

# PROJECT / Flexible Convergence of Wireless Standards and Services

## FLOWS

### Main Objective:

The objective is to show how multiple wireless standards (GSM, UMTS, HIPERLAN/2) and the services that they support can converge in a flexible manner within a consumer's terminal. FLOWS will study and demonstrate the convergence of wireless standards allowing the user to be simultaneously connected to several of them and enabling transparent access to various services. The activity will be focused in the following areas:

(i) Development of channel models for converging systems (GSM, UMTS, HIPERLAN, DVB and DAB), characterisation of services for the various systems, and analysis of traffic performance (Luis M. Correia, João Gil, Filipe Cardoso, Jorge Aguiar, Gabriela Galvano); (ii) Design of triple-band (GSM1800, UMTS, HiperLAN2) printed antennas, and small antennas to be integrated into a handset terminal. Analysis and simulation of possible MIMO multi-antenna configurations (Custódio Peixeiro); (iii) Design of multiband antennas using the fractal concept (António A. Moreira). (iv) Design and test of ultra-wideband antennas, including the evaluation of antenna performance when integrated into a real user terminal (Carlos A. Fernandes)

---

Reference: IST-2001-32125, Funding: EU, Start Date: 01-10-2001

---

Team: Luis Manuel Jesus Sousa Correia, [Custódio José Oliveira Peixeiro](#), [Carlos Antonio Cardoso Fernandes](#), [António Manuel Restani Graça Alves Moreira](#), João Gil, Filipe Duarte dos Santos Cardoso, Jorge Aguiar

---

Groups: [Antennas and Propagation – Lx](#)

---

Partners: Philips Research Laboratories

---



Local Coordinator: Luis Manuel Jesus Sousa Correia