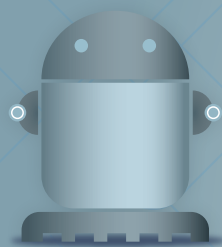


**iROS**  
Hamburg 2015



## FLOOR WASHING ROBOT FOR PROFESSIONAL USERS



**FLOBOT**



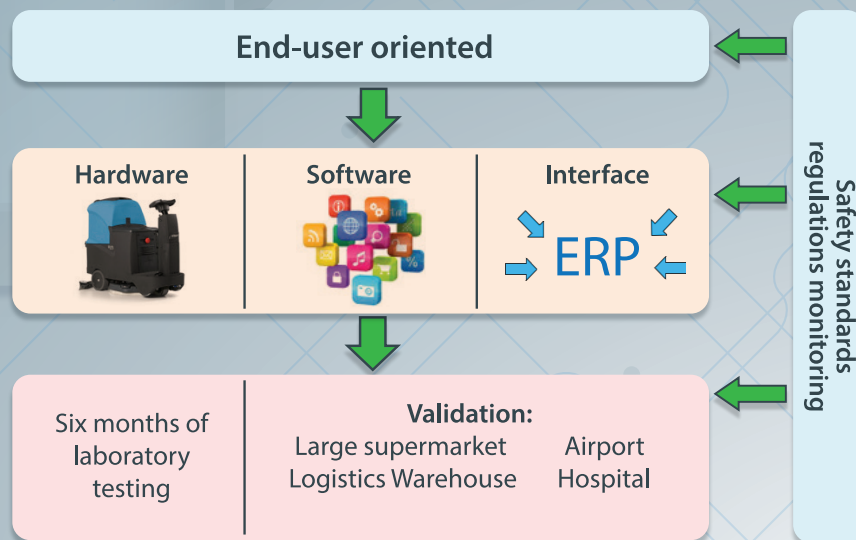
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The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 645376

## Objectives

- ▶ To develop an autonomous, robotised professional washing machine for large premises
- ▶ To develop a system that increases the quality of service and lowers the cost of operation
- ▶ To integrate modular, low cost solutions for autonomous navigation, object detection and human tracking
- ▶ To develop user interfaces for easy reprogramming of mission, tasks, remote supervision and control
- ▶ To prove the usability and flexibility of the robot by testing in four real-world use-case scenarios

## Our Approach



## Object and dirt detection

Detecting and quantifying, in real-time, the level of dirt on different floor surfaces, coping with reflections, shadows and inhomogeneous textures. Detecting small and medium size objects that may obstruct the robot's motion or damage its on-board cleaning system.



## People detection, tracking and trajectory analysis

Robust sensor fusion methods for human detection and people tracking from a mobile platform for safe and fast navigation in highly dynamic environments. Statistical analysis of human trajectories for identification and efficient cleaning of floor areas more likely to be dirty.



## Real-world evaluation

Evaluating a fully functional prototype for floor washing tasks in a supermarket, an airport, a hospital and a logistics warehouse.