

Coriva

The next level of locating solutions

Daniel Bossert | TRUMPF Tracking Technologies





TRUMPF



Unlocking technological worlds for generations to come.



TRUMPF is

- high tech company.
- world market and technology leader for machine tools and industrial lasers.
- family-owned.
- founded in 1923.
- HQ in Ditzingen, Germany.
- 17.900 employees.
- 5.4 Bill EUR turnover. (+27%)
- Over 70 subsidiaries worldwide.

TRUMPF



1923–
2023

A photograph of a factory floor. In the foreground, there are several large, light-colored metal parts, possibly aluminum, with various holes and slots. Some of these parts are resting on wooden pallets. In the background, there are more metal parts, some of which are stacked. A green plastic bin is visible in the upper right corner. The floor is a light-colored concrete.

What are the challenges in the discrete manufacturing?

The challenge in discrete manufacturing

The actual process



What is done instead



- Transportation
- Movements
- Inventory
- Waiting
- Over-production
- Incorrect processes
- Waist / defects

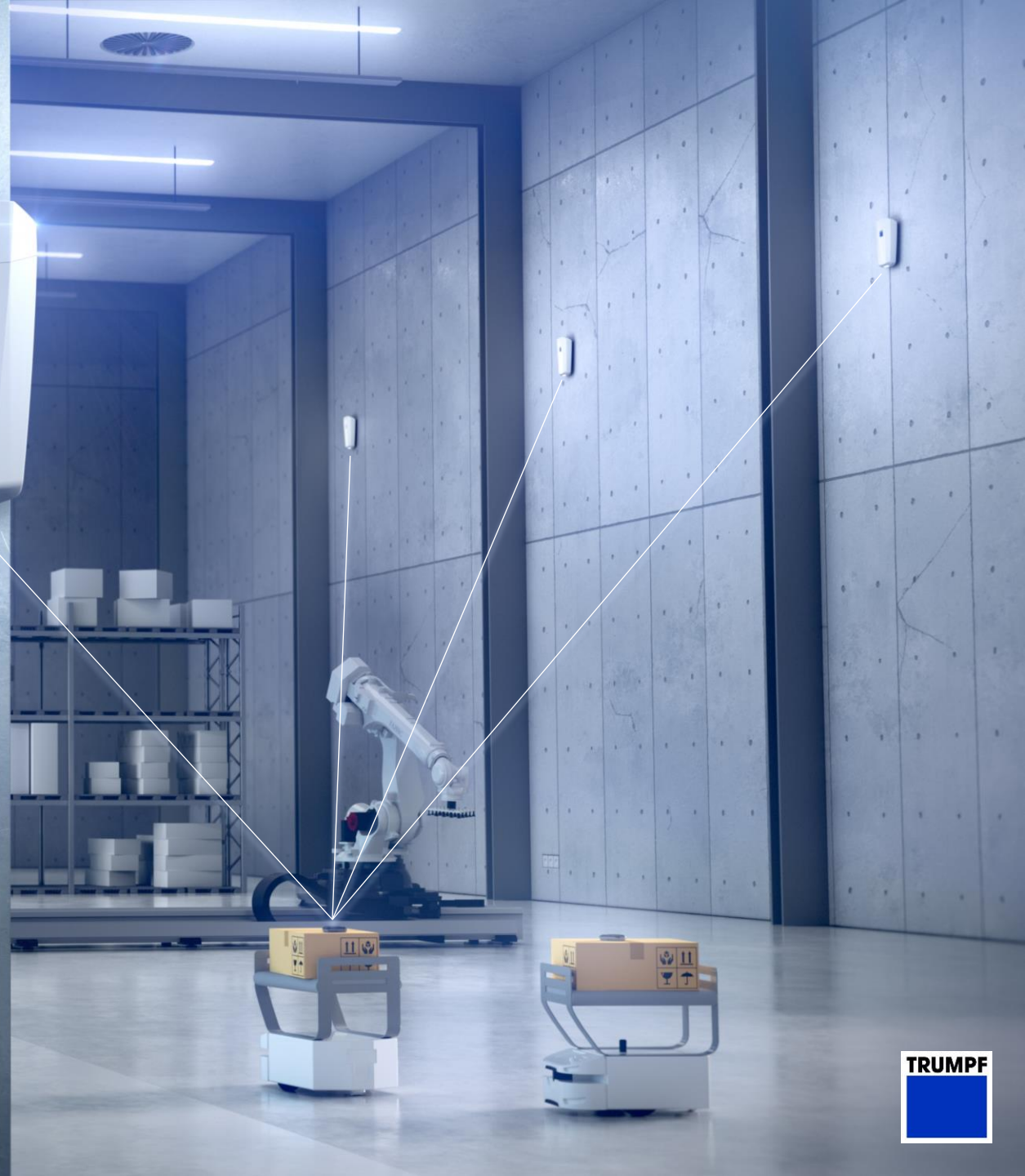
More than half of the time in manufacturing is spent on supportive, non-value-adding processes.

Coriva - The next level of real-time locating solutions

- 1 Tag sends out UWB signal
- 2 Satellites receive signals at different times
- 3 Locating software determines position of tag based on different signal transmission times



UWB is the most robust and precise locating technology.



RTLS real-time locating to optimize your shopfloor

02

Process automatization

Trigger events to an application automatically when asset enters or leaves geofence

01

Asset Tracking

Reduce search times, increase transparency

03

Navigation

Of people and machines (AGVs) to reduce waiting times and increase transport speed

04

Daten analysis

For the optimization of movement sequences, warehousing, processes, etc.

06

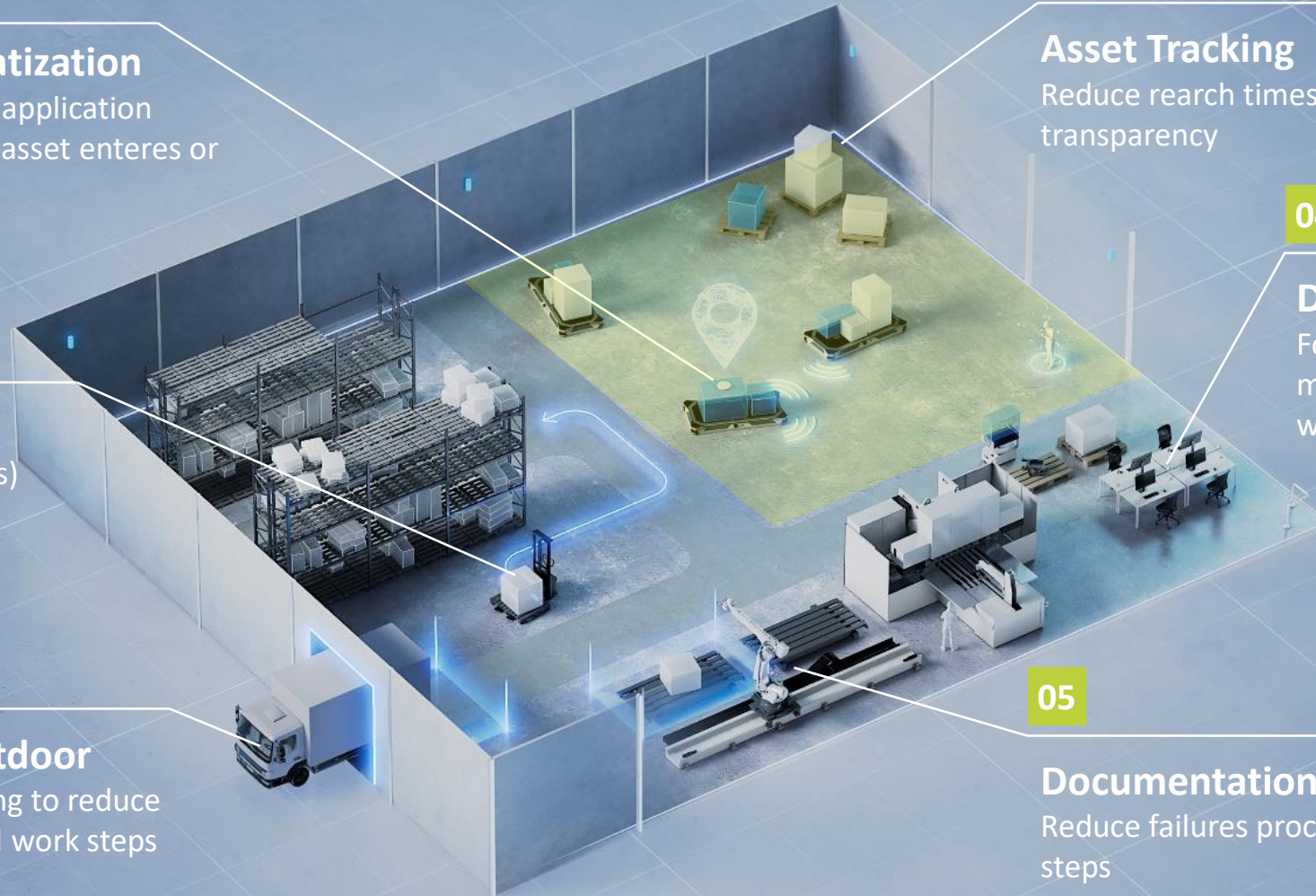
Seamless In-/Outdoor

Cross-company tracking to reduce failures and additional work steps

05

Documentation

Reduce failures process steps



Coriva meets



The open locating standard

The world's first open locating standard for the industry and logistics



omlox is part of PI

PROFIBUS & PROFINET International



Known association
for industrial standardization

30 years
Industrial communication

Strong community

More than 1.700 members

Global footprint

More than 27 regional
associations
60 test and training centers

Today's situation

There are thousands of proprietary silo applications with locating technologies

Location based apps

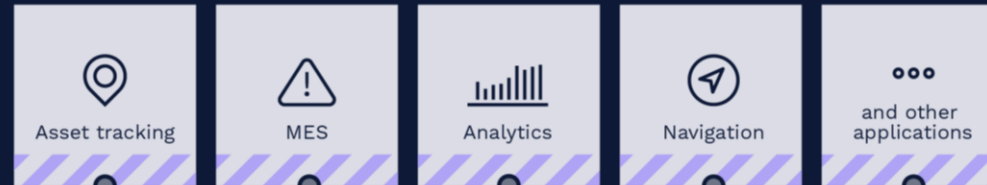


Location zones

Mobile units

The omlox architecture designed for >200 use cases

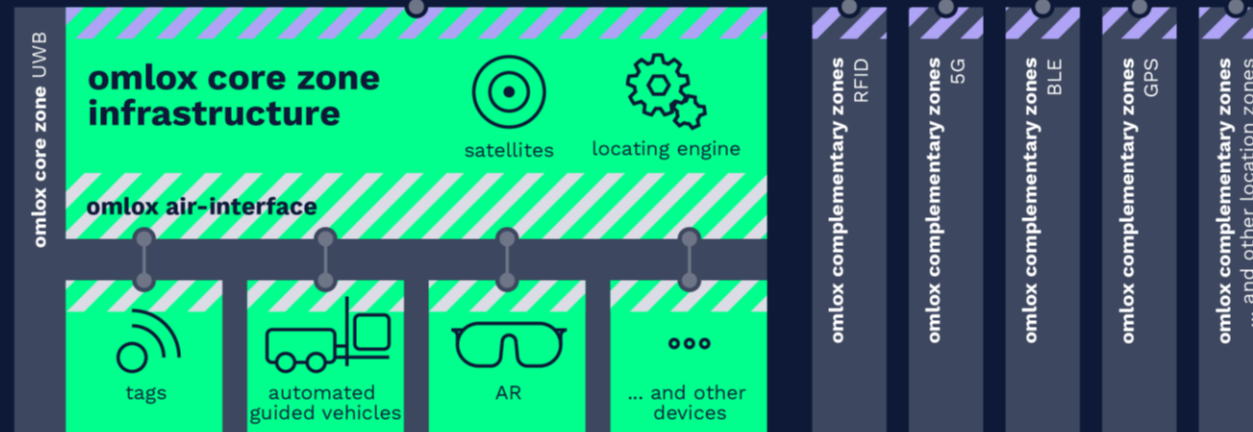
Location based apps



Location middleware



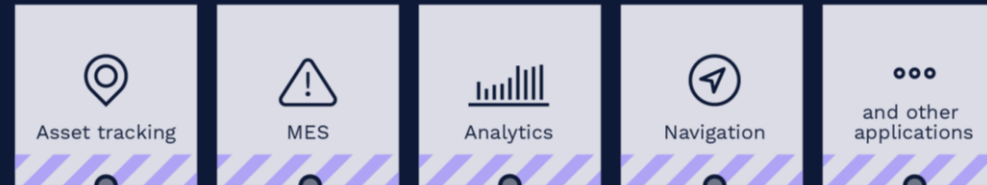
Location zones



Mobile units

The omlox architecture & benefits

Location based apps



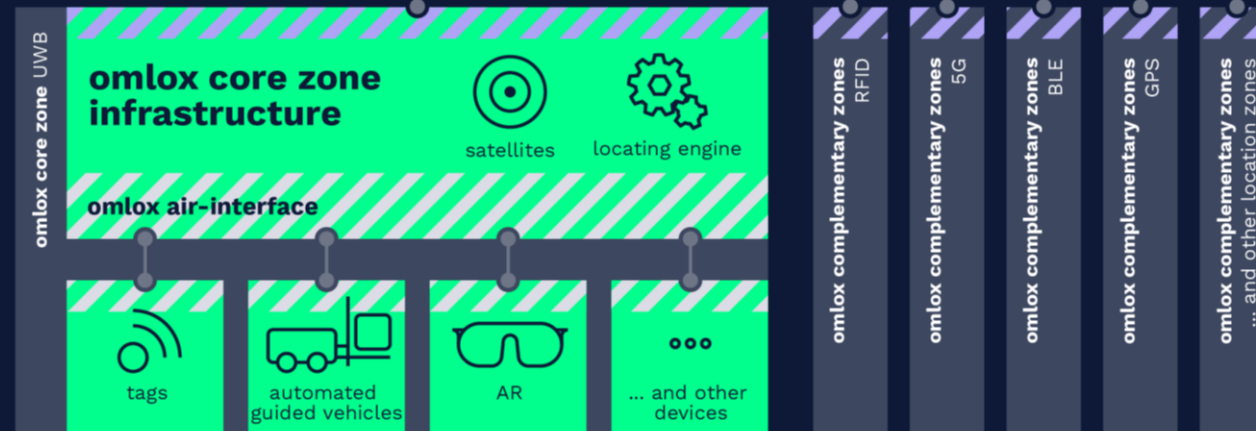
Easy integration to any application

Location middleware



Single source of truth for all locating data. Main features for locating based services centralized in middleware

Location zones



Technology agnostic
Easy integration of any locating technology.
Future-proved architecture

Mobile units

Enables interoperability on UWB technology



Coriva by TRUMPF

The next level of locating solutions

Coriva – RTLS interoperability at it's best

no limits - design & scale up your Coriva solution for your individual use case with omlox apps & tags


TRUMPF



The image shows a TRUMPF logo at the top left. Below it, a tablet and a laptop display the Coriva software interface. The tablet screen shows a graph with a peak and the text '3 days 17'. The laptop screen shows a 3D factory floor plan with various equipment and components. In front of the laptop is a white, vertical, rectangular RTLS tag with the TRUMPF logo on it.

omlox
certified ✓ air8


use third party applications for your desired use case



The image displays four different devices showing various applications: a desktop monitor with a dashboard featuring line graphs and a pie chart; a tablet showing a map with green location markers; a smartphone showing a map with green location markers; and a laptop showing a factory floor plan with colored zones labeled 'Einzelanfertigung', 'Pufferbereich', and 'Spindelmontage'. To the right of these devices is the 'omlox connectable app' logo.

omlox
connectable app

choose third party omlox compliant tags to track your assets



The image shows five different types of omlox compliant tags: two black rectangular tags with QR codes, a white tag with a photo of a woman and the text 'Eva VIP Visitor Your Company', a blue rectangular tag, and a black rugged smartphone displaying a map application. To the right of these tags is the 'omlox certified ✓ air8' logo.

omlox
certified ✓ air8

CorivaEngine - The beating heart of your locating system

Software to locate your assets within omlox Core Zone



One software to locate any omlox compliant trackable



Standard omlox API enables easy software integration into existing ecosystems



Flexible and scalable deployment
edge, cloud or hybrid



Set of software tools designed for HW and SW integrators and solution providers



Pay per squaremeter provides cost transparency regardless of amount of trackables or use cases

CorivaSatellite – No limits, only visions

The world's first omlox compliant Satellite



- ▶ Enables 8GHz (UWB) **omlox compliant air interface**
- ▶ **Flexible connection** with PoE, Wifi and 5G (up comming)
- ▶ **Status indication with LED**
- ▶ Available in **IP20** and **IP67** to fit any application
- ▶ Easy and fast satellite **mounting** in mutilple constallations possible

CorivaTag Plus – Start tracking now

omlox compliant tag



- ▶ **Easy handling** due to handy size (45 x 71 x 10 mm), slider mount
- ▶ **High robustness** with IP67 casing
- ▶ **Equipped with signaling** like LED-status, vibration, signal sounds
- ▶ **Long battery lifetime**
- ▶ **Contactless and fast battery loading**

omlox application examples

Integrate third party applications into your omlox ecosystem



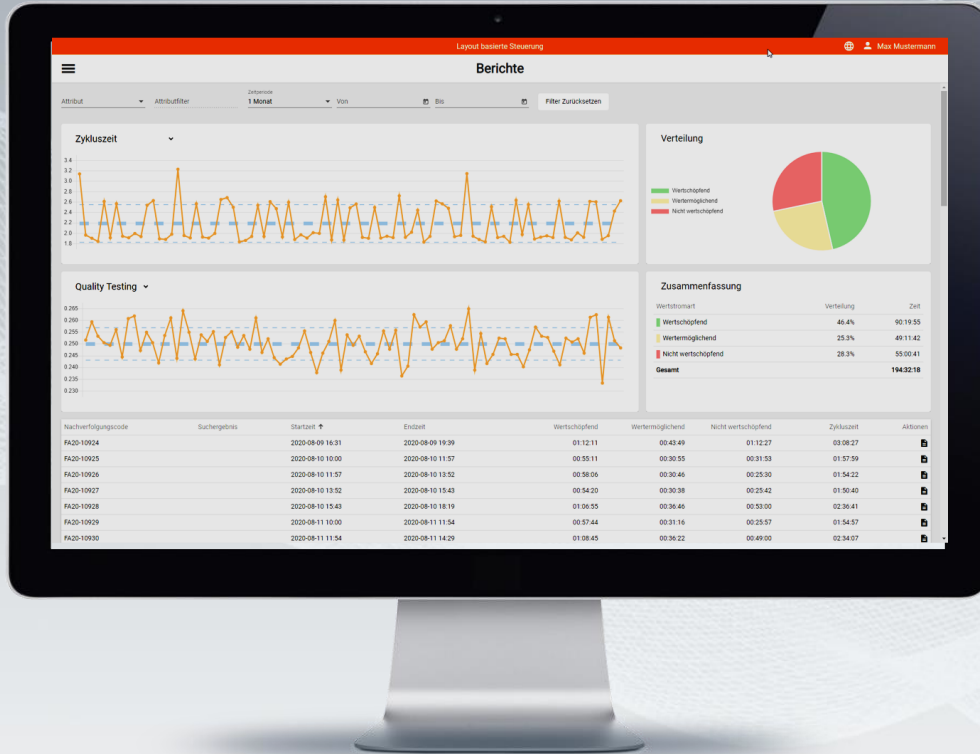
Asset Tracking in real-time

allows users to reduce search times, increase transparency on the shopfloor and optimize throughput times



Process automatisatisation

process actions based on geo-fences can be triggered automatically



Digital value stream mapping

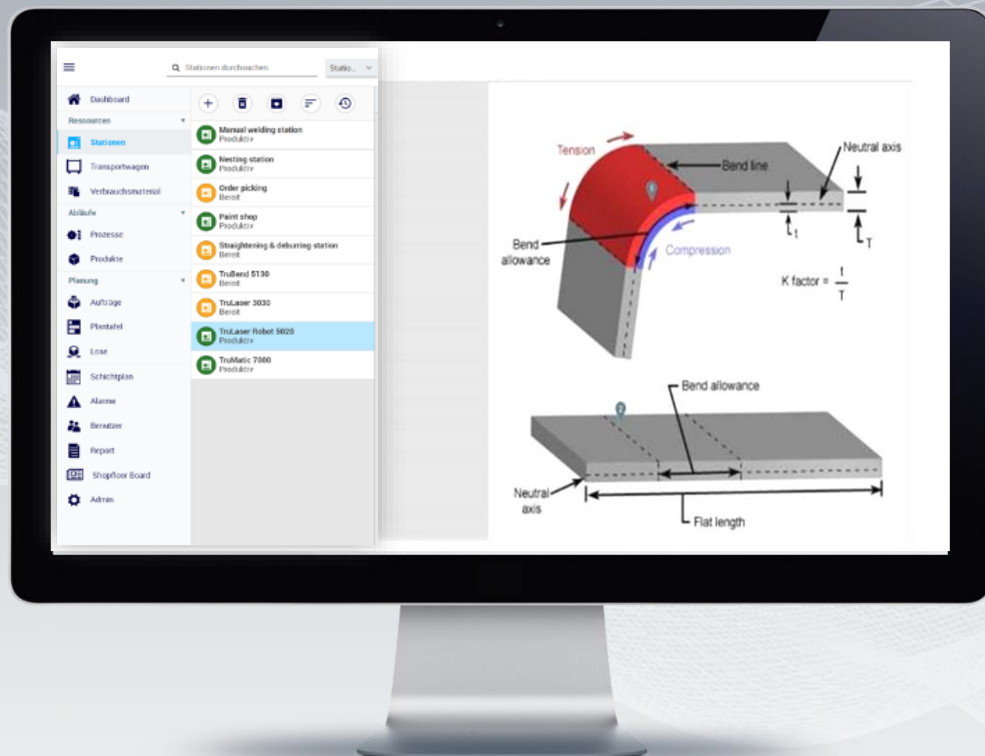
Value stream mapping will be automatically generated with locating data and geo-fences. It helps to reduce waste and to improve efficiency





Real time process steering

Determine in real-time deviations on workplace, buffer times, transport routes, process times.



Paperless production

Locating data in real time and process actions based on geo-fences will trigger working instructions to workers when an asset arrives at a working station.



Data analysis

historical transport data enables route optimizations

and many more...

Reference use cases



We already run omlox at own TRUMPF plants.
Successful omlox implementation at end customers sites started.



USA, China, Austria,
Germany



MANN+
HUMMEL



LIEBHERR

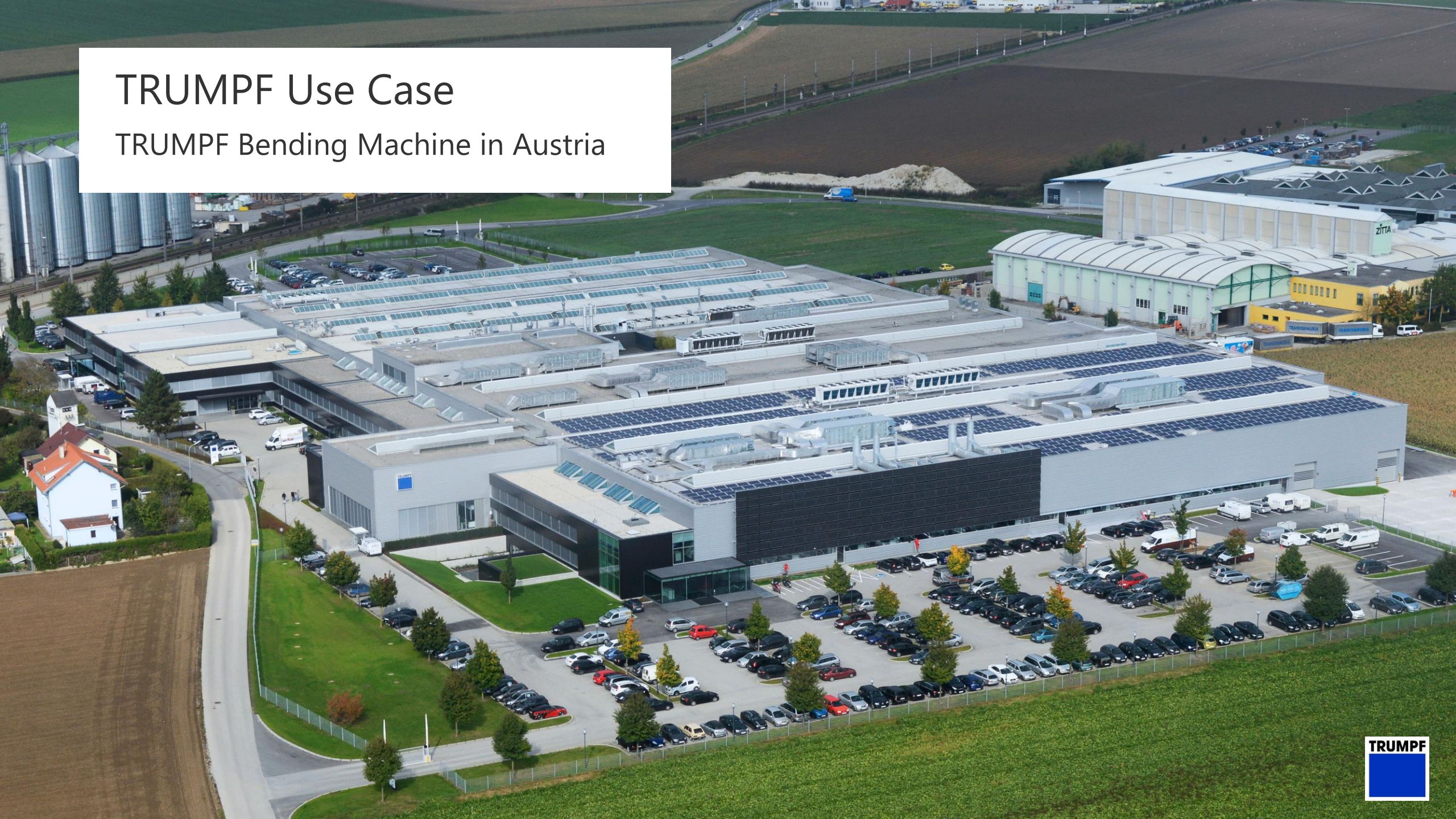


ARNOLD 
metalligent®



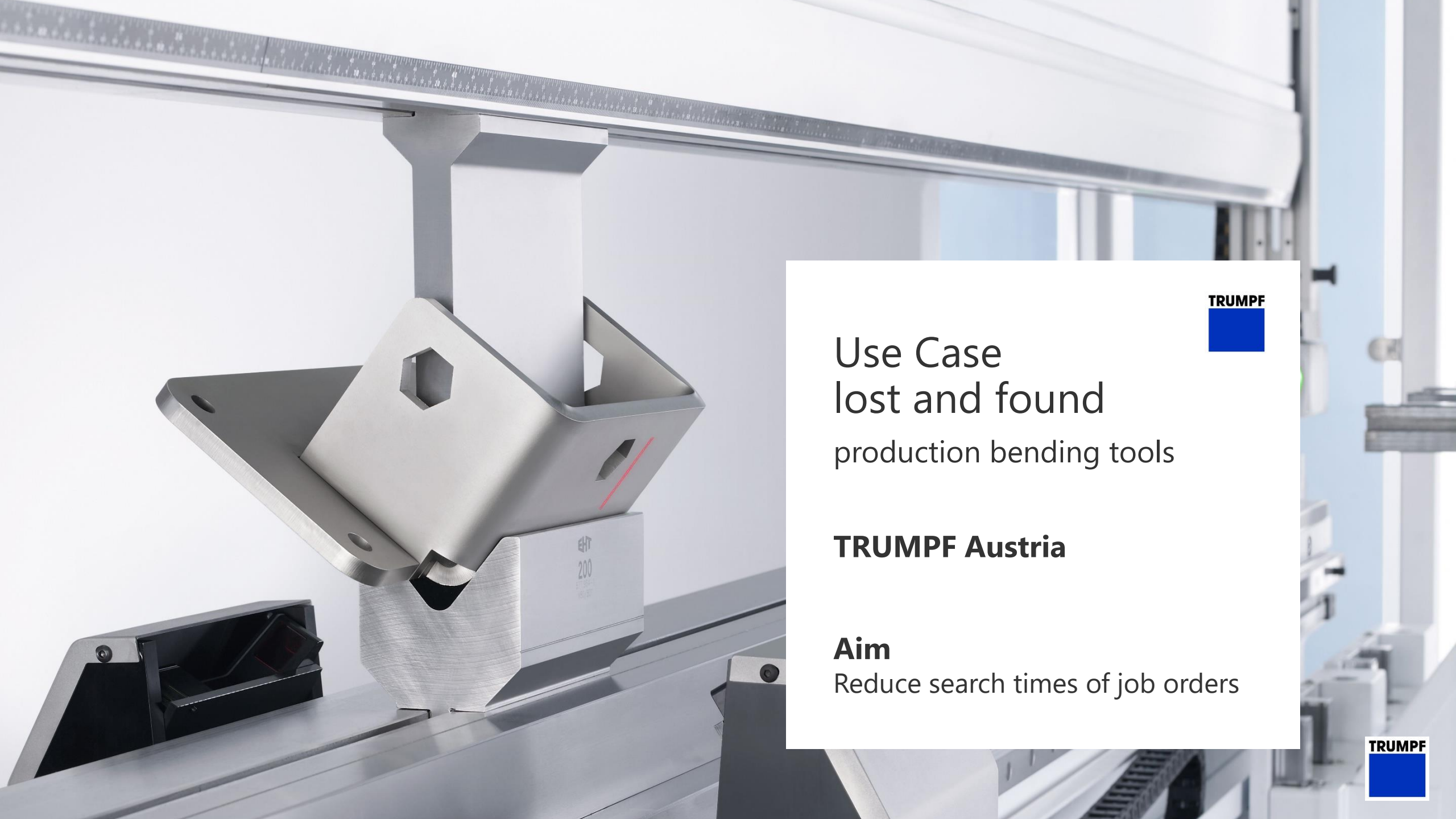
TRUMPF Use Case

TRUMPF Bending Machine in Austria





Manufacturing bending
machines and tools



Use Case lost and found production bending tools

TRUMPF Austria

Aim

Reduce search times of job orders





The solution

Infrastructure

- Installation of satellites in production area
- UWB omlox tags on cart

Application

- customer specific app (TAT own developemt)
- Binding / unbinding
- SAP interface

Benefit

- Savings 1h search time a day
- ROI after 18 months

outlook

further Use Cases

- Optimization of idle times through prioritization in buffer storage
- Reduction of errors (e.g. support in the processing of production steps)
- Implement application for analysis and visualization



The background of the slide is a photograph of a modern building facade. The facade is composed of a grid of dark horizontal and vertical frames. Between these frames are large glass panels. Overlaid on the glass panels are numerous vertical green bars of varying heights and shades of green, creating a textured, forest-like appearance. The building is curved, and the sky is visible in the background.

**MANN +
HUMMEL**

Use Case lost and found

Mann & Hummel Germany

Aim

- Pallet tracking and reduce search in warehouse
- Reduce shipping failures



The solution

Infrastructure

- installation of satellites in warehouse
- Barcode scanner with integrated omlox UWB

Application

- Customer specific app
- SAP Interface

Benefit

- **Savings 3 h search times a day**
- **ROI after 12 months**



Customer benefits

Transparency
increase

Process
automatization

Process failure
reduction

Search time
-39%

Throughput
+12%

Productivity
increase

omlox

ROI
1 Year

Customers and Partners who trust in us

**MANN+
HUMMEL**



HPE aruba
networking



bornemann



accenture

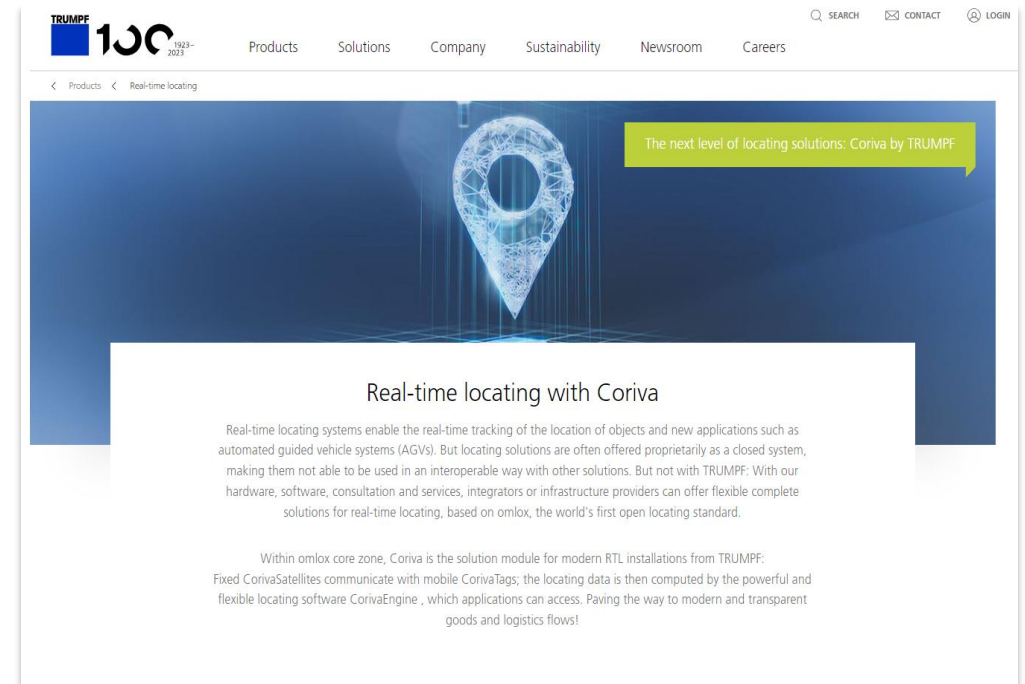
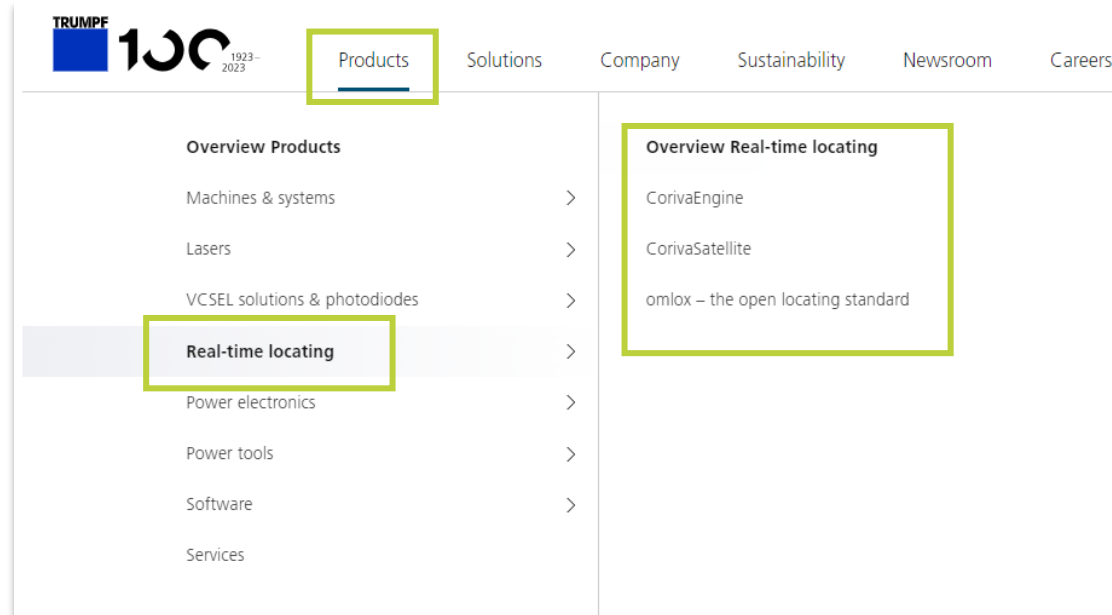
T-Systems



and many more...

Coriva information are available at TRUMPF webseite www.trumpf.com

Real-time locating | TRUMPF





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