SICK
Sensor Intelligence.

Exploring Tomorrow's Industrial Automation

A Journey through the Industrial Metaverse with Omniverse

Dr. Bahram Torabi, SVP R&D

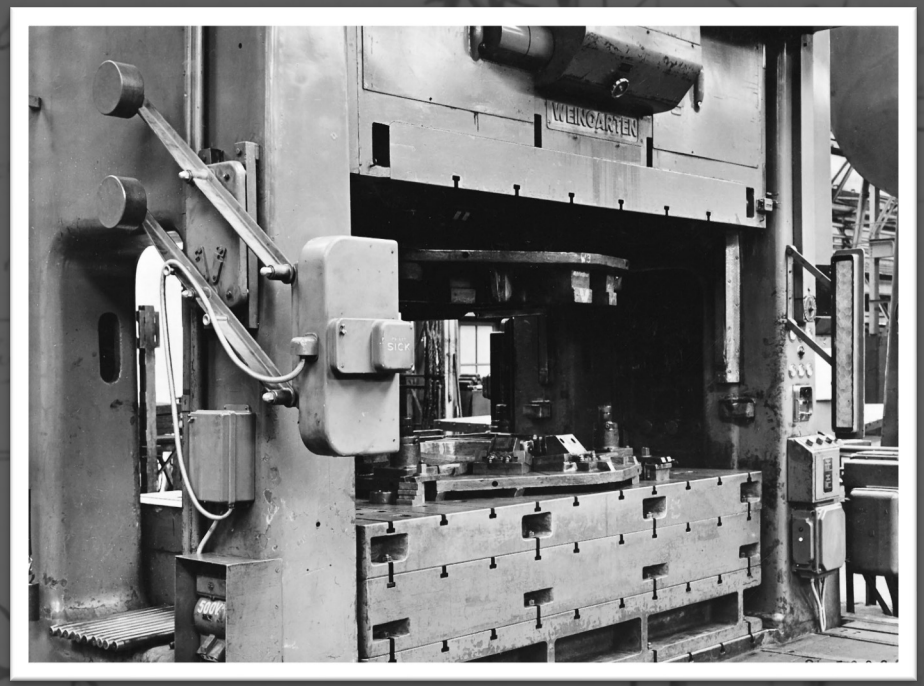
Dr. Jan Jarvis, Head of Virtualization

SICK AG

Gisela and Erwin Sick

Company founded in 1946

Our roots are in safety and environmental protection



TODAY

WE DEVELOP SENSOR SOLUTIONS FOR CUSTOMERS AROUND THE GLOBE

- Over 50 subsidiaries worldwide
- Around EUR 2.2 billion sales in 2022
- Almost 12,000 employees


Factory
Logistics
Process
Automation

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Motion control sensors


Distance sensors


LiDAR and radar sensors


Machine vision and identification

40.000 Products


Process sensors


Detection sensors


Analyzers


Flow measurement


Safety

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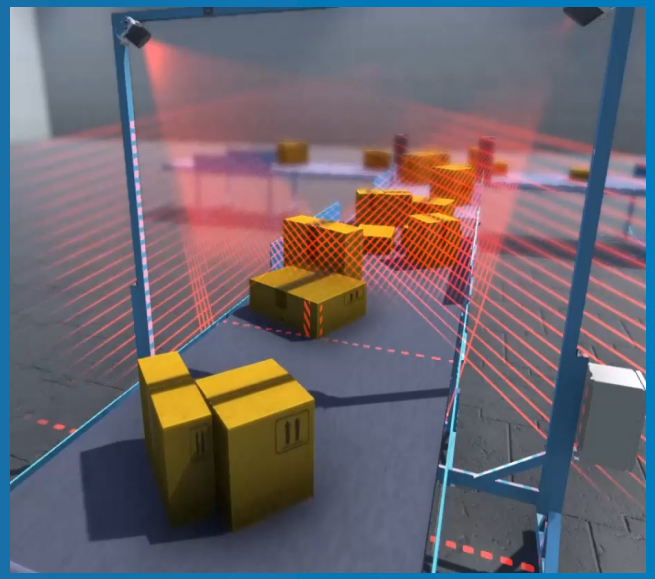
TODAY

What if ...

we could **transfer** every **individual** industrial use case of our customer directly to our most **competence** experts and bring our best **solutions** to each one of our customers...

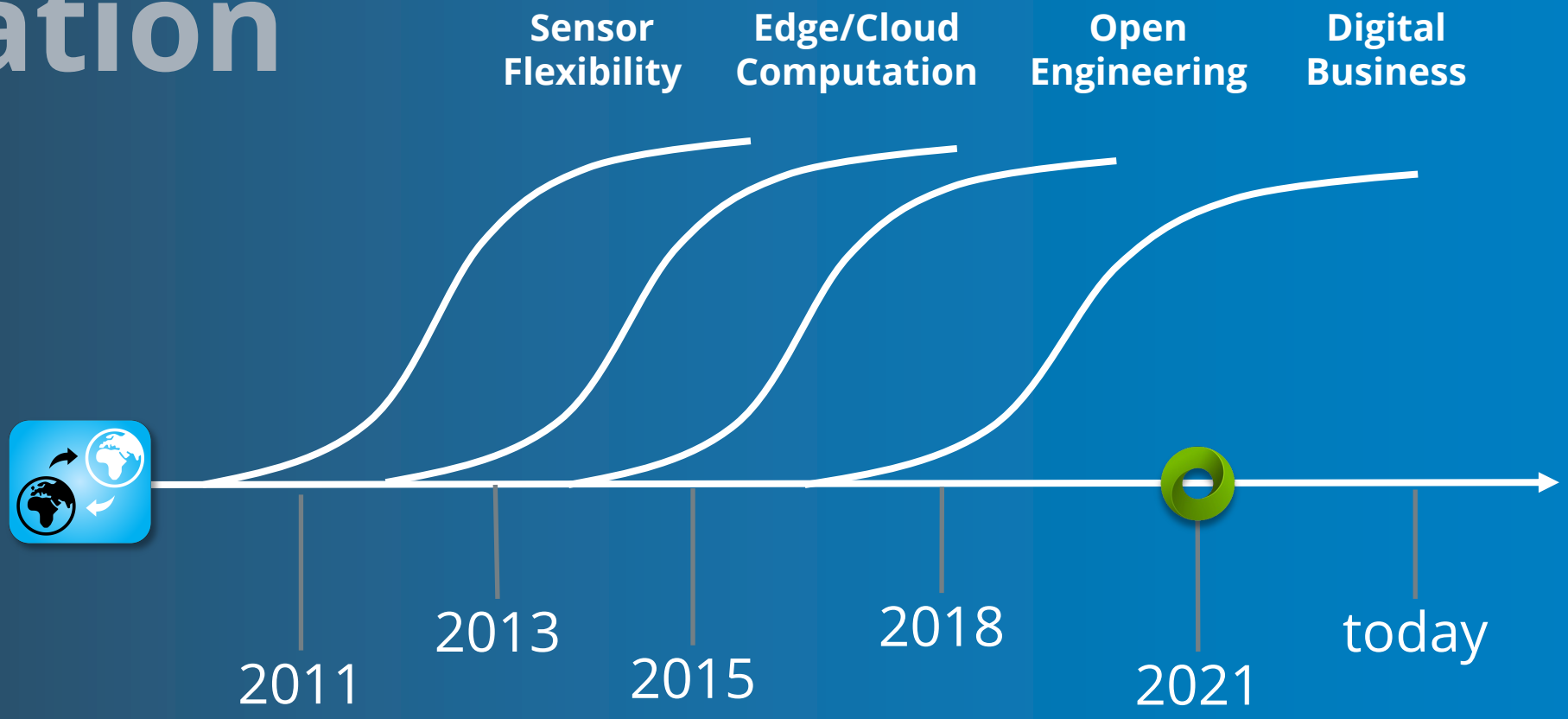
... **seamlessly** and at **scale**

then we could …



Virtualization of Industrial Application

Virtualization of Industrial Application



Sensor Flexibility

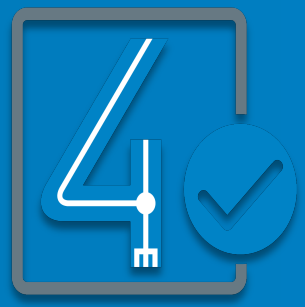
- Introducing our open **embedded platform** "**Euler**" running on Linux
- Covering wide range of products
- Integration of 3rd party libraries
- Late deployment

Euler

2011

Industry 4.0

A 4th industrial revolution is propagated. Increased connectedness, „intelligence" and automation promise further efficiency boosts. Sensing solutions are a crucial part.



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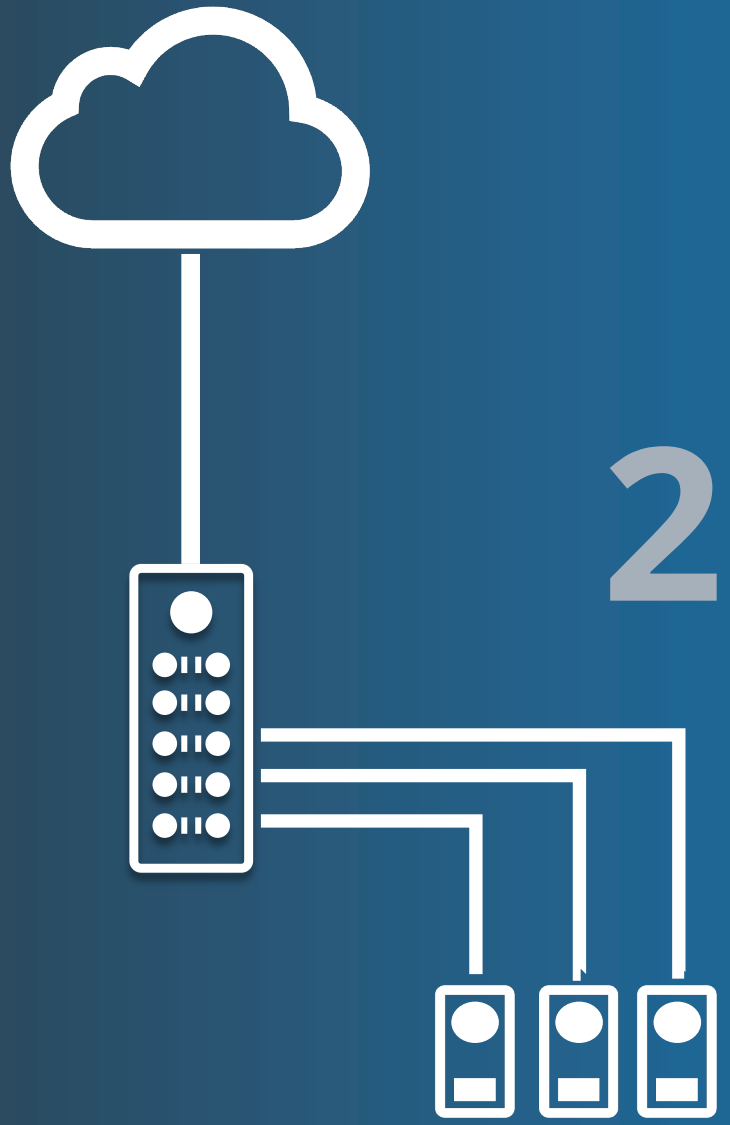

2013

Edge/Cloud Computing

Sensor Integration Machines (**SIM**) are released to integrate multiple sensors into comprehensive sensing solutions

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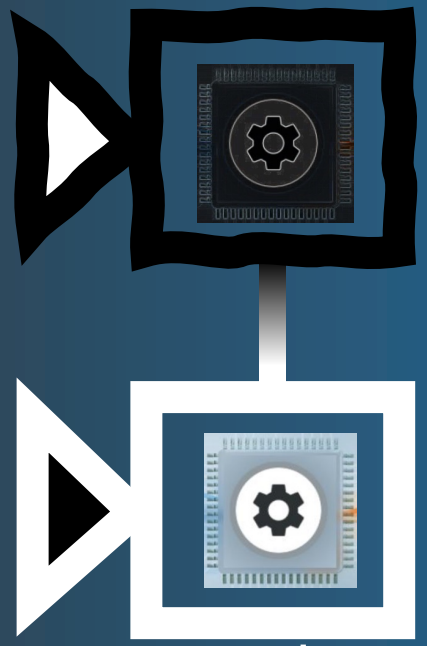
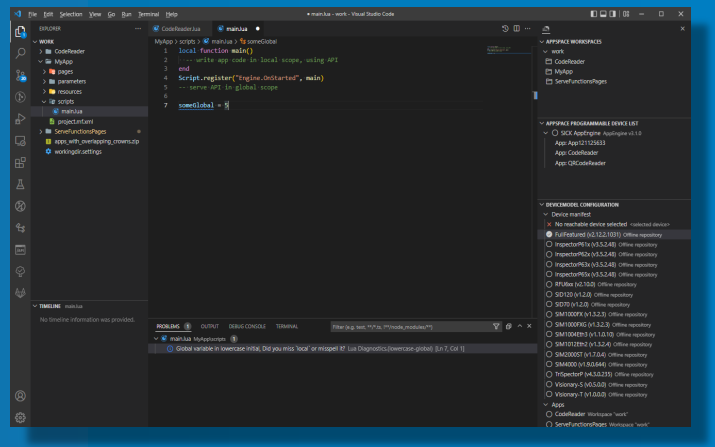
Open Engineering

AppSpace: An open engineering suite, which allows individual solutions to be developed and deployed on our devices and distributed via cloud



2015



AppEngine

AppStudio

SICK APP SPACE

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Digital Business

A unit without sensors: A new data-oriented business unit is founded with a focus on data, computation (AI, ML, MV, ...) and cloud services.

2018

Gaming Industry

New players enter in industrial automation bringing advanced computing power and simulation competence to the table

Stones are in place:

- Sensor Flexibility
- Edge/Cloud computation
- Open Engineering tools
- Organization prepared

Pushing Vision into Reality

Virtualization of Industrial Applications

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NVIDIA Omniverse

With USD, ray-tracing technology, connectors and a transparent platform, NVIDIA paves the way towards industrial metaverse.

2021

SICK–NVidia Collaboration

We work together in our path towards future of automation industry.

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TODAY

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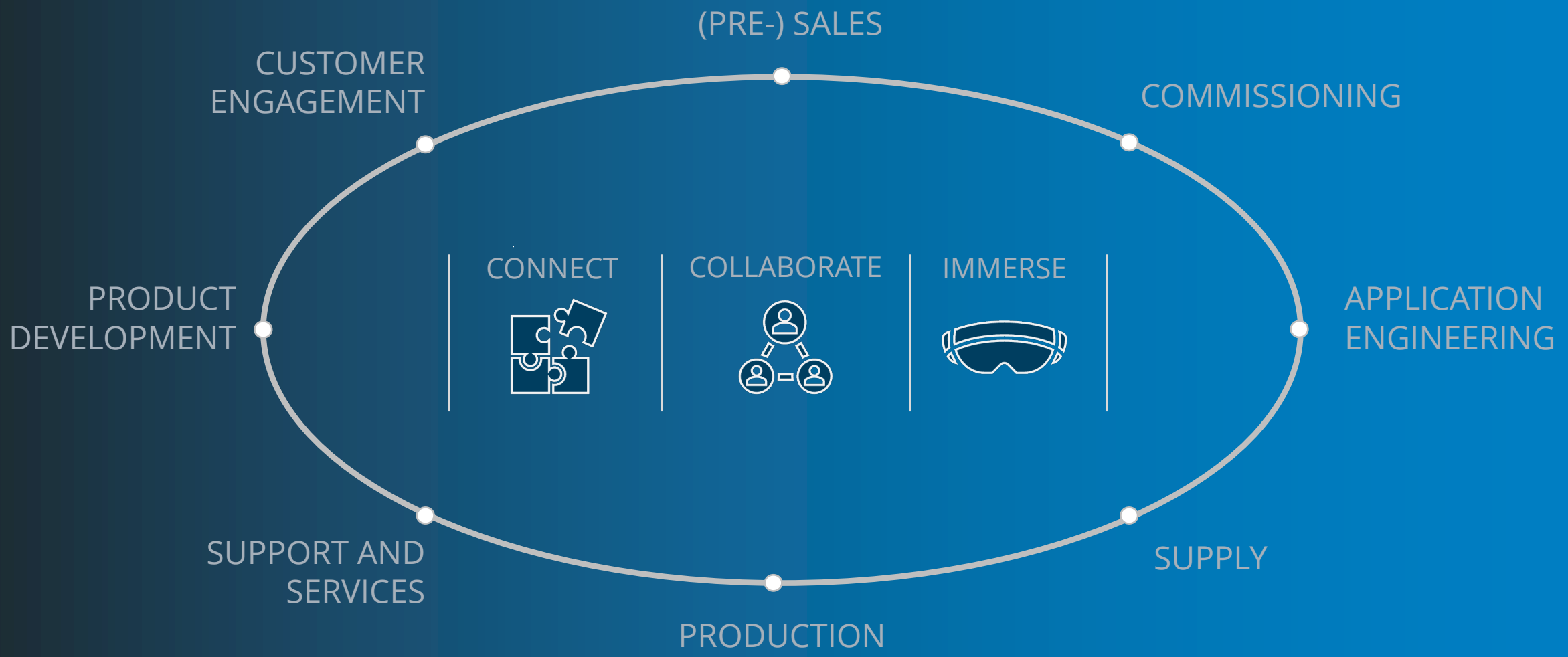

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Virtual Customer Center

More Info

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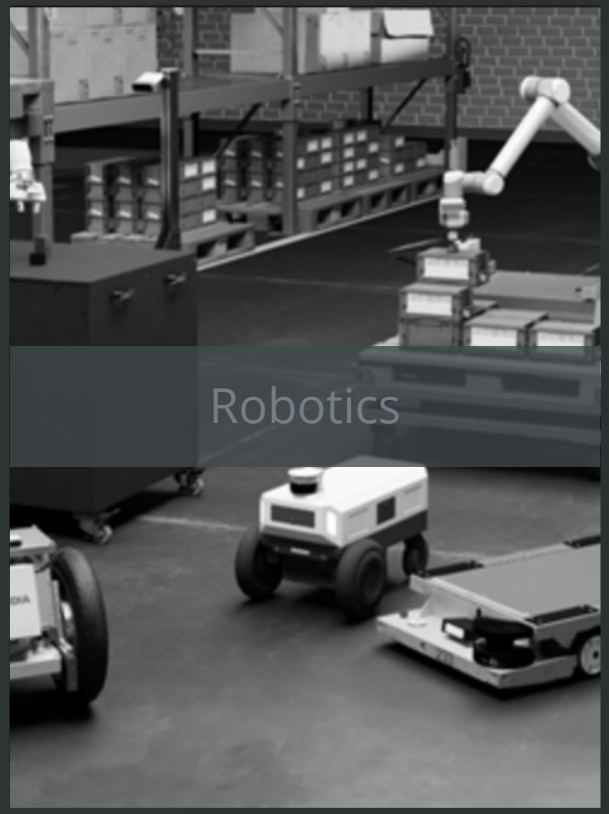
SICK Virtual Customer Center



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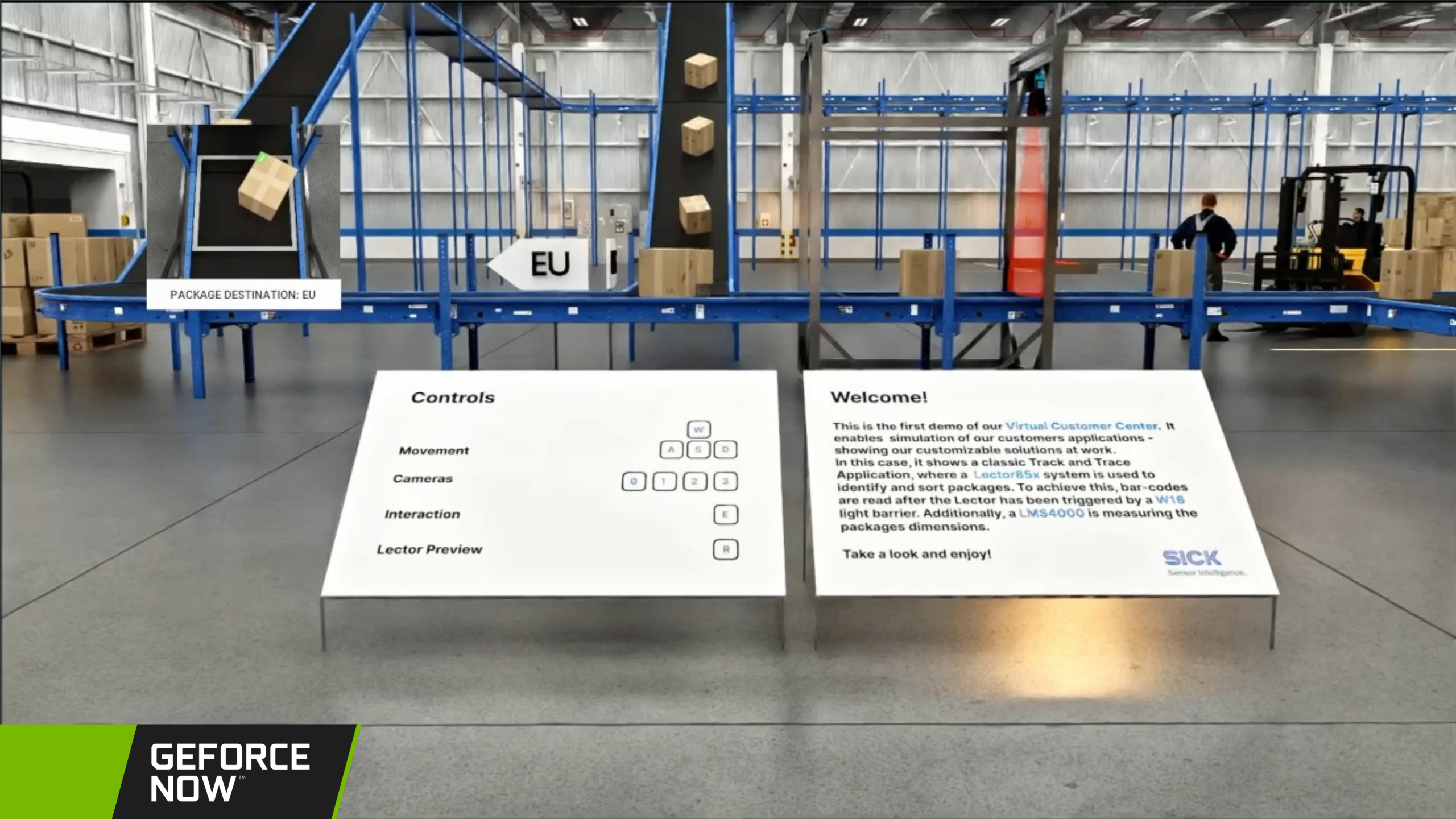
PACKAGE DESTINATION: EU
EU
Controls
Movement
W
A
S
D
Cameras
0
1
2
3
Interaction
E
Lector Preview
R
Welcome!
This is the first demo of our Virtual Customer Center. It enables simulation of our customers applications - showing our customizable solutions at work.
In this case, it shows a classic Track and Trace Application, where a Lector85x system is used to identify and sort packages. To achieve this, bar-codes are read after the Lector has been triggered by a W18 light barrier. Additionally, a LMS4000 is measuring the packages dimensions.
Take a look and enjoy!
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Virtual Solution Engineering

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Depalletization Guidance (Top View)

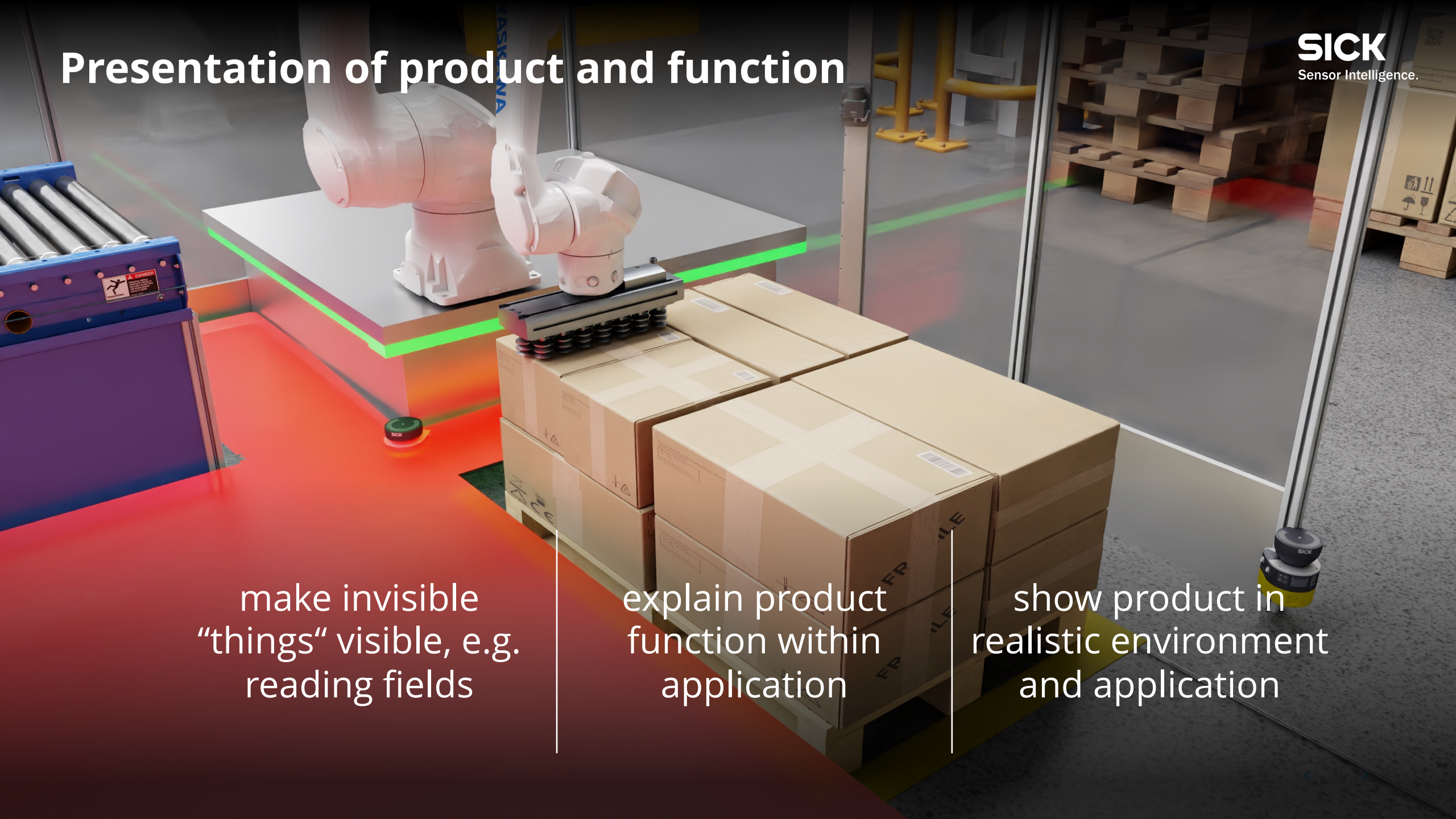
Tailored solution

individual configuration of SICK solution

optimize product function within application

validate SICK solution in customer application

Presentation of product and function



make invisible “things“ visible, e.g. reading fields

explain product function within application

show product in realistic environment and application

SICK Sensor Models in ISAAC SIM

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microScan3

SICK Sensor Models in ISAAC SIM

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microScan3

TiM781

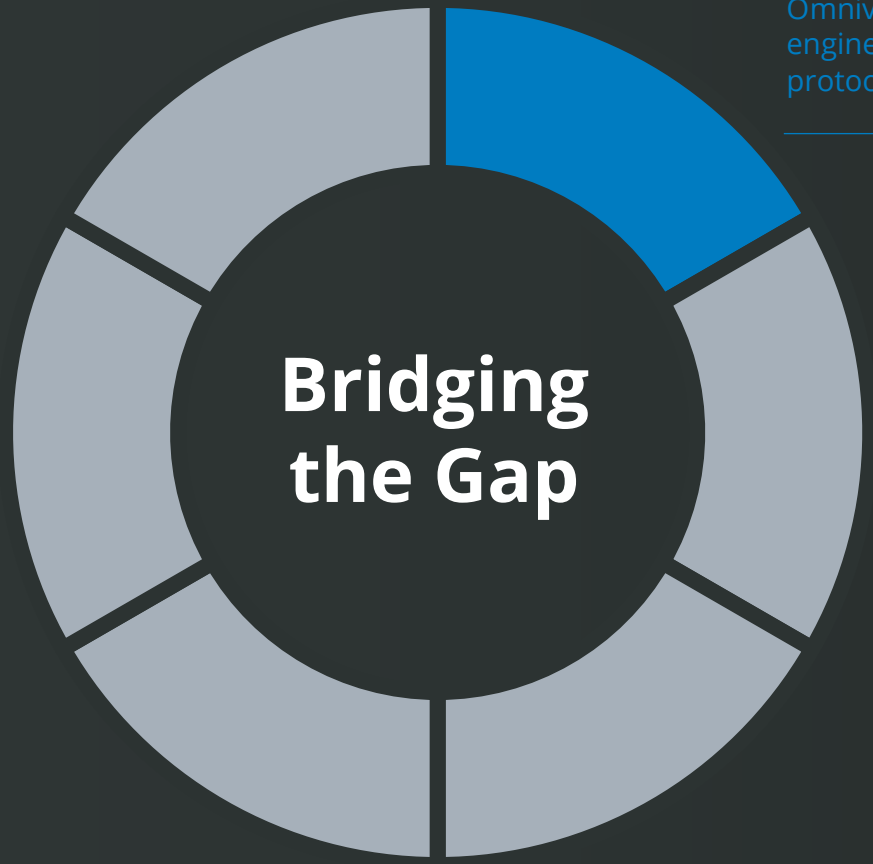
multiScan136 + 165

picoScan150

To be continued...

Ecosystem

Full support of the OpenUSD standard / Omniverse connectors throughout the engineering tool landscape and communication protocols in industrial automation



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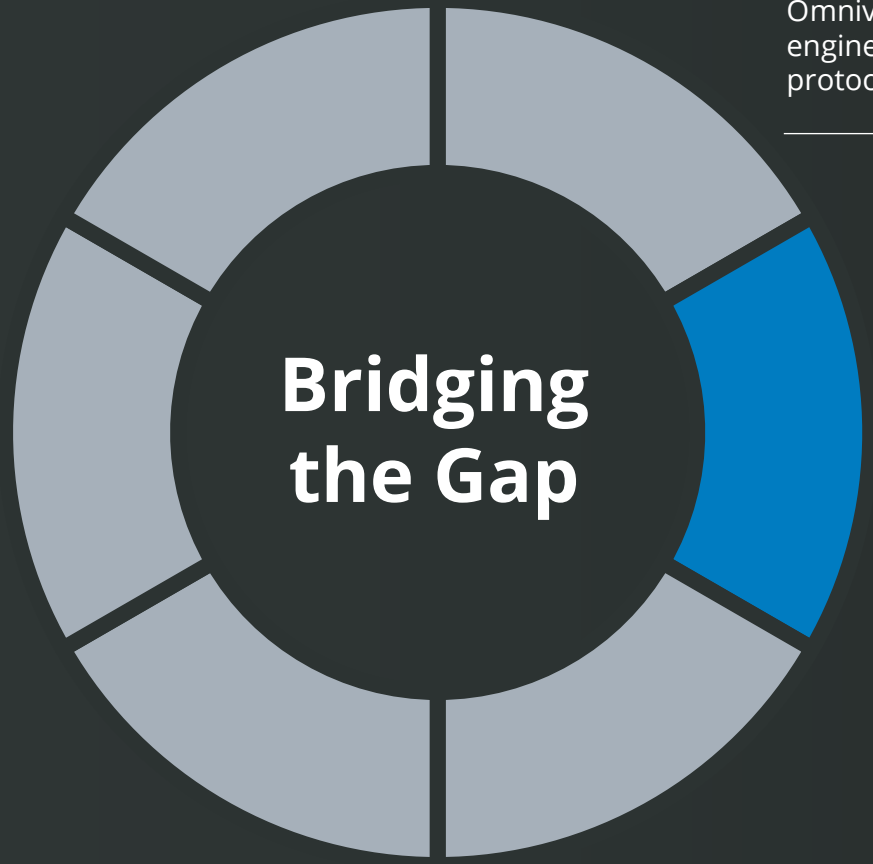

Advancing OpenUSD

Development in accordance with standards and requirements in automation industry: Stability and Expandability

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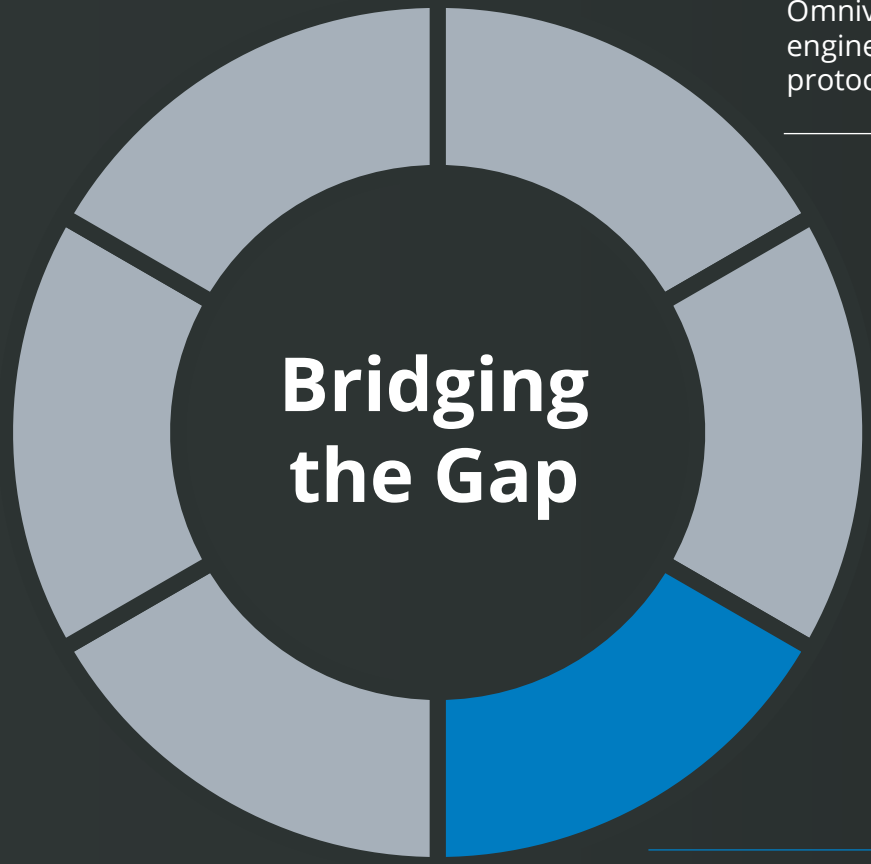

Advancing OpenUSD

Development in accordance with standards and requirements in automation industry: Stability and Expandability

Asset Catalog

Comprehensive shared catalog of high standard physically correct and simulation ready asset

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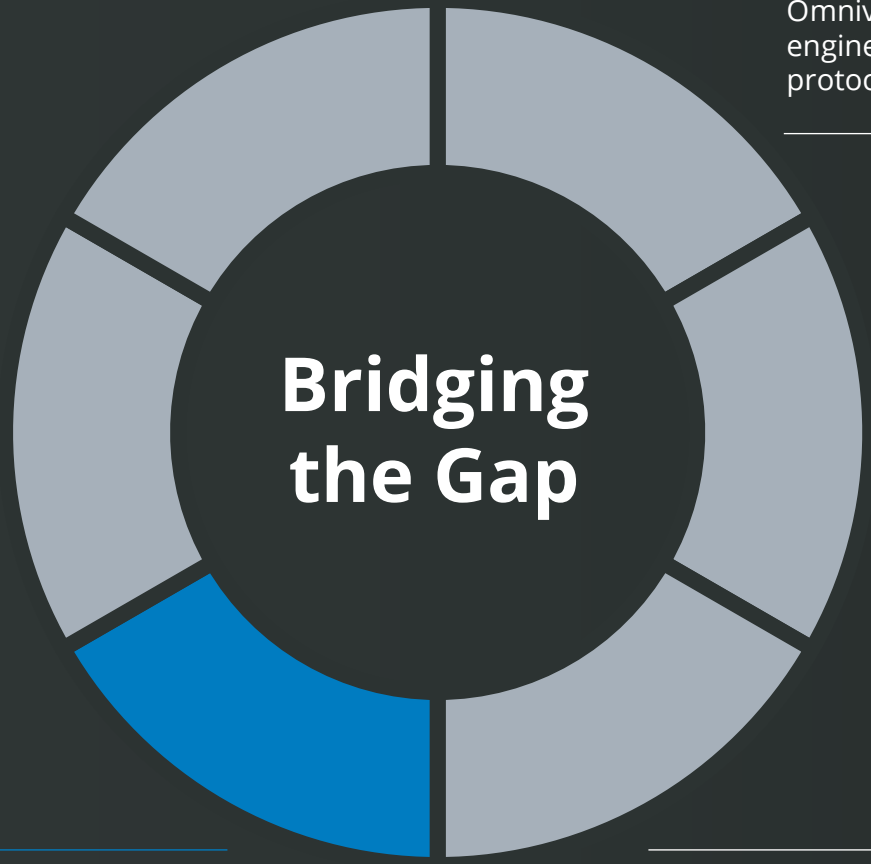

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Ready to use service infrastructure for scale in authoring and distribution especially for non-expert users

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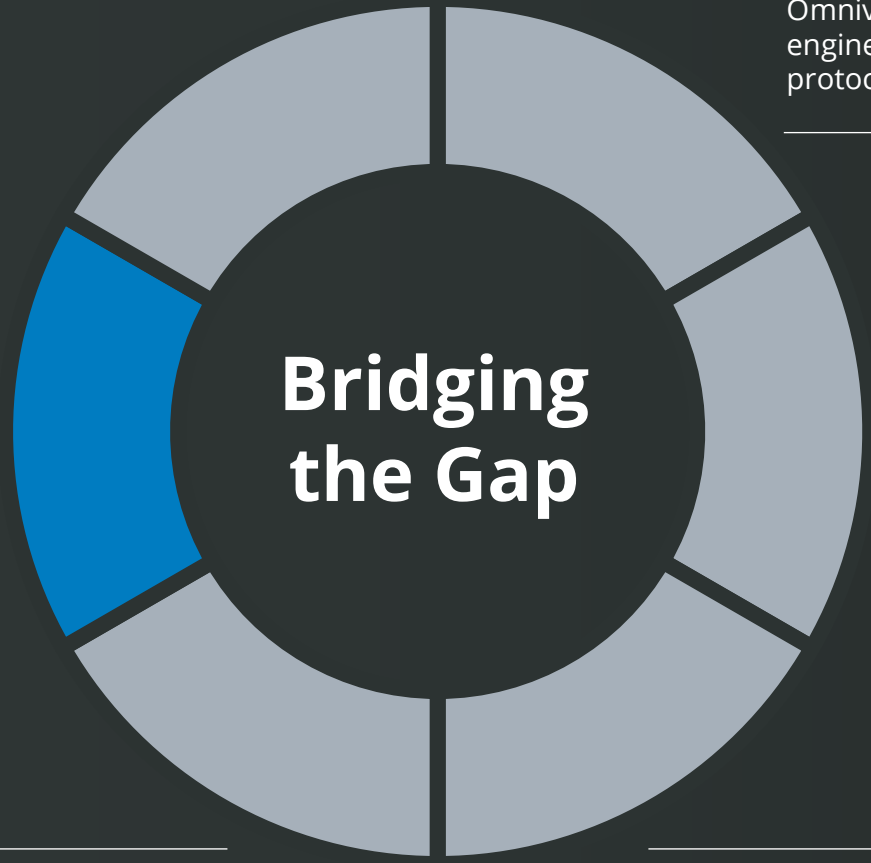
Rendering Materials

A comprehensive set of standardized physically correct rendering materials covering non-visible spectral range



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Reality Capture

Fast and reliable ways of bringing virtual models of real-world objects into Omniverse

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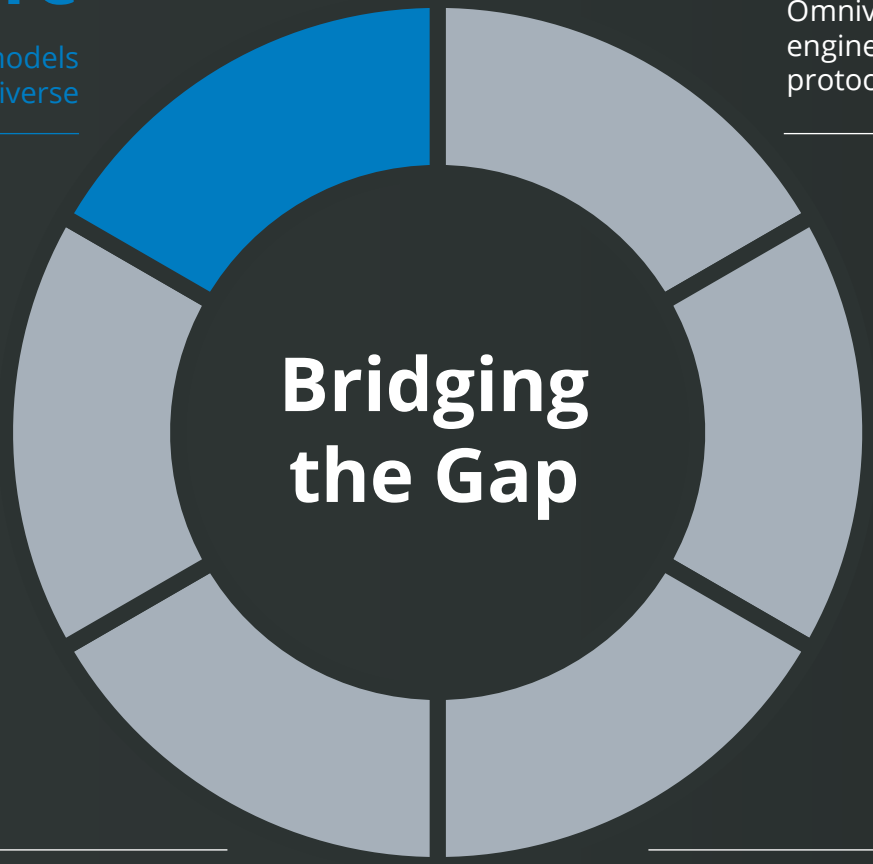

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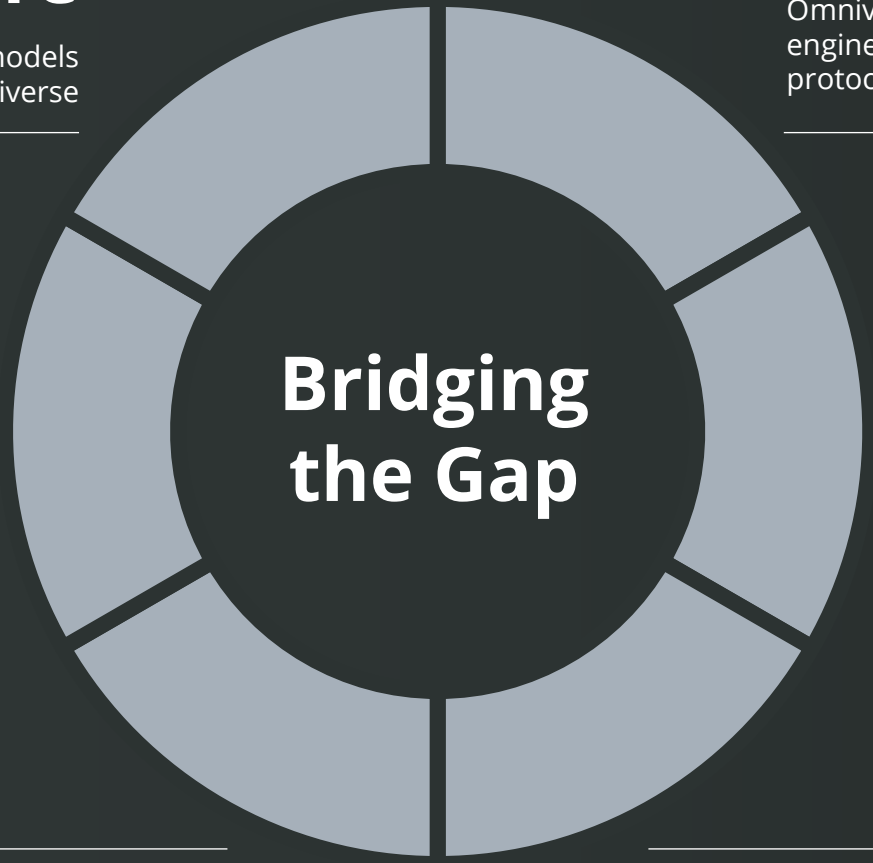

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connected engineering tools

collaboration

individual solutions

open standards

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Please meet us at the Expo in the Robotics Area (Booth 438)