

TwinCAT HMI

Applicaion Note

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001	03.04.2014	mvx	Hints on using the HMI from Beckhoff with TwinCAT 3

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1 Version

The suggestions in this document are based on the March 2014 version of Tc3_1CNCPLCBase.tpzip and triamec sample code 3.0.

2 Adaptations to the PLC code for the HMI

Merging a TriamecCnc sample code with the HMI sample code of Beckhoff must be done into the same project if the drives must react on CNC M-codes.

We suggest the following changes to the code:

- Exclude the PRG_AxesHandler call in MAIN from the project. It contains HLI3_SetAxisRelease, which writes to Ir_mc_control.follow_up. This conflicts to the followMe/AxisTracking feature of the function block TL_CNC_AX used in triamec sample code.
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When migrating old HMI PLC Code, consider the following

- Channel numbering: Make sure, any reference of the sort CNCSystem.Channel[*] takes into account the new numbering root "0" of TwinCat3 HMI objects.
- Replace CNCSystem.Channel[1].M[51] by CNCSystem.Channel[CHAN].M[51].bState_rw
- Replace (pMC[1]^addr^.StateBahn_Data.X_RapidMode by gpCh[1]^bahn_state.rapid_mode_r
- Replace LinkVEChannelStructure(nChan:=1,... by HLI3_LinkVEChannelStructure(nChanIdx:=1...

Also consider the following changes we made in-house

- Global_Machinendaten: removed "constant" mark
- Global Variables/Global_Messages and MAIN.PRG_ShowMessages(): not required
- Some PLC Variables were defined in the HMI and not present in the PLC. Consider deleting these variables in the HMI setup: PlcKeysRight

2.1 Manual Buttons and VE

See triamecLaser/ManualTriamec code for an example on how to interface to the Manual page of the HMI.

See triamecLaser/ST_VEVariableConfig.TcDUT for an example of interfacing to the VE structures.

3 HMI Executable

Migration to TC3 does not require using the new HMI from Beckhoff. Old code may be adapted by taking into account the new ADS addresses of TwinCAT3.

However, the new HMI allows flexible integration of customer windows and button configuration. Give it a try.