



VIRTUAL REALITY PLATFORM TO ASSESS AIR TRAFFIC CONTROLLERS PERFORMANCE IN CONTROL TOWER OPERATIONS

AUTHORS:

De Piano, R., Ferreira, A., Pozzi, S., Terenzi, M. (Deep Blue S.r.l.)
POC: rosa.depiano@dblue.it

Betti, V., Pavone, E., Marucci, M., Aricò, P., Borghini, G., Di Flumeri, G., Sciaraffa, N., Babiloni, F., Aglioti, S.M. (Sapienza - University of Rome)
POC: pietero.arico85@gmail.com, m.marucci@gmail.com

Hurter, C., Benhacène, R., Clercq, C., Reynal, M. (ENAC- Ecole Nationale de l'Aviation Civile)
Telea, A., Kruijer, J.F. (RUG-University of Groningen)



CONTEXT

Control Tower Operations

Embodied Cognition

Multimodal integration

OBJECTIVES

To demonstrate how virtual reality can be used to validate user requirements within a multimodal and immersive control tower environment.

To derive requirements for more immersive and multisensory operations in Remote Tower Operations context.

VIRTUAL REALITY PLATFORM



Virtual Reality platform reproducing the Control Tower environment.

HTC + 2 Vive controllers + platform with embedded sensors for vibrations.

7 Air Traffic Controllers managing the traffic in 4 different Tower Control scenarios.

2 task difficulties: Easy, Hard.

4 different sensory conditions: only visual, visual and auditory, visual and haptic, visual, auditory and haptic.

OUTCOMES



Virtual reality allows to measure the impact of the combination of different sensory modalities in tower control scenarios.

Adaptable platform for different studies that aim to assess the human performance in complex-safety systems.

Valid method to study situation awareness, perceived mental workload and sense of presence) in ATM context (Tower Control)