

SIEMENS

Get our full press kit here
sie.ag./press-hm23



We combine the
real and digital worlds



For German translation:
Please pick up a head-set at the stage

Get our full press kit here
www.siemens.com/press/hm24

SIEMENS

Siemens & Gen AI

From theory to practice to scale

Hannover Messe 2024

Press Conference

Cedrik Neike, CEO Digital Industries at Siemens





A large, industrial robot with a metallic, greyish-blue finish. The robot's head is prominent, featuring glowing blue lights around its eyes and a blue grille on its side. On its chest, there is a large, stylized 'T' logo. The robot's arms are visible, with various mechanical joints and components. The background is a dark, industrial setting with a grid-like pattern on the ceiling.

... 2014

Remember Titan?



Generative AI has arrived



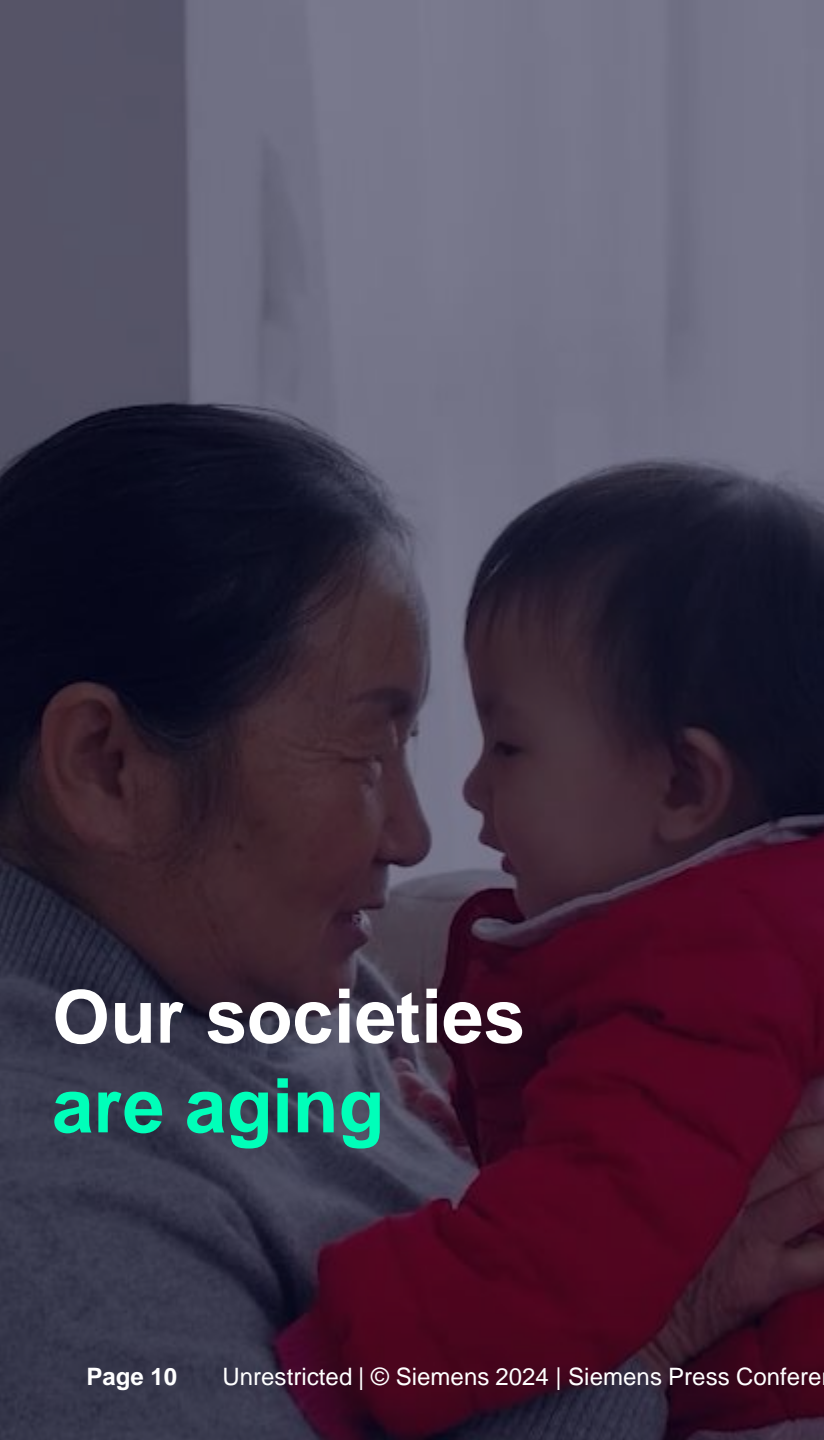
A new future for human and machine



It's not sci-fi, it's **reality**



Generative AI is transforming industry



**Our societies
are aging**



**Glocalization
for resilient supply
chains**



**Climate Change
as a global
challenge**

A dark, blue-tinted photograph of an industrial robotic arm. The arm is the central focus, with its joints and various components visible. The background is a blurred industrial setting. The text 'But AI must be industrial' is overlaid on the image.

**But AI must be
industrial**

The background of the slide is a dark, blue-tinted photograph of an industrial factory floor. Several large, white robotic arms are visible, some in the foreground and others in the background, all appearing to be in operation. The lighting is somewhat dim, creating a sense of a busy, modern manufacturing environment.

We make AI real
We make AI industrial
We make industrial AI easy



Top employer for **AI experts**

Künstliche Intelligenz

Siemens zieht Top-Forscher an

Deutschland fällt im Werben um Experten für künstliche Intelligenz zurück? Falsch, sagt eine britische Personalberatung: Besonders deutsche Großkonzerne ziehen viele KI-Experten an.

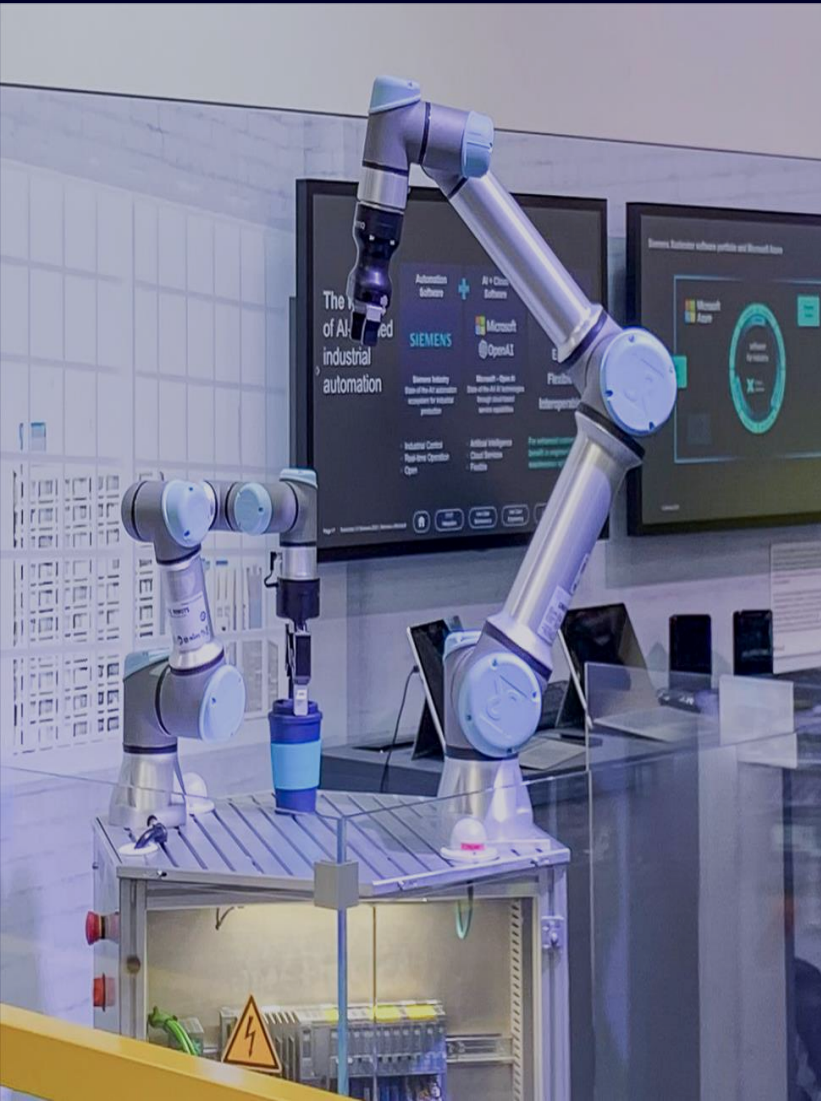
05.04.2024, 13.00 Uhr • aus DER SPIEGEL 15/2024

The background features a dark blue field with a network of thin, light-colored lines connecting various nodes. Some nodes are represented by small circles, while others are rectangular shapes with internal patterns, resembling circuit components or data points. The overall aesthetic is technical and digital.

Siemens Industrial Copilot

From theory to practice to scale

Calculating.





And so can you!




**Siemens Industrial Copilot is now
seamlessly connected to the
TIA portal**



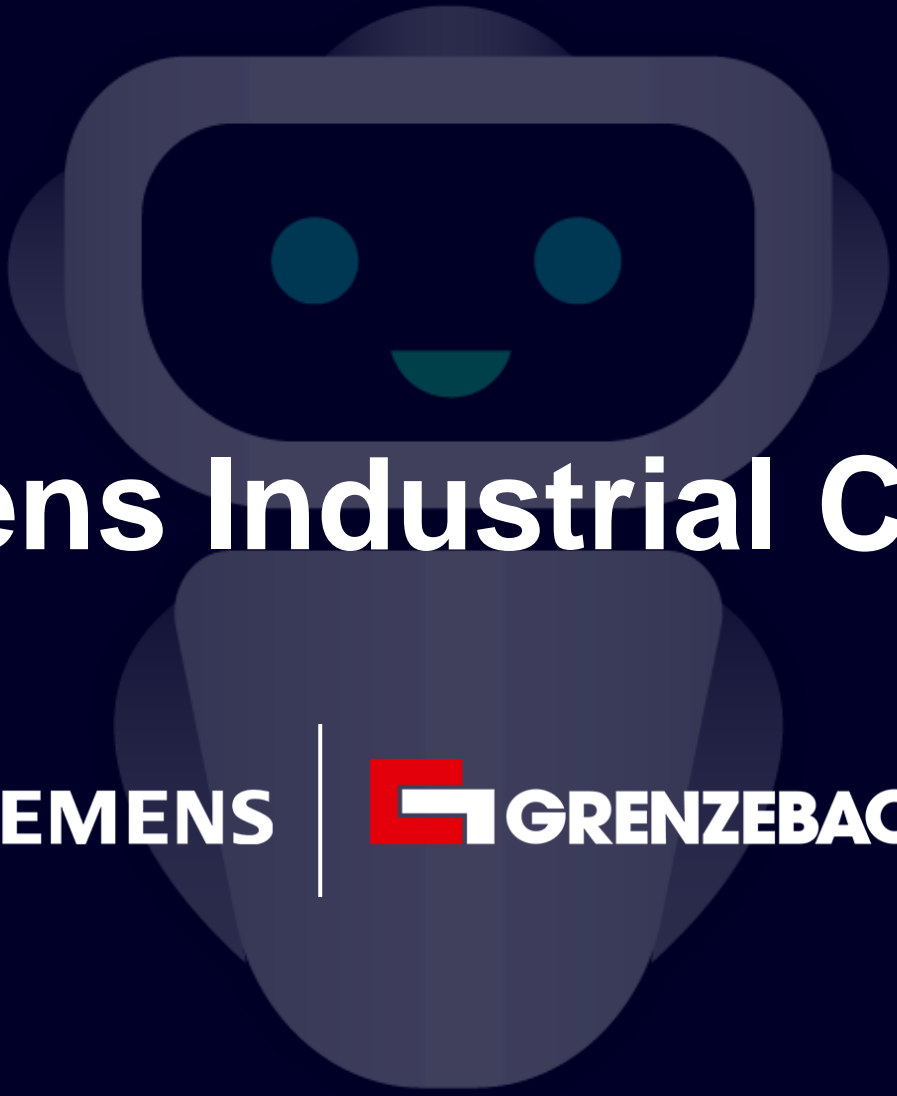
**And available for download on the
Siemens Xcelerator marketplace
from **Summer 2024****

Google



Google Suche

Auf gut Glück!



Siemens Industrial Copilot

SIEMENS

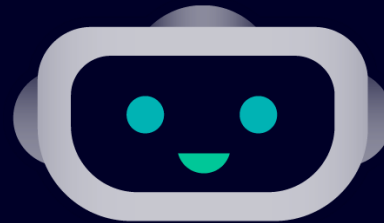


GRENZEBACH

CAD/CAM:
Siemens NX

PLM:
Teamcenter X

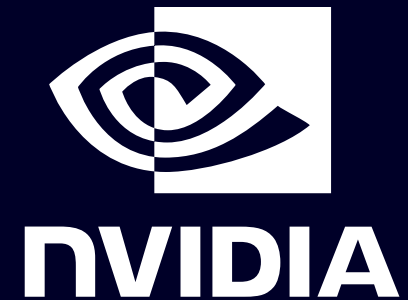
Automated inspection:
Machine Vision



**Predictive
Maintenance:**
Senseye

And many more...

SIEMENS





Tony Hemmelgarn

President and CEO,
Siemens Digital Industries Software

Revision: Latest Working | Date: Today | Units: None | Variant: HX_18V/001;HXWith18V | Expansion: BOMExpandProcessByPartSource

+ Add ↔ Edit Structure ↺ Reset View 🔍 Find 🔍 Filter ⚙️ Configure 📄 Split Context ✎ Edit ⋮

Element	ID	Revision
Handdrill_Assembly_Configurator	PWRTOOLS-1-100	A
BATTERY 18V	PWRTOOLS-1-101	A
Battery pack underside (18V NiCd)	3-001-000000	B
Battery Cells (15x NiCd)	3-001-000002	A
Battery Cell NiCd x15	3-001-000001	B
Battery pack top plate	3-001-000003	A
Battery bottom connection	3-001-000004	A
Battery side button x2	3-001-000005	A
Battery spring clip x2	3-001-000006	A
Battery top connection	3-001-000007	A
Screw x6	3-001-000008	A
MOTOR WITH GB	PWRTOOLS-1-103	A
Main variable speed drive DC motor	3-001-000035	A
Adapter ring	3-001-000023	A
Gearbox housing	3-001-000024	A
Main shaft	3-001-000025	A
Motor sun gear (9T)	3-001-000026	A
Second sun gear	3-001-000027	A
Planet gear x6	3-001-000028	B
Inner retaining ring	3-001-000030	A
Ring3	3-001-000031	A
Ring5	3-001-000032	A
Ring2	3-001-000033	A
Clutch balls	3-001-000100	A
Chuck front plate	3-001-000043	A
Screw dia 3 x 12 x5	3-001-000034	A
Universal Torque Controller	Universal Torque Con...	A

Details **Main variable speed drive DC motor**
 Owner: ed (ed) | Last Modified Date: 29-Feb-2024 | Release Status: Approved | Type: Item Revision

[Overview](#) | [Weight and Balance](#) | [Parameters](#) | [Changes](#) | [Partners](#) | [Classification](#) | [Made From](#) | [Where Used](#) | [Attachments](#) | [Materials](#) | [Composition](#)

▼ Properties

ID: 3-001-000035

Name: Main variable speed drive DC Motor

Revision: A

Revision Name: Main variable speed drive DC Motor

Description: Main variable speed drive DC Motor

Occurrence Name: Main variable speed drive DC motor

Reference Designator:

Find Number: 10

Quantity:

Unit Of Measure: each

Maturity:

Release Status: Approved

Date Released: 29-Feb-2024

Release Effectivity: Approved 29-Feb-2024 00:00 to UP (NONE)

Element Effectivity ID:

Element Effectivities:

Variability Scope:

Solution Variant Category:

Is Variant Item: False

Solution Variant Source:

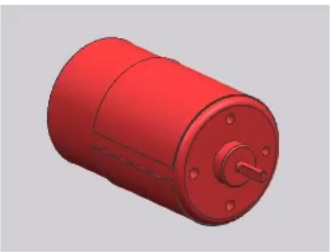
Owner: ed (ed)

Group ID: Engineering

Last Modifying User: ed (ed)

Precise: False

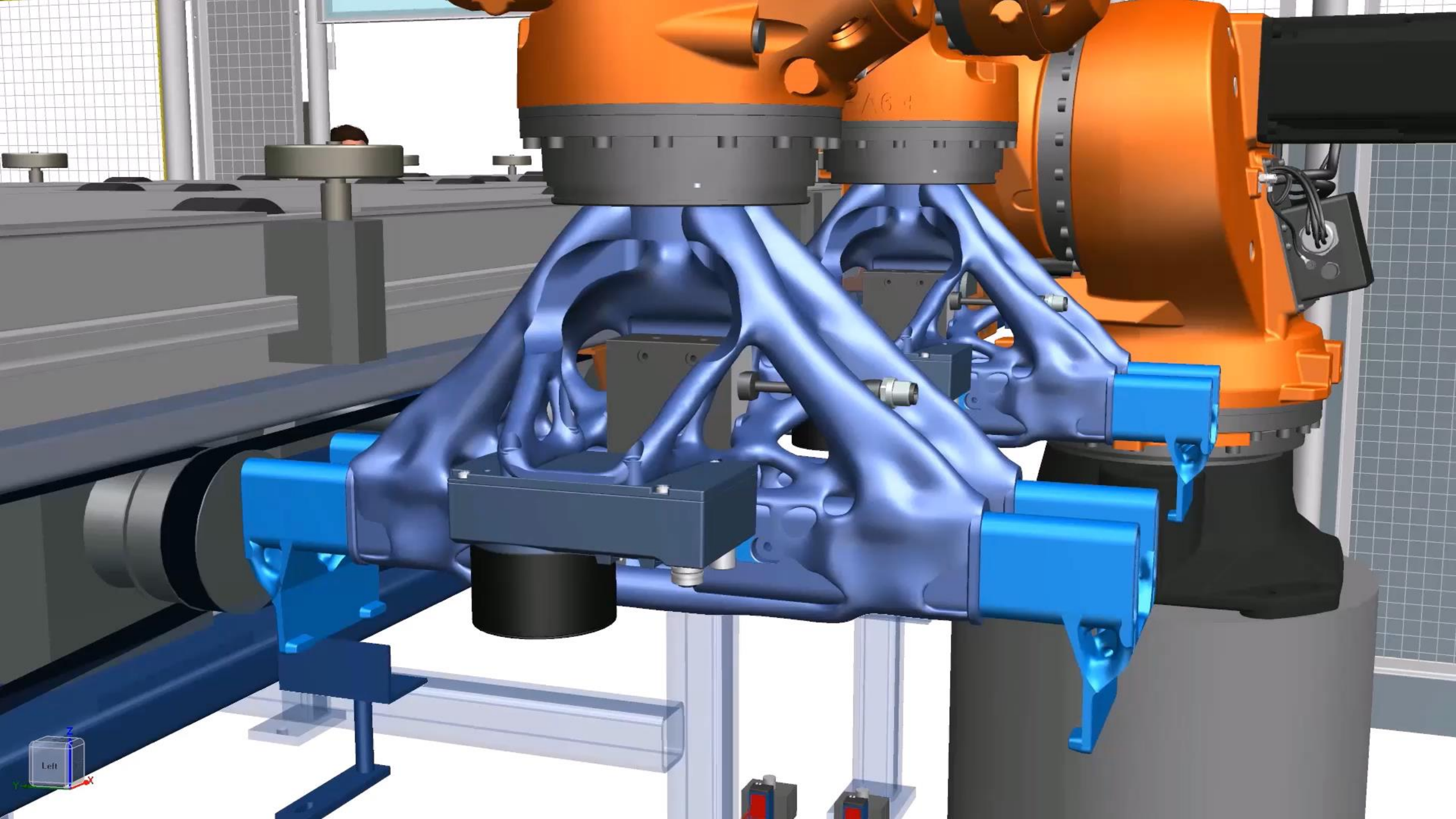
▼ Preview



▼ Uses Semi-Components

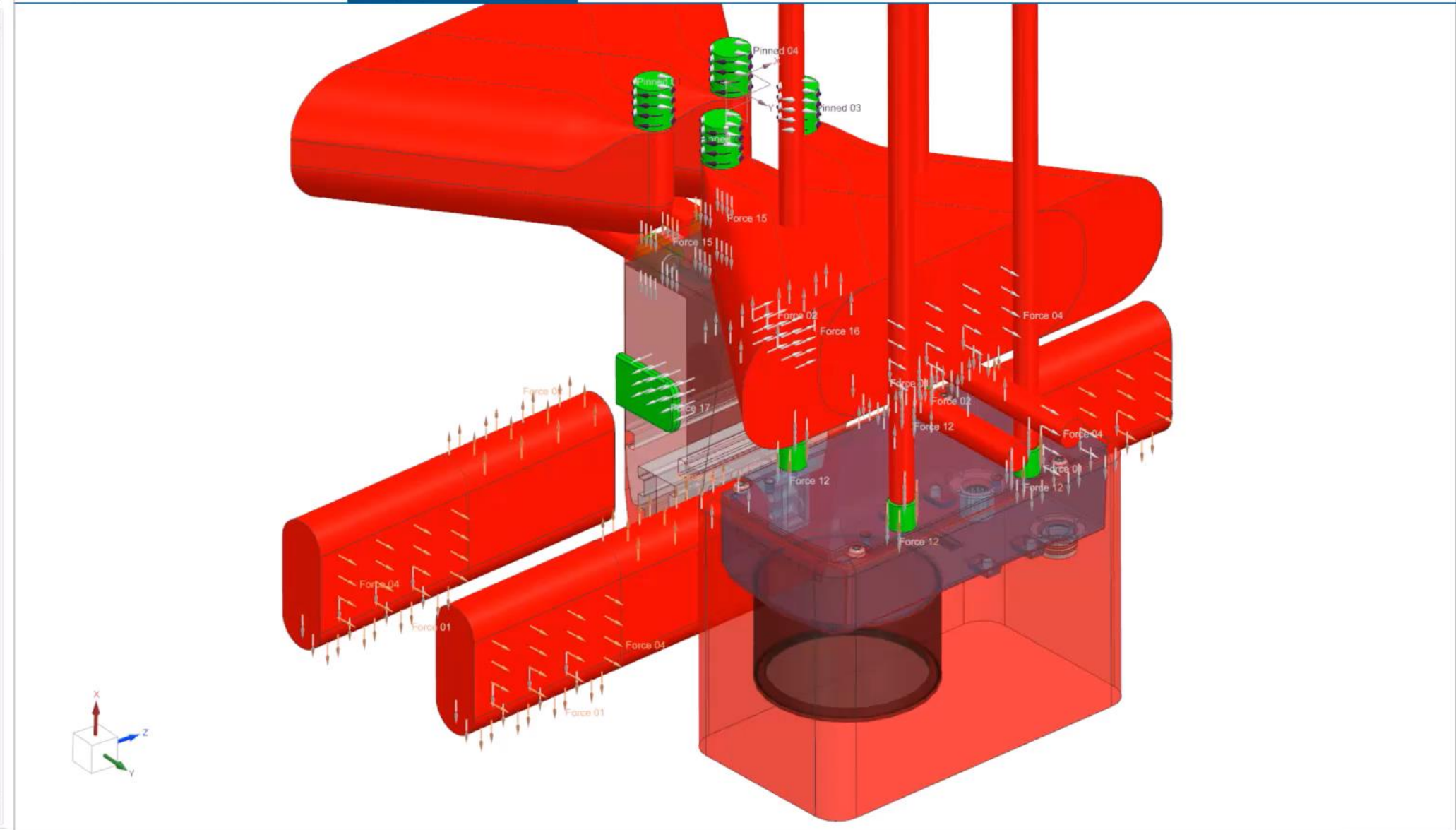
Table Selection Mode Select All Export To... Paste

Name	Type	Release Status	Date Modified



Optimization Navigator

Title
Thicken "OUT_Bottom_Surface" (162)
Thicken "OUT_Top_Surface" (163)
Extrude "OUT_Festo" (72)
Extrude "OUT_Screw_Mount_Festo_4" (62)
Extrude "OUT_Screw_Mount_Festo_4" (62)
Extrude "OUT_Screw_Mount_Festo_3" (60)
Extrude "OUT_Screw_Mount_Festo_3" (60)
Extrude "OUT_Screw_Mount_Festo_Finger"
Extrude "OUT_Screw_Mount_Festo_Finger"
Mirror Geometry (173)
Extrude "Connector_Festo_Gripper" (168)
Cylinder "OUT_Festo_Cable" (93)
Mirror Geometry (167)
Extrude "OUT_Actuator_Movement" (166)
Mirror Geometry (177)
Extrude (175)
Shape Constraints
Planar Symmetry 01
Optimization Constraints
Max Mass Limit 01
Scenery Bodies
Connections
Analysis Constraints
Pinned 01
Pinned 02
Pinned 03
Pinned 04
Environment Loads
Analysis Loads
Force 01
Force 02
Force 03
Force 04
Force 05
Force 06
Force 07
Force 08
Force 09
Force 10
Force 11
Force 12
Force 13
Force 14







1_Synthesis_of_Aspirin_(Experiment).pdf



file

1 / 2



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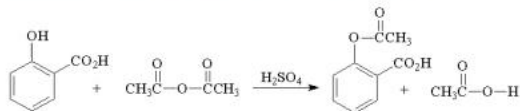


1: Synthesis of Aspirin (Experiment)

Over history, many compounds obtained from nature have been used to cure illnesses or to produce an effect in humans. These **natural products** have been obtained from plants, minerals, and animals. In addition, various transformations of these and other compounds have led to even more medically useful compounds. During this semester, you will have an opportunity to isolate some pharmacologically active natural products and to synthesize other active compounds from suitable starting materials.

Analgesics are compounds used to reduce pain, antipyretics are compounds used to reduce fever. One popular drug that does both is aspirin. The Merck Index, which is an encyclopedia of chemicals, drugs and biologicals, lists the following information under aspirin: acetylsalicylic acid; monoclinic tablets or needle-like crystals; mp 135 °C (rapid heating); is odorless, but in moist air it is gradually hydrolyzed into salicylic and acetic acids; one gram dissolves in 300 mL of water at 25 °C, in 100 mL of water at 37 °C, in 5 mL alcohol, in 17 mL chloroform.

SYNTHESIS OF ASPIRIN (acetylsalicylic acid)



- Place 2.0 g (0.015 mole) of salicylic acid in a 125-mL Erlenmeyer flask.
- Add 5 mL (0.05 mole) of acetic anhydride, followed by 5 drops of conc. H_2SO_4 (use a dropper, H_2SO_4 is highly corrosive) and swirl the flask gently until the salicylic acid dissolves.
- Heat the flask gently on the steam bath for at least 10 minutes.
- Allow the flask to cool to room temperature. If acetylsalicylic acid does not begin to crystallize out, scratch the walls of the flask with a glass rod. Cool the mixture slightly in an ice bath until crystallization is completed. The product will appear as a solid mass when crystallization is completed.
- Add 50 mL of water and cool the mixture in an ice bath. Do not add the water until crystal formation is complete.
- Vacuum filter the product using a Buchner funnel. You can use some of the filtrate to rinse the Erlenmeyer flask if necessary.
- Rinse the crystals several times with small portions (5 mL) of cold water and air dry the crystals on a Buchner funnel by suction until the crystals appear to be free of solvent. Test this crude product for the presence of unreacted salicylic acid using the ferric chloride test. Record the weight of the crude solid which probably contains water.
- Stir the crude solid with 25 mL of a saturated aqueous sodium bicarbonate solution in a 150 mL beaker until all signs of reaction have ceased (evolution of CO_2 ceases).
- Filter the solution through a Buchner funnel to remove any insoluble impurities or polymers that may have been formed. Wash the beaker and the funnel with 5 to 10 mL of water.
- Carefully pour the filtrate with stirring, a small amount at a time, into an ice cold HCl solution (ca 3.5 mL of conc. HCl in 10 mL of water) in a 150-mL beaker and cool the mixture in an ice bath. Make sure that the resulting solution is acidic (blue litmus paper) and that the aspirin has completely precipitated out.
- Filter the solid by suction and wash the crystals 3X with 5 mL of cold water each. Remove all the liquid from the crystals by pressing with a clean stopper or cork. Air dry the crystals and transfer them to a watch glass to dry. Test a small amount of the

Chat

Example questions:

What are the materials required to make aspirin?

What are the equipment required for this?

Can you add a step for each stage with instructions?

Generate BOP

Ask any question ...





mendix

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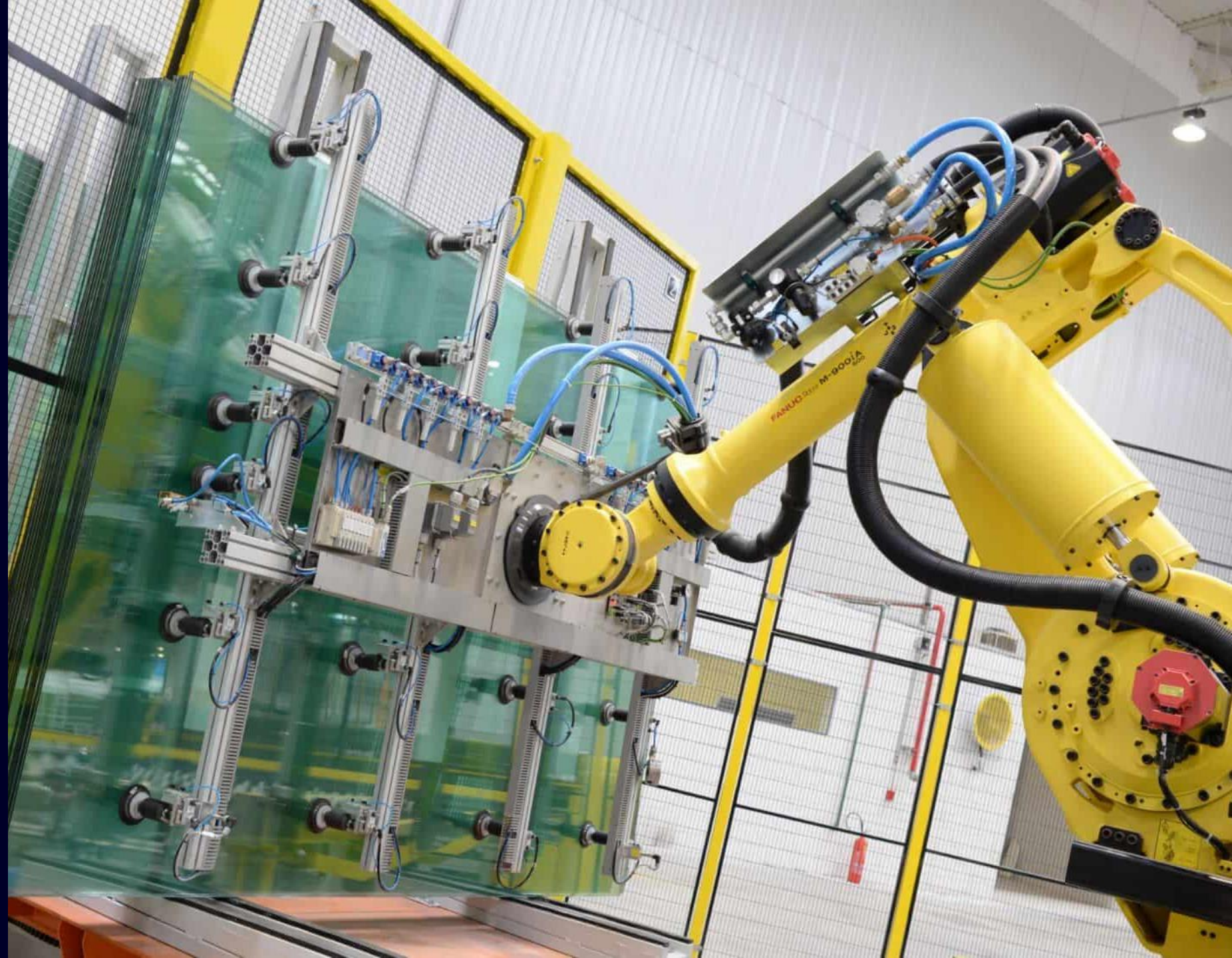


vivix

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- Home
- Industrial Metaverse
- Optimize My Plant
- Energy Manager
- Insights Hub OEE
- Insights Hub Quality Prediction
- Insights Hub Asset Health and Service
- ?
- 🔔
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- 👤



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- Insights Hub Asset Health and Service
- ?
- 🔔
- ⚙️
- 👤

Giga Arctic Factory - Norway

NVIDIA Omniverse Viewer



Physical Asset Info

[Insights Hub](#)

Name: Cell Packing Robot
 Type: BatteryPlantRobot
 Manufacturer: Kuka
 Status: OK

Virtual Asset Info

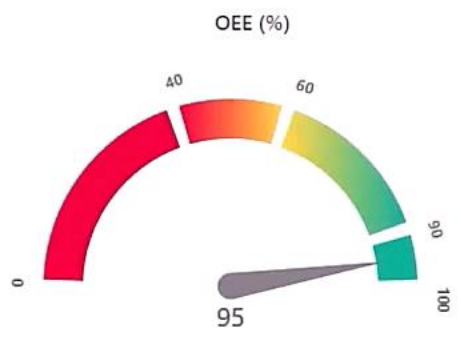
[Teamcenter](#)

Name: Robot Cell Packing
 ID: VA-7653091
 Revision: A
 Description: Kuka cell packing robot



Information

- KPI
- Timeseries
- Events
- Issues
- Issue Details
- Simulation
- Service Requests
- Studies



Performance (%)	98.0
Quality (%)	92.0
Availability (%)	95.0

Active Issues	0	Number of Cycles	127359
Last Serviced	03 March 2023	Next Service Date	03 June 2023
Mean Amb Temp	16 °C	Mean Vibration	0.000161 m/s ²



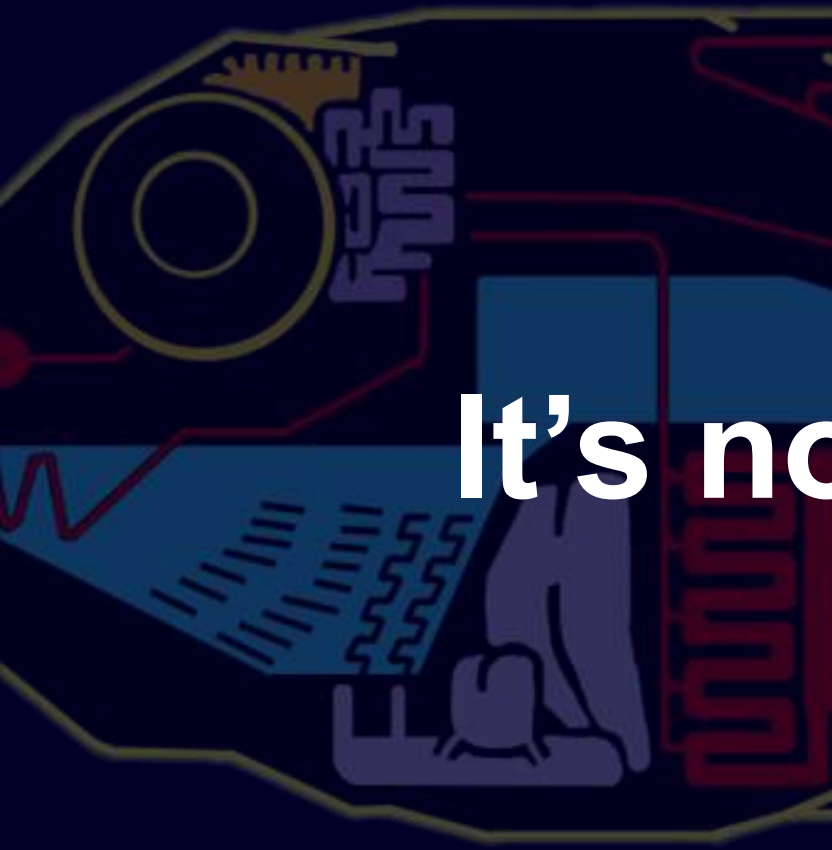
HD HYUNDAI

A futuristic factory floor with a man and a woman walking, a drone flying, and industrial machinery.

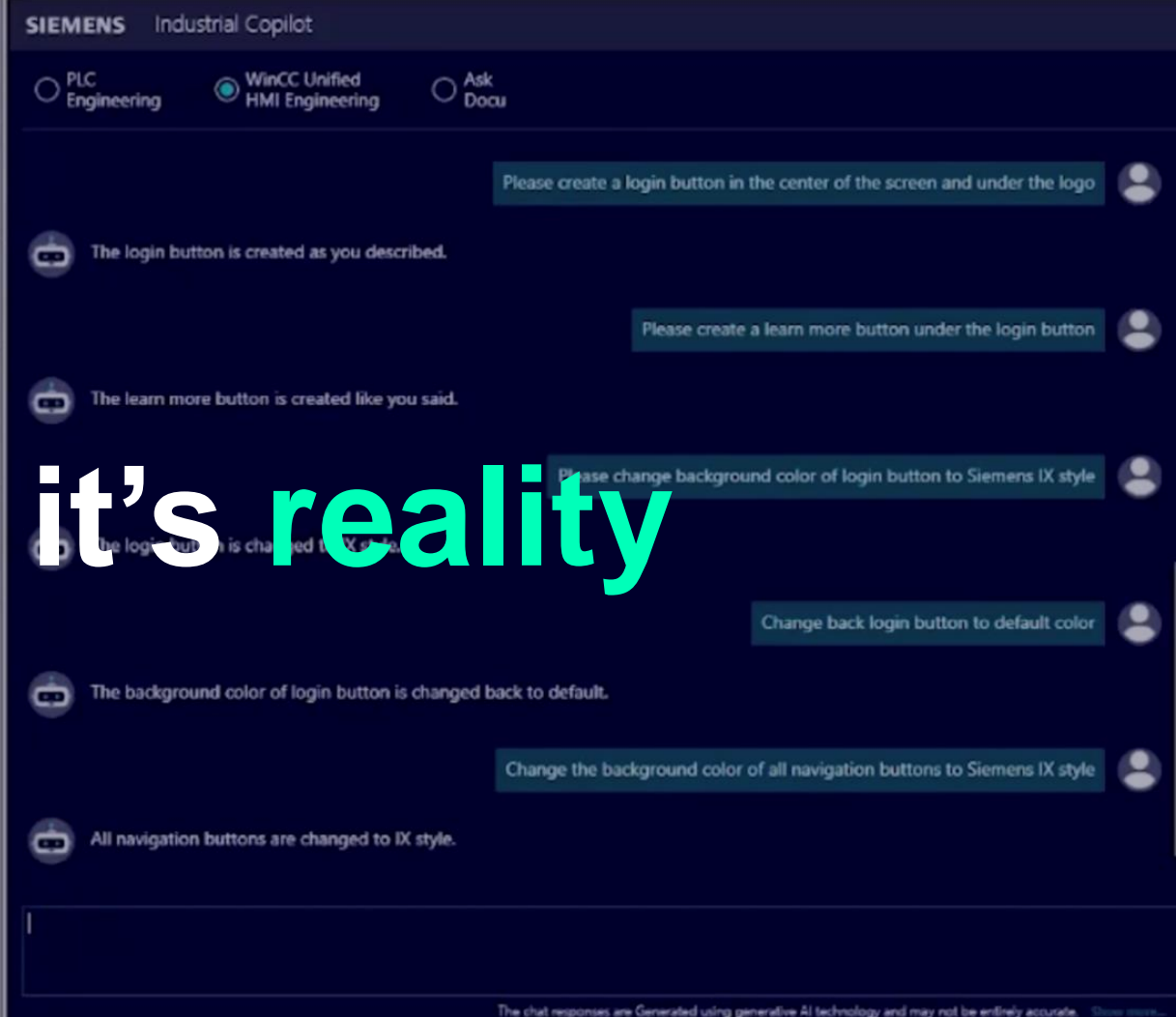
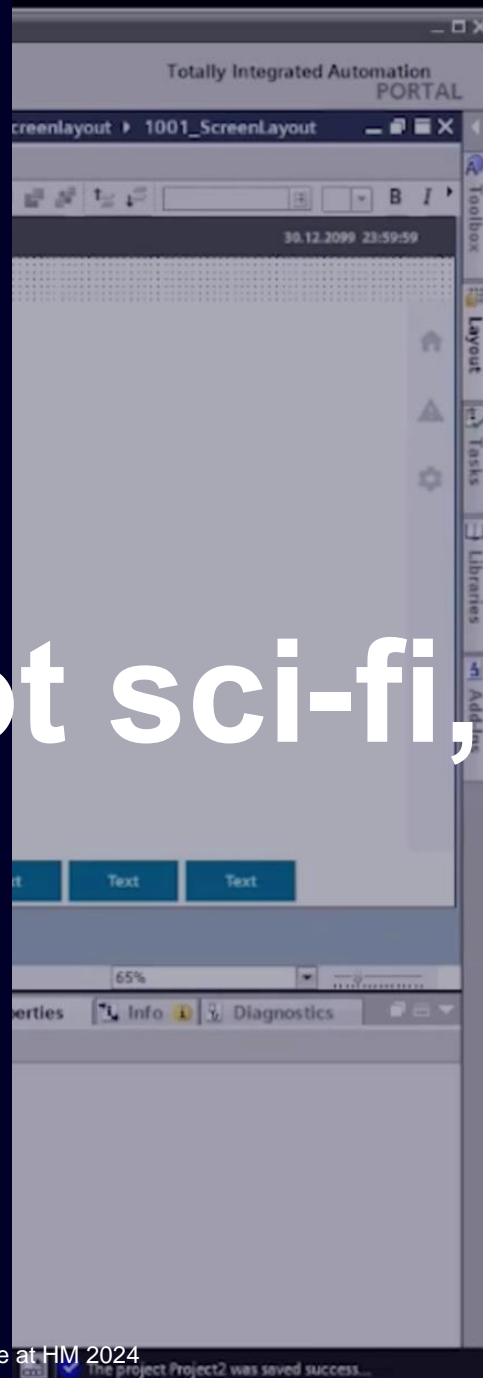
We are on a **journey**



It's not sci-fi, it's **reality**



It's not sci-fi, it's reality





Explore **Industrial AI**
& much more at our booth

Overview: Siemens highlight exhibits and presenters



Rainer Brehm
CEO Factory Automation

**Industrial AI -
supercharging
the digital and
sustainable
transformation**



Katharina Westrich
Head of Vertical
Management Semiconductor

**Semiconductors
end-to-end
showcase**



Meiko Krause
Head of Global Account
Management and Strategy
(Automotive Industries)

**The Sustainable
Digital
Enterprise for
Automotive**



Cedric Bardenhagen
Sustainability Manager
Motion Control

**Siemens
EcoTech – A new
standard for
transparency of
products**