

Device Stack Extension Parameter Handler

Overview

The Parameter Handler is an add-on to the TEConcept IO-Link Device Stack which lets the user easily implement lots of ISDU parameters. The parameter handler takes care of DataStorage and block parameterisation. It additionally provides an interface for non-volatile storage of parameters. The user can stay focused on implementing the technology application, using a simple interface to define and access ISDU parameters. The Parameter Handler takes care of the required two parameter sets, provides call-back functions for cross-checks, and implements the parameter reset functions.

Functional Description

All ISDU parameters are defined in table format. For each parameter name, index/subindex, datatype, array length, access rights etc. are defined. Parameters can be accessed from the application by simple getter/setter functions using parameter names. Additionally, for each parameter, different call-backs can be defined which are called on read or write access by the IO-Link Master or for parameter consistency check.

Most read-write parameters must be stored in non-volatile memory. A module is provided with the Parameter Handler which handles non-volatile storage including a checksum to prevent data corruption. The user only needs to implement the actual storage in EEPROM.

The Parameter Handler uses the API of the Device Stack and implements the required call-back functions. Time-consuming tasks of the Parameter Handler are processed from a separate function which must be called cyclically from main loop or as OS task.

Intended Use

Applications which already have structures to handle parameters should use the Device Stack API directly and do not need the Parameter Handler. The Parameter Handler is intended for applications which do not yet have a handling mechanism for parameters and non-volatile memory.

Advantages

The Parameter Handler considerably simplifies implementation of arrays or records. Access to subindices or to the whole parameter is provided (restriction: subindices must be aligned to byte boundaries). Blocktransfer and DataStorage are handled automatically including creating the IndexList. SystemCommands, DeviceReset, ApplicationReset and Back-to-Box are also covered.



Deliverables

- Source Code. Standard ISDU Parameters and some Demo parameters are implemented
- Interface for non-volatile storage of ISDUs
- User manual

License Model

- Royalty-free license
- Full source code
- The Parameter Handler is only sold together with the IO-Link Device Stack