

DIMECC

NECOVERSE

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DIMECC Ltd

**OECD Council Working Party on
Shipbuilding**

Workshop for Labour issues

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Social communication

Possibility to talk, see and communicate with people in a way, that current video-conference platforms do not support.

Hands-on-training

Certified training in shipyard and renewal of existing competence cards e.g. firework card, forklift card and occupational safety card.

Real-life integration

The decisions and actions made in metaverse will take place in the real world i.e. using a machine, maneuvering equipment, and remote operations.

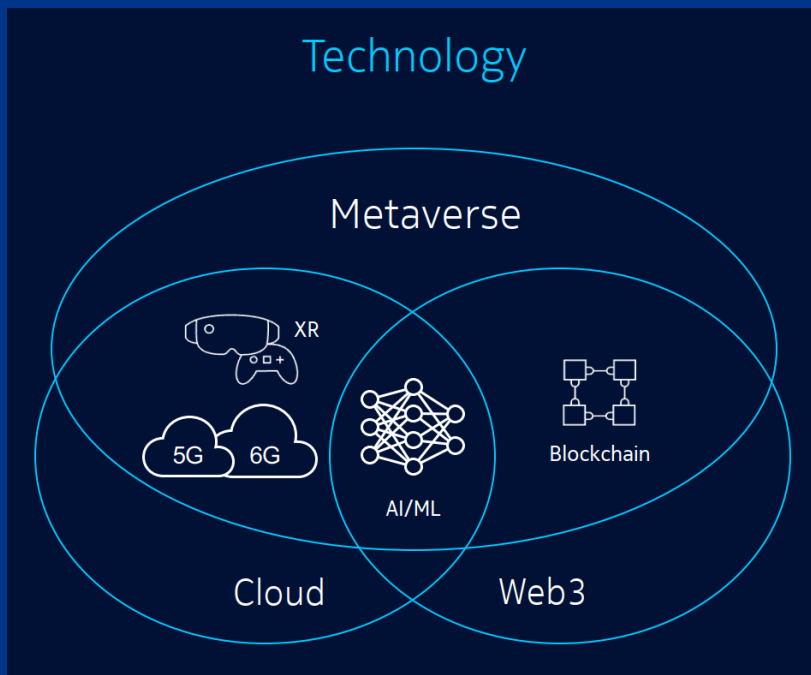
What is Metaverse?

The metaverse, a combination of spatial computing and the Internet, aims to create 3D virtual worlds and incorporate several key emerging technologies such as the blockchain, cryptocurrencies, AI, cloud and edge computing, among many others.

Virtual reality (VR) and augmented reality (AR) have the potential to completely transform how we work and collaborate.

Early applications are already in place, from remote AR assistants for field workers to virtual events in VR worlds.

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Vision

Necoverse project develops new immersive and authentic collaborative tools to shipyard which improves productivity, safety and energy efficiency in training, commissioning, design, operations, and maintenance.

Mission

Necoverse project delivers metaverse environments with proven metrics of efficiency and with up-to-date knowledge how to redesign work routines utilizing latest immersive and collaborative digital tools.

Objective

The creation and utilization of metaverse environment in shipbuilding and industrial content.

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Facts

Duration 2 years

6 Industrial partners

3 Research partners

Budget 5,5 M€

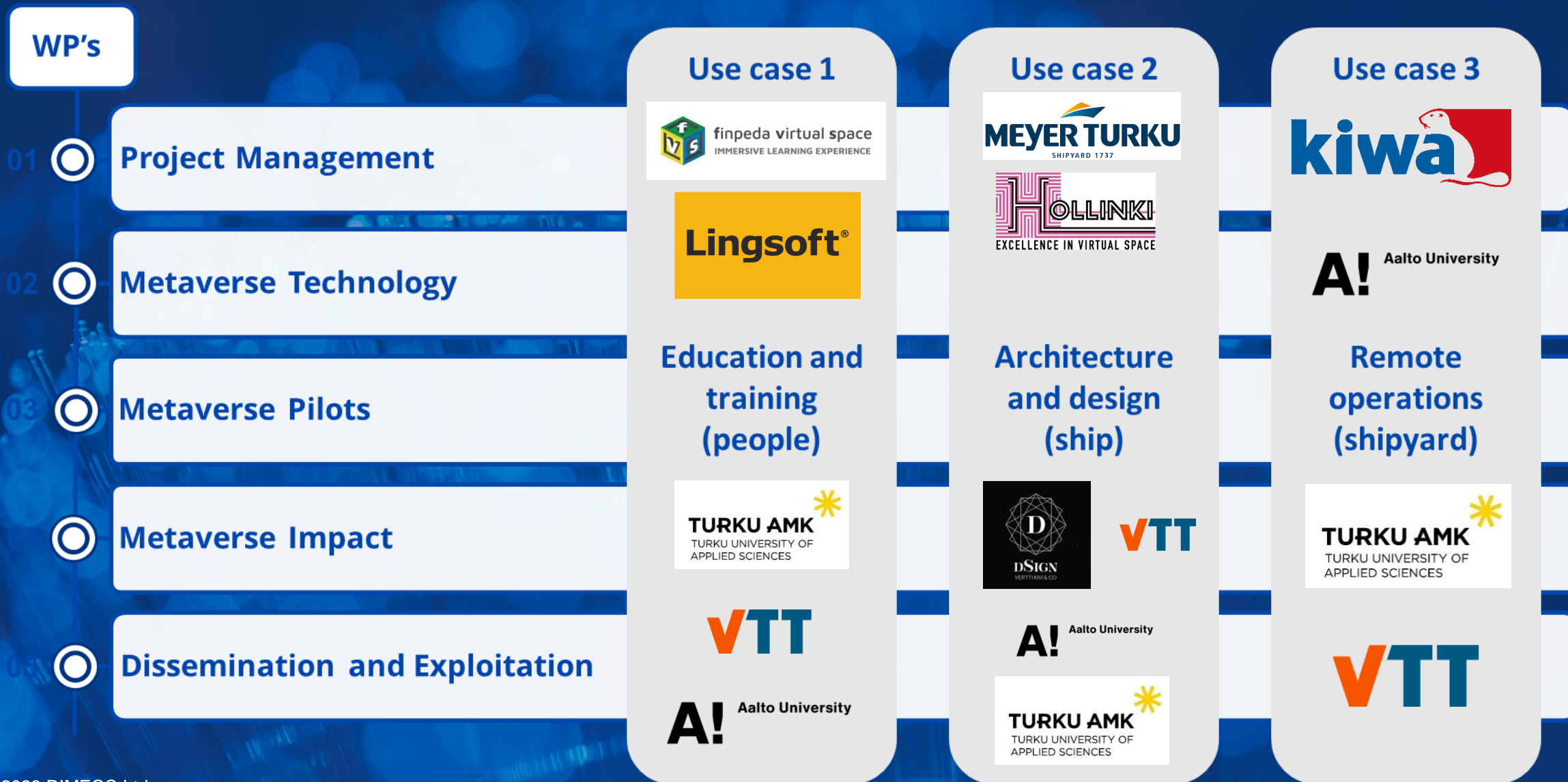
BUSINESS
FINLAND



DSIGN
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Project structure



Benefits for Shipyard

1. Shipbuilding revisions in metaverse

- Comparing point cloud data with technical drawings and 3D-model (e.g. Cadmatic, Aveva)
- The use of metaverse enables participants to be physically present using XR or to be remotely present using VR
- This way SC, as a turnkey contractor, could decrease the time and number of revisions while communicating immersively with the owner (e.g., RCG), architects (e.g., dSign, Kudos Dsign, Hollinki), classification society (e.g., DNV), Meyer design department, and equipment / system manufacturers (e.g., SeaKing)

2. Employee training in metaverse

- No physical classrooms, teachers or requirements to be present
- Operation of expensive equipment in a challenging environment
- Collaborative hull block building and outfitting

3. Remote use and remote monitoring of devices

- Metaverse enabling virtual presence of specialists remotely during inspection or commissioning

Use Case 1

Education and training

The use of metaverse technologies in education and training can provide several benefits, including:

- Improved retention and recall of information: Immersive and interactive training experiences can facilitate the acquisition of new knowledge and skills and can improve the retention and recall of this information over time.
- Enhanced collaboration and communication: The metaverse can enable learners to interact and collaborate with each other and with instructors in real-time, fostering a sense of community and enabling more effective learning.
- Increased convenience and flexibility: The metaverse can provide learners with the ability to access training content from any location and on any device, enabling flexible and convenient learning.

Use Case 1

Education and training

The research questions of education and training use case are:

How much time can be saved by training in the metaverse?

How much skills can be improved?

How much energy and CO2 emissions can be saved when training remotely?

How to identify whether someone has achieved the required 3D visualization abilities?

Use Case 2

Architecture and design

The use of metaverse technologies in ship architecture and design can provide several benefits, including:

- Improved accuracy and realism of simulations: AI-enhanced simulations can improve the accuracy and realism of simulations, enabling designers and engineers to assess the performance and behavior of ship systems and structures with greater confidence.
- Enhanced communication and collaboration: The metaverse can enable designers and engineers to interact and collaborate with each other and with other stakeholders in real-time, fostering a sense of community and enabling more effective decision-making.
- Increased efficiency and productivity: Collaborative design environments can reduce the need for physical meetings and enable more efficient and productive workflows, saving time and reducing costs

Use Case 2

Architecture and design

The research questions of architecture and design use case are:

How much time can be saved in the metaverse-based design process?

How much change management and version control can be improved by increasing accuracy and minimizing the need for reviews?

What could be the guidelines to minimize these needs for reviews?

How much energy can be saved when enabling reviews and decision-making remotely?

How much costs can be saved by integrating the design process with revisions to the real-life ship construction process?

Use Case 3

Remote operations

The use of metaverse technologies in remote operation can provide several benefits, including:

- Improved efficiency and productivity: Remote operation can enable operators to monitor and control systems and processes from a distance, reducing the need for physical presence and enabling more efficient and productive workflows.
- Enhanced communication and collaboration: The metaverse can enable operators to interact and collaborate with each other and with other stakeholders in real-time, fostering a sense of community and enabling more effective decision-making.
- Increased safety and convenience: Remote operation can reduce the need for operators to be physically present in potentially hazardous or inconvenient environments, enhancing safety and convenience.

Use Case 3

Remote operations

The research question of remote operations use case are:

What's the impact of remote operation for the industrial partners?

How does the application meet the requirements of the different roles in the organization?

- The roles in question are field operator, production manager, and maintenance worker.

How to display effective information to the different kinds of end users?

Industrial Metaverse

Improving
Productivity and Safety