Research center 'Ambient Intelligence' at the University of Kaiserslautern

'Ambient Intelligence' (AmI) stands for an intelligent environment that senses and adaptes to the presence of humans and objects to provide support and various services. It will help people in various situations; in particular at work, during recreation and alone living elderly.

The research center consolidates researcher of five different faculties (Electrical Engineering and Information Technology, Computer Science, Mechanical Engineering and Process Engineering, Mathematics and Social Sciences) to jointly contribute to the common goal: enhancing the scientific fundamentals of Ambient Intelligence. Chairman Prof. Dr. Lothar Litz and Vice-Chairman Prof. Dr. Norbert Wehn, are both from department of Electrical Engineering and Information Technology.

In the near future coupled networks of 'intelligent devices' will be present in many situations, like at home, at work or in vehicles. They will provide information on demand as well as various services in work assistance, health care, and every day life. These systems react to their current environment and differ substantially from present devices especially in terms of appearance and mode of user interaction.

As of today's point of view, the following applications appear particularly attractive:

- Assisted living, services for the elderly and dialled,
- Telemedicine, health care and aftercare,
- New workflows in the production of goods and installation of facilities,
- Optimisation of growth and harvesting conditions in agriculture.

All applications are based on the same basic technical functionality: AmI-Systems process numerous interfaces to humans and their environment. They take over the conversion between external sources of information, e.g. the internet, and the digital signal processing that processes speech, image, and movement information as well as environmental conditions (just to name but a view). AmI-Systems need numerous different sensors. Combined with their associated analysis and communication electronics, they still should be as small as possible to enable an unobtrusive integration into the environment. A challenging aspect is the low power consumption. AmI-Devices must fit into walls, clothes or even human bodies. They are supposed to work self-sustained during their complete life-cycle without battery change.

The technologies summarised as 'Ambient Intelligence' have the potential to alter our life and work-places intensively as previous technologies. Completely new possibilities are offered to the human user. Contrariwise mankind has to face completely new challenges. These challenges are to be addressed by this interdisciplinary research group.

For more information visit: www.eit.uni-kl.de/AmI/

Kaiserslautern, 16.10.2003