

## SERVICE ROBOT FOR QUALITY CHECK IN THE RELIABILITY LABORATORY OF HOUSEHOLD APPLIANCES



### Objective:

To **free** the operator from repetitive operations and routine checks in reliability labs and to **improve** the quality check of the WMs.

Once a WM has been connected (from an electrical and hydraulic point of view) the operator has only to push the start button every time the cycle has been completed and to check if the WM is working properly.

The mobile robot has to:

- **move** in front of the machines
- **identify** the machines
- **acquire** some quantities
- **associate** the measurements to the machine
- **analyze** the acquired data compared with reference values in order to check the behaviour of the machines



Sensors positioned on the robot:

- a **camera** to be used also for the checking of the front panel of the machine
- a **force transducer** in order to measure the force necessary to push the button (to be positioned on a special tool)
- a set of **microphones** in order to acquire the noise emitted by the machine
- an **infrared camera** in order to measure temperature of some parts of the machine
- a **laser vibrometer** to measure WM vibrations

## Challenges:

- Navigation and perception in an unstructured environment
- Manipulation and physical interaction with the real world
- Human-Robot interaction
- Safety for operation near humans
- Fusion of multimodal sensor data and analysis
- Perception, categorisation, interpretation and decision making

## SERVICE ROBOT FOR QUALITY CHECK IN THE RELIABILITY LABORATORY OF HOUSEHOLD APPLIANCES

### Contacts:

**Cristina Cristalli**

[c.cristalli@loccioni.com](mailto:c.cristalli@loccioni.com)

+39 0731 816280

**Giacomo Angione**

[g.angione@loccioni.com](mailto:g.angione@loccioni.com)

+39 0731 816359

### AEA srl

Via Fiume 16

60030 Angeli di Rosora

Ancona, Italy

Phone +39 0731 8161

Fax +39 0731 814700

[info@loccioni.com](mailto:info@loccioni.com)

[www.loccioni.com](http://www.loccioni.com)