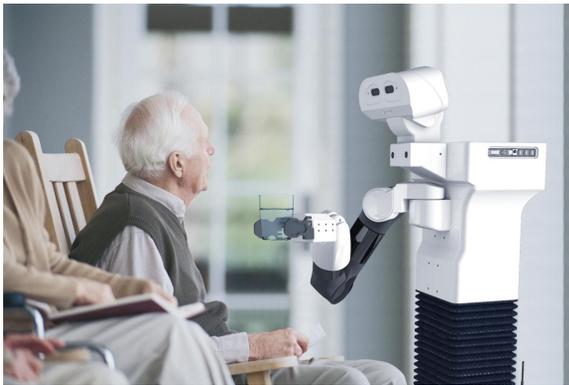


RobMoSys defines a platform of assets and services to help **robotics industry to improve their software/system engineering practice**. Join us to **work together to create this ecosystem** and to demonstrate your own success story with **real world cases** in line with our **industrial pilots**.

Description

The pilot [1] is about a **healthcare robot application** in a domestic environment. It will demonstrate an autonomous mobile manipulator assisting an elderly person with physical constraints. The pilot can be used to showcase navigation and Human-Robot-Interaction (Automatic Speech Recognition, Text To Speech, Visual Perception). It can be extended with object and people recognition and manipulation.



Expected Benefits

The pilot is addressed to open call 2 contributors in order to show that a mobile manipulator product is able to adapt easily to different assistive tasks in different environments (e.g. private apartment, hospital room), by selecting a set of components or/and by changing the skills configuration and the task coordination.

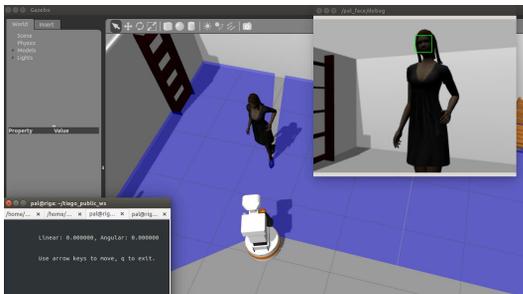
This pilot is using SmartMDS Toolchain to comply with RobMoSys methodology and the existing software infrastructure of the TIAGo mobile manipulator.

The technical benefits of the pilot are:

- Simplify development via software components composition
- Replace of components as is, without further development
- Adaptation to the environment through skills configuration
- Create ad-hoc applications using task level coordination (robotic behaviour)
- Exchange software components to add capabilities of the robot

Scenario Examples

- The pilot will use the TIAGo mobile manipulator with ROS bridges to link the SmartSoft environment with the current TIAGo framework.
- Potential Use-Cases for ITP
 - Create assistive applications for TIAGo (welcome visitors to the apartment, finding objects in the apartment, delivering items to the elderly person, ...)
 - Extend the pilot skeleton with ITP components related to specific fields like HRI, object/people recognition, manipulation
 - Interface with the pilot on different levels (from component to task level)



Pilot Resources

The pilot can be downloaded and executed on any computer via **docker container**, which includes everything needed to run the TIAGo simulation and the SmartMDS Toolchain. Also a real robot application can be performed on TIAGo at **PAL Robotics** facilities in Barcelona, Spain.

- **Ready-to-run container** available: TIAGo docker (Linux Ubuntu, SmartMDS Toolchain, Eclipse IDE, Gazebo simulation, TIAGo ROS packages)
- **Software available**
 - RobMoSys software components to use with SmartMDS Toolchain [2]
 - TIAGo SmartMDS repositories (navigation, SmartMDS to ROS bridge ports, System TIAGo deployment)
 - TIAGo ROS packages (manipulation, navigation and perception)
- Documentation and **TIAGo tutorials** [3]

[1] <https://robmosys.eu/wiki/pilots:assistive-manipulation>

[2] <https://robmosys.eu/wiki/baseline:components:smartsoft>

[3] <http://wiki.ros.org/Robots/TIAGo/Tutorials>