

## **Piano Formativo /programma attività**

### **Assegno di Ricerca *“Realtà estesa in applicazioni aeronautiche”***

The increasing interest in Synthetic Vision and Augmented Reality technologies has led various analysts to positively esteem the adoption of such tools in the aircraft life cycle: in the design phase, during the flight operations, in the maintenance and finally in the flight control operations. In this regard, the definition of new and advanced interfaces and tools, within with standard and regulations, is an unavoidable step in the design of Virtual and Augmented reality technology.

The proposed activity will be carried on in the framework of the DTT (Digital Technologies for Tower) project, which has been funded by the SESAR JU. SESAR is the European programme for the development of the future Air Traffic Control System. Specifically, DTT is part of the Horizon 2020 industrial research projects of SESAR funded in 2019.

In this context, the DTT project aims at maturing the concept formerly developed within the RETINA Project that consists in an Augmented Reality-based interface for air traffic control operators in the airport control tower. Although, this concept can be expanded to the whole aircraft life cycle.

To this aim, the research activity will develop and validate a new class of human-machine interface for VR and AR, able to satisfy the different request in the aircraft life cycle, in order to have a standardize tool/interface for the AR/VR in the aircraft life cycle. Moreover, these technologies must be able to exchange information with traditional tools/instrumentations (as those used in the air traffic control or in aircraft design process).

The activity will be developed under the supervision of Sara Bagassi and the study plan expects the following tasks:

- state of the art on AR/VR technology exploitation in the aircraft life cycle;
- training on the specific development tools used for the project;
- contribution to the development of the interface prototypes;
- reporting activity.

The selected candidate will take part to project meetings and activity and will contribute to the dissemination of results through the submission of journal papers. He/she will also participate to national and international conferences and exhibitions, such as:

- SIDs (SESAR Innovation Days)
- ATM Seminar (Air Traffic Management Seminar)
- WATMC (World Air Traffic Management Congress)
- AIAA conferences (American Institute of Aeronautics and Astronautics conferences)
- CEAS conference (Council of European Aerospace Societies conference)
- AIDAA conference (Associazione Italiana di Aeronautica e Astronautica conference)

The activities could be carried out remotely if the restrictions due to the current COVID-19 emergency will apply again.

Il Responsabile scientifico  
Prof.ssa Sara Bagassi