

softMC Training

Introduction



Welcome to softMC Training

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Training Prerequisites

- It is assumed your system comprises a softMC and CDHD servo drives
- It is assumed you have knowledge and skills in:
 - EtherCAT and CANopen - including PDO and SDO, Operation Modes
 - Motion and servo control
 - Programming (BASIC, or other language)

Course Overview

1. ControlStudio
2. IP Configuration
3. File Management
4. Program Structure
5. Program Control and Debugging
6. Motion Bus
7. Motion
8. Data Recording
9. Event Handling and Error Handling
10. API
11. MC-Basic Language

Glossary

- **Task** A program that has been loaded and might be running
- **Declaration** Introduction of a variable name and the variable type
- **Definition** Declaration plus assignment
- **Function** Routine with return value
- **Subroutine** Software routine without return value
- **Library** A collection of functions and/or subroutines
- **(Motion) element** Axis or axis group; anything that can be moved is considered an element
- **Command** Initiates an action, hardcoded in firmware
- **Property** Attribute of a motion elements
- **System property** Attribute of the softMC system, not related to a specific motion element
- **Axis** An abstraction of a motor/drive combination within the softMC; predefined
- **Group** A collection of axes; user-configured
- **Firmware** System software that cannot be modified by the user
- **ControlStudio** Windows-based development environment for the softMC
- **Terminal** Command line interface in ControlStudio, for direct communication with softMC
- **Entry Station** Software module that implements terminal functionality;

Conventions

- The following conventions are used to represent program components in the examples throughout the training modules:
- Axis **A1, A2, A3** ... – default axis names within system
- Group no default names – need to be defined by user
- Italicized text in **<brackets>** , such as *<program>*, *<axis>*, *<element>*, *<group>*
 - Must be replaced by a name:
 MyGroup
 MyProg
 MyVariable
 MyRobot
 - Note: program names are limited to 8 characters

END