

## **Immersive and Shared Location for Professional Training: Virtual Reality Training in the Security Sector (Poster)**

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### **חוויה אימרסיבית משותפת במטא-וורס: מציאות מדומה בשימוש כוחות הביטחון (פוסטר)**

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Disclaimer: The author is part of the VR development team of this solution

#### **Abstract**

Although Virtual Reality (VR) started being used in the 80s, in the last decade, the number of users sharply increased due to the development of more friendly and not-for-expert devices, the favorable market and the advent of the COVID-19 outbreak.

My research argues that the introduction of innovative technologies in professional sectors is not only beneficial but necessary - and it will do so, by showing the benefits and potential that immersive and shared location VR training have in comparison to traditional training in the security sector. Specifically, the research focuses on the development and implementation of the VR training prototype recently developed by the Agenfor International within the EU-funded project J-SAFE that aimed to train Law Enforcement Agencies (LEAs) and Intelligence officers to counter radicalization processes in prison.

The training solution developed relies on an innovative methodology called VR Blended Solution capable of merging two methodologies: 1) immersive VR training, delivered through a multiplayer platform to test professionals in real-life scenarios and daily tasks combined with a gaming component, in order to enhance professionals' engagement and focus; 2) synchronic and a-synchronic e-learning with HERMES platform, focused on the theoretical framework. This formula ensured professionals to improve equally the theoretical and practical part, learning by doing how to prevent and detect signs of radicalization in prison.

Scenarios are actual replicas of real places, which makes the experience more realistic and immersive. Two additional features: 1) the embedding of training instructions in the VR exercise, with no need to guide the person from outside the VR; 2) the use of high-end hardware that ensures high graphic quality.

The prototype underwent an evidence-based assessment, which resulted to be positive. Results of the piloting phase that involved 53 professionals from 4 European Countries (i.e. Germany,

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Greece, Romania, Italy) underline that this VR blended training solution increases the interaction, focus, engagement and entertainment of trainees and gives opportunities to test scenarios that are often difficult to experience. This new solution is a promising first step toward innovative and effective training in the field of security.

**Keywords:** Virtual reality, AI, XR, Training, Education

## References

- Adnan, M., & Anwar, K. (2020). Online Learning amid the COVID-19 Pandemic: Students' Perspectives. *Online Submission*, 2(1), 45–51.
- Bonifati, A., Guerrini, G., Lutz, C., Martens, W., Mazilu, L., Paton, N., ... & Zhou, Y. (2020). Holding a Conference Online and Live due to COVID-19. *arXiv preprint arXiv:2004.07668*.
- Bowman, D. A., & McMahan, R. P. (2007). Virtual reality: how much immersion is enough?. *Computer*, 40(7), 36–43.
- Chris Stokel-Walker.(2020). Conferences bring large groups of people together to exchange ideas, network and do business. How can the industry ride out the Covid-19 era? [blog post]. Retrieved from: <https://www.bbc.com/worklife/article/20200826-what-the-future-of-conferences-could-look-like>
- Correia, A. P., Baran, E., & Yusop, F. D. (2007, June). Designing cross-border online collaborative learning experiences. In *EdMedia+ Innovate Learning* (pp. 1769–1778). Association for the Advancement of Computing in Education (AACE).
- Gonzalez-Franco, M., Perez-Marcos, D., Spanlang, B., & Slater, M. (2010, March). The contribution of real-time mirror reflections of motor actions on virtual body ownership in an immersive virtual environment. In *2010 IEEE virtual reality conference (VR)* (pp. 111–114).
- Gray, L. M., Wong-Wylie, G., Rempel, G. R., & Cook, K. (2020). Expanding qualitative research interviewing strategies: Zoom video communications. *The Qualitative Report*, 25(5), 1292–1301.
- Kilteni, K., Groten, R., & Slater, M. (2012). The sense of embodiment in virtual reality. *Presence: Teleoperators and Virtual Environments*, 21(4), 373–387.
- Lassoued, Z., Alhendawi, M., & Bashitialshaaer, R. (2020). An exploratory study of the obstacles for achieving quality in distance learning during the COVID-19 pandemic. *Education Sciences*, 10(9), 232.
- Liang, H. N., Lu, F., Shi, Y., Nanjappan, V., & Papangelis, K. (2019). Evaluating the effects of collaboration and competition in navigation tasks and spatial knowledge acquisition within virtual reality environments. *Future Generation Computer Systems*, 95, 855–866.
- Lim, S., & Reeves, B. (2010). Computer agents versus avatars: Responses to interactive game characters controlled by a computer or other player. *International Journal of Human-Computer Studies*, 68(1-2), 57–68.
- Pepe, E., Bajardi, P., Gauvin, L., Privitera, F., Lake, B., Cattuto, C., & Tizzoni, M. (2020). COVID-19 outbreak response: a first assessment of mobility changes in Italy following national lockdown. *MedRxiv*.
- Riva, G., Wiederhold, B., & Molinari, E. (1998). An investigation into factors influencing immersion in interactive virtual reality environments. In *Virtual environments in clinical psychology and neuroscience* (pp. 43–51). IOS.
- Sanchez-Vives, M. V., & Slater, M. (2005). From presence to consciousness through virtual reality. *Nature Reviews Neuroscience*, 6(4), 332–339.
- Smith, W. R., Atala, A. J., Terlecki, R. P., Kelly, E. E., & Matthews, C. A. (2020). Implementation guide for rapid integration of an outpatient telemedicine program during the COVID-19 pandemic. *Journal of the American College of Surgeons*, 231(2), 216–222.