What If You Had A Universal Remote That Controlled Your Universe?

Imagine that you are watching a soccer match on your mobile phone or handheld device, while sitting on the bus. As you enter your living room, the match automatically jumps from the handheld to your forty-inch HD TV. You sit back to enjoy the rest of the match in comfort. Then the handheld signals an incoming call. You accept that call. The match is paused and the call goes into video calling mode on the big screen. When you hang up, you are given the choice to continue watching the game where it paused or to pick up the live feed. Using your handheld device, you can select the live feed.

Although this may sound like the stuff of science fiction, it is just one of many types of scenarios made possible through the research and development of technology in the Telecommunications Software & Systems Group (TSSG) at WIT. TSSG is a leading partner in this three-year research project, Daidalos II, which is being undertaken jointly by partners around Europe. As well as leading one of the five research work packages of this project, TSSG is in charge of marketing and dissemination as well as playing an important role in the design of the architecture and in the development of this technology. Additionally, TSSG has involved some of its key people in the testing and evaluation of the project results. Daidalos II looks at the entire networking architecture in order to produce an all-encompassing solution that will ultimately transform the mobile phone into a mobile office station and media centre, which will be capable of communicating with many devices in the environment around it. The project is guided by five key concepts. A high-level overview of some aspects of these five concepts are outlined in the table above.

Technology	Practical application
1. Mobility management and the ability to allow service provision across many different technologies and networks	Receiving calls on a mobile network while being able to receive TV transmissions on a broadcast network
2. Individualising services to each user's needs	Users will be told of services that fall within their interest range at particular times. For example, while in a supermarket you are alerted on your handheld device that there is a 2 for 1 offer on your favourite shampoo, because it knows you are short of shampoo at home. If you are Spanish, the 2 for 1 offer alert may be made in the Spanish language.
3. Maintenance of user's privacy	The concepts in Daidalos II include the collection of a lot of information about individual users, in order to provide a more personalised service to them. This data must be held in a manner that would not breach a user's privacy. Technology in Daidalos II separates the data from the user's identity so the data cannot be linked to the user.
4. Integration of broadcast technology	The ability to access live feeds on broadcast networks is paramount to the future of the convergence of media with mobile technology. Currently it is possible to receive data files of events that occurred in the past, but not live feeds directly from a broadcast network.
5. The provision of a platform that will make it easy for organisations to become service providers on the network.	This will result in an explosion of the number and type of services that will be available to users from their handheld devices. It should be almost as simple to deploy a service as it is to set up a website.

Daidalos II works on all levels of the network to achieve these aims. At the bottom, the project is working on integrating different kinds of networks. Daidalos II aims at achieving an efficient and scalable integration of network technologies including cellular, satellite, broadcast, wired networks, wireless networks and sensor networks. Whereas in the past you could only get television broadcasts from the terrestrial broadcast network, telephone calls on your mobile phone network or fixed line network and cable television on your cable TV network, in the future these will combine so that you can use any of these networks for functionality that was originally designed for the other.

Pervasive services are services that can run with very little user intervention. They may not be fully automated, but they will have features that allow them to work for the user in the background until it is necessary for the user to intervene. For example, in the opening scenario, the live feed jumped automatically from the handheld device to the large screen without the user having to intervene. The TSSG is heavily involved in the research and development of a number of key components of the Pervasive Service Platform (PSP), as well as being the leader for the work package responsible for this platform.

The handheld device will be much more than a universal remote control. It will do everything that is now carried out by an array of different devices such as laptops, DVD players, TVs, and mp3 players. Daidalos II envisions multiple types of 'dumb' devices that will be embedded in environments everywhere: in shops, bars and workplaces, that will be able to interact with, and expand the capabilities of the handheld device. The TSSG is proud to be part of the research and development of this frontier technology that will shape the future.

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