Delivering next-generation mobile content

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With mobile phones attaining almost universal coverage in Europe, the focus has now shifted to providing the next generation of content-rich applications and services to end users.
The IST-funded project MAESTRO aims to play its part in this evolution by harnessing satellite technology together with existing 3G UMTS networks to deliver interactive digital multimedia services to mobile users.

Launched in January 2004, MAESTRO sets out to use Satellite Digital Multimedia Broadcasting (S-DMB) technology to implement a broadcast/multicast layer complementary to the existing 3G mobile networks.

As Nicolas Chuberre, MAESTRO's project manager explains, the satellite component is designed as much as possible to reuse current 3G technology, thereby minimising the development of new products and technologies, while at the same time increasing the content delivery capacity of the networks.

"The beauty of this approach is that it allows us to provide mobile broadcast services such as mobile TV and video service delivery to 3G handsets with minimum cost impact on 3G handset terminals. S-DMB offers basically Multimedia Broadcast Multicast Service (MBMS) over nationwide umbrella cells to an unlimited audience and is compatible with open service platforms developed for 3GPP MBMS services," he says.

Among the advantages over existing technology is that global coverage in countries such as Great Britain, France, Germany, Italy, Portugal, Spain, Poland and Greece can be achieved with a cost effective satellite/terrestrial repeater infrastructure that constitutes a single frequency network.

“Indoor coverage is achieved with a high-power geo-stationary satellite and a complementary network of terrestrial repeaters deployed in dense urban areas where the satellite power is not sufficient to achieve deep indoor penetration,” remarks Chuberre. Another bonus is the fact that S-DMB offers a flexible and environmentally-friendly add-on to the existing 3G infrastructure.

“There is very low radio wave exposure from this technology and the terrestrial repeaters are designed to be smoothly co-sited with base stations,” explains Chuberre. “They can eventually share the 3G base station antennas, as we proved in a trial of the technology in Monaco. The repeater’s transmission power is also compatible with 3G requirements and the terrestrial repeater network density is less than the one for UMTS base stations,” he says.

The Monaco trials of the system were deemed a great success by the project partners and proved beyond doubt the viability of the S-DMB technology and its ability to successfully piggyback on the existing 3G infrastructure. Further trials are planned for Toulouse, France, later this year to fine-tune the technical performance of the system.

In terms of the commercial potential of S-DMB technology, Nicolas Chuberre has no doubt that the technology developed by MODIS, the original forerunner to MAESTRO, has much to offer the telecommunications industry.

“We have started introducing the S-DMB concept to mobile and satellite

operators since the beginning of this year and it has been well received by all of them. The commercial success in the USA of XM Radio and Sirius and the launching of a S-DMB system in Korea, albeit based on different technology and a different frequency band, underscores just how relevant the proposed hybrid satellite/terrestrial repeater architecture really is," he says.

Chuberre estimates that an initial commercial rollout of the technology is possible for 2007, followed by a full-scale deployment at the beginning of 2009.

All of which is good news for 3G users keen to have streaming television and video relayed directly to their handsets for an affordable price.

"Basically S-DMB is able to deliver up to 27 mobile TV channels per umbrella cell for a monthly subscription fee in the range of 10 euros," says Chuberre. "The service will be available anywhere in Europe and the cost impact on 3G handsets is expected to be much less than 5 euros in volume."

Source: IST Results