RobMoSys

Modelling in a real setting

Assistive mobile manipulation in Healthcare
ERF - Malaga - 2020

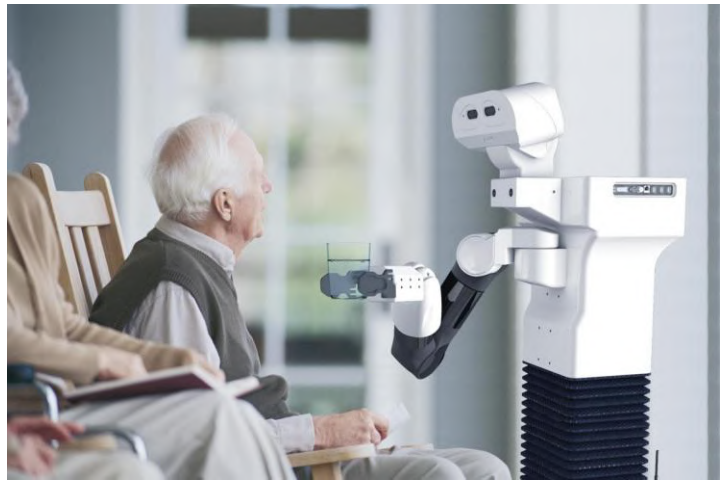
PAL ROBOTICS

Assistive Scenario

The world (especially EU) is aging rather rapidly. According to the World Health Organization, we soon will have more older people than children and more people at extreme old age than ever before.

Assistive robots contribution to the aging trend. Combining several sub-systems into robots. Requirements to follow:

- specific physical constraints that the elderly person is facing
- requirements of the environment where the person lives (ex. ordinary apartment or in a room in a care institute)



From traditional to RobMoSys platforms

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Legacy Robotics		Healthcare and Future Robotics
Well defined	*Environment*	Dynamic
Proprietary	*Frameworks*	Open
Quite difficult	*Reuse of components*	Work In Progress
Big [Manufacturing]	*Potential*	Huge [Healthcare and Future Robotics]

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Technical benefits for a robotic company

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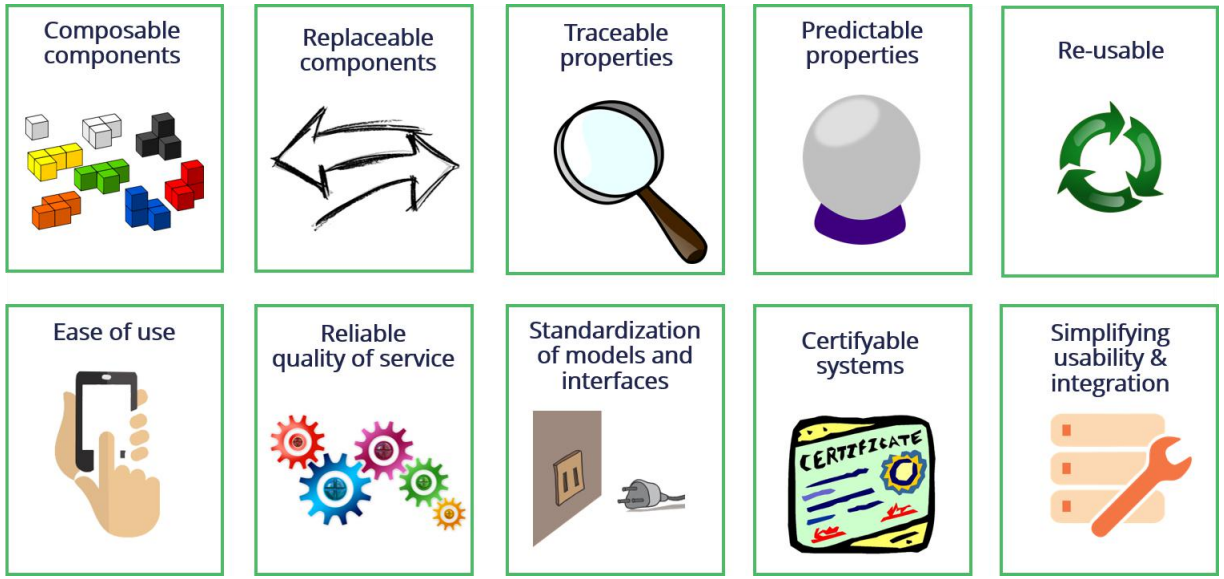

- **Robotic domain models** (navigation, manipulation, perception, world model) that describe exactly what the components provide (functionality) and how (interfaces)
- **Model-driven tooling** to design and deploy robotic applications
- A set of **ready-to-use robotic components** and a **data sheet** containing the information needed to be used without knowing the internal implementation

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Example: RobMoSys Navigation Architecture modification

System Component Architecture view in SmartSoft

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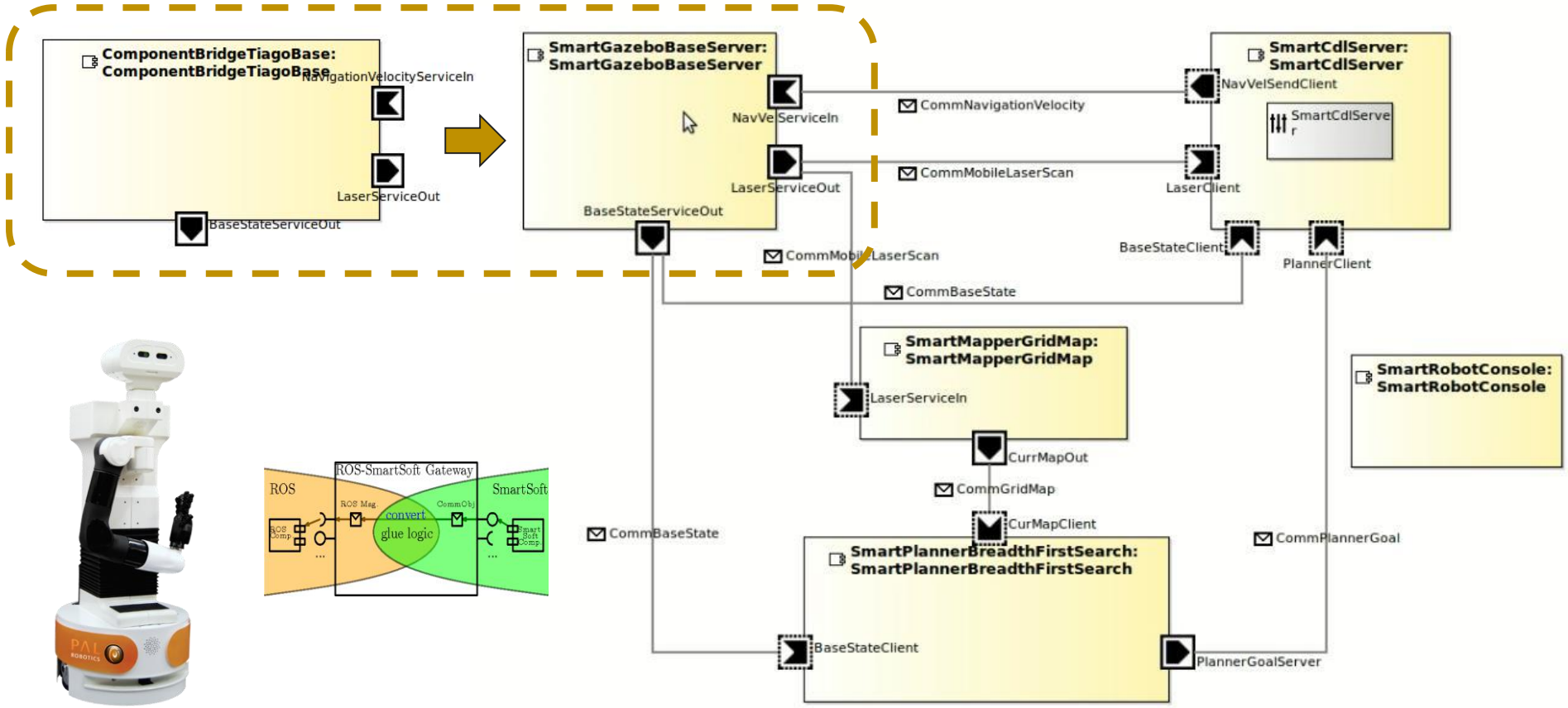
Replacement of components



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RobMoSys example via SmartSoft

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