



# twinverse

## Industrial site management with 3D reality models

for more efficient decision-making, collaboration, and innovation while reducing costs and risks

Solution introduction



# PROBLEMS WE ARE SOLVING



Getting complete picture of industrial environments and processes is not easy

- Understanding complex sites requires physical visits and long experience
- Floorplan gives only a limited view and making a CAD model for old sites is expensive



Asset information is scattered in purpose-built systems not linked to real-world

- Context of the assets at the production facility is missing making understanding of dependencies difficult
- Maintenance and training processes are inefficient due to difficult access to relevant information



Current 3D tools are meant for designing, not for ongoing operations

- Complex functionality needed for designing requires CAD skills prohibiting non-expert use
- Hand-crafted models are conceptual and don't include environment

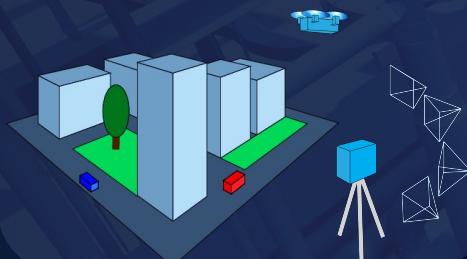
# SOLUTION

## DATA-ENRICHED SPATIAL AWARENESS BASED ON VIRTUALIZED ENVIRONMENT



# VALUE PROPOSITION

Real-world facilities, sites, machinery, equipment etc.



State-of-the-art  
3D reality model

Operational data  
and documents

Asset and process data, safety and quality instructions, training videos, PI diagrams etc.

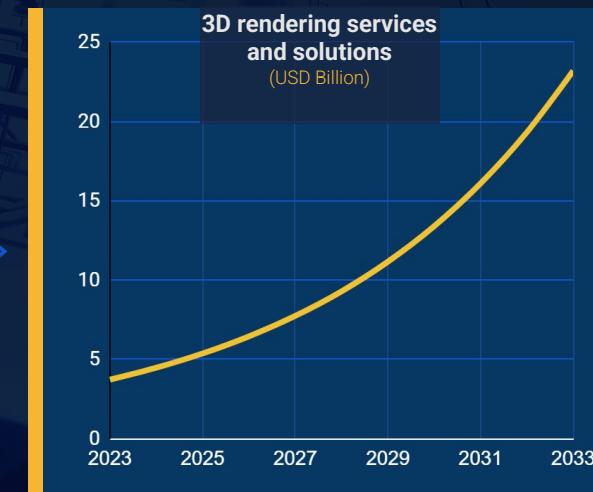
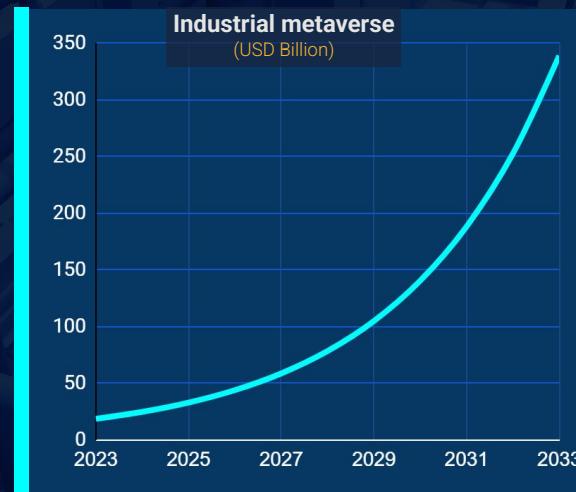
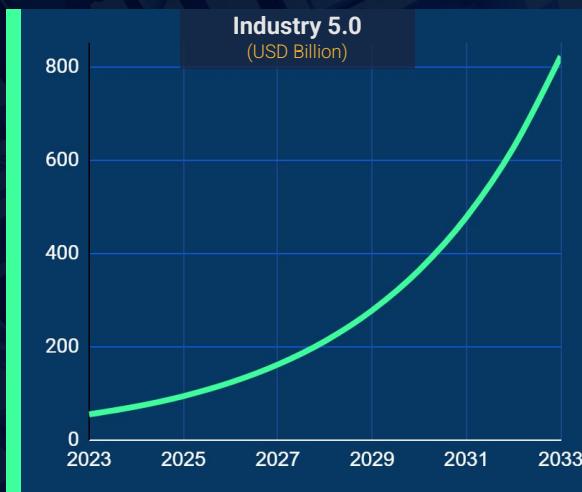


Twinverse  
collaborative  
3D web platform

More efficient use of the information related to the operational environment and processes

Reduced maintenance costs, minimized operational downtime, decreased travel expenses, improved error detection, enhanced training effectiveness, optimized construction, and reduced dispute resolution costs

# WHERE THE MARKET IS GOING



Industry 5.0 market

Industrial metaverse market

Twinverse's focus is on 3D rendering services and solutions

# COMPETITION IN WEB SERVICE SPACE

- ✓ Applies well
- ▬ Applies partially
- ✗ Does not apply

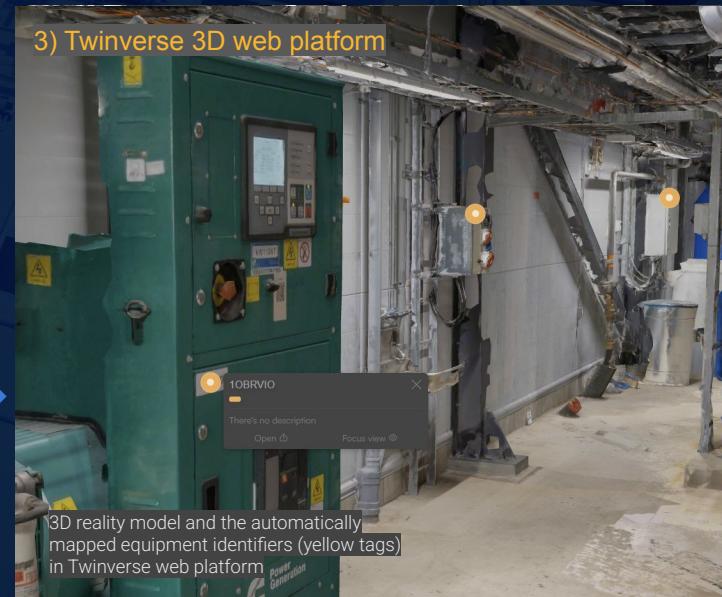


USE CASES

3D FEATURES	twinverse	Matterport	thinglink..	SAMP	PREVU3D	Cintoo	Process Genius
Full 3D model-based environment with freedom of movement	✓	✗	✗	✓	✓	✓	▬
Visually accurate virtual environment	✓	✓	✓	▬	✓	✓	✗
Dimensionally accurate virtual environment	✓	▬	✗	✓	✓	✓	✗
Focus in design and planning	▬	▬	✗	▬	✓	✓	▬
Focus in operations and maintenance	✓	▬	✗	✓	▬	▬	✓
Focus in training and presentation	✓	✓	✓	✓	▬	▬	✗
Simplicity of use	✓	✓	✓	▬	▬	▬	✓
Primary 3D data source	photos and laser scans (for seamless coverage)	360° images	360° images	laser scanning	laser scanning	laser scanning	handmade CAD models

# COMPETITIVE EDGE: AUTOMATED ASSET 3D MAPPING

- 1) Detect equipment identifiers from high-resolution photographic dataset using an image recognition AI model
- 2) Localize detected identifiers and map them in the model using 3D reconstructed image dataset
- 3) Connect data from other systems to the assets in the model using the mapped identifiers



## Benefits:

- a) Know real 3D locations for all assets in the industrial environment
- b) Link and view asset documentation and data
- c) See assets' assembly, interconnections, close-by objects and environment remotely

# COMPETITIVE EDGE: AUTOMATED 3D SCENE ANALYSIS

Segmentation of the 3D scene into individual assets for better and easier interaction and data integration

Separation of individual objects in 3D reality model using AI to show the structure of the assets

Other 2D and 3D materials can be added for different views



Benefits:

- Interconnect Piping and Instrumentation Diagram (P&ID) with physical assets
- Easy factory layout pre-design with existing infra

# CUSTOMERS

Existing



Metsä

SSAB

||PORT OF  
HELSINKI||



Adven

**FINGRID**

**BOLIDEN** 100  
1924-2024

Interested

**BASF**

We create chemistry

**elisa**

**NESTE**

**fortum**

**MERUS POWER**

**TAMPEREEN ENERGIA**

**CREATIVE TECHNOLOGY**

**nokian  
TYRES**

**BOREALIS**

**uni  
per**

**NORILSK NICKEL**

**Nordkalk**

**OID**

**WÄRTSILÄ**

**HELEN**  
**kemira**

**DIGITA**

**UPM**

**HELSINKI  
SHIPYARD**

**HELSINGIN MULLY**  
• YHDEKÄSTÄ PÄÄMPPÄÄ JOKAISTEEN PÄÄMÄÄ •  
• VUODESTA 1934 •

**twinverse**

# COMMENTS FROM CUSTOMERS

Research Director at  
Valmet

Twinverse's expertise in modeling reality and utilizing the models is of a high level. The platform is well suited for our Digital Twin in Action project. For us the interesting use cases are: remote support, object recognition, and data integration automation with OCR tagging.

Manager, Asset  
Management at Fortum

Routes and models are nicely visualized in the Twinverse system. Annotation of maintenance data, process status and CAD models is important for us. Data can be accessed easily when all equipment are annotated with an identifier that can be used to get data from other systems.

SVP, Global Manufacturing  
at Kemira

The most important added value of the service is centralized access to scattered documentation from one place.

Safety Manager at Metsä  
Wood

The model is useful in preparing for annual maintenance shutdowns. The instructions are also useful for weekly maintenance. Guidance on the active force range of safety devices and SSS switches and how to reset safety devices is important.

Development Manager at  
Port of Helsinki

We don't need to use our security cams anymore to show places and thus reveal our security infra to outsiders. We can show details and assets, such as roads, lamps and other infrastructure, to our own staff and port operators in the office without going to the port area.



# twinverse

Improving your operations with 3D and data