Erasmus+

ARFAT

THE AUGMENTED REALITY FORMWORK ASSEMBLY TRAINING

Number: 2016-1-PL01-KA202-026102
01.12.2016-30.11.2017

AUGMENTED REALITY

AR is the term to define a direct or indirect view of the psychical environment in the real world, which elements combine with virtual elements in order to create a mixed reality in real time. AR enable precise conduction of activities performed by workers in an efficient manner, ensuring the safety of work at the same time.

Developed training systems, based on modern IT technology - Augmented Reality (AR), are being constantly improved by most influential companies all over the world. Being used, among others, in trainings for pilots, F1 drivers and military personnel, it is safe to say, that AR is the future of high-quality work-based VET.

Never before was AR used for formwork training. Use of mobile devices and AR technology will make the training innovative and interesting to the participants. Foreseen manual, training system and augmented reality software will contain best practices from different European countries in the field of formworks and scaffoldings, and series of exercises for users.
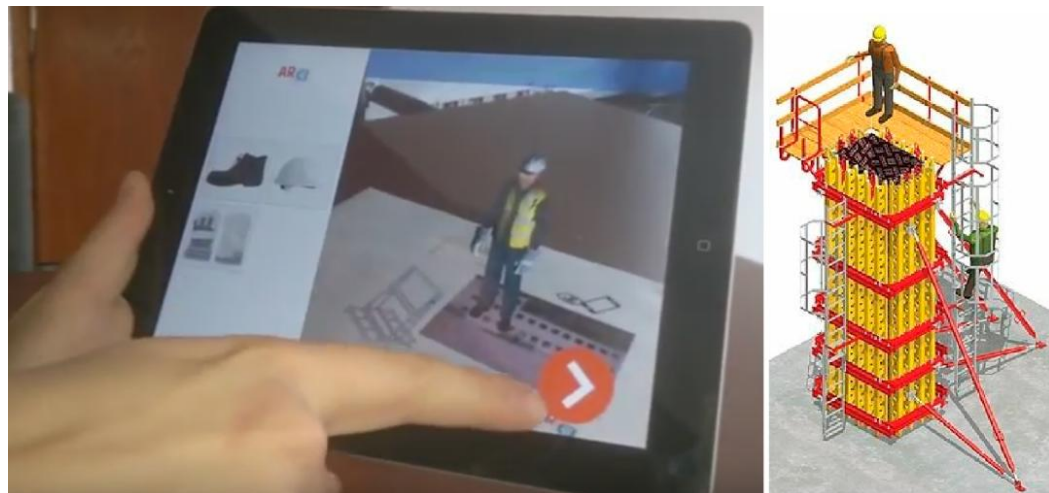
AR system for formworks (source: own & PERI).

For more information about the project, please visit our website:
www.arfat.il.pw.edu.pl

Falls from height are the most common causes of serious accidents, often fatal, not only in Poland but throughout European Union. As human life is the most important value, there is a great need of elevating H&S level. This problem has been raised in European Directive 2001/45/EC, which obliges to take appropriate measures to improve safety and health at work.

The project will address H&S issues as it stems from the need of prevention of accidents on construction sites. These accidents are mainly caused by falling from height, especially from scaffoldings. Works at heights (i.e. formworks, scaffolding works) are one of the most dangerous among construction works. One of the main reasons is: because current training methods are insufficient. As the research shows, workers are not interested in classic trainings. Use of mobile devices (smartphones, tablets), modern AR technology and supporting media files will make ARFAT training much more interesting and unforgettable. The need for the projects was also confirmed by the questionnaires and previous project (ARCW – Health and safety procedures for curtain walls with the use of Augmented Reality Technology). Both construction employees and employers stated that there is a great need for construction trainings with the use of AR.

As a result of the project, training system will be created together with paper manual, application for mobile devices and supporting media files. Training will be open for all interested parties, it will use innovative methods that suit in the best way modern, digital era.

OUTPUTS OF THE PROJECT:
- **O1: Evidence based learning outcomes.** This output comprises learning outcomes on formworks and scaffolding works namely statements of what learners should know, understand and be able to do upon completion of the ARFAT training, in the form of definitions of specific knowledge, skills and competences.
- **O2: ARFAT training system.**
- **O3: ARFAT manual.**
- **O4: ARFAT application (software).** It is foreseen to prepare two versions of application for two most common systems for mobile devices in EU: android OS and iOS.
- **O5: ARFAT AR markers.**
- **O6: ARFAT instructional movies.**

The objective of these outputs is to develop up-to-date, tailor-suited to sectoral needs, modern formworks and scaffolding works training, appropriate to be integrated into existing VET offerings or to serve European community as a stand-alone training. These outputs will address modern skills needs of construction engineers, construction workers, stakeholders and associations in the construction sector, SMEs and companies (construction sector), VET providers, and technical universities, delivering a European solid, reliable and comprehensive pedagogical tool.

Partnership

POLITECHNIKA WARSZAWSKA - WARSAW UNIVERSITY OF TECHNOLOGY

TECHNISCHE UNIVERSITÄT DARMSTADT

FUNDACION LABORAL DE LA CONSTRUCCION

PERI