SIEMENS

SIMATIC Project Generator

Parameter Manual

03/2016

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Preface

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About this document

Objective

This manual describes the commands of the XML interface available with the ProjectGenerator.
The ProjectGenerator is an extension to the SIMATIC system.

The manual is an addition to the SIMATIC standard documentation.

Note

This document does not claim to contain all details on devices in any version or to take all conceivable operational cases and applications into account.

Should you require further information or encounter specific problems not covered in enough detail for your field of application, please contact your local Siemens office.

Target group

This document is intended for programmers.

Table of contents

Command overview

1

1.1 Templates and examples

Templates for XML files

Detailed and executable templates for XML files are supplied with the project generator and can be used as a copy template or as an orientation aid for your own expansions.

Example

The following extract from the *Communication_LCom.XML* standard module provides an overview of the interaction of the individual commands in an XML description file.

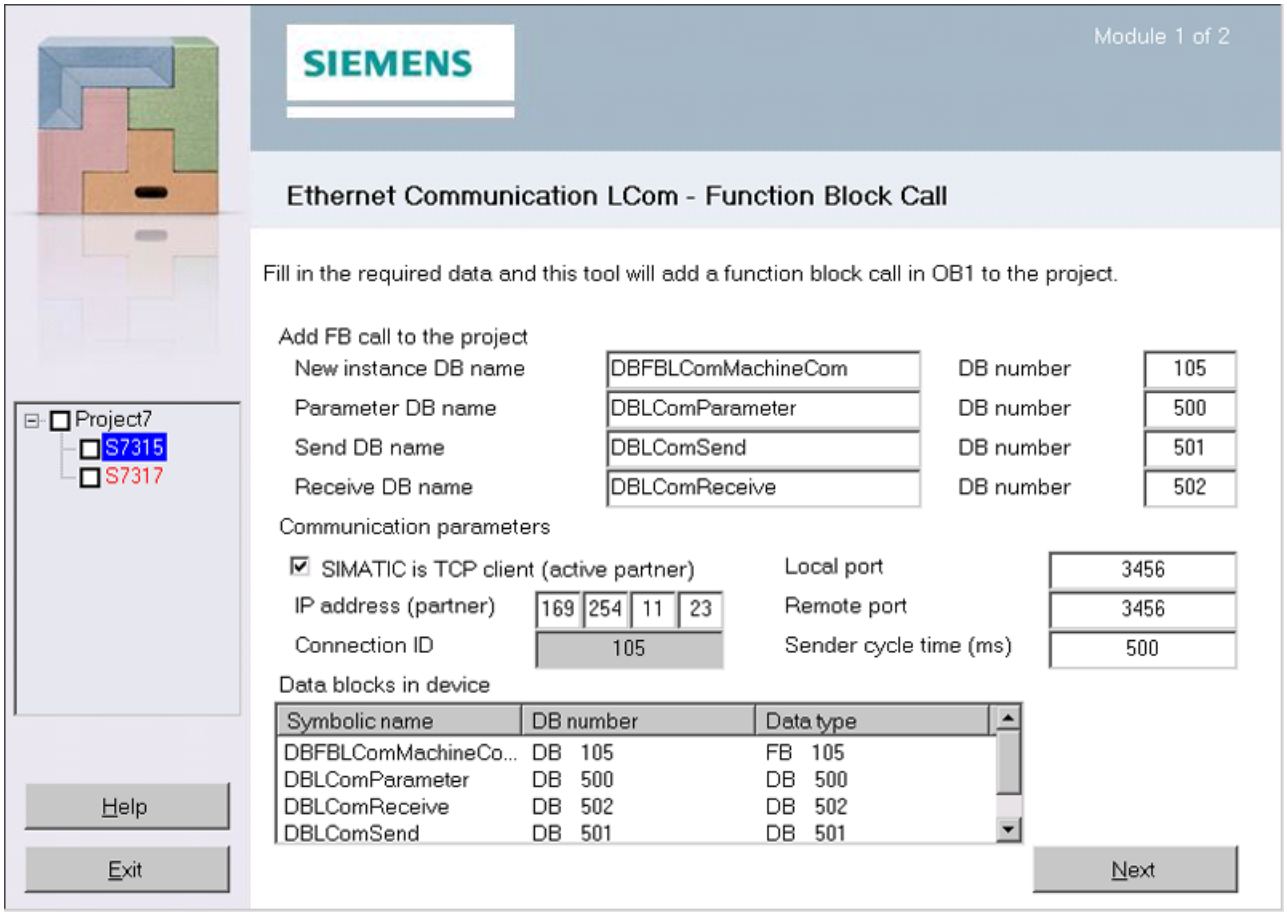
Table 1- 1 Extract from the XML description file of the *LCom* standard module

```
<CommandList Name="FBLComMachineCom"
    DisplayText="Use Ethernet Communication LCom"
    ModulInfoFile="SIMATIC\EquipmentModules\Communication_LCom\
                   LCom_Ethernet_Communication_Library_for_SIMATIC_V1_1.pdf">
    <Command ID="1" Name="ChangeForm">
    <Control Action="add"
             Type="Button"
             Name="BT_Exit"
             Text="Exit"
             Location="12, 531"
             Size="130, 30"
             Enabled="true"
             Visible="true"
             ToolTip="Abort this program">
         <Events>
             <Click code="MyApp.NextCommand(0)"/>
         </Events>
    </Control>
    ...
```

Table 1- 2 Continuation of extract from the XML description file of the *LCom* standard module

```
 <Control Action="add"
         Type="Button"
         Name="BT_Help"
         Text="Help"
         Location="12, 491"
         Size="130, 30"
         Enabled="true"
         Visible="true"
         ToolTip="Show help information">
     <Events>
         <Click code="MyApp.NextCommand(9)"/>
     </Events>
</Control>
<Control Action="add"
         Type="Label"
         Name="LBL_Head_Info"
         Text="Ethernet Communication LCom - Function Block Call"
         Location="173, 110"
         AutoSize="true"
         BackColor="__call_SetColor(Transparent)">
</Control>
<Control Action="add"
         Type="Label"
         Name="LBL_Info"
         Text="Fill in the required data and this tool will add a function block
               call in OB1 to the project."
         Location="160, 160"
         Size="600, 30"
         AutoSize="false"
         BackColor="__call_SetColor(White)">
</Control>
<Control Action="add"
         Type="Label"
         Name="LBL_ProjectName"
         Text="Project name"
         Location="175, 200"
         AutoSize="true"
         BackColor="__call_SetColor(White)">
</Control>
   ...
```

If the example is completed further (as shown in the executable supplied file *Communication_LCom.XML*), the project generator screenshot for the example appears as follows:


SIEMENS
Module 1 of 2
Ethernet Communication LCom - Function Block Call
Fill in the required data and this tool will add a function block call in OB1 to the project.
Add FB call to the project
New instance DB name
DBFBLComMachineCom
DB number
105
Parameter DB name
DBLComParameter
DB number
500
Send DB name
DBLComSend
DB number
501
Receive DB name
DBLComReceive
DB number
502
Communication parameters
SIMATIC is TCP client (active partner)
IP address (partner)
169 254 11 23
Connection ID
105
Local port
3456
Remote port
3456
Sender cycle time (ms)
500
Data blocks in device
Symbolic name
DB number
Data type
DBFBLComMachineCo...
DB 105
FB 105
DBLComParameter
DB 500
DB 500
DBLComReceive
DB 502
DB 502
DBLComSend
DB 501
DB 501
Project7
S7315
S7317
Help
Exit
Next

1.2 Overview of parameters

The table below provides an overview of the most important parameters that can be set for the commands in the ProjectGenerator. The parameters are listed together with their meaning, the data type, their possible values, and an example.

Table 1- 3 Overview of the commonly used parameters

Parameter	Meaning	Data type	Possible values	Code example
Action	Specifies the action that is to be executed.	STRING	Add Remove	`Action="add"`
Alignment	Specifies the alignment of the text within the control.	ENUM	Default Left Top SnapToGrid	`Align-ment="HorizontalAlignment.Left"`
AutoSize	Specifies whether the size of the element is to be determined automatically.	BOOL	True False (default)	`AutoSize="true"`
BackColor	Specifies the background color. All colors that are defined in the .Net object *System.Drawing.Color* are possible here (e.g. White, Green, Blue, Red, LightSlateGray, etc.). A transfer of the RGB color codes is not possible.	Is defined via the *SetColor* command.	---	`BackColor="__call _setcolor(Transparent)"`
BlockType	The data block and instance data block types, as well as function and function block, are allowed.	ENUM	DATA_BLOCK/ FUNCTION/ FUNCTION_BLOCK	`BlockType="DATA_BLOCK"`
Checked	Specifies whether the element is activated or not.	BOOL	True False (default)	`Checked="true"`
DropDownStyle	Specifies the display type of the control.	ENUM	Simple DropDown (default) DropDownList	`DropDownStyle = "DropDown-List"`
Enabled	Specifies whether an element can be operated.	BOOL	True (default) False	`Enabled="true"`
FullRowSelect	Specifies whether the whole row is selected.	BOOL	True False (default)	`FullRowSelect="true"`
HideSelection	Specifies whether the selection is hidden when the control loses focus.	BOOL	True False (default)	`HideSelection="false"`
Location	Specifies the position on the user interface (x, y).	INTEGER, INTEGER	0.0	`Location="450,200"`
MultiSelect	Specifies whether multiple row selection is permitted	BOOL	True False (default)	`MultiSelect="false"`

Parameter	Meaning	Data type	Possible values	Code example
Name	Specifies a unique name for the control within the active user interface. The name can also be used for referencing within the newly compiled code.	STRING	---	`Name="LV_Projects"`
Position	Only FIRST and LAST are permitted. If no position is given, the new networks are attached.	ENUM	FIRST/LAST	`Position="first"`
Size	Specifies the size of the control (width, height) if *AutoSize* is not selected.	INTEGER, INTEGER	0.0	`Size="150,13"`
SizeMode	Specifies the display of the picture.	ENUM	Normal (Default) StretchImage AutoSize CenterImage Zoom	`SizeMode = "StretchImage"`
Source	Transfers the content of the control element if this is generated via a system function.	STRING for function call	---	`Source="__call_GetAvailableDeviceVersions"`
Text	Specifies the text which is to be displayed on the element.	STRING	---	`Text="Button1"`
Tooltip	Specifies the text of the tooltip for the element.	STRING	---	`ToolTip="Select the version of the new device"`
Type	Specifies the type of the control.	STRING	Button Label TextBox ListBox ListView RadioButton CheckBox ComboBox Picture	`Type="TextBox"`
VersionsCheckType	EXTERNAL: (two-digit version check): is checked in the version in the block properties. INTERNAL (three-digit version check): the first version ID is searched for in the first comment field of the block and used for the version check.	ENUM	INTERNAL/ EXTERNAL	`VersionCheck-Type="INTERNAL"`

Parameter	Meaning	Data type	Possible values	Code example
View	Specifies the view of the control.	ENUM	LargeIcon (default) Details SmallIcon List Title	`View="Details"`
Visible	Specifies whether an element is visible.	BOOL	True (default) False	

Table 1- 4 Overview of the commonly used parameters for items

Parameter	Meaning	Data type	Possible values	Code example
Items				
Items	Accesses the source input via a reference (@source. …): Select which elements from the system function call are to be selected. All elements from the *Source* parameter are then accepted.	STRING	---	`items="@source.name"`
Name	Elements can be added directly here if no elements have been specified via the *Item* tag.	STRING	---	
SelectedIndex	Specifies the preselection of the current index of the combo box.	INTEGER	0	`SelectedIndex ="0"`

Table 1- 5 Overview of the commonly used parameters for events

Parameter	Meaning	Data type	Possible values	Code example
Events				
CheckedChanged	Is triggered when the state of the element has been changed.	---	----	
Click	This action is triggered by clicking the button.	---	---	`<Click code="MyApp.NextCommand(0)" />`
SelectedIndexChanged	Is called when a different element has been selected within the control.	---	---	`SelectedIndexChanged code="@BT_Next@.Enabled=@LV_Projects@.SelectedItems.Count > 0"`

All events provided by .NET can also be used here.

Table 1- 6 Overview of the commonly used parameters for limits

Parameter	Meaning	Data type	Possible values	Code example
Limits				
DataType	The data type that is to be entered in the text field can be specified here. Because of the default setting, certain characters are hidden and the value checked for validity.	ENUM	OBJECT IPADDRESS BOOL BYTE WORD DWORD INT DINT REAL TIME DATE TOD	`DataType="uint"`
Length	The length can also be limited here for the *Object* data type.	INTEGER	255	`Length="" Min="1" Max=""`
Max	A value can be limited to a maximum value here.	INTEGER	Dependent on the data type	
Min	A value can be limited to a minimum value here.	INTEGER	Dependent on the data type	

Further information on the parameters can be found on the Internet in the Microsoft.NET Framework Class Library (http://msdn.microsoft.com/en-us/library/ff361664.aspx).

The following section contains the descriptions of all controls that can be inserted in the user interface.

1.3 General commands

1.3.1 ChangeForm

The most frequently required properties of the **controls** (**user interface elements**) are described in this section. It is possible to access all properties provided by the *Visual Basic .NET*.

A code, which is generated from the relevant code element of the XML tag during runtime, is transferred to the events of the user interface elements. This means that the code that is required for the execution is only compiled at the respective position and then inserted.

If a reference is required to an active element of the user interface, the element can be accessed via the assigned name. For this purpose however, the @ character must be inserted before and after the name so that the correct reference can be found.

The syntax for the code must comply with *Visual Basic .NET*. The insert sequence for access to elements within a *ChangeForm* command is not relevant (i.e. access to a control can be from the first element (see the example below) directly to the last control.

Example

A checkbox is available on the user interface and the status *Checked* is to be set:

Table 1- 7 Code example

```
Code="@<Name des Controls>@.Checked = True"
```

1.3.1.1 Button

Parameter

Parameter	Meaning
Action	Specifies the action that is to be executed.
Type	Specifies the type of the control.
Name	Specifies a unique name for the control within the active user interface. The name can also be used for referencing within the newly compiled code.
Text	Specifies the text which is to be displayed on the element.
Location	Specifies the position on the user interface (x, y).
Size	Specifies the size of the element (width, height) if *AutoSize* is not selected.
Enabled	Specifies whether an element can be operated.
Visible	Specifies whether an element is visible.
Tooltip	Specifies the text of the tooltip for the element.
AutoSize	Specifies whether the size of the element is to be determined automatically.
BackColor	Specifies the background color.
Events	
Click	This action is triggered by clicking the button.

Example

Table 1- 8 Button code example

```
<Control
    Action="add"
    Type="Button"
    Name="BT_Button1"
    Text="Button1"
    Location="12, 531"
    Size="130, 30"
    Enabled="true"
    Visible="true"
    ToolTip="This is Button1">
    <Events>
        <Click code="MyApp.NextCommand(0)" />
    </Events>
</Control>
```

1.3.1.2 CheckBox

Parameter

Parameter	Meaning
Action	Specifies the action that is to be executed.
Type	Specifies the type of the control.
Name	Specifies a unique name for the control within the active user interface. The name can also be used for referencing within the newly compiled code.
Text	Specifies the text which is to be displayed on the element.
BackColor	Specifies the background color.
AutoSize	Specifies whether the size of the element is to be determined automatically.
Location	Specifies the position on the user interface (x, y).
Checked	Specifies whether the checkbox is activated or not.
Size	Specifies the size of the control (width, height) if *AutoSize* is not selected.
Tooltip	Specifies the text of the tooltip for the element.
Enabled	Specifies whether an element can be operated.
Visible	Specifies whether an element is visible.
Events	
CheckedChanged	Is triggered when the state of the checkbox has been changed.

Example

Table 1- 9 CheckBox code example

```
<Control
    Action="add"
    Type="CheckBox"
    Name="CB_CheckBoxName"
    Text="CheckBox1"
    BackColor="__call_SetColor(Transparent)"
    AutoSize="true"
    Location="200,277"
    Checked="true"
    Size="200,17"
    ToolTip="This is CheckBox1">
</Control>
```

1.3.1.3 ComboBox

Image 1-1 ComboBox

Parameter

Parameter	Meaning
Action	Specifies the action that is to be executed.
Type	Specifies the type of the control.
Name	Specifies a unique name for the control within the active user interface. The name can also be used for referencing within the newly compiled code.
Location	Specifies the position on the user interface (x, y).
DropDownStyle	Specifies the display type of the control.
Size	Specifies the size of the control (width, height) if *AutoSize* is not selected.
Source	Transfers the content of the control element if this is generated via a system function.
Tooltip	Specifies the text of the tooltip for the element.
BackColor	Specifies the background color.
Enabled	Specifies whether an element can be operated.
Visible	Specifies whether an element is visible.
AutoSize	Specifies whether the size of the element is to be determined automatically.
Items	
Name	Elements can be added directly here if no elements have been specified via the *Item* tag.
Alignment	Specifies the alignment of the text within the control.
SelectedIndex	Specifies the preselection of the current index of the combo box.
Items	Accesses the source input via a reference (@source. …): Select which elements from the system function call are to be selected. All elements from the *Source* parameter are then accepted.
Events	
SelectedIndexChanged	Is called when a different element has been selected within the control.

Example

Table 1- 10 ComboBox code example

```
<Control
    Action="add"
    Type="ComboBox"
    Name="CB_Machine_Type "
    Source="__call_GetAvailableMachineTypes('OMAC V3',
            'SIMATIC\EquipmentModules\InterfaceGenerator\InterfaceMachineTypes')"
    DropDownStyle = "DropDownList"
    Location="360, 360"
    Size="180,13"
    ToolTip="="Select the machine type">
    <Items
        Name=""
        Alignment="HorizontalAlignment.Left"
        Items="@source.name">
    </Items>
</Control>
```

1.3.1.4 Label

Parameters

Parameter	Meaning
Action	Specifies the action that is to be executed.
Type	Specifies the type of the control.
Name	Specifies a unique name for the control within the active user interface. The name can also be used for referencing within the newly compiled code.
Text	Specifies the text which is to be displayed on the element.
BackColor	Specifies the background color.
AutoSize	Specifies whether the size of the element is to be determined automatically.
Location	Specifies the position on the user interface (x, y).
Size	Specifies the size of the element (width, height) if *AutoSize* is not selected.
Visible	Specifies whether an element is visible.
Tooltip	Specifies the text of the tooltip for the element.

Example

Table 1- 11 Label code example

```
<Control
    Action="add"
    Type="Label"
    Name="LBL_Label1"
    Text="Label1"
    BackColor="__call_SetColor(Transparent)"
    AutoSize="true"
    Location="173, 110" >
</Control>
```

1.3.1.5 ListBox

Parameter

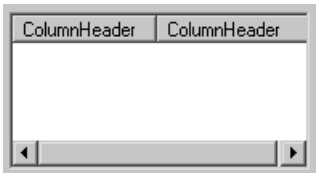
Parameter	
Action	Specifies the action that is to be executed.
Type	Specifies the type of the control.
Name	Specifies a unique name for the control within the active user interface. The name can also be used for referencing within the newly compiled code.
Location	Specifies the position on the user interface (x, y).
Size	Specifies the size of the button (width, height) if *AutoSize* is not selected.
Source	Transfers the content of the control element if this is generated via a system function.
Tooltip	Specifies the text of the tooltip for the element.
Enabled	Specifies whether an element can be operated.
Visible	Specifies whether an element is visible.
AutoSize	Specifies whether the size of the element is to be determined automatically.
BackColor	Specifies the background color.
Text	Specifies the text which is to be displayed on the element.
Events	
SelectedIndexChanged	Is called when a different element has been selected within the control.
Items	
items	Accesses the source input via a reference (@source. …): Select which elements from the system function call are to be selected. All elements from the *Source* parameter are then accepted.

Example

Table 1- 12 ListBox code example

```
<Control Action="add"
             Type="ListBox"
             Name="LB_Blocks_in_device"
             Source="__call_GetSimaticBlocks"
             Location="175, 350"
             Size="110, 100"
             ToolTip="Instance DBs in the selected device">
      <Items Name="Device"
             Size="100"
             Alignment="HorizontalAlignment.Left"
             items="@source.Name">
      </Items>
    </Control>
```

1.3.1.6 ListView



Parameter

Parameter	Meaning
Action	Specifies the action that is to be executed.
Type	Specifies the type of the control.
Name	Specifies a unique name for the control within the active user interface. The name can also be used for referencing within the newly compiled code.
View	Specifies the view of the control.
MultiSelect	Specifies whether multiple row selection is permitted.
FullRowSelect	Specifies whether the whole row is selected.
HideSelection	Specifies whether the selection is hidden when the control loses focus.
Text	Specifies the text which is to be displayed on the element.
Location	Specifies the position on the user interface (x, y).
Size	Specifies the size of the control (width, height) if *AutoSize* is not selected.
Enabled	Specifies whether an element can be operated.
Visible	Specifies whether an element is visible.
AutoSize	Specifies whether the size of the element is to be determined automatically.
Tooltip	Specifies the text of the tooltip for the element.
Source	Transfers the content of the control element if this is generated via a system function.
BackColor	Specifies the background color.
Events	
SelectedIndexChanged	Is called when a different element has been selected within the control.
ListViewItem	
Name	Specifies the name of the main element.
Size	Specifies the size of the display within the control (can be visible or not depending on the selected view of the control).
Alignment	Alignment of the text within the control.
ListViewSubItem	*ListViewSubItem* can be used several times below the *ListViewItems*. Each *ListViewSubItem* defines a new column in the view.
Name	Specifies the name and the text that is entered as header in the table.

Size	Specifies the size of the display within the column (can be visible or not depending on the selected view of the control).
Alignment	Specifies the alignment of the text within the column.
Item	Accesses the source input via a reference (@source. …):
	Select which elements from the system function call are to be selected. All elements from the *Source* parameter are then accepted.

Example

Table 1- 13 ListView code example

```
<Control
    Action="add"
    Type="ListView"
    View="Details"
    Name="LV_Projects"
    MultiSelect="false"
    FullRowSelect="true"
    HideSelection="false"
    Location="170,220"
    Size="600,300"
    Source="__call_GetProjects">
    <ListViewItem
        Name="Project"
        Size="100"
        Alignment="HorizontalAlignment.Left"
        Item="@source.name" />
        <ListViewSubItem
           Name="Projectpath"
           Size="300"
           Alignment="HorizontalAlignment.Left"
           Item="@source.logpath" />
         <ListViewSubItem
           Name="Last modified"
           Size="130"
           Alignment="HorizontalAlignment.Left"
           Item="@source.modified" />
          <ListViewSubItem
             Name="Creator"
             Size="50"
             Alignment="HorizontalAlignment.Left"
             Item="@source.creator" />
    </ListViewItem>
    <Events>
        <SelectedIndexChanged
        code="@BT_Next@.Enabled=@LV_Projects@.SelectedItems.Count > 0"/>
    </Events>
</Control>
```

1.3.1.7 Picture

Parameter

Parameter	Meaning
Action	Specifies the action that is to be executed.
Type	Specifies the type of the control.
Name	Specifies a unique name for the control within the active user interface. The name can also be used for referencing within the newly compiled code.
Location	Specifies the position on the user interface (x, y).
Size	Specifies the size of the picture (width, height) if *AutoSize* is not selected.
SizeMode	Specifies the display of the picture.
ImageLocation	Specifies the path to the picture. The path can also be specified relative.
Enabled	Specifies whether an element can be operated.
Visible	Specifies whether an element is visible.
AutoSize	Specifies whether the size of the element is to be determined automatically.
Tooltip	Specifies the text of the tooltip for the element.

Example

Table 1- 14 Picture code example

```
<Control
    Action="add"
    Type="Picture"
    Name="PB_Example2"
    Location="350, 0"
    Size="250,150"
    SizeMode = "StretchImage"
    ImageLocation ="Pictures\Example2.png">
</Control>
```

1.3.1.8 RadioButton

Parameters

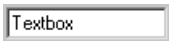
Parameter	Meaning
Action	Specifies the action that is to be executed.
Type	Specifies the type of the control.
Name	Specifies a unique name for the control within the active user interface. The name can also be used for referencing within the newly compiled code.
BackColor	Specifies the background color.
Text	Specifies the text which is to be displayed on the element.
AutoSize	Specifies whether the size of the element is to be determined automatically.
Enabled	Specifies whether an element can be operated.
Location	Specifies the position on the user interface (x, y).
Checked	Specifies whether the radio button is activated or not.
Size	Specifies the size of the button (width, height) if *AutoSize* is not selected.
Tooltip	Specifies the text of the tooltip for the element.
Visible	Specifies whether an element is visible.

Example

Table 1- 15 RadioButton code example

```
<Control
    Action="add"
    Type="RadioButton"
    Name="RB_RadioButton1"
    BackColor="__call_SetColor(Transparent)"
    Text="RadioButton1"
    AutoSize="true"
    Enabled="true"
    Location="170,216"
    Checked="true"
    Size="200,17"
    ToolTip="This is RadioButton1">
</Control>
```

1.3.1.9 TextBox



Parameters

Parameter	Meaning
Action	Specifies the action that is to be executed.
Type	Specifies the type of the control.
Name	Specifies a unique name for the control within the active user interface. The name can also be used for referencing within the newly compiled code.
Text	Specifies the text which is to be displayed on the element.
Location	Specifies the position on the user interface (x, y).
Size	Specifies the size of the element (width, height) if *AutoSize* is not selected.
Enabled	Specifies whether an element can be operated.
Visible	Specifies whether an element is visible.
AutoSize	Specifies whether the size of the element is to be determined automatically.
BackColor	Specifies the background color.
Limits	
DataType	The data type that is to be entered in the text field can be specified here. Because of the default setting, certain characters are hidden and the value checked for validity.
Length	The length can also be limited here for the *Object* data type.
Min	A value can be limited to a minimum value here.
Max	A value can be limited to a maximum value here.

Data types for the Limit tag data type

DataType	
Object	Checks the syntax according to SIMATIC Manager object specifications.
IPAddress	Checks for length, value and STEP 7 syntax in the IPv4 aaa.bbb.ccc.ddd format.
Bool	Checks for value and STEP 7 syntax.
Byte	Checks for length, value, and STEP 7 syntax.
Word	Checks for length, value, and STEP 7 syntax.
DWord	Checks for length, value, and STEP 7 syntax.
Int	Checks for length, value, and STEP 7 syntax.
Dint	Checks for length, value, and STEP 7 syntax.
Real	Checks for length, value, and STEP 7 syntax.
Time	Checks for length, value, and STEP 7 syntax.
Date	Checks for length, value, and STEP 7 syntax.
Tod	Checks for length, value, and STEP 7 syntax.

Example

Table 1- 16 TextBox code example

```
<Control Action="add"
             Type="TextBox"
             Name="TB_LCom_FB_Number"
             Text="105"
             TextAlign="center"
             Location="615, 248"
             Size="60,13"
             Autosize="false"
             ToolTip="">
    <Limits DataType="udint" Length="" Min="1" Max="5000"/>
    <Events>
        <TextChanged Code="@TB_Connection_ID@.Text = @TB_LCom_FB_Number@.Text"/>
    </Events>
</Control>
```

1.3.2 ActivateLogging

The logging functionality of the project generator activities is activated with this command.

Command parameters

This command does not have any parameters.

Example

Table 1- 17 Code example

```
<Command
    ID="100"
    Name="ActivateLogging"
    NCID="101">
</Command>
```

1.3.3 BrowseProject

A file browser is opened with this command in order to select a STEP 7 project. When a valid project is selected, it is opened.

Command parameters

This command does not have any parameters.

Example

Table 1- 18 Code example

```
<Click code="If MyApp.BrowseProject Then MyApp.NextCommand(32)"/>
```

1.3.4 CheckPath

This command can be called in the code of an event with the *MyApp.* prefix.

The current value is read from the transferred control with this command. A check is performed as to whether the path is available.

Command parameters

Parameter	
Control	Transfer of the control with the start and target path

Example

Table 1- 19 Code example

```
<Leave code="MyApp.CheckPath(@TB_Path@)"/>
```

1.3.5 CheckProjectPath

This command can be called in the code of an event with the *MyApp.* prefix.

This command checks whether the project path already exists.

Command parameters

Transfer parameters	
Path	Path of the project
Name	Name of the project

Example

Table 1- 20 Code example

```
<Click code="If MyApp.CheckProjectPath(@TB_Path@.Text,@TB_Name@.Text)
             Then MyApp.NextCommand(26)"/>
```

1.3.6 DestroyForm

All control elements of the user interface are deleted with this command. Exceptions are the device overview and the display of the current configuration step.

This command is used when the configuration of a standard module stretches over several pages.

Command parameters

This command does not have any parameters.

Example

Table 1- 21 Code example

```
<Command
    ID="1"
    Name="DestroyForm"
    NCID="20">
</Command>
```

1.3.7 FolderBrowser

This command can be called in the code of an event with the *MyApp.* prefix.

The current value from the transferred control is read out with this command and the browser window with the read value started. After a path has been selected, the command writes the path back to the control.

The return value of the function is a Boolean value which indicates whether the selection has been confirmed with **OK**.

Command parameters

Parameter	
Control	Transfer of the control with the start and target path

Example

Table 1- 22 Code example

```
<Click code="MyApp.FolderBrowser(@TB_Path@)"/>
```

1.3.8 NextCommand

This command is only called in the code of an event with the *MyApp.* prefix.

A jump is performed to the *Element* command line with the transferred ID with this command. If the ID equal to 0 is transferred, the Exit dialog box is opened.

Command parameters

Transfer parameters	
NCID	Transfer of the next command ID

Example

Table 1- 23 Code example

```
<Click code="MyApp.NextCommand(0)"/>
```

1.3.9 OpenFile

A file with the standard program set in Windows is started with this command. If several files are to be opened, the parameter line can be be executed several times.

Command parameters

Parameter	
Path	Specifies the path to the file

Example

Table 1- 24 Code example

```
<Command
    ID="100"
    Name="OpenFile"
    NCID="20">
    <Parameter
        Path="SIMATIC\EquipmentModules\Communication_LCom
              \LCom_Ethernet_Communication_Library_for_SIMATIC_V1_1.pdf"/>
</Command>
```

1.3.10 PingToIPAddress

A ping to an IP address is performed with this command and the result is output in a message box. If several pings are to be performed, the parameter line can be called several times.

Command parameters

Transfer parameters

Value	Target IP address

Example

Table 1- 25 Code example

```
<Command
    ID="100"
    Name="PingToIPAddress"
    NCID="20">
    <Parameter Name="Parameter1" value="__ref_TB_IPAddress.Text">
    </Parameter>
</Command>
```

1.3.11 ReadNextEquipmentModuleConfig

This command informs the ProjectGenerator that the configuration of an equipment module has been completed. This command is therefore the last command that is executed for the configuration of an equipment module. If a further command has been selected in the selection for the equipment module which follows the current command, the configuration is continued with the next equipment module. If this is not the case, the "Project Generation" page is opened after the call of this command.

Command parameters

This command does not have any parameters.

Example

Table 1- 26 Code example

```
<Command
    ID="100"
    Name="ReadNextEquipmentModuleConfig"/>
```

1.3.12 SetColor

This command defines colors, e.g the color of the background.

Command parameters

Transfer parameters

Color	All colors that are defined in the .Net object System.Drawing.Color are possible here (e.g. White, Green, Blue, Red, LightSlateGray, etc.). A transfer of the RGB color codes is not possible.

Example

Table 1- 27 Code example

```
BackColor="__call_SetColor(Transparent)"
```

1.3.13 ShowAboutBox

The About box is activated with this command. The About box contains information on the precise product designation, the installed version, the company name, and the copyright.

Command parameters

This command does not have any parameters.

Example

Table 1- 28 Code example

```
<Command
    ID="6"
    Name="ShowAboutBox"/>
```

1.3.14 StartupPath

This command returns the path to the main directory of the ProjectGenerator as a string. If the command is called via the VB code, this must be written as follows: *MyApp.StartupPath*

Example

Table 1- 29 Code example

```
Use in the source code
REM Path of the ProjectGenerator
Dim ProjectGeneratorPath As String = MyApp.StartupPath
```

1.3.15 Step7DefaultPath

This command can be transferred directly to a control property via the *__Call_* prefix.

The current default path set for the projects in STEP 7 is returned with this command.

Command parameters

This command does not have any parameters.

Example

Table 1- 30 Code example

```
Text="__call_Step7DefaultPath"
```

1.3.16 SetTemporaryVariable

With this command, values in the data management of the ProjectGenerator can be stored temporarily.

Any number of values can be stored temporarily with one call of the command. The parameter line must be filled in several times in this case. The values can be read with the GetValueOfTemporaryVariable function.

Command parameters

Parameter	
Name	Name of the temporary variables.
Type	Optional: You can choose between the options LOCAL and GLOBAL. Local temporary variables are automatically deleted when the next module is called; global variables are retained. If this parameter is not supplied, LOCAL is taken automatically.
Value	Value of the temporary variables.

Example

Two variables are saved. The first variable is called „Hello“ and has the value „World“. The second variable is called „ModuloLength“ and has the value "360".

Table 1- 31 Code example

Use in a command

```
<Command  ID="100011" Name="setTemporaryVariable"  NCID="">
      <Parameter  Name="Hello" Type ="Global"  Value="World"/>
      <Parameter  Name="ModuloLength"  Value="360"/>
</Command>
```

Use in the source code

```
MyApp.myISL.setTemporaryVariable('ProjectName' ,'Global', 'MyProject')
MyApp.myISL.setTemporaryVariable('ModuloLength' ,'Local', 360.0)
```

1.4 Commands for inserting and deleting objects

1.4.1 CreateObject

An object that is defined via *Type* and the *ExternalTypeName* is created with this command. The name of the respective type is used to check whether this already exists. If it already exists, the command is aborted.

Command parameters

Parameter	
Type	The *object type* of the device that is to be created is specified here.
Name	Name of the new object
Version	Version of the new object
ExternalTypeName	Type of device to be imported
ReferenceObject	Transfer of a reference object (list box) to directly update the display of the user interface.

Example

Table 1- 32 Code example

```
<Command
    ID="100"
    Name="CreateObject"
    NCID="20">
    <Parameter
        Type="Device"
        Name="__ref_TB_Name_New_Device.text"
        Version="__ref_CB_Name_New_Device_AvailableDeviceVersions.text"
        ExternalTypeName="__ref_CB_Name_New_Device_ExternalTypeName.text"
        ReferenceObject="LB_Devices"/>
</Command>
```

1.4.2 DeleteObject

A newly created object can be deleted with this command. Objects that already exist in a project cannot be deleted.

Command parameters

Parameter	
Type	The *object type* of the device that is to be deleted is specified here.
Name	Name of the object to be deleted
ExternalTypeName	Type of the object to be deleted
ReferenceObject	Transfer of a reference object (list box) to directly update the display of the user interface.

Example

Table 1- 33 Code example

```
<Command
    ID="100"
    Name="DeleteObject"
    NCID="20">
    <Parameter
        Type="Device"
        Name="__ref_TB_Name_New_Device.text"
        ExternalTypeName="__ref_CB_Name_New_Device_ExternalTypeName.text"
        ReferenceObject="LB_Devices"/>
</Command>
```

1.4.3 ImportSimaticLibrary

Libraries are imported to an active device with this command.

Any number of libraries can be imported with one call of the command. The parameter line must be filled in several times in this case.

Command parameters

Parameter	
Name	Name of the program folder in the library to be imported.
VersionsCheckType	In the EXTERNAL version check (two-digit version check), the version is checked using the version ID in the block properties. For INTERNAL (three-digit version check), the first version ID is searched for in the first comment field of the block and used for the version check.
Path	Path to the library to be imported. The path can also be specified relatively. The library must be available in STEP7 project format.
SymbolicFBName	Symbolic name of a block that represents a proxy for the entire library. In this block, the version check is also carried out.

Example

Table 1- 34 Code example

```
<Command
    ID="10"
    Name="ImportSimaticLibary"
    NCID="20">
    <Parameter
        Name="LComCP343"
        VersionCheckType="INTERNAL"
        Path="SIMATIC\EquipmentModules\Communication_LCom\Data\Libraries\LCom\LCom.s7p"
        SymbolicFBName="FBLComMachineCom"/>
</Command>
```

1.4.4 ImportSimaticSource

Sources can be imported into the active device with this command.

Any number of sources can be imported with one call. The parameter line must be filled in several times for this purpose.

A source may only contain one block.

Command parameters

Parameter	
Name	Symbolic name of the block within the project. The value can also be assigned a reference to a user interface element. The *Text* property of the element is evaluated here.
VersionsCheckType	In the EXTERNAL version check (two-digit version check), the version is checked using the version ID in the block properties. For INTERNAL (three-digit version check), the first version ID is searched for in the first comment field of the block and used for the version check.
Path	Path to the source to be imported. The path can also be specified relatively.

Example

Table 1- 35 Code example

```
<Command
    ID="20"
     Name="ImportSimaticSource">
    <Parameter
        Name="TB_Name_of_added_Source"
        VersionCheckType="INTERNAL"
        Path="SIMATIC\EquipmentModules\Communication_LCom\Data\Sources\
              DBFBLComMachineCom.AWL" />
    <Parameter
        Name="TB_Name_of_added_Parameter_DB"
        VersionCheckType="INTERNAL"
        Path="SIMATIC\EquipmentModules\Communication_LCom\Data\Sources\
              DBLComParameter.AWL" />
</Command>
```

1.5 Information commands

1.5.1 GetAvailableSimaticDevices

All SIMATIC devices that are available in a directory for import are returned with this command. This command can be transferred directly to a control property via the *__Call_* prefix. The command returns a collection (*Arraylist*) of *SortedDictionary* objects. These offer a "NAME" key for accessing the name of the SIMATIC station.

Command parameters

Transfer parameters

Version	Specifies the main version of the device (S7300 or S7400)

Example

Table 1- 36 Code example

```
Source="__call_GetAvailableSimaticDevices('S7300')"
```

Table 1- 37 Use in the source code

```
REM Get all SIMATIC devices
Dim DeviceList As System.Collections.Arraylist = My-
App.myIsl.getavailablesimaticdevices('V3_2')
For Each tmpDevice As System.Collections.Generic.SortedDictionary(Of
String, String) in DeviceList
                MessageBox.Show(tmpDevice('NAME').ToString())
Next
```

1.5.2 GetAvailableSimaticDeviceVersions

All versions (S7300 or S7400) of the SIMATIC devices that are available for import are returned with this command. This command can be transferred directly to a control property via the *__Call_* prefix. The command returns a collection (*Arraylist*) of *SortedDictionary* objects. These offer a "NAME" key for accessing the versions available.

Command parameters

This command does not have any parameters.

Example

Table 1- 38 Code example

```
Source="__call_GetAvailableSimaticDeviceVersions"
```

Table 1- 39 **Use in the source code**

```
REM Get all SIMATIC versions
Dim VersionList As System.Collections.Arraylist =
MyApp.myIsl.getavailablesimaticdeviceversions()
For Each devVersion As System.Collections.Generic.SortedDictionary(Of
String, String) in VersionList
                MessageBox.Show(devVersion('NAME').ToString())
Next
```

1.5.3 GetDevicesInProject

With this command, all SIMOTION and SIMATIC devices (not SINAMICS devices) are returned that are either already in the project or that should still be added with the ProjectGenerator. This command can be transferred directly to a control property via the *__Call_* prefix. When called in the source code, a collection (*Arraylist*) of *SortedDictionary* objects is returned. These offer the following keys for accessing the properties: NAME, OBJECTID, TYPEID, TYPENAME, VERSION

Command parameters

This command does not have any parameters.

Example

Table 1- 40 Code example

```
Source="__call_GetDevicesInProject"
```

Table 1- 41 **Use in the source code**

```
Dim deviceList As System.Collections.Arraylist = My-
App.myIsl.GetDevicesInProject()
For Each tmpDevice As System.Collections.Generic.SortedDictionary(Of
String, String) in deviceList
                MessageBox.Show(tmpDevice('NAME').ToString())
Next
```

1.5.4 GetSimaticDeviceName

The name of the active device is returned with this command. This command can be transferred directly to a control property via the *__Call_* prefix. When used in the source code, the name is returned as a string.

Command parameters

This command does not have any parameters.

Example

Table 1- 42 Code example

```
Text="__call_GetSimaticDeviceName"
```

Table 1- 43 **Use in the source code**

```
Dim deviceName As String
deviceName = MyApp.myIsl.GetSimaticDeviceName()
```

1.5.5 GetSimaticBlocks

All existing blocks in the project, e.g. for display in a *list box*, are returned with this command. This command can be transferred directly to a control property via the *__Call_* prefix. When called in the source code, a collection (*Arraylist*) of *SortedDictionary* objects is returned. These offer the following keys for accessing the properties: NAME, ADDRESS, DATATYPE

Command parameters

This command does not have any parameters.

Example

Table 1- 44 Code example

```
Source="__call_GetSimaticBlocks"
```

Table 1- 45 **Use in the source code**

```
Dim blocks As System.Collections.Arraylist = My-
App.myIsl.GetSimaticBlocks()
For Each tmpBlock As System.Collections.Generic.SortedDictionary(Of
String, String) in blocks
            MessageBox.Show(tmpBlock('NAME').ToString())
Next
```

1.5.6 GetValueOfSimaticDBVariable

This command reads out the currently valid value of a variable from a data block and returns it. If a value is not found either in the project or in the database, the *DefaultValue* is returned. This command can be transferred directly to a control property via the *__Call_* prefix. When the command is used in Visual Basic .NET source codes, the value is returned as a string.

Command parameters

Transfer parameters

Name	Name of the variable or constant
DBName	Symbolic name of the block being searched for
DefaultValue	Substitute value when no value is found

Example

Table 1- 46 Code example

```
Checked="__call_GetValueOfSimaticDBVariable('config.boProductionModeActive
','DBLPMLV3ModeStateManager',True)"
```

1.5.7 IsSimaticS7300Station

A type check of the station can be performed with this command. The response in the process code is type-specific. The result of the type check is returned as a value of the Boolean data type.

Command parameters

This command does not have any parameters.

Example

Table 1- 47 Code example

```
<Click code="If MyApp.IsSimaticS7300Station Then
                MyApp.NextCommand(10)
            Else
                MyApp.NextCommand(11)
            End If
            MyApp.NextCommand(60)
            "/>
```

1.5.8 GetValueOfTemporaryVariable

The value of a temporary variable is returned as a string with this command.

This command can be transferred directly to a control property via the *__Call_* prefix. The returned value can also be converted to other data types.

Command parameters

Parameter	
Name	Name of the temporary variables.
Type	You can choose between the options LOCAL and GLOBAL.
Lokale	Temporary variables are deleted automatically when the next module is called; global variables are retained. If this parameter is not supplied, LOCAL is assumed automatically.
DefaultValue	Default value of the temporary variables if they are not found in the data management.

Note

Errors in conversion may occur when working with floating-comma numbers. See the code example below.

Example

Table 1- 48 Code example

Transfer to a control

```
Text="__call_ GetValueOfTemporaryVariable(Hello,LOCAL,World_Not_Found)"
```

Use in the source code

```
REM define different global variables
MyApp.myISL.SetTemporaryVariable('DoubleValue','Global',3601.8)
MyApp.myISL.SetTemporaryVariable('DoubleValueAsStringWithDot','Global', '3601.8')
MyApp.myISL.SetTemporaryVariable('DoubleValueAsStringWithComma','Global', '3601,8')
MyApp.myISL.SetTemporaryVariable('StringValue','Global', 'SomeText')

Dim DoubleVariable As Double
Dim StringVariable As String

DoubleVariable = MyApp.myISL.GetValueOfTemporaryVariable ('DoubleValue' , 'Global', -1)
MsgBox (DoubleVariable)   REM No error and output correct (3601.8)

DoubleVariable = MyApp.myISL.GetValueOfTemporaryVariable ('DoubleValueAsStringWithComma',
'Global', -1)
MsgBox (DoubleVariable)   REM No error and output  correct (3601.8)

DoubleVariable = MyApp.myISL.GetValueOfTemporaryVariable ('DoubleValueAsStringWithDot',
'Global', -1)
MsgBox (DoubleVariable)   REM No error but output not correct (36018)

DoubleVariable = MyApp.myISL.GetValueOfTemporaryVariable ('StringValue', 'Global', -1)
MsgBox (DoubleVariable)   REM  error converting the String to a Double value

StringVariable = MyApp.myISL.GetValueOfTemporaryVariable ('DoubleValue', 'Global', -1)
DoubleVariable = Double.Parse(StringVariable)
MsgBox (DoubleVariable)   REM No error and output correct(3601.8)

StringVariable = MyApp.myISL.GetValueOfTemporaryVariable ('DoubleValueAsStringWithDot',
'Global', -1)
DoubleVariable = Double.Parse(StringVariable)
MsgBox (DoubleVariable)   REM No error but output not correct(36018)

StringVariable = MyApp.myISL.GetValueOfTemporaryVariable ('DoubleValueAsStringWithComma',
'Global', -1)
DoubleVariable = Double.Parse(StringVariable)
MsgBox (DoubleVariable)   REM No error and output correct(3601.8)
```

1.5.9 GetDeviceProperty

The value of every permissible HW Config property (attribute) of a device can be read out with this command. If it is the property of a module or a submodule, then the appropriate module (and submodule) number must be specified. As it may be that the required property is within a field, as with *LocalInAddresses* or *LocalOutAdresses*, it is also possible to optionally specify the name of the relevant object with *ObjectType*.

The command can only be executed within the VB code.

Command parameters

Parameter	
DeviceName	Name of the device.
Name	Name of the HW Config property/attribute.
SlotNumber	Optional: Specification of the slot number for the addressing of subordinate slots.
SubSlotNumber	Optional: Specification of the subslot number for the addressing of subordinate slots.
ObjectType	Optional: Specification of the object that is to be accessed, e.g. *LocalInAddresses* or *LocalOutAddresses*.

Example

Table 1- 49 Code example

```
<Control
     Action="add"
     Type="Button"
     Name="BT_GetDeviceProperty"
     Text="GetDeviceProperty"
     Location="280, 360"
     Size="150, 30"
     Enabled="true"
     Visible="true"
     ToolTip="Test the function GetDeviceProperty">
     <Events>
         <Click code="
          DIM String_Value =
          MyApp.myIsl.GetDeviceProperty('MyET200', 'LogicalAddress', '2',
'6', 'LocalInAddresses')
          "
         />
     </Events>
</Control>
```

1.6 Commands for the source and object manipulation

1.6.1 Commands for the source manipulation

1.6.1.1 SetLabel

A label is replaced in a complete source with this command. The label is supplemented by a leading "<" and following ">" character.

As precondition for this command, an *ImportSimaticSource* must be executed.

Command parameters

Parameter	
TargetName	Contains the name of the SIMATIC source
LabelName	Specifies the label that is replaced in the entire source.
Value	Specifies the value that is replaced.
Type	For access to SIMATIC sources, the type must be given as "Simatic_Source_Label".

Example

Table 1- 50 Code example

```
<Command
    ID="80" Name="SetLabel"
    NCID="1000" >
    <Parameter
        TargetName="TB_Name_of_added_Source"
        LabelName="Inst_DB_Name"
        Value="TB_Name_of_added_Source"
        Type="Simatic_Source_Label"/>
</Command>
```

1.6.1.2 SetSimaticValue

With this command you can set variables of a block to a defined value that is also partially determined during runtime.

Command parameters

Parameter	
SourceName	Name of the data block source to which the value of a variable is to be added. The value can also be assigned a reference to a user interface element. The *Text* property of the element is evaluated here.
Name	Name of the variable to be added. The value can also be assigned a reference to a user interface element. The *Text* property of the element is evaluated here.
Value	Value of the variable to be added. The data type must correspond to the S7 data types. The value can also be assigned a reference to a user interface element. The *Text* property of the element is evaluated here.
Convert	Converts the numerical value in the *Value* parameter to the given number system. Using the HEX tag, you can specify that the numerical value in the *Value* parameter should automatically be converted to a hexadecimal number.

Example

Table 1- 51 Code example

```
<Command
    ID="50"
    Name="setSimaticValue"
    NCID="80" >
    <Parameter
        SourceName="TB_Name_of_added_Parameter_DB"
        Name="sParameter.sCfgConnection.boWithLComProtocol"
        Value="TRUE" />
    <Parameter
        SourceName="TB_Name_of_added_Parameter_DB"
        Name="sParameter.sCfgConnection.boIsTcpClient"
        Value="CB_Is_TCP_Client" />
    <Parameter
        SourceName="TB_Name_of_added_Parameter_DB"
        vName="sParameter.sCfgConnection.b16LocalPort"
        Value="TB_Local_port"
        Convert="HEX"/>
</Command>
```

1.6.1.3 SetSymbolInSymbolTable

With this command, values can be added to the symbol table of the project and changed. Any number of lines may be changed or expanded with a single call. The parameter line can be filled in several times for this purpose.

A source may only contain one block.

Command parameters

Parameter	
SymbolicName	Symbolic name of the tag The value can also be assigned a reference to a user interface element. The *Text* property of the element is evaluated here.
BlockNumber	Block number of the tag The value can also be assigned a reference to a user interface element. The *Text* property of the element is evaluated here.
BlockType	Type of tag: DATA_BLOCK / FUNCTION / FUNCTION_BLOCK
InstanceFBNumber	For an instance data block, the *FB-Number* reference must be entered here. The value can also be assigned a reference to a user interface element. The *Text* property of the element is evaluated here.

Example

Table 1- 52 Code example

```
<Command
    ID="40"
    Name="SetSymbolInSymbolTable"
    NCID="70" >
    <Parameter
        SymbolicName="TB_Name_of_added_Source"
        BlockNumber="TB_Lcom_FB_Number"
        BlockType="DATA_BLOCK"
        InstanceFBNumber="105"/>
    <Parameter
        SymbolicName="TB_Name_of_added_Parameter_DB"
        BlockNumber="TB_Lcom_Param"
        BlockType="DATA_BLOCK"/>
</Command>
```

1.6.2 Commands for the object manipulation

1.6.2.1 InsertNetworksIntoOB

This command allows code networks to be added to any organization block. This command also checks whether the code is already available. If so, it is not added again. The code to be added can also contain labels that can be replaced by calling the *SetLabel* subparameter. Calling the parameter and subparameter lines can be repeated as often as required in a command call.

Command parameters

Parameter	
Name	Name of organization block to which the code networks are to be added. The value can also be assigned a reference to a user interface element. The Text property of the element is evaluated here.
Path	Path to the code networks to be imported. The path can also be specified relatively.
Position	The position for adding the new networks can be given here. Only FIRST and LAST are allowed. If no position is specified, the new networks are attached.
DummyPath	If a new OB is created, an empty export of the block must be present that can be imported as a default block. The path to the exported source must be specified here.
Subparameter SetLabel	
LabelName	Specifies the label that is replaced in the entire source.
Value	Specifies the value that is replaced.

Example

Table 1- 53 Code example

```
<Command
    ID="60"
    Name="InsertNetworksIntoOB"
    NCID="41" >
    <Parameter
        Name="OB1"
        Path="SIMATIC\EquipmentModules\Communication_LCom\
              Data\Templates\OB1Call.txt"
        Position=""
        DummyPath="SIMATIC\EquipmentModules\Communication_LCom\
                   Data\Templates\OB1.AWL">
        <SetLabel
            LabelName="Inst_DB_Name"
            Value="TB_Name_of_added_Sources"/>
        <SetLabel
            LabelName="Send_DB_Name"
            Value="TB_Name_of_added_Send_DB"/>
        <SetLabel
            LabelName="Receive_DB_Name"
            Value="TB_Name_of_added_Receive_DB"/>
        <SetLabel
            LabelName="Param_DB_Name"
            Value="TB_Name_of_added_Parameter_DB"/>
    </Parameter>
</Command>
```

1.6.2.2 InsertVariablesIntoOB

This command allows variables to be added to any organization block. This command also checks whether the variables are already available. If so, the variables are not added again.

Command parameters

Parameter	
Name	Name of the organization block to which the variable is to be added. The value can also be assigned a reference to a user interface element. The *Text* property of the element is evaluated here.
Variable	Name of the variable to be added. The name must not be longer than 24 characters. The value can also be assigned a reference to a user interface element. The *Text* property of the element is evaluated here.
DataType	Data type of the variable to be added. The data type must correspond to the S7 data types. The value can also be assigned a reference to a user interface element. The *Text* property of the element is evaluated here.
Comment	Comment of the variable to be added. The value can also be assigned a reference to a user interface element. The *Text* property of the element is evaluated here.

Example

Table 1- 54 Code example

```
<Command
    ID="70"
    Name="InsertVariableIntoOB"
    NCID="50">
    <Parameter
        Name="OB1"
        Variable="boInitDone"
        DataType="BOOL"
        Comment=""/>
    <Parameter
        Name="OB1"
        Variable="b16ErrorId"
        DataType="WORD"
        Comment=""/>
</Command>
```

1.6.2.3 SetDeviceProperty

The value of every permissible HW Config property (attribute) of a device can be set with this command. If it is the property of a module or a submodule, then the appropriate module (and submodule) number must be specified. It may be that the required property is within a field, as with *LocalInAddresses* or *LocalOutAddresses*. It is possible to optionally specify the name of the relevant object with *ObjectType*.

Command parameters

Parameter	
DeviceName	Specification of the sought device name.
Name	Name of the property/attribute.
Value	The value that is to be assigned.
SlotNumber	Optional: Specification of the slot number for the addressing of subordinate slots.
SubSlotNumber	Optional: Specification of the subslot number for the addressing of subordinate subslots.
ObjectType	Optional: Specification of the object to be addressed, e.g. LocalInAddresses or LocalOutAddresses.

Example

Table 1- 55 Code example

```
<Command ID="301" Name="SetDeviceProperty">
    <Parameter
        DeviceName="MyET200"
        SlotNumber="3"
        SubSlotNumber=""
        Name="LocalAddress"
        Value="1500"
        ObjectType="LocalOutAddresses"
    />
</Command>
```

1.6.2.4 ConfigureProfinetIRT

The settings required for the IRT communication can be made with this command. All IRT-capable devices are set up as sync slave and the controller as sync master in the respective PROFINET IO system.

The times specified in the parameters are set and all IRT-capable slots activated as slaves. The Ti/To mode is set to "IO Device" and the specified times set for all devices.

Command parameters

Parameter	
DeviceName	Name of the controller to be configured as sync master.
CPUInterface	Specification of the controller interface on which the subsystem to be configured is located.
SyncDomain	Optional: Name of the sync domain. If this parameter is not specified, the standard sync domain is used.
CycleTime	Bus cycle time in ms.
Ti	Time to read-in the process values in µs.
To	Time to output the process values in µs.

Example

Table 1- 56 Code example

```
<Command ID="303" Name="ConfigureProfinetIRT">
    <Parameter
        DeviceName="newDevice"
        CPUInterface="PN1"
        SyncDomain=""
        CycleTime ="4000"
        Ti="125"
        To="250"
    />
<Command/>
```

1.6.2.5 AddPNDevice

Arbitrary PROFINET devices can be inserted in a PROFINET IO system by means of the MLFB or GSDML file with this command.

In special cases, a prefix must be attached to the MLFB. For this reason, it is recommended that an export is created of the relevant station from HW Config and that the MLFB specified there is used including the prefix.

If a GSDML file is used, it must already be installed in the hardware configuration. If more than one device or module is defined in the GSDML file, the appropriate ID from the GSDML file must be specified for the device.

Optionally, as many modules and submodules as permitted by the engineering system can be inserted in this device. The *Module* and *SubModule* elements can be specified a corresponding number of times.

Limitation of the possible ET200 stations: See Projectgenerator supplementary conditions.

Command parameters

Parameter	
DeviceName	Name to be assigned for the inserted device.
DeviceIdentifier	Specification of the MLFB or GSDML file.
ID	Optional: Specification of the ID for the specification of the device from the GSDML file.
IPAddress	Specification of the IP address (also possible as hex value). For example: 192.168.0.6 C0A80006
CPUInterface	Specification of the controller interface on which the subsystem in which the device is to be inserted is located.
Version	Optional: Specification of the version if the DeviceIdentifier parameter is an MLFB.
DeviceNumber	Optional: Specification of the device number in the PROFINET IO system if a number other than the next free number is desired.

Module	
ModuleName	Name to be assigned for the inserted module.
ModuleIdentifier	Specification of the MLFB or GSDML file.
ModuleID	Optional: Specification of the ID for the specification of the module from the GSDML file.
SlotNumber	Specification of the slot number for the addressing of subordinate slots.

SubModule	
SubModuleName	Name to be assigned for the inserted submodule.
SubModuleIdentifier	Specification of the MLFB or GSDML file.
SubModuleID	Optional: Specification of the ID for the specification of the submodule from the GSDML file.

SlotNumber	Specification of the slot number for the addressing of subordinate slots.
SubSlotNumber	Specification of the subslot number for the addressing of subordinate subslots.

Example

Table 1- 57 Code example

```
<Command ID="307" Name="AddPNDevice">
    <Parameter
        DeviceName="__ref_TB_GSDName.Text"
        DeviceIdentifier="GSDML-V2.31-Siemens-ET200SP-20150326.xml"
        ID="DIM_20"
        IPAddress="192.168.1.6"
        CPUInterface="PN1"
        Version="V2.0"
        Address="2">
        <Module
            ModuleName="DI 16x24VDC ST"
            ModuleIdentifier="GSDML-V2.31-Siemens-ET200SP-20150326.xml"
            ModuleID="DI 16x24VDC ST"
            SlotNumber ="1"/>
        <Module
            ModuleName="DI 16x24VDC ST"
            ModuleIdentifier="GSDML-V2.31-Siemens-ET200SP-20150326.xml"
            ModuleID="DI 16x24VDC ST"
            SlotNumber ="2"/>
        <Module
            ModuleName="DI 16x24VDC ST"
            ModuleIdentifier="GSDML-V2.31-Siemens-ET200SP-20150326.xml"
            ModuleID="DI 16x24VDC ST"
            SlotNumber ="3"/>^
        <SubModule
            SubModuleName ="My Port 1 (2xRJ45)"
            SubModuleIdentifier ="GSDML-V2.31-Siemens-ET200SP-
20150326.xml"
            SubModuleID ="IDS_1P1 HF RJ45 V2.2"
            SlotNumber ="0"
            SubSlotNumber ="2"/>
    </Parameter>
</Command>
```

1.6.2.6 AddPNDeviceModule

Individual modules can be added to a PROFINET device by means of the GSDML file with this command.

As prerequisite, the GSDML file to be used must already be installed in HW Config.

Any number of modules and submodules can be inserted in a device with a single command.

A module can be created with the *Module* element. Several modules can be created through multiple use of the element.

A submodule can be created with the *SubModule* element. Several submodules can be created through multiple use of the element.

Command parameters

Parameter	
DeviceName	Name of the device in which the modules or submodules are to be inserted.

Module	
ModuleName	Name to be assigned for the inserted module.
ModuleIdentifier	Specification of the MLFB or GSDML file.
ModuleID	Specification of the ID for the specification of the module from the GSDML file.
SlotNumber	Specification of the slot number for the addressing of subordinate slots.

SubModule	
SubModuleName	Name to be assigned for the inserted submodule.
SubModuleIdentifier	Specification of the MLFB or GSDML file.
SubModuleID	Optional: Specification of the ID for the specification of the submodule from the GSDML file.
SlotNumber	Specification of the slot number for the addressing of subordinate slots.
SubSlotNumber	Specification of the subslot number for the addressing of subordinate subslots.

Example

Table 1- 58 Code example

```
<Command ID="310" Name="AddPNDeviceModule">
    <Parameter
        DeviceName ="__ref_TB_GSDName.Text">
        <Module
            ModuleName="DI 16x24VDC ST"
            ModuleIdentifier="GSDML-V2.31-Siemens-ET200SP-20150326.xml"
            ModuleID="DI 16x24VDC ST"
            SlotNumber ="1"/>
        <SubModule
            SubModuleName ="My Port 1 (2xRJ45)"
            SubModuleIdentifier ="GSDML-V2.31-Siemens-ET200SP-
20150326.xml"
            SubModuleID ="IDS_1P1 HF RJ45 V2.2"
            SlotNumber ="0"
            SubSlotNumber ="2"/>
    </Parameter>
</Command>
```

1.6.2.7 CreateET200Module

Individual modules of an ET200 can be created and configured with this command.

Command parameters

Parameter	
DeviceName	Name of the ET200 station.
ModuleName	Name of the module.
MLFB	MLFB of the module.
SlotNumber	Slot number in which the module is to be inserted.
InAddress	Optional: Start address of the module.
InAddressSMType	Optional: Is only used for ET 200L and ET 200S modules and has the following coding: 16: Digital addresses 32: Analog addresses 256: Diagnostic addresses
InAddressLength	Optional:
InSubAddress	Optional: Subaddress of the module.
InPartProcessImage	Optional: Number of the assigned part process image.
InArea	Optional: Area identifier. 0: SIMATIC 400 module 1: SIMATIC 300 module 2: DP addressing 3: P area (S5 connection) 4: Q area (S5 connection) 5: IM3 area (S5 connection) 6: IM4 area (S5 connection) 7: Reserved
InBitAddress	Optional: The bit offset to the start address is stored here for ET 200 and ET 200S electronic modules.
OutAddress	Optional: Specification of the logical address.
OutAddressSMType	Optional: Is only used for ET 200L and ET 200S modules and has the following coding: 16: Digital addresses 32: Analog addresses 256: Diagnostic addresses
OutAddressLength	Optional: Length of the address in bytes (depending on the module)
OutSubAddress	Optional: Subaddress of the module.
OutPartProcessImage	Optional: Number of the assigned part process image.

OutArea	Optional: Area identifier. 0: SIMATIC 400 module 1: SIMATIC 300 module 2: DP addressing 3: P area (S5 connection) 4: Q area (S5 connection) 5: IM3 area (S5 connection) 6: IM4 area (S5 connection) 7: Reserved
OutBitAddress	Optional: The bit offset to the start address is stored here for ET 200 and ET 200S electronic modules.

Example

Table 1- 59 Code example

```
<Command ID="321" Name="CreateEt200Module">
    <Parameter ET200Name="MyET200"
        ModuleName="TestxCreateEt200Module"
 MLFB="6ES7 131-4BF50-0AA0" Version="V7.0"
        SlotNumber="4"
        InAddress="42"
        InAddressSMType=""
        InAddressLength=""
        InSubAddress=""
        InPartProcessImage=""
        InArea=""
        InBitAddress=""
        OutAddress=""
        OutAddressSMType=""
        OutAddressLength=""
        OutSubAddress=""
        OutPartProcessImage=""
        OutArea=""
        OutBitAddress=""
    />
</Command>
```

1.6.2.8 CreatePNTopology

The PROFINET topology can be configured with this command. The ports are connected according to the parameter specifications. Whereby, the Device as well as the PartnerDevice can be a station or a slave.

The Parameter element can be used several times for multiple interconnections (see example).

Command parameters

Parameter	
DeviceName	Name of the controller/device.
PNInterfaceName	Name of the PROFINET interface.
PortNumber	Number of the port.
PartnerDeviceName	Name of the partner controller / device.
PartnerPNInterfaceName	Name of the partner PROFINET interface.
PartnerPortNumber	Number of the partner port.

Example

Table 1- 60 Code example

```
<Command ID="305" Name="CreatePNTopology">
    <Parameter
        DeviceName ="newDevice"
        PNInterfaceName ="PNxIO"
        PortNumber ="3"
        PartnerDeviceName ="NewCU"
        PartnerPNInterfaceName ="PN-IO"
        PartnerPortNumber ="1"
    />
    <Parameter
        DeviceName ="newDevice"
        PNInterfaceName ="PNxIO"
        PortNumber ="2"
        PartnerDeviceName ="GSDxDevice"
        PartnerPNInterfaceName ="Interface"
        PartnerPortNumber ="1"
    />
</Command>
```

1.6.2.9 CreateProfinetSubsystem

PROFINET IO systems can be created at the specified interface of the active controller with this command.

If a subnet with the specified name already exists, it is linked to the PROFINET IO system. Otherwise a new subnet is created and linked.

The name of the new subsystem is "PROFINET IO System" and is assigned the next free IO system number.

Command parameters

Parameter	
CPUInterface	Specification of the controller interface on which the subsystem in which the device is to be inserted is located.
SubnetName	Name of the subnet.

Example

Table 1- 61 Code example

```
<Command ID="319" Name="CreateProfinetSubsystem">
    <Parameter
        SubnetName ="Ethernet(101)"
        CPUInterface ="PN1"
    />
</Command>
```

Contact

A

A.1 Contacts

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A.2 Internet addresses

Additional information on various topics is provided on the following Internet pages.

See also

SIMOTION (www.siemens.com/simotion)

SINAMICS (www.siemens.com/sinamics)

Motion Control / Application Center (www.siemens.com/motioncontrol/apc)

Packaging (www.siemens.com/packaging)