

Up close and personal networks

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(PhysOrg.com) -- The MAGNET Beyond project developed a breakthrough platform to cope with a world where every individual owns up to a thousand personal devices. But what will such a world look like?

The Wireless World Research Forum, an expert group, predicts that people could be using up to a thousand personal devices – everything from sensors to satellite navigation – within the next decade. Now European researchers have developed a hardware and software platform that can cope with such a huge growth in personal technologies.

It is essentially a network of everything around you, a platform that will enable all sorts of current and emerging devices to communicate with each other through a Personal Network (PN) and associated Personal Area Networks (PANs).

A PN links between smaller PANs that, in turn, connect to all the technology within reach, such as clothing, sensors, mobile phones, and so on. The PNs provide an overall network between PANs, which may be in reach or far away.

But what will the MAGNET Beyond platform enable users to do in this not-so-distant PAN-future?

Seamless services

Focus on the user was a core element of the project. “In MAGNET Beyond, we looked at user needs, and then set out what the technical

requirements were to fulfil those needs,” explains Liljana Gavrilovska, Technical Manager of the MAGNET Beyond project.

In other words, the technology does the difficult work so users do not need to. It is a far cry from much of technology where people go through a painful learning curve before getting a gadget to work for them. Remember the dismal performance of video recorders.

The EU-funded MAGNET Beyond project sought to provide compelling services delivered seamlessly to the user over self-managing and configuring technology. Essentially, the technology remains transparent, invisible to the user.

In one pilot test, for example, users go to a gym and their phone links in directly with the exercise machines. It automatically adds new information to the users exercise diary, and can offer guidance for new goals. Ultimately, it will be able to track a user’s vital signs against performance and, if necessary, transmit information to a personal doctor.

Icebreaker

In another scenario, called 'Icebreaker', researchers tested social and professional networking via a MAGNET Beyond PN. In this scenario, a reporter and a photographer attend a film festival separately. Accreditation is handled automatically, by connecting to the festival network. On arrival, all the data relevant to the festival is downloaded to the duo, along with a virtual press pass and festival programme.

The reporter does an interview and writes a story, then scans her contact book to see if there are any photographers covering the festival who can provide illustrations for her article. She finds the photographer and arranges to meet. At the meeting, the reporter and photographer’s

personal networks set up a federation, linking temporarily one network to the other.

The reporter's network sets up a secondary federation with her newsroom. The photos are transferred to the newsroom and cash is transferred to the photographer's account. Again, all these services are performed seamlessly.

These services were just a basic test of the MAGNET Beyond's potential. Ultimately, the technology developed by the project will enable potentially thousands of new and enhanced services, all seamlessly deployed.

Healthcare monitoring, for example, is a major application that could find immediate deployment. It allows doctors to keep track of recovering patients, or to monitor specific health indicators for high-risk individuals and elderly people.

The basic pilot tests were a success, gaining ready acceptance from the users, who thought the services were handy, really easy to use and that they would be willing to pay for similar services – a key issue for the future of the platform.

Future exploitation

MAGNET Beyond has presented its prototypes and pilot demonstrations around the world, including several specialty events for ICT mobile technology.

Meanwhile, EU projects ORACLE and WHERE use the hardware developed by MAGNET Beyond, and the consortium developed strong co-operation within several EU project clusters like broadband Air Interfaces, Beyond 3G System Architectures, and others.

Elements of their work have been patented and are paving the way towards emerging standards, which will mean the project has an impact long into the future, after its work is finished.

“The project has been very active in the standards area, making contributions to all the significant bodies and fora,” notes Gavrilovska. “Certainly, a lot of the technical advances, both in hardware and in software, will be taken up in some form by the different partners, but I would hope that, one day, the platform would be deployed as a whole, and I think there is a good chance that will happen.”

Addressing real, current problems

“Because MAGNET Beyond platform responds to real problems as they exist now, and we designed everything to make sure that the technology, like the optimised air interfaces, could be easily and cost-effectively integrated into a wide range of devices, from phones to laptops to cars.”

The project is a landmark step in the development of Personal Networks. It tackled the major obstacles to seamless technical set-up, and created many novel and innovative technologies in the process, both in hardware and software. It also opens a lot of opportunities to create new services.

MAGNET Beyond will usher in a new phase of the Information Age, where self-managing personal technology – capable of linking and working together to complete a common goal – will give rise to a ‘network of everything around you’.

The MAGNET beyond project received funding from the ICT strand of the Sixth Framework Programme for research.

This is the final of a three-part series on MAGNET Beyond.

Part 1. www.physorg.com/news146150493.html

Part 2. www.physorg.com/news146236275.html

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