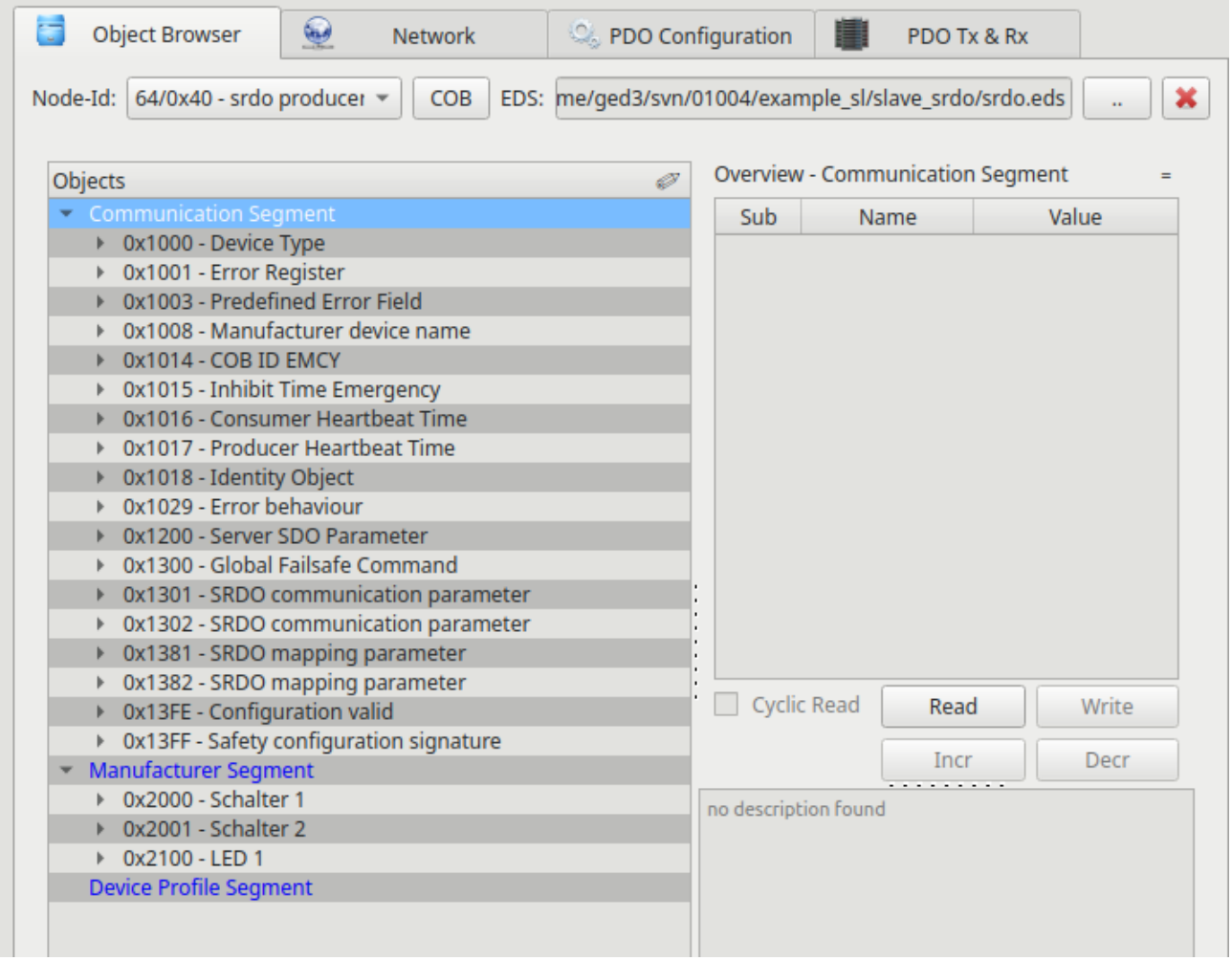
SRDO Configuration PlugIn

The CDE SRDO Configuration PlugIn can be used to configure SRDOs of CANopen Safety devices. It handles especially the most challenging task of the CRC calculation.

In order to use the CDE SRDO Configuration PlugIn, start the CDE, make sure it is connected to the CAN network and load the EDS file of the CANopen device which shall be configured.

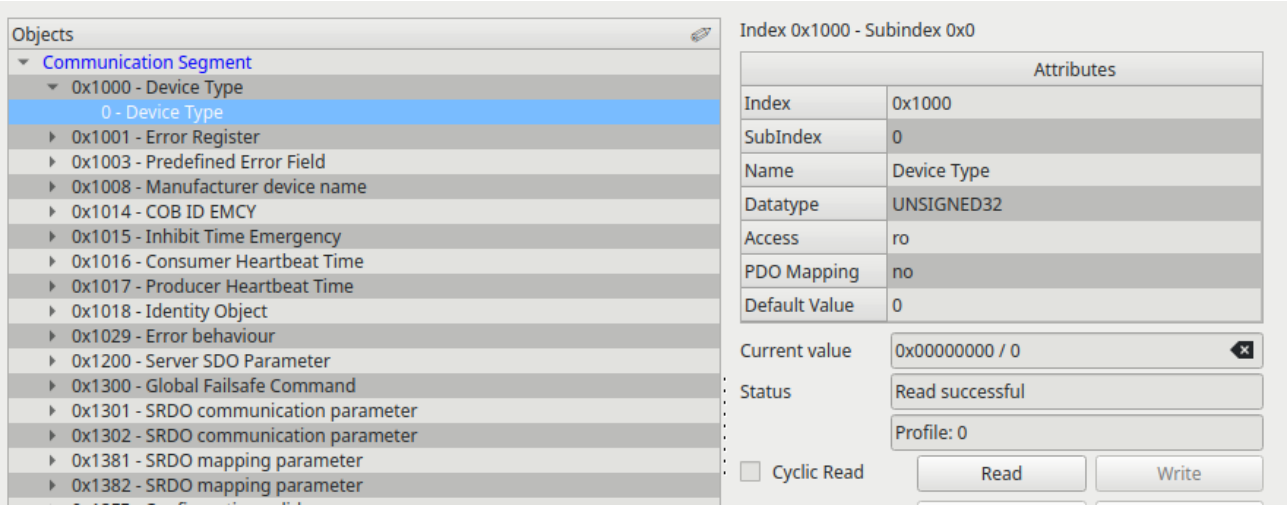
The following introduction uses the emotas slave_srdo example, which uses a CANopen node-ID of 64 and has 2 SRDOs – one for transmission and one for reception.

After selecting the Node-ID 64 and loading the EDS file, the object dictionary in the object browser looks like this:



Using a different device it would look different, but it should have SRDO configuration objects starting at 0x1301 in order to use SRDOs.

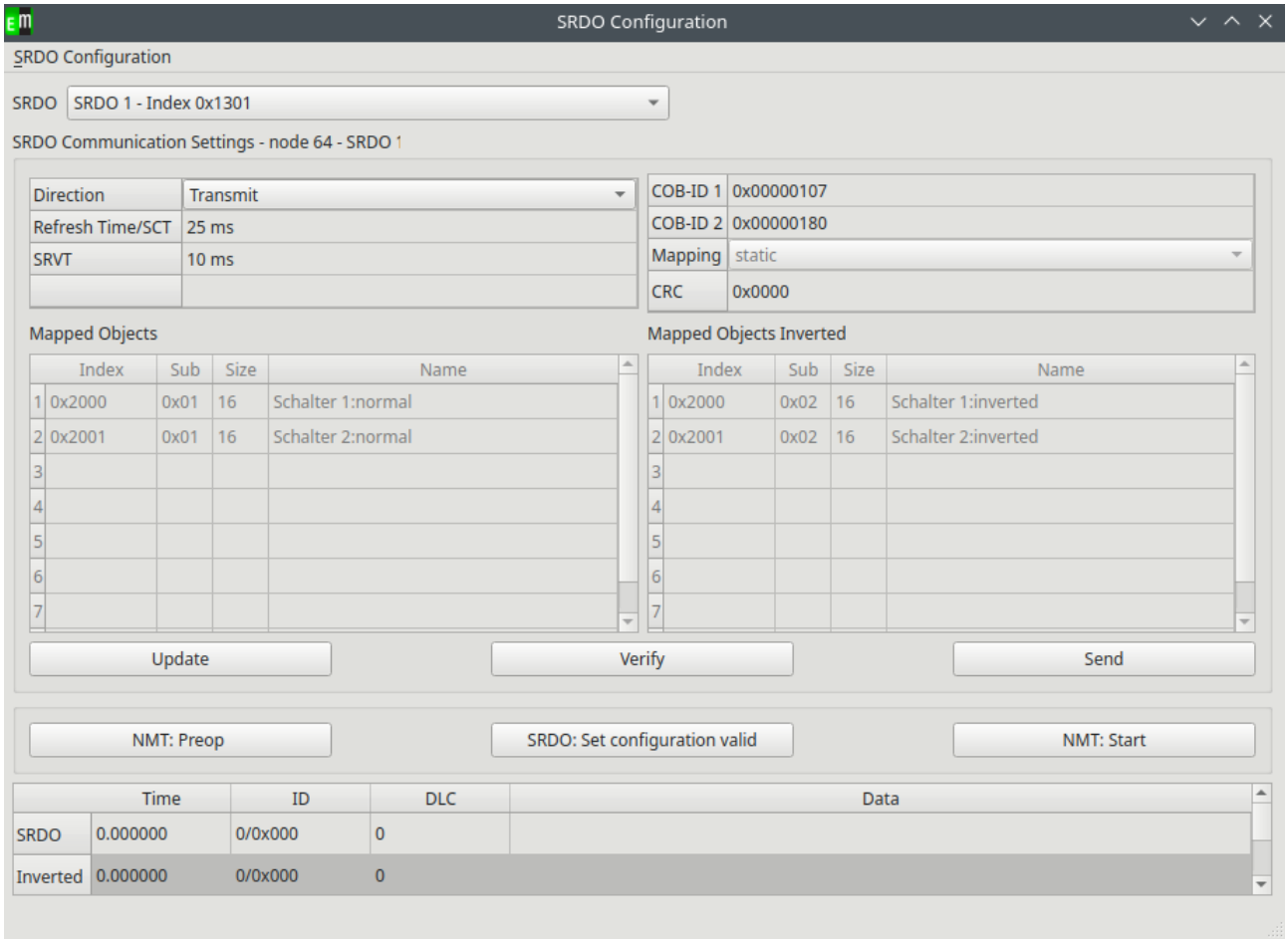
In order to verify that the CDE is able to communicate with the device, it is recommended to read the object 0x1000:0:



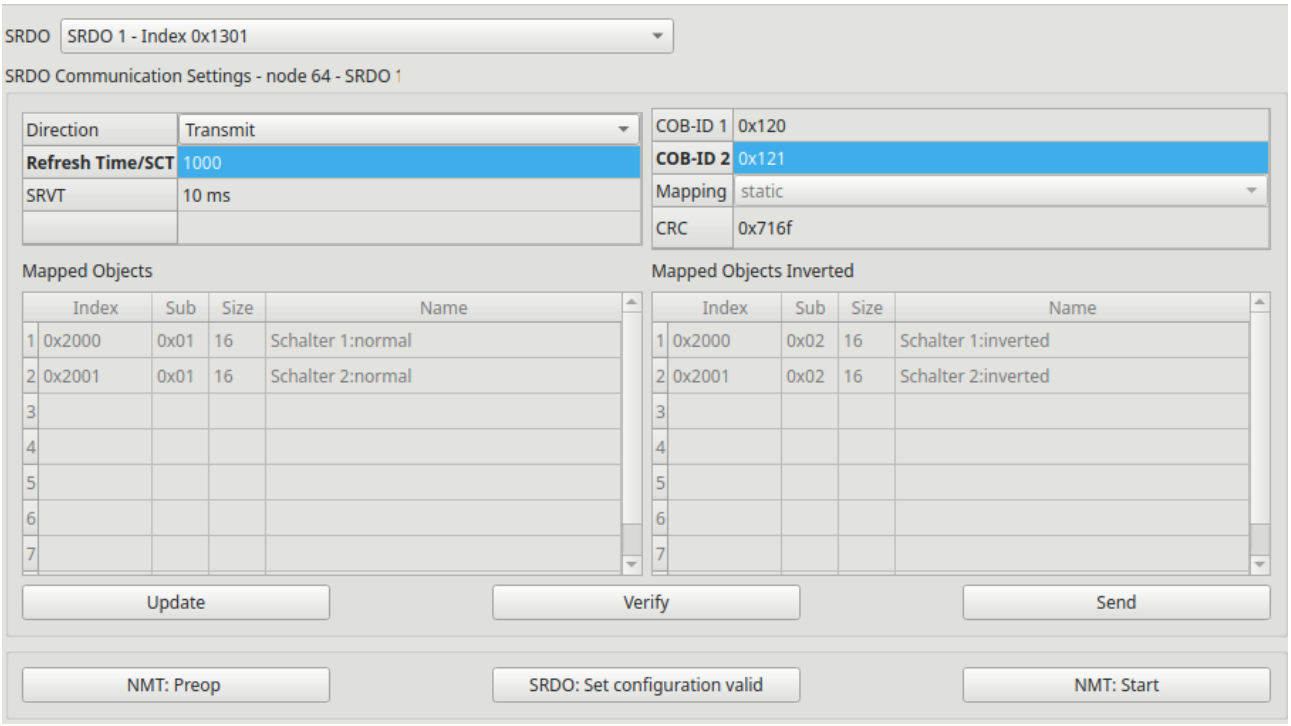
One could use the CDE's object browser to manually configure the SRDO objects, but the SRDO configuration plugIn simplifies this task.

In order to open it, select PlugIns → SRDO Configuration and a new dialog will be opened. Check if the right node-ID is used and press 'Update' to read the data from the device.

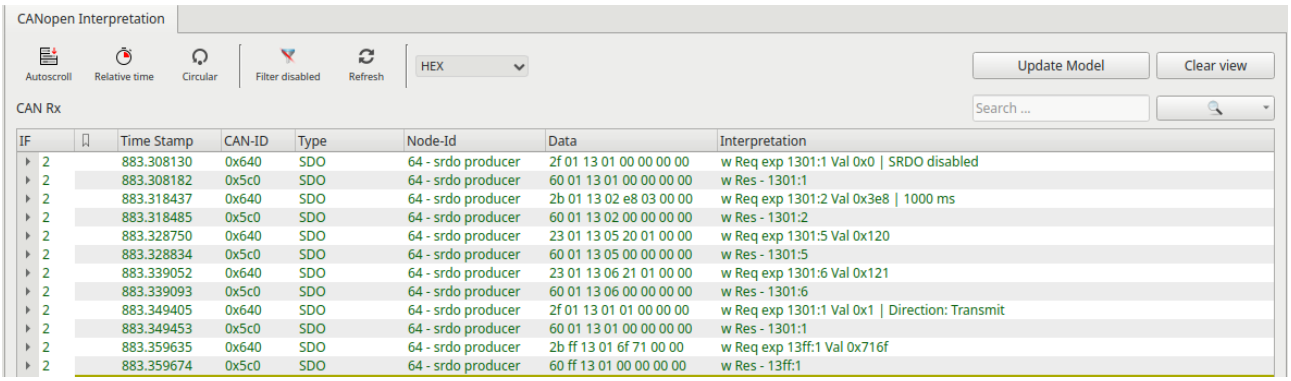
Using our example, it will look like this:



With other devices, the PDO mapping, the CAN-IDs and the timings can be different. If the settings shall be modified, we can change e.g. the Safety Cycle Time to 1000ms, and the COB-IDs to 0x120 and 0x121. After that, the button 'Verify' can be pressed and it calculates the CRC for these values:



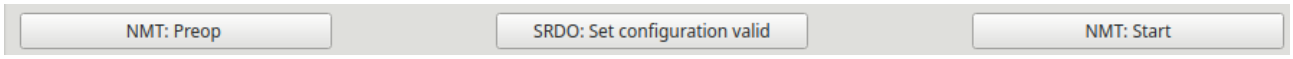
Using 'Send' the values can be sent by SDO to the device and it can be monitored in the CANopen Interpretation Window:



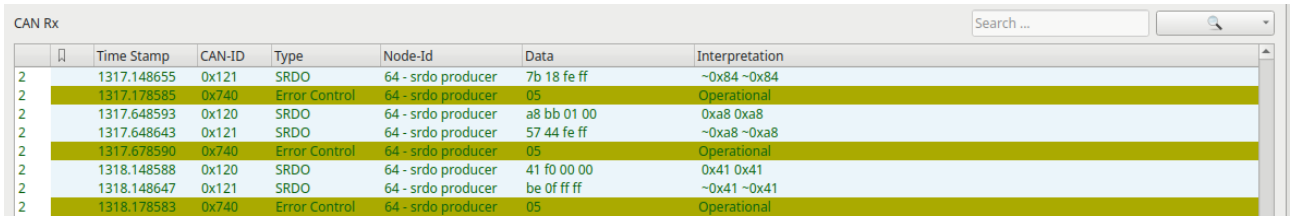
In order to start the device, we need to make sure that the 2nd SRDO is also configured with a valid CRC. In order to keep it simple, we just disable the 2nd SRDO by setting the Information Direction to "Disabled". After calculating the CRC, the settings can also be send to the device:

		Time Stamp	CAN-ID	Type	Node-Id	Data	Interpretation
2		1021.174046	0x640	SDO	64 - srdo producer	2f 02 13 01 00 00 00 00	w Req exp 1302:1 Val 0x0 | SRDO disabled
2		1021.174093	0x5c0	SDO	64 - srdo producer	60 02 13 01 00 00 00 00	w Res - 1302:1
2		1021.185297	0x640	SDO	64 - srdo producer	2b 02 13 02 32 00 00 00	w Req exp 1302:2 Val 0x32 | 50 ms
2		1021.185353	0x5c0	SDO	64 - srdo producer	60 02 13 02 00 00 00 00	w Res - 1302:2
2		1021.195528	0x640	SDO	64 - srdo producer	23 02 13 05 01 01 00 00	w Req exp 1302:5 Val 0x101
2		1021.195561	0x5c0	SDO	64 - srdo producer	60 02 13 05 00 00 00 00	w Res - 1302:5
2		1021.205776	0x640	SDO	64 - srdo producer	23 02 13 06 02 01 00 00	w Req exp 1302:6 Val 0x102
2		1021.205807	0x5c0	SDO	64 - srdo producer	60 02 13 06 00 00 00 00	w Res - 1302:6
2		1021.225269	0x640	SDO	64 - srdo producer	2f 02 13 01 00 00 00 00	w Req exp 1302:1 Val 0x0 | SRDO disabled
2		1021.225343	0x5c0	SDO	64 - srdo producer	60 02 13 01 00 00 00 00	w Res - 1302:1
2		1021.292094	0x640	SDO	64 - srdo producer	2b ff 13 02 00 00 00 00	w Req exp 13ff:2 Val 0x0
2		1021.292172	0x5c0	SDO	64 - srdo producer	60 ff 13 02 00 00 00 00	w Res - 13ff:2

After that the 'Configuration Valid' object can be set and the device can be started using the 2 buttons close to the bottom of the SRDO Configuration window:



After that, the SRDOs can also be seen in the CANopen Interpretation:



		Time Stamp	CAN-ID	Type	Node-Id	Data	Interpretation
2		1317.148655	0x121	SRDO	64 - srdo producer	7b 18 fe ff	~0x84 ~0x84
2		1317.178585	0x740	Error Control	64 - srdo producer	05	Operational
2		1317.648593	0x120	SRDO	64 - srdo producer	a8 bb 01 00	0xa8 0xa8
2		1317.648643	0x121	SRDO	64 - srdo producer	57 44 fe ff	~0xa8 ~0xa8
2		1317.678590	0x740	Error Control	64 - srdo producer	05	Operational
2		1318.148588	0x120	SRDO	64 - srdo producer	41 f0 00 00	0x41 0x41
2		1318.148647	0x121	SRDO	64 - srdo producer	be 0f ff ff	~0x41 ~0x41
2		1318.178583	0x740	Error Control	64 - srdo producer	05	Operational