Non-interacting and PLC-neutral EtherCAT data tapping

IIoT-suitable data provision via MQTT

Simplified start-up with automatic decoding of the ENI file

Import symbol information directly from ENI files

Creating IIoT value from EtherCAT process data through passive network tapping

The platform-independent container netFIELD App EtherCAT Tap analyzes the data stream of an EtherCAT controlled network in real-time and transfers filtered device process data into the IIoT protocol MQTT. For each packet of process data, it must be specified whether EtherCAT data is tapped continuously or at intervals and, if the latter, which topic and at which interval the data is transmitted to the MQTT broker. An EtherCAT data buffer and MQTT payload transmission as a data array prevent data overflows.

A physical data switch is used to unobtrusively tap data on the Ethernet network for forwarding to the container context. It’s installed directly after the EtherCAT controller and run by Hilscher’s netMIRROR in combination with a netX-SoC network controller integrated in the container host. Tapping data parallel to the controller and making it available to IIoT technologies enables long-term data analysis and the identification of trends and error scenarios. Plant operators benefit from increased asset productivity through predictive maintenance, minimization of downtime, and optimization of workflows through intelligent machine learning algorithms.

The EtherCAT network configuration is automatically obtained from TwinCAT or other engineering tools via the ENI file. By importing ENI project data, symbol information is also imported. Process data to be published to the MQTT broker is determined in the network tree.

Under its netFIELD brand, Hilscher offers further communication containers, edge device platforms and a cloud-based remote management solution for devices and containers.
# FACT SHEET

## TECHNICAL DATA

### General

<table>
<thead>
<tr>
<th>Product</th>
<th>netFIELD App EtherCAT Tap</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Software type</strong></td>
<td>Container</td>
</tr>
<tr>
<td><strong>Repository</strong></td>
<td><a href="https://hub.docker.com/r/hilscherautomation/netfield-app-ethercat-tap">https://hub.docker.com/r/hilscherautomation/netfield-app-ethercat-tap</a></td>
</tr>
</tbody>
</table>

### Hardware requirements

- **Processor architecture**: x64, ARM64 (each with netX-SoC support)
- **Container size**: 400 MB, unpacked
- **Memory requirements**: Minimum 200 MB, plus 100 KB of usable data buffer size per filtered process data
- **Data feed**: 2x 10/100 Mbit netX-SoC based industrial Ethernet ports (via netMIRROR Ethernet mirror tap)

### Software requirements

- **Operating system**: Linux
- **Container runtime environment**: Required, e.g., Docker
- **Data distribution**: Any MQTT broker, e.g., Mosquitto (Access within the container network context)

### Runtime properties

- **Inbound protocol**: EtherCAT (as listening-only device)
- **Inbound protocol sampling rate**: Continuous traffic or configurable sampling intervals per packet of process data
- **Outbound protocol**: MQTT (as a client)
- **Outbound protocol send rate**: Adjustable from 1 ms, typically 100 ms
- **Data throughput**: Processor performance dependent

### Licensing

- **Container protection**: CodeMeter licensing technology
- **Product activation**: License key
- **Network license server**: Required for license storage and retrieval (Windows and Container)
- **Billing model**: One-time payment

### Optional items

<table>
<thead>
<tr>
<th>Product name</th>
<th>Product number</th>
<th>Brief description</th>
</tr>
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<tbody>
<tr>
<td>NFA-PNT-OTP</td>
<td>1917.057</td>
<td>netFIELD App PROFINET Tap, floating license Includes all updates within 1 year of license activation</td>
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<tr>
<td>NMR-TFE-RE</td>
<td>7340.100</td>
<td>netMIRROR 10/100 Mbit Ethernet mirror TAP</td>
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<tr>
<td>NIOT-E-TIJCX-GB-RE/NFLD</td>
<td>1321.300/NFLD</td>
<td>netFIELD OnPremise x64 computer platform for containerized applications with netX support</td>
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*Note: All technical data may be changed without further notice.*