

Preface IEE 2nd International Workshop on Intelligent Environments (IEE IE06)

On the road to the realization of the Ambient Intelligence (AmI) vision, physical space becomes augmented with computation, communication and digital content, thus transcending the limits of direct human perception. An Intelligent Environment consists of a set of technologies, infrastructures, applications and services operating seamlessly across physical environments (e.g. neighbourhood, home, car), thus spanning all the different spheres of everyday life. Their inhabitants, humans and agents, will carry out tasks, most of which will be very similar to those that we do today, only their activities will be very different. The introduction of ICT and its applications in order to support these activities (and improve the efficiency of tasks) will change many of their parameters and properties, especially those related to space and time.

Types of Intelligent Environments range from private to public and from fixed to mobile; some are ephemeral while others are permanent; some change type during their life span. Living in an Intelligent Environment requires a proper balance between a complex diversity of interests and values, some of which apply to traditional environments / spaces, too. The natural way to achieve this is by establishing boundaries; digital boundaries which people tend to accept intuitively. Then, among the most important requirements are to ensure privacy, to enhance interaction, to optimise usage, to manage resources and to apply security. A new definition of relations like “belongs to”, “owns”, “inherits” etc is needed – in all levels: individual, public, legal.

In our view, the realisation of inhabitable Intelligent Environments requires the convergence of different prominent disciplines: Information Science, Architecture, Material Engineering, Artificial Intelligence, Sociology and Design. In addition, technical breakthroughs are required in key enabling technology fields, such as, microelectronics (e.g., miniaturisation, power consumption), communication and networking technologies (e.g., broadband and wireless networks), smart materials (e.g., bio-implants) and intelligent agents (e.g., context awareness and ontologies).

This workshop, the second in a new series, will provide a leading edge forum for researchers and engineers from across the world to present their latest research and to discuss future directions in this area. The workshop will bring together researchers from both industry and academia from the various disciplines contributing to the area on Intelligent Environments. The aim is to promote a holistic, systemic view of the emerging discipline and help stimulate research and break down barriers between the different disciplines.