University of Genoa
Department of Biophysical and Electronic Engineering (DIBE)

Ph.D. Course in Information and Communication Technologies (STIC)

in cooperation with

DIT, University of Trento

DIMI, University of Udine

Technoaware S.r.l.

4th Short course
on

DISTRIBUTED MULTIMEDIA TELEMATIC SERVICES
FOR AMBIENT INTELLIGENCE APPLICATIONS

University of Genoa, July 11 – 15, 2005

Lecturers:

Prof. Carlo Regazzoni (University of Genoa, Department of Biophysical and Electronic Engineering – DIBE), Prof. Francesco De Natale (University of Trento, Department of Information and Communication Technology – DIT), Prof. Fabrizio Granelli (University of Trento, Department of Information and Communication Technology – DIT), Prof. Claudio Sacchi (University of Trento, Department of Information and Communication Technology – DIT) Prof. Gianluca Foresti (University of Udine, Department of Mathematics and Information Science – DIMI), Lucio Marcenaro, Ph.D. (Technoaware S.r.l.), Gianluca Gera, Ph.D. (Technoaware S.r.l.).
**Background and objectives:**

Ambient monitoring and surveillance is one of the best known application fields of multimedia information processing and communication technologies. The early era of video-surveillance started at the beginning of ‘60s with the commercial diffusion of analog CCTV systems. During 80’s and 90’s the commercial availability of low-cost technologies for multimedia signal processing involved a push towards PC-based digital surveillance systems with centralized processing of information transmitted by peripheral sensors (e.g. wireless cameras, etc.). At the end of 90’s, the availability of embedded signal processing technologies caused a true revolution in the ambient surveillance, starting the era of *intelligent sensors* and *intelligence distribution* across the communication network. Such a technological push involved a shift from the “old” concept of ambient surveillance to the innovative concept of *ambient intelligence*. The term “ambient intelligence” identifies a specific set of telecommunications, signal processing, recognition, and decision tasks related to monitored environments characterized by the presence of sensors, network hubs, and control centres provided with different autonomous processing capabilities (namely: “intelligence”), overall integrated in heterogeneous communication networks (wireless and wirelines). The “intelligent” ambient should also interact with different user classes by sending (or receiving) *personalized messages*, depending both on the user typology and on the users’ communication devices (concept of *personal communications*).

The four-day course is aimed at presenting specific methodologies and inter-disciplinary advanced techniques required for the design and the implementation of ambient intelligence systems and services. *The course is the fourth edition of a cooperation at the Ph.D. higher education level among Universities of Genova, Trento and Udine started in Genova in 2002/2003.*

**Registration modality:**
The course topics are addressed to an audience mainly consisting of students attending Ph.D. in telecommunications and information science. Nevertheless, the attendance is open to all interested people. **The course registration is free.**

Please, send an e-mail to *Stefano Piva* (e-mail address: piva@dibe.unige.it) for registration, containing your name, and your affiliation.

**Preliminary lectures program:**

- **First day (July 11, 2005) h. 9.00 – 12.00 / 14.00 – 17.00** – room D1: *Proactive Systems for Ambient Intelligence Applications: Sensors, Architectures, Multimedia Signal Processing Algorithms* (Prof. C. Regazzoni)
- **Second day (July 12, 2005) h. 9.00 – 13.00** – room D1:
  - *Active Vision and Data Fusion for Ambient Intelligence Applications* (Prof. G. Foresti)
  - *Demos and Application Examples* (Prof. C. Regazzoni)
- **Third day (July 13, 2005) h. 9.00 – 12.00 / 14.00 – 17.00** – room D1: *VICom and REOST Projects: Examples of Ambient Intelligence Applications* (Ph.D. L. Marcenaro, Ph.D. Gianluca Gera – Technoaware S.r.l.)
- **Fourth day (July 14, 2005) h. 9.00 – 12.00 / 14.00 – 17.00** – room D1:
  - *Multimedia information sources: scalable coding and retrieval* (Prof. F. De Natale)
  - *Wideband Transmission and Networking Techniques for Ambient Intelligent Applications* (Prof. C. Sacchi, Prof. F. Granelli)

**Logistic information:**
For logistic information (transport, accommodation, hotel reservations, etc.), please contact *Stefano Piva* (Phone: +39-010-3532968, Fax: +39-010-3532134, e-mail: piva@dibe.unige.it).