

# Handling of Preferences and Needs within AAL Systems

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## Abstract

Assistive Technology is perceived in academic circles as a viable option to enhance quality of life of individuals affected by some types of cognitive or physical impairments. The success of this technology hugely depends on the effective satisfaction of the final users. This document summarizes the underlying argument of a keynote to be provided during AST'14 focused on the importance of Preferences and Needs to increase the perceived usefulness of Assistive Technology applications from the final user side.

## Introduction<sup>1</sup>

Intelligent Environments are by definition intelligent systems which take decisions based on their sensing informed perception of a context. The ultimate goal of these systems is to make life easier in some way (Cook et al., 2009). Ambient Assisted Living systems are perhaps the most interesting example as it aims at a positive impact on humans at a health and well-being level (Augusto et al., 2012).

The Intelligent Environments manifesto (Augusto et al., 2013) is based on 9 main principles which are considered as fundamental to realize the vision of Intelligent Environments:

**P1)** to be intelligent to recognize a situation where it can help.

**P2)** to be sensible to recognize when it is allowed to offer help.

**P3)** to deliver help according to the needs and preferences of those which is helping.

**P4)** to achieve its goals without demanding from the user/s technical knowledge to benefit from its help.

**P5)** to preserve privacy of the user/s.

**P6)** to prioritize safety of the user/s at all times.

**P7)** to have autonomous behaviour.

**P8)** to be able to operate without forcing changes on the look and feel of the environment or on the normal routines of the environment inhabitants.

**P9)** to adhere to the principle that the user is in command and the computer obeys, and not viceversa.

These principles combine a number of characteristics and concerns which are featured in the literature of the technical area in the past decade. Most specially, they take cognizance that Intelligent Environments must be human-centric, that is give preponderance to the user expectations of the system. Two important notions in the user interaction with the user are those of preferences and needs. Their importance directly addressed by P3 above but also indirectly related to several of the other principles. *Preferences* indicate services which should be delivered to the user in a specific manner, the user may have indicated or the system may have learnt the most satisfactory mode of delivery. An example may be that the user may not like reminders being issued during work meetings. *Needs*, on the other hand, indicate more mandatory services. This talk will discuss the nature and computational challenges associated with the consideration of these concepts as part of the engineering of Ambient Assisted Living systems.

## References

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