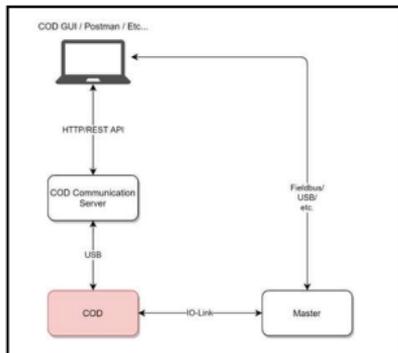# Configurable-Observable Device

Overview

The Configurable-Observable Device (COD) is a special IO-Link Device that emulates the IO-Link behavior of other IO-Link Devices. Additionally, the COD can be configured to simulate typical issues of IO-Link Devices, like improper timing, unexpected events, response errors, etc. Some examples of use cases where emulation of IO-Link Devices are needed are:

- Testing of IO-Link Masters
- Testing of IO-Link Parameterization Tools
- Designing the User Interface of an IO-Link Device
- Regression Testing

Description

The COD is an IO-Link Device that can be configured and parameterized via REST API. The actual hardware communicates with the PC via USB. The REST API is provided by a PC-side server application called COD Communication Server.

Features

- REST API for configuration and observation in automated test systems
- PC application for easy configuration
- Emulates IO-Link Device by using its IODD
- Fully configurable dynamic ISDU parameter handling, with settable error generation for each index and sub-index
- Configurable DPP1 values (e.g. cycle time, process data, vendor and device ID, etc.)
- Event generation
- Process data mirroring, generation
- Observation of IO-Link communication and internal device variables (e.g., startup sequence, data storage flags)
- Error generation (e.g., emulation of a faulty device)
- Non-volatile memory to store configured parameters permanently

Advantages

- Easy integration in CI/CD pipelines
- Test data generation for testing Host side applications (e.g., IO-Link configurator tools)

Deliverables

- 1 COD hardware
- PC configurator application
- COD Communication Server application
- REST API description (yaml file)