

Service

Reasons to include Robotics

By Gernot Schmierer

The service sector is on the rise. Since the early 1970s, this part of our economy has seen a steady increase in new jobs. As a result, the majority of jobs in the United States, Europe, and Asia are today found in the service sector. For that reason, the new technology of service robots will impact this area enormously, bringing it to a new level. These robots will become fixtures in every household and in people's everyday lives.

Broadly speaking, service robots perform a number of tasks including refueling vehicles, maintaining and updating nuclear power stations, caring for the elderly, keeping watch over museums, exploring outer space, and cleaning airplanes. There is no all-inclusive definition for these robotic systems, since their tasks vary so widely. The one thing they all have in common is that they perform services for people or equipment, rather than aiding in manufacturing—the main purpose of industrial robotics. With the growing demand and promising prototypes, efforts are being made to develop service robots and to implement them on a greater scale. In contrast to the field of industrial robots, the majority of service robots need to be designed individually. Service robots need to work effectively in different environments using a variety of task sequences, even if important subsystems such as drives, control systems, and sensors are constructed in a modular form and can be applied to other operational uses. The challenge of modern information-dependent societies requires high-level automation systems that can interact with humans in a rapidly changing environment. The following examples of currently existing or prototype service robots demonstrate some first steps towards this service society of the future.



A range of sensors built into the master's suit registers the master's movements and transfers them to the robot's control system allowing real-time interaction between the master and the slave.