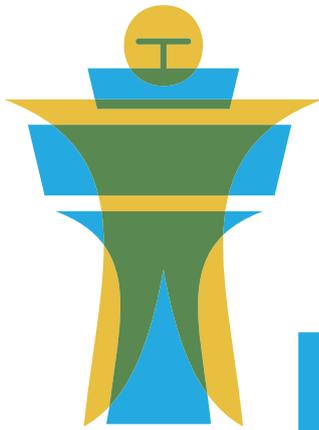


PROJECT INFORMATION

PROJECT COORDINATOR: **Deep Blue**

FOR MORE INFO, CONTACT: **S.Pozzi**, simone.pozzi@dblue.it | **J. Dokic**, jelena.dokic@dblue.it

DURATION: **24 months, started in June 2016**



MOTO

THE EMBODIED
REMOTE TOWER

#automation
#HumanPerformance
#RemoteTower
#Multimodal Solutions

CONSORTIUM



WEBSITE

www.moto-project.eu

ABOUT

Human Performance advances in Air Traffic Management (ATM) have been traditionally focused on two main senses: sight and hearing. There is still an unexplored potential of perceptual improvement for ATCOs performance in Remote Tower Operations (RTO), namely in the use of the other human senses.

OBJECTIVES

The overall objective of the project is to identify the key multimodal stimuli required on RTO to enhance the sense of Presence experienced by ATCOs.

MOTO project detailed objectives are the following:

- 1: Assess the role of multimodal (i.e. multisensory, beyond visual, and proprioception) acquisition of information in current control tower operations.
- 2: Define user requirements for a multimodal Remote Tower, to reconstruct multimodal perception in a remote tower simulation platform including the development of augmented multimodal interfaces.
- 3: Define brain-physiological indexes, customized for Remote Tower operations, to monitor aspects of Human Performance like: workload, situation awareness, fatigue, drop of attention.
- 4: Validate the above results in realistic ATM operational conditions through simulation facilities in two scenarios:
 - . Compare the performance benefits between a baseline Remote Tower and the Augmented Remote Tower;
 - . Assess the performance benefits of the Augmented Remote Tower in radically changed scenarios.

OUTCOMES

The expected outcomes of the project are:

- Scenarios of embodied cognition in tower operations;
- Requirements for more realistic multimodal remote tower platforms;
- Multimodal solutions to improve ATCO performance;
- Neuro-physiological classifiers to monitor human performance in Tower, in particular in RTO context.

BENEFITS FOR ATM

The main expected benefits coming from the project to Remote Tower Operations are the following ones:

- 1: Enhancement of the Sense of presence via multimodal solutions. The enhanced Sense of presence is a key requirement to preserve human performance as in real operations, with the same attention levels, similar decision-making processes, in order to facilitate the transfer of real-world knowledge and skills into the RTO.
- 2: The development of a non-intrusive index based on kinematics, physiological and brain cortical activity, to monitor the condition of controllers and detect any loss of situation awareness due to lack of realism (or other technical problems) in the Remote Tower platform.

FOCUS ON

Enhanced sense of presence

Non-intrusive embodiment index



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