Operating Instruction Manual

Generic EtherCAT Slave DTM for EtherCAT Slave Devices

Configuration of EtherCAT Slave

Language: English

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1 Introduction

1.1 About this Manual

This manual provides information on how to set up EtherCAT Slave devices described with XML DDF files. These devices can be configured with the EtherCAT Generic Slave DTM within an FDT Framework.

Dialog Pages

The table below gives an overview for the individual dialog pages descriptions:

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	General	*18*
	Behavior	*19*
	State Machine Timeout	*20*
	Device Check-up	*21*
	Process Data	*22*
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Table 1: Overview Dialog Pages

1.1.1 Online Help

The Generic EtherCAT Slave DTM contains an integrated online help facility.

- To open the online help, click on the **Help** button or press the **F1** key.

1.1.2 List of Revisions

Index	Date	Version	Component	Chapter	Revisions
1	13.12.07	0.9.0.0 1.0.3.0	ECATGenericSlaveDTM.dll ECATGenericSlaveGUI.ocx	all	created
2	20.01.09	0.900.121 4.6448 1.0.3.0	ECATGenericSlaveDTM.dll ECATGenericSlaveGUI.ocx		Revised
3	02.06.09	0.900. 1625.x	ECATGenericSlaveDTM.dll ECATGenericSlaveGUI.ocx	1.4.4.2 1.4.5 3.4	Section „*Table Line Buttons*“ added Section „Status Bar“ actualized, Some changes and additions. New screenshots.

1.1.3 Conventions in this Manual

Operation instructions, a result of an operation step or notes are marked as follows:

Operation Instructions:

➢ <instruction>

Or

1. <instruction>
2. <instruction>

Results:

➯ <result>

Notes:

Important: <important note>

Note: <note>

<note, were to find further information>

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1.3 About EtherCAT Generic Slave DTM

You can use the EtherCAT Generic Slave DTM to configure the EtherCAT slaves described with XML DDF files within a FDT Framework.

The informations necessary for the configuration of the EtherCAT Slave devices are stored within the EtherCAT Master device when using the EtherCAT Generic Slave DTM and thus the Master is configured.

1.3.1 Requirements

System Requirements

- Windows® 2000/ Windows® XP
- CD ROM drive
- Graphic resolution: min. 1024 x 768 pixel
- Keyboard and Mouse

Requirements EtherCAT Generic Slave DTM

Requirements for working with an EtherCAT Generic Slave DTM.

- Installed FDT Framework
- Installed EtherCAT Master DTM
- DDF file of the devices to configure
- The user needs to reload the Device Catalog

Loading XML DDF files

To work with the EtherCAT Generic Slave DTM, the XML-DDF file of the device must be copied into the DDF folder in the installation directory of the DTM.

For further information refer to section *Configuration Steps* on page 15 , under step 1 and 2.

1.4 Dialog Structure of the EtherCAT Generic Slave DTM

The graphical user interface of the DTM is composed of different areas and elements listed hereafter:

1. A header area containing the **General Device Information**,
2. The **Navigation Area** (area on the left side),
3. The **Dialog Pane** (main area on the right side),
4. The general buttons **OK**, **Cancel**, **Apply**, **Help**,
5. The **Status Line** containing information e. g. the online-state of the DTM.

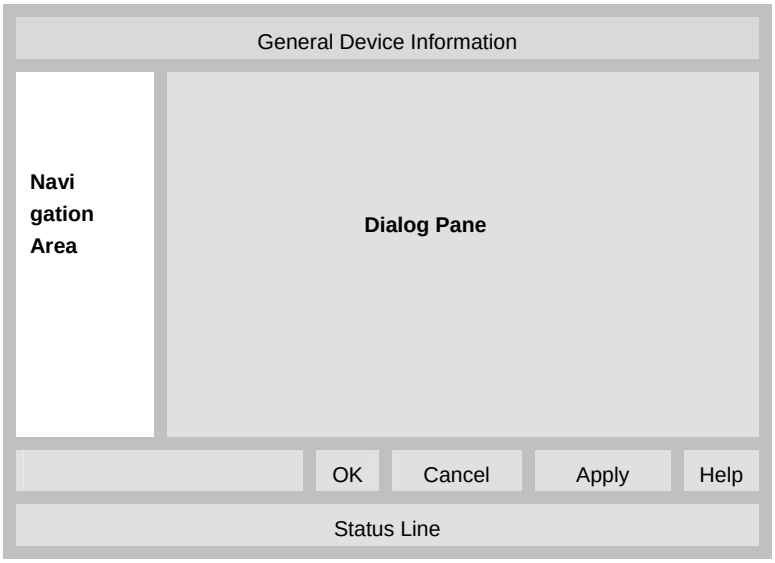


Figure 1: Dialog Structure of Generic EtherCAT Slave DTM

1.4.1 General Device Information

Parameter	Meaning
IO Device	Name of the device
Vendor	Vendor name of the device
Device ID	Identification number of the device
Vendor ID	Identification number of the vendor

Table 2: General Device Information

1.4.2 Navigation Area

The **Navigation Area** at the left side of the dialog provides a tree structure to navigate through the panes of the DTM.

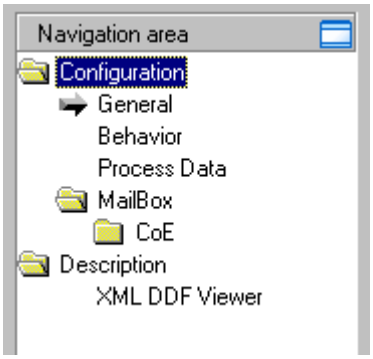


Figure 2: Navigation Area

➢ To access a DTM pane select the respective item of the navigation tree structure.

The **Navigation Area** can be hidden or it can be displayed again.

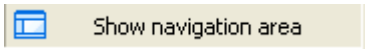
Control	Meaning
	Window button to hide the navigation area, (at the right side of the navigation title bar).
	**Show navigation area** button to open the navigation area, (at the lower left corner of the dialog pane).

Table 3: Hide / display Navigation

1.4.3 Dialog Pages

At the dialog pane the **Configuration** or **Description** panes are opened via the corresponding folder in the navigation area.

Configuration	
General	At the **General** page EtherCAT Slave information is displayed. For further information, refer to section *General* on page 18.
Behavior	At page **Behavior** the parameters of the Device checkup, the Process Data and the Watchdog are described. For further information, refer to section *Behavior* on page 19.
Process data	At page **Process Data** the parameters of the Sync Manager are displayed, the PDO Assignment and the PDO content. For further information, refer to section *Process Data* on page 24.
Mailbox	At page **Mailbox** you can get information on mailbox-based data transfer and the CoE (CANopen over Ethernet) functionality. For further information, refer to section *Mailbox* on page 27.
Description	
XML DDF Viewer	By use of the **XML DDF-Viewer** a DDF file can be viewed and searched through. For further information, refer to section *XML DDF Viewer* on page 32.

Table 4: Overview Settings and Configuration Pages

1.4.4 Controls and Dialog Buttons

In this section, you will find general information on controls and buttons.

1.4.4.1 General Buttons

The table below explains the general buttons in the DTM user interface.

Button	Meaning
OK	To confirm your latest settings, click on the **OK** button. All changed values will be applied on the frame application database. *The dialog then closes.*
Cancel	To cancel your latest changes, click on the **Cancel** button. Answer to the safety query **Configuration data has been changed. Do you want to save the data?** by **Yes**, **No** or **Cancel**. **Yes**: The changes are saved or the changed values are applied on the frame application database. *The dialog then closes.* **No**: The changes are not saved or the changed values are not applied on the frame application database. *The dialog then closes.* **Cancel**: *Back to the DTM.*
Apply	To confirm your latest settings, click on the **Apply** button. All changed values will be applied on the frame application database. *The dialog remains opened.*
Help	To open the DTM online help, click on the **Help** button.

Table 5: General Buttons

1.4.4.2 Table Line Buttons

➢ To select, create or delete a line in a table use the buttons shown in the table below.

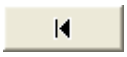
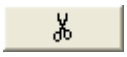
Button	Meaning
	To select the first line of a table use the button **First Line**.
	To select the previous line of a table use the button **Previous Line**.
	To select the next line of a table use the button **Next Line**.
	To select the last line of a table use the button **Last Line**.
	The button **Create a new Line** inserts new lines into the table.
	The button **Delete selected Line** deletes the selected line from the table.

Table 6: Table Line – Buttons

1.4.5 Status Bar

The **Status Bar** displays information about the current state of the DTM. The current activity, e.g. download, is signaled graphically via icons in the status bar.

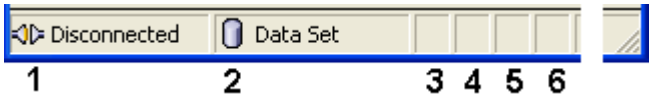
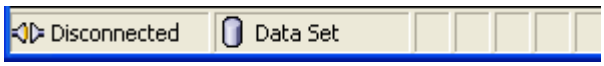


Figure 3: Status Bar – Status Fields 1 to 6

Status Field	Icon / Meaning
1	**DTM Connection States**
	Connected: Icon closed = Device is online
	Disconnected: Icon opened = Device is offline
2	**Data Source States**
	Data set: The displayed data are read out from the instance data set (database).
	Device: The displayed data are read out from the device.
3	**States of the instance Date Set**
	Valid Modified: Parameter is changed (not equal to data source).
4	**Changes directly made on the Device**
	Load/configure diagnosis parameters: Diagnosis is activated.
6	**Device Diagnosis Status**
	Save operation succeeded: The save operation has been successful.
	Further messages due to successful handling of device data.
	Save operation failed: The save operation has failed.
	Further fail operation messages due to incorrect communication due to malfunction in the field device or its peripherals.

Table 7: Status Bar Icons [1]

Offline State



Save operation succeeded

Online State and Diagnosis

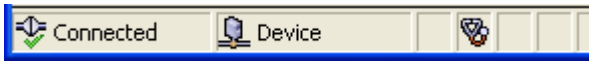


Figure 4: Status Bar Display Examples

2 Getting Started

2.1 Configuration Steps

The following table describes the steps to configure a device with the Generic EtherCAT Slave DTM as it is typical for many cases. At this time it is presupposed that the EtherCAT Master DTM installation was already done.

#	Step	Short Description	For detailed information see section	Page
1	Add EtherCAT Slave in the Device Catalog	Add the Slave in the Device Catalog by importing the device description file to the Device Catalog. Depending of the FDT Container. For netDevice: - **Network > Import Device Descriptions**.	*(See User Manual netDevice and netProject)*	-
2	Load device catalog	Depending of the FDT Container: For netDevice: - select **Network > Device Catalog**, - select button **Reload Catalog**.	*(See User Manual netDevice and netProject)*	-
3	Create new project / Open existing project	Depending of the frame application. For the configuration software: - select **File > New** or **File > Open**.	*(See User Manual of the Frame Application)*	-
4	Insert Master or Slave into configuration	Depending of the FDT Container: For netDevice: - in the Device Catalog click to the Master, - and insert the device via drag and drop **to the line** in the network view, - in the Device Catalog click to the Slave, - and insert the device via drag and drop **to the Master bus line** in the network view.	-	-
5	Configure Slave	Configure the Slave. - Double click to the device icon of the Slave. - The Generic Slave DTM configuration dialog is displayed. In the Generic Slave DTM configuration dialog: - configure the EtherCAT device parameters. - close the Generic Slave DTM configuration dialog via the button **OK**.	*Configuring Device Parameters*	16
6	Configuration Steps Master device	Configure the Master device via EtherCAT-Master DTM.	*(See User Manual DTM for EtherCAT-Master devices)*	-
7	Save project	Depending of the frame application. For the configuration software: - select **File > Save**.	*(See User Manual of the Frame Application)*	-

Table 8: Getting Started - Configuration Steps

For information to further steps as **Download Configuration** or **Diagnosis**, refer to the user manual *DTM for EtherCAT-Master devices*.

2.1.1 Configuring Device Parameters

The following steps are needed to configure the device parameters using the EtherCAT Generic Slave DTM:

- Configure the behavior of the EtherCAT-Slave as described in section *"Behavior*" at page 19.
- On the **Behavior** page set the parameters for

- the Device checkup,
- the **Process data**
- and the **Watchdog**.

- Configure the process data of the EtherCAT-Slave as described in section "*Process Data"* at page 24.
- On the **Process Data** page set the parameters for

- the **Sync Manager**,
- the **PDO Assignment (0x1C10-0x1C2F)**
- and the **PDO Content (0x1600-0x17FF).**

3 Configuration

3.1 Overview Configuration

Configuration Dialog Pages

The table below gives an overview for the Configuration dialog pages descriptions:

Section	Page
General	*18*
Behavior	*19*
Process Data	*24*
Mailbox	*27*

Table 9: Descriptions of the Dialog Pages Configuration

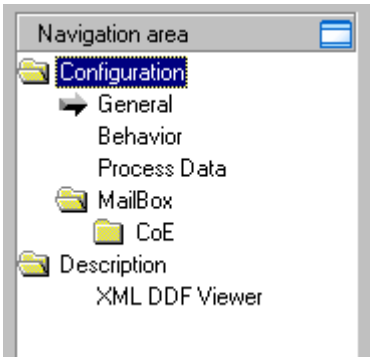


Figure 5: Navigation Area - Configuration

3.2 General

The **General** dialog page shows the **Description** of the EtherCAT Slave.

Note: The **Station Address** is set by the EtherCAT Master, therefore the corresponding data field is not editable.

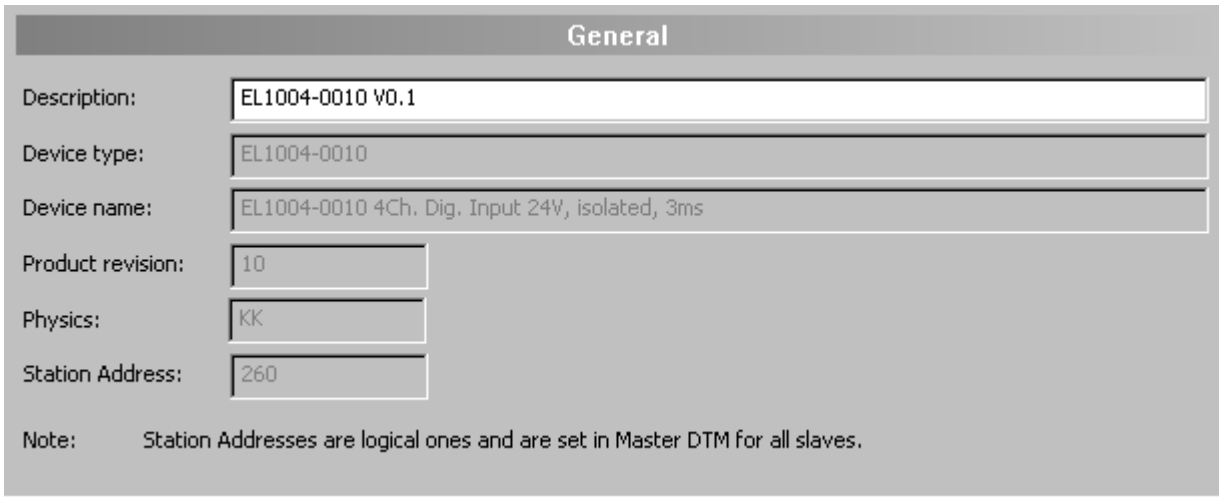


Figure 6: Configuration > General

Parameter	Meaning
Description	Symbolic Name of the EtherCAT Slave station.
Device type	Device type as defined in the DDF
Device name	Device name as defined in the DDF
Product revision	Product revision as defined in the DDF or E²PROM
Physics	EtherCAT Port configuration: available ports and their types.
Station Address	Station Address denominates a logical address. The station address of a slave is set in the master DTM.

Table 10: General Page Parameters

Physics in the context of EtherCAT Port configuration is described by two characters indicating the physical interface of the connection. The coding is as follows:

Physics	Port type
K	E-Bus
Y	100Base-TX
F	100Base-FX

Table 11: Coding of Parameter "Physics"

3.3 Behavior

At the page **Behavior,** the parameters of

- the state machine timeout values
- the device checkup,
- the process data
- and the watchdog timer.
- are set and displayed.

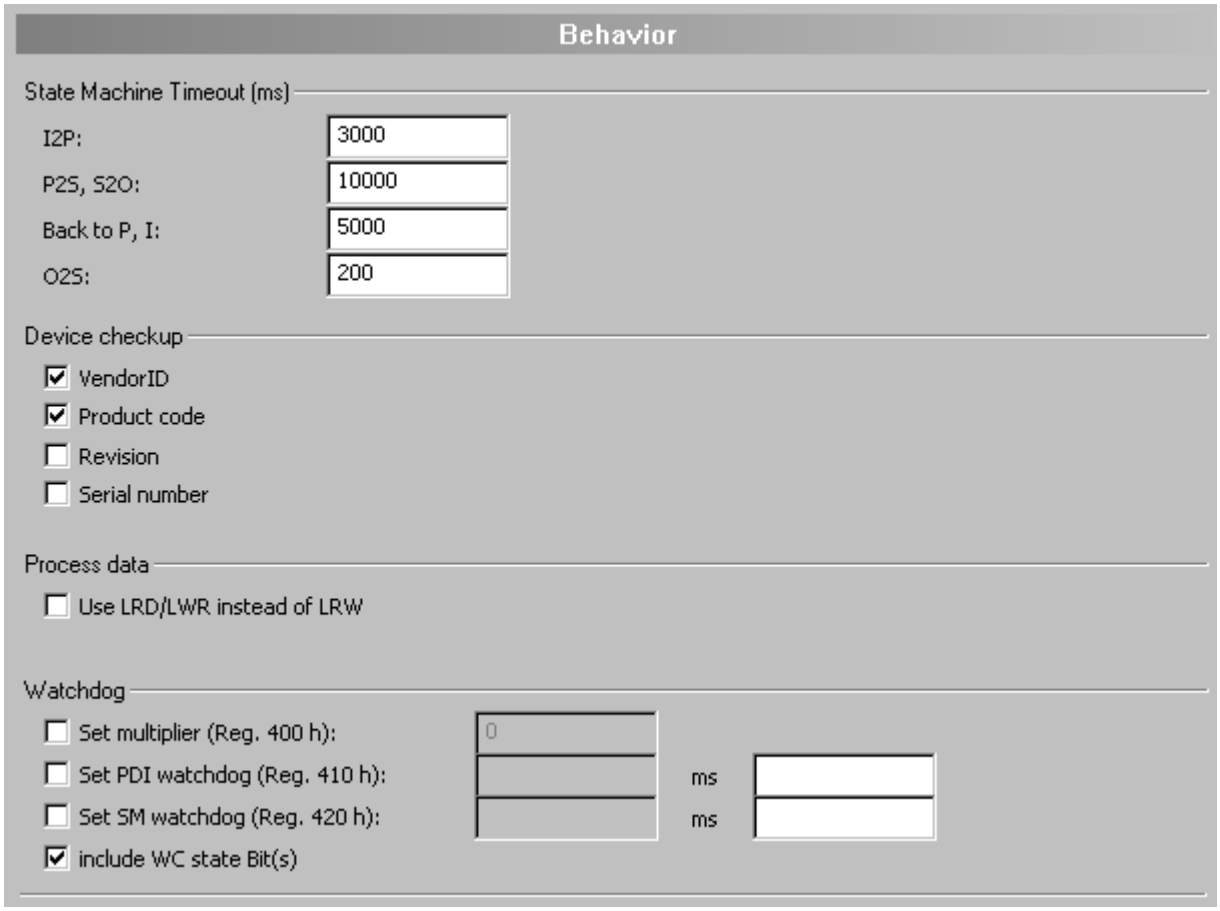


Figure 7: Configuration > Behavior

3.3.1 State Machine Timeout

For various transitions between states of the EtherCAT slave state machine the associated timeout values can be configured separately in the state machine timeout section of the 'Behavior' dialog:

- I2P

  This value applies to the transition from *Init* state to *Pre-Operational* state

- P2S, S2O

  This value applies to the transition from *Pre-Operational* state to *Safe-Operational* state and from *Safe-Operational* state to *Operational* state.

- Back to P, I

  This value applies to the transition from any higher state back to *Pre-Operational* state or *Init* state.

- O2S

  This value applies to the transition from *Operational* state to *Safe-Operational* state.

Note: These timeout values are specified in units of milliseconds.

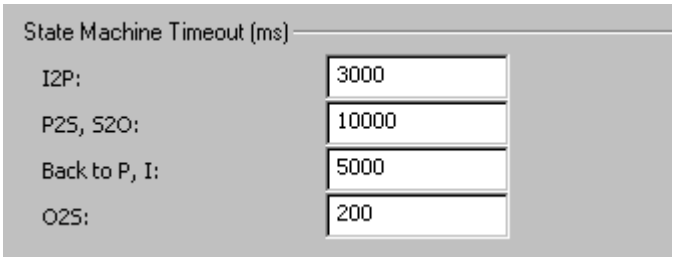


Figure 8: Configuration > Behavior > State Machine Timeout - Configuration

3.3.2 Device Check-up

The *device check-up* part of the **Behavior** dialog looks like:

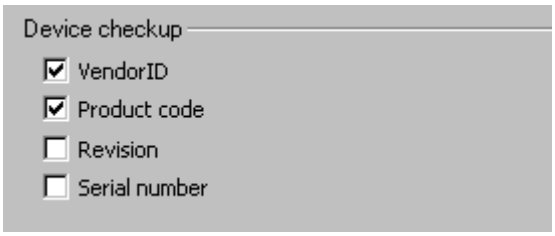


Figure 9: Configuration > Behavior > Device Check

The following table shows which items identifying the EtherCAT device can optionally be verified during device check-up if marked in the dialog accordingly.

Parameter	Meaning
VendorID	Device's vendor ID (DDF or stored device-internally)
Product code	Device's product code (DDF or stored device-internally)
Revision	Device's revision (DDF or stored device-internally)
Serial number	Device's Serial number (DDF or stored device-internally)

Table 12: Parameters Behavior > Device checkup

The values within the DDF file are verified against the corresponding information stored in the device (for example, within an E²PROM circuit), if the according check box is marked.

3.3.3 Process Data

EtherCAT supplies different command sets for reading and writing:

- a combined read/write command (LRW)
- separate read and write commands (LRD/LWR)

This option allows to choose between these alternatives:

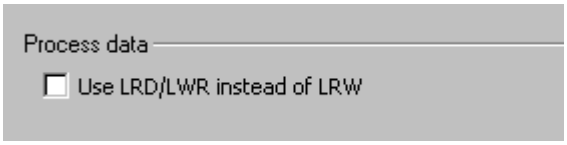


Figure 10: Configuration > Behavior > Process data

Parameter	Meaning
Use LRD/LWR instead of LRW	Logical read and write operation: If marked, separate EtherCAT read (LRD) and write (LWR) commands will be used. Otherwise, a combined EtherCAT read and write (LRW) command will be used.

Table 13: Parameters Behavior > Process data

For more information on EtherCAT read and write commands see the *EtherCAT Communication Specification*, version 1.0, section *6.2* “EtherCAT Services”, page 43.

3.3.4 Watchdog

Both the entire PDI (Process Data Interface) and all sync managers (separately) are monitored by watchdog timers.

The following rules apply for resetting the watchdog timers:

- Each access from the application controller to the EtherCAT Slave controller resets the watchdog timer of the Process Data Interface.
- Each write access to the associated memory area of a sync manager resets the sync manager's watchdog timer.

The watchdog timeout values can be calculated using the formula given below from an individually configurable value and a common multiplier.

The "Watchdog" part of the "*Behavior*" dialog allows specifying the multiplier and the individual values for PDI watchdog and sync manager watchdogs.

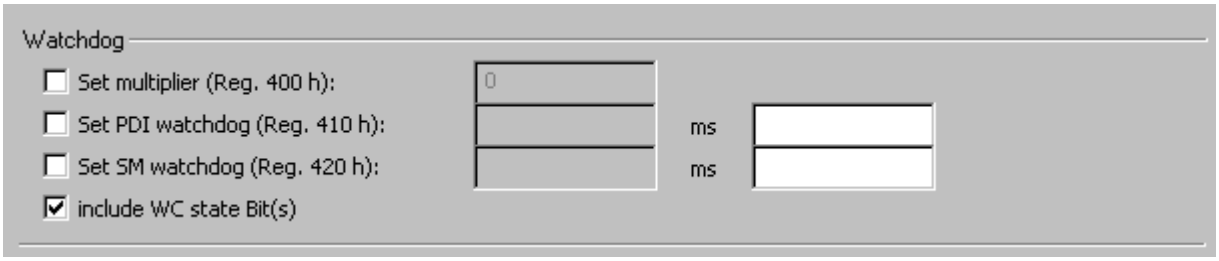


Figure 11: Configuration > Behavior > Watchdog

Parameter	Meaning
Set multiplier	Watchdog multiplier, content of the register 0x400
Set PDI watchdog	PDI watchdog, see note below
Set SM watchdog	SM watchdog, see note below
Include WC state Bit(s)	If this check box is marked, an input variable is added to the slave device, that shows the working counter state of the EtherCAT slave device.

Table 14: Parameters Behavior > Watchdog

Note: The **PDI** & **SM** watchdog timeout values are calculated as follows.

PDI watchdog timeout =

([value of register 0x400] + 2) * 40 * [value of register 0x 410]

SM watchdog timeout =

([value of register 0x 400] + 2) * 40 * [value of register 0x 420]

3.4 Process Data

In EtherCAT, the process data objects (PDO) are assigned to sync managers. A sync manager is used for synchronization of data communication on a certain communication channel. This channel is configured either for input or for output and either for cyclic or for acyclic communication. (This is defined within the device description file.) Up to 16 sync manager can be configured. These are numbered from 0 up to 15. The process data dialog only displays the sync manager which is for cyclic communication. Possible sync managers for acyclic communication is displayed in the **CoE MailBox** dialog**.**

The illustration below shows the process data dialog of the EtherCAT Generic Slave DTM:

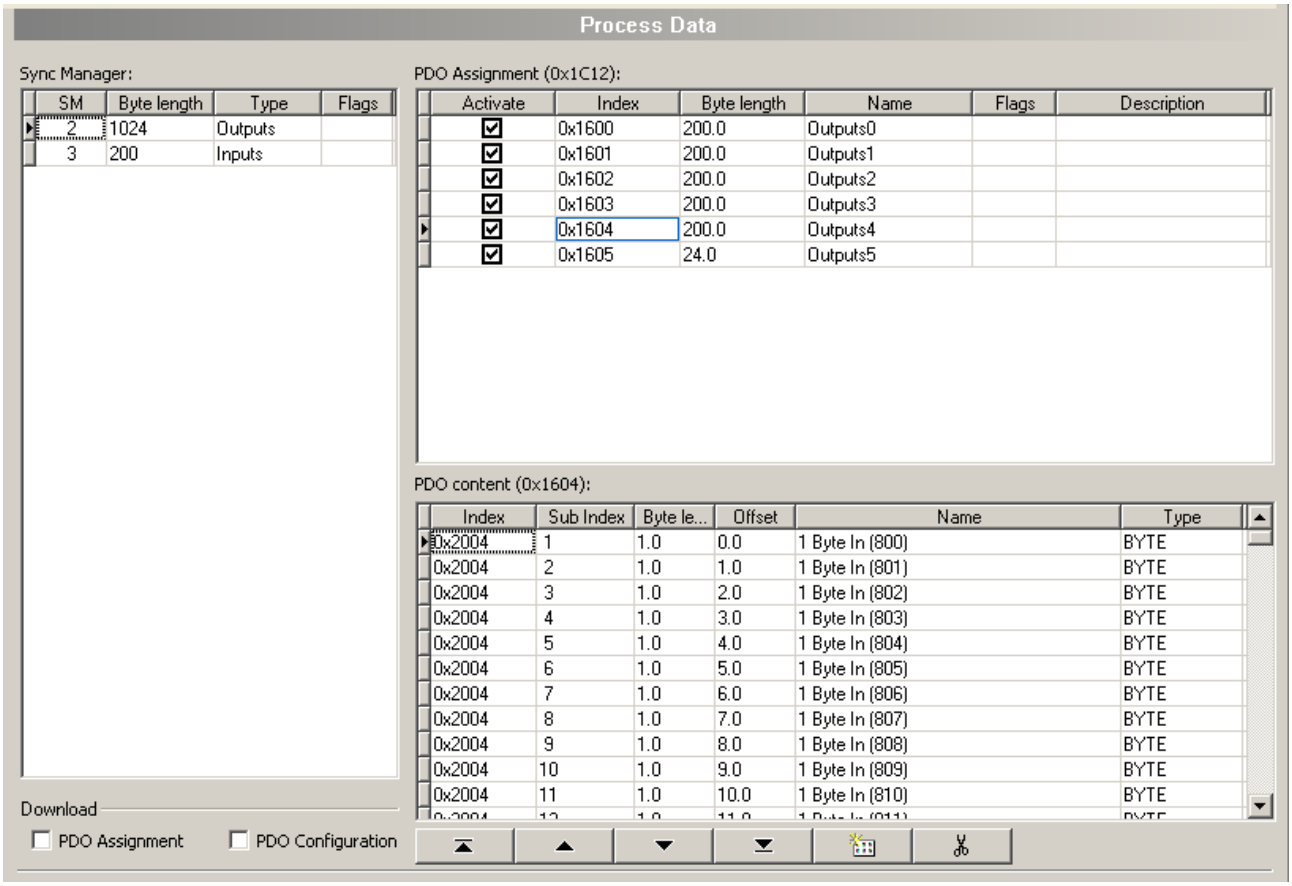


Figure 12: Configuration > Process data

The process data dialog consists of three parts:

- Sync Manager area
- PDO Assignment area
- PDO Content area

3.4.1 Sync Manager

Within the process data dialog only those PDOs can be shown simultaneously, which are assigned to the same sync manager.

The left part of the process data dialog represents the *Sync Manager* area which is used for choosing the sync manager to be used. It provides the **Sync Manager** table for choosing the sync manager whose PDOs are to be displayed, and additionally two checkboxes for PDO assignment and PDO configuration which however are relevant in case of variable configuration only.

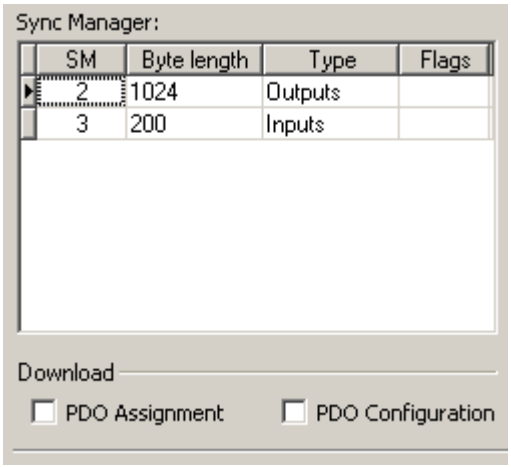


Figure 13: Configuration > Process data > Sync Manager

The table **Sync Manager** displays the configuration of the sync managers for the device, as defined in its device description file (DDF). For each of the 4 sync managers available at maximum in the table, the following information is displayed:

Parameter	Meaning
SM	Sync Manager channel number (0-15)
Byte length	Sync Manager length in bytes
Type	Sync Manager type (Inputs/ Outputs)
Flags	Sync Manager flags (Flag F = fixed contents)

Table 15: Parameters Process data > Sync Manager

In case this device supports acyclic communication based on mailboxes the Sync Manager 0 is used for the mailbox output (master to slave) and the Sync Manager 1 is used for the mailbox input (slave to master).

If the device does not support acyclic communication based on mailboxes, Sync Manager 0 - 15 can be used for the Process data outputs and inputs (also see Figure *Configuration > Process data > Sync Manager*).

The size of the Sync Managers is defined by the assigned PDO objects. In this case the PDO object is assigned to the Sync Manager 3 and because the content of this object has the size 8 the Sync Manager is configured to 8 bytes.

The read-only checkboxes below show the download flags which are defined in device description file. They have the following meaning:

Checkbox	Meaning
PDO Assignment	This flag indicates whether to download PDO assignment of Sync Manager. ▪ If this flag is checked, this means that PDO assignment of the slave is writable and special CoE Init-Commands should be generated by the EtherCAT Master DTM in the Configuration Information File. ▪ These CoE Init-commands include the indices of transmit/receive PDOs. Therefore the slave knows how such PDOs are related to the Sync Manager.
PDO Configuration	This flag indicates whether to download PDO mapping. ▪ If this flag is set as checked, this means that PDO mapping of the slave is writable and special CoE Init-Commands should be generated by the EtherCAT Master DTM in the Configuration Information File. ▪ These CoE Init-Commands include the indices of mapped process data objects. Therefore slave knows how mapped PDOs are related to transmit /receive PDOs.

Table 16: Meaning of Checkboxes

3.4.2 PDO Assignment (Index 0x1C10- 0x1C1F)

The upper right part of the process data dialog represents the *PDO Assignment* area for the sync manager chosen within the left part of the window. It contains the transmit/receive PDOs.

Thus the contents of this table depends on the choice of the sync manager in the left part of the window. If a sync manager with type “Outputs” is selected, all defined receive PDOs (Index 0x1600 -0x17FF) in the device description file will be shown in this table.

Similarly, if a sync manager with type “Inputs” is selected, all defined transmit PDOs (Index 0x1A00 -0x1BFF) will be shown in this table.

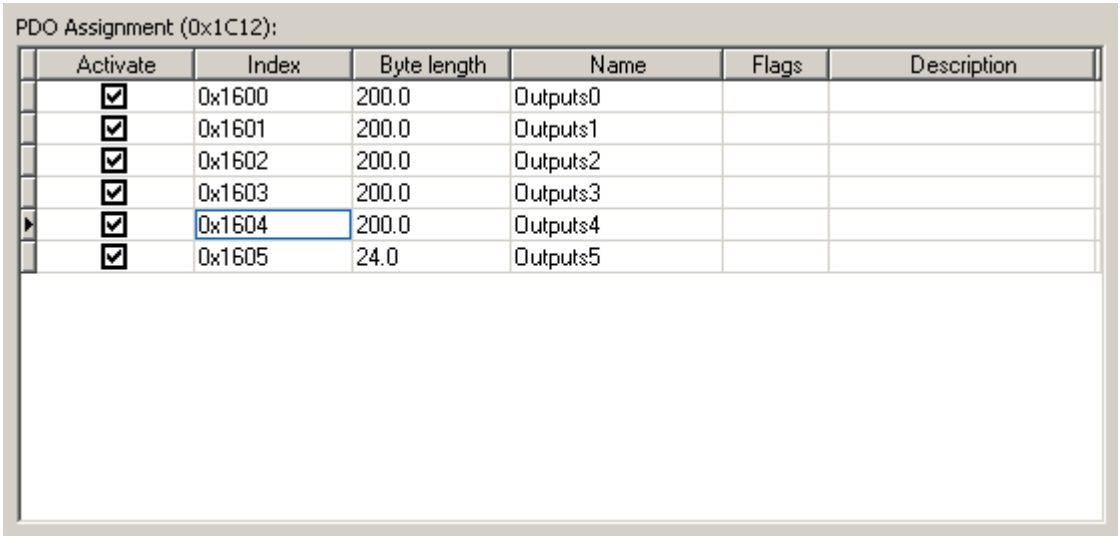


Figure 14: Configuration > Process data > PDO Assignment

For the transmit/receive PDOs assigned to the chosen sync manager, the following values are displayed:

Parameter	Meaning
Activate	Activation check box for assigned PDO of the selected Sync Manager
Index	Object index of the PDO
Byte length	Length of the PDO in bytes
Name	Name of the PDO
Flags	Flags assigned to the PDO
Description	Description of the PDO

Table 17: Parameters Process data > PDO Assignment

The PDO assignment is stored in a sync manager channel object within the object dictionary of the EtherCAT slave. The index of such an object is displayed in the headline of the PDO assignment area, and it has a relationship with the sync manager channel number(n) :

`Index = 0x1C10 + n  ( n = 0…15)`

In the current example the information was taken from the object with the index 0x1C12 indicating sync manager 2 had been chosen for display.

For slave devices with selectable PDO assignment, PDO/PDOs can be selected from the given list of multiple fixed PDOs according to the rules defined by the device description file.

3.4.3 PDO Content (Index 0x1600-0x17FF, 0x1A00-0x1BFF)

The lower right part of the process data dialog represents the *PDO Content* area. It contains the mapped process data objects of the transmit/receive PDO, which has been selected in the upper right part of the window.

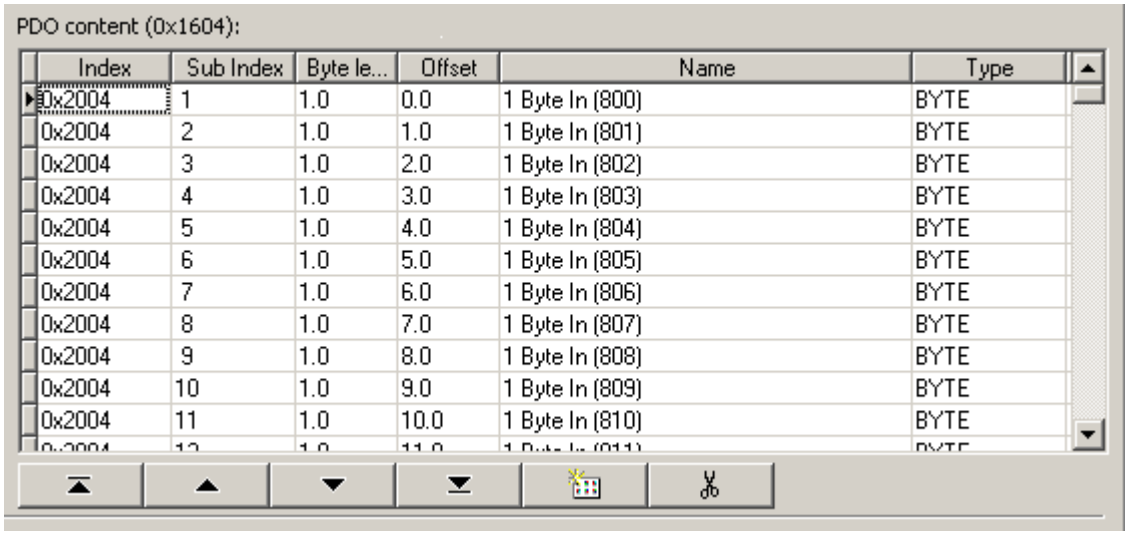


Figure 15: Configuration > Process Data > PDO Content

For the mapped process data objects, the following values are displayed:

Parameter	Meaning
Index	Object index Subindex of the PDO
Sub index	Sub index for the PDO
Byte length	Size of the PDO entry
Offset	Offset of the PDO entry
Name	Name of the PDO entry
Type	Data type of the PDO entry

Table 18: Parameters Process Data > PDO Content

The PDO content is stored in a transmit/receive object within the object dictionary of the EtherCAT slave. You can find the correct index of the selected transmit/receive PDO in the headline of the PDO assignment area.

In the current example the information was taken from the object with index 0x1604.

For an explanation of the navigation buttons see section "*Table Line Buttons*" of this document.

3.5 Mailbox

3.5.1 CoE

For slave devices supporting the CoE MailBox, the following dialog page is additionally displayed:

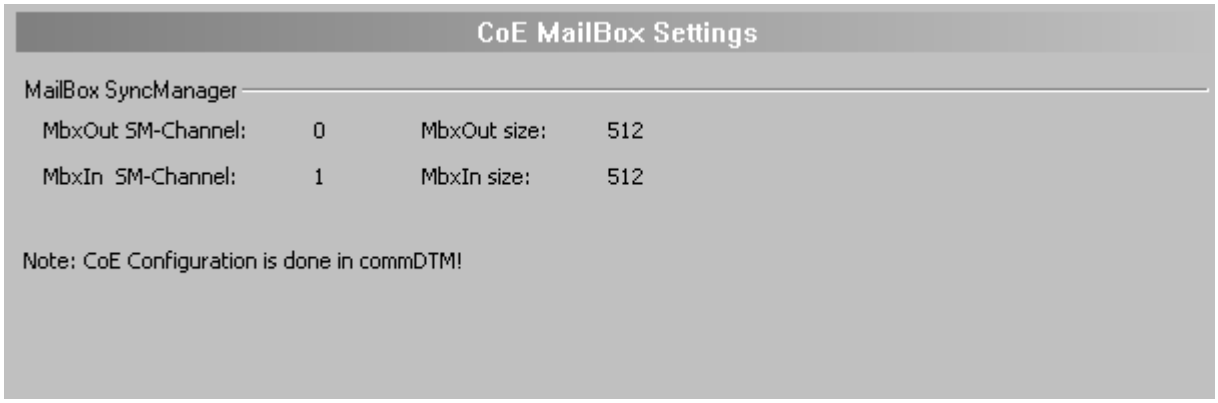


Figure 16: Configuration > Mailbox > CoE Mailbox Settings

The dialog page provides the following information:

- The channel number of the sync manager (for mailbox input and output)
- The configured mailbox size (this applies both for the input mailbox and for the output)mailbox

The complete MailBox configuration for each slave with MailBox support is done in the EtherCAT Master-DTM.

4 Description

4.1 Overview Description

The **Description** pages contain the following information:

- XML Viewer page: the devices XML file content in HTML style.

Description Dialog Pages

The table below informs about the contents of the **Description** dialog page:

Subsection	Manual Page
XML DDF Viewer	31

Table 19: Descriptions of the Description Pages

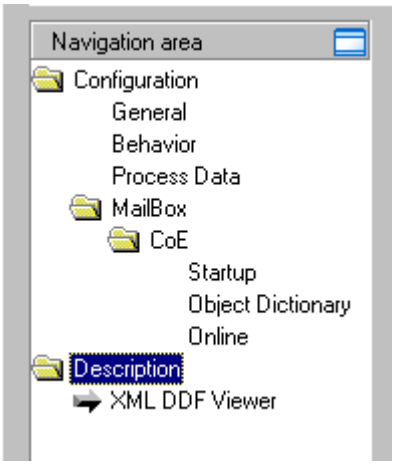


Figure 17: Navigation Area – Description

4.2 XML DDF Viewer

The **XML DDF Viewer** displays the content of the XML DDF file of the device.

Under **Filename** the absolute file directory path and the file name of the displayed DDF file is displayed. **Find what** offers a search feature to search for text contents within the text of the DDF file.

In the DDF Viewer window on the left side, the line number is displayed for simple overview, the further entries show the DDF file in text format.

Parameter	Meaning
FIlename	File directory path and the file name of the displayed DDF file.
Find what	Search feature to search for text contents within the text of the DDF file.
Match case	Search option
Match whole word	Search option

Table 20: Device Description – XML DDF Viewerr

The **XML DDF Viewer** page consists of the following elements:

- **File name** shows the absolute path of the DDF file.
- **Find what** offers searching for specific text within the DDF file.
- Using the **Find Next** button allows you to jump to the next occurrence of the text to be searched for within the XML DDF file.
- Check **Match case** if you want to perform a case-sensitive search.
- Check **Match whole word** if only entire words should match and fragments of words should be excluded from matching.

Note: You can also access the search functionality of the **XML DDF Viewer** by typing **Ctrl-F** on the keyboard.

5 Lists

5.1 List of Figures

5.2 List of Tables

6 Glossary

CoE

CANopen over EtherCAT

CoE denominates a method for accessing an object dictionary which has been adopted for use in EtherCAT from CANopen.

DDF

Device Description File.

DTM

Device Type Manager.

The Device Type Manager (DTM) is a software module with graphical user interface for the configuration or for diagnosis of devices.

E²PROM

Electronically erasable Programmable Read-Only Memory

E-Bus

Bus system based on LVDS standard

EDS

Electronic Data Sheet

EtherCAT-Master

A device which is responsible for the configuration, parameterization of the EtherCAT segment, all connected devices' controllers, and cyclic process data exchange, mailbox and diagnostics services.

EtherCAT-Port

Physical type of data transmission used by EtherCAT. An EtherCAT Slave Master can have up to 4 EtherCAT ports. Can be one of the following three alternatives:

• E-Bus

• 100Base-TX

• 100Base-FX

EtherCAT-Slave

A device which is configured by the Master, receives telegrams with output data, commands from it and provides input and status data.

FDT

Field Device Tool

FDT specifies an interface, in order to be able to use DTM (Device Type Manager) in different applications of different manufacturers

FMMU

Fieldbus Memory Management Unit

A field bus memory management unit organizes a mapping of EtherCAT logical addresses to physical addresses.

LVDS

Low Voltage Differential Signals

A data transmission standard specified in ANSI/TIA/EIA-644-1995 and used in Beckhoff's E-Bus.

Object Dictionary

An object dictionary is a storage area for device parameter data structures. It is accessed in standardized manner very similarly as this is done in CANopen..

PDO

Process Data Objekt

Specific data object for cyclic data communication.

SDO

Service Data Objekt

Specific data object for acyclic data communication, i.e. mailbox-based communication. It is typically used for accessing the object dictionary.

Sync Manager

Synchronization Manager

A sync manager synchronizes the data communication on a specific communication channel. It is configured for managing either input or output and for working either cyclically or acyclically based on mailboxes. Configuration is done within the DDF file. Up to 4 sync managers numbered 0 to 3 can be configured.

XML

Extensible Markup Language

A versatile data storage format defined by the World Wide Web Consortium (W3C). It is based on elements and attributes. In EtherCAT, it is used in device descriptions stored in DDF files.

7 Appendix

7.1 User Rights

User-rights are set within the FDT-container. Depending on the level the configuration is accessible by the user or read-only.

To access the **Configuration** panes of the Generic EtherCAT Slave DTM you do not need special user rights. Also all users can select the decimal or hexadecimal Display mode or sort table entries.

Note: To edit, set or configure the parameters of the **Configuration** panes, you need user rights for *Maintenance,* for *Planning Engineer* or for *Administrator*.

The following tables give an overview of the user right groups and which user rights you need to configure the single parameters.

7.1.1 Configuration

	Observer	Operator	Maintenance	Planning Engineer	Adminis-trator
General	D	D	X	X	X
Behavior	D	D	X	X	X
Process Data	D	D	X	X	X
Mailbox	D	D	X	X	X

Table 21: Configuration (D = Displaying, X = Editing, Configuring)

7.2 References

[1] Device Type Manager (DTM) Style Guide, Version 1.0 ; FDT-JIG - Order No. <0001-0008-000>

[2] EtherCAT Communication Specification, August 2007

7.3 Contacts

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