

The project focuses on the integration of technologies and novel human-machine interface in a help desk or reception desk.

The main objective is to provide new forms of interaction between the customer and the desk and to enhance the user experience. The desk is manufactured by a professional woodworker: the use of wood as the main material and the design and the aesthetics of the system are key issues.

Related publication:

Design and development of the first prototype of a social, intelligent and connected help desk.
Simona D'Attanasio, Thierry Sotiropoulos, Rachid Alami – CHIRA 2019, 3th International Conference on Computer-Human Interaction Research and Applications, Vienna, Austria, September 20-21, 2019.

Research objectives :

Integration of robotic technologies
Development of a new concept and architecture of help desk
Integration of social behaviour
Integration in woodworking of robotic technologies
Skills applied :

Sensors and actuators integration: mechatronic and design aspects
Sensor system development
ROS architecture for system control
Multimodal human-machine interfaces integration
Machine learning classification algorithms with OpenPose
Previous research

Design and development of a robotic based test bench for spatial applications.

The system is based on an industrial robotic arm. It is designed to assist the tests of satellite antennas in laboratory and provide zero-gravity simulation by lifting the weight of the antenna during the whole opening process. The system is able to detect and follow the movement of the centre of gravity of the mechanical structure with a precision less than 1mm.

Related publication

Development of a Sensing System for Zero Gravity Simulation Using a Robot Manipulator to Test Antenna Reflector Unfolding in Satellites.

Simona D'Attanasio, Jérôme Charron (Airbus D&S). Proceedings of the 4th IFToMM Symposium on Mechanism Design for Robotics – Springer. Udine, Italy, 11-13 September, 2018.

Requested profile for a Master Thesis

Programming skill in Python and C++ in Linux operating system.
Knowledge of ROS
Knowledge of network integration and IoT
Open and ready to interact with other field of engineering as electronics and mechanics
Capable to work in multi-competence team. Able to coordinate the work of several students
Curious and open on innovation
Experience in the redaction of scientific articles