

rexroth

ctrlX CORE

Die Fabrik der Zukunft braucht vertikale Lösungen und Mut

SEF Lenkungsausschuss III 04.12.20
Hans Michael Krause, Bosch Rexroth



Smart
Electronic
Factory



GERMAN
INNO
VATION
AWARD 20
WINNER



reddot winner 2020
industrial design

rexroth
A Bosch Company

**CNC, MOTION CONTROL, PLC
PROCESS CONTROL
SAFETY SOLUTIONS
IOT SOLUTIONS
IPC & PANELS
DRIVES
MOTORS
SERVICES**

trix CORE



Modern IT and consumer technology vs. operational technology

App Store

**Extension
with Apps**

Security

Updates

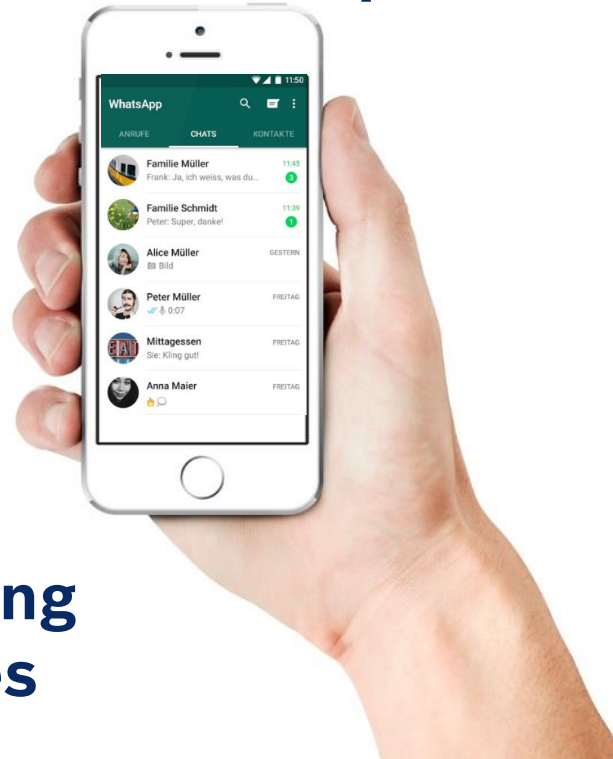
**Wireless
Connectivity**

**Speech
Recognition**

**Central
Management**

**Git Version
Control**

**Modern
Programming
Languages**



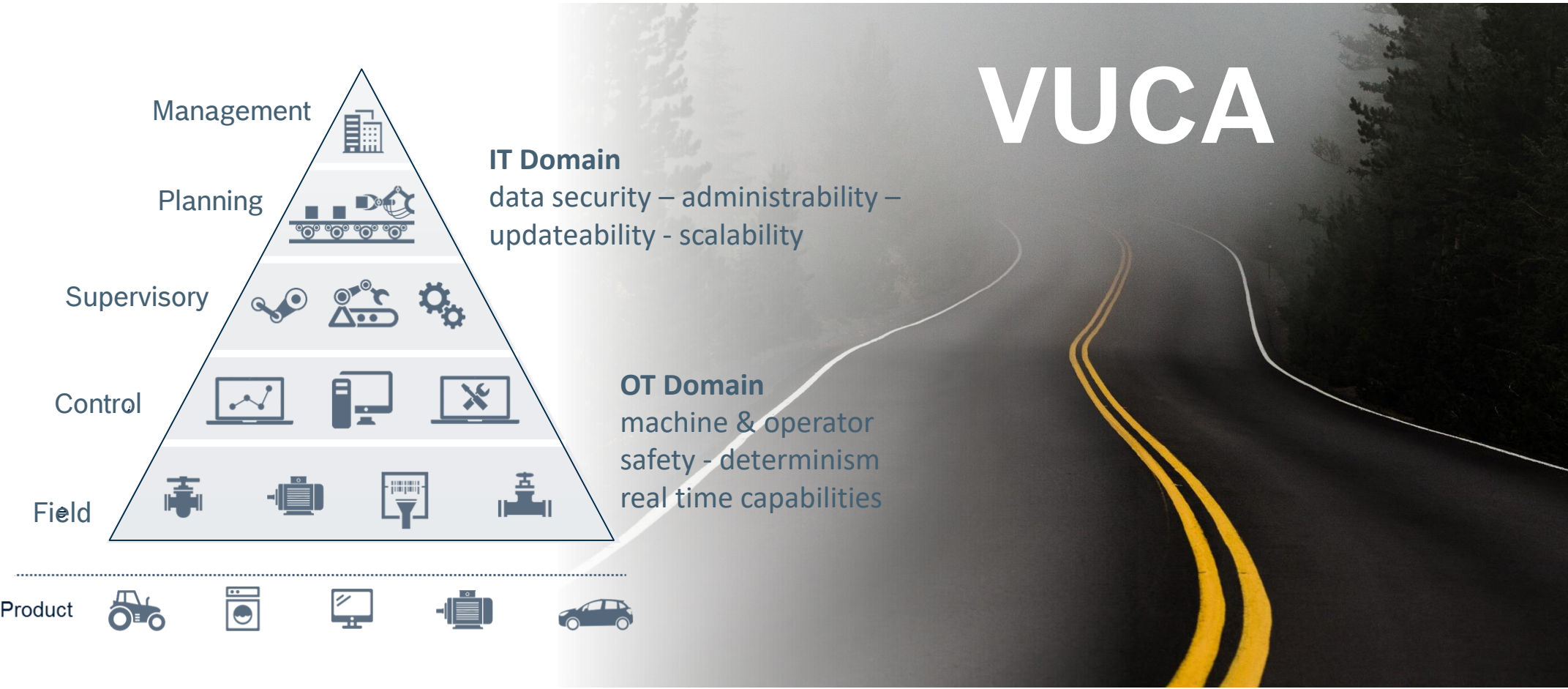
Modern IT and consumer technology vs. operational technology

Factory of today



Modern IT and consumer technology vs. operational technology

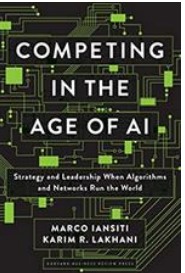
World of today



Modern IT and consumer technology vs. operational technology

World of today

Click & Collect 

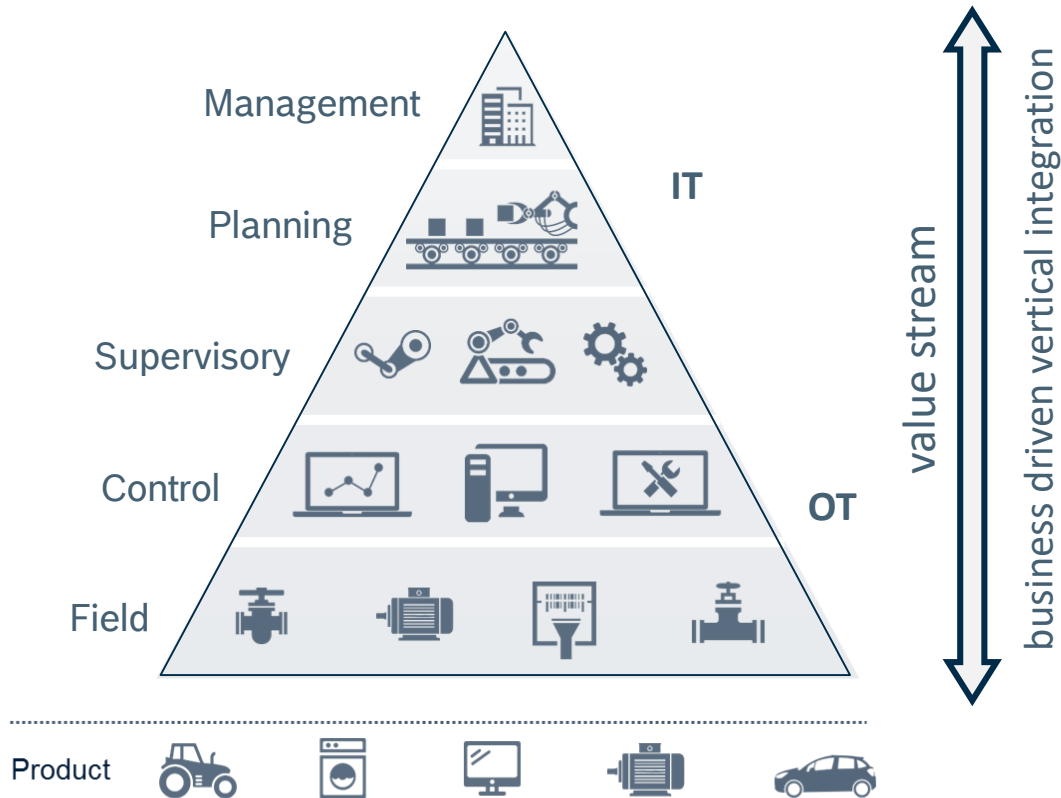


Source



Modern IT and consumer technology vs. operational technology

Automate the change

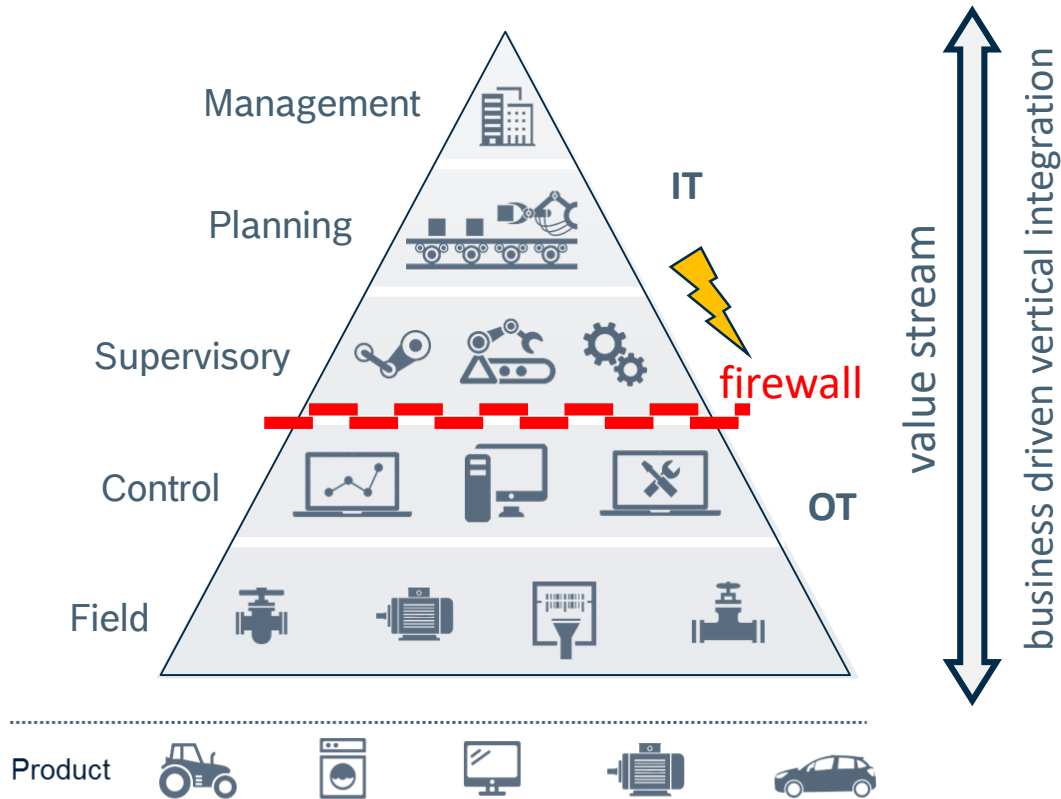


Customer value in a VUCA World

- Flexible end to end production planning
- Dynamic load balancing between production sites
- Efficient and consistent product changes and optimizations across departs + production sites
- Quick reconfiguration of equipment
- Increasing knowledge sharing
- Improved quality management
- Improved overall equipment efficiency

Modern IT and consumer technology vs. operational technology

Impediments to Automate the Change



Impediments

- Proprietary ecosystems and interfaces
- Missing data security in OT devices
- Isolation of communication with the field and control level by firewalls
- Missing determinism and real time capabilities in IT
- Missing flexibility due to big monolithic solutions packages
- Missing framework for cross domain collaboration.

Modern IT and consumer technology vs. operational technology

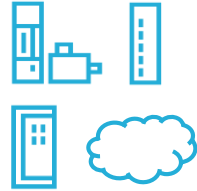
Needs for a new automation platform



Connective



Secure



Hardware agnostic



Administrable



Deterministic



Open & Extendable

ctrlX
AUTOMATION

**THE SMARTPHONE
OF AUTOMATION.**



ctrlX AUTOMATION

Explore the world of
Automation

Via apps

ctrlX AUTOMATION's
app-based system makes it
easy to add new automation and
control functions at any time

SERVICES



ENGINEERING

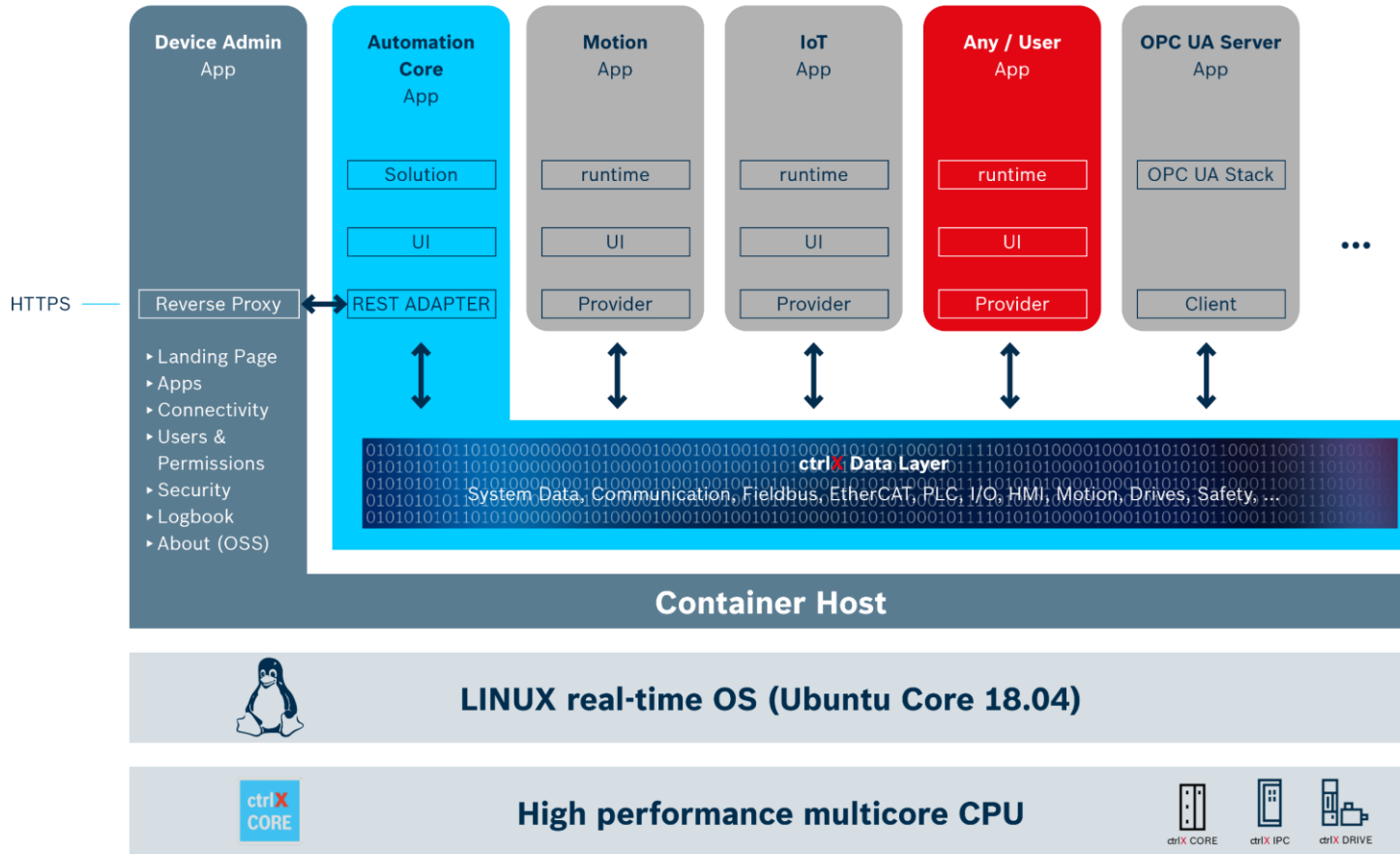


RUNTIME APPS



ctrlX AUTOMATION

Uniform architecture



LINUX

World's most stable and secure real-time operating system

ctrlX Data Layer

Central access to all real-time and non-real-time data

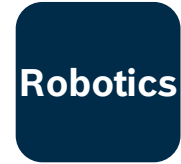
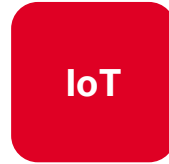
APP Technology

for runtime and engineering software and integration of 3rd party and/or user apps

ctrlX AUTOMATION

The most open automation system on the market

CREATE YOUR OWN APP



e.g. with
C/C++

e.g. with
Java / JavaScript

e.g. with
Python

e.g. with
HTML5, Java
Script

e.g. with
ROS

USING ALMOST EVERY LANGUAGE



PLCopen



Python



C/C++



Java



Node.js



ROS



ROS 2



HTML5

...

AND TOOLCHAIN

Visual Studio
Code

Visual Studio



ctrlX WORKS SDK
ctrlX CORE^{virtual}

SUPPORTED BY THE COMMUNITY



ctrlX AUTOMATION
Community



Github

ctrlX AUTOMATION

Apps



ctrlX DRIVE



ctrlX CORE



ctrlX IPC









Enabler for software defined automation and cloud deployment.

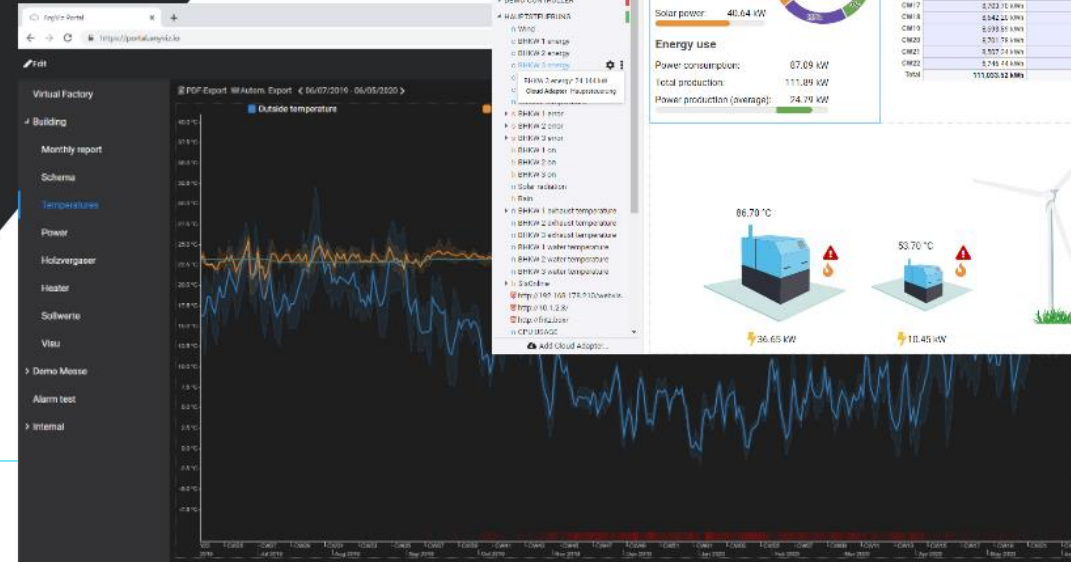
ctrlX World

Cloud HMI & Remote Portal



AnyViz Cloud for Automation Industry

-  Real-time visualization of process data
-  Record machine and operating data
-  Targeted condition monitoring
-  Remote control
-  Automated reports
-  Networking of machines and plants



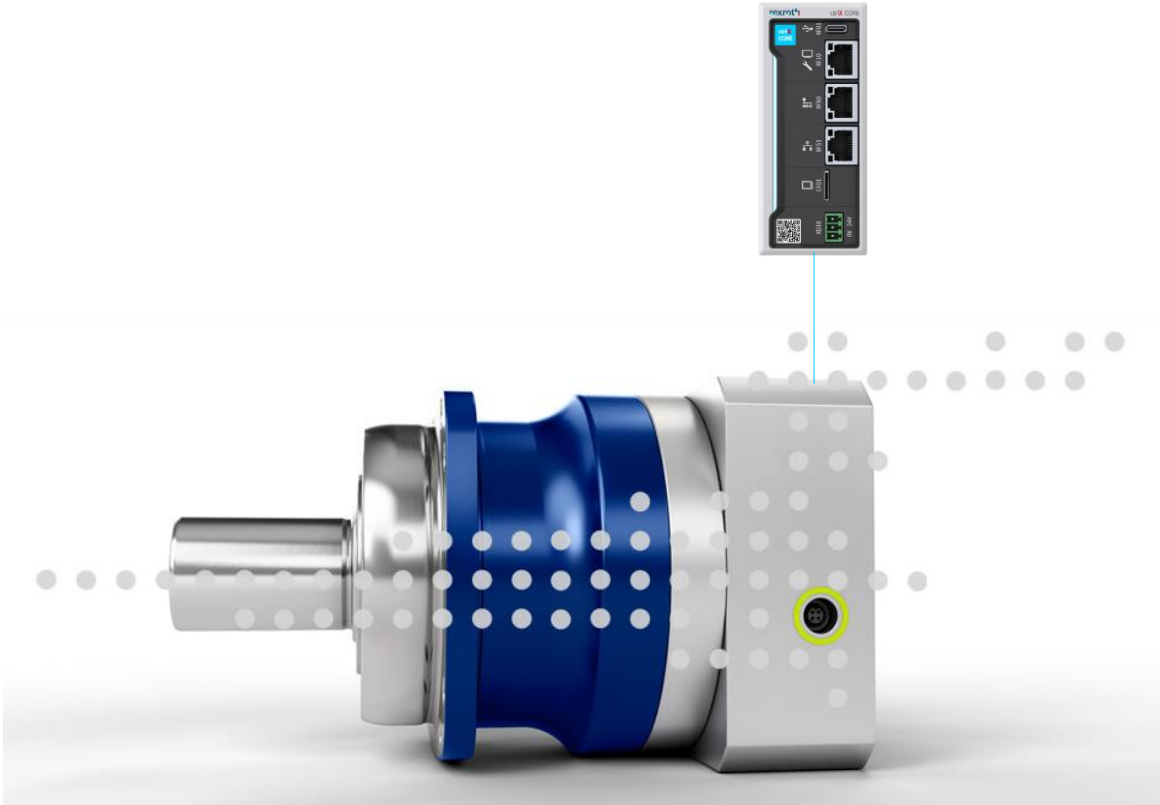
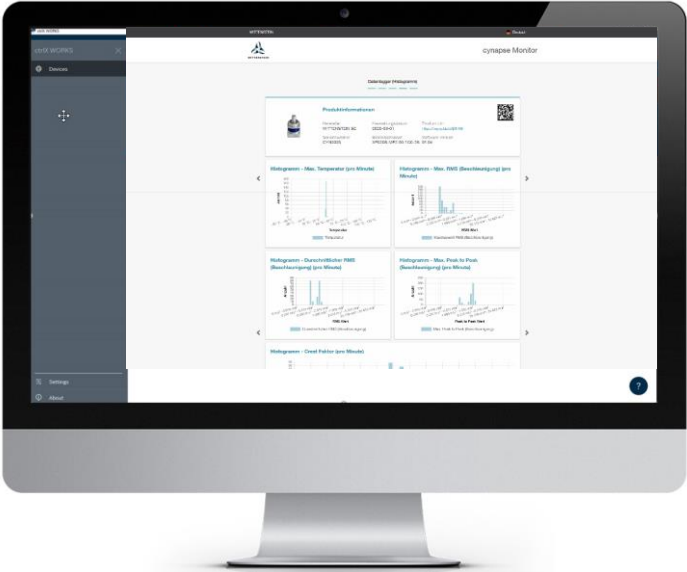
ctrlX World

Speech recognition



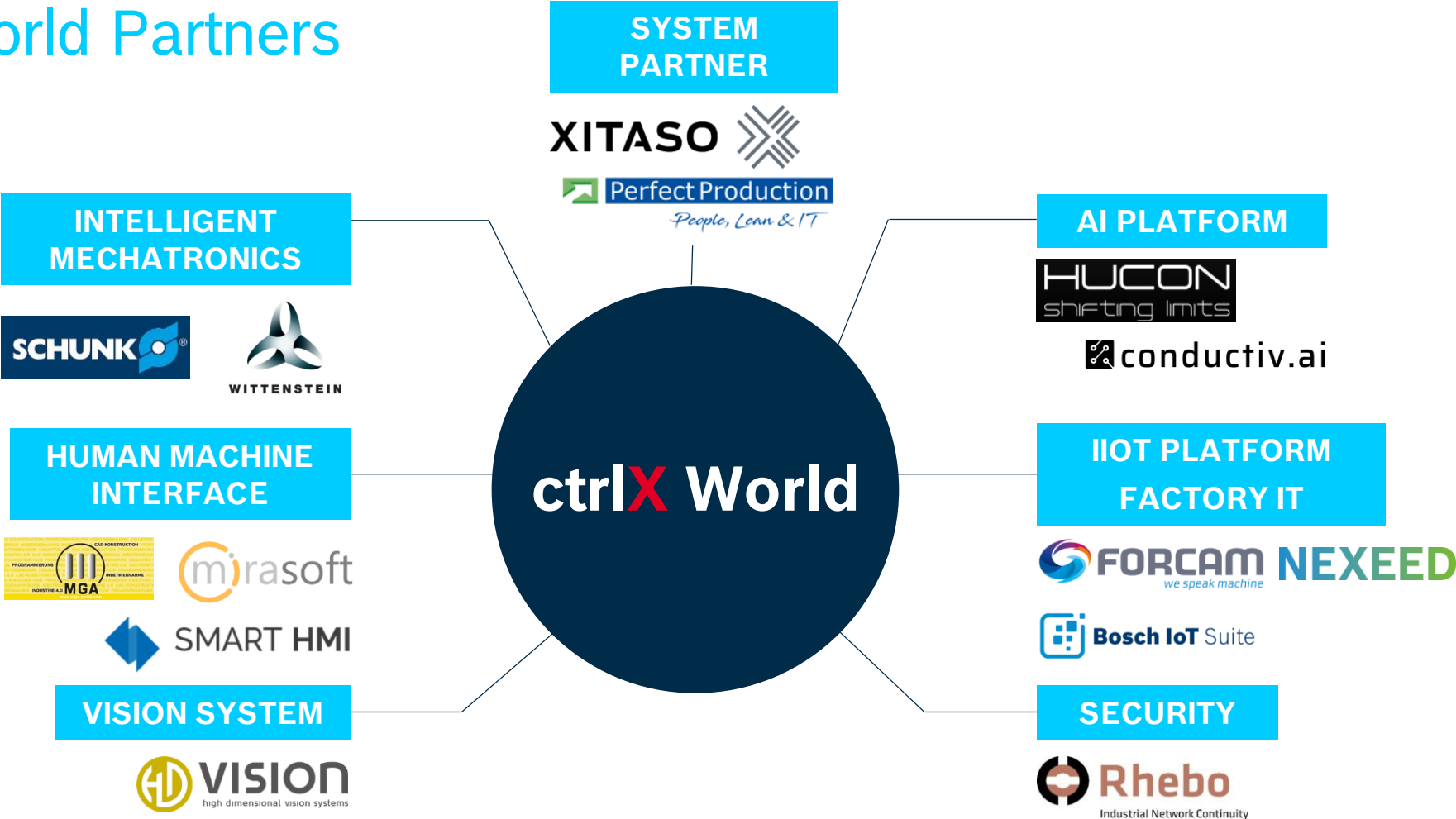
ctrlX World

Intelligent mechatronics



ctrlX AUTOMATION

ctrlX World Partners





**Die Zukunft der Hydraulik
ist connected.**

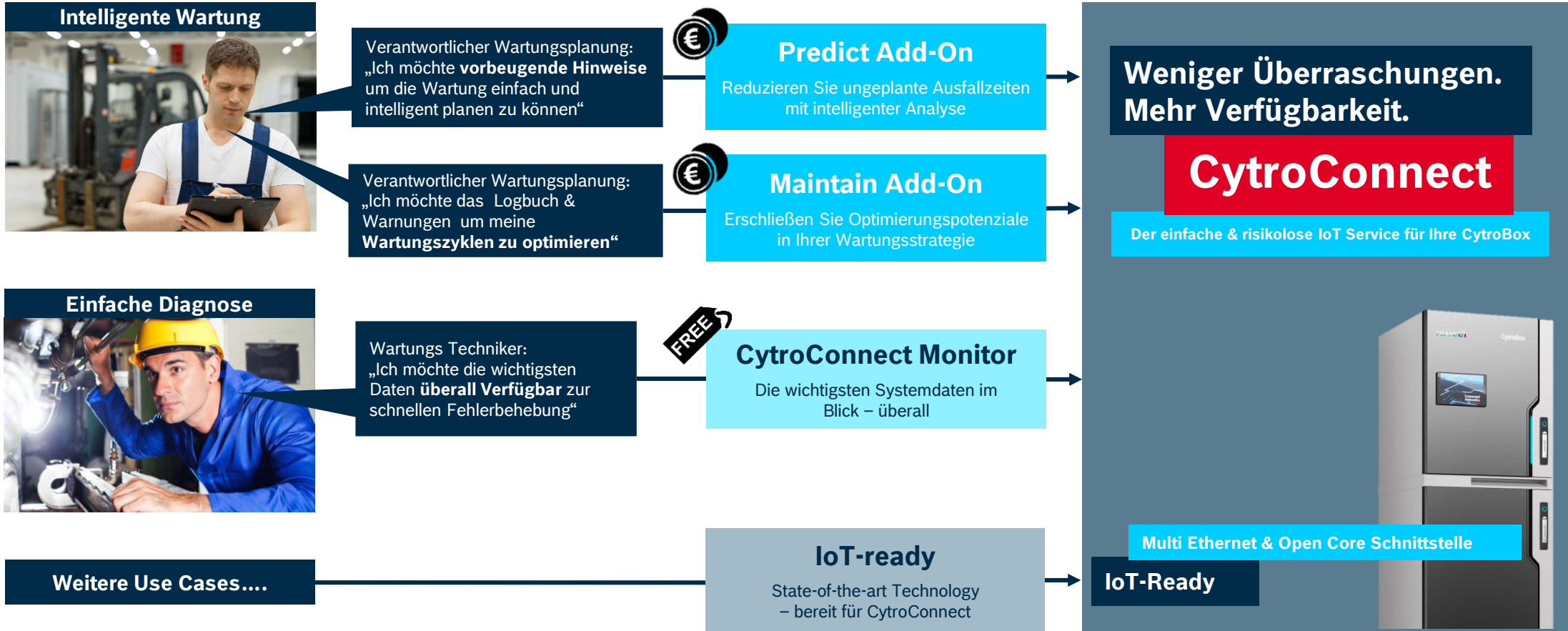
**Weniger Überraschungen.
Mehr Verfügbarkeit.**

CytroBox

FUTURE STARTS NOW

CytroConnect

Ihr Use Case – Unsere Lösung

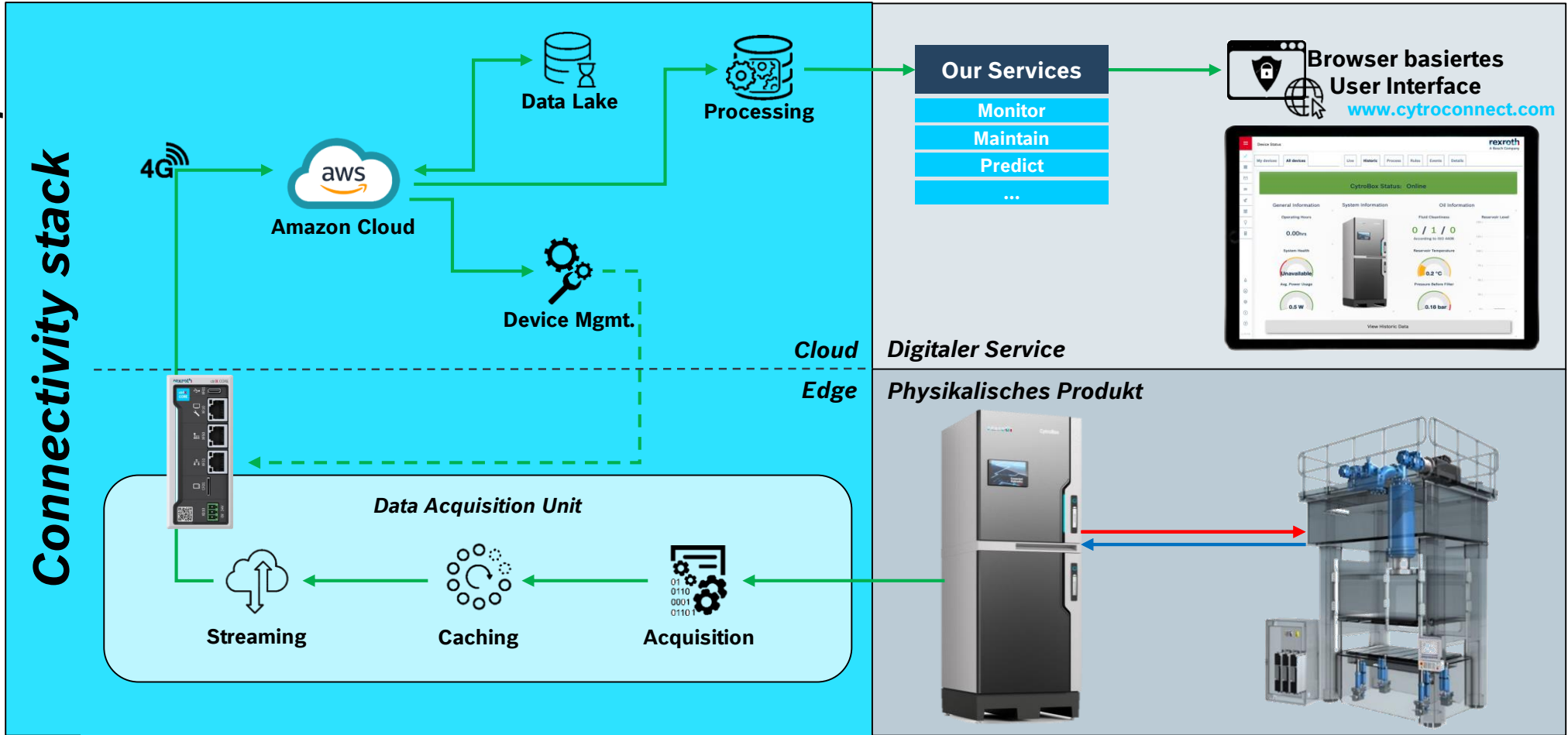


CytroConnect

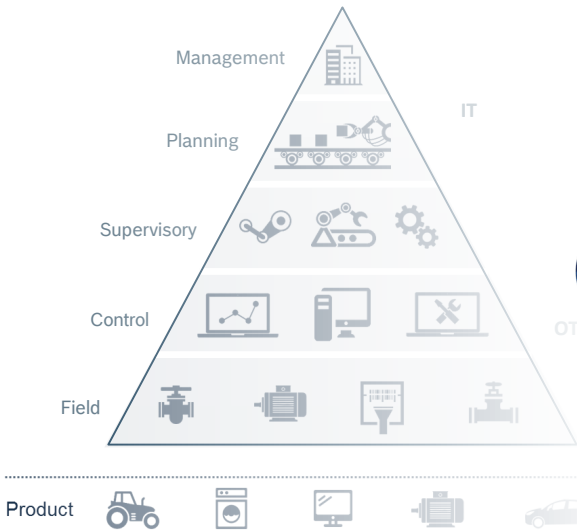
Technical concept

reliable – scalable – secure – compliant

Connectivity stack



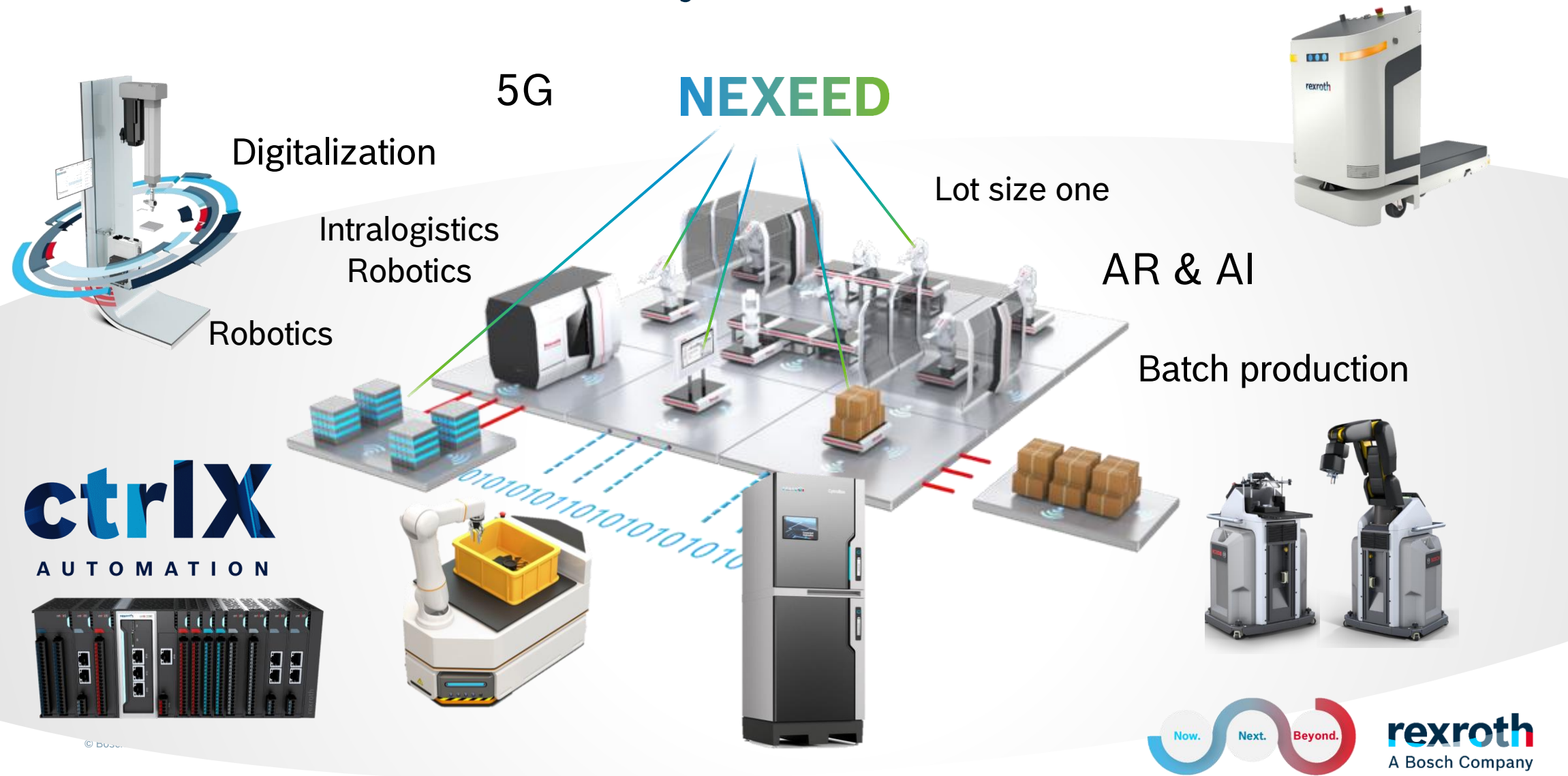
Transformation to the Factory of the Future

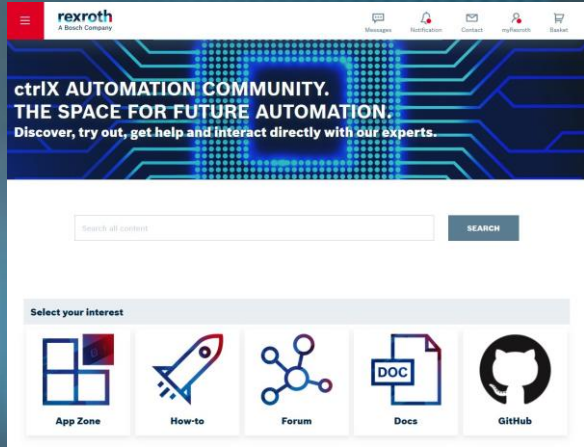


ctrlX
AUTOMATION



Transformation to the Factory of the Future





www.ctrlX-AUTOMATION.com

[@elkrause](https://twitter.com/elkrause) [in](https://www.linkedin.com/in/HansMichaelKrause) HansMichaelKrause

[Link to Video](#)

[Video](#)

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