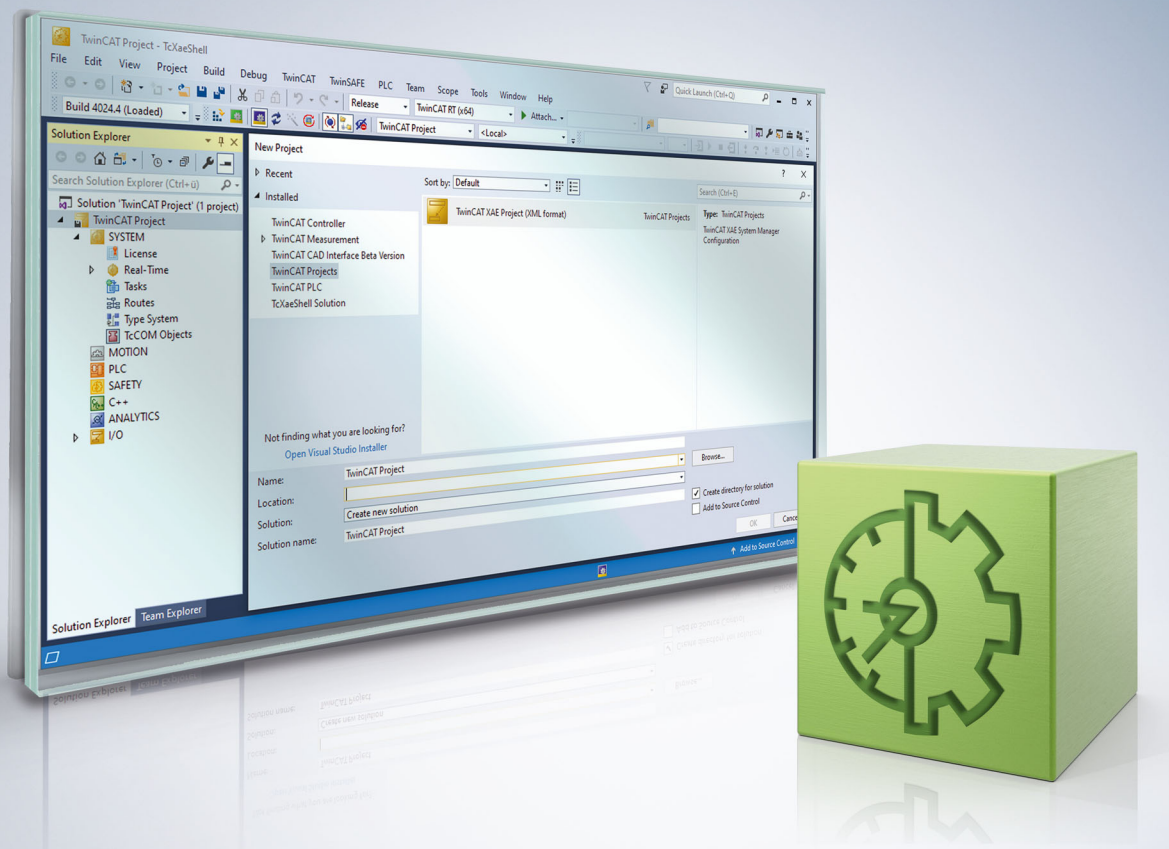
BECKHOFF New Automation Technology

Manual | EN

TwinCAT 3

Project Compare Tool



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1 Foreword

1.1 Notes on the documentation

This description is only intended for the use of trained specialists in control and automation engineering who are familiar with applicable national standards.
It is essential that the documentation and the following notes and explanations are followed when installing and commissioning the components.
It is the duty of the technical personnel to use the documentation published at the respective time of each installation and commissioning.

The responsible staff must ensure that the application or use of the products described satisfy all the requirements for safety, including all the relevant laws, regulations, guidelines and standards.

Disclaimer

The documentation has been prepared with care. The products described are, however, constantly under development.
We reserve the right to revise and change the documentation at any time and without prior announcement.
No claims for the modification of products that have already been supplied may be made on the basis of the data, diagrams and descriptions in this documentation.

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EP1590927, EP1789857, EP1456722, EP2137893, DE102015105702
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1.2 Safety instructions

Safety regulations

Please note the following safety instructions and explanations!
Product-specific safety instructions can be found on following pages or in the areas mounting, wiring, commissioning etc.

Exclusion of liability

All the components are supplied in particular hardware and software configurations appropriate for the application. Modifications to hardware or software configurations other than those described in the documentation are not permitted, and nullify the liability of Beckhoff Automation GmbH & Co. KG.

Personnel qualification

This description is only intended for trained specialists in control, automation and drive engineering who are familiar with the applicable national standards.

Description of symbols

In this documentation the following symbols are used with an accompanying safety instruction or note. The safety instructions must be read carefully and followed without fail!

⚠ DANGER

Serious risk of injury!

Failure to follow the safety instructions associated with this symbol directly endangers the life and health of persons.

⚠ WARNING

Risk of injury!

Failure to follow the safety instructions associated with this symbol endangers the life and health of persons.

⚠ CAUTION

Personal injuries!

Failure to follow the safety instructions associated with this symbol can lead to injuries to persons.

NOTE

Damage to the environment or devices

Failure to follow the instructions associated with this symbol can lead to damage to the environment or equipment.

Tip or pointer

This symbol indicates information that contributes to better understanding.

1.3 Notes on information security

The products of Beckhoff Automation GmbH & Co. KG (Beckhoff), insofar as they can be accessed online, are equipped with security functions that support the secure operation of plants, systems, machines and networks. Despite the security functions, the creation, implementation and constant updating of a holistic security concept for the operation are necessary to protect the respective plant, system, machine and networks against cyber threats. The products sold by Beckhoff are only part of the overall security concept. The customer is responsible for preventing unauthorized access by third parties to its equipment, systems, machines and networks. The latter should be connected to the corporate network or the Internet only if appropriate protective measures have been set up.

In addition, the recommendations from Beckhoff regarding appropriate protective measures should be observed. Further information regarding information security and industrial security can be found in our https://www.beckhoff.com/secguide.

Beckhoff products and solutions undergo continuous further development. This also applies to security functions. In light of this continuous further development, Beckhoff expressly recommends that the products are kept up to date at all times and that updates are installed for the products once they have been made available. Using outdated or unsupported product versions can increase the risk of cyber threats.

To stay informed about information security for Beckhoff products, subscribe to the RSS feed at https://www.beckhoff.com/secinfo.

2 Introduction

The TwinCAT3 Project Compare Tool (TcProjectCompare) is an application program that can be used to compare and merge TwinCAT3 projects. The tool can be integrated in Visual Studio or used in stand-alone mode.

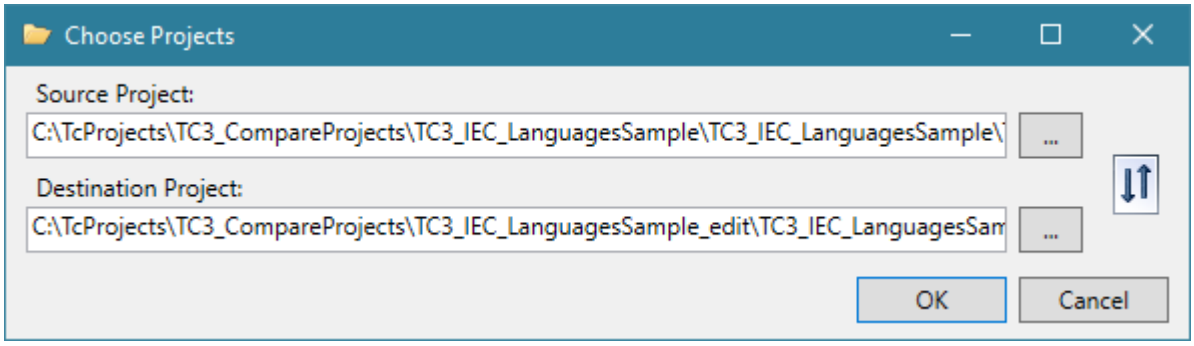
If a TwinCAT3 project is managed with the help of source code control software (e.g. integrated in Visual Studio), the source control clients can be set so that they automatically call the TcProjectCompare tool in the case of comparing or merging files or projects. Further information on the configuration of source control clients can be found in the section Configuration of the TcProjectCompare for use with source control [▶ 14].

3 Use of the TcProjectCompare

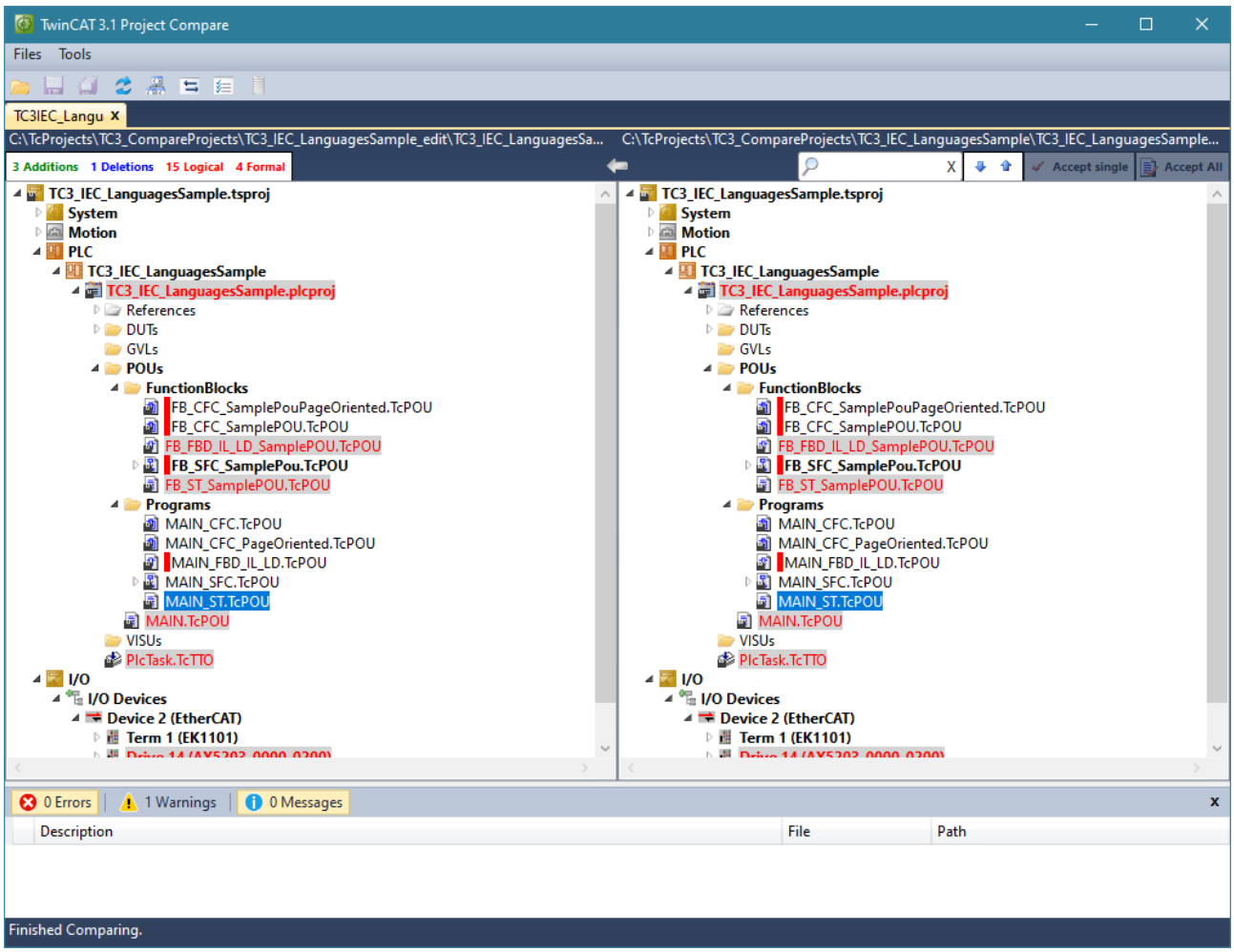
Encryption

If encryption is used in the TwinCAT project, you can only use the TcProjectCompare version that is integrated in Visual Studio (see Use of the TcProjectCompare [▶ 10]).

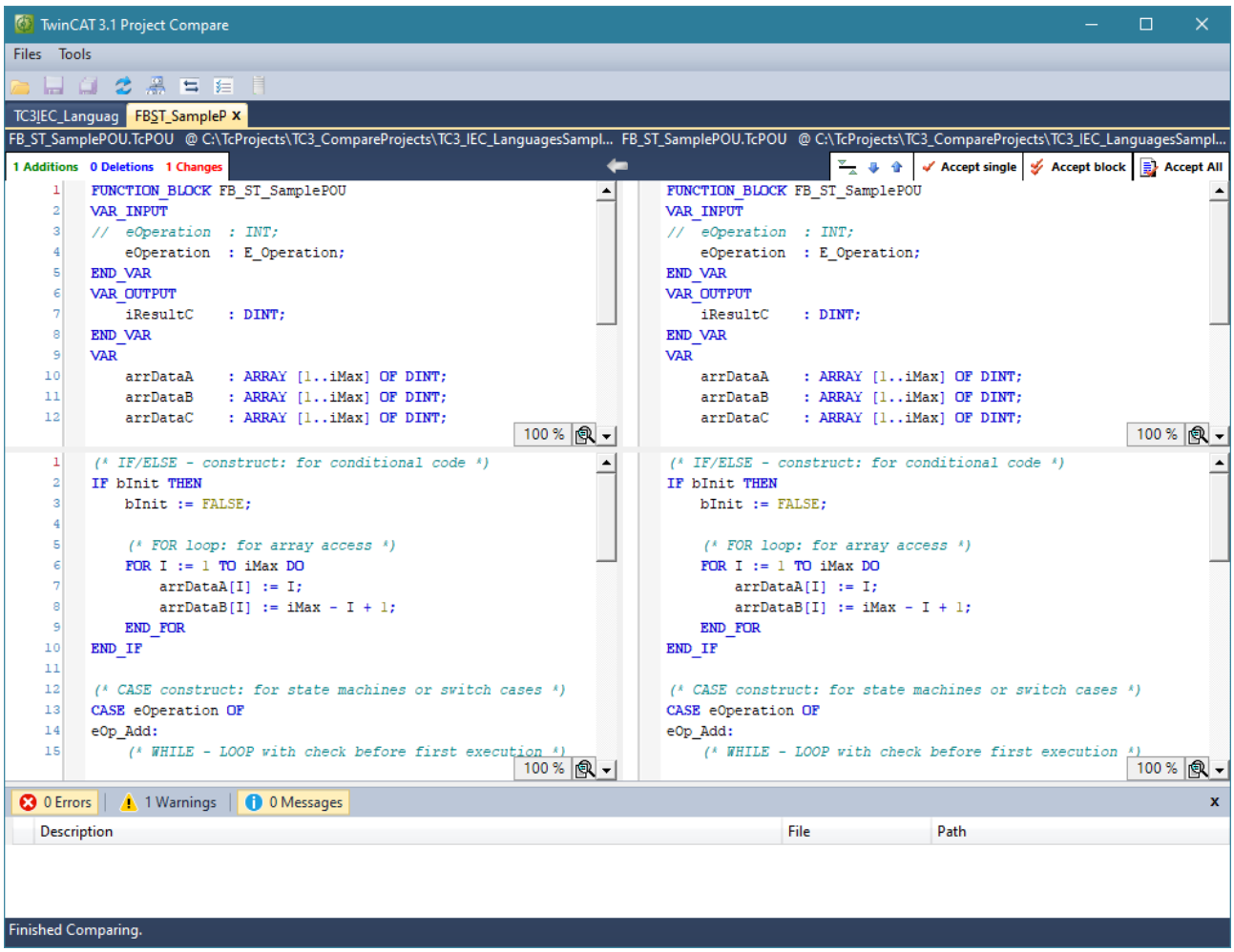
The following dialog appears after starting the TCProjectCompare tool:



With this dialog you can select the two TwinCAT projects that are to be compared. The left-hand project is the project that is being edited (into which merging takes place). The right-hand project is the project that is being used for comparison.



In order to display the changes in a TwinCAT object (e.g. a POU), open the comparison for this element with a double click.

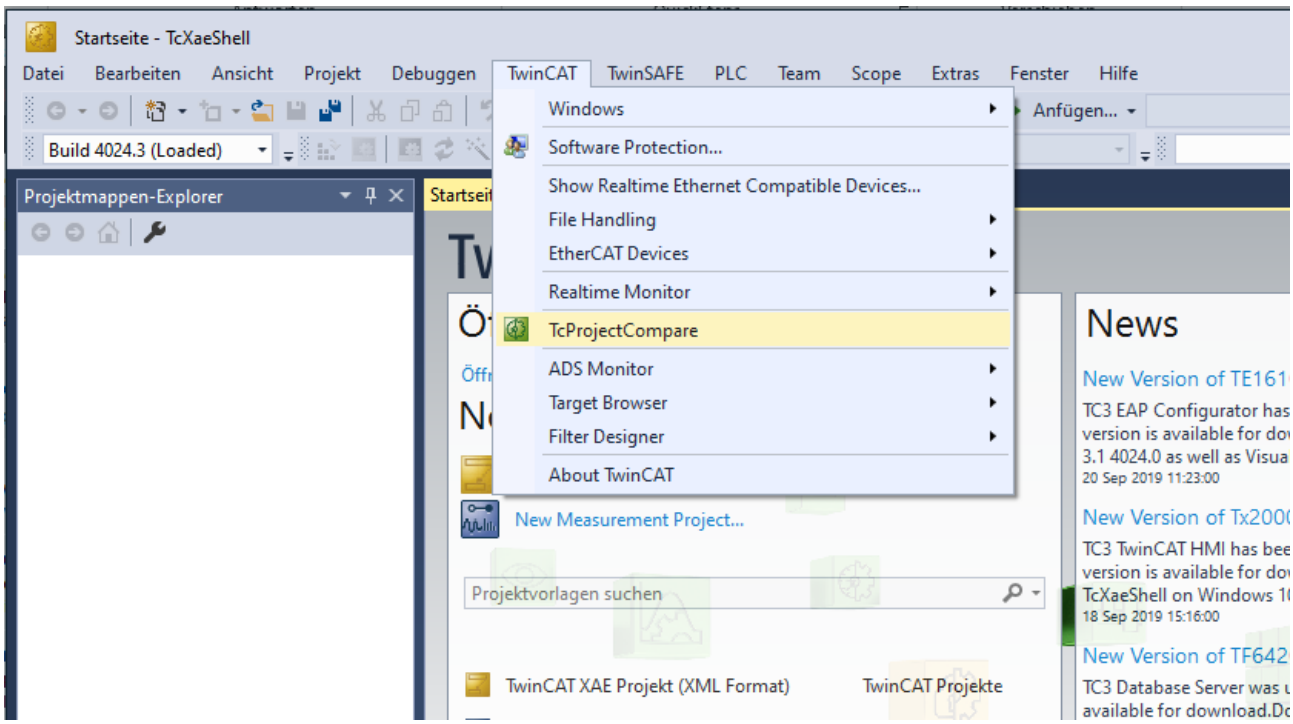


Not all changes are visible in the PLC editors

All files from TwinCAT are saved as XML. There are two different views for the PLC files. One is the display when using PLC editors, the other is an XML display. Therefore, a distinction is made for these files between content changes and formal changes. The latter can only be displayed in the XML view (see Use of the TcProjectCompare [▶ 11]). Content changes are indicated by displaying the name of the POU in a different color. Formal changes are indicated by a red bar in front of the name of the POU.

Starting the TcProjectCompare plugin in Visual Studio

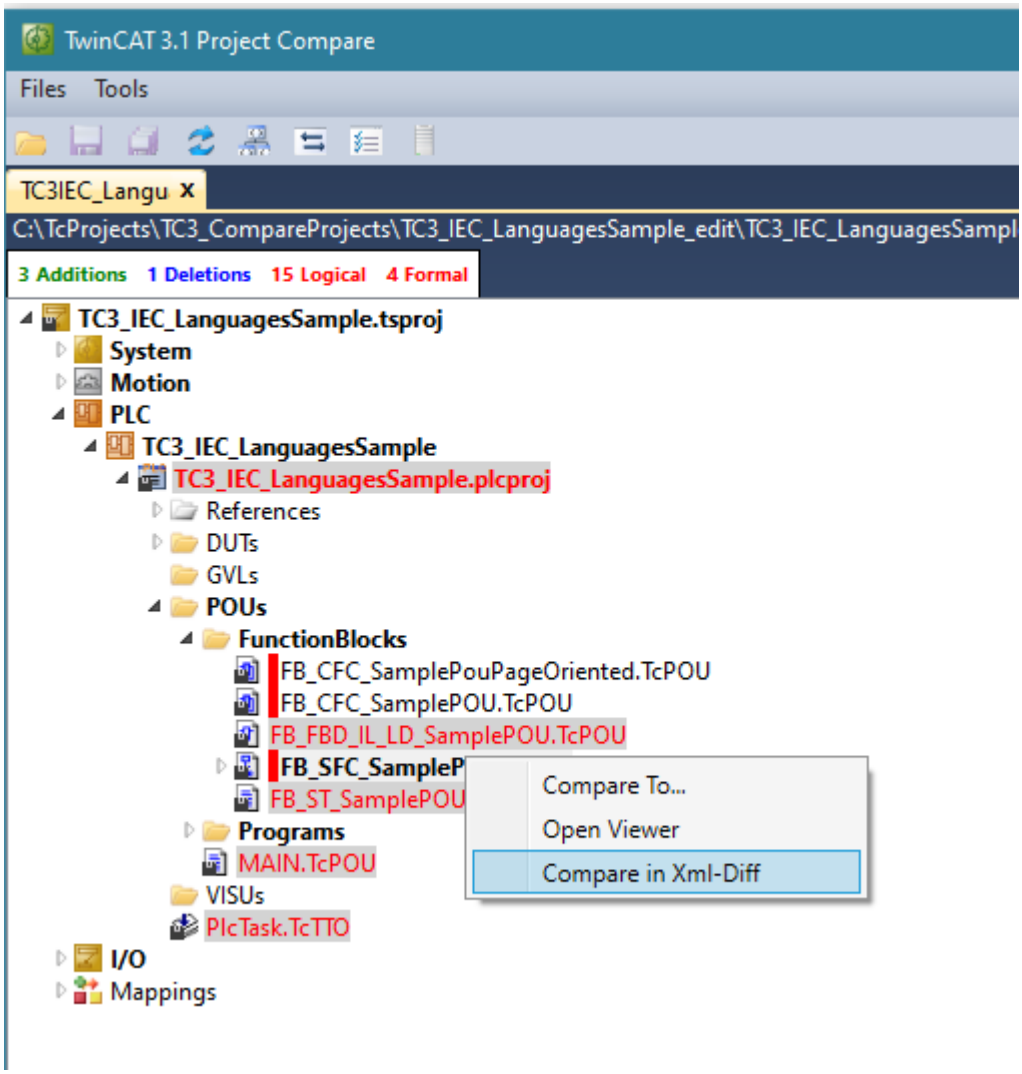
To start the TcProjectCompare in Visual Studio, select the menu item **TwinCAT -> TcProjectCompare**.



For TwinCAT versions prior to 3.1.4024.0, use the menu item **View -> Other Windows -> TcProjectCompare**.

XML comparison of TwinCAT objects

All TwinCAT files are stored as XML files on the hard disk. If only formal changes have been made to a file (marked by the vertical red bar in front of the POU name), these changes are not recognizable in a comparison using the PLC editor. Formal changes are, for example, changed GUIDs of individual objects or changed LineIDs (required for breakpoint handling). These changes can only be made visible with an Xml comparison. To do this, open the context menu of the TwinCAT object (by right-clicking) and select the option **Compare in Xml-Diff**.



3.1 Starting the Project Compare tool via the command line

The transfer/command line parameters of the Project Compare tool are described in the section Transfer parameters of the TcProjectCompare [▶ 17]:

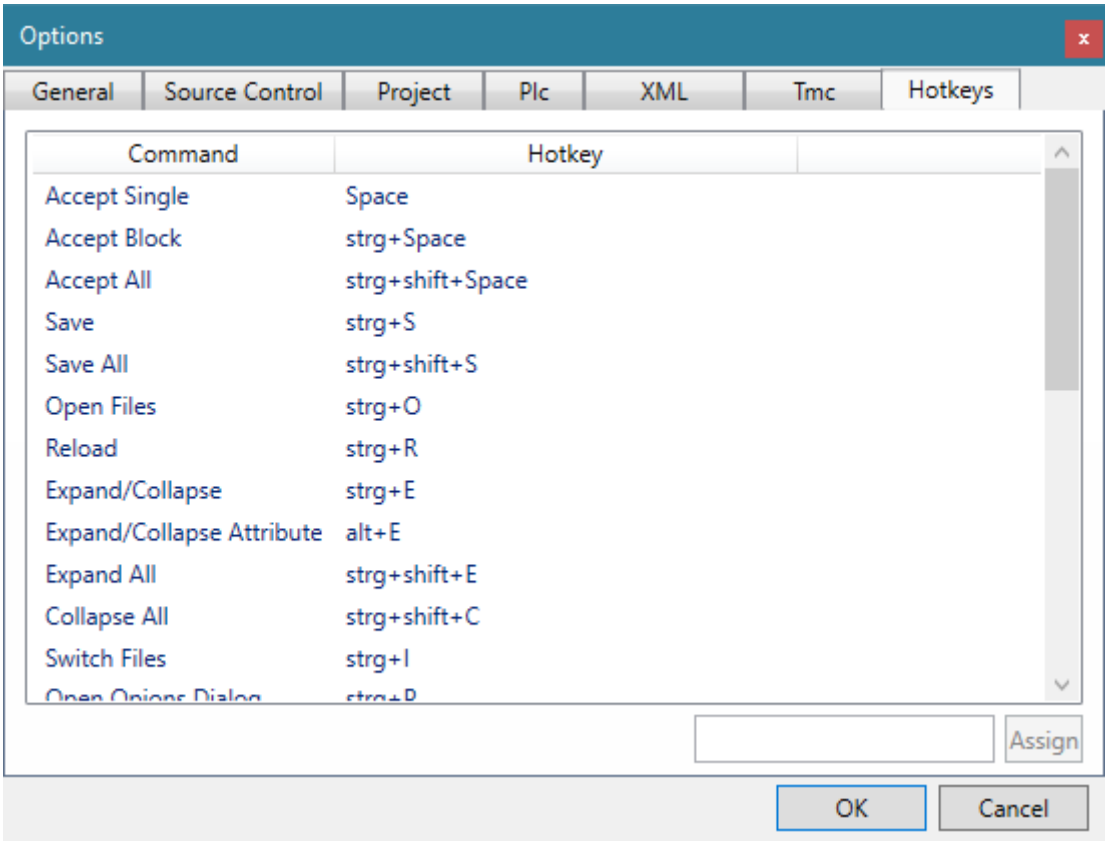
Sample: The command line call for a comparison with the TcProjectCompare of version 4020 or newer therefore looks like this:

```
C:\TwinCAT\3.1\Components\TcProjectCompare\TcProjectCompare.exe /filel <Datei linke Seite> /filer <Datei rechte Seite>
```

Optionally, the title that is to be displayed for the left or right side of the comparison window can be transferred with the option `/dl` or `/dr` respectively.

3.2 Defining the shortcuts

The TcProjectCompare can be operated via the keyboard with the help of shortcuts. These can be viewed and adapted on the **Hotkeys** tab of the options.



Defining/changing shortcuts:

1. Open the Options dialog via the menu command **Tools** -> **Options…**
2. Select the **Hotkeys** tab.
3. Select the command for which you wish to change the key command.
4. Jump to the selection box in front of the **Assign** button with a mouse click or using the Tab key.
5. Actuate the desired shortcut.
   ⇨ The shortcut is entered in the selection box.
6. Confirm your selection by clicking on **OK** or select a further command for which you wish to change the shortcut.

4 Configuration of the TcProjectCompare for use with source control

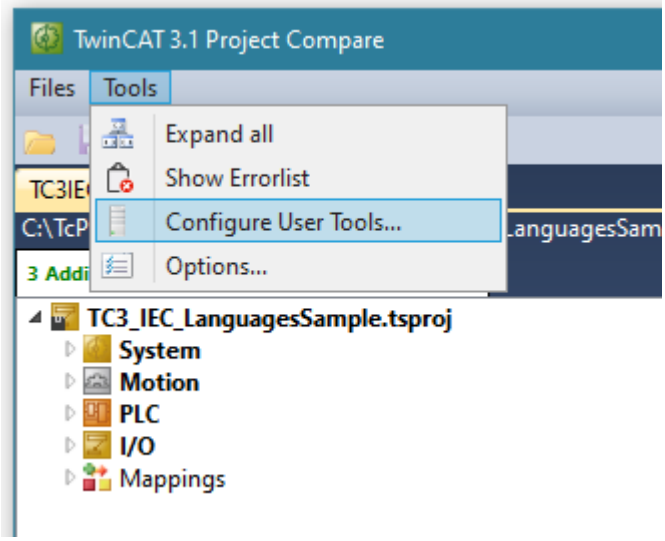
The configuration of the TcProjectCompare can be generated from the software for use with some of the most frequently used source control clients. At the moment, these are the following clients:

- Microsoft Team Foundation Server
- Git
- AnkhSVN

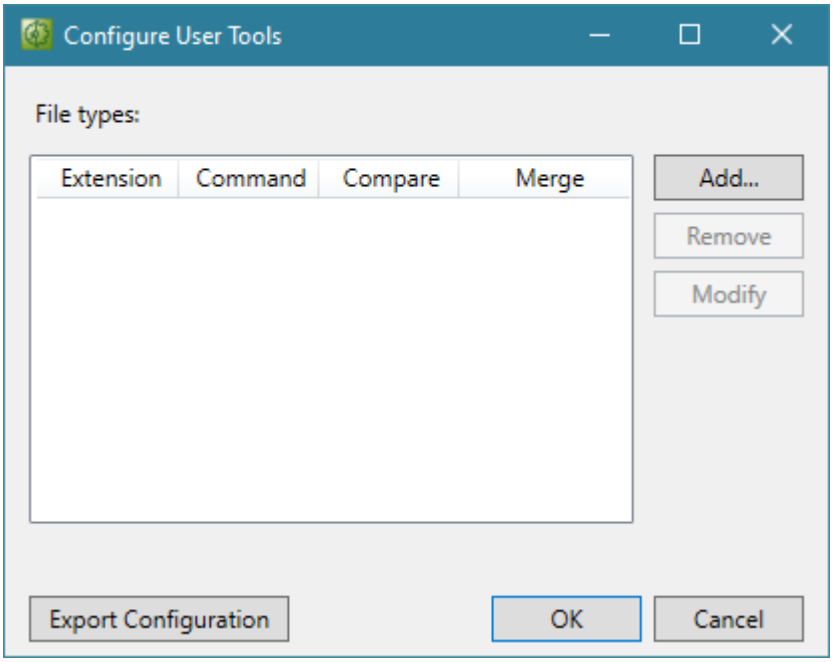
Generating the configuration of these clients

To generate the settings for one of the source control clients listed above, proceed as follows:

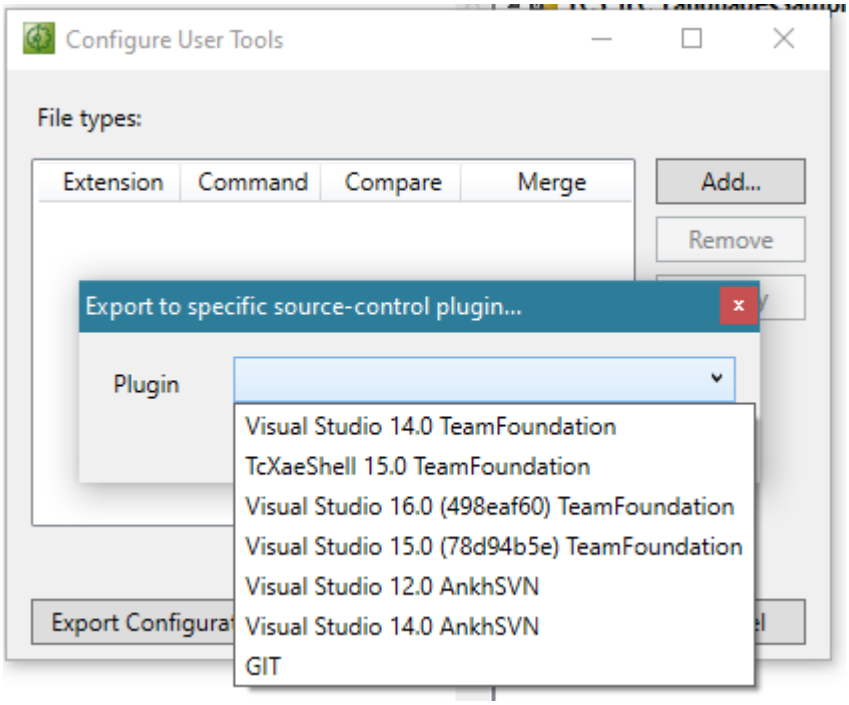
1. Open TcProjectCompare**.**
2. Select the menu **Tools** -> **Configure User Tools....**



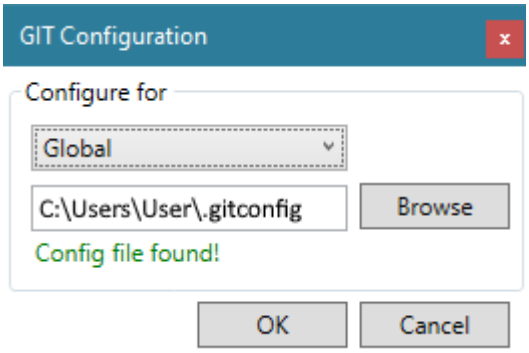
3. Click on **Export Configuration.**



4. In the following dialog, select the source control client for which the settings are to be generated from the selection box.



5. In case Git is the source control client, you can select in the following dialog whether you want the settings for the selection of the Compare Tool used to be saved globally or for the specific project. If you save them for the specific project, select the *.gitconfig* file from your local repository. Then confirm your selection with **OK**.



⇨ The configuration has been created.

Configuring other source control clients:

If you use a source control client that is not listed above, you must configure the use of the TcProjectCompare in the respective source control client. To do this, use the transfer parameters listed in the section Transfer parameters of the TcProjectCompare [▶ 17].

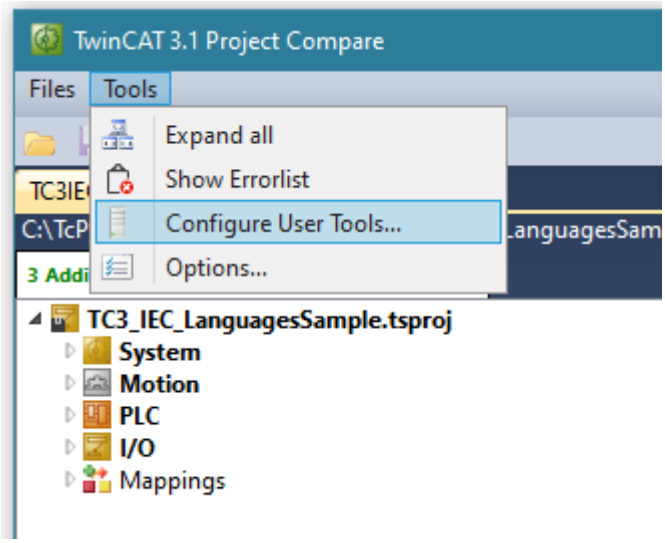
Dealing with non-TwinCAT flies

Some clients only allow a general compare/merge tool for all file extensions. For this reason the TwinCAT Project Compare tool offers the option to define further compare tools for special file extensions.

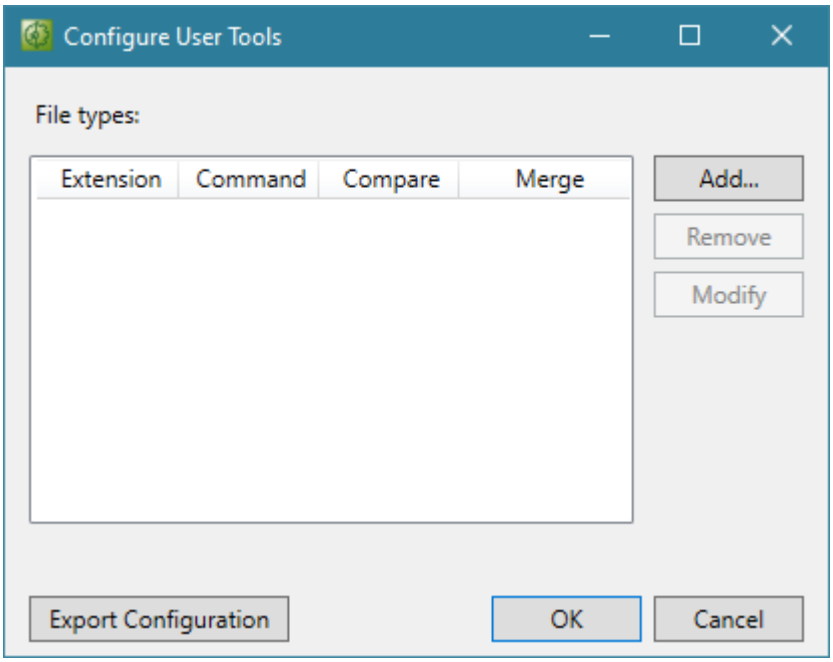
Setting an external compare tool for file extensions:

1. Open the TcProjectCompare.

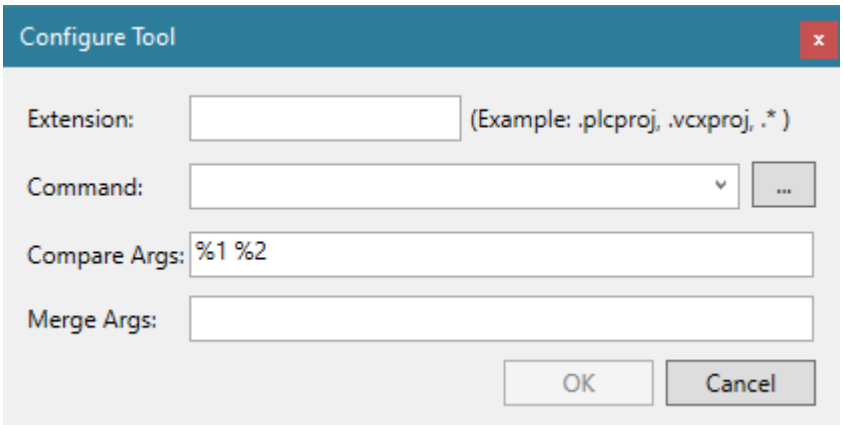
2. Select the menu **Tools** -> **Configure User Tools....**



3. Click on **Add**.



4. In the following dialog describe which file extension is used, which tool is to be called (**Command** line) and which transfer parameters are required for compare or merge. Confirm the settings with **OK**.



4.1 Transfer parameters of the TcProjectCompare

Since not all special features of the various clients can be dealt with here, the transfer parameters of the TwinCAT Project Compare Tools are briefly described below:

Transfer parameters for TwinCAT version 4020 or higher:

/filel	File path – left side.
/filer	File path, right side.
/filem	File path for the merged file.
/dl	Display name, left side.
/dr	Display name, right side.
/sc	Call via source control client.

Transfer parameters for TwinCAT versions 4018 or lower:

	File path – left side.
	File path, right side.
	File path of merged file.
/dl	Display name, left side.
/dr	Display name, right side.
/sc	Call via source control client.

In Project Compare tool version or lower 4018 the file paths for the left, right and merged file were determined based on the order in which they are called. The order was always left, right, merged file.

Samples:

Compare (Compare/Diff):

Version 4018 for PlasticSCM:

```
C:\TwinCAT\3.1\Components\TcProjectCompare\TcProjectCompare.exe
"@destinationfile" "@sourcefile" /sc
```

Version 4018 for TFS:

```
C:\TwinCAT\3.1\Components\TcProjectCompare\TcProjectCompare.exe %2 %1 /dl %7 /dr
%6 /sc
```

Version 4020 for TFS:

```
C:\TwinCAT\3.1\Components\TcProjectCompare\TcProjectCompare.exe /filel %2 /filer
%1 /dl %7 /dr %6 /sc
```

Merge:

Version 4018 for PlasticSCM:

```
C:\TwinCAT\3.1\Components\TcProjectCompare\TcProjectCompare.exe /dl
"@destinationsymbolic" /dr "@sourcesymbolic" "@destinationfile" "@sourcefile"
"@output" /sc
```

Version 4018 for TFS:

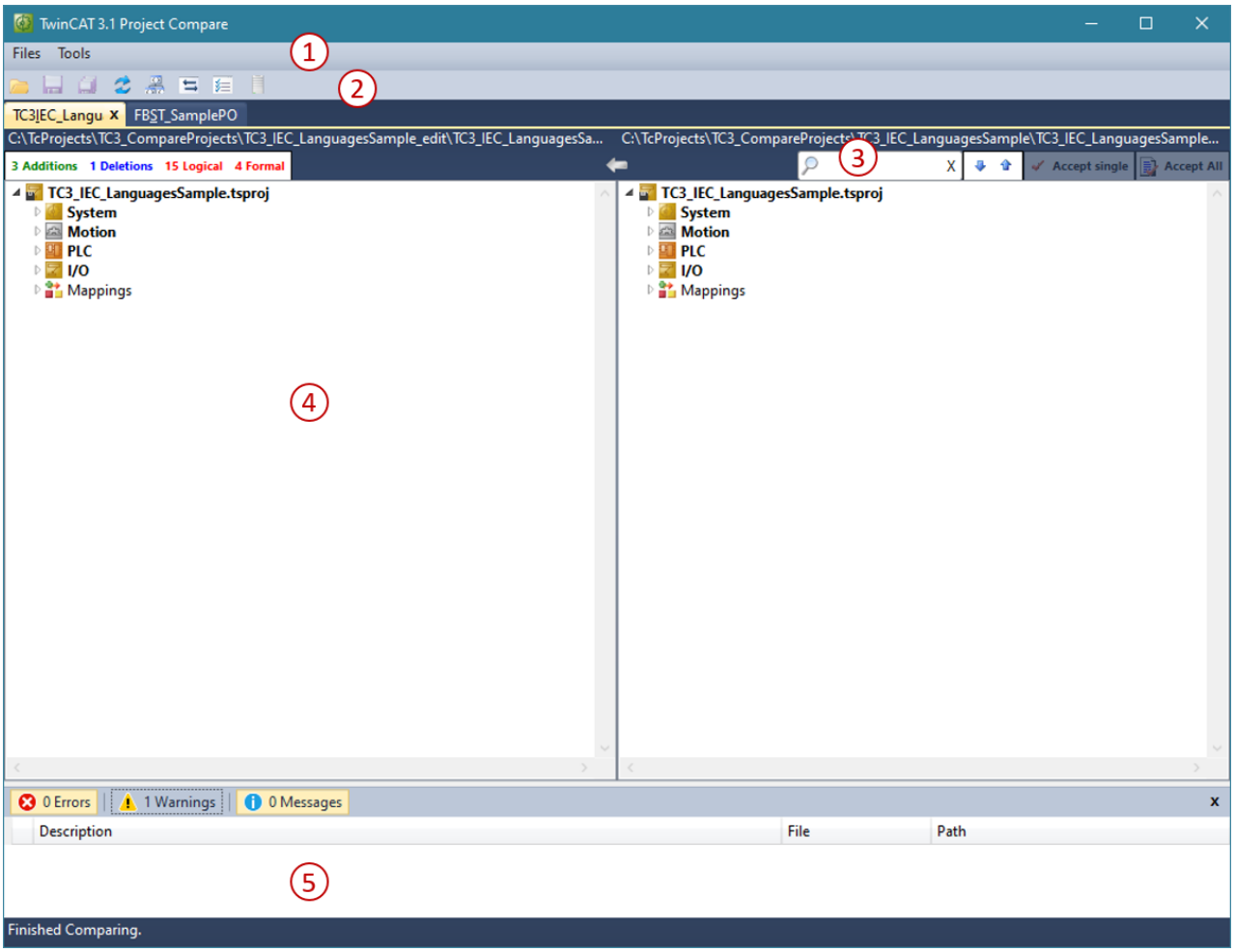
```
C:\TwinCAT\3.1\Components\TcProjectCompare\TcProjectCompare.exe %2 %1 %4 /dl
%7 /dr %6 /sc
```

Version 4020 for TFS:

```
C:\TwinCAT\3.1\Components\TcProjectCompare\TcProjectCompare.exe /filel %2 /filer
%1 /filem %4 /dl %7 /dr %6 /sc
```

5 Reference, user interface

The user interface of the TwinCAT Project Compare Tool consists of the following components:



1	Menu bar
2	Toolbar
3	Toolbar of the comparison windows
4	Comparison window
5	Error list

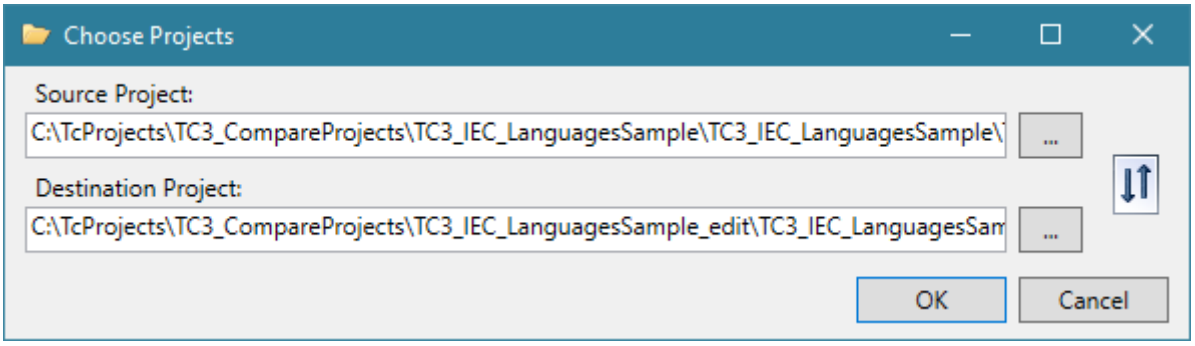
5.1 Menu bar

5.1.1 Files

Choose Files...

Function: This command opens a dialog in which you can select the two files to be compared.

Call: Menu **Files**-> **Choose Files**



Merging of files is only possible in one direction

In the TcProjectCompare, the merging of contents is only possible from the right-hand comparison window to the left-hand comparison window. The files must therefore be selected accordingly. If you wish to change the merging direction, swap the files using the command **Switch Files**.

Save All

Function: The command saves all changes in all opened comparison windows.

Call: Menu **Files** -> **Save all**

Reload

Function: This command reloads the two files to be compared (e.g. after some changes have been made and saved).

Call: Menu **Files** -> **Reload**

Switch Files

Function: This command swaps the files in the two comparison windows. In other words, the file previously opened in the left-hand comparison window will be opened in the right-hand comparison window and vice versa.

Call: Menu **Files** -> **Switch Files**

Exit

Function: This command terminates the TcProjectCompare.

Call: Menu **Files** -> **Exit**

5.1.2 Tools

Expand all

Function: This command expands the complete tree view in the TcProjectCompare.

Call: Menu **Tools** -> **Expand all**

Show Error List

Function: This command shows the **Error List** window, in which the errors and warnings of the TcProjectCompare are displayed.

Call: Menu **Tools** -> **Show Error List**

Error list is only selectable in stand-alone mode

If the TcProjectCompare is displayed integrated in Visual Studio, the Visual Studio error list is used.

Configure User Tools...

Function: This command opens the **Configure User Tools…** dialog (see Configure User Tools [▶ 26]).

Call: Menu **Tools** -> **Configure User Tools…**

Options...

Function: This command opens the **Options** dialog (see Options [▶ 27]).

Call: Menu **Tools** -> **Options**

5.2 Toolbar

The toolbar of the TcProjectCompare provides the following commands:

	Select the two files to be compared.
	Save the changes in the current comparison window.
	Save all outstanding changes.
	Reload the two files to be compared.
	Expand the complete tree.
	Swap the sides of the two files to be compared.
	Open the **Options** dialog (see Options [▶ 27]).
	Open the **Configure User Tools…** dialog (see Configure User Tools [▶ 26]).

5.3 Comparison window

The results of the comparison of the two projects/files are displayed in the comparison windows. There are three different comparison views, which are explained below. If the comparison of single files has been initiated (e.g. by command line or via the source control client), the corresponding comparison window opens directly. If two TwinCAT projects have been selected for comparison, the TcProjectCompare starts with the comparison windows of the TwinCAT 3 project (see TwinCAT3 project comparison window [▶ 21]).

Handling the status information in the comparison windows:

The status information for the current comparison is located on the left-hand side of the toolbar in the comparison windows. It indicates how many additions, deletions and changes have been found. It always refers to a comparison starting from the left-hand side, as that is the side in which contents are merged.

Example of the status display after a comparison:

Starting from this example, this would be:

- No contents, which are present on the left-hand side, but not on the right-hand side.
- One entry that is present on the right-hand side, but not (yet) on the left-hand side.
- Once change in an entry

In the comparison editors, the changes are displayed in the same colors as the status bar, so that it can immediately be seen whether an addition, deletion or change is concerned.

NOTE

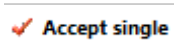
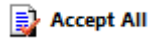
Unwanted deletion of contents when accepting additions

Additions show changes that exist on the left-hand side, i.e. on the side on which merging is to take place. Since this is the side that is currently being edited, the contents are mostly new contents of its own. However, the merging (acceptance of changes) refers to the right-hand side of the comparison window. This may contain changes by third parties or in comparison with old project versions. Since merging takes place from the right-hand side to the left-hand side, the non-existence on the right-hand side of the comparison window is therefore accepted when accepting an addition. In other words, the content of an addition is deleted upon acceptance.

5.3.1 TwinCAT3 project comparison window

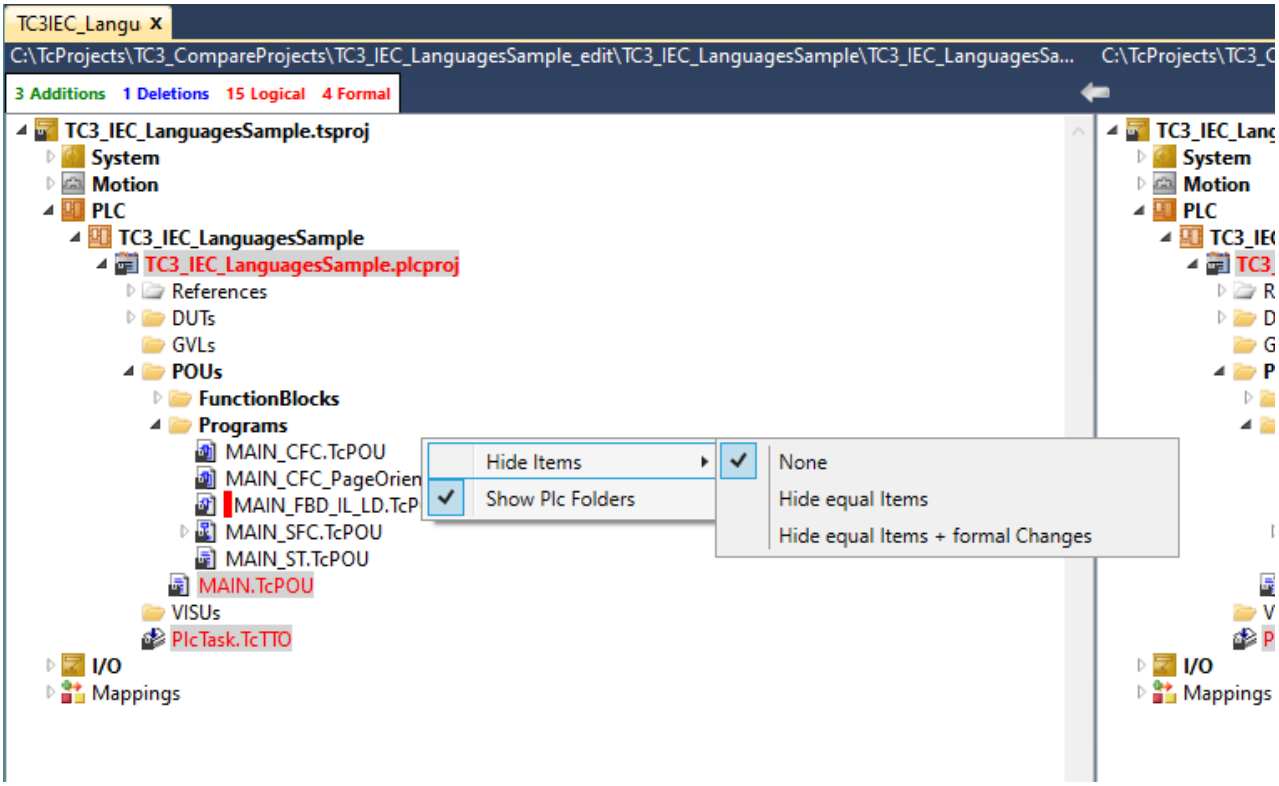
A distinction is made in the comparison window of the TwinCAT3 project between logical (content) and formal changes. In the case of logical changes, the name of the item is displayed in red. These are changes that relate to the behavior of the machine/plant. Formal changes are indicated by a vertical red bar in front of the item name. These are changes that are important for the project handling, but have no meaning for the project in terms of content. One example of formal changes is the LineIDs. These are required to assign code lines within a POU to binary code positions of the generated runtime module. They are required to display breakpoints set in a POU in the right positions, even after code changes that do not require recompilation (e.g. comment lines or empty lines). Formal changes cannot be displayed in the PLC comparison windows; therefore, they have to be compared (if need be) in the XML comparison windows.

Toolbar in the comparison editor of the TwinCAT3 project:

Additions	Number of newly added elements.
Deletions	Number of elements to be deleted.
Logical	Number of content changes (only in the TwinCAT3 project comparison window).
Formal	Number of formal changes (only in the TwinCAT3 project comparison window).
	Shows the direction in which merging takes place.
	Search box for searching for components/entries. Available in the comparison editors of the TwinCAT3 project and the XML comparison.
	Jump to the next change.
	Jump to the previous change.
	Accept selected change.
	Accept all changes.

Context menu in the comparison window of the TwinCAT tree:

Context menu on a free area in the comparison editor of the TwinCAT project



Hide Items	Opens the submenu **Hide Items.**
Hide Items -> None	Selection: Do not hide any items.
Hide Items -> Hide equal items	Selection: Hide equal items.
Hide Items -> Hide equal items + formal Changes	Selection: Hide equal items and items with only formal changes.
Show Plc Folders	Selection: Show PLC folders.

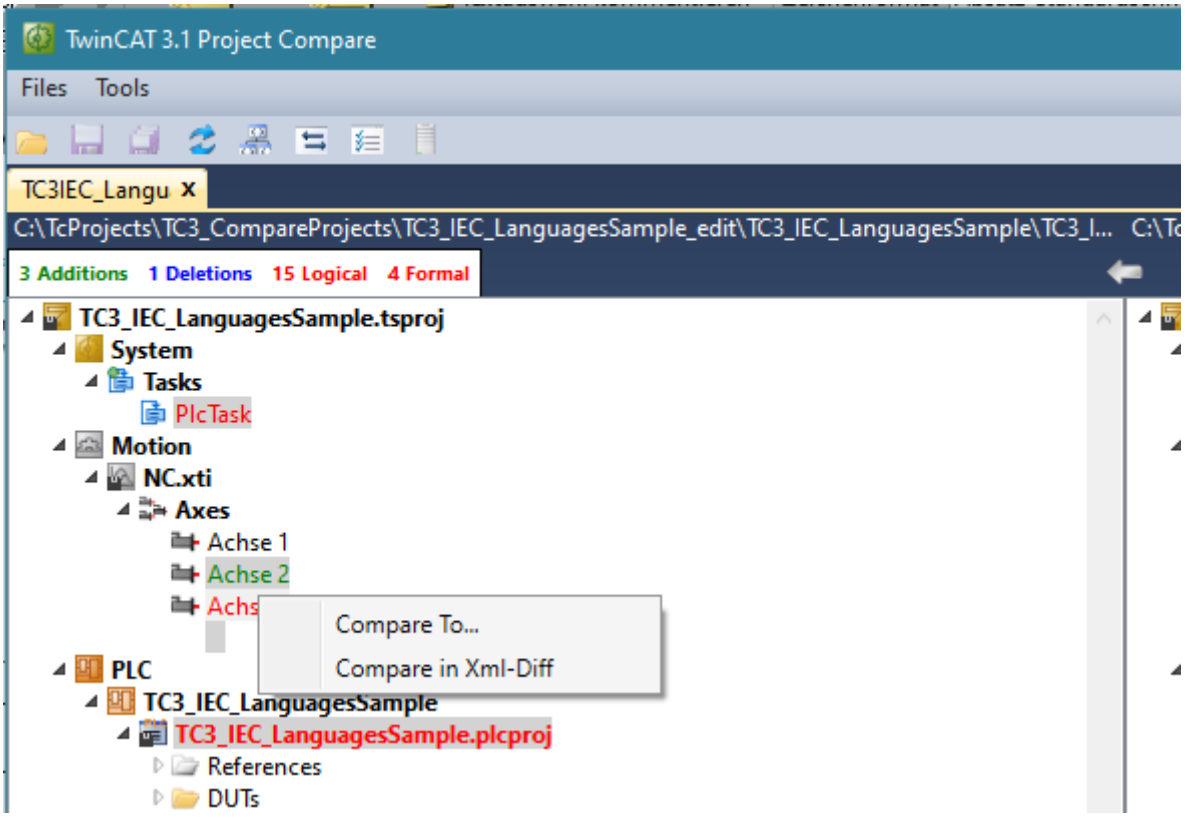
With the help of the option **Show Plc Folders**, you can set whether the POUs are to be compared in the existing folder structure of the PLC or in an alphabetically sorted flat list. The comparison using the folder structure thus displays a change for POUs that are identical in terms of content and form, even if they are located in different folders of the PLC.

Since these POUs are not "opposite" one another in the comparison windows, they are not compared in terms of content, but displayed as **Addition** and **Deletion** at the respective points. The content comparison can be initiated with the option **Compare To…** (see TwinCAT3 project comparison window [▶ 23]). However, since this assignment has to take place manually for every POU pair located in different places within the PLC folder structure, the comparison can also be initiated in a flat, alphabetically sorted list by deactivating the option **Show Plc Folders**. In order to merge all changes (content, formal and structural) it may therefore be useful to compare a project with the option **Show Plc Folders** switched on and also with it switched off.

Changes when switching over the option Show Plc Folders are not recognized without a Reload

Since the displayed status information and thus the determined changes relate to the last successful comparison, it is necessary to reload the project after switching over the option **Show Plc Folders**. Otherwise a POU that has remained the same both content-wise and formally will nevertheless be recognized as changed if it is contained in two different folders.

Context menu at a node in the TwinCAT project tree

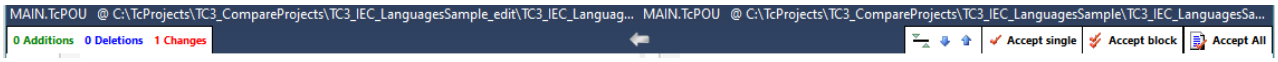


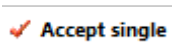
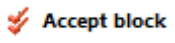
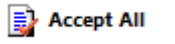
Compare To…	Manual assignment to an object to be compared.
Compare in Xml-Diff	Comparison using the XML comparison.

If objects or sub-projects are renamed in the course of the project, they are displayed in the TcProjectCompare as **Addition** or **Deletion** respectively. A content or formal comparison does not take place. In order to be able to compare these objects or sub-projects with each other despite that, it is possible to force a manual assignment/manual comparison with the option **Compare To…**.

5.3.2 PLC comparison window

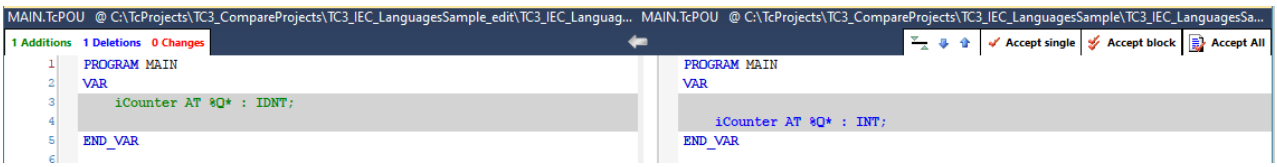
Toolbar in the comparison editors:



Additions	Number of new elements to be added.
Deletions	Number of elements to be deleted.
Changes	Number of changes (only in the comparison editors of the PLC and XML comparison).
	Shows the direction in which merging takes place.
	Amend comparison of changes (oppose changes).
	Jump to the next change.
	Jump to the previous change.
	Accept selected change.
	Accept all changes of the selected block.
	Accept all changes.

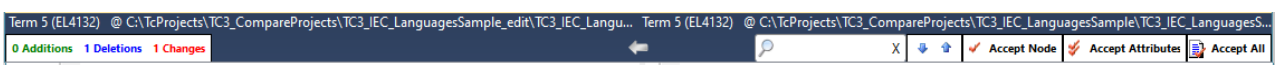
If code lines are not to be directly compared, it is possible to display these code lines with an offset on both sides by activating the option **Oppose Changes**. This makes it possible to accept the change on the right-hand side of the comparison window without overwriting the code line on the left-hand side of the comparison window.

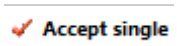
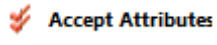
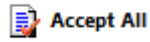
Sample: Display of a code line with the function **Oppose Changes** activated.



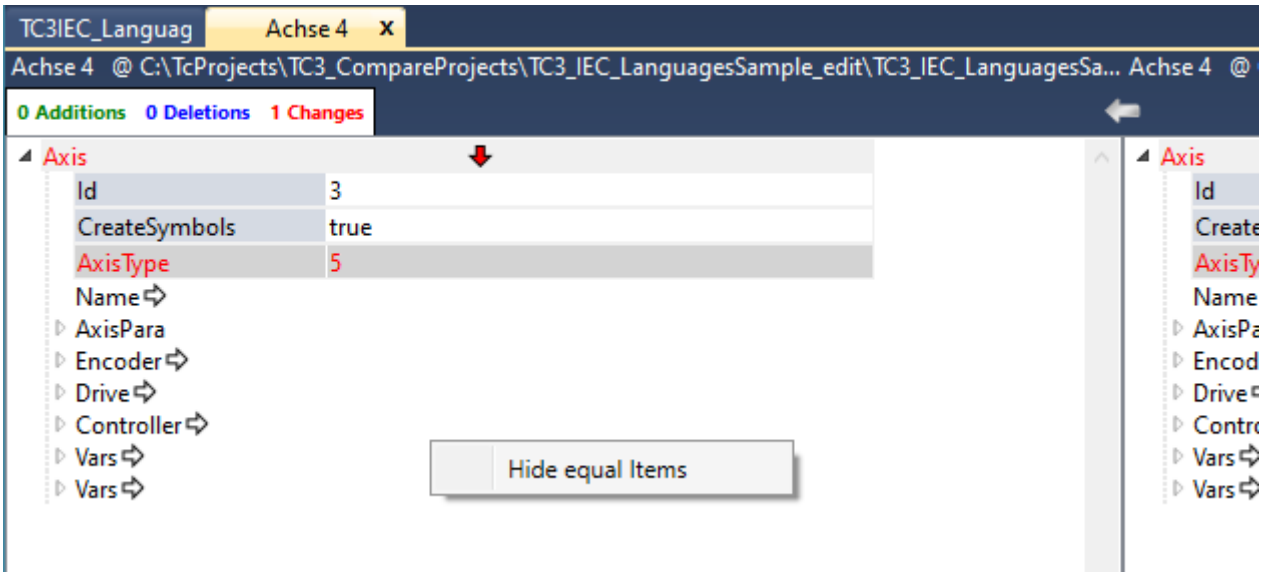
5.3.3 XML comparison window

Toolbar in the comparison editors:



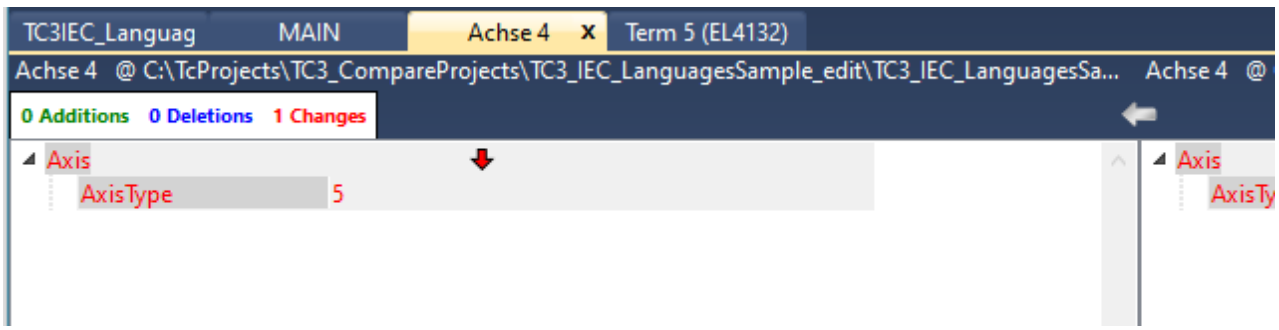
Additions	Number of new elements to be added.
Deletions	Number of elements to be deleted.
Changes	Number of changes (only in the comparison editors of the PLC and XML comparison).
	Shows the direction in which merging takes place.
	Search box for searching for components/entries; available in the comparison editors of the Twin CAT3 project and XML comparison.
	Jump to the next change.
	Jump to the previous change.
	Accept selected change.
	Accept all changes to the attributes of the selected node.
	Accept all changes.

Context menu on a free area in the Xml comparison editor



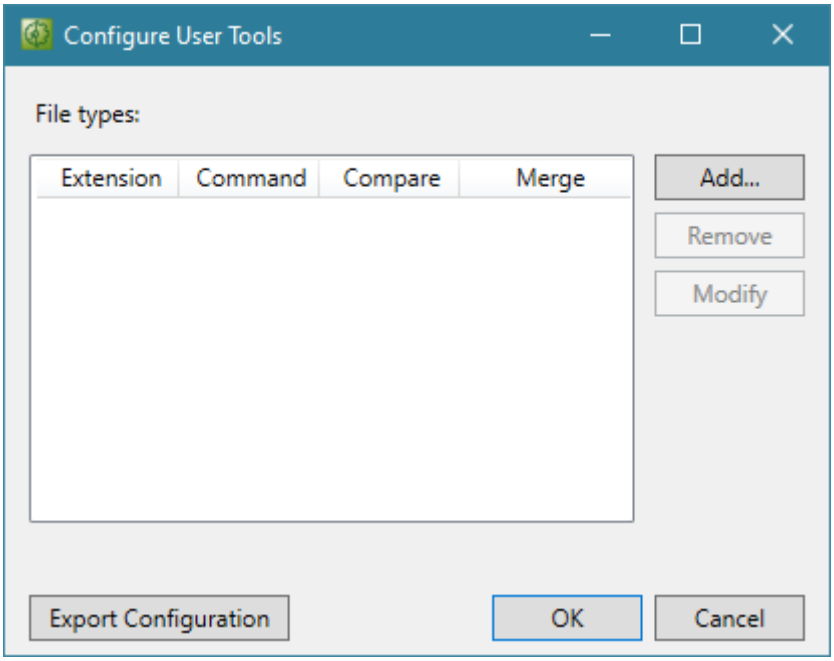
Hide equal Items	Hide all equal items.

Sample: Display with option **Hide equal Items** activated.



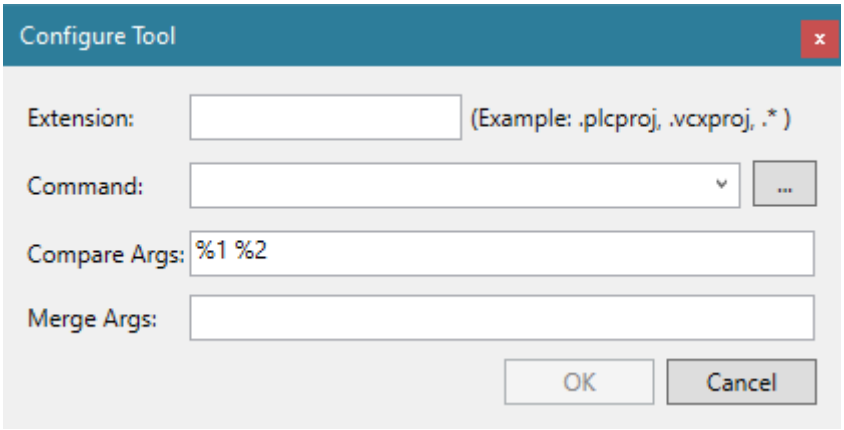
5.4 Configure User Tools

The windows and options of the dialog **Configure User Tools…** are described below. The specific procedure to set the TcProjectCompare or the source control clients can be found in the chapter Configuration of the TcProjectCompare for use with source control [▶ 14].



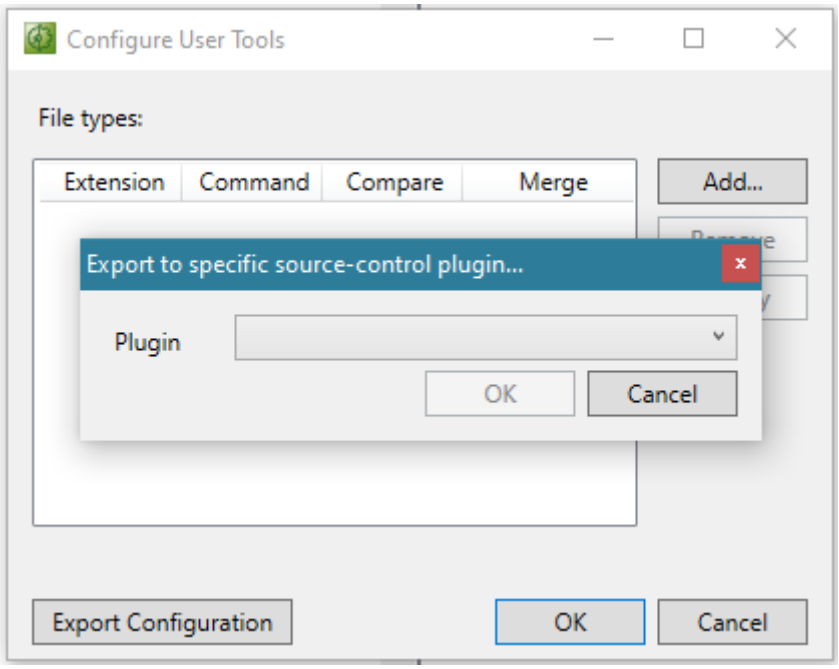
Add…	Add a file type for forwarding to an external comparison tool (see Configure User Tools [▶ 26]).
Remove	Delete a file type.
Modify	Edit the settings for a file type.
Export Configuration	Export the configuration for the TcProjectCompare for a source control client (see Configure User Tools [▶ 27]).
OK	Confirm the settings made.
Cancel	Cancel and discard the settings made.

Add file type dialog



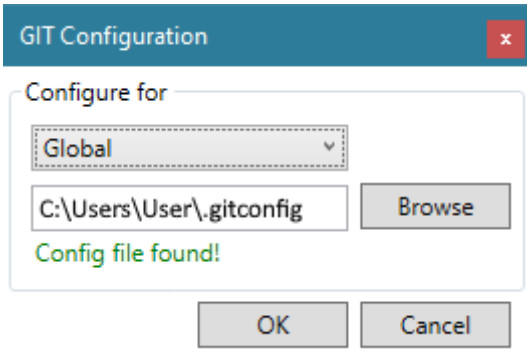
Extension	File extension of the file type.
Command	Selection of the comparison tool to be called (path to *.EXE* file).
Compare Args	Command line parameters of the comparison tool for a comparison.
Merge Args	Command line parameters of the comparison tool for merging.

Export Configuration Dialog



Selection box	Selection box for selecting a source control client.
OK	Confirm the selection.
Cancel	Cancel and discard the selection.

Git Configuration Dialog



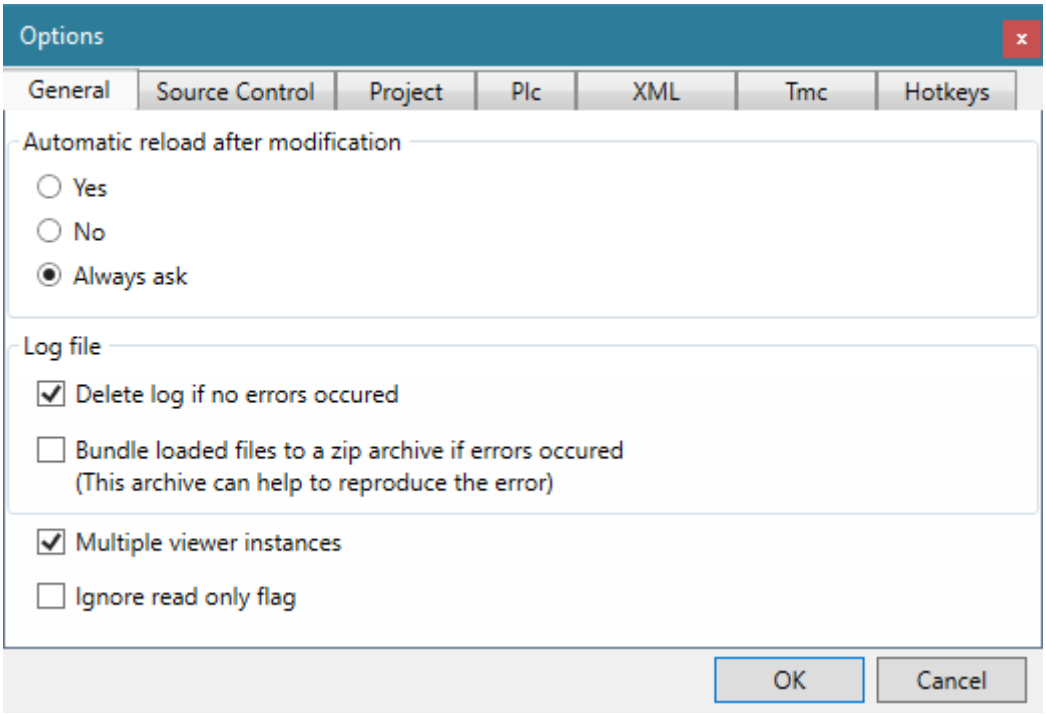
Selection box *Global* / *Specific Project*	Choice between global and project-specific configuration.
Selection box for the .gitconfig file	Selection of the gitconfig file of a local repository.
OK	Confirm the selection.
Cancel	Cancel and discard the selection.

5.5 Options

Further options for adapting the TcProjectCompare tool to your specific requirements are available under **Tools** -> **Options**. These options are described in the following sub-chapters.

5.5.1 General tab

General settings of the TcProjectCompare are stored on the **General** tab.



In the area **Automatic reload after modification**, you can set whether the file/project should be reloaded after a change.

Yes	Reloads both files after each change.
No	Does not carry out an automatic reload.
Always ask	Following a change, asks whether a reload should be carried out.

You can set the logging for the TcProjectCompare in the **LogFile** area:

Delete log if no error occurred	Deletes all log files if no error has occurred.
Bundle loaded files to a zip archive if error occurred	In the case of an error, the loaded files and the log files are stored as a ZIP archive.

The log files of the TcProjectCompare are stored in the folder *%TWINCAT3DIR%Components\TcProjectCompare\LastLog*.

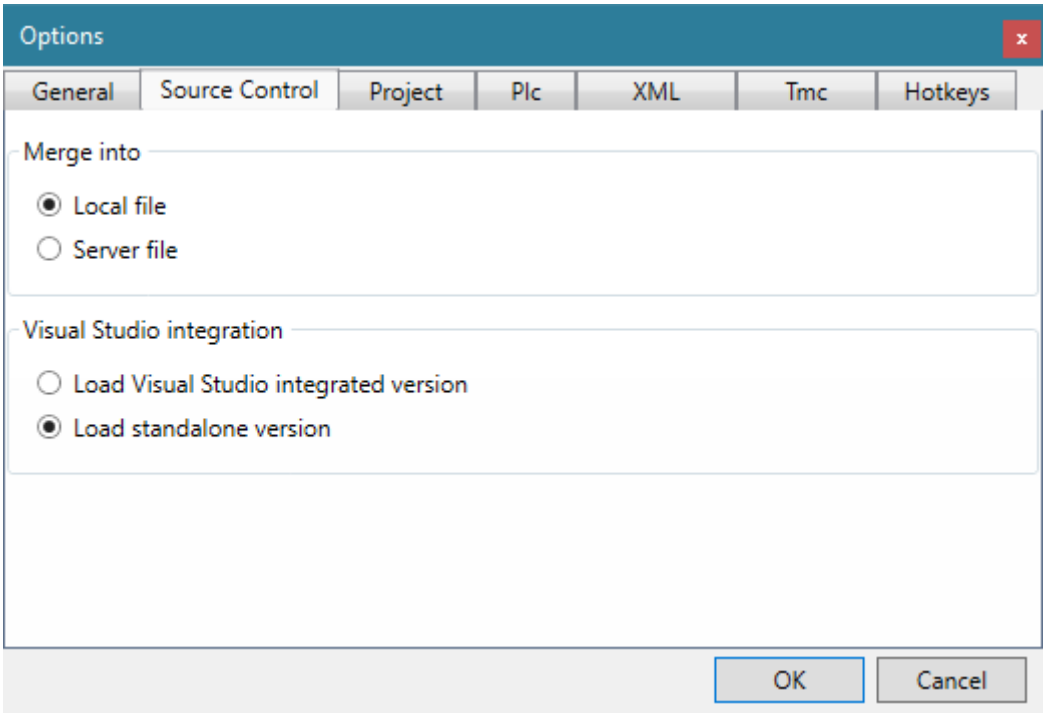
Further general settings:

Multiple viewer instances	Allows several instances of the individual comparison windows (with the exception of the TwinCAT3 project comparison window).
Ignore read only flag	Ignores the read-only flag when saving.

If projects or files that are subject to source control handling are compared with one another, it can be the case – depending on the source control client – that files that are not checked out are read-only. These files can be merged despite that by activating the option **Ignore read only flag**. However, they won't automatically be checked out!

5.5.2 Source Control tab

All properties of the TcProjectCompare that are important in the case of a call by a source control client are displayed on the **Source Control** tab.



In the **Merge into** area you can specify whether merging takes place into the local file or into the server file in the case of a call by a source control client. Since the TcProjectCompare can only merge from the right-hand side to the left-hand side, this setting specifies which side of the comparison window the local and server files are loaded into.

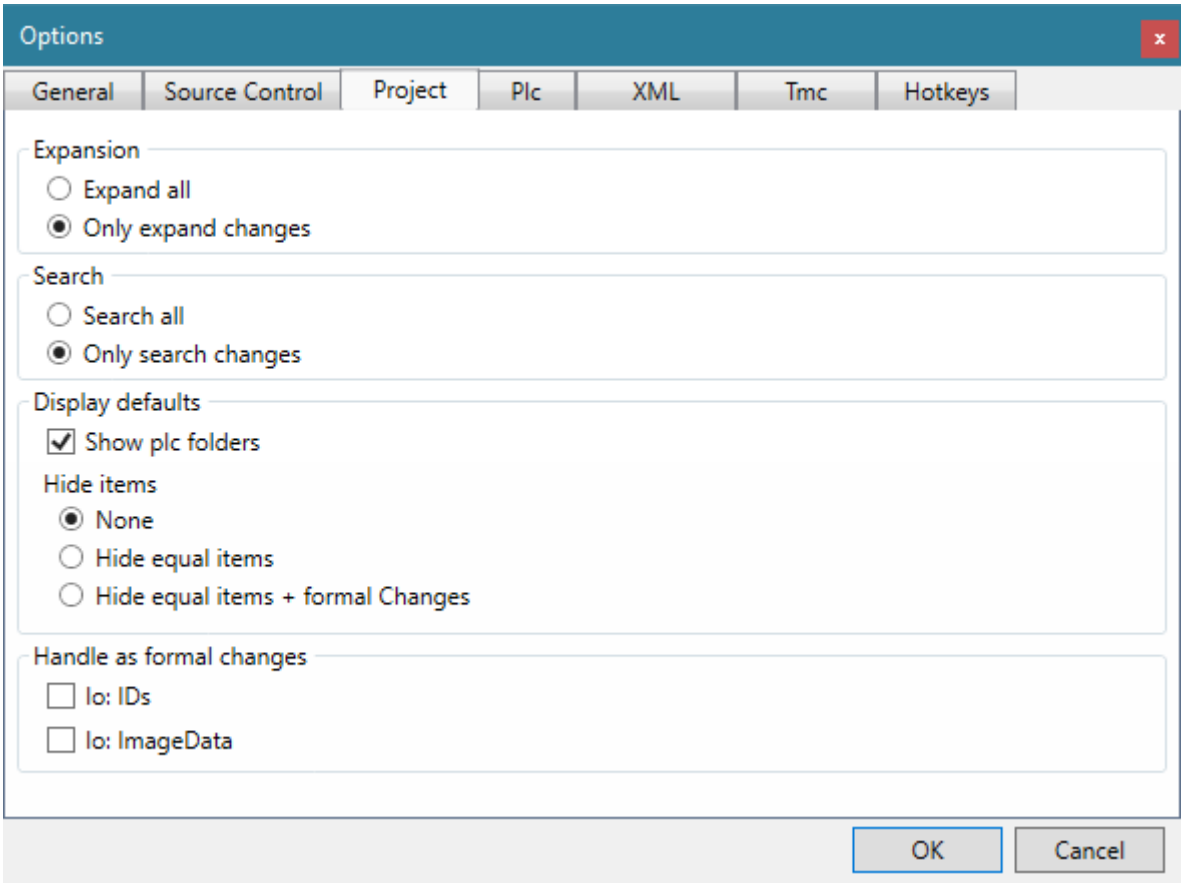
Local file	Merge into the local file; the local file is loaded into the left-hand comparison window.
Server file	Merge into the server file; the server file is loaded into the left-hand comparison window.

Under **Visual Studio Integration** you can specify whether TcProjectCompare is to be used in stand-alone mode or integrated in Visual Studio. The latter option is only available from TwinCAT version 3.1 build 4020 or higher.

Load Visual Studio integrated version	Opens the version of the TcProjectCompare that is integrated in Visual Studio.
Load standalone version	Opens the stand-alone version of the TcProjectCompare.

5.5.3 Project tab

All settings that are important in the TwinCAT3 project comparison window are listed on the **Project** tab.



In the **Expansion** area you can specify whether the complete tree or only the parts containing changes are expanded when opening a project file.

Expand all	All elements are expanded.
Only expand changes	Only the changes are expanded.

In the **Search** area you can specify whether search queries within the TcProjectCompare include only the changed elements or all elements.

Search all	All elements are searched.
Only search changes	Only changes are searched.

In the **Display Defaults** area you can define the default values for the options **Show Plc Folders** and **Hide Items**.

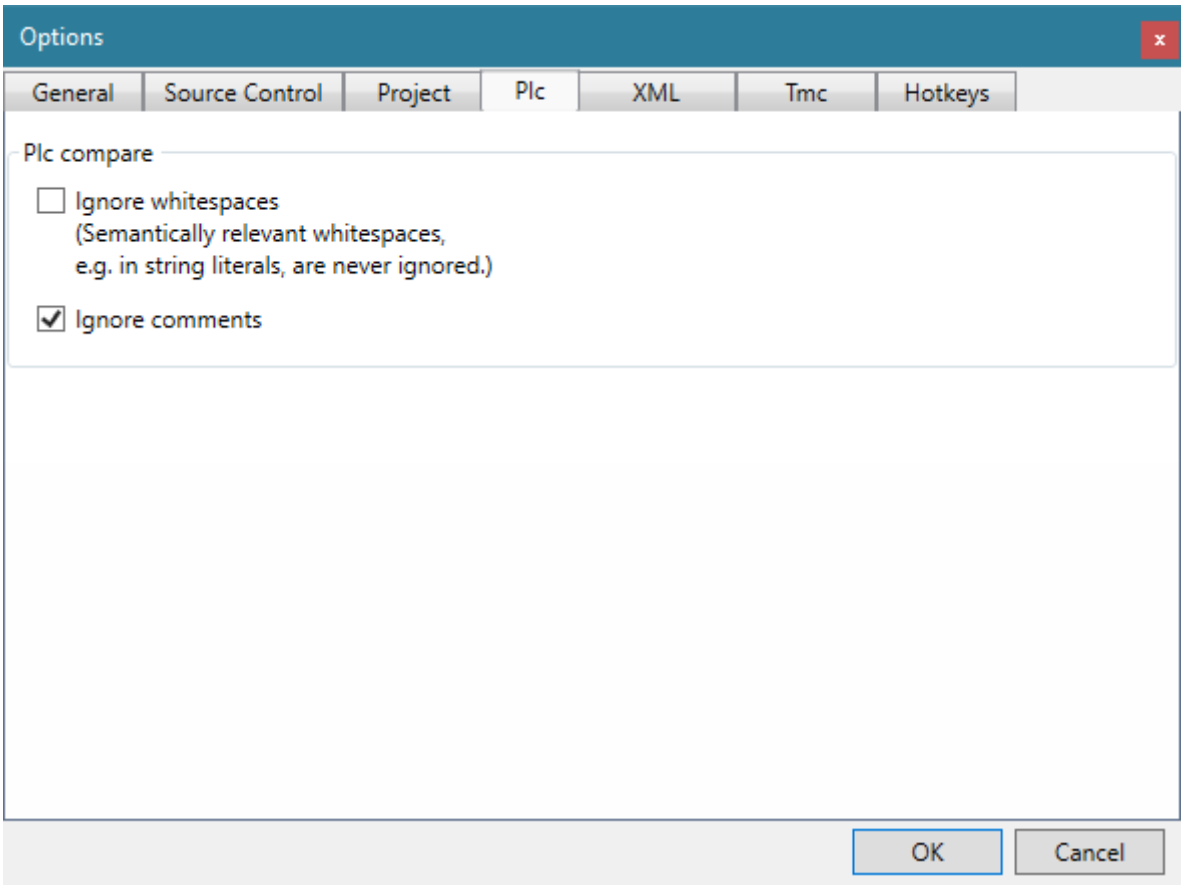
Show Plc Folders	Display the PLC folder structure.
Hide Items -> None	No items are hidden.
Hide Items -> Hide equal items	Equal items are hidden.
Hide Items -> Hide equal items + formal Changes	Equal items and formal changes are hidden.

In the **Handle as formal changes** area, you can specify what are regarded as formal changes.

Io:IDs	In the TwinCAT I/O node, all changes to the IDs of the sub-items are displayed as formal changes.
Io:ImageData	In the TwinCAT I/O node, all changes to the ImageData (the images displayed in the tree) are displayed as formal changes.

5.5.4 Plc tab

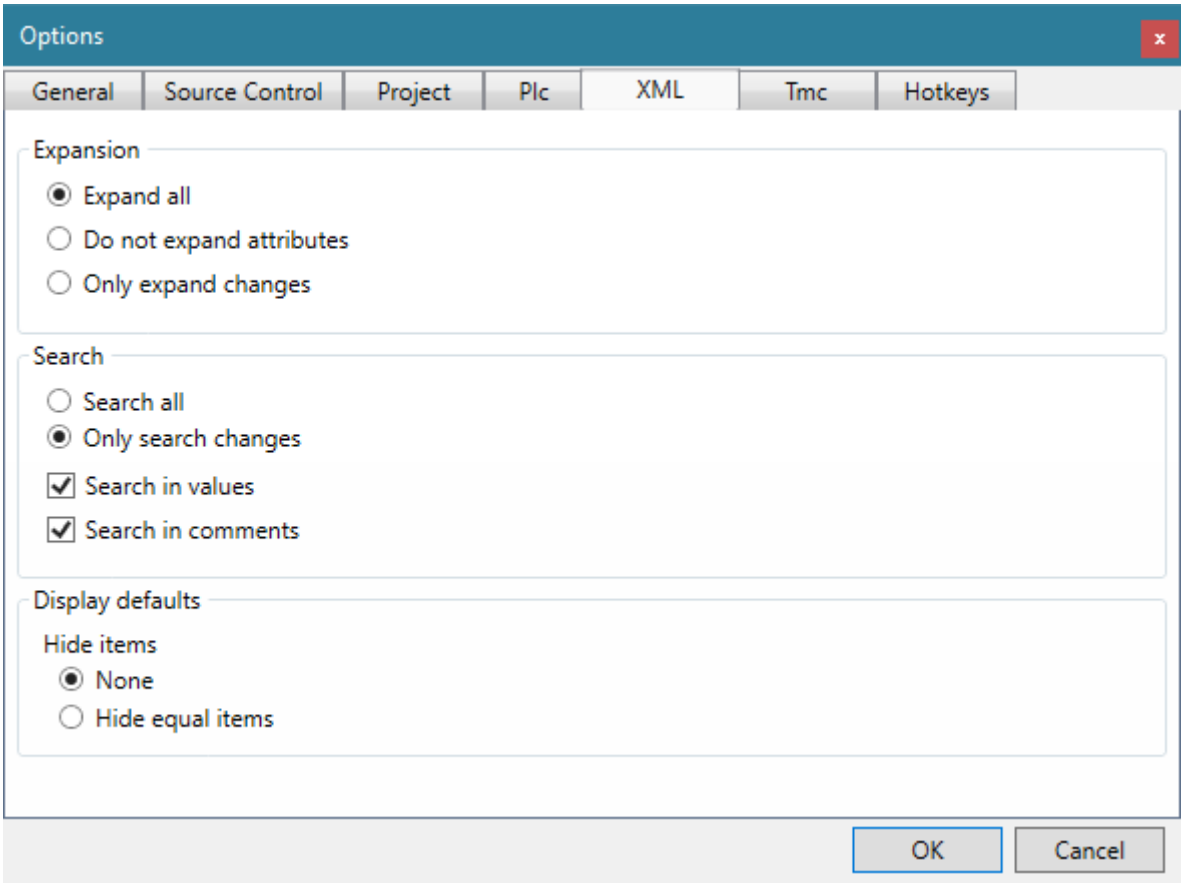
All settings that are important in the PLC comparison window are displayed on the **Plc** tab.



Ignore whitespaces	Spaces (with the exception of semantically relevant spaces) are ignored in the comparison.
Ignore comments	Comments are ignored in the comparison.

5.5.5 Xml tab

All settings that concern the XML comparison window are displayed on the **XML** tab.



Under **Expansion** you can specify whether the whole tree is expanded or only the parts containing modifications when an XML file is opened.

Expand all	Expands the complete XML tree.
Do not expand attributes	Expands the complete XML tree, but no attributes.
Only expand changes	Only expands the changes.

Under **Search** you can specify whether search queries within the TcProjectCompare tool apply only to the modified elements or all elements, and whether the search should also include the values or comments of the XML elements.

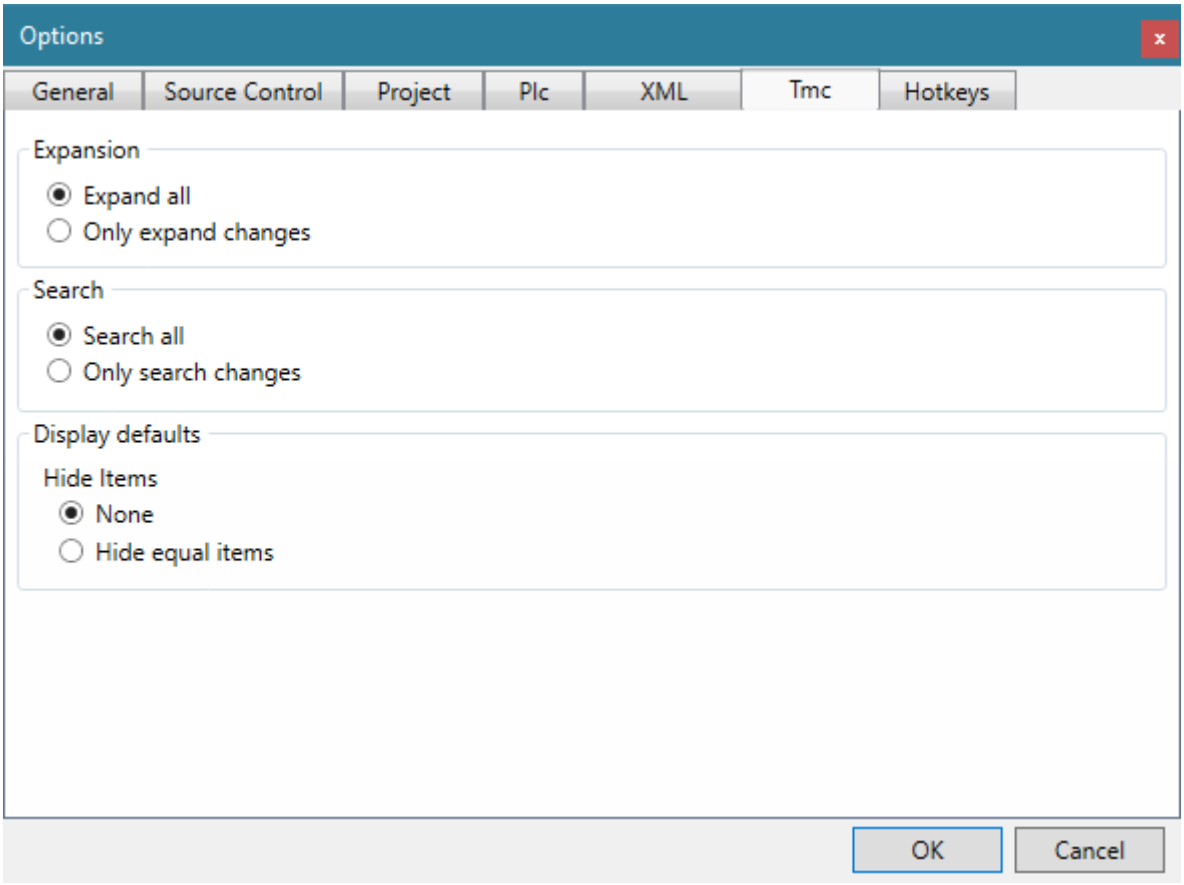
Search all	Search all Xml nodes.
Only search in changes	Search only Xml nodes with changes.
Search in values	Also search the values in Xml nodes.
Search in comments	Also search the comments of the Xml items.

The default settings when opening an Xml comparison window are defined in the **Display Defaults** area.

None	All items are displayed.
Hide equal Items	Hides all equal items.

5.5.6 Tmc tab

All settings that concern the comparison of TMC files are displayed on the **TMC** tab.



Under **Expansion** you can specify whether the whole tree is expanded or only the parts containing modifications when an TMC file is opened.

Expand all	Expands the complete TMC tree.
Only expand changes	Only expands the changes.

In the **Search** area you can specify whether search queries within the TcProjectCompare should include only the changed items or all items.

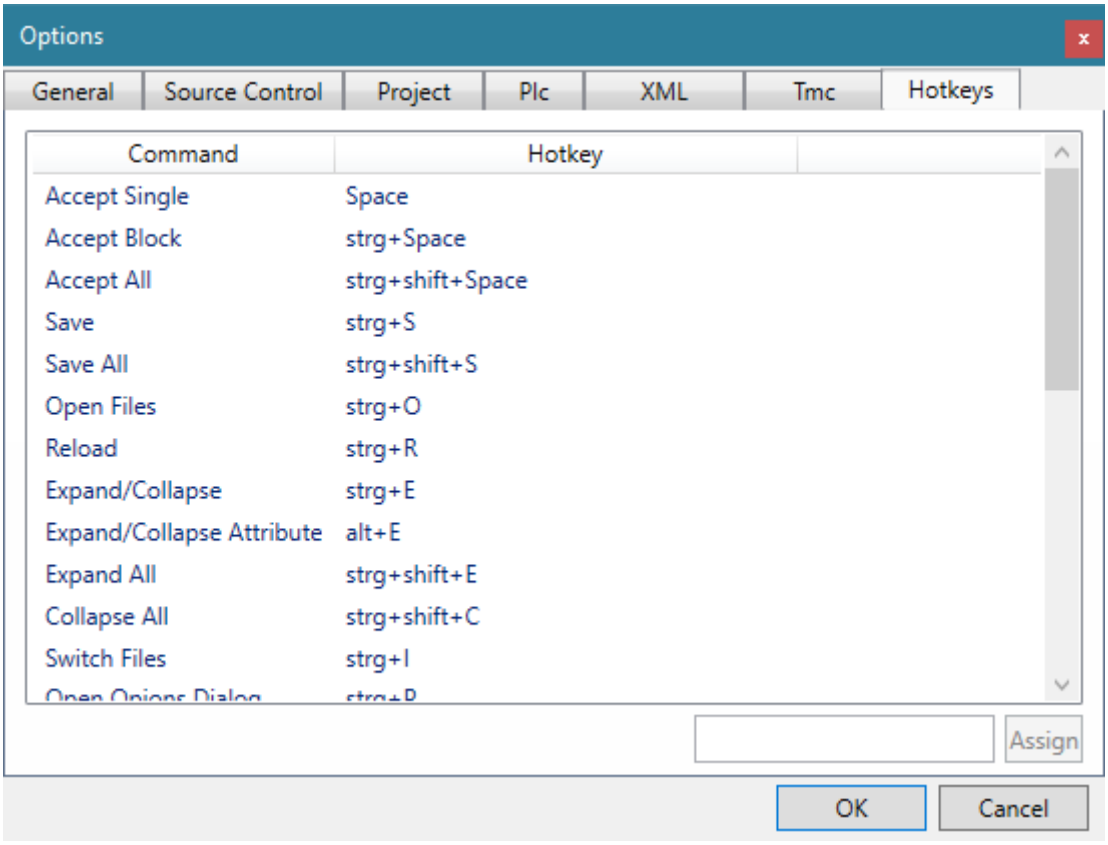
Search all	Search all TMC nodes.
Only search in changes	Search only TMC nodes with changes.

The default settings when opening an TMC comparison window are defined in the **Display Defaults** area.

None	All items are displayed.
Hide equal Items	Hides all equal items.

5.5.7 Hotkeys tab

Shortcuts for the operation of the TcProjectCompare with the keyboard can be defined on the **Hotkeys** tab.



Assign	Assigns the selected shortcut to the selected command.
OK	Confirm the selection.
Cancel	Cancel and discard the changes.

5.6 Error list

All errors and messages of the TcProjectCompare are displayed in the **Error List** window.

Clear	Deletes the entries in the **Error List** window.

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