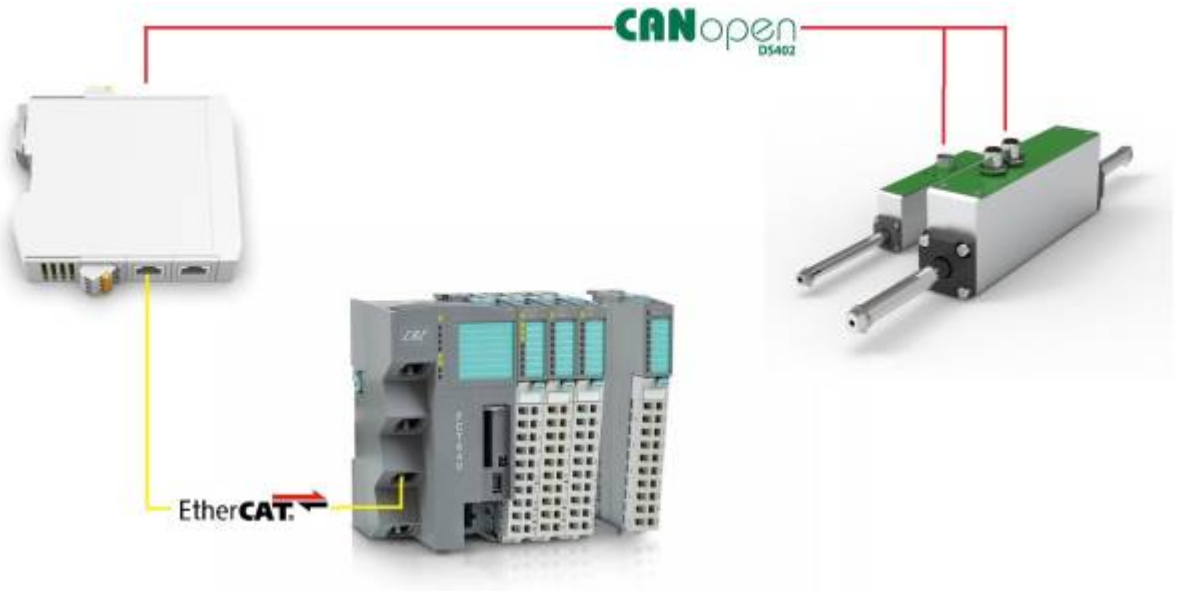
Use Cases

Synchronization using CANopen PDO (DS402 bridge)



In this configuration the interpolated position point is sent through the PDOs to the NLi motor. The change of the motion table parameters is made by using CANopen SDO.

CODESYS example project: :gtw_ethercat:gtw_eth_2_axis_pdo_sync_402.zip

Gateway and PDO configuration

16#8000:16#00	GATEWAY_CONF			
:16#01	N_SLAVE	RW	UINT	16#0002
:16#02	SYNC_TIME_CAN	RW	UINT	16#0001
:16#03	SYNC_TIME_CAN_PDO	RW	UINT	16#0002
:16#04	SYNC_TIME_MODBUS	RW	UINT	16#0019
:16#05	CAN_TIMEOUT	RW	UINT	16#0064
:16#06	MODBUS_TIMEOUT	RW	UINT	16#00C8
:16#07	GATEWAY_MODE	RW	UINT	16#0000
:16#08	GATEWAY_FW_VERSION	RO	UINT	16#5B80

16#800B:16#00	Slave_PDO_Mapping			
:16#01	PDO1_ADDRESS	RW	UINT	16#6064
:16#02	PDO1_LENGTH	RW	UINT	16#0020
:16#03	PDO2_ADDRESS	RW	UINT	16#6041
:16#04	PDO2_LENGTH	RW	UINT	16#0010
:16#05	PDO3_ADDRESS	RW	UINT	16#6061
:16#06	PDO3_LENGTH	RW	UINT	16#0008
:16#07	PDO4_ADDRESS	RW	UINT	16#0000
:16#08	PDO4_LENGTH	RW	UINT	16#0000
16#800C:16#00	Slave_PDI_Mapping			
:16#01	PDI1_ADDRESS	RW	UINT	16#60C1
:16#02	PDI1_LENGTH	RW	UINT	16#0020
:16#03	PDI2_ADDRESS	RW	UINT	16#6040
:16#04	PDI2_LENGTH	RW	UINT	16#0010
:16#05	PDI3_ADDRESS	RW	UINT	16#6060
:16#06	PDI3_LENGTH	RW	UINT	16#0008
:16#07	PDI4_ADDRESS	RW	UINT	16#0000

Synchronization using Remote I/O trigger and CANopen SDO



In this configuration the Bus Converter generates a synchronization signal (motion trigger) for NLi motor using remote output. The change of the motion table parameters is made by using CANopen SDO. CANopen PDOs can be used to read status word and current position at every EtherCAT sync time.

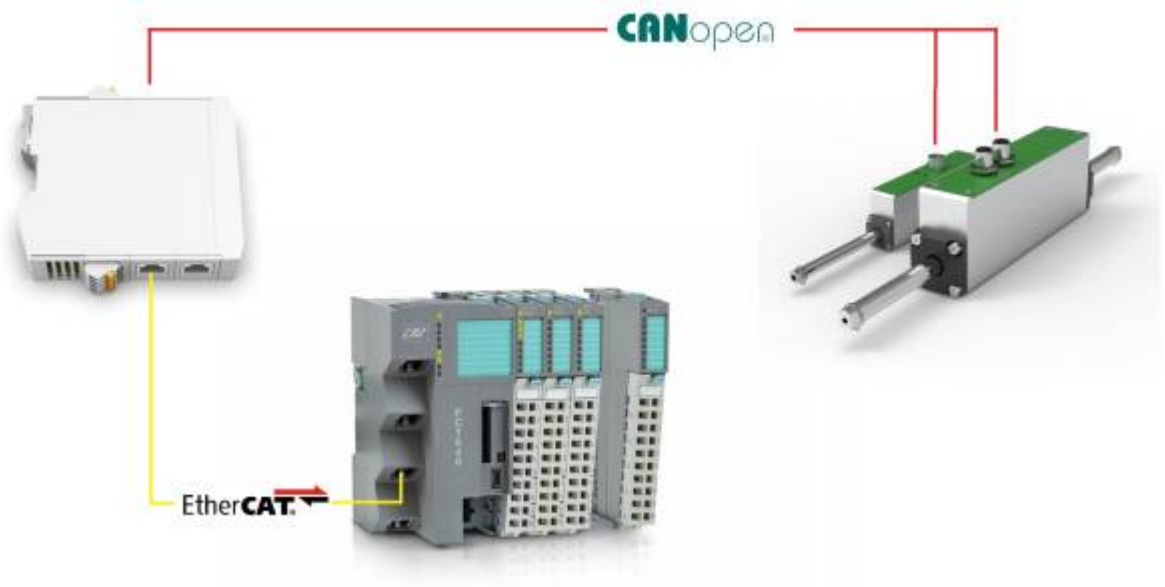
CODESYS example project: :gtw_ethercat:gtw_eth_2_axis_pdo_io_sync.zip

Gateway and PDO configuration

16#8000:16#00	GATEWAY_CONF			
:16#01	N_SLAVE	RW	UINT	2
:16#02	SYNC_TIME_CAN	RW	UINT	2
:16#03	SYNC_TIME_CAN_PDO	RW	UINT	5
:16#04	SYNC_TIME_MODBUS	RW	UINT	25
:16#05	CAN_TIMEOUT	RW	UINT	100
:16#06	MODBUS_TIMEOUT	RW	UINT	200
:16#07	GATEWAY_MODE	RW	UINT	0
:16#08	GATEWAY_FW_VERSION	RO	UINT	23424

16#800B:16#00	Slave_PDO_Mapping			
:16#01	PDO1_ADDRESS	RW	UINT	16#6064
:16#02	PDO1_LENGTH	RW	UINT	16#0020
:16#03	PDO2_ADDRESS	RW	UINT	16#6041
:16#04	PDO2_LENGTH	RW	UINT	16#0010
:16#05	PDO3_ADDRESS	RW	UINT	16#6061
:16#06	PDO3_LENGTH	RW	UINT	16#0008
:16#07	PDO4_ADDRESS	RW	UINT	16#0000
:16#08	PDO4_LENGTH	RW	UINT	16#0000
16#800C:16#00	Slave_PDI_Mapping			
:16#01	PDI1_ADDRESS	RW	UINT	16#60FD
:16#02	PDI1_LENGTH	RW	UINT	16#0020
:16#03	PDI2_ADDRESS	RW	UINT	16#6040
:16#04	PDI2_LENGTH	RW	UINT	16#0010
:16#05	PDI3_ADDRESS	RW	UINT	16#6060
:16#06	PDI3_LENGTH	RW	UINT	16#0008
:16#07	PDI4_ADDRESS	RW	UINT	16#0000
:16#08	PDI4_LENGTH	RW	UINT	16#0000

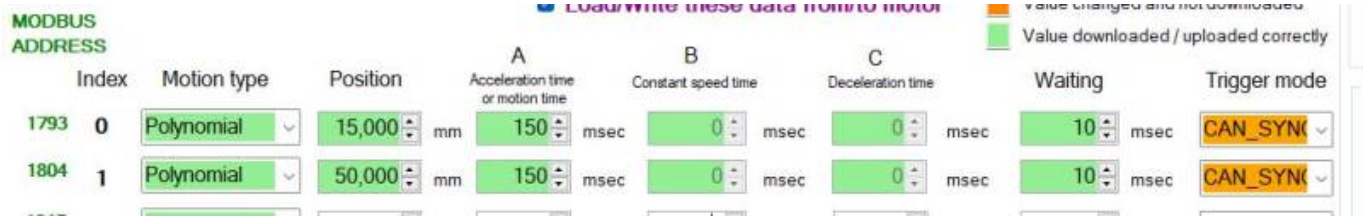
Synchronization using Synch signal and CANopen SDO



In this configuration the Bus Converter is sending a Synch signal to every NLi motors on the CANopen fieldbus using PDO. The change of the motion table parameters is made by using CANopen SDO.

CANopen PDOs can be used to read status word and current position at every EtherCAT sync time.

In this way, the Sync_value on the PDO (0x7002) can be used to send motion trigger synchronization signal using CAN communication instead of Remote I/O signal. The NLi motor must be configured to trigger this signal instead of Digital Input.



Gateway configuration and PDO mapping remain the same as in the previous use case.

Synchronization using Remote I/O trigger and MODBUS RTU



In this configuration the Bus Converter generates a synchronization signal (motion trigger) for NLi motor using remote output. The change of the motion table parameters is made by using MODBUS RTU communication. Status and control word can be read and written using MODBUS RTU communication. Current position can be read using MODBUS RTU.

CODESYS example project using FCT640 PLC : :gtw_ethercat:gtw_eth_slave_modbus.zip

Gateway configuration

16#8000:16#00	GATEWAY_CONF			---
:16#01	N_SLAVE	RW	UINT	2
:16#02	SYNC_TIME_CAN	RW	UINT	2
:16#03	SYNC_TIME_CAN_PDO	RW	UINT	5
:16#04	SYNC_TIME_MODBUS	RW	UINT	25
:16#05	CAN_TIMEOUT	RW	UINT	100
:16#06	MODBUS_TIMEOUT	RW	UINT	200
:16#07	GATEWAY_MODE	RW	UINT	1
:16#08	GATEWAY_FW_VERSION	RO	UINT	23424

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