**Moving safely, living independently: The co-creation of FreeWalker**
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**Purpose** Wandering and getting lost can be dramatic and a health threat for people with cognitive impairments such as dementia (Rowe, et al., 2011; Hunt, Brown, & Gilman, 2010; Koester, 2008). Furthermore, it can increase the care burden and stress among formal and informal carers. Within the European AAL FreeWalker project, a location-based service is iteratively developed that allows older people with cognitive impairment - or who feel insecure in the outside environment - an increased freedom and self-determined way of moving in the outside environment. FreeWalker is also aimed at creating peace of mind for formal and informal caregivers by supporting them in monitoring the primary client. FreeWalker determines dynamic geo-graphic safe zones based on input of the contact person, typical movement patterns of the primary client, and calendar entries. The geographic location of the client can then be monitored via a GPS tracker carried by the person with cognitive impairment. The (in)formal carer can monitor the location via a web-based and mobile application and notifies the caregiver or contact person if the client is about to leave, or leaves, the dynamic safe zone. The overall goal of FreeWalker is to extend the freedom of movement of people with dementia. **Method** In the first year of the project, FreeWalker was co-created with a total of 66 end-users of which (in)formal carers and people with MCI. To ensure that clients who participated in these studies can go out safely, iterative codesign sessions, heuristic evaluations, and focus group inter-views have been performed at research locations in Switzerland, Austria, and the Netherlands. Heuristic evaluations, focus groups, and low- and high-fidelity prototyping sessions were con-ducted to ensure that FreeWalker is a stable and usable system that can be safely used in the field trials. In the co-design iterations, care professionals and clients were heavily involved and provided feedback on important themes such as usability, learnability, and stability. **Results and Discussion** In the first phases, the needs and wishes of the end-users were gathered to develop a low-fidelity prototype which was further co-created with the end-users up to a mid-fidelity prototype. Requirements for the dynamic safe zone in FreeWalker consisted - among others - of a safe zone that is based on the day rhythm of the primary end-user, should have different levels of freedom, and should be easy to edit and react on an appointment (e.g., a doctor visit). The results from the various iterative sessions resulted in a list of requirements used in development and were used to build a high-fidelity prototype that fits the target group expectations on both functional and design requirements. FreeWalker will be further evaluated with a total of 106 people with MCI and dementia and 71 formal caregivers to assess whether it is beneficial to its end-users in daily life.

**References**

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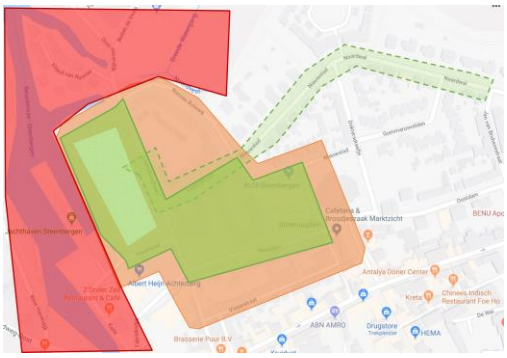


*Figure 1. Dynamic Safe Zones*