Novel technologies to boost the shipyard industry

AR/VR tools in Mari4_Yard

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ORGANIZED BY THE EU HORIZON 2020 PROJECTS:

FIBRE4YARDS SHIPYARD FOR THE FUTURE

RESURGAM

MARI4YARD MARI4ALLIANCE

30th and 31st May 2023, RTD Innovation Dock, Rotterdam

These projects have received funding from the European Union's Horizon 2020 research and innovation programme under grant agreements n° 101006860 (FIBRE4YARDS), n° 101007005 (RESURGAM), and n° 101006798 (Mari4_YARD).

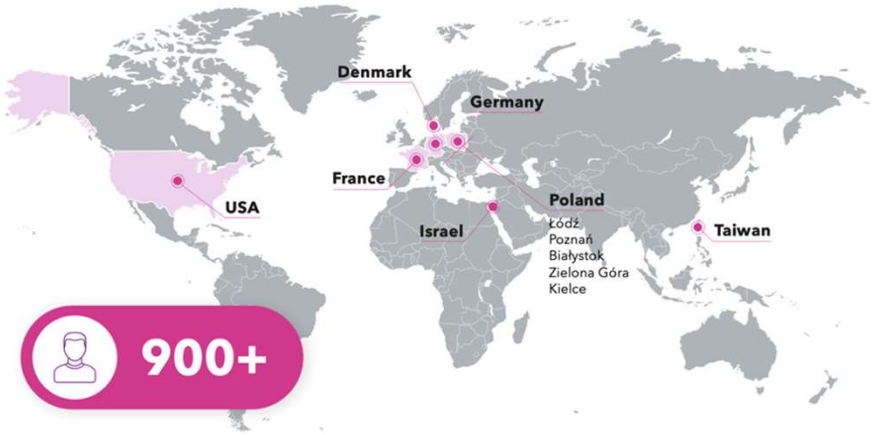
About TTPSC

We strongly hold the belief that **change is a constant factor** in our modern era, and our world is continuously evolving. As a result, we continuously strive to grow and expand our market presence to **better serve our customers at the local level**.

23 offices on 3 continents

Projects in 30 countries

100% Polish Private Capital



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- psc_ TRANSITION ASIA TECHNOLOGIES
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- psc_ TRANSITION USA TECHNOLOGIES
- algomine

TTPSC in EU/PL grants

FLUENTLY

Fluently leverages the latest advancements in AI-driven decision-making process to achieve true social collaboration between humans and machines while matching extremely dynamic manufacturing contexts.

Connected Worker

A system increasing the efficiency of remote communication and collaboration, thanks to hardware-agnostic AR technology based on a real-time spatial mapping and tracking powered by edge/cloud computing and 3G/4G/5G networks.

INEDIT

Open Innovation Ecosystems for Do It Together process

PENELOPE

Closed-loop digital pipeline for a flexible and modular manufacturing of large components

Mari4_YARD

User-centric solutions for a flexible and modular manufacturing in small and medium-sized shipyards

PIONEER

OPEN INNOVATION PLATFORM FOR OPTIMISING PRODUCTION SYSTEMS BY COMBINING PRODUCT DEVELOPMENT, VIRTUAL ENGINEERING WORKFLOWS AND PRODUCTION DATA

IMPROVE

Innovative Modeling Approaches for Production Systems to raise validatable efficiency

Real World Engine

Development of interactive methods for spatial mapping and modelling for rapid design of vast digital worlds in mixed reality

Purpose of AR/VR tools

TTPSC mission is to amplify workers' senses without sacrificing their safety to avoid on-the-job mistakes

AR/VR tools

MARI4YARD
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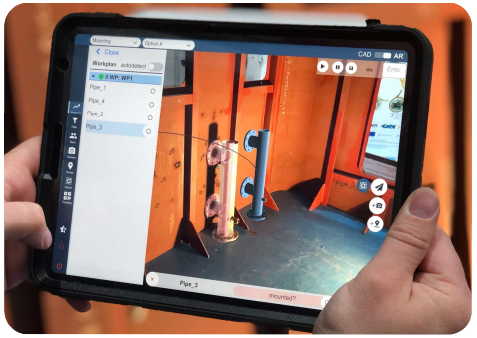
Tablet based



TUHH
Technische Universität Hamburg

Head-mounted

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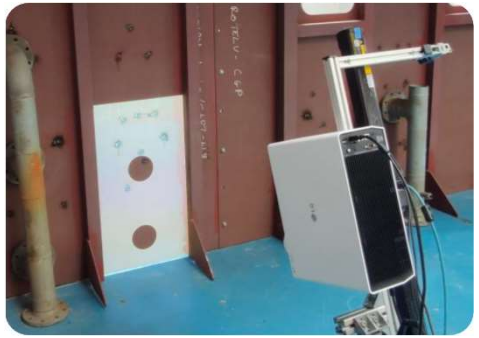
Projection based



INESCTEC

Head-mounted AR

Reality 1st

Digital 1st

Reality 1st

MARI4YARD
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- 100% hands-free
  20 languages
- Active Noise Cancellation
  up to 100 dB
- PPE compatible
- 8 hours battery life

The black button on the front of the device opposite of the camera is the power button.

Reality 1st

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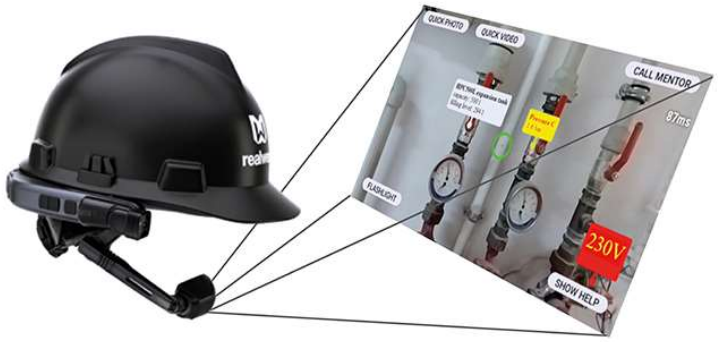
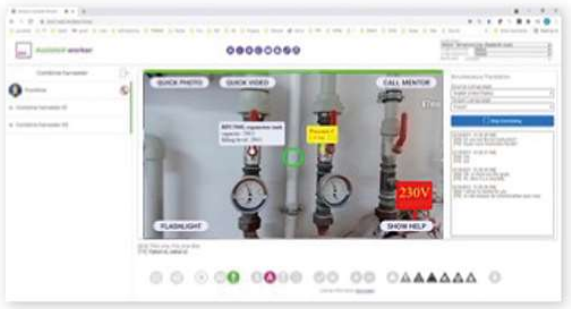
- Spatial work instructions delivered to industrial headsets
- Voice-controlled interaction for hands-free experience
- 3D digital workflow
- Real-time supervision, collaboration, troubleshooting



SkillWorx

Patent-pending remote SLAM



Reality 1st at Brodo Split

- This is a monocular device without native AR capabilities
- Remote SLAM from SkillWorx anchors the overlays persistently on physical equipment
- Content is divided in steps
- Content is stored and reusable as a 3D map with overlays (text, documents, videos, photos, alerts, etc.)

Reality 1st at Brodo Split

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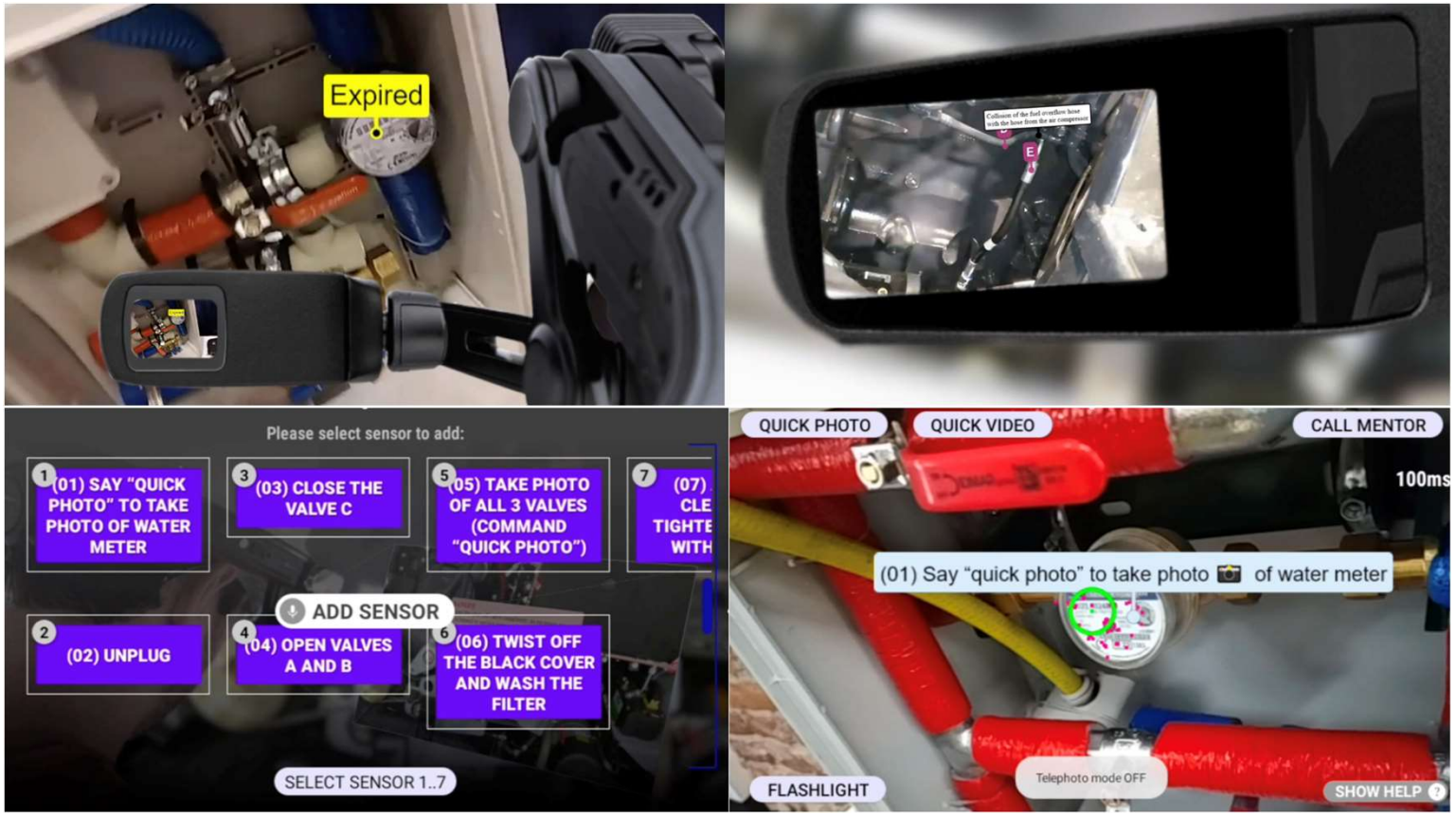
- Real-time audio/video connection enriched with AR overlays for remote handover, acceptance, supervision, control, troubleshooting
- Remote participants use web browser (desktop/mobile)
- Both participants can anchor overlays
- Content is stored and reusable as a 3D map with overlays and as a video with overlays

Reality 1st, more samples



Reality 1st, end-2-end

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1 Industrial Process Digitised
2 Training curated & published
3 Worker picks the training content
4 Optional Space tracking (SLAM)
5 Training content displayed as step-by-step sequence
6 Multi-media resource access (pictures, movies, drawings etc.)
7 Optional Over the shoulder Remote Help
8 Time/Task Capture (for Compliance or Knowledge Capturing)

DIGITAL THREAD ORCHESTRATOR

content & data sources: PLM CAD MES ERP CMMS HR etc

Digital 1st

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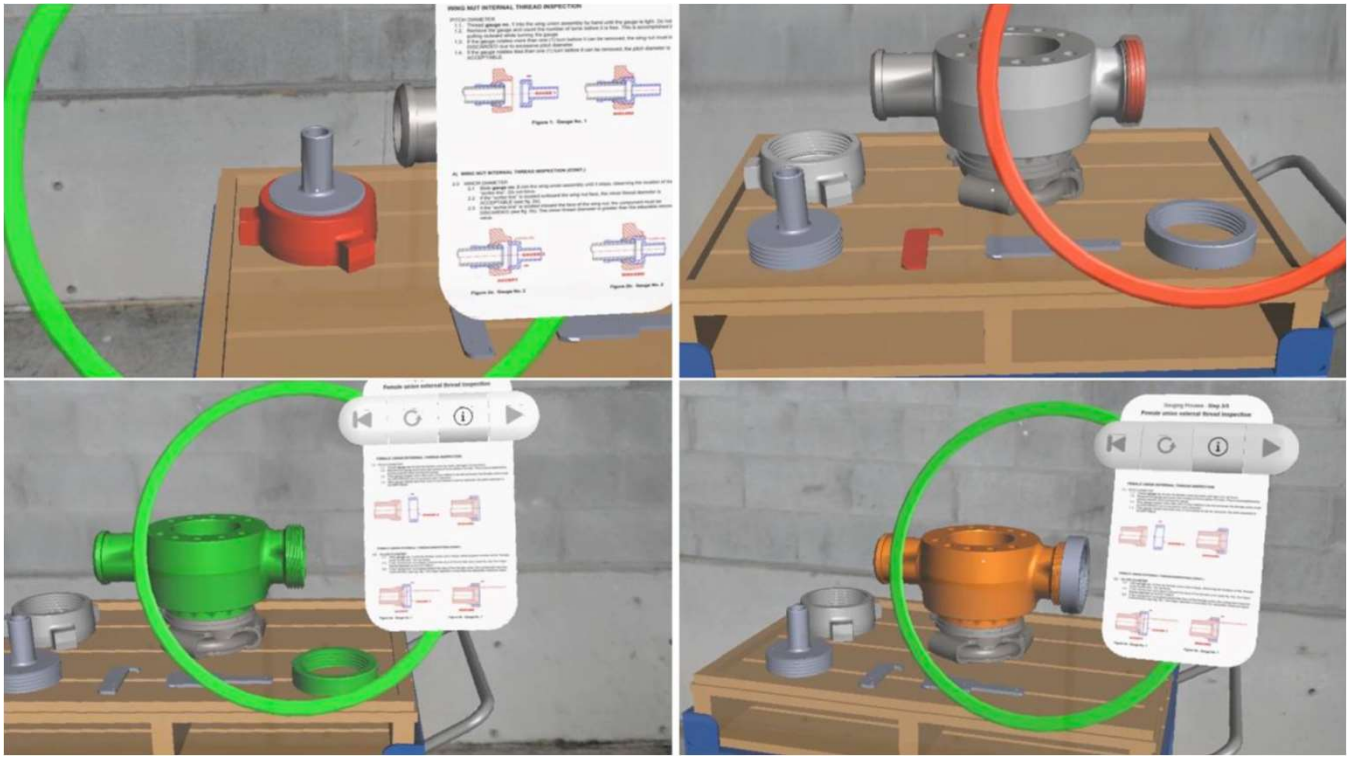
- High-fidelity 3D content
- Natural-scale experience
- Animations interactions
- Quick (~30min) experience



Digital 1st at Brodo Split

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- Collaborative
- Visual
- Multiplayer
- Natural-scale
- Mixing with Reality

Reality 1st vs Digital 1st

- Lightweight
- On-the-job, long-time use
- No eye-strain
- No neck-pain
- Audio interaction over gestures
- Good for noisy, harsh environment
- 2D & "2,5D" experience
- Remote AR as a service
- Much longer battery life

- More bulky
- In controlled environment, short-time use
- May cause eye-fatigue
- May cause neck-pain
- Gestures over audio
- Not a perfect fit for noisy, harsh environment
- 3D interactive, animated experience
- AR on device
- Rather short battery life

THANKS
FOR YOUR ATTENTION

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