V. Dupourqué. RobuLAB¹⁰, a service robot designed to Aging-in-Place. Gerontechnology 2009;8(3):183; doi: 10.4017/gt.2009.08.03.009.00 A direct consequence of staying at home and not going out is a feeling of loneliness. In addition, older persons in the 4th or frailty phase of life need more and more support from several different persons and organizations. Companion robots may act as connectors to the rest of the world thanks to internet services. Moreover, having a moving and reactive 'companion', albeit with some imperfections, may introduce a sense of life with affective relationships¹, just like a pet. The robuLAB¹⁰ robot is being designed for developers and integrators seeking to build home-centric service robots² to help older adults. It belongs to the next generation of assistive robots that are expected to become as common as mobile phones. Think of the Japanese HAR from Toyota³ or the Korean iRobiQ⁴ from Yujin. Technical description With the designers, users and medical staff involved at the early stage of the robuLAB¹⁰ development, we decided to avoid the humanoid approach, and made a robot with a more common aspect for better acceptance. We also chose a voice interface, to reduce the amount of complex interactions for the older person. The robuLAB¹⁰ companion robot integrates navigation software, enabling the robot to navigate, follow, and assist a person from room-to-room (Figure 1). It can go anywhere in the home, and also includes voice synthesis and voice recognition for cognitive stimulation: reminders, appointments, medications, lunch time, to name a few. The basic module is made of a rectangular platform (40x40x40 cm), weighting 30 kg. Navigation software is based on SRI's KARTO⁵, laser and ultrasonic sensors, voice interface allowing for elaborate dialogs. A physical assistance module may be added, to help stand up and walk. Thanks to the access to internet and teleservices, it works like a gateway from the house to the rest of the world. User studies RobuLAB¹⁰ has been chosen by R&D projects funded by ANR (France), the project MIRAS focusing on physical assistance, and QuoVADIS⁶. ROBODOMO from MBDS⁷ (France) will execute field tests, starting before the end of 2009.

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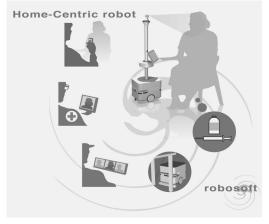




Figure 1. Overview of interaction among end user, robot and environment (left); on the right, the physical assistance module