INDUX-R

https://indux-r.eu/

OVERVIEW

INDUX-R envisions a human-centric **XR ecosystem** that will transform European industrial sectors by empowering **humans** and creating **innovative XR products** and services of significant added value. It targets concrete scientific breakthroughs that will be applied in use cases driven from real-life needs while having the potential to be replicated in several other applications.

These breakthroughs are focused on state-of-the-art **XR technologies**, for digitization and creation of XR assets, realistic animation, light-field HMDs, XR media streaming and egocentric perception.

OBJECTIVES

1
Create a digitization toolkit for the low cost yet high-fidelity generation of virtual environments developing complementary 3D reconstruction and neural methodologies

2
Create avatars and digital representations of humans and objects that can realistically model and animate physical properties, motion and deformation phenomena

3
Build an integrated, secure and trustworthy IoT network of XR devices, sensors and actuators covering visual, auditory and haptic perception that offers an immersive and multimodal user experience

4
Validate the envisioned technologies in innovative, human-centric XR applications demonstrating the added value of the proposed solution and paving the way towards its commercialization

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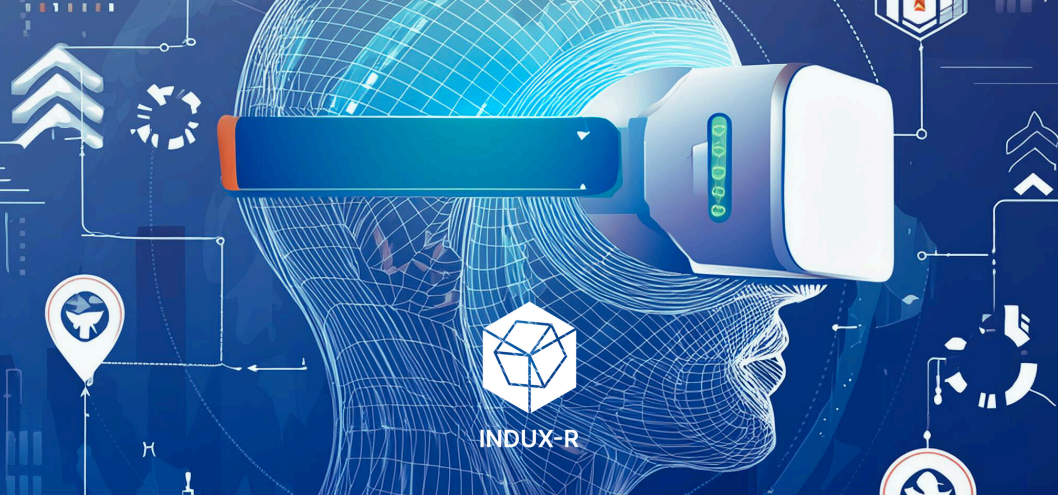
CERTH-Greece, FORTH-Greece, CWI-Netherlands, TUM-Germany, UAB-Spain, EUT-Spain, FINT-Cyprus, NOVA-Greece, ORamaVR-Switzerland, INOVA-Portugal, RINA-Italy, IDECO-Spain, CREAL-Switzerland, INVENTICS-Greece, UNIGE-Switzerland, HUG-Geneva, EKTACOM-France, AdI-Italy, FSU-Germany

USE CASES

LIVEMEDIAXR OMNICONFERENCES

Novel XR solutions in human full body capture, tracking and localization facilitating the seamless interaction between physical and remote attendees in hybrid conferences

X-RAY VISION FOR INDUSTRY 4.0

Industrial "X-ray" vision, sensor data integration and predictive maintenance towards advancing industrial productivity and improving workspace safety

VIRTUAL MEDICAL TRAINING

Medical training in immersive & dynamic multi-user VR operating room - Embodied Virtual AI assistant - NERF-reconstructed 3D user avatars - Realtime surgical interactions (cut, tear, suture) on deformable soft body tissues - Enabling trainees learn faster, sharpen and retain surgical skills

4D RECONSTRUCTION FOR CULTURAL TOURISM

3D reconstruction and style transfer techniques allowing realistic 4D representation of cities via spatio-temporal Digital Twins for wandering in the past and present of historical buildings

NOMADE CARS SPORTS IMMERSION

Integration of heterogenous sensors such as haptic sensors and 6DoF motion simulation platform and development of low latency streaming protocols enabling fully immersive experiences for remote audiences in motorsports

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