



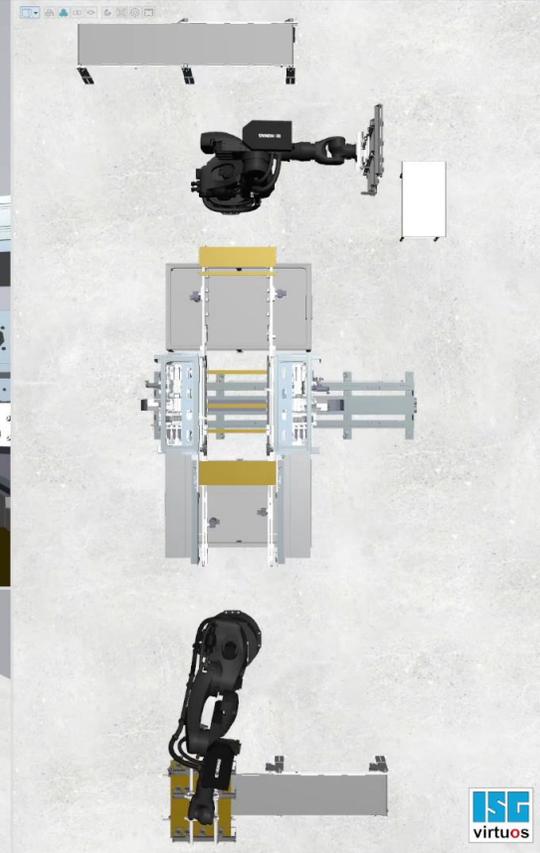
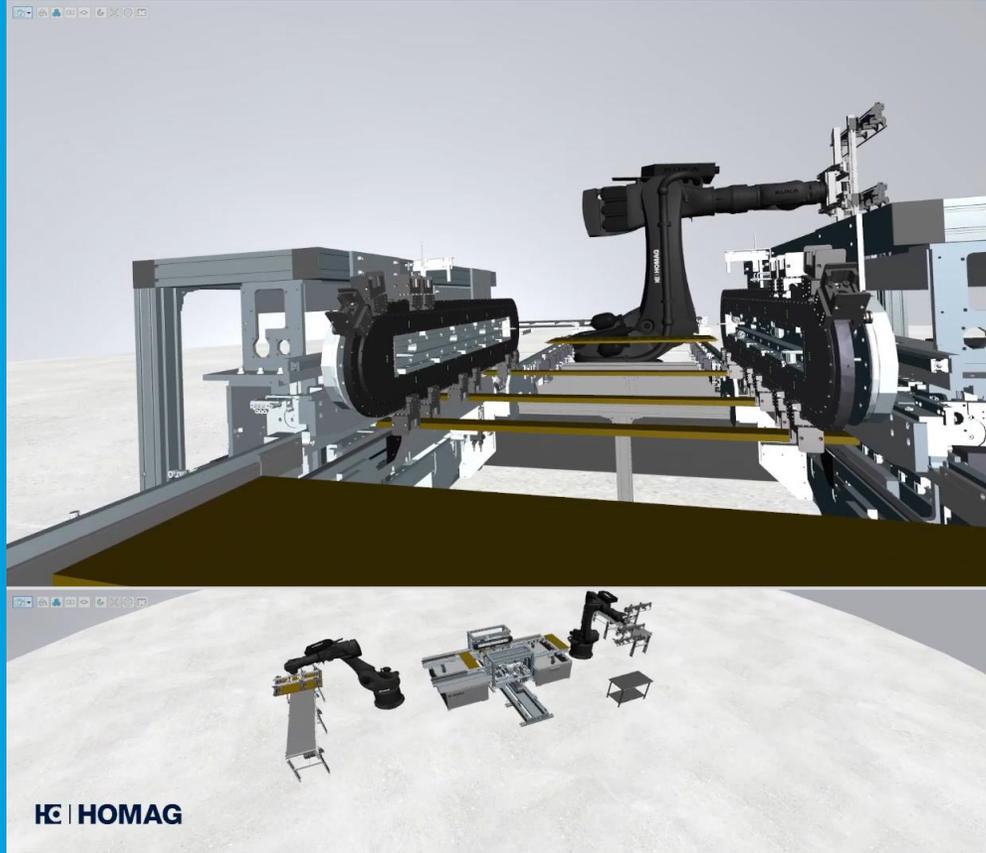
**Intelligente Engineering-Daten für
die virtuelle Inbetriebnahme**

VIRTUELLE PLANUNG, AUSLEGUNG UND INBETRIEBNAHME

WIE KOMPONENTENHERSTELLER IM DIGITALEN
ENGINEERING EINEN MEHRWERT BIETEN KÖNNEN

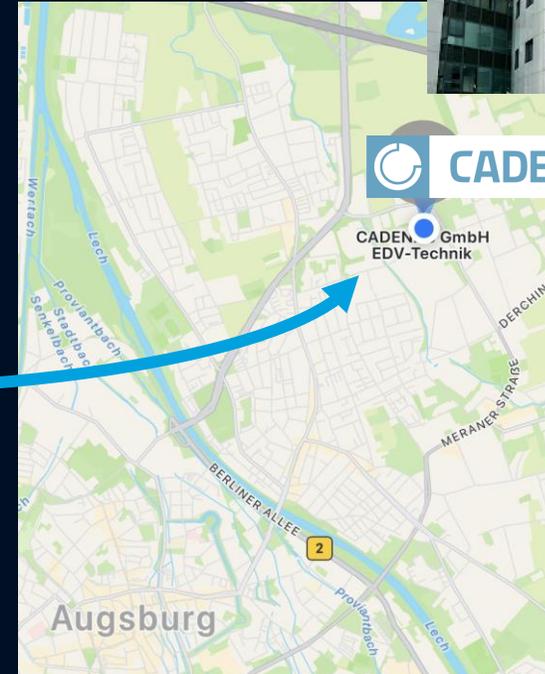


Digital
Twin, 4D



CADENAS, ISG UND TWINSTORE

EIN STARKES UMFELD FÜR TECHNOLOGIE UND INNOVATION

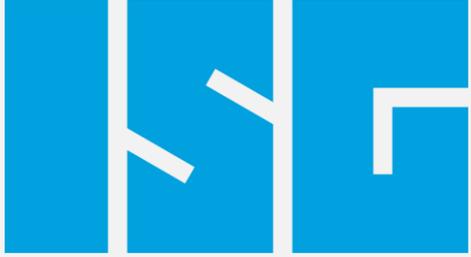


Forschungspartner:



ARENA2036





Ihr Partner für **VIRTUELLE INBTRIEBNAHME & MOTION CONTROL**

80

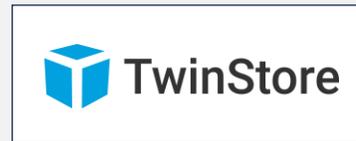
Mitarbeitende

35

Jahre Erfahrung

Individuelle Lösungen aus einer Hand

Virtuelle Inbetriebnahme



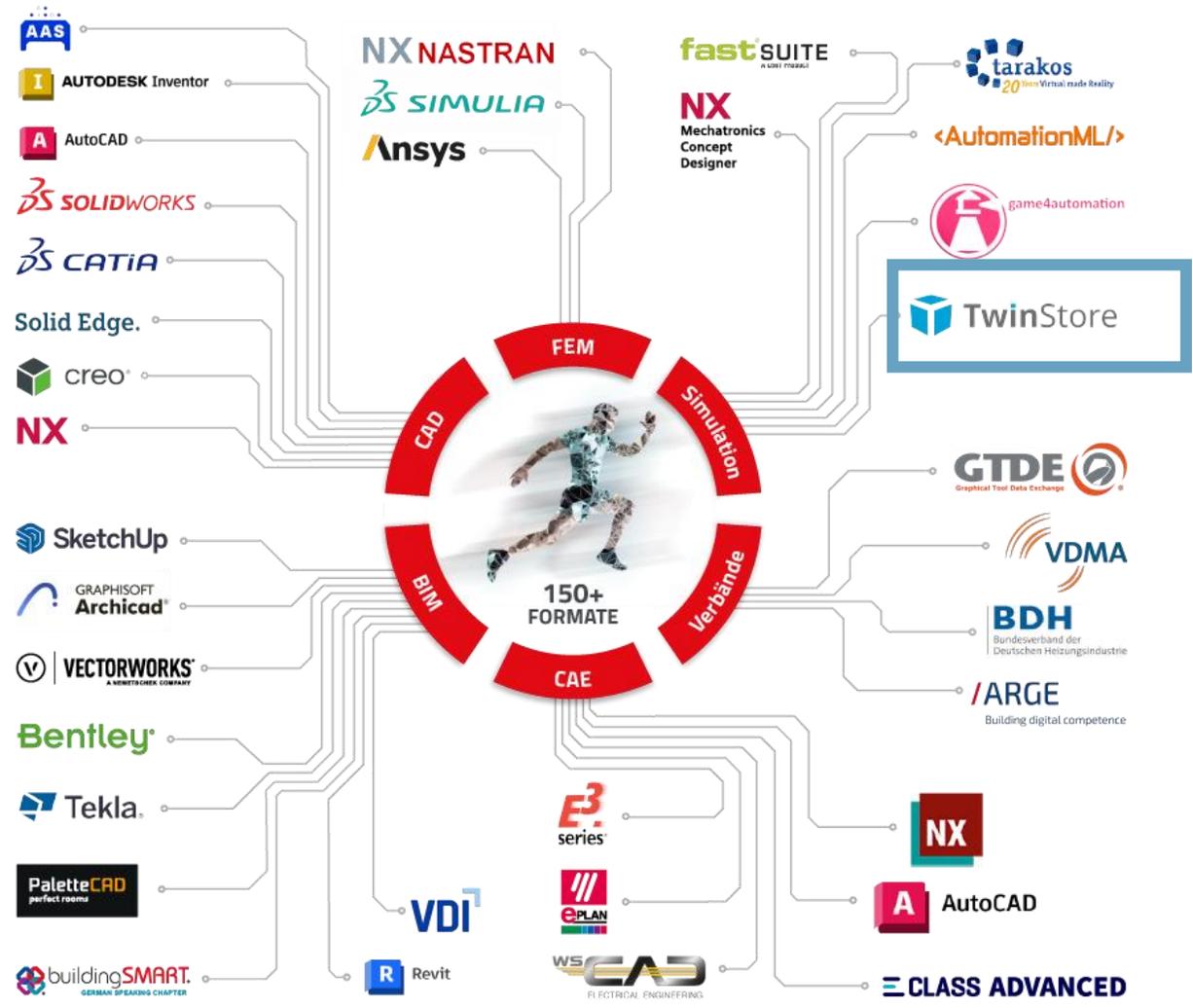
CNC



Testautomatisierung







und viele mehr...

Der digitale Zwilling spart Ihren Kunden wertvolle Zeit!



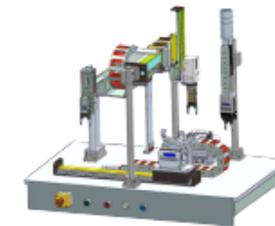
VS



3Dfindit
Engineering Daten



4 Minuten

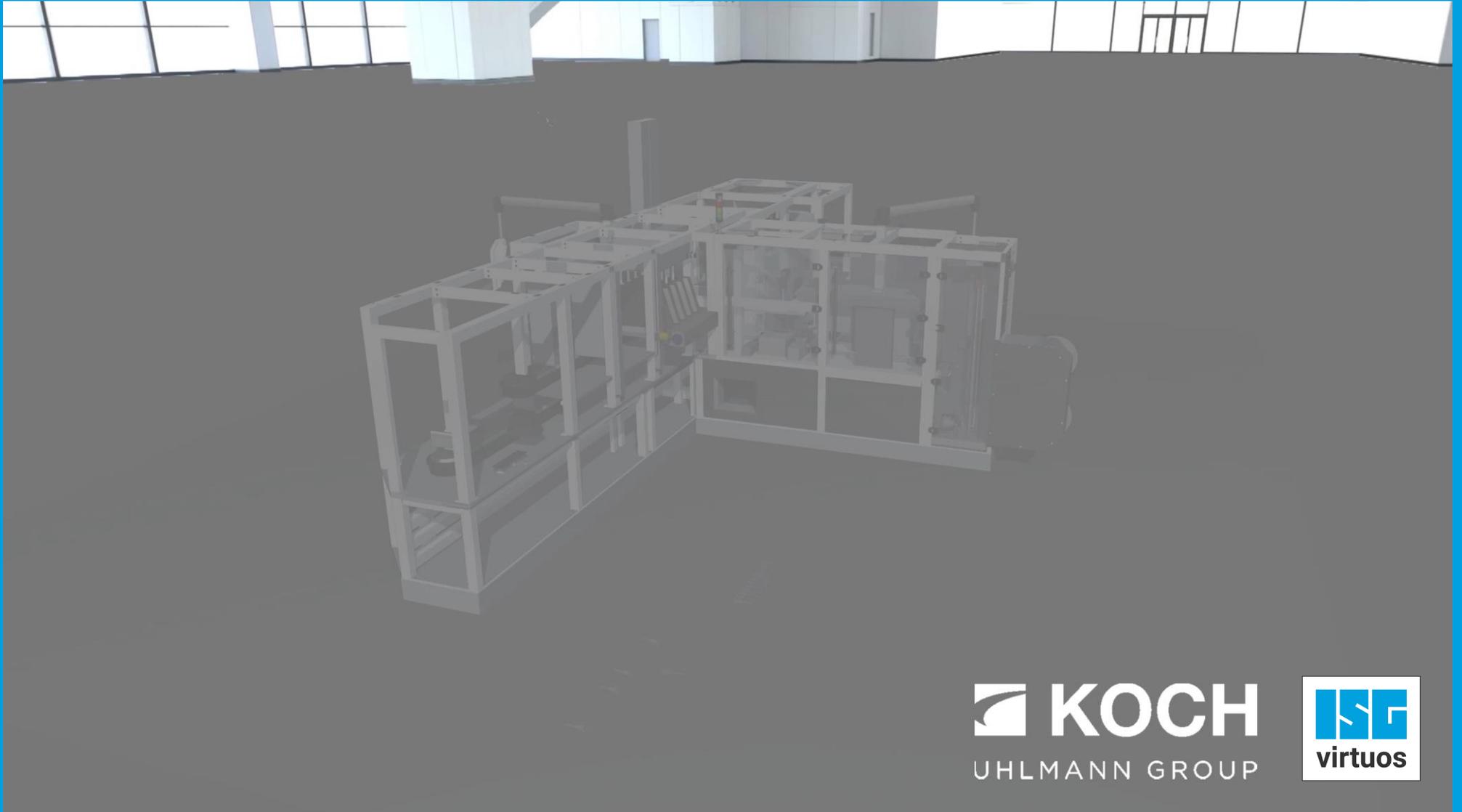


Einsatzbereiter
Digitaler Zwilling

PDF, 2D

CAD, 3D

Digital
Twin, 4D



 **KOCH**
UHLMANN GROUP



PDF, 2D

CAD, 3D

Digital
Twin, 4D



GROZ-BECKERT®

ELWEMA

ZUMTOBEL



aumann

RAMPF
discover the future

Gleason

techno
wood
the art of wood machining

IMA SCHELLING
GROUP

IT ENGINEERING
SOFTWARE INNOVATIONS



SCHULER

ROTH
KOMPLETTE
AUTOMATISIERUNGS-
LÖSUNGEN



scm
woodworking technology

Gehring

ZIMMER
group

MURR
ELEKTRONIK
stay connected

KOCH
UHLMANN GROUP

umicore



CHIRON Group



LASCO UNIFORMTECHNIK
WERKZEUGMASCHINENFABRIK



ZIMMERMANN
milling solutions

HELLER

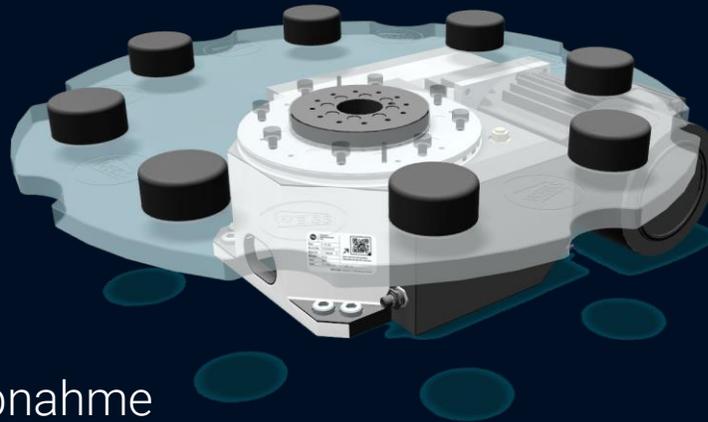
infoteam
software

HEITEC

uvm.

4D-Simulationsmodelle direkt vom Hersteller

- + Branchenübergreifende Modellbibliotheken
- + Gesicherte Validität & Qualität
- + Per Drag-and-Drop in Tool zur virtuellen Inbetriebnahme einsetzbar



Ihre Vorteile bei der virtuellen Inbetriebnahme

- + Reduzierte Modellierungszeiten
- + Originale Firmware & detaillierte Dokumentation
- + Direkt als Feldbus-komponenten anbindbar

TwinStore Community

Strong Technology Partnership



TWINSTORE®

THE ONLINE STORE FOR 4D MODELS

4D simulation models directly from the component manufacturer

Digital Twins

- Digital training of operational staff
- Digital shadow for production support

- Digital sales process
- Virtual planning and design
- Virtual Commissioning

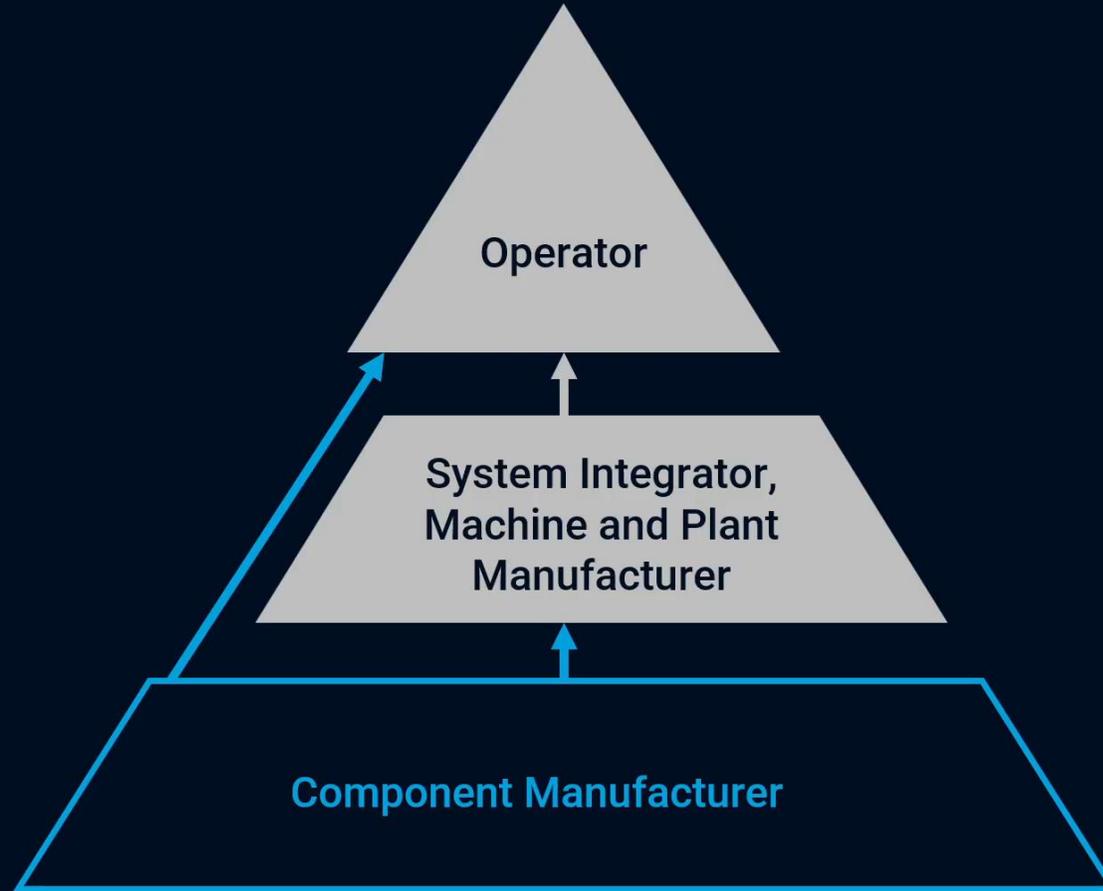
Operator

System Integrator,
Machine and Plant
Manufacturer



TwinStore

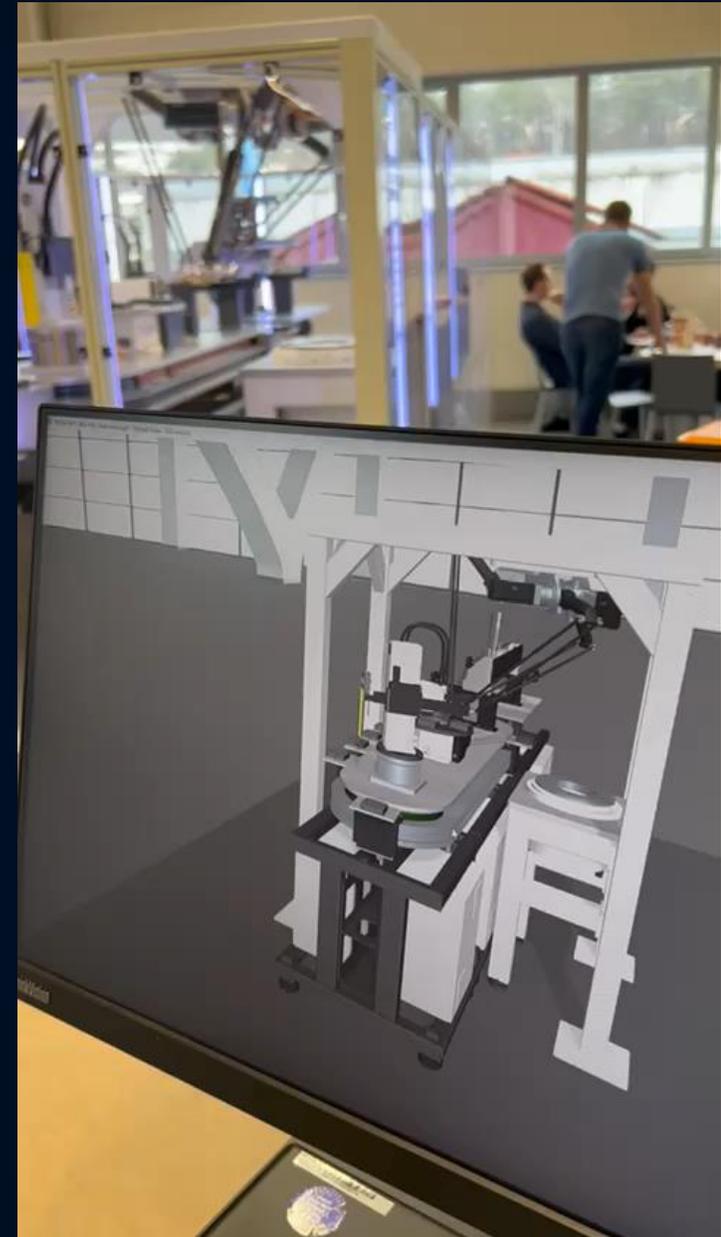
THE ONLINE STORE FOR 4D MODELS





„Wir setzen bei WEISS auf die Bereitstellung von 4D-Modellkatalogen im TwinStore, weil wir unsere Kunden beim digitalen Engineering unterstützen und uns damit im Vergleich zum internationalen Wettbewerb differenzieren.“

Uwe Weiss
CEO @ WEISS GmbH





„Mit den Simulationsmodellen der COMBIVERT F6 und S6 Drive Controller, die wir im TwinStore bereitstellen, können unsere Kunden die reale Inbetriebnahme bestmöglich vorbereiten. Die Modelle beinhalten bereits das detailgetreue Verhalten der internen Rampengeneratoren und können einfach in Simulationssoftware wie ISG-virtuos eingebunden werden.“

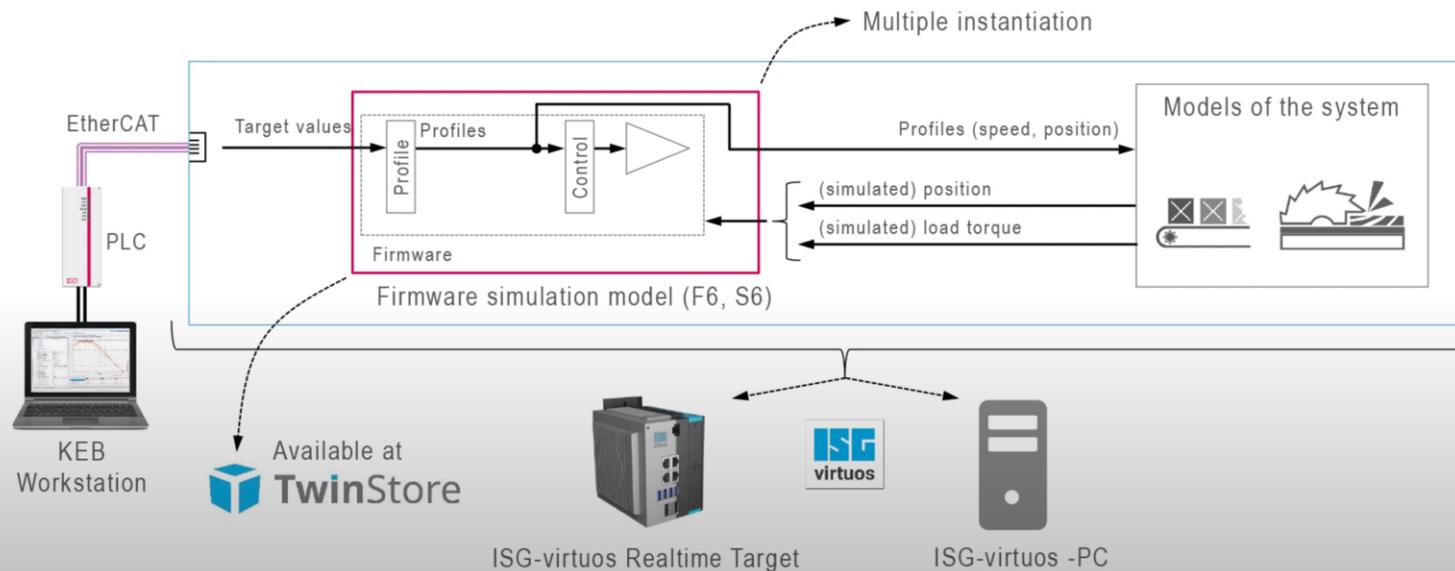
Tobias Wenneker
Produktmanager Drives
@ KEB Automation KG



KEB firmware simulation models – real-time systems



ISG Real-Time Systems - Simulations for the verification of PLC control code



CADENAS

ctrlX DRIVE Simulation Model For ISG-virtuos



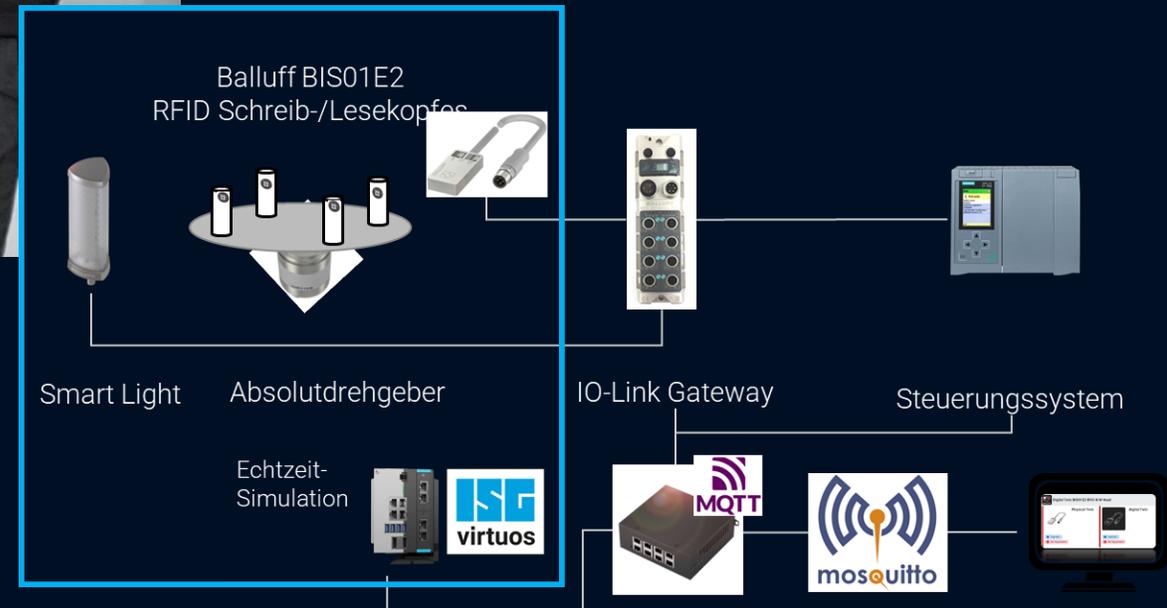
BALLUFF



The future of manufacturing and automation will be digital.

Dr. Markus Jung, Head of Software Engineering at Balluff

Quelle: <https://www.balluff.com/en-de/news/the-symbiosis-of-hardware-and-software>

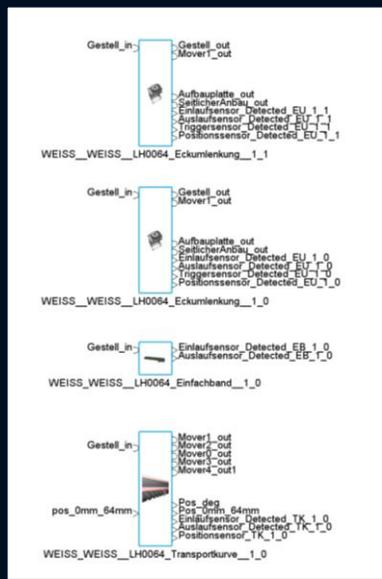
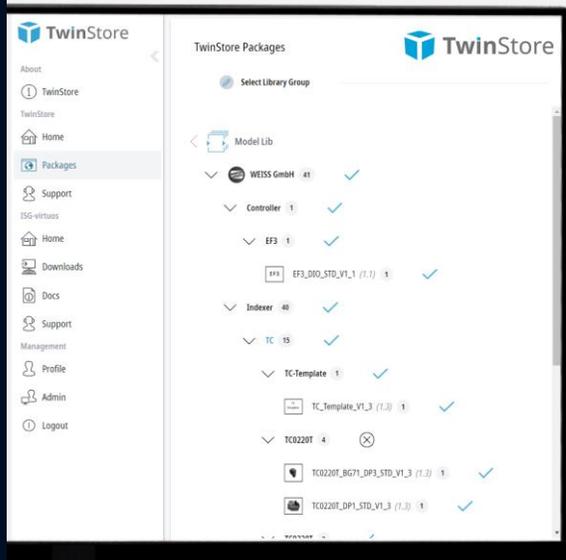


Visit us @





41 WEISS-Modelle jetzt im TwinStore verfügbar!



WEISS ROTARY INDEXING TABLES

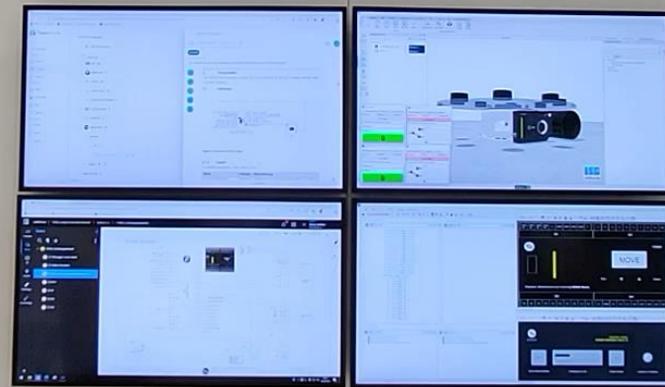
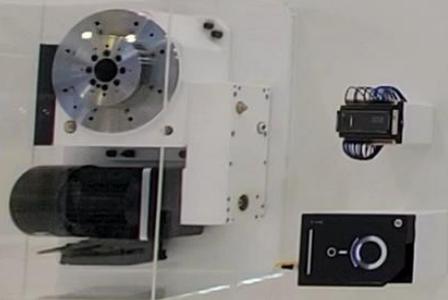
Upgrade your connectivity.

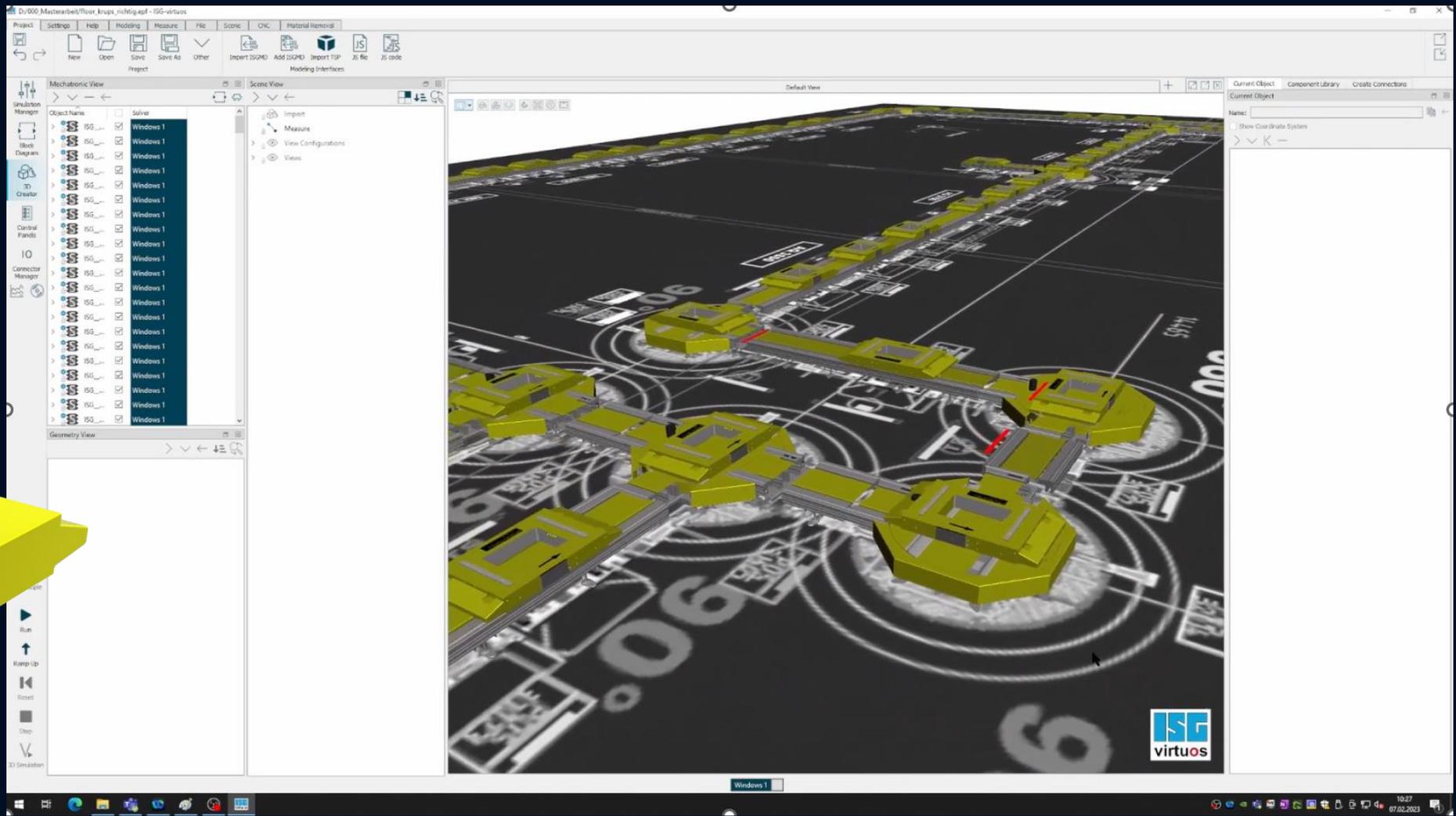
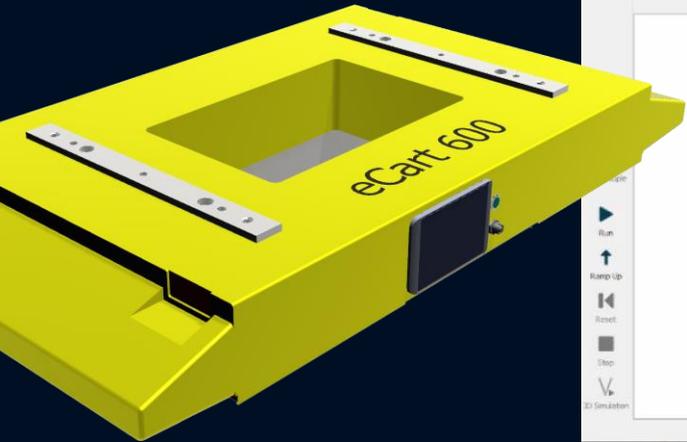
The fifth generation of WEISS Rotary Indexing Tables enables easy access to production digitalisation for system integrators plant manufacturers and users. Apart from other features it also comes with simulation models right from the outset.

VIRTUAL COMMISSIONING

Upgrade your productivity.

As WEISS strives for a high level of digitalisation in its product portfolio, we offer simulation models for TS005 and the fifth generation of WEISS Rotary Indexing Tables. Moreover the TS005 product add-ons range from EPLAN macros and AML description files to the 4D behaviour model.





IHRE VORTEILE

- ▶ Virtuelle Produktkataloge u.a. aus den Bereichen Robotik, Handhabungs-, Antriebs- und Fördertechnik
- ▶ Zeiteinsparung durch Einbindung bereits vorgefertigter Simulationsmodelle
- ▶ Detailliertere Simulation durch die Verwendung realitätsnaher Modelle zur Abbildung z.B. des originalen Echtzeitverhaltens
- ▶ Fließende Integration in die Laufzeitumgebung von ISG-virtuos

1 Simulationsdaten / Digitaler Zwilling der Komponente

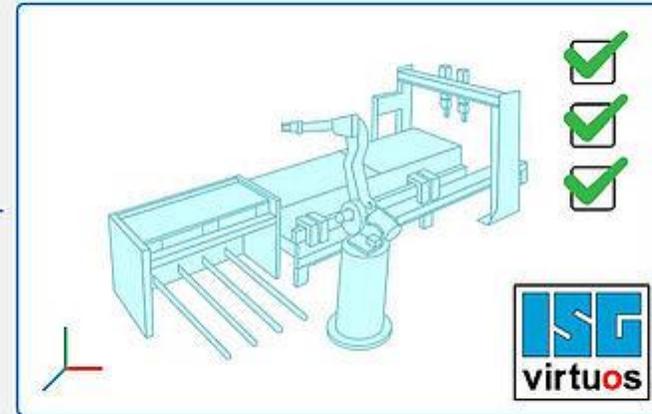


Auswählbar über den Produktbereich unserer Website zimmer-group.de ...



... oder direkt über virtuos-twinstore.de das passende TwinStore-Paket herunterladen.

2 Digitales Engineering / Digitaler Zwilling der Anlage



Ablaufsimulation und virtuelle Inbetriebnahme der Anlage (Maschinen- und Anlagenbauer / Systemintegrator)

3 Reale Inbetriebnahme und weitere Benefits



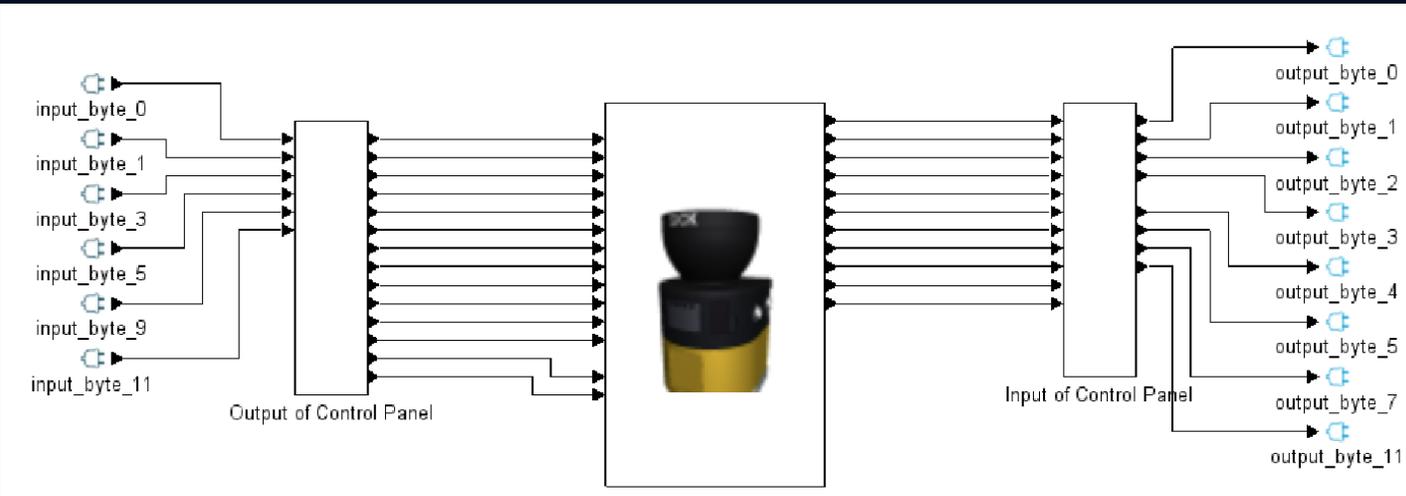
Reale Inbetriebnahme beim Anlagenbetreiber

Documentation on Digital Twin of the SICK Security Laser Scanner MICS3-ABAZ40PZ1P01.

Overview

This document describes the use of the Digital Twin of the SICK Safety Laser Scanner MICS3-ABAZ40PZ1P01.

| | |
|---------------------|---|
| Provider | SICK AG |
| Package Name | SICK_AG__SICK_AG__MICS3-ABAZ40PZ1P01__1_3 |



INPUT

Trigger Run Mode

Device Reboot With Network

Device Reboot Without Network

Monitoring Case No.: 1

Activate Standby Mode

Stop Alarm Detection

Reset Paths

Path 1

Path 2

Path 3

Path 4

Path 5

Path 6

Path 7

Path 8

Apply Field Status, Errors and Warnings

1-64 (Grid of 64 green buttons)

Contamination Warning

Contamination Error

Invalid Reference Contour

Manipulation Status

Device Error

Application Error

Connection Lost

OUTPUT

Current Monitoring Case No.

Device Display

Waiting for Input

Reset Required on

Cut-Off Path 1-8

Device Status

Run-Mode Active

Standby-Mode Active

Application Error

Device Error

Contamination Warning

Contamination Error

Reference Contour Status

Manipulation Status

Monitored Fields

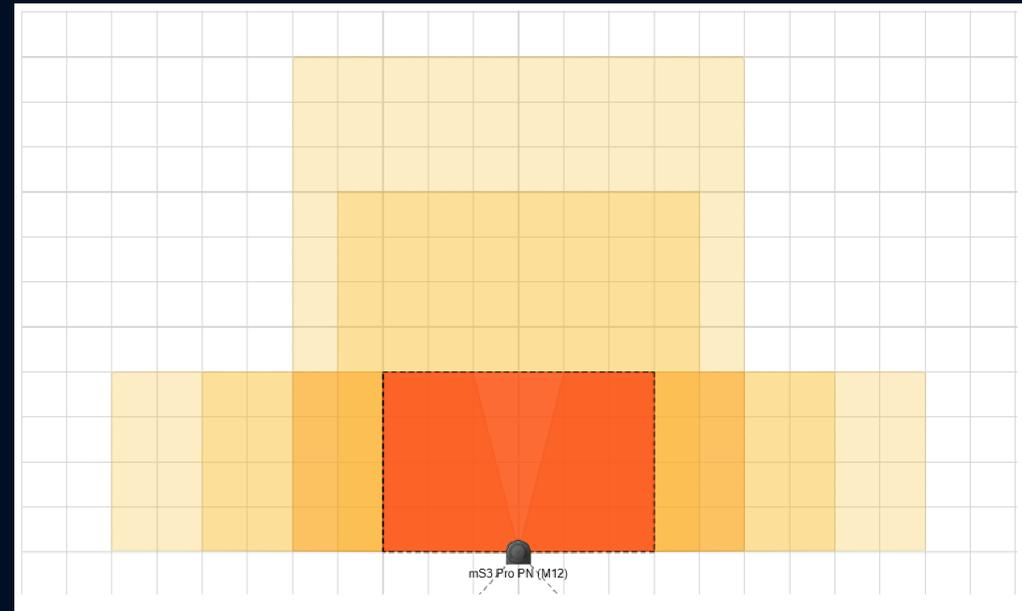
8 vertical bars with yellow indicators

Non-Safe Cut-Off Paths

Non-Safe Cut-Off Path 1-8

Safe Cut-Off Paths

Safe Cut-Off Path 1-8

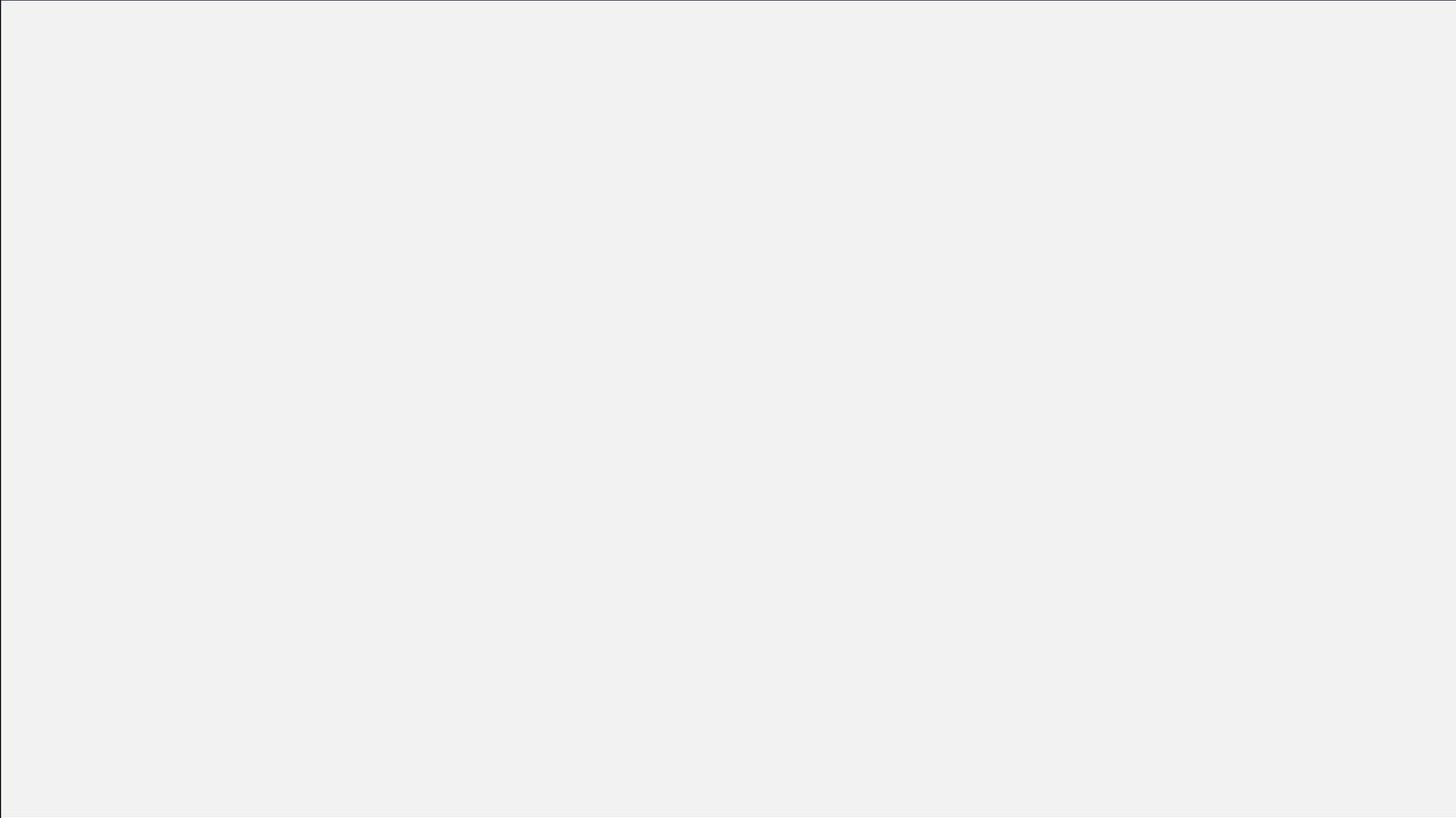






AC4DEMY

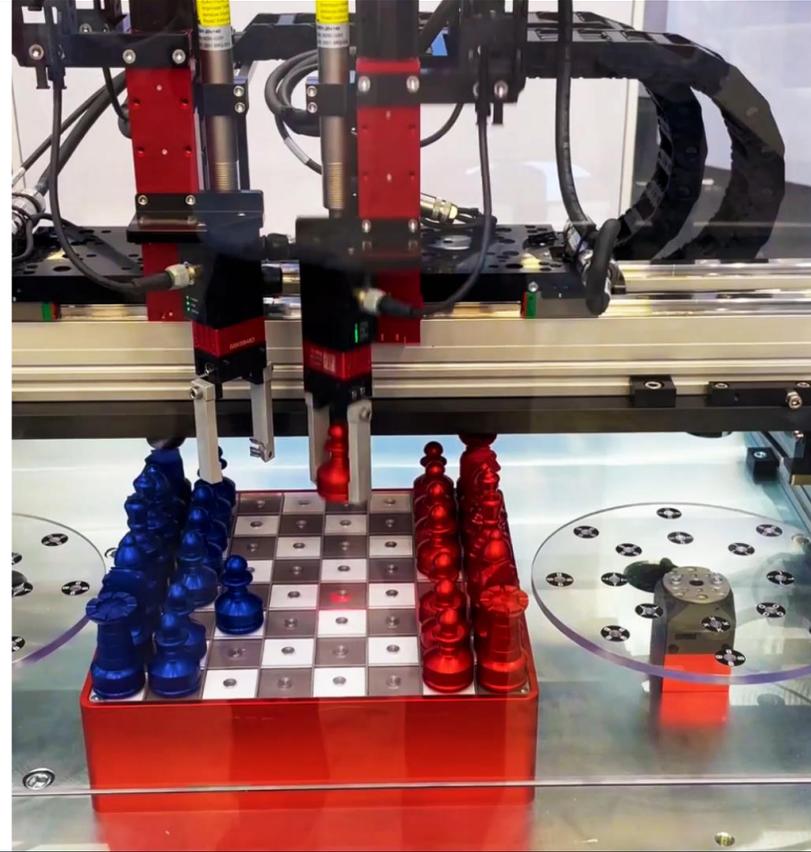
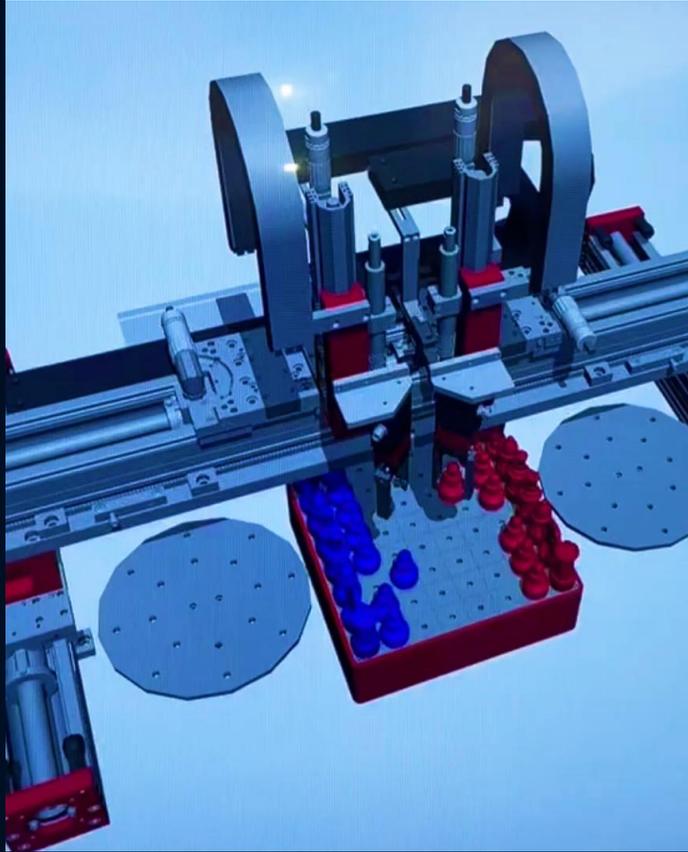
gemeinsam zur
digitalen Referenz-
komponenten





INDUSTRY FORUM

2024



CADENAS

TwinStore V2

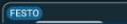
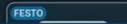
TwinStore

Models

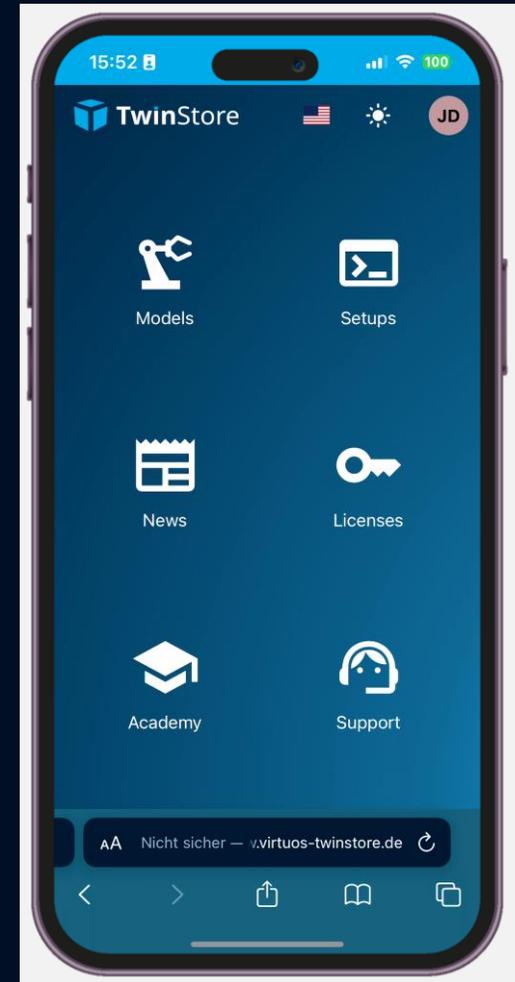
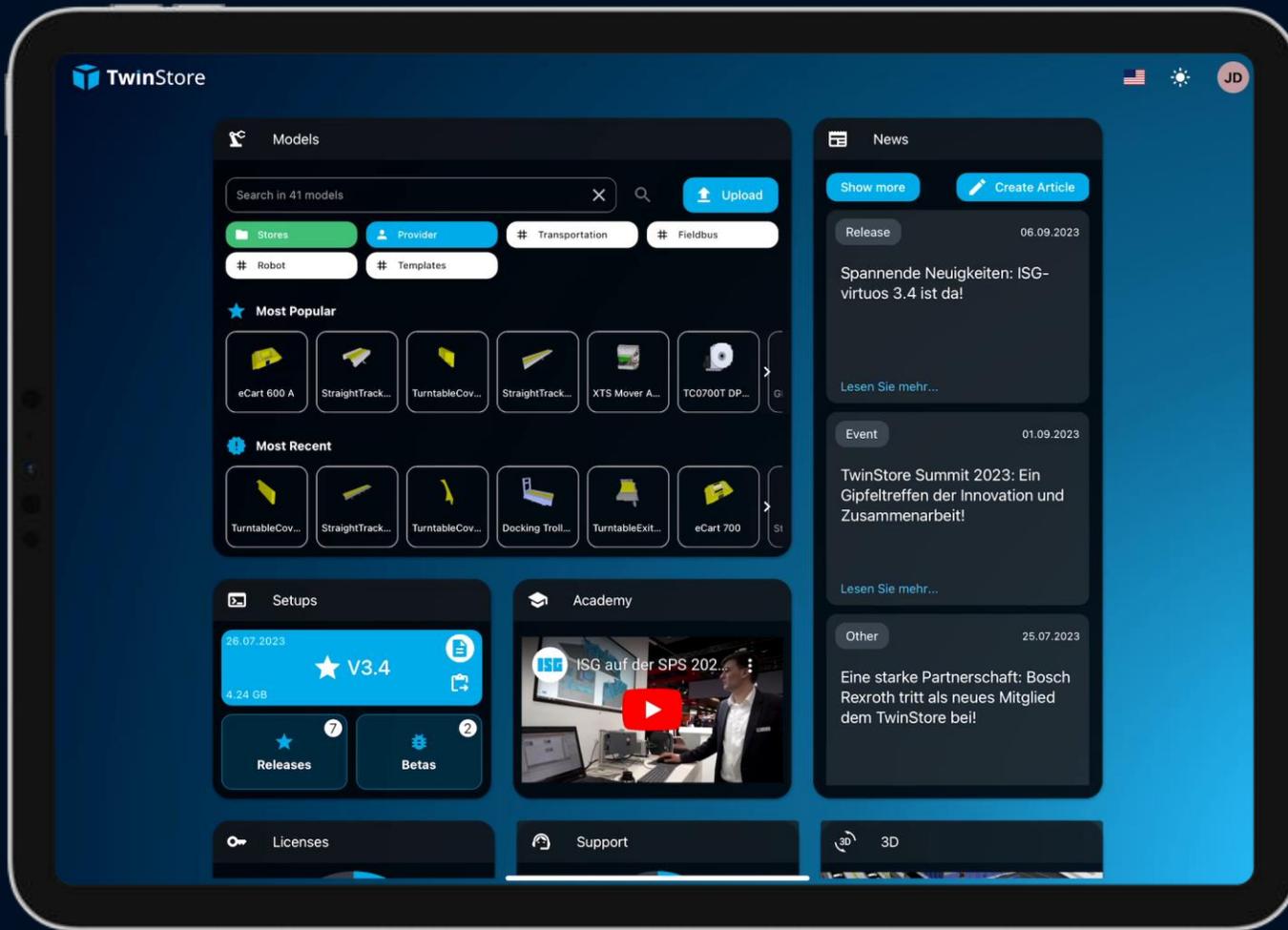
Search in 167 models

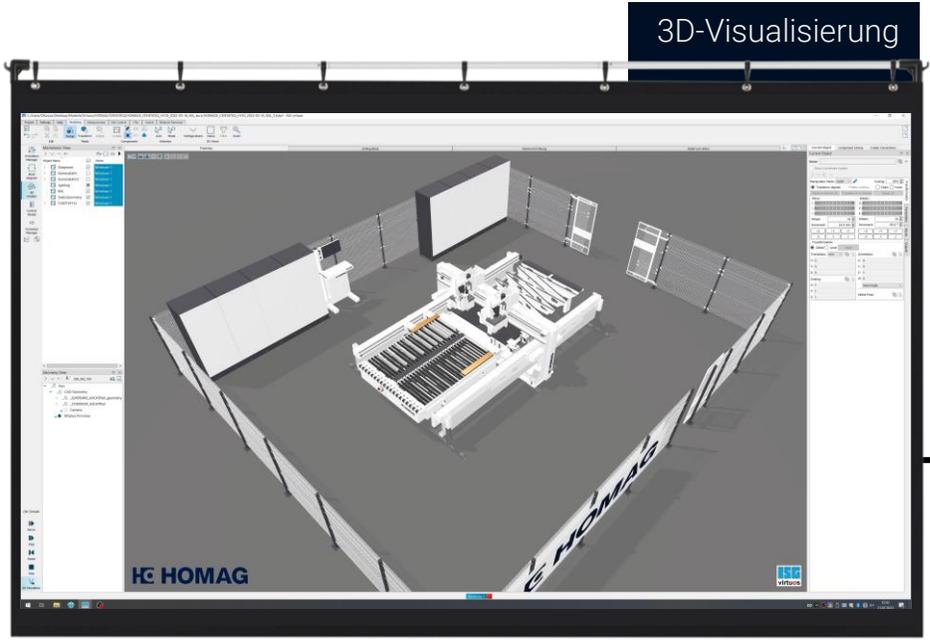
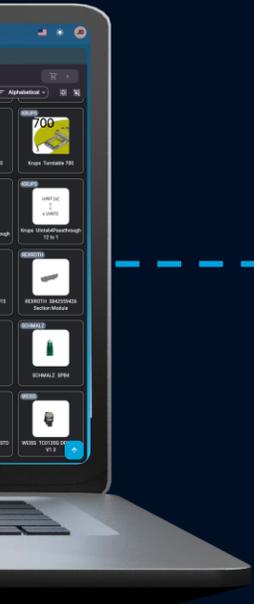
Alphabetical

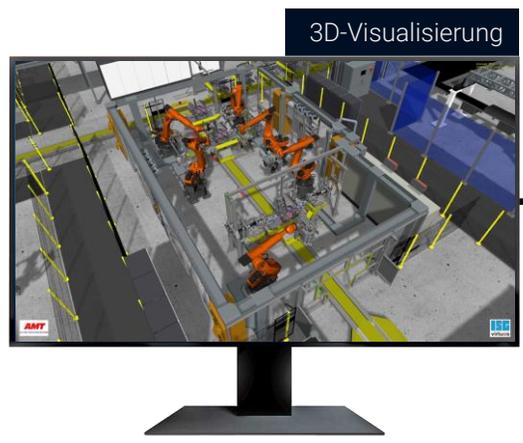
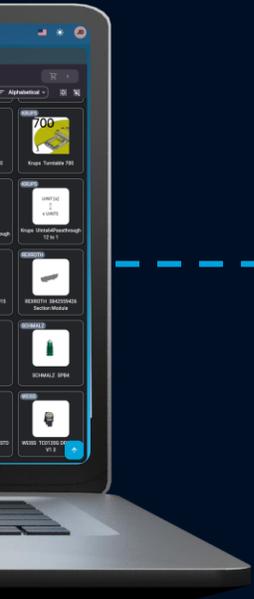
Projects Provider Manufacturer Platforms Transportation Fieldbus Robot Handling Technology Sensor

| | | | | | | | | | | | |
|--|--|---|--|---|---|---|---|---|---|---|---|
|  <p>ABB Robotics IRB 6660 100 3 3</p> |  <p>AHT-WEISS</p> |  <p>Adept Adept S1700D</p> |  <p>Afang Afang Portalachse PDL40</p> |  <p>Beckhoff ATRO Base 100</p> |  <p>Beckhoff ATRO Base 120</p> |  <p>Beckhoff ATRO Base 140</p> |  <p>Beckhoff ATRO Base 80</p> |  <p>Beckhoff ATRO L Motor 100</p> |  <p>Beckhoff ATRO L Motor 100 OutputFlange</p> |  <p>Beckhoff ATRO Link 100 100 200</p> |  <p>Beckhoff ATRO MILS</p> |
|  <p>Beckhoff ATRO MILS 2</p> |  <p>Beckhoff ATRO Motor I 100 80</p> |  <p>Beckhoff ATRO Motor I 120 100</p> |  <p>Beckhoff ATRO Motor I 140 120</p> |  <p>Beckhoff XPlanar Base APS4322</p> |  <p>Beckhoff XPlanar Mover APM4220 A</p> |  <p>Beckhoff XPlanar Mover APM4221 A</p> |  <p>Beckhoff XPlanar Mover APM4330 A</p> |  <p>Beckhoff XPlanar Tile ASP4322</p> |  <p>Beckhoff XTS Clothoid Left 180</p> |  <p>Beckhoff XTS Curve Left 22 5</p> |  <p>Beckhoff XTS Curve Left 45</p> |
|  <p>Beckhoff XTS Curve Right 22 5</p> |  <p>Beckhoff XTS I Track</p> |  <p>Beckhoff XTS L Track</p> |  <p>Beckhoff XTS Lift</p> |  <p>Beckhoff XTS Mover AT9011 0050</p> |  <p>Beckhoff XTS Mover AT9011 0070</p> |  <p>Beckhoff XTS Mover KOCH</p> |  <p>Beckhoff XTS O Track</p> |  <p>Beckhoff XTS OxS Track</p> |  <p>Beckhoff XTS Straight 1000 mm</p> |  <p>Beckhoff XTS Straight 233 mm</p> |  <p>Beckhoff XTS Straight 250 mm</p> |
|  <p>Beckhoff XTS Switch 3 Tracks</p> |  <p>Beckhoff XTS U Track</p> |  <p>Beckhoff XTS WPC Bottles</p> |  <p>Beckhoff XTS Z Track</p> |  <p>Comau Racer</p> |  <p>Comau Smart NJ 290 3 0</p> |  <p>Epson G20 854S</p> |  <p>Example Conveyor Material</p> |  <p>FANUC FANUC-M-10iA-12S</p> |  <p>FESTO 8061500 ELGC BS KF 80 300</p> |  <p>FESTO 8061501 ELGC BS KF 80 400</p> |  <p>FESTO 8061502 ELGC BS KF 80 500</p> |
|  <p>FESTO 8061503 ELGC BS KF 80 600</p> |  <p>FESTO 8061504 ELGC BS KF 80 800</p> |  <p>FESTO 8061505 ELGC BS KF 80 1000</p> |  <p>FESTO 8062824 ELFC KF 80 100</p> |  <p>FESTO 8062825 ELFC KF 80 200</p> |  <p>FESTO 8062826 ELFC KF 80 300</p> |  <p>FESTO 8062827 ELFC KF 80 400</p> |  <p>FESTO 8062828 ELFC KF 80 500</p> |  <p>FESTO 8062829 ELFC KF 80 600</p> |  <p>FESTO 8062830 ELFC KF 80 800</p> |  <p>FESTO 8062831 ELFC KF 80 1000</p> |  <p>FESTO 8062832 ELFC KF 80 1200</p> |
|  <p>FESTO</p> |  <p>FESTO</p> |  <p>FESTO</p> |  <p>FESTO</p> |  <p>FESTO</p> |  <p>FESTO</p> |  <p>FESTO</p> |  <p>FESTO</p> |  <p>FESTO</p> |  <p>FESTO</p> |  <p>FESTO</p> |  <p>FESTO</p> |

TwinStore V2



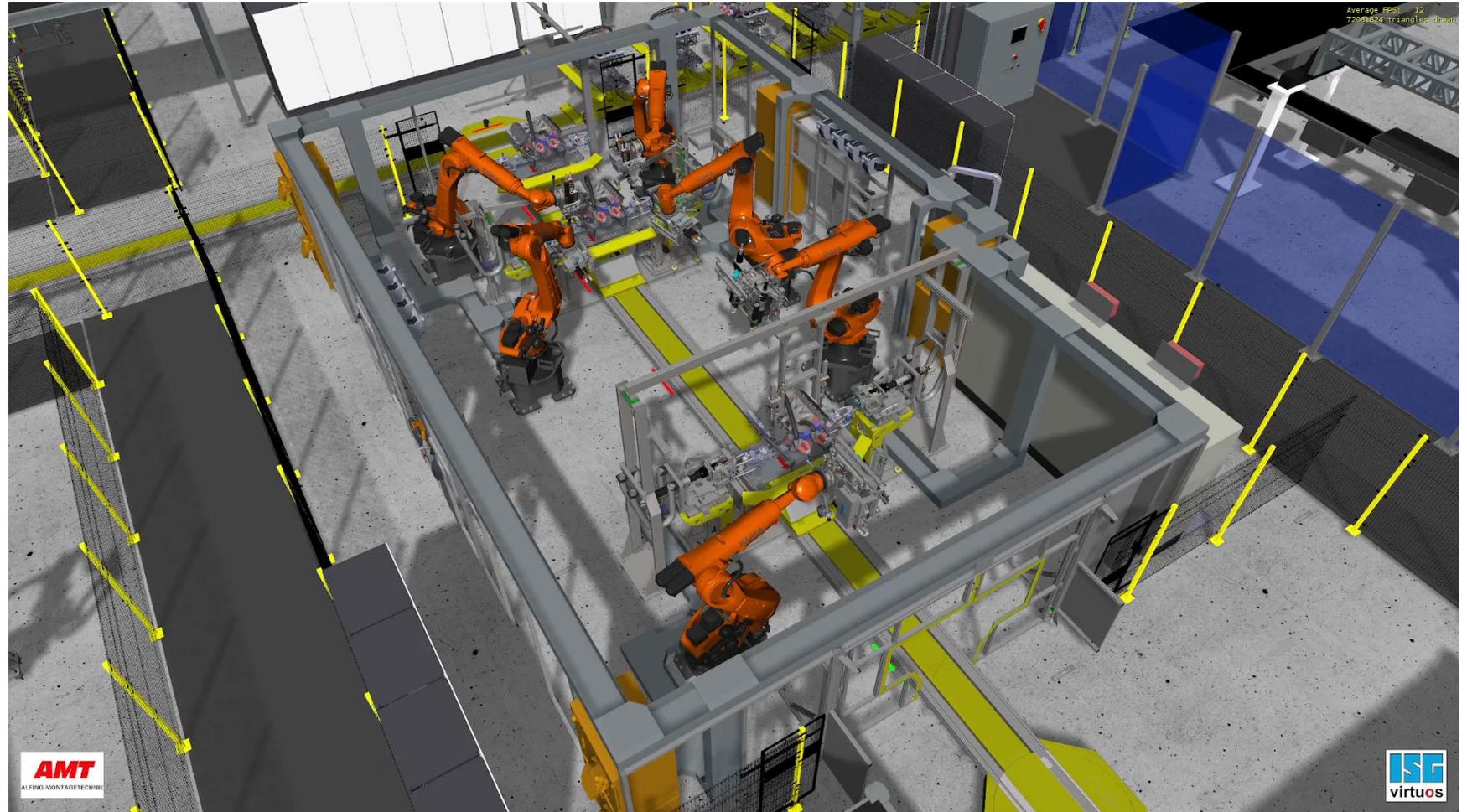
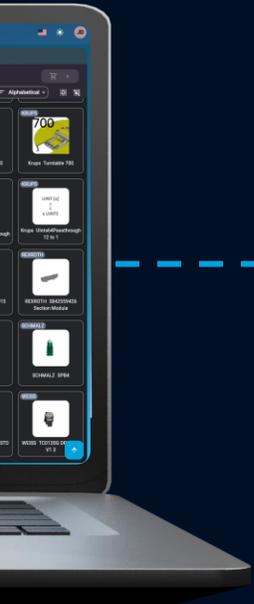


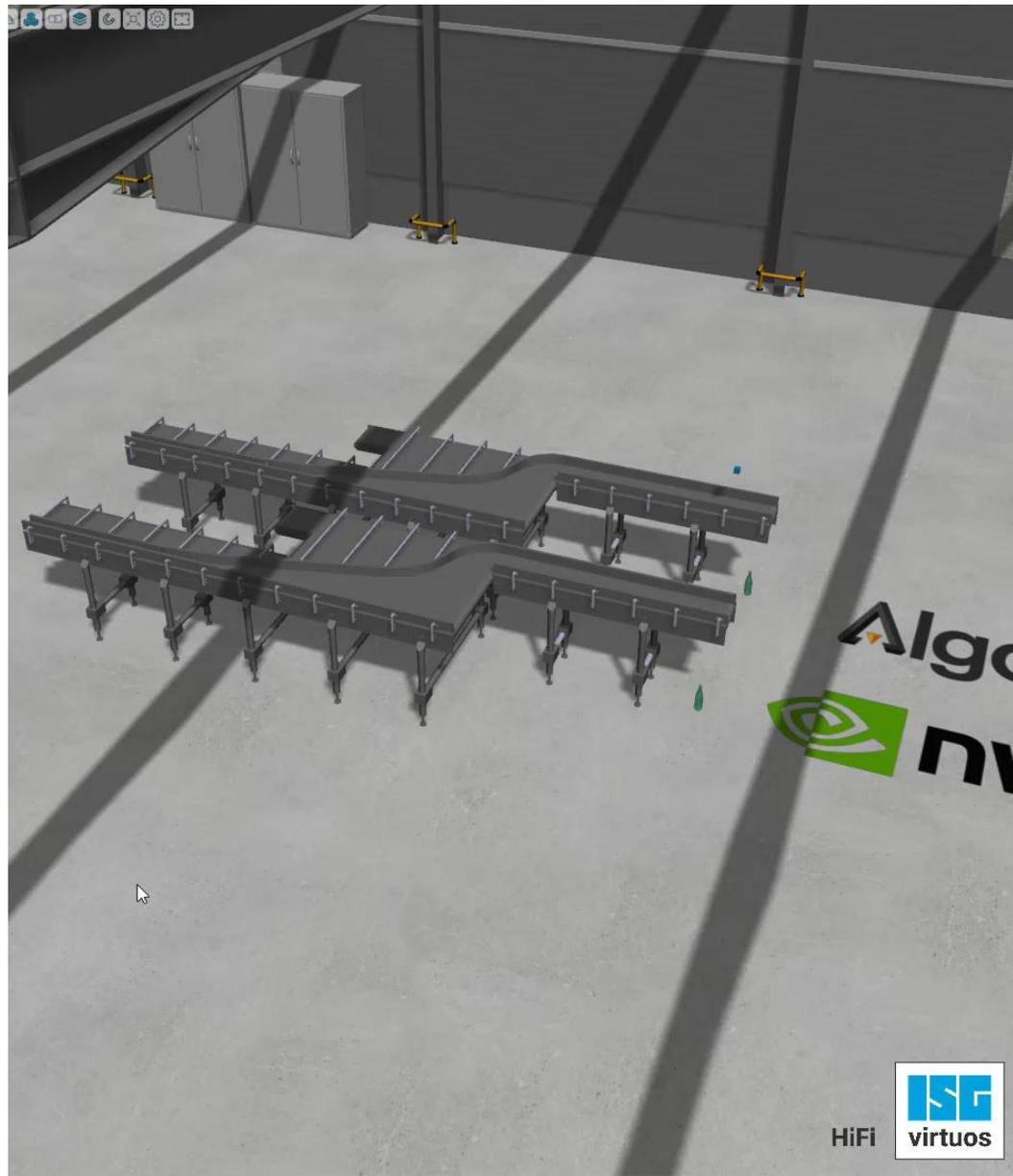
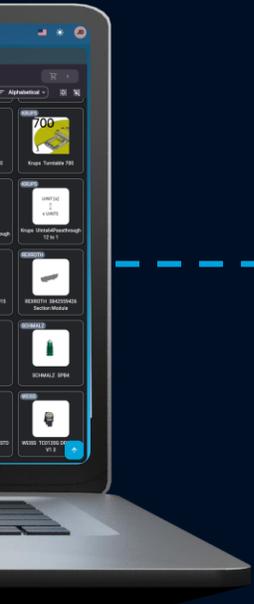


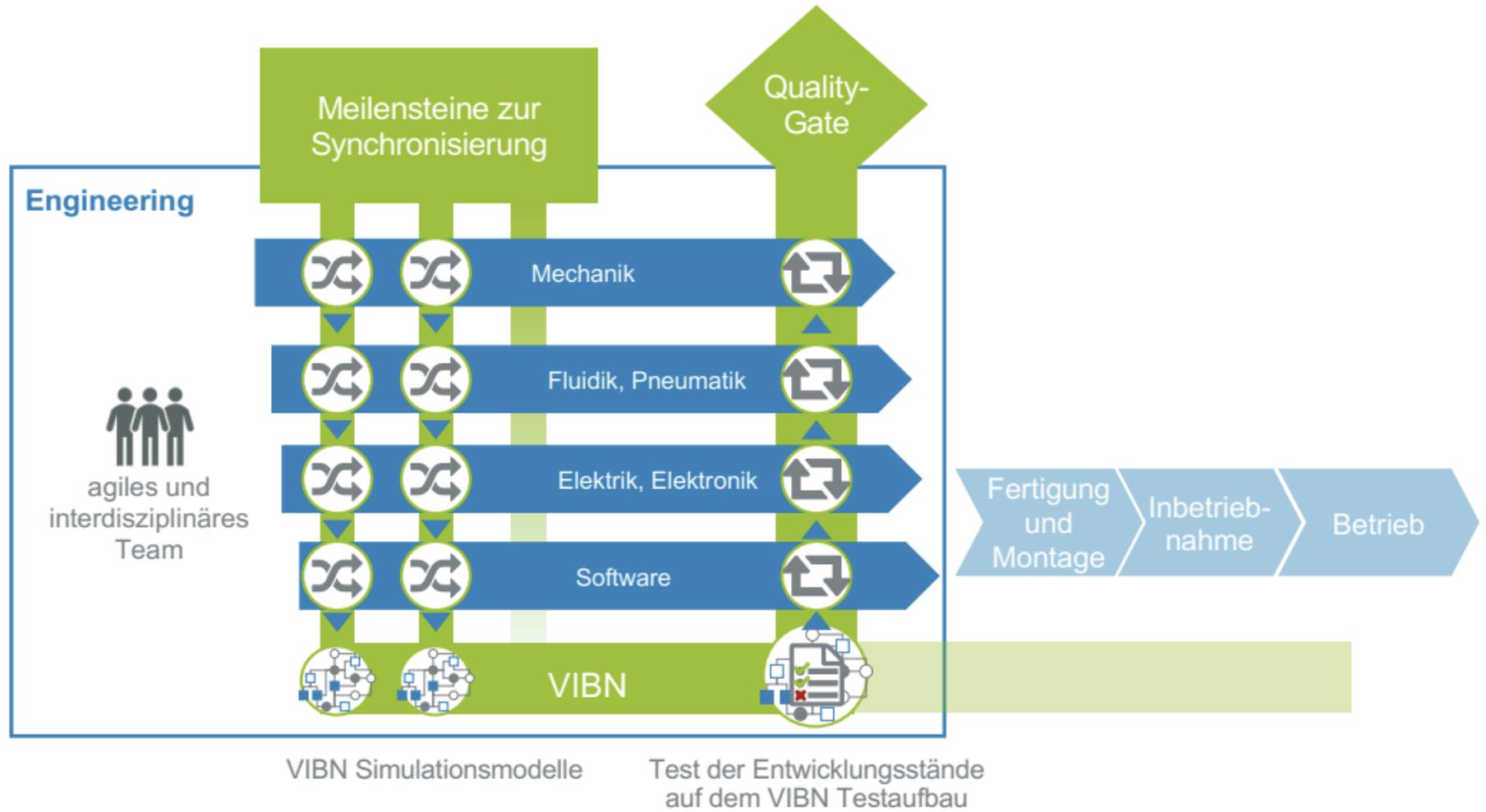
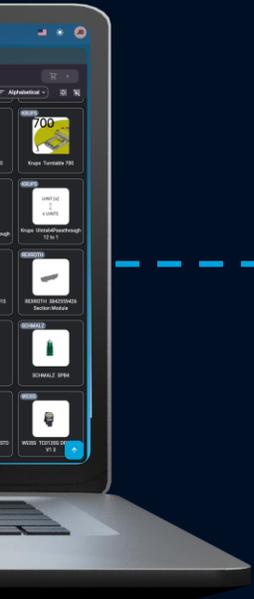
TCP/IP

PROFIBUS

Realtime Target







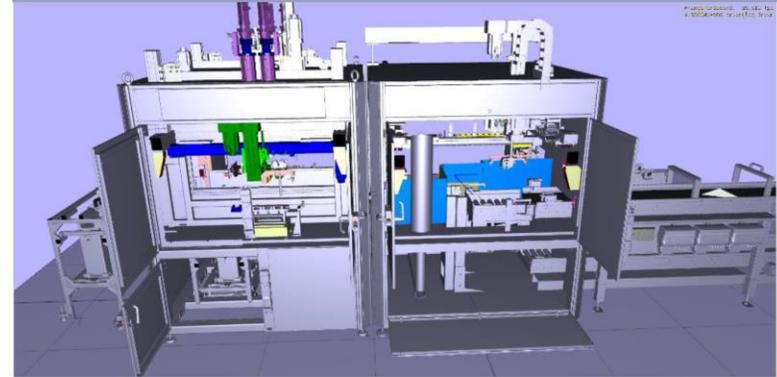
HH K2: Integrationstests beim Lieferant mit mobilem D-Lab



MUC, K5 AFO150: Integrationstests



DGF MP04: Betrachtung von unsichtbaren Bereichen



BA05, DGF; mobiles D-Lab während Hochlauf



BBA, G8 AFO400: Integrationstests



Z4 MUC: Schulung Anlagenbetreiber



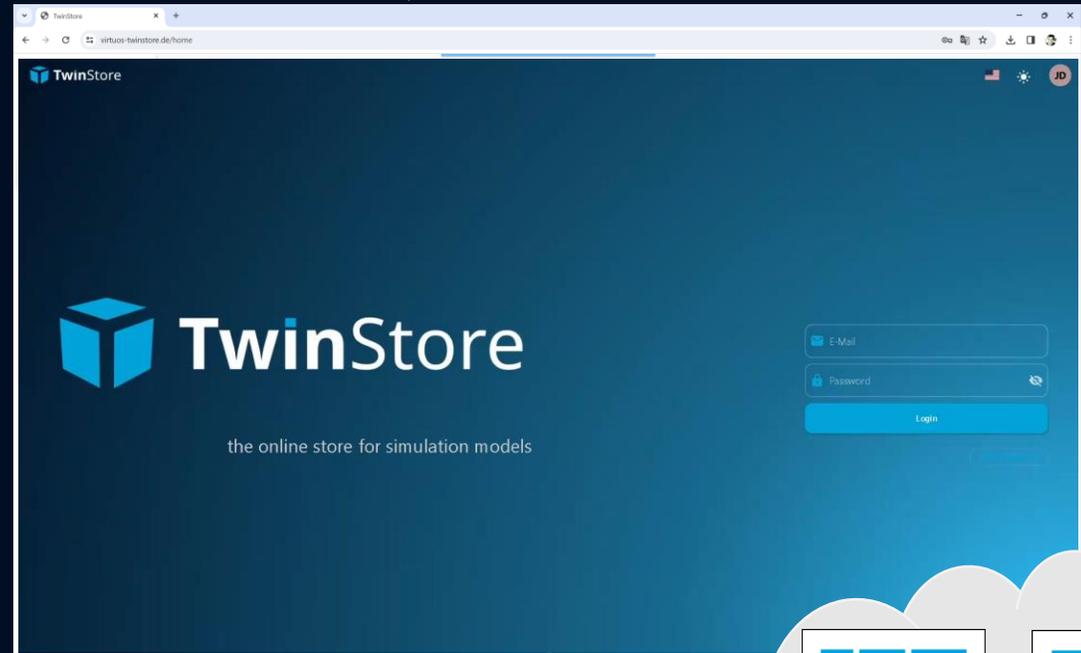
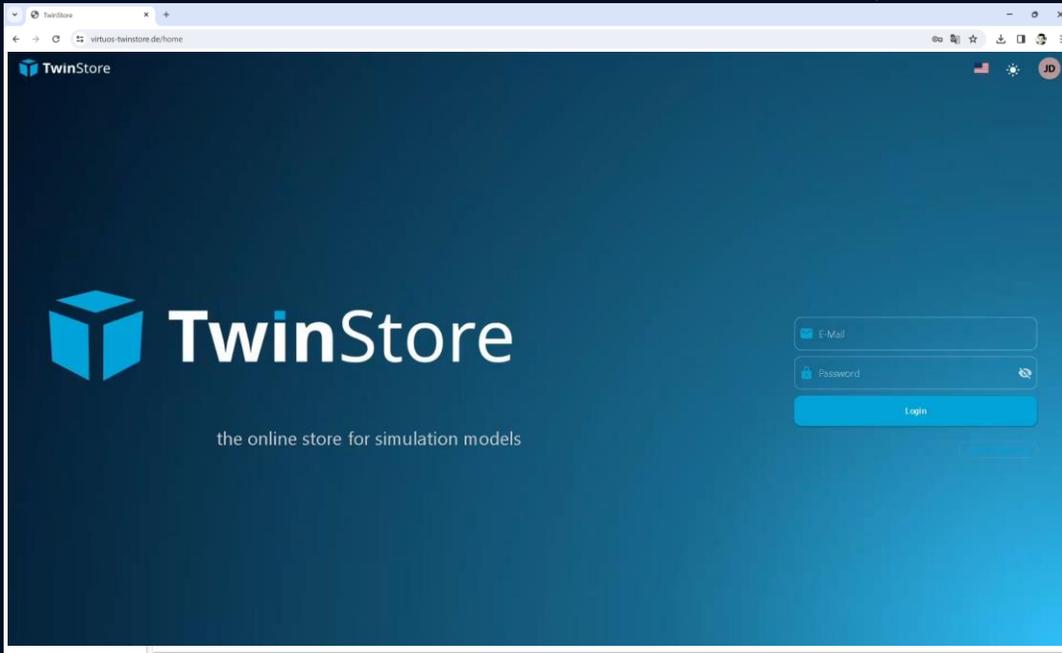
BMW VIBN | 24.04.2020

Quelle: Dr. Wiliam Tekouo (BMW): Virtuelle Inbetriebnahme Anwendungsbeispiele und Vorteile, VDMA Webinar Virtuelle Inbetriebnahme, 24.04.2020



ZWEI WELTEN WERDEN EINS

WEB-BASED MODELING & SIMULATION

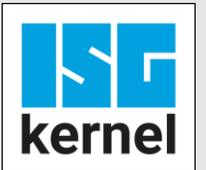


ISG KEY TECHNOLOGIES

SaaS
Software as a Service

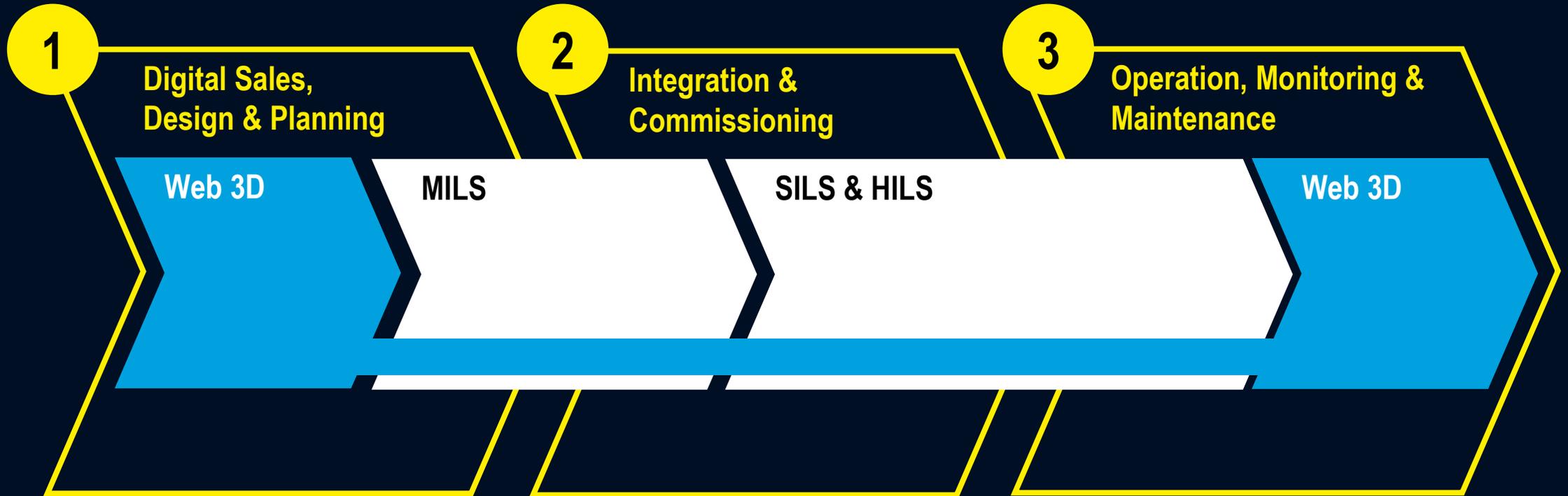


Solver
Engine



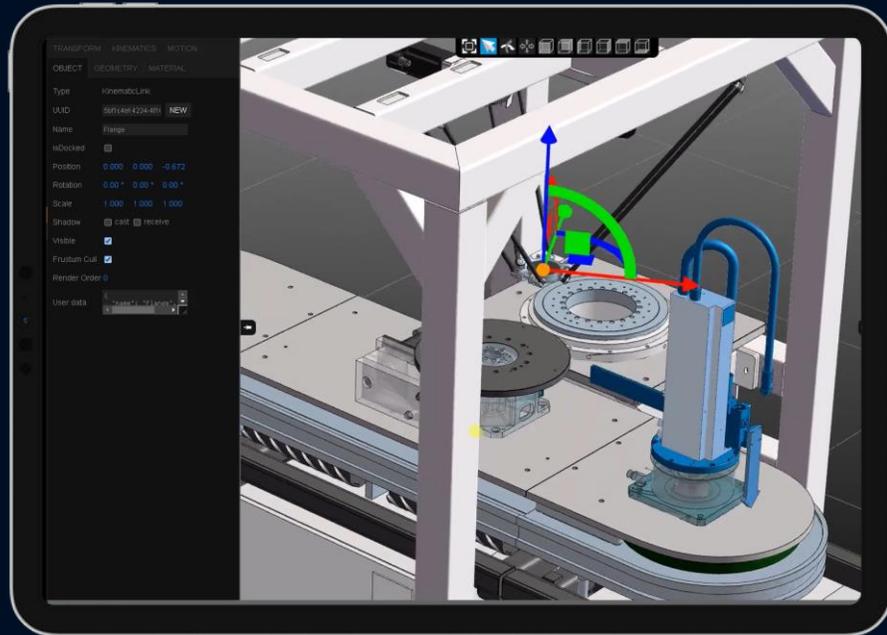
Motion
Engine





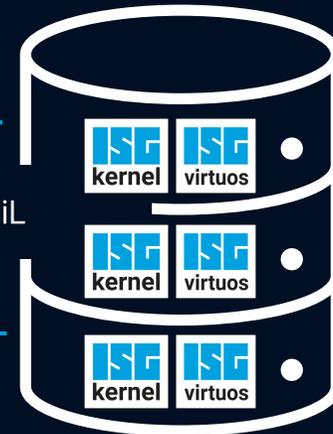
ZWEI WELTEN WERDEN EINS

TWINDESIGNER: VOLLSTÄNDIGE FUNKTIONALITÄT EINER VIBN SOFTWAREUMGEBUNG VERFÜGBAR



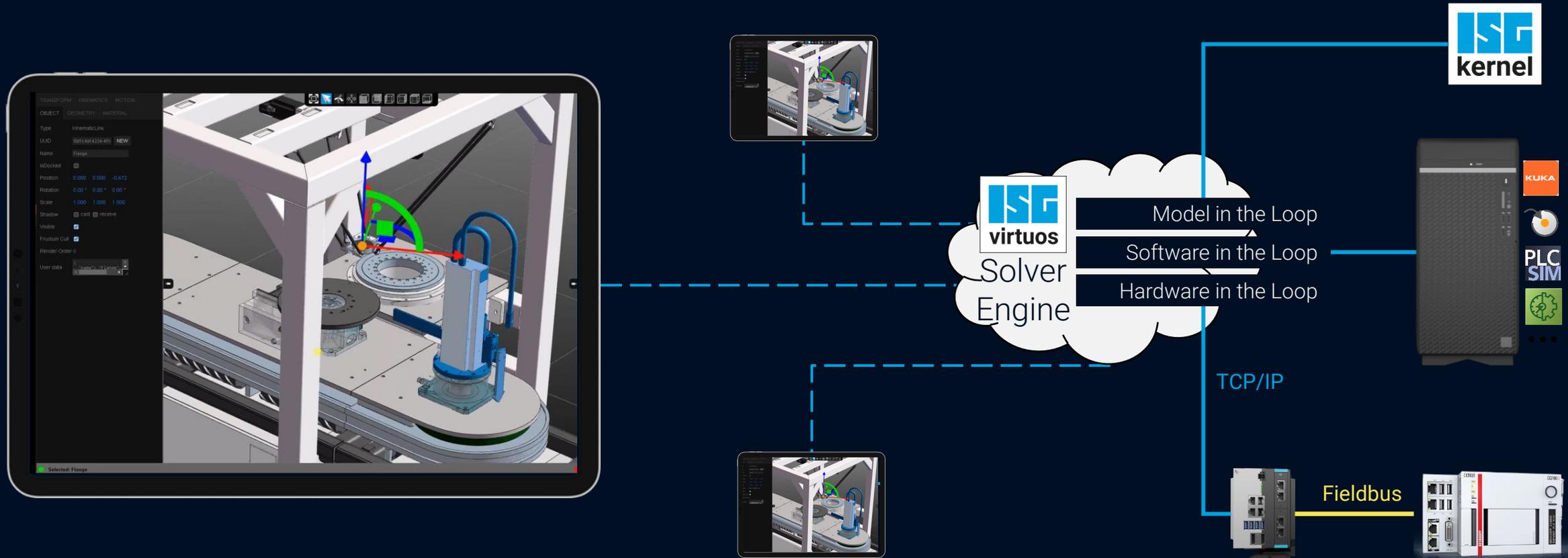
SaaS
Software as a Service

MiL



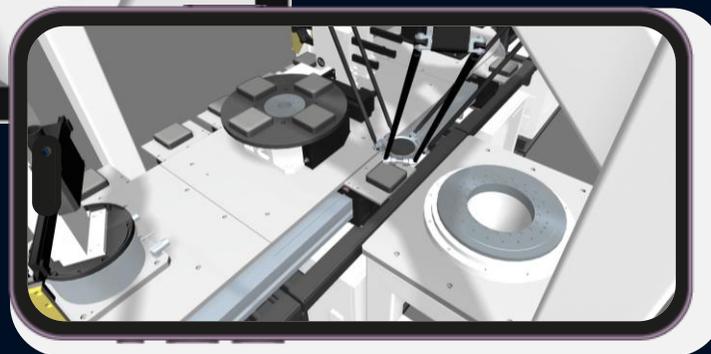
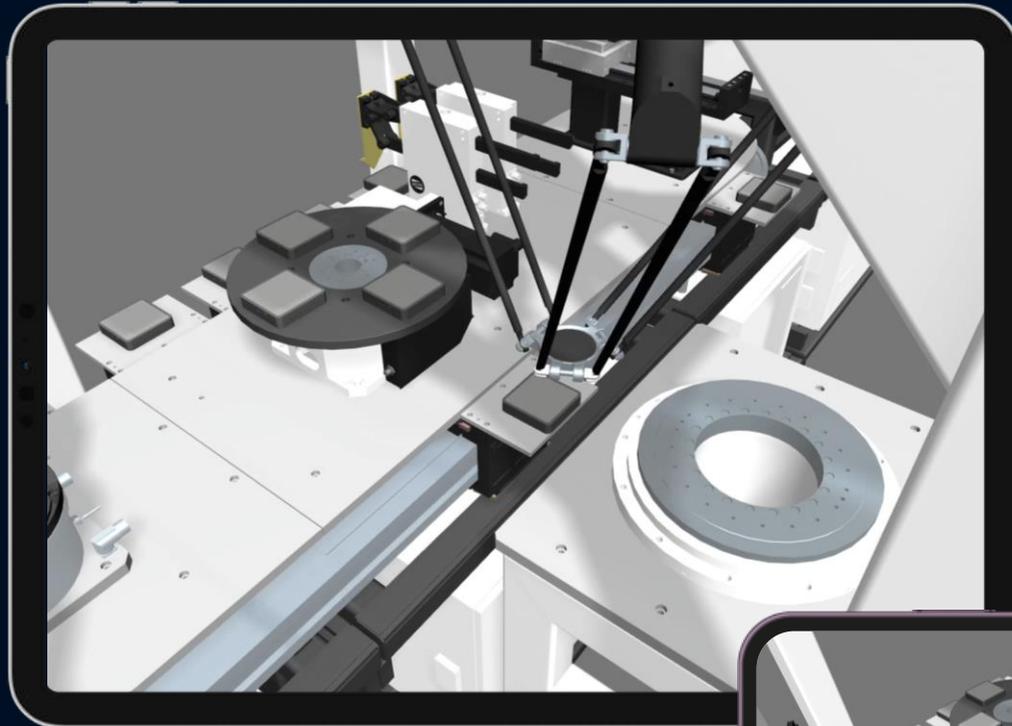
ZWEI WELTEN WERDEN EINS

TWINDESIGNER: VOLLSTÄNDIGE FUNKTIONALITÄT EINER VIBN SOFTWAREUMGEBUNG VERFÜGBAR

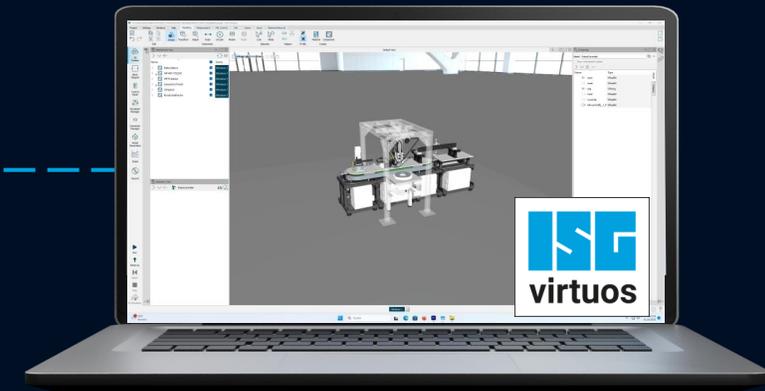


ZWEI WELTEN WERDEN EINS

TWINDESIGNER: INTERAKTIVE ANIMATIONEN VON AUTOMATISIERUNGSSZENARIEN ERSTELLEN & TEILEN

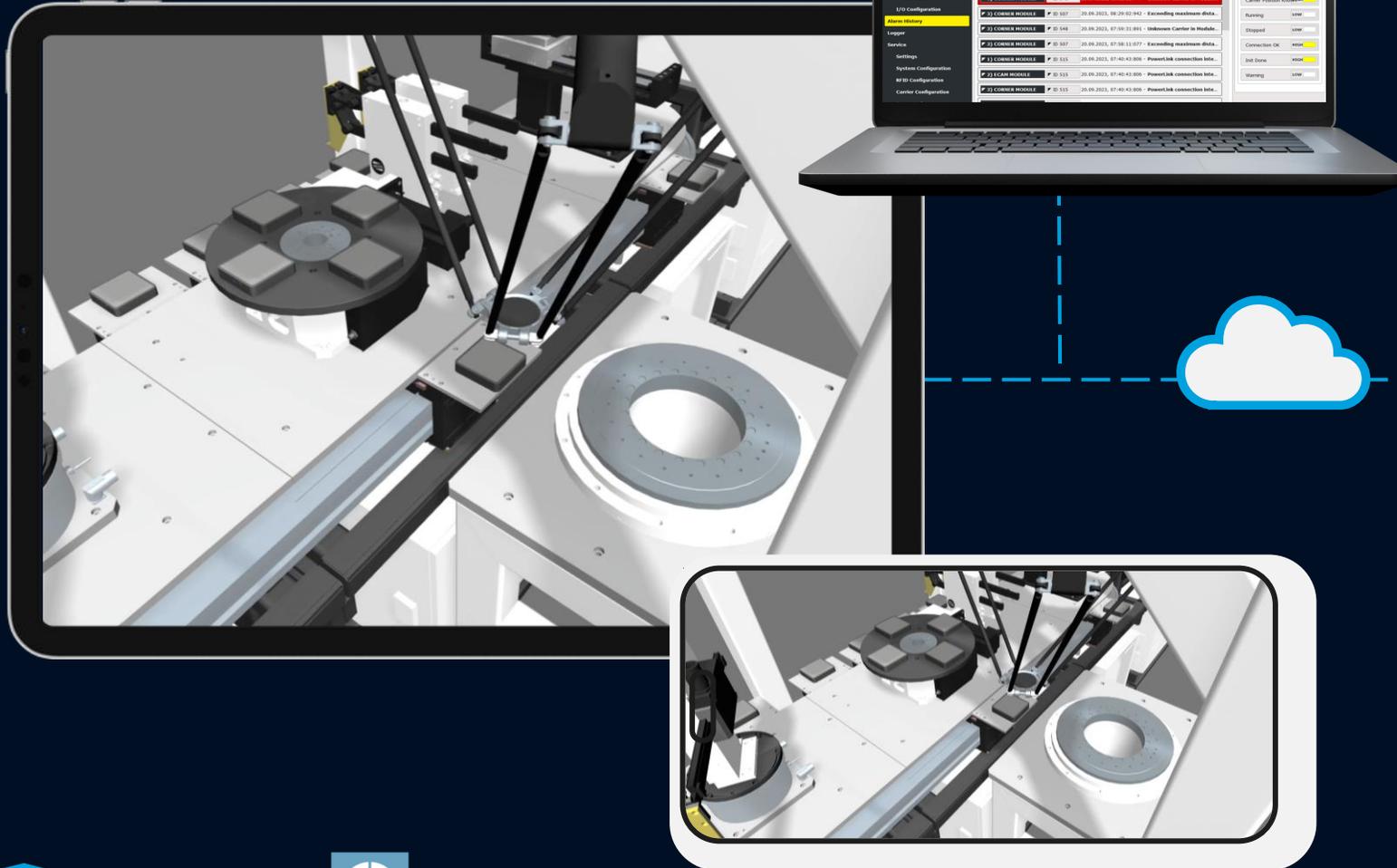


Simulationsplattform



ZWEI WELTEN WERDEN EINS

TWINDESIGNER: DIGITALER SCHATTEN





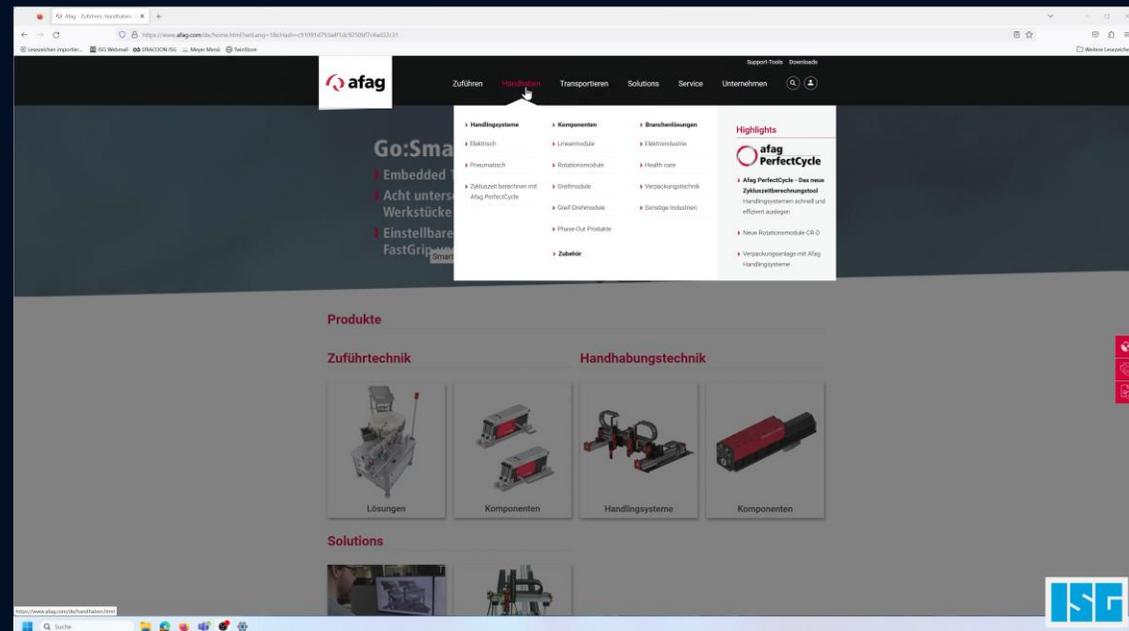
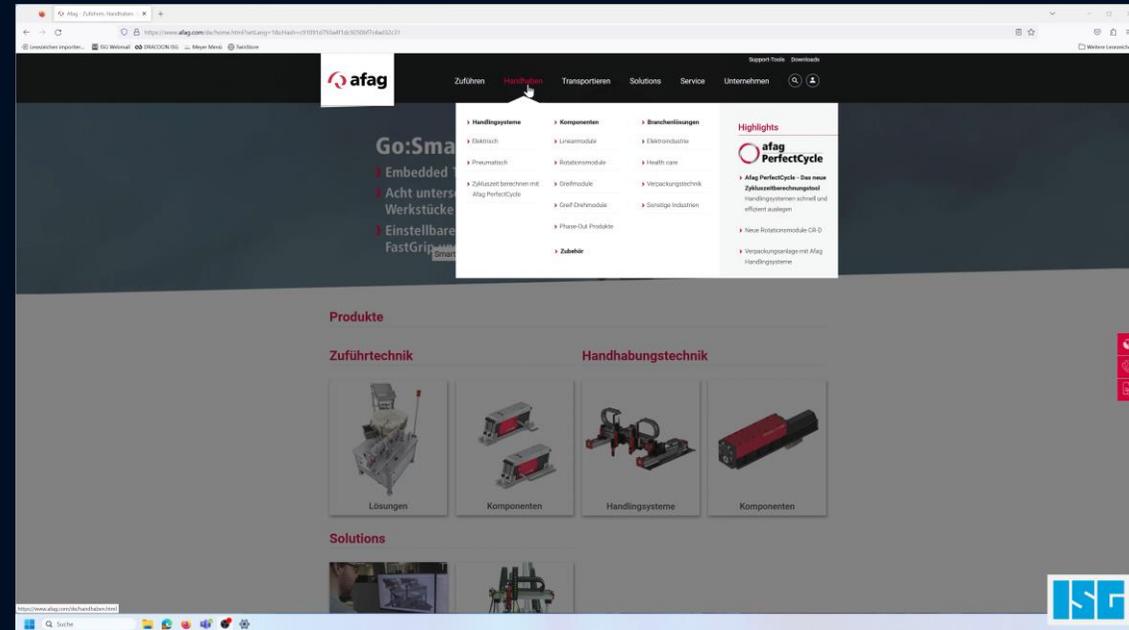
VEREINFACHTE UMWANDLUNG VON 3D- ZU 4D-MODELLEN

- _ Neue Export-Funktion in ISG-virtuos
- _ Integration der Cadenas 3D-find it- Bibliotheken



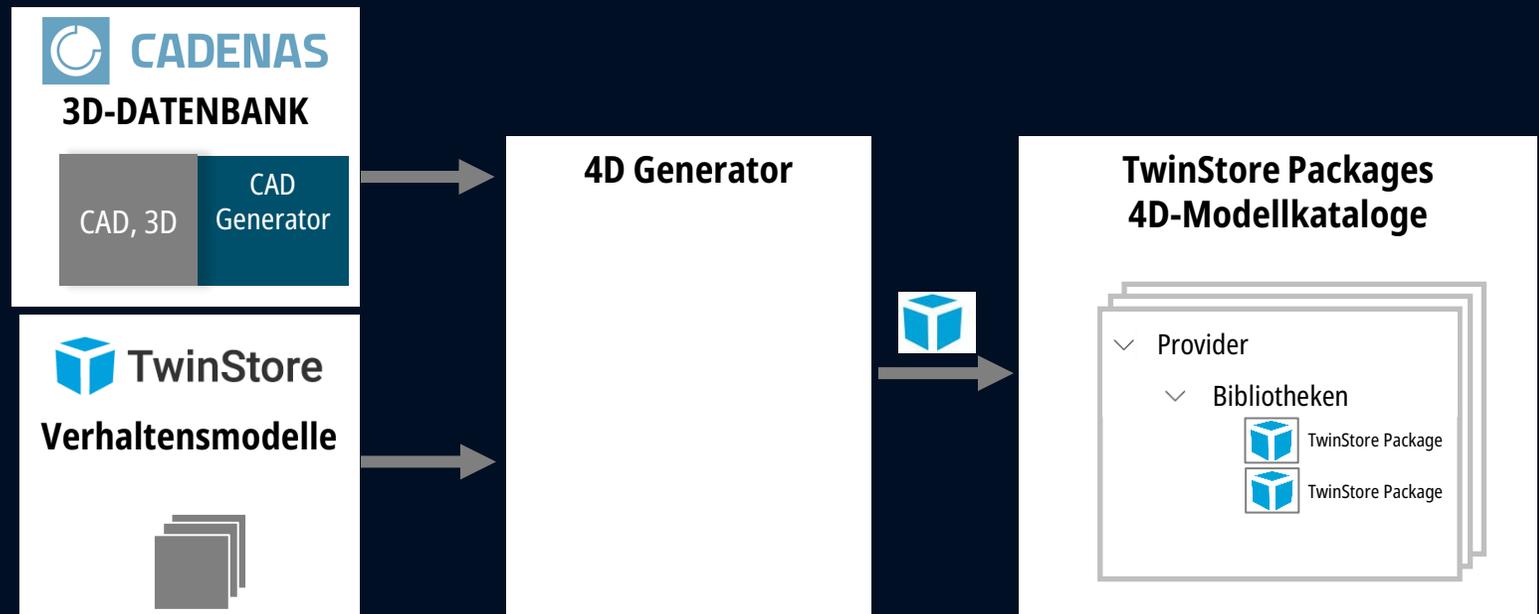
PLATTFORMUNABHÄNGIG EINSETZBAR

dank der Verfügbarkeit der
4D-Modelle im AASX-Standard



TwinStore & CADENAS

- + Reduzierung der Aufwände zur Katalogerstellung
- + Durchgängiges Konzept für 3D und 4D Daten
- + Generierung von Variantenmodellen



Sprechen Sie uns an



Thomas Lang



Dr. Christian Scheifele



INDUSTRY
FORUM 2024



Proof-of-Concept

Gemeinsame Umsetzung einer Referenzkomponente mit unseren Experten

1. Projektanalyse
2. Realisierungsworkshop



Erstes CADENAS & TwinStore Komponentenmodell