The Industrial Metaverse:
Supercharging Industrial Efficiencies

2024 IEEE International Symposium on
the Emerging Metaverse (ISEMV)

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Industrial Metaverse — Hype or Hope?

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Industrial Metaverse

A user-centric virtual place to **collaborate, experience & interact** with the **comprehensive Digital Twin** where **engineering decisions** are made leveraging precise robust data
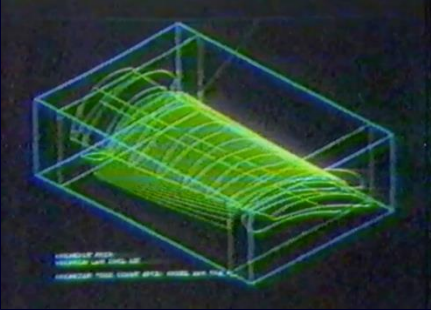
Real & Digital

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Industrial Metaverse
It is an evolution, not a revolution
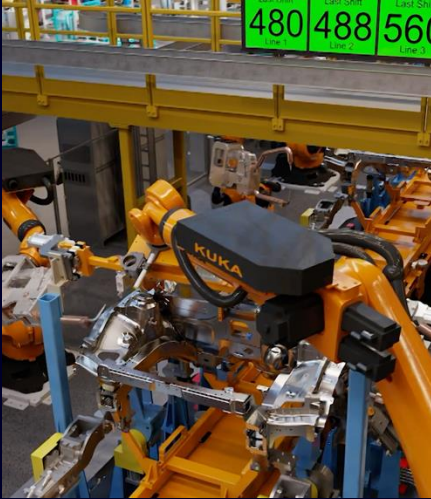

Model pioneers

CAx sunrise

PLM pervasion

Digital Twin era

Industrial Metaverse

~1985

~2000

~2015

~2023

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What do most people see?

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What do we see as "More real than real"?

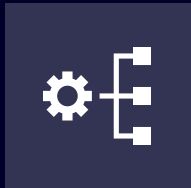
Environmental Data
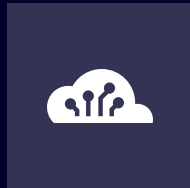
Energy market rates

Suppliers

Power/Energy

Humans

AGVs/Robots

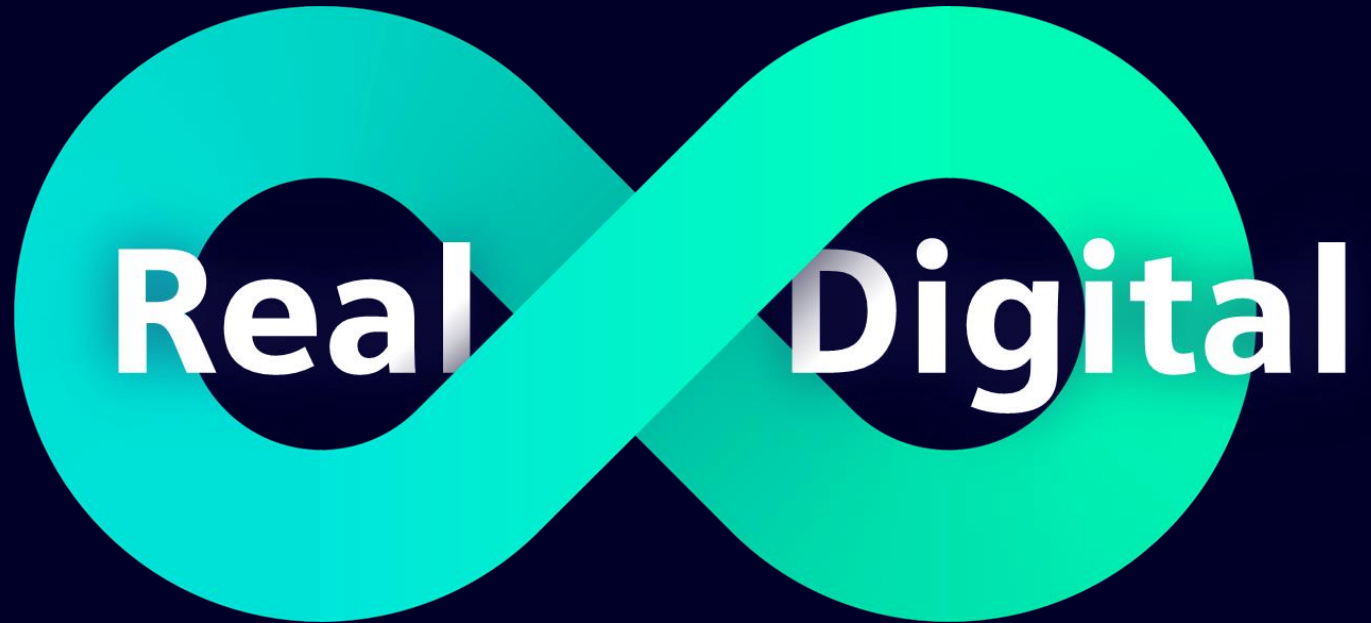As Designed, As Built, As Operated

Sensor Data

Cloud/Edge

OEE

Remaining useful life

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Combining the real and the digital worlds

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Siemens Xcelerator
The open digital business platform to deliver the Industrial Metaverse

A powerful **Ecosystem**

A curated **Portfolio** with
offerings from Siemens und Partners

Interoperable

Flexible

Open

A **Marketplace** to explore, educate,
exchange and transact

„as-a-Service"

Cybersecure

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First real examples
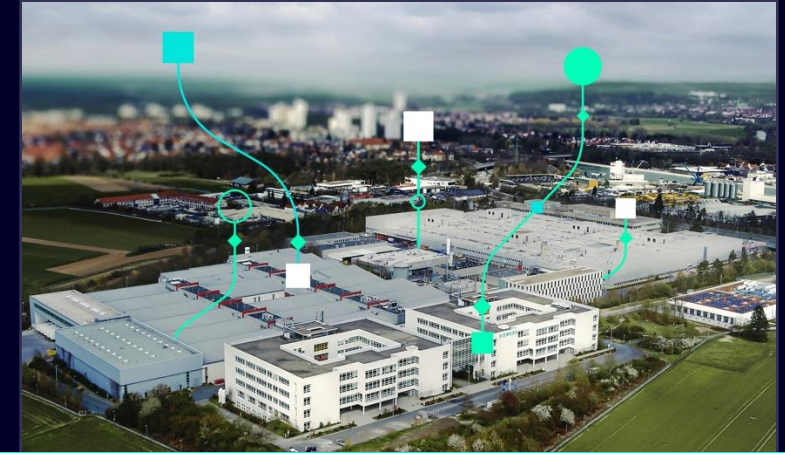## Siemens as Customer Zero

Nanjing
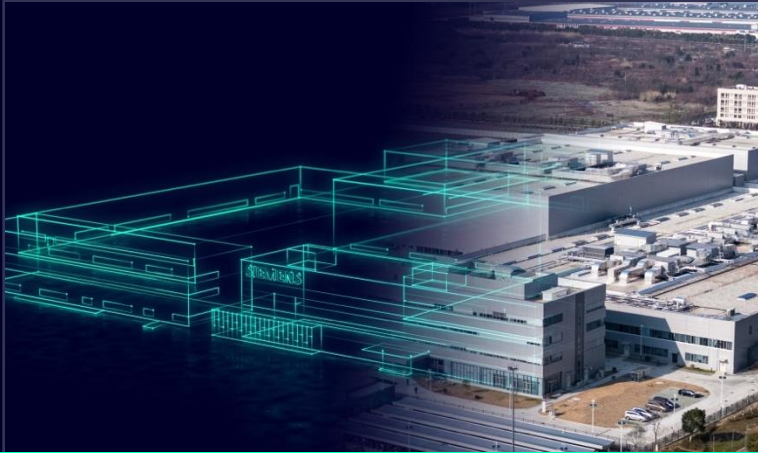
First digital native factory born from own digitalization concept

Siemensstadt

Digital twin ecosystem along the lifecycle of a sustainable and tech driven future city

Gerätewerk Erlangen

Blueprint factory for the industrial Metaverse

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Industrial Metaverse as enabler for sustainability

Design &
Engineering

Virtual Testing
& Validation

Production

Operations

Training

Save
up to
50%
material

Save
up to
40%
energy

Boost
up to
20%
productivity

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Collaboration with the City of Berlin – to make an entire city district carbon neutral

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Collaboration to guarantee train availability for more passenger capacity

HOPE — Industrial Metaverse

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Why not there yet?
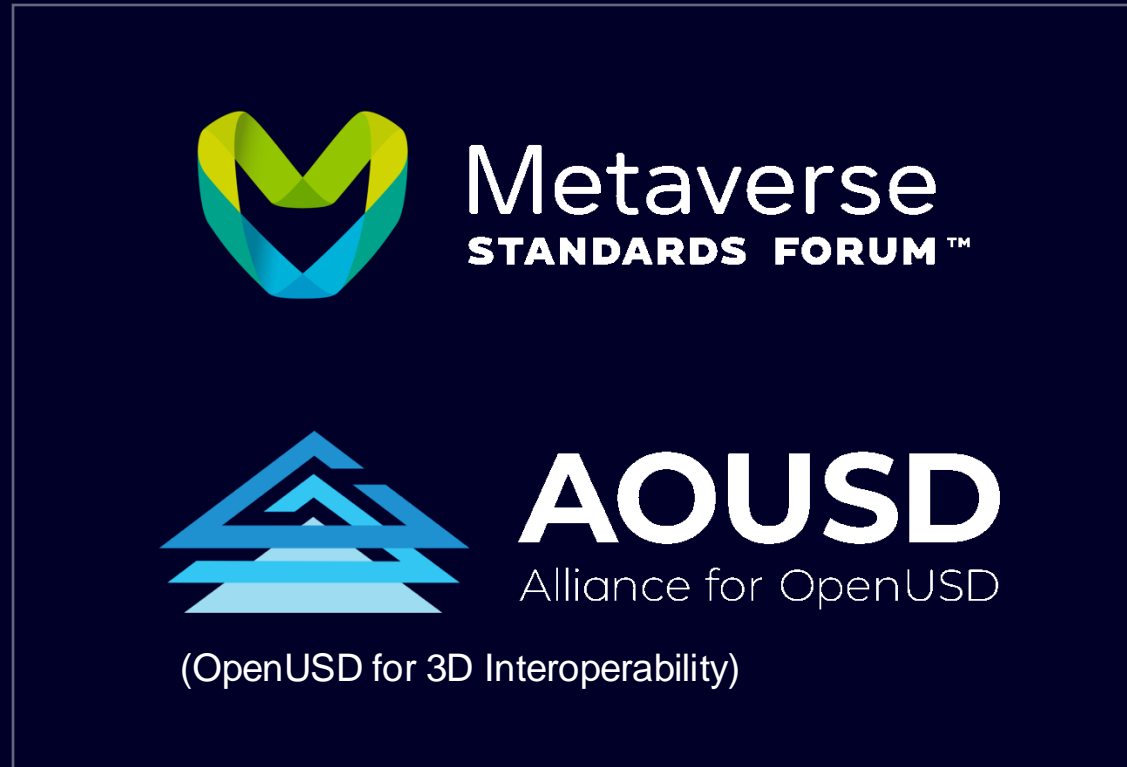## Combining the real and digital worlds is easier said than done

Lack of
connectivity

Lack of
interoperability

Lack of
skills

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Standardization and interoperability will supercharge the Industrial Metaverse

(OpenUSD for 3D Interoperability)

What can be the role for the IEEE here?

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Let's build the Industrial Metaverse **together**.

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