

Plug 'n play in home networks

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Today, music, images and videos are usually stored in digital form. But each medium needs its own playback device. In a networked home, different types of media can be smoothly interchanged and played back thanks to **the UPnP standard**.

The range of audio and video equipment in today's homes keeps growing – digital cameras, video recorders, MP3 players, set-top boxes and game consoles. It doesn't take long to build up a jumbled collection of audio and video data, stored on numerous devices that are frequently not compatible to one another. "UPnP – Universal Plug and Play – is a standard created by the industry for linking different devices made by different manufacturers," explains Christian Gran of the Fraunhofer Institute for Open Communication Systems FOKUS in Berlin. "The idea is that computers, televisions, multimedia devices and household appliances will automatically detect and communicate with one another or exchange data, without requiring complex configuration on the part of the user – simply plug and play."

So far such arbitrary interchanging is only possible to a limited extent. A UPnP Audio / Video stack designed by developers from FOKUS and its spin-off, TwonkyVision GmbH, is already available on the market. The stack includes a media server that supports a variety of media such as music, images, videos and Internet radio. These components make it easy to put the idea of a multimedia home network into practice. It is planned that next-generation devices will be equipped with UPnP AV by their manufacturers.

Any new DVD player or game console that the user subsequently purchases will be ready for UPnP. Set-top boxes, MP3 players or video recorders will then be able to communicate, regardless of make. Another asset of the media server is that it only requires less than 150 kilobytes of memory. The user no longer needs to worry whether the file format is the right one for the playback device – the server deals with that problem. Further help is provided by a database-supported multimedia content management system, which manages and searches for music, images and videos in the UPnP network regardless of the device on which the data are stored.

In future, however, it will not only be the devices within a single home that are interlinked, but different home networks with one another. FOKUS and TwonkyVision are working on a home-to-home gateway for this purpose. Multimedia devices connected via the home-to-home gateway can then access the content from different UPnP networks. “So if I’m visiting my friends and they suddenly want to see the photos of our last vacation, I can simply use their devices to show the pictures from my server,” concludes Christian Gran.

Source: Fraunhofer-Gesellschaft

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