netFIELD CLOUD
DIGITAL INTO THE FUTURE
THE FUTURE IS INTELLIGENT AND CONTAINERIZED

Hilscher, a leader in industrial communication, has launched a unified IoT technology portfolio and named it netFIELD. It includes scalable gateway hardware (netFIELD Edge), a secure operating system (netFIELD OS), ready-to-use applications for the edge (netFIELD Apps), an open REST API standard for connecting with netFIELD-based applications and services (netFIELD Cloud), and a user-friendly self-service portal (netFIELD Portal).

CONTAINERS ARE REVOLUTIONIZING CONNECTED IOT DEVICES AND NETFIELD.IO IS THE PERFECT MATCH TO MANAGE AND RUN THEM.

INTELLIGENT EDGE
We solve the data integration challenge by running intelligence at the edge. Deploy Docker containers to your devices. Build your own applications or get our ready-to-use containers.

OPEN PLATFORM
Manage your devices from a single-point with end-to-end security, powerful open APIs and SDKs. Use our data storage or streaming pipeline for further data analysis or visualization.

EASY PORTAL
Manage your device fleet with our self-service portal by deploying containers, updating the operating system or remote managing configurations.

FAST DASHBOARD
Quickly focus on the most important aspects of your data using user-defined visualization dashboards.

netFIELD is a fully managed service that makes it possible to run workloads at the edge from a central point at scale, bringing intelligence to the edge with a hybrid cloud and edge approach.

INDUSTRIAL IOT SOLUTIONS DO COST MILLIONS
• Why should you reinvent the wheel?
• Join us at the forefront of technology.

With our technology, you pull ahead of your competitors.

REMOTE MANAGER
Control and manage your devices with a secure, private connection from anywhere.

CONTAINER MANAGER
Create your container collection and share them with your customers and partners.

DATA STREAMING & STORAGE
Use our data storage and real-time IoT streaming for dashboarding and analytics applications.

FLEET MANAGEMENT
Allows you to update entire machine series from the netFIELD portal with just a few clicks and new functions.

netFIELD is one platform for all your data integration and application management needs.
## REACH NEW HEIGHTS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>netFIELD PLATFORM</td>
<td>• Firmware and Container Software Management</td>
</tr>
<tr>
<td></td>
<td>• Data streaming and storage</td>
</tr>
<tr>
<td></td>
<td>• Web services to connect other Cloud Platforms</td>
</tr>
<tr>
<td>netFIELD PORTAL</td>
<td>• Device-, Container-, Organization-, Tenant Management</td>
</tr>
<tr>
<td></td>
<td>• Edge monitoring</td>
</tr>
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<td></td>
<td>• Dashboards for sensorEDGE</td>
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<td>netFIELD SPECIAL FEATURES</td>
<td>• Fleet Management</td>
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<td></td>
<td>• Meetering</td>
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<td></td>
<td>• hawkBit REST API for App Store Connectivity</td>
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<td>• Zero Touch onboarding</td>
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<td>Total number of API-Keys</td>
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<td>Total number of cloud to device messages per device per minute</td>
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<td>&lt; 99%</td>
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### Item

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<tr>
<th>Item</th>
<th>Description</th>
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<tbody>
<tr>
<td>netFIELD.IO TENANT</td>
<td>Get your slice of a multi-tenant cloud.</td>
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<tr>
<td>netFIELD.IO INSTANCE</td>
<td>Your dedicated cloud deployment.</td>
</tr>
<tr>
<td>netFIELD OS</td>
<td>Our proven OS on your devices.</td>
</tr>
<tr>
<td>ON-BOARDING WORKSHOP</td>
<td>Hands-on workshop about how our technology can elevate your business outcomes. Any number of participants, one price.</td>
</tr>
</tbody>
</table>
netFIELD OPERATING SYSTEM
THE HEART OF CENTRAL OR DECENTRAL MANAGED IIOT DEVICES
THE SECURE OPERATING SYSTEM FOR AN INTELLIGENT EDGE

Hilscher netFIELD OS is a lean and secure operating system that makes it easy to program, deploy, connect edge devices. Hilscher netFIELD OS extends the Linux kernel with software libraries to securely connect operation technology like PLC, MES, Historians, Files or other on-premise systems with IT services like the netFIELD Cloud. Our netFIELD OS lets you innovate faster embracing container technologies managed by the netFIELD Cloud platform point or locally at the edge.

The netFIELD OS core services include the support of hardware interfaces, the network environment, secure and system logging. In order to setting up the gateway configuration, the Device Manager is providing a web interface with user profiles for access control. With the open plug-in mechanism, the functionality of the Device Manager can be extended with the help of containerized applications. The device manager can also be accessed from anywhere access function of the netFIELD cloud platform.

netFIELD OS DATACENTER

While netFIELD OS is used to run natively on a hardware device, netFIELD OS Datacenter is running in a virtualization environment. Since the software architecture of netFIELD OS is the same, the user will not recognize, whether OS and the Device Manager is running natively on a hardware device or virtualized as a guest on a hypervisor.

TYPICAL SCENARIOS FOR netFIELD OS DATACENTER

In a distributed scenario with multiple machines and/or locations a central instance of the netFIELD OS should be the interface to the netFIELD Cloud.

The hardware featureset or the netFIELD Edge devices does not meet the requirement of the use case.

In this case a central running netFIELD App Platform Connector or another cloud connector (to connect Azure, AWS, or Google) may be the interface between between the enterprise network of the customer and one or more cloud providers.

The MQTT Broker can also run in this virtualized environment to receive aggregated or raw data from distributed edge devices on the machine sites.

The performance is scalable and depends from the number of datapoints as well as from the customer requirements in which time periods the data should be proceeded.

Additionally a database can store, aggregate and forward the received data as required to an IT System, the netFIELD Cloud platform or to another preferred cloud provider.

A local dashboard (e.g. provided by Node-RED) may offer an overview about the machine park condition.

ADVANTAGES

- Hardware resources of the Host system can be shared with guest systems as required
  - CPU cores
  - RAM
  - Network interfaces
  - Persistent Storage

- High Availability / Reliability Strategies

- Hardware independency of guest applications (netFIELD OS)

- Access to remote storage systems via NFS or iSCSI including RAID n redundancy

- Contribution to Green IT

For example the Advanced Vector Extensions are required for an Application Container using KI (e.g. Tensorflow). In this case the virtual edge appliance can be used without additional effort for testing.
## netFIELD OS CHARACTERISTICS

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Docker Technology</td>
<td>netFIELD OS based edge devices can run every application build on the Docker technology.</td>
</tr>
<tr>
<td>Application Deployment</td>
<td>Applications can be served centrally by using the netFIELD Cloud or locally by using any accessible Docker Registry.</td>
</tr>
<tr>
<td>netFIELD OS Datacenter</td>
<td>The scalable virtual edge appliance is running as a guest OS in VMware or KVM host environments.</td>
</tr>
<tr>
<td>Firmware Update</td>
<td>The netFIELD OS can be updated for functional or security reasons locally or remote by using the netFIELD Cloud.</td>
</tr>
<tr>
<td>netFIELD Extension</td>
<td>Every device running a Debian or Ubuntu OS can be extended with the required services to connect to netFIELD Cloud for application deployment and remote access.</td>
</tr>
<tr>
<td>Internet Connectivity</td>
<td>Internet proxies in enterprise networks can be a hurdle to connect devices to the internet. The netFIELD OS is supporting proxy settings for such LAN infrastructures. The proxy configuration covers the connectivity of the operating system, the Docker framework and application containers with the internet.</td>
</tr>
<tr>
<td>OT Network Protection</td>
<td>Edge devices with netFIELD OS can protect the OT network using the integrated firewall. This allows IT and OT networks to be isolated, e.g. using the NAT functionality.</td>
</tr>
<tr>
<td>WiFi Connectivity</td>
<td>netFIELD Edge devices with WiFi support can be connected to Enterprise and Personal WPA protected networks.</td>
</tr>
<tr>
<td>Application Container UI Plugins</td>
<td>Custom application containers can add a user friendly UI to the local Device Manager for setting up the application container.</td>
</tr>
</tbody>
</table>

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**SOCIAL MEDIA**

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netFIELD EDGE
MOMENTUM AT YOUR IT/OT CONVERGENCE
YOUR DIGITAL IIOT TRANSFORMATION WITH OUR MANAGED EDGE DEVICES

Devices of netFIELD Edge complement the factory floor when PLCs alone come to their limits in IIoT-based instrumentations delivering loads of data. They aggregate, compute or forward with power. Your augmented intelligence software either device deployed or on a companion cloud exploits the information flood turning it into factory insights to gain beneficial value outcomes like reducing downtimes or increasing efficiency.

YOUR FOCUS STAYS ON APPLICATIONS WITH OUR EDGE SOLUTION-READY PLATFORMS

HIGH ASSURANCE LINUX
Yocto Linux with security modules, signed images boot only and TLS secured web front end

DOUBLE DOCKER
Portal and local shell managed two Docker instances for moving containerized workloads encapsulated and securely onto the devices

INDUSTRIAL ETHERNET
Multi-protocol controller netX featuring Industrial Ethernet networks real-time processing in active or listening mode

ENHANCED CONNECTIVITY
Device model dependent connectivity options for WiFi, USB, serial, CAN, storage, display and many more

COMPUTING POWER
Sufficient CPU power executing even sophisticated container software on premise

The integrated Docker enables the deployment of any business logic and computing jobs wrapped up into secure and portable containers. In minutes your software is shifted to the local edge on any number of devices managed worldwide through a complementing web portal.

YOUR DEVICE FLEET MANAGED THROUGH YOUR INTERNET PORTAL

ENTERPRISE PORTAL
Web control center for remote orchestration and management of installed device fleet and their software containers

ACCESS CONTROL
Administration of company hierarchical structures with role-based permission control

REST API
https-based programming interface for building own fully featured portal independent web or mobile apps

SCALEABLE ROLL-OUT
OEM prepared to maintain an own instance or a custom portal copy as a tenant

Separate OT ports for Real-Time Ethernet networks like PROFINET, EtherCAT, EtherCAT/IP
Powerful x86 or ARM based quad-core CPUs with clock rates starting at 1.2GHz
IT uplink ports for both local or cloud based intermittent communications
Additional interfaces for different types of sensors and actuators of the shop floor

Our hybrid Edge/Portal solution brings intelligence to your IT/OT transitions at any time from anywhere. Remote deployment, troubleshooting and auto-provisioning contribute to a rapid scale across any containerized software to reduce capital and operational costs of your Integrated Industry and Automation projects.
## Technical data

<table>
<thead>
<tr>
<th>Description</th>
<th>Technical data</th>
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<tbody>
<tr>
<td>OT networks support</td>
<td>Protocols PROFINET, EtherNet/IP, EtherCAT, Modbus TCP</td>
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<tr>
<td>IT networks support</td>
<td>Any Ethernet frame based protocol</td>
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<tr>
<td>Operating system</td>
<td>Linux, Yocto based</td>
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<tr>
<td>Security enhanced OS</td>
<td>Yes</td>
</tr>
<tr>
<td>Real-Time kernel patched</td>
<td>Yes</td>
</tr>
<tr>
<td>SSH access</td>
<td>Yes</td>
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<tr>
<td>Web user interface</td>
<td>Cockpit, <a href="http://www.cockpit-project.org">www.cockpit-project.org</a></td>
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<tr>
<td>Container engine</td>
<td>Docker 19.x CE</td>
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<tr>
<td>Docker engine instances</td>
<td>Two. First locally manageable, second from remote</td>
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<tr>
<td>Local instance management</td>
<td>Via SSH or Cockpit UI, Docker standard</td>
</tr>
<tr>
<td>Remote instance management</td>
<td>Via <a href="http://www.netfield.io">www.netfield.io</a> internet portal, usage optional</td>
</tr>
<tr>
<td>Portal subscription</td>
<td>On monthly basis</td>
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<tr>
<td>Fleet container management</td>
<td>Via portal UI frontend</td>
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<tr>
<td>Remote access to local UI</td>
<td>Via portal UI frontend</td>
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<tr>
<td>Remote software update</td>
<td>Via portal UI frontend</td>
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<tr>
<td>RESTful API backend</td>
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<td>White labeling</td>
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## Article Order Number Description

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<td>NIOT-E-TPI51-EN-RE/NFLD 1321.400/NFLD</td>
<td>Docker Edge Gateway &quot;netFIELD Connect&quot;, 4x 1.2GHz ARM32 CPU, 1GB RAM, 8GB SD, Wifi</td>
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<tr>
<td>NIOT-E-TIJCX-GB-RE/NFLD 1321.300/NFLD</td>
<td>Docker Edge Gateway &quot;netFIELD OnPremise&quot;, 4x 2GHz x64 CPU, 8GB RAM, 128GB SSD, Wifi</td>
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sensorEDGE
IO-LINK-TO-CLOUD SENSOR-BOX
8 SENSORS REMOTELY MONITORED AT A RATE OF A SECOND

sensorEDGE aggregates data of up to 8 IO-Link sensors and transfers them to a cloud at an interval of a second.

The sensorEDGES are managed in a cloud portal where the data can be visualized. Using the cloud API allows streaming the data into own applications in real-time.

THE IO-LINK-TO-CLOUD SENSOR BOX

- **PLUG AND PLAY**
  No fieldbus and PLC, Internet is enough. IO-Link sensors are auto-detected.

- **8 IO-LINK CHANNELS**
  Ideal for multi-sensor applications with scope-limited local amount of data points.

- **HIGH TRANSMISSION RATE**
  Data exchange once per second for reactive and time sensible applications.

- **LOCAL WEB INTERFACE**
  For easy initial on-site IO-Link parameterization of complex sensors.

POWER, CONNECT AND FETCH DATA WORLDWIDE INSTANTLY

- **CENTRAL ORCHESTRATION**
  Device management, diagnostics and update at any time and from anywhere.

- **FLEXIBLE DASHBOARDS**
  Configurable widgets for visualizing the sensor values online.

- **REST API CONNECTOR**
  Reactive interface to fetch data for analysis, storage or forwarding purposes.

YOUR SENSOR DATA MONITORED ANYWHERE AT ANY TIME

- **AROUND THE CLOCK**
  Event driven data reception via WebSocket stream in 24/7 operation.

- **EAVESDROP SECURE**
  End-to-end encrypted plus secret API key for maximum data protection.

- **EASIEST USAGE**
  API programming example as Node-RED node.

sensorEDGE is based on Hilschers netFIELD technology and is a prime life example for a successful netFIELD based project.

For further information about netFIELD please visit www.hilscher.com/netFIELD.
## FACT SHEET - THE TECHNICAL DATA

### IO-Link
- **Connectors**: 8 x M12 A-coded, female; 5-pole
- **Master class**: Class A: Specification V1.1
- **Operation mode**: IO-Link, Sensors only
- **Supply Current**: 1A per port
- **Commissioning**: Auto detection, Web tool optional
- **Short-circuit proof**: yes

### Environment
- **Temperature (operation)**: -25 ... +60°C
- **Temperature (storage)**: -40 ... +85°C
- **Protection class**: IP67

### Geometry
- **Dimensions (LxWxH)**: 200 x 60 x 20 mm

### Mechanics
- **Weight**: 420 g
- **Conformity**: CE

### Data transmission
- **Cloud uplink data**: 1x/second, health: 1x/minute
- **API fetch**: WebSocket based, event driven

### Commercial
- **Device**: One-off costs
- **Cloud usage**: Subscription

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03/2021 GB
**BUILDING A CUSTOMER SOLUTION IS LIKE AN ORCHESTRATION**

A huge choice of available application containers can be networked to complete the customer solution with a minimum of development effort.

### Application containers might provide functions for
- Process-, Topology- and Asset Data acquisition from field devices and other data sources
- Data storage, aggregation and filtering
- Cloud-/On-Premise application connectivity and secure data transport

The open netFIELD application container reference architecture includes interfaces for the inter-container communication using MQTT. In this way it is possible to distribute overall solution workload over several devices or virtual machines. Additionally an application container may also be equipped with user-friendly web application which can be seamlessly integrated as plugin into the Edge Device Manager. The ability to implement methods into an application container, which can be called via the cloud api is completing the reference architecture of a netFIELD application container.

**READY TO USE netFIELD APPLICATION CONTAINER**

**netFIELD APP PLATFORM CONNECTOR**
Make local data centrally available in the netFIELD Cloud platform.

- Transport data from the MQTT communication infrastructure to the netFIELD cloud platform API, where this data is exposed as a Web Socket Secure endpoint. You are free to configure which data topics are transported to the netFIELD cloud platform.
- The configuration can be done locally or remotely via the device manager provided by netFIELD OS.
- Stream this data into analytics pipelines or real-time dashboards. The firmware update of the netFIELD Edge device is also managed by the netFIELD Proxy application container.

**netFIELD APP PROFINET/ETHERCAT TAP**
Data diode to the field network and data filtering

- The netFIELD App PROFINET or EtherCAT TAP is able to read the meaningful symbols from the TIA portal or respectively from the TwinCAT project files in order to simplify the filter configuration of the required data points.
- The configuration can be done locally or remote via the Device Manager provided by netFIELD OS.

**MQTT COMMUNICATION INFRASTRUCTURE**

- A further ready to use netFIELD application container is the netFIELD App MQTT Broker, which can be deployed to any netFIELD Edge device or virtual edge appliance running the netFIELD OS. So it is possible to provide the MQTT communication infrastructure by one single device. In the case, that an MQTT broker is already available in the network, this broker can be used as MQTT infrastructure for the netFIELD application container as well.

**netFIELD APP EDGE MONITOR**
Monitor your netFIELD Edge device resource usage.

- Gain health insights and take action based on the acquisition of netFIELD Edge device configuration information and resource consumption data. The collected information are published to the MQTT communication infrastructure on a regular base.
- netFIELD Proxy is available and configured to provide these data to the netFIELD Cloud platform a data visualization is available in the netFIELD Portal.

**netFIELD APP OPC UA CLIENT**
Connect to and browse multiple OPC UA server of field devices

- This easy-to-use OPC UA Connector enables the connection to multiple OPC UA capable field devices and is able to browse automatically the complete node tree of any OPC UA Server. Relevant nodes can be selected so that the values can be published in the MQTT communication infrastructure. The configuration can be done locally or remotely via the device manager provided by netFIELD OS.

**netFIELD APP AZURE/AWS/GOOGLE CONNECTOR**

- Push selected data streams to the cloud of your choice.
- Transport data from the MQTT communication infrastructure to the Azure Event Hub, AWS or Google cloud.
- The app configuration can be done locally or remote via the Device Manager provided by netFIELD OS or netFIELD Cloud.

Deploy the ready-to-use netFIELD apps together with self-developed containers to your netFIELD Edge devices in order to complete high-quality customer solutions.
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<th>Order Number</th>
<th>Category</th>
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<tr>
<td>netFIELD App IO-Link Configurator</td>
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<td>netFIELD App OPC UA IO-Link Adapter</td>
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<td>Connectivity</td>
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</tbody>
</table>

Get in contact with our sales team.

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netFIELD APP
PROFINET TAP

BROWNFIELD IOT
ENABLEMENT IN 15 MINUTES
ENABLE BROWN-FIELD MACHINERY FOR IOT APPLICATIONS

Equipping brown-field machinery with condition monitoring and data analytics applications allows to get the IoT-benefit out of existing machine installations. The netFIELD App PROFINET Tap allows extracting machinery process data simply by monitoring the existing network traffic. There is no need to change PLC or machine configuration. It works with any PROFINET network, independent of PLC or device vendor.

EASILY INTEGRATED AND CONFIGURED WITHIN MINUTES.

As there is no need of touching the network or PLC configuration the required integration effort is minimal. The rich configuration app allows importing symbol information from device description files. In a Siemens environment integration is even easier, TIA Portal semantics can be used directly.

IoT-enable your machine within minutes in five simple steps:

1. Lead out existing network traffic via a network TAP (1) device or the mirror port of a switch (2)
2. Automatically read in the PROFINET configuration from a machine startup
3. Add data semantics automatically simply by importing the TIA Portal Engineering project or GSDML device description files
4. Select information of interest from the whole machine process data image interactively in the configuration app
5. Subscribe to MQTT messages in your monitoring or analytics application

HOW IT WORKS UNDER THE HOOD

Containerized software
- The netFIELD App PROFINET Tap is delivered as a containerized software which allows easy deployment and software management.
- The software container delivers a built-in rich configuration app which can be used easily via a web-browser without the need of installing any additional software tools.

Deep packet inspection with integrated fieldbus intelligence
- The netFIELD App PROFINET Tap analyses the existing machine network traffic using deep packet inspection technologies.
- It “understands” the fieldbus protocol by itself and thus does not require you as an end-user to deep-dive into fieldbus technology.
- Due to the listening-only functionality, netFIELD App PROFINET Tap is absolutely invisible to your existing machine components and thus cannot disturb the existing process.

Form data to information
- The extracted raw fieldbus data is automatically enriched by semantics during the capture process.
- The required semantic information can be read in by using AutomationML as interchange format with TIA Portal in a Siemens environment.
- Alternatively, GSDML device description files can be read in, allowing mapping semantic information in any non-vendor-specific environment.
- Of course, it is always possible to “fine tune” semantics manually via the configuration app.

There is no need of touching your working machine, nor changing PLC or machine configuration
Automatic PROFINET configuration detection and semantic mapping from TIA Portal or GSDML
Secure by design due to the listening-only functionality

MQTT Broker

Semantic import from device description files

Semantic import from TIA Portal

Listen to PROFINET traffic

Data semantic

MQTT Broker

Published information via MQTT

Select only information of interest from the whole dataset

Transform data to information by adding semantic

Interpret PROFINET and extract raw process data

TAP
<table>
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<th>Article</th>
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<td>netFIELD App</td>
<td>1917.007</td>
<td>Data Acquisition</td>
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<td>PROFINET Tap</td>
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netFIELD APP
ETHERCAT TAP
BROWNFIELD IOT
ENABLEMENT IN 15 MINUTES
ENABLE BROWN-FIELD MACHINERY FOR IOT APPLICATIONS

Equipping brown-field machinery with condition monitoring and data analytics applications allows to get the IoT-benefit out of existing machine installations. The netFIELD App EtherCAT Tap allows extracting machinery process data simply by monitoring the existing network traffic. There is no need to change PLC or machine configuration. It works with any EtherCAT network, independent of PLC or device vendor.

EASILY INTEGRATED AND CONFIGURED WITHIN MINUTES

As their is no need of touching the network or PLC configuration the required integration effort is minimal. The rich configuration app allows importing symbol information directly from an EtherCAT network information (ENI) file. IoT-enable your machine within minutes in four simple steps:

1. Lead out existing network traffic via a network TAP (1) device.
2. Automatically read in the EtherCAT configuration and data semantics by importing the EtherCAT network information (ENI) file.
3. Select information of interest from the whole machine process data image interactively in the configuration app.
4. Subscribe to MQTT messages in your monitoring or analytics application.

HOW IT WORKS UNDER THE HOOD

Containerized software
- The netFIELD App EtherCAT Tap is delivered as a containerized software which allows easy deployment and software management.
- The software container delivers a built-in rich configuration app which can be used easily via a web-browser without the need of installing any additional software tools.

Deep packet inspection with integrated fieldbus intelligence
- The netFIELD App EtherCAT Tap analyses the existing machine network traffic using deep packet inspection technologies.
- It "understands" the fieldbus protocol by itself and thus does not require you as an end-user to deep-dive into fieldbus technology.
- Due to the listening-only functionality, netFIELD App EtherCAT Tap is absolutely invisible to your existing machine components and thus cannot disturb the existing process.

Form data to information
- The extracted raw fieldbus data is automatically enriched by semantics during the capture process.
- The required semantic information can be read in by using the EtherCAT network information (ENI) file, provided by TwinCAT or any other compatible Engineering tool.
- Of course, it is always possible to "fine tune" semantics manually via the configuration app.

ENABLE BROWN-FIELD MACHINERY FOR IOT APPLICATIONS

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netFIELD DEVICE
IP67, netX SOCS & netRAPID
IO-LINK DEVICES WITH REAL-TIME ETHERNET
OPTIMIZED TECHNOLOGY PLATFORM WITH PRE-QUALIFIED SOFTWARE ECOSYSTEM

netFIELD Device technology platform connects IO-Link sensors – wired or wireless – with demanding Real-Time Ethernet networks. For configuration and diagnostics an integrated OPC UA server with IO-Link companion profile is used. It combines established netX 90 technology with Hilscher’s new netIOL chip – an intelligent IO-Link transceiver with additional diagnostics to detect plant errors.

IO-LINK COMMUNICATION FOR OEM BRANDLABELING

Network Connectivity
- Based on proven HILSCHER netX technology
- Based on OPC UA using IO-Link Companion Profile
- Per webserver or OPC UA via Ethernet
- Alternatively wireless via mobile devices

Configuration & Diagnosis
- Based on OPC UA using IO-Link Companion Profile
- Per webserver or OPC UA via Ethernet
- Alternatively wireless via mobile devices

Intelligent 4-channel IO-Link transceiver
- 32Bit RISC CPU, up to 16 ports cascadable
- 8-port time synchronized communication with 400µs cycle time
- Diagnosis of voltages and currents from each IO-Link pin, on-chip temperature and supply voltage

Modular application firmware
- Configurable runtime including protocol & IO-Link stack, OPC UA & webserver, configuration & OEM management
- Qualified firmware & precertified networks
- Expandable to fit your application
- Firmware download, authentication, IO-Link port configuration and diagnosis via integrated webserver.

Sensor and Device powering
- Up to 16A each for 1L and 2L
- Max. 4A (Pin1) per sensor
- Nom. 2A (DO) per digital out

Alternately IO-Link wireless module
- TigoMaster 2T SOM from CoreTigo
- Supports up to 16 Wireless devices

FROM CHIPSET VIA MODULE TO BRANDLABELED IP67 DEVICE

netX 90 & netIOL
- Chipset for own designs
- Tested circuit board designs, incl. design package
- Branded software or own application

netRAPID 90 & netIOL
- Embedded module for own designs
- Tested circuit board designs, incl. design package
- Preloaded with software
- Branded software or own application

OEM Circuit Board
- Individual or ready-to-use OEM hardware
- Tested & qualified circuit board
- Preloaded with software
- Branded software or own application

IP67 Brandlabeling
- Ready-to-use IP67 module
- Tested & certified product
- Preloaded with software
- Branded software or own application

Customers profit from an optimized and validated technology platform as well as a pre-qualified software ecosystem and pre-certified protocol stacks.
Note: All technical data may be changed without further notice.

Digital Out: nom. 2A (DO) - Sensor supply: max. 4A (Pin1) - 2L: max. 16A - 1L: max. 16A

-25°C ... +70°C -25°C ... +70°C -25°C ... +70°C -25°C ... +70°C

8 DIO + 8 DIO, 16 DO, 16 DI, 8 DIO + 8 DIO

-25°C ... +70°C -25°C ... +70°C -25°C ... +70°C -25°C ... +70°C

1L: max. 16A 1L: max. 16A 1L: max. 4A 1L: max. 4A

2L: max. 16A 2L: max. 16A 2L: max. 4A 2L: max. 4A


Future option: Bluetooth interface