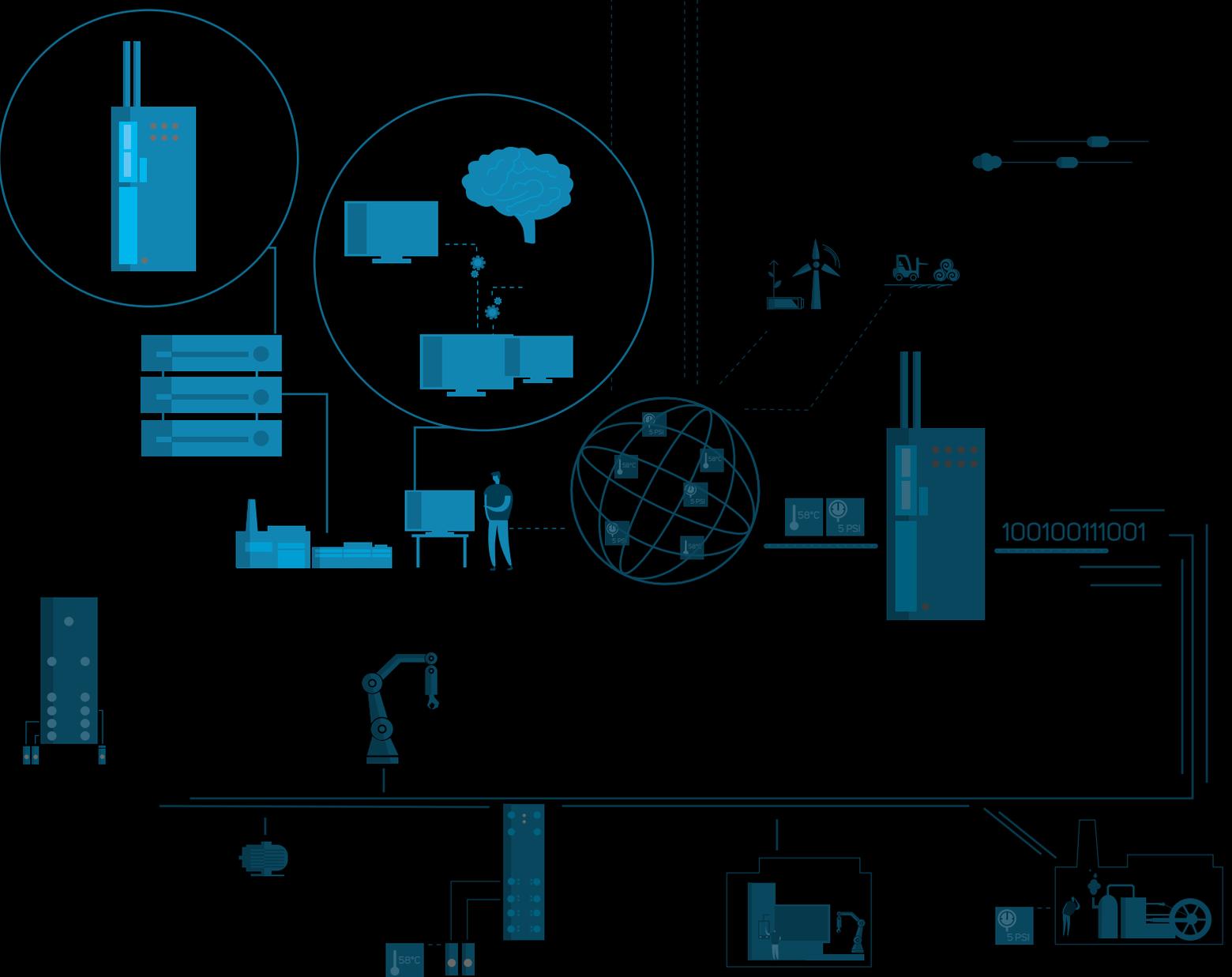


# netFIELD OPERATING SYSTEM

THE HEART OF CENTRAL OR  
DECENTRAL MANAGED IIOT DEVICES

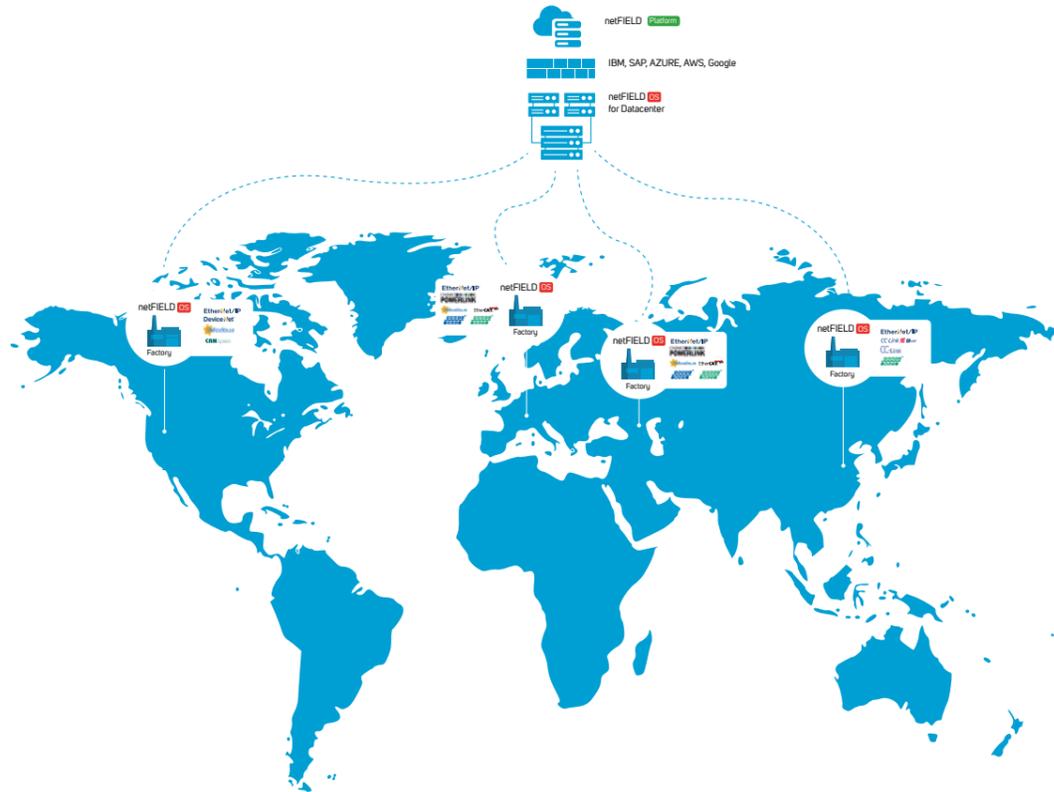




## THE SECURE OPERATING SYSTEM FOR AN INTELLIGENT EDGE

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.

### DEVICE MANAGER MAIN CHARACTERISTICS

- ✓ Device On-Boarding to **netFIELD.io**
- ✓ LAN/WiFi/WAN settings
- ✓ Resource Monitoring
- ✓ Firewall settings (NAT, enable/disable incoming ports, port-forwarding)
- ✓ Network attached storage access (iSCSI Targets, NFS)
- ✓ Firmware update
- ✓ Private Key Infrastructure (Certificates)
- ✓ Logging
- ✓ Shell access
- ✓ Plugin support for the configuration of application container
- ✓ Remote Access to the local Device Manager UI, connected OT network devices or single services shared by devices connected to the OT network.

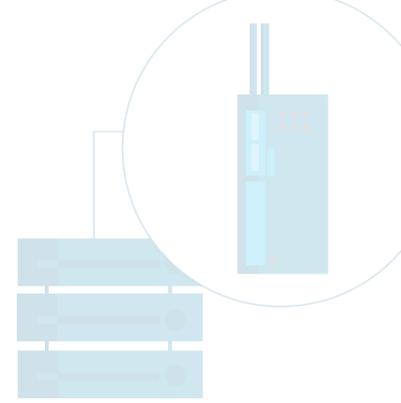
## netFIELD OS DATACENTER

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.



### 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 independancy of guest applications (**netFIELD OS**)
- + Access to remote storage systems via NFS or iSCSI including RAID n redundancy
- + Contribution to Green IT



## 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 of 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 the enterprise network of the customer and one or more cloud providers.

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.

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.



# netFIELD OS CHARACTERISTICS

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

## HEADQUARTERS

Germany  
Hilscher Gesellschaft für  
Systemautomation mbH  
Rheinstraße 15  
65795 Hattersheim (Frankfurt)

[contact@netfield.io](mailto:contact@netfield.io)  
[www.hilscher.com/netfield](http://www.hilscher.com/netfield)

## SOCIAL MEDIA

Find more  
information  
on social media

