a function-like preprocessor macro.

MATLAB code elements MATLAB code elements include [MATLAB local functions](#) and [local MATLAB variables](#). MATLAB code elements are not available in the Simulink Model Explorer or the Property Manager.

MATLAB local function A function that is scoped to a [MATLAB main function](#) and located at the same hierarchy level. MATLAB local functions are treated like MATLAB main functions and have the same properties as the MATLAB main function by default.

MATLAB main function The first function in a MATLAB function file.

Matrix AF An access function resulting from a DD AccessFunction object whose VariableKindSpec property is set to APPLY_TO_MATRIX.

Matrix signal Collective term for 2-D signals implemented as [matrix variable](#) in [production code](#).

Matrix variable Collective term for 2-D arrays in [production code](#) that implement 2-D signals.

Measurement Viewing and analyzing the time traces of [calibration parameters](#) and [measurement variables](#), for example, to observe the effects of ECU parameter changes.

Measurement and calibration system A tool that provides access to an [ECU](#) for [measurement](#) and [calibration](#). It requires information on the [calibration parameters](#) and [measurement variables](#) with the ECU code.

Measurement variable Any variable type that can be [measured](#) but not [calibrated](#). The term *measurement variable* is independent of a variable type's dimension.

Memory mapping The process of mapping variables and functions to different [memory sections](#).

Memory section A memory location to which the linker can allocate variables and functions.

Message Browser A TargetLink component for handling fatal (F), error (E), warning (W), note (N), and advice (A) messages.

MetaData files Files that store metadata about code generation. The metadata of each [code generation unit \(CGU\)](#) is collected in a DD Subsystem object that is written to the file system as a partial DD file called `<CGU>_SubsystemObject.dd`.

Method Behavior subsystem An atomic subsystem used to generate code for a method implementation. From the TargetLink perspective, this is an [Adaptive AUTOSAR Function](#) that can take arguments. It contains a Function block whose AUTOSAR mode is set to **Adaptive** and whose Role is set to **Method Behavior**.

Method Call subsystem An atomic subsystem that is used to generate a method call in the code of an [Adaptive AUTOSAR Function](#). The subsystem contains a Function block whose AUTOSAR mode is set to **Adaptive** and whose Role is set to **Method Call**. The subsystem interface is used to generate the function interface while additional model elements that are contained in the subsystem are only for simulation purposes.

Microcontroller family (MCF) A group of [microcontroller units](#) with the same processor, but different peripherals.

Microcontroller unit (MCU) A combination of a specific processor with additional peripherals, e.g. RAM or AD converters. MCUs with the same processor, but different peripherals form a [microcontroller family](#).

MIL simulation A simulation method in which the function model is computed (usually with double floating-point precision) on the host computer as an executable specification. The simulation results serve as a reference for [SIL simulations](#) and [PIL simulations](#).

MISRA Organization that assists the automotive industry to produce safe and reliable software, e.g., by defining guidelines for the use of C code in automotive electronic control units or modeling guidelines.

Mode An operating state of an [ECU](#), a single functional unit, etc..

Mode declaration group Contains the possible [operating states](#), for example, of an [ECU](#) or a single functional unit.

Mode manager A piece of software that manages [modes](#). A mode manager can be implemented as a [software component \(SWC\)](#) of the [application layer](#).

Mode request type map An entity that defines a mapping between a [mode declaration group](#) and a type. This specifies that mode values are instantiated in the [software component \(SWC\)](#)'s code with the specified type.

Mode switch event An [RTE event](#) that specifies to start or continue the execution of a [runnable](#) as a result of a [mode change](#).

Model Compare A dSPACE software tool that identifies and visualizes the differences in the contents of Simulink/TargetLink models (including Stateflow). It can also merge the models.

Model component A model-based [code generation unit \(CGU\)](#).

Model element A model in MATLAB/Simulink consists of model elements that are TargetLink blocks, Simulink blocks, and Stateflow objects, and signal lines connecting them.

Model port A port used to connect a [behavior model](#) in [ConfigurationDesk](#). In TargetLink, multiple model ports of the same kind (data in or data out) can be grouped in a [model port block](#).

Model port block A block in [ConfigurationDesk](#) that has one or more [model ports](#). It is used to connect the [behavior model](#) in [ConfigurationDesk](#).

Model port variable A DD Variable object that represents a [model port](#) of a [behavior model](#) in [ConfigurationDesk](#).

Model-dependent code elements Code elements that (partially) result from specifications made in the model.

Model-independent code elements Code elements that can be generated from specifications made in the Data Dictionary alone.

Modular unit A submodel containing functionality that is reusable and can be integrated in different [integration models](#). The [production code](#) for the modular unit can be generated separately.

Module A DD object that specifies code modules, header files, and other arbitrary files.

Module specification The reference of a DD Module object at a **Function Block** ([TargetLink Model Element Reference](#)) block or DD object. The resulting code elements are generated into the [module](#). See also [production code](#) and [stub code](#).

ModuleOwnership A DD object that specifies an owner for a module (module owner) or module group, i.e. the owning [code generation unit \(CGU\)](#) that generates the [production code](#) for it or declares the [module](#) as external code that is not generated by TargetLink.

N

Nested bus A nested bus is a [bus](#) that is a subordinate [bus element](#) of another bus.

Nested struct A nested struct is a [struct](#) that is a subordinate [struct component](#) of another struct.

Non-scalar signal Collective term for vector and [matrix signals](#).

Non-standard scaling A [scaling](#) whose LSB is different from 2^0 or whose Offset is not 0.

Nv receiver port A require port in NvData communication as described by [Classic AUTOSAR](#). In the Data Dictionary, nv receiver ports are represented as DD NvReceiverPort objects.

Nv sender port A provide port in NvData communication as described by [Classic AUTOSAR](#). In the Data Dictionary, nv sender ports are represented as DD NvSenderPort objects.

Nv sender-receiver port A provide-require port in NvData communication as described by [Classic AUTOSAR](#). In the Data Dictionary, nv sender-receiver ports are represented as DD NvSenderReceiverPort objects.

NvData Data that is exchanged between an [atomic software component \(atomic SWC\)](#) and the [ECU's NVRAM](#).

NvData interface An [interface](#) used in [NvData](#) communication.

NVRAM Abbreviation of *non volatile random access memory*.

NVRAM manager A piece of software that manages an [ECU's NVRAM](#). An NVRAM manager is part of the [basic software](#).

0

Offline simulation application (OSA) An application that can be used for offline simulation in VEOS.

Online parameter modification The modification of parameters in the [production code](#) before or during a [SIL simulation](#) or [PIL simulation](#).

Operation Defined in a [client-server interface](#). A [software component \(SWC\)](#) can request an operation via a [client port](#). A software component can provide an operation via a [server port](#). Operations are implemented by [server runnables](#).

Operation argument Specifies a C-function parameter that is passed and/or returned when an [operation](#) is called.

Operation call subsystem A collective term for [synchronous operation call subsystem](#) and [asynchronous operation call subsystem](#).

Operation call with runnable implementation subsystem An atomic subsystem that contains a Function block whose AUTOSAR mode property is set to **Classic** and whose Role is set to **Operation call with runnable implementation**.

Operation invoked event An [RTE event](#) that specifies to start or continue the execution of a [runnable](#) as a result of a client call. A runnable that is related to an [operation invoked event](#) represents a server.

Operation result provider subsystem A subsystem used when modeling *asynchronous* client-server communication. It is used to generate the call of the `Rte_Result` API function and for simulation purposes.

See also [asynchronous operation call subsystem](#).

Operation subsystem A collective term for [operation call subsystem](#) and [operation result provider subsystem](#).

OSEK Implementation Language (OIL) A modeling language for describing the configuration of an OSEK application and operating system.

P

Package A structuring element for grouping elements of [software components](#) in any hierarchy. Using package information, software components can be spread across or combined from several [software component description \(SWC-D\)](#) files during [AUTOSAR import/export](#) scenarios.

Parent model A model containing references to one or more other models by means of the Simulink Model block.

Partial DD file A [DD file](#) that contains only a DD subtree. If it is included in a [DD project file](#), it is called [Included DD file](#). The partial DD file can be located on a central network server where all team members can share the same configuration data.

Per instance memory The definition of a data prototype that is instantiated for each [atomic software component instance](#) by the [RTE](#). A data type instance can be accessed only by the corresponding instance of the [atomic SWC](#).

Per instance parameter A parameter for measurement and calibration unique to the instance of a [software component \(SWC\)](#) that is instantiated multiple times.

Physical evaluation board (physical EVB) A board that is equipped with the same target processor as the [ECU](#) and that can be used for validation of the generated [production code](#) in [PIL simulation](#) mode.

PIL simulation A simulation method in which the TargetLink control algorithm ([production code](#)) is computed on a [microcontroller](#) target ([physical](#) or [virtual](#)).

Plain data type A data type that is not struct, union, or pointer.

Platform A specific target/compiler combination. For the configuration of platforms, refer to the Code generation target settings in the TargetLink Main Dialog Block block.

Pool area A DD object which is parented by the DD root object. It contains all data objects which can be referenced in TargetLink models and which are used for code generation. Pool data objects allow common data specifications to be reused across different blocks or models to easily keep consistency of common properties.

Port (AUTOSAR) A part of a [software component \(SWC\)](#) that is the interaction point between the component and other software components.

Port-defined argument values Argument values the RTE can implicitly pass to a server.

Preferences Editor A TargetLink tool that lets users view and modify all user-specific preference settings after installation has finished.

Production code The code generated from a [code generation unit \(CGU\)](#) that owns the module containing the code. See also [stub code](#).

Project folder A folder in the file system that belongs to a TargetLink code generation project. It forms the root of different [artifact locations](#) that belong to this project.

Property Manager The TargetLink user interface for conveniently managing the properties of multiple model elements at the same time. It can consist of menus, context menus, and one or more panes for displaying property-related information.

Provide calprm port A provide port in parameter communication as described by [Classic AUTOSAR](#). In the Data Dictionary, provide calprm ports are represented as DD ProvideCalPrmPort objects.

R

Read/write access function An [access function \(AF\)](#) that *encapsulates the instructions* for reading or writing a variable.

Real-time application An application that can be executed in real time on dSPACE real-time hardware such as SCALEXIO.

Receiver port A require port in sender-receiver communication as described by [Classic AUTOSAR](#). In the Data Dictionary, receiver ports are represented as DD ReceiverPort objects.

ReplaceableDataItem (RDI) A ReplaceableDataItem (RDI) object is a DD object that describes an abstract interface's basic properties such as the data type, scaling and width. It can be referenced in TargetLink block dialogs and is generated as a global [macro](#) during code generation. The definition of the RDI macro can then be generated later, allowing flexible mapping to an [implementation variable](#).

Require calprm port A require port in parameter communication as described by [Classic AUTOSAR](#). In the Data Dictionary, require calprm ports are represented as DD RequireCalPrmPort objects.

RequirementInfo An object of a DD RequirementInfo object. It describes an item of requirement information and has the following properties: Description, Document, Location, UserTag, ReferencedInCode, SimulinkStateflowPath.

Restart function A production code function that initializes the global variables that have an entry in the RestartfunctionName field of their [variable class](#).

Reusable function definition The function definition that is to be reused in the generated code. It is the code counterpart to the [reusable system definition](#) in the model.

Reusable function instance An instance of a [reusable function definition](#). It is the code counterpart to the [reusable system instance](#) in the model.

Reusable model part Part of the model that can become a [reusable system definition](#). Refer to [Basics on Function Reuse](#) ([TargetLink Customization and Optimization Guide](#)).

Reusable system definition A model part to which the function reuse is applied.

Reusable system instance An instance of a [reusable system definition](#).

Root bus A root bus is a [bus](#) that is not a subordinate part of another bus.

Root function A function that represents the starting point of the TargetLink-generated code. It is called from the environment in which the TargetLink-generated code is embedded.

Root model The topmost [parent model](#) in the system hierarchy.

Root module The [module](#) that contains all the code elements that belong to the [production code](#) of a [code generation unit \(CGU\)](#) and do not have their own [module specification](#).

Root step function A step function that is called only from outside the [production code](#). It can also represent a non-TargetLink subsystem within a TargetLink subsystem.

Root struct A root struct is a [struct](#) that is not a subordinate part of another struct.

Root style sheet A root style sheet is used to organize several style sheets defining code formatting.

RTE event The abbreviation of [run-time environment event](#).

Runnable A part of an [atomic SWC](#). With regard to code execution, a runnable is the smallest unit that can be scheduled and executed. Each runnable is implemented by one C function.

Runnable execution constraint Constraints that specify [runnables](#) that are allowed or not allowed to be started or stopped before a runnable.

Runnable subsystem An atomic subsystem that contains a Function block whose AUTOSAR mode property is set to **Classic** and whose Role is set to **Runnable**.

Run-time environment (RTE) A generated software layer that connects the [application layer](#) to the [basic software](#). It also interconnects the different [SWCs](#) of the application layer. There is one RTE per [ECU](#).

Run-time environment event A part of an [internal behavior](#). It defines the situations and conditions for starting or continuing the execution of a specific [runnable](#).

S

Scaling A parameter that specifies the fixed-point range and resolution of a variable. It consists of the data type, least significant bit (LSB) and offset.

Sender port A provide port in sender-receiver communication as described by [Classic AUTOSAR](#). In the Data Dictionary, sender ports are represented as DD SenderPort objects.

Sender-receiver interface An [interface](#) that describes the [data elements](#) and [event messages](#) that are provided or required by a [software component \(SWC\)](#) via a [port \(AUTOSAR\)](#).

Sender-receiver port A provide-require port in sender-receiver communication as described by [Classic AUTOSAR](#). In the Data Dictionary, sender-receiver ports are represented as DD SenderReceiverPort objects.

Server port A provide port in client-server communication as described by [Classic AUTOSAR](#). In the Data Dictionary, server ports are represented as DD ServerPort objects.

Server runnable A [runnable](#) that provides an [operation](#) via a [server port](#). Server runnables are triggered by [operation invoked events](#).

Shared parameter A parameter for measurement and calibration that is used by several instances of the same [software component \(SWC\)](#).

Shared variable A variable that is accessed by several [reusable system instances](#). Typically, shared variables are used for parameters whose values are the same across instances. They increase code efficiency.

SIC runnable function A void (void) function that is called in a [task](#). Generated into the [Simulink implementation container \(SIC\)](#) to call the [root function](#) that is generated by TargetLink from a TargetLink subsystem. In [ConfigurationDesk](#), this function is called *runnable function*.

SIL simulation A simulation method in which the control algorithm's generated [production code](#) is computed on the host computer in place of the corresponding model.

Simple TargetLink model A simple TargetLink model contains at least one TargetLink Subsystem block and exactly one MIL Handler block.

Simplified initialization mode The initialization mode used when the Simulink diagnostics parameter Underspecified initialization detection is set to Simplified.

See also [classic initialization mode](#).

Simulation application An application that represents a graphical model specification (implemented control algorithm) and simulates its behavior in an offline Simulink environment.

Simulation code Code that is required only for simulation purposes. Does not belong to the [production code](#).

Simulation S-function An S-function that calls either the [root step functions](#) created for a TargetLink subsystem, or a user-specified step function (only possible in test mode via API).

Simulink data store Generic term for a memory region in MATLAB/Simulink that is defined by one of the following:

- A Simulink.Signal object
- A Simulink Data Store Memory block

Simulink function call The location in the model where a Simulink function is called. This can be:

- A Function Caller block
- The action language of a Stateflow Chart
- The MATLAB code of a MATLAB function

Simulink function definition The location in the model where a Simulink function is defined. This can be one of the following:

- [Simulink Function subsystem](#)
- Exported Stateflow graphical function
- Exported Stateflow truthtable function
- Exported Stateflow MATLAB function

Simulink function ports The ports that can be used in a [Simulink Function subsystem](#). These can be the following:

- TargetLink ArgIn and ArgOut blocks
These ports are specific for each [Simulink function call](#).
- TargetLink InPort/OutPort and Bus InPort/Bus OutPort blocks
These ports are the same for all [Simulink function calls](#).

Simulink Function subsystem A subsystem that contains a Trigger block whose Trigger Type is `function-call` and whose Treat as Simulink Function checkbox is selected.

Simulink implementation container (SIC) A file that contains all the files required to import [production code](#) generated by TargetLink into [ConfigurationDesk](#) as a [behavior model](#) with [model ports](#).

Slice A section of a vector or [matrix signal](#), whose elements have the same properties. If all the elements of the vector/matrix have the same properties, the whole vector/matrix forms a slice.

Software component (SWC) The generic term for [atomic software component \(atomic SWC\)](#), [compositions](#), and special software components, such as [calprm software components](#). A software component logically groups and encapsulates single functionalities. Software components communicate with each other via [ports](#).

Software component description (SWC-D) An XML file that describes [software components](#) according to AUTOSAR.

Stateflow action language The formal language used to describe transition actions in Stateflow.

Struct A struct (short form for [structure](#)) consists of subordinate [struct components](#). A struct component can be a struct itself.

Struct component A struct component is a part of a [struct](#) and can be a struct itself.

Structure A structure (long form for [struct](#)) consists of subordinate [struct components](#). A struct component can be a struct itself.

Stub code Code that is required to build the simulation application but that belongs to another [code generation unit \(CGU\)](#) than the one used to generate [production code](#).

Subsystem area A DD object which is parented by the DD root object. This object consists of an arbitrary number of Subsystem objects, each of which is the result of code generation for a specific [code generation unit \(CGU\)](#). The Subsystem objects contain detailed information on the generated code, including C modules, functions, etc. The data in this area is either automatically generated or imported from ASAM MCD-2 MC, and must not be modified manually.

Supported Simulink block A TargetLink-compliant block from the Simulink library that can be directly used in the model/subsystem for which the Code Generator generates [production code](#).

SWC container A [container](#) for files of one [SWC](#).

Synchronous operation call subsystem A subsystem used when modeling *synchronous* client-server communication. It is used to generate the call of the `Rte_Call` API function and for simulation purposes.

T

Table function A function that returns table output values calculated from the table inputs.

Target config file An XML file named `TargetConfig.xml`. It contains information on the basic data types of the target/compiler combination such as the byte order, alignment, etc.

Target Optimization Module (TOM) A TargetLink software module for optimizing [production code](#) generation for a specific [microcontroller](#)/compiler combination.

Target Simulation Module (TSM) A TargetLink software module that provides support for a number of evaluation board/compiler combinations. It is used to test the generated code on a target processor. The TSM is licensed separately.

TargetLink AUTOSAR Migration Tool A software tool that converts classic, non-AUTOSAR TargetLink models to AUTOSAR models at a click.

TargetLink AUTOSAR Module A TargetLink software module that provides extensive support for modeling, simulating, and generating code for AUTOSAR software components.

TargetLink Base Suite The base component of the TargetLink software including the [ANSI C](#) Code Generator and the Data Dictionary Manager.

TargetLink base type One of the types used by TargetLink instead of pure C types in the generated code and the delivered libraries. This makes the code platform independent.

TargetLink Blockset A set of blocks in TargetLink that allow [production code](#) to be generated from a model in MATLAB/Simulink.

TargetLink Data Dictionary The central data container that holds all relevant information about an ECU application, for example, for code generation.

TargetLink simulation block A block that processes signals during simulation. In most cases, it is a block from standard Simulink libraries but carries additional information required for production code generation.

TargetLink subsystem A subsystem from the TargetLink block library that defines a section of the Simulink model for which code must be generated by TargetLink.

Task A code section whose execution is managed by the real-time operating system. Tasks can be triggered periodically or based on events. Each task can call one or more [SIC runnable functions](#).

Task function A function that implements a task and calls the functions of the subsystems which are assigned to the task by the user or via the TargetLink Code Generator during multirate code generation.

Term function A function that contains the code to be executed when the simulation finishes or the ECU application terminates.

Terminate function A [runnable](#) that finalizes a [SWC](#), for example, by calling code that has to run before the application shuts down.

Timing event An [RTE event](#) that specifies to start or continue the execution of a [runnable](#) at constant time intervals.

tlilib A TargetLink block library that is the source for creating TargetLink models graphically. Refer to [How to Open the TargetLink Block Library](#) ([TargetLink Orientation and Overview Guide](#)).

Transformer The [Classic AUTOSAR](#) entity used to perform a [data transformation](#).

TransformerError The parameter passed by the [run-time environment \(RTE\)](#) if an error occurred in a [data transformation](#). The `Std_TransformerError` is a struct whose components are the transformer class and the error code. If the error is a hard error, a special runnable is triggered via the [TransformerHardErrorEvent](#) to react to the error. In AUTOSAR releases prior to R19-11 this struct was named `Rte_TransformerError`.

TransformerHardErrorEvent The [RTE event](#) that triggers the [runnable](#) to be used for responding to a hard [TransformerError](#) in a [data transformation](#) for client-server communication.

Type prefix A string written in front of the variable type of a variable definition/declaration, such as `MyTypePrefix Int16 MyVar`.

U

Unicode The most common standard for extended character sets is the Unicode standard. There are different schemes to encode Unicode in byte format, e.g., UTF-8 or UTF-16. All of these encodings support all Unicode characters. Scheme conversion is possible without losses. The only difference between these encoding schemes is the memory that is required to represent Unicode characters.

User data type (UDT) A data type defined by the user. It is placed in the Data Dictionary and can have associated constraints.

Utility blocks One of the categories of TargetLink blocks. The blocks in the category keep TargetLink-specific data, provide user interfaces, and control the simulation mode and code generation.

V

Validation Summary Shows unresolved model element data validation errors from all model element variables of the Property View. It lets you search, filter, and group validation errors.

Value copy AF An [access function \(AF\)](#) resulting from DD AccessFunction objects whose AccessFunctionKind property is set to READ_VALUE_COPY or WRITE_VALUE_COPY.

Variable access function An [access function \(AF\)](#) that *encapsulates the* access to a variable for reading or writing.

Variable class A set of properties that define the role and appearance of a variable in the generated [production code](#), e.g. CAL for global calibratable variables.

VariantConfig A DD object in the [Config area](#) that defines the [code variants](#) and [data variants](#) to be used for simulation and code generation.

VariantItem A DD object in the DD [Config area](#) used to variant individual properties of DD Variable and [ExchangeableWidth](#) objects. Each variant of a property is associated with one variant item.

V-ECU implementation container (VECU) A file that consists of all the files required to build an [offline simulation application \(OSA\)](#) to use for simulation with VEOS.

V-ECU Manager A component of TargetLink that allows you to configure and generate a V-ECU implementation.

Vendor mode The operation mode of RTE generators that allows the generation of RTE code which contains vendor-specific adaptations, e.g., to reduce resource consumption. To be linkable to an RTE, the object code of an SWC must have been compiled against an application header that matches the RTE code generated by the specific RTE generator. This is the case because the data structures and types can be implementation-specific.

See also [compatibility mode](#).

VEOS A dSPACE software platform for the C-code-based simulation of [virtual ECUs](#) and environment models on a PC.

Virtual ECU (V-ECU) Software that emulates a real [ECU](#) in a simulation scenario. The virtual ECU comprises components from the application and the [basic software](#), and provides functionalities comparable to those of a real ECU.

Virtual ECU testing Offline and real-time simulation using [virtual ECUs](#).

Virtual evaluation board (virtual EVB) A combination of an [instruction set simulator \(ISS\)](#) and a simulated periphery. This combination can be used for validation of generated [production code](#) in [PIL simulation](#) mode.

W

Worst-case range limits A range specified by calculating the minimum and maximum values which a block's output or state variable can take on with respect to the range of the inputs or the user-specified [constrained range limits](#).

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