A user study of a volunteer-based assistance and navigation system for senior citizens

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Ensuring their elder citizens' mobility is becoming a rising concern for aging Western societies. Immobility oftentimes hinders social participation, and as such can have negative effects on the persons' social contacts and overall health. The obvious answer to this problem seems to be good public transport infrastructure, and provision of such is a necessity. However, frequently running trains and buses are just one part of the solution, as a significant number of people will refuse to use them for a variety of reasons. Thus, we need to respond to these reservations by identifying them and subsequently use this knowledge for solutions filling that void. The German nationally funded research project inDAgo aims at developing a mobility assistance system targeted to senior citizens. Several focus groups and domain expert interviews with seniors, healthcare and mobility experts in the vicinity of Darmstadt, Germany, were conducted. Based on these findings two "personas", stereotypical would-be users of the planned mobility assistance system, were derived according to the underlying scenario based design lifecycle. Thereafter a set of integrated solutions to support elderly citizens in their use of public transport was designed. One is a technical navigation assistant for guided travel in an urban environment on foot and with public transport. The system is comparable to common GPS technology in cars, however, adjusted to fit elderly users' needs both in terms of user interface and routing configurations. The second system can draw from a pool of volunteers who have agreed to lend a helping hand whenever a senior in their vicinity requires such. The inDAgo system combines both aspects in a single assistance solution and its prototypical implementation has been thoroughly tested in real-life situations. This paper documents evaluation results and discusses possible future assistance systems and mobility solutions.