XR Research Laboratory
Vision, Mission, and Strategic Plan

Department of Public Management and Information Technology
Faculty of Public Governance and International Studies, Ludovika University of Public Service (LUPS)
Year of foundation: 2024

Philosophy and Mission

Extending reality is not just a technological development; it signifies a paradigm shift, changing how humans interact, learn, and work. We believe that the ethical and practical, effective use of Extended Reality (XR)—including Virtual Reality (VR) and Mixed Reality (MR)—benefits both individuals and society as a whole and will reshape the future of education.

The NUPS XR Laboratory is dedicated to advancing and supporting the development of XR (VR and MR) technologies while adhering to the highest ethical and professional standards. The Lab aims to be a leader within the university community, encouraging innovation, knowledge sharing, and collaboration. It is committed to improving the university's digital competence through the application of XR technologies in education.

Strategic Focus Areas

Education and Training
Disseminating knowledge and skills related to XR (VR and MR) technologies both within and beyond the educational system, contributing to the development of digital competencies.

Networking and Partnerships:
Strengthening connections among the various faculties and units of NUPS (e.g., the Institute of Disaster Management, the Integrity Research Centre), industry stakeholders, and higher education institutions both in Hungary and internationally.

Innovation and Development
Ongoing development and deployment of XR (VR and MR) technologies at the Faculty of Public Governance and International Studies (ÁNTK), in collaboration with other university faculties. Creating a platform with innovative learning applications tailored to the profiles of the Faculty and LUPS, to be integrated into LUPS education and made available through various models to NUPS partner institutions as well as domestic and international universities.

Ethics and Responsibility
Promoting the ethical use of XR (VR and MR) technologies and establishing guidelines for their responsible implementation.

Standardization
Ensuring the quality and compatibility of XR (VR and MR) applications and devices within the university.

Initiating forward-looking research projects that utilise the social science methodologies customary at ÁNTK, complemented by experimental research designs, UX (user experience), and usability testing.

International Publications

Publishing research findings in esteemed scientific journals and at international conferences. Our goal is to participate in and present at both domestic and international XR scientific forums, thereby contributing to the knowledge base of the XR (VR and MR) scientific community and promoting critical, ethical, and informed use of XR among end users.

Promote the university through internationally recognized publications and research, thereby strengthening the connection between the National University of Public Service's name and XR technology research. This will enhance the university's prestige and appeal within the global academic community and among prospective students.

New Courses for Students

Designing and delivering new XR (VR and MR) courses for various disciplines at both undergraduate and master's levels.

Educational Methodology Workshops for Lecturers

Providing training for NUPS lecturers in the pedagogical use of XR (VR and MR) technologies through dedicated XR workshops, in collaboration with the Creative Learning Office, and integrated into the Rector's Reform process aimed at modernizing teaching methods. Developing and launching XR-themed summer weeks and methodology workshops for local and international partner institutions.

School Outreach Programs

Delivering demonstration-based programs to introduce XR (VR and MR) technology in primary and secondary schools, making education more engaging, developing the digital skills of young generations, and contributing to the future supply of skilled professionals.

Teacher Training in Cooperation with the Public Administration Training Institute

Designing and delivering workshops and summer courses to prepare primary and secondary school teachers for integrating XR (VR and MR) into their teaching, thereby increasing their digital competence, expanding the range of experiential teaching tools, making the learning process more efficient, and enhancing learning outcomes.

Public Administration Training in Collaboration with the Public Administration Training Institute

Delivering XR (VR and MR) training programs for public administration professionals and government office staff.

Program Timeline

2024

Establishment of the Research Laboratory: outfitting the facility, procuring equipment, and launching initial research and platform development projects. Identifying partners for

participation in domestic and international funding calls and preparing proposals (e.g., Erasmus Partnership for Innovation).

Opening Conference: Introduction to the Laboratory, its Goals, Plans, Projects, and Collaboration Opportunities.

Designing XR digital competence development programs for public administration and teacher training.

Public administration training courses in cooperation with the Public Administration Training Institute.

Hosting workshops for university students and lecturers.

Launching English-language XR methodology summer workshops for lecturers from domestic and foreign partner universities.

Research reports: presenting the results of research conducted during the year.

Research: integrating VR applications into university courses, analysing course development challenges, and gathering student feedback.

Preparing international publications (min. 2 per researcher).

2025

Implementation of launched domestic and international projects in research and platform development.

Workshops for lecturers.

Public Administration trainings in cooperation with the Public Administration Training Institute.

Workshops for teachers (Public Administration Training Institute).

Implementation of digital competence development programs.

Delivery of school outreach programs.

XR conference with an innovation competition.

Summer thematic workshops.

Annual conference: results, status, and plans.

International publications: min. 2 per researcher.

Conference participation: min. 2 per researcher.

2026

Implementation of domestic and international research and platform development projects.

Closure of initiated projects.

Dissemination of research results.

Distribution of platform development outputs.

Workshops for lecturers.

Public administration training courses in cooperation with the Public Administration Training Institute.

Workshops for teachers (Public Administration Training Institute).

Implementation of digital competence development programmes.

Delivery of school outreach programs.

XR conference with an innovation competition.

Summer thematic workshops.

Annual conference: results, status, and plans.

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