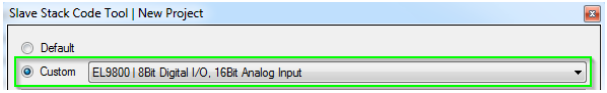
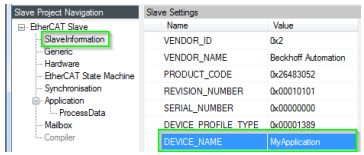
*Objective: Create a slave project with the SSC Tool, define own objects in a *.xlsx file, create the slave source code and ESI file, run the slave application*

I. Create a basic SSC Tool project

1. Download the Slave Stack Code (SSC) and install the EtherCAT Slave Stack Code Tool. link: http://www.ethercat.org/memberarea/stack_code.aspx
2. Start the **EtherCAT Slave Stack Code Tool** and create a new project [1] .
3. Select **EL9800 | 8Bit Digital I/O, 16Bit Analog Input**



4. Set ***DEVICE_NAME*** = "MyApplication" (Node ***Slave Information***)



5. Save the project in "c:\working\SlaveProject\" (File->Save)

II. Create a new Application

6. Create a new application description file (Tool-> Application->Create new)
7. Add the following object descriptions to the Excel® file

Index	Object Code	SI	DataType	Name	Default	Min	Max	M/O/C	B/S	Access	rx/tx
//0x6nnx	Input Data of the Module (0x6000 - 0x6FFF)										
0x6000	RECORD			Results						ro	
		1	UINT	Result 1						ro	tx
		2	UINT	Result 2						ro	tx
		3	BOOLEAN	Toggle						ro	tx
		4	pad_15								
//0x7nnx	Output Data of the Module (0x7000 - 0x7FFF)										
0x7000	RECORD			Setpoint Values						ro	
		1	UINT	Value 1						rw	rx
		2	UINT	Value 2						rw	rx
//0x8nnx	Configuration Data of the Module (0x8000 - 0x8FFF)										
0x8000	RECORD			Parameters						ro	
		1	INT	Inc 1						rw	

8. Save the Excel file (in the default location)
9. Close the import application dialog
10. Create the slave files (Project -> "Create new Slave Files") and close the SSC Tool

III. Create a MPLAB Project

11. Create a MPLAB slave project in c:\working\SlaveProject [2] .
12. Open "MyApplication.c" and add the following lines to the method "**void APPL_InputMapping(UINT16* pData)**" (line 254)

```
void APPL_InputMapping(UINT16* pData)
{
    *pData = Results0x6000.Result1;
    pData++;
    *pData = Results0x6000.Result2;
    pData++;
    *pData = Results0x6000.Toggle;
}
```

13. Add the following lines to the method "**void APPL_OuputMapping(UINT16* pData)**" (line 270)

```
void APPL_OutputMapping(UINT16* pData)
{
    SetpointValues0x7000.Value1 = *pData;
    pData++;
    SetpointValues0x7000.Value2 = *pData;
}
```

14. Add the following lines to the method "**void APPL_Application(void)**" (line 282)

```
void APPL_Application(void)
{
    Results0x6000.Result1 += Parameters0x8000.Inc1;
    Results0x6000.Result2 =
SetpointValues0x7000.Value1+SetpointValues0x7000.Value2;
}
```

15. Compile and run the slave application [2] .
16. Copy the ESI file to the TwinCAT ESI folder (e.g. TwinCAT 2.11 : "c:\Twincat\Io\Ethercat\")
17. Create a TwinCAT configuration [2] .
18. Scan slave, update EEPROM of slave, delete slave, re-scan network with new slave

IV. References (Download)

www.beckhoff.com -> Download -> Documentation -> EtherCAT Development Products

[1] Application Note Slave Stack Code (AN ET9300)
[2] Application Note EL9800

V. Contact

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