

3rd party identity card

Project acronym/name	MR@REAM
Logo (if any)	 <p>Remote Earthquake Area Management through real-time immersive MR streaming to monitor and guide first responders' field operations</p>
Organisation name(s)	Crisis Med NKUA, Academia, Greece https://crisis.med.uoa.gr/ Pi P.C., SME, Greece https://pi-tech.gr/

Objective, goal, use case

The MR@REAM project aimed to enhance emergency response in earthquake scenarios by enabling remote experts to guide first responders through immersive Mixed Reality. The goal was to create a reliable, real-time communication pipeline to support triage and treatment decisions under pressure, improving coordination and efficiency in critical situations.

Concept, approach

The system combined a PICO 4 Ultra Enterprise MR headset, a Node.js WebSocket server deployed at the 6G-SANDBOX Athens testbed, and a PC control application. This setup allowed bi-directional exchange of live video, audio, images, and 3D objects between field responders and remote teams. Trials and final experimentation validated the architecture using 5G CPE and Wi-Fi 6 connectivity, with iterative improvements after each test.

Results (testing, validation) and Impact

The platform was successfully tested in three phases, culminating in final experiments with NKUA participants. It achieved stable performance at ~20 Mbps, 1080p, 45 FPS, with low latency and clear audio. Remote experts could update triage steps and medical visuals in real time, instantly reflected in the headset.

Impact:

- **For society:** improved readiness and training for emergency response.
- **For 6G-SANDBOX:** validation of bandwidth-intensive MR streaming over 5G.
- **For partners:** Pi P.C. advanced XR solutions for future commercialization; NKUA gained practical insights for medical training integration.

<https://pi-tech.gr/sandbox/>