Building the smart home wirelessly

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Like the paperless office, the smart home has been a long time coming, but a report published in the *International Journal of Internet Protocol Technology*, suggests that radio tags coupled with mobile communications devices could soon provide seamless multimedia services to the home.

Yueh-Min Huang of the Department of Engineering Science, at the National Cheng Kung University (NCKU), in Tainan, Taiwan, and colleagues explain that as networks and technology develop, the concept of a smart home has become a major focus of major computer, communication and consumer companies.

The team has now proposed this an intelligent home network system that works by integrating well-known Radio Frequency Identification (RFID) technology into the Open Service Gateway Initiative (OSGi) to allow people to access a video monitoring and media system throughout their household or even remotely.

Their proposal will help solve several common problems for people when they are away from home, such as whether they left devices and lights running that should have been switched off, to check that their security alarm is set and often more worrisome whether the children are doing their homework or watching TV or gaming instead?

When you are at home, the same RFID technology could take care of entertainment needs as you move around the house, allowing favorite songs to follow you from room to room, for instance.

The team points out that more than 70 manufacturers, including Echelon, IBM, Motorola, Nokia, Nortel, Panasonic, Philips, Sony, and Toshiba have joined OSGi, which means that the standard could be widely adopted and implemented by technologists. The NCKU team has built on this open network system using RFID so that devices and individuals can be connected to video devices in the smart home for entertainment or security purposes.

There are several scenarios that their system could enable: users could watch and control a monitor screen in the home through a mobile device, for instance. Users could interact with each other through networked TV whether they are at home or not. And, by having a centralized media server users could have movies or music track them as they move from room to room.

"The open architecture system in this paper can provide rapid, automatic, and convenient services, thereby substantially improving the quality of life for users," the researchers say. Fundamentally, RFID over the OSGi system will make the smart home a reality by connecting all your media devices and domestic appliances so that they can usefully communicate with each other and with you, the team concludes.

More information: "RFID-based seamless multimedia services for smart homes" in *Int. J. Internet Protocol Technology*, 2009, 4, 232-239

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