

20 March 2026

# Pilot 5 Webinar

Enhancing Technician Training & Remote Support with XR & AI

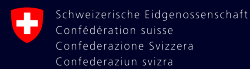
# XR5.0

Human-Centric AI-Enabled  
Extended Reality Applications  
for the Industry 5.0 Era



Funded by  
the European Union

Project funded by



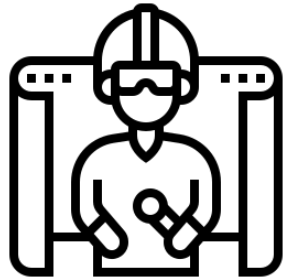
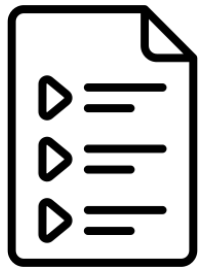
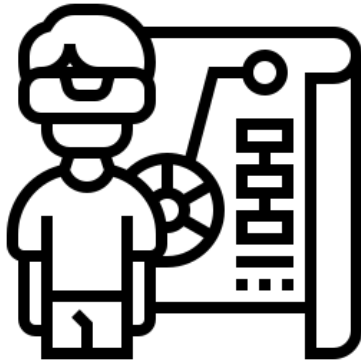
Swiss Confederation

Federal Department of Economic Affairs,  
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- Overview of XR5.0 project
- Focus on Pilot 5 demonstration
- XR & AI technologies for Industry 5.0
- Agenda overview





## What is Pilot 5 about?

- XR training for edge device assembly
- AI-powered support for repair tasks
- Personalized guidance for technicians
- Improved safety, efficiency & performance

# Training Challenges

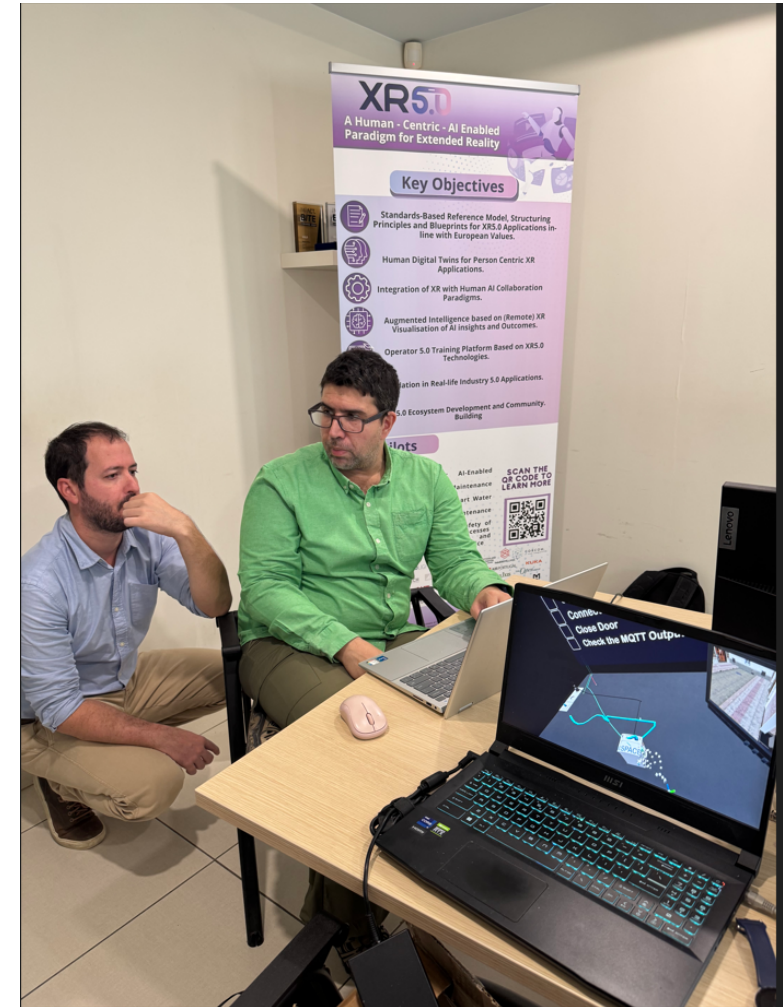
## Industrial Training Limitations

- Complex assembly procedures
- Different technician skill levels
- High training time & cost

	User Story (Requirement) Description	Expected KPIs	Achieved KPIs
<b>Use Case #5.1</b>	Create personalized training workflows using AI to enhance efficiency and engagement	Assembly Time Reduction>20% Repair Time Reduction>20% Increased Engagement>50% Cost Reduction>20%	N/A
	Need for accessible, cloud-based training materials to support ongoing learning and quick access.	Assembly Time Reduction>20% Repair Time Reduction>20% Cost Reduction>20%	N/A
	Technicians need instructions to quickly perform device commissioning	Assembly Time Reduction>20% Repair Time Reduction>20% Cost Reduction>20%	N/A

## Immersive & Personalized Learning

- VR-based training scenarios
- Interactive 3D device visualization
- Realistic simulated environment
- Hands-on learning without risk



## Adaptive Training Workflows

- Skill-level based scenarios
- Beginner → Step-by-step guidance
- Intermediate → Condensed workflows
- Real-time feedback & performance tracking



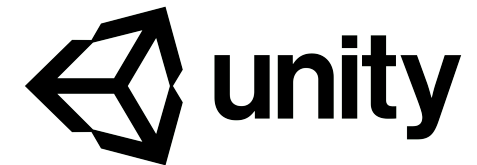
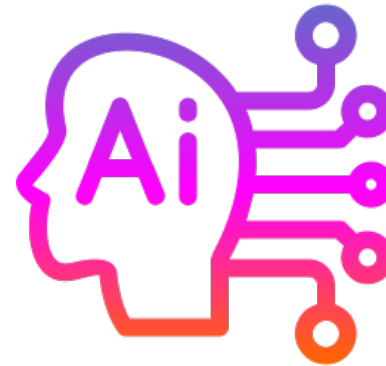
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## XR & AI Ecosystem

- Unity-based XR platform
- Meta Quest VR devices
- Human Digital Twin models
- AI-generated adaptive workflows

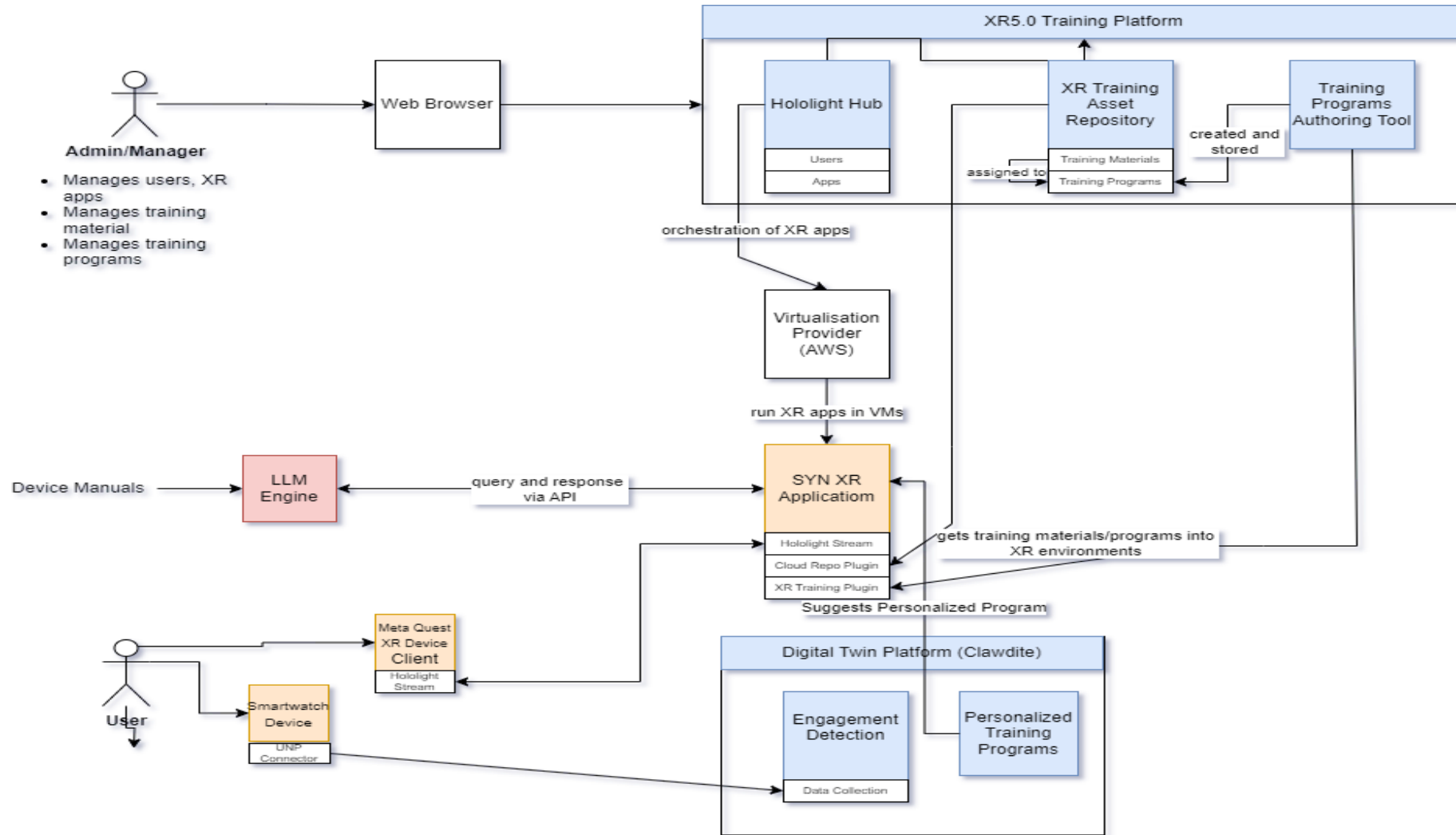


## Key Benefits

### Training Impact

- Faster skill acquisition
- Reduced assembly errors
- Improved safety conditions
- Higher technician engagement





# AI-Powered AR Support for Real-Time Edge Device Repairs

## Purpose :

To showcase Extended Reality (XR) technologies specifically designed to train and assist the workers in the assembly, deployment, and maintenance of edge devices.

- SPACE develops a bespoke agent for these devices, which connects to the Guardian PSIM platform for integrated surveillance rule-based incident response (e.g., triggering alarms, locking doors and safes, lighting control, etc.).
- Such devices have been installed and operate in several enterprise customers in industrial domain (in the banking sector for the ATM rolling shutter to prevent theft and violation)
- demonstrate the value and effectiveness of providing personalized instructional content that caters to varying skill levels of the workforce, particularly targeting beginners and intermediate-level workers.



## Key Components:

### Diagnostic and Troubleshooting Tools:

Real-time access to device diagnostics and sensor data within the XR environment assists

in the quick identification of issues.

**Interactive Troubleshooting Guides:** Access to comprehensive, interactive repair manuals and decision trees tailored to specific fault scenarios.

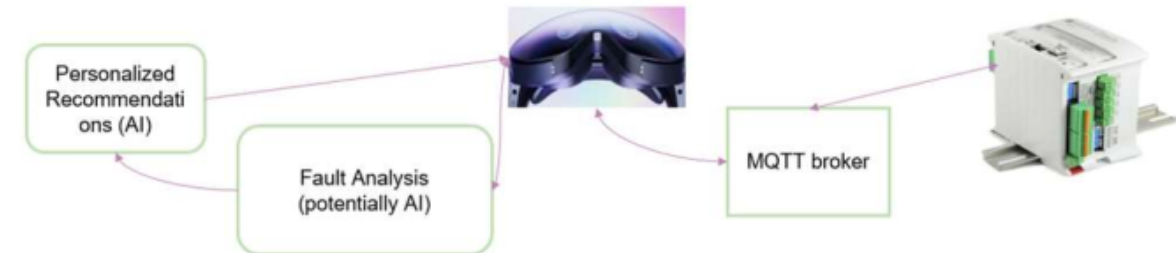
**AI-Powered Fault Detection:** Utilization of AI models to predict and identify common issues, providing proactive recommendations to technicians.

### Real-Time AR-Based Remote Assistance

- **Live Support Sessions:** Technicians can connect with remote experts through AR interfaces, receiving step-by-step guidance during repair tasks .
- **Visual Annotations:** Experts can overlay visual instructions directly onto the technician's field of view, facilitating precise and clear guidance.
- **Bidirectional Communication:** Seamless audio and video communication channels enable effective collaboration and immediate problem resolution.

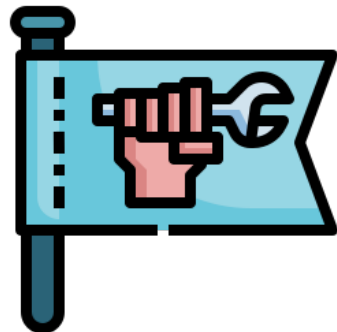
## High level architecture

- Field data transmitted via an MQTT broker from the edge device to the XR headset, enabling real-time interaction.
- Faults or anomalies detected during operation are analyzed, which then activate tailored guidance processes.
- include personalized recommendations generated through Explainable and Generative AI, visualized within the XR environment.



## Repair & Troubleshooting Complexity

- Multiple device configurations
- Fault diagnosis difficulties
- Need for expert assistance
- Downtime & operational cost



## On-site XR Guidance

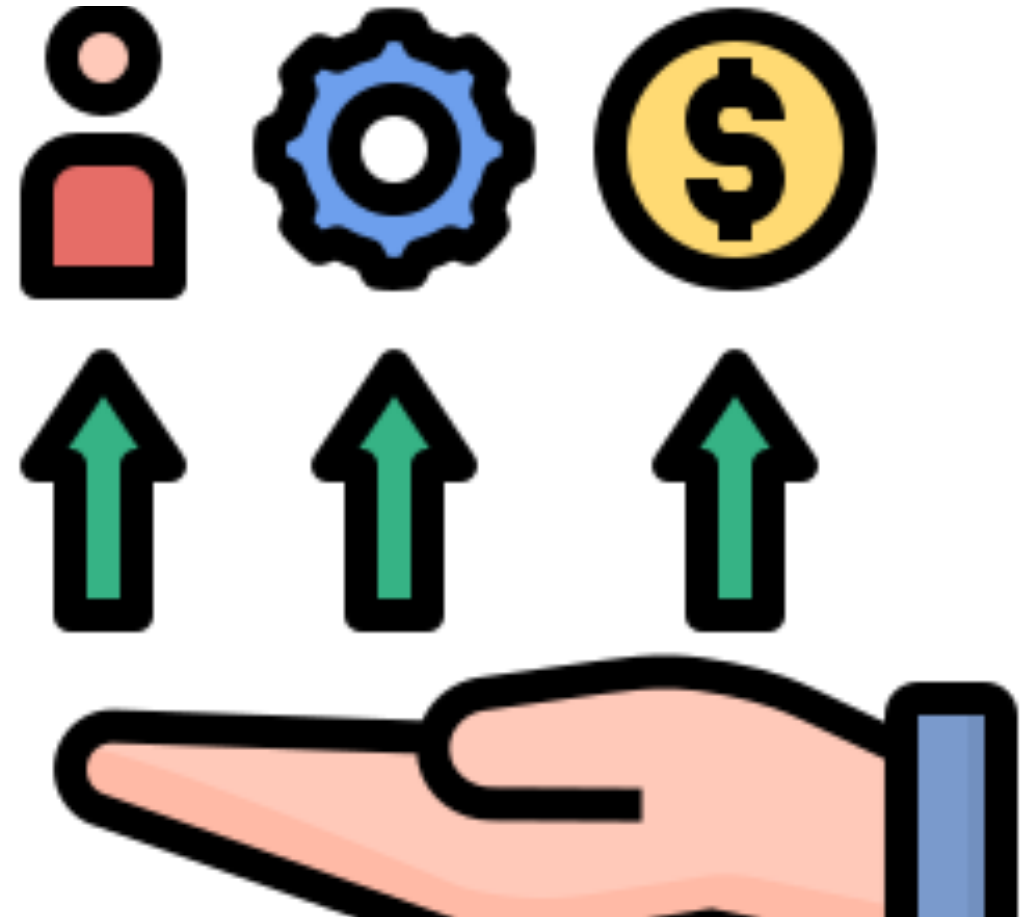
- AR-based visual instructions
- Step-by-step repair overlays
- Real-time remote expert support
- Hands-free operation



## Operational Benefits

### Field Support Impact

- Reduced repair time
- Lower operational costs
  - Minimized downtime
- Increased workforce autonomy



# Live Audience Survey & Open Discussion



# XR5.0

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for the Industry 5.0 Era

## Thank You!

[www.xr50.eu](http://www.xr50.eu)



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