Bluetooth: Private and Public

Seamless access supporting the user

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Having moved to wireless/mobile telephony, we have also changed our habits. Arrangements are made while being on the way, and destinations are not longer found by maps, but by questions such as "Where should I go now?". The move from the fixed Internet access to the mobile access will result in new behaviours, some of them being visible already now.

Location services are evolving, and the "Where are my friends just now?" and "What can we do here?" questions will be more frequently asked in the future. People will continue to be on the move, and expect to have their personalised information following them.

Seamless personalised access

What is common in most of the future scenarios is the expectation of seamless access and personalised services. EURESCOM's P1118 "Bluetooth Access" paves the way for the seamless access, and establishes means for personalisation. Undoubtedly, Bluetooth has the capabilities to provide seamless access. It is not as specialised as WLAN; it is more an all-round tool to serve interconnectivities of all our devices. The technology is cheap, current estimations are 2 € for a two-chip solution and 5 € for the single chip implementation. Bluetooth has low power consumption, and the Bluetooth *profiles* allow interconnectivity. Most of the profiles are software based, and allow a reconfiguration of the capabilities of your devices.

On the move

As of today we tell people to call us on "my mobile", and for those who travel for business the laptop is part of the luggage. But we still lack communication between the devices, and tools to transfer "my agenda" down to the mobile phone are lacking. The main reason for this is the stone-age technology of laptops: It takes "hours" to boot, and the laptops are always "off-line". PDAs are bridging the gap, being online all the time and synchronised with the PC. All these devices will interact seamless with the help of Bluetooth and form the Personal

Figure 1 - Seamless access with your phone as the gateway to the public network

Access Network (PAN). The devices have different communication capabilities, but Bluetooth will act as a unifier, allowing the mobile phone (with GPRS and UMTS) to be the gateway towards the public network (see figure 1).

Visiting Access

Broadband access is available at all companies and more and more private homes. But the access is usually hidden, because it is cable based. Bluetooth and WLAN will open the access for the devices of your PAN, and allow for always-best-connected from all your devices (see figure 2).

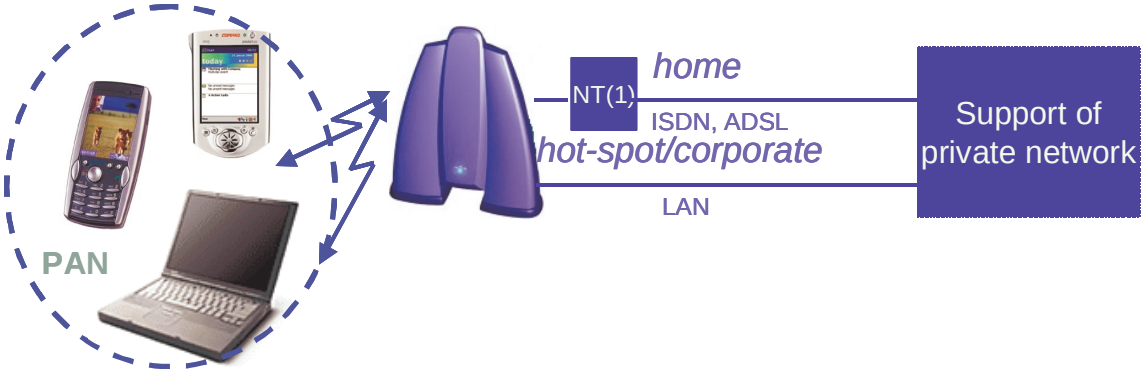

Figure 2 - Home/corporate seamless access from all devices of your PAN

The wireless access opens also for visiting services, e.g. providing visitors with local information of the site/company or general access to the Internet. Companies have identified the provision of this local and global information as a service to their visitors. P1118 has taken the idea further, and has established concepts for an open visitor access to the private home.

Security and privacy

An open wireless access will ease the usage of broadband services, but needs mechanisms for security and privacy. P1118 favours the authentication through the mobile phone, as illustrated in figure.

Figure 3 - Authentication and security in your ”personal sphere” provided by the SIM

Customers trust communication in the operator’s network, and this network can be used to distribute security tools, e.g. an encryption key. Having distributed both the identity (from the SIM) and the encryption key to the devices of the PAN, the user can have a seamless and secure connection from his PC or PDA to the network.

Conclusion

Key elements of future communication scenarios are seamless access and personalised services. Bluetooth is the key technology to distribute the user's login identity to all the devices of his Personal Access Network (PAN). All devices can use this identity to connect seamless to their preferred network. Identification will also prepare the way for personalised services: "Exactly what I want!"

More information about seamless and "Public" Bluetooth Access are available at http://www.eurescom.de/public/projects/p1100-series/P1118/ .