**FLO™ technology brings multimedia content to mobile devices**

**TV on your mobile phone**

These global activities focus on combining different technologies to economically provide the mobile users’ handheld devices with a wide range of multimedia content. The technical development of OFDM-based standards has produced a variety of solutions — DVB-H, DMB-T or FLO™, for example — that make mobile reception of TV/video services possible on battery-operated devices such as mobile phones. The required networks are currently being implemented in different countries.

The conversion from analog to digital TV meets the needs of service providers. In the USA, for example, the TV channels 51 to 69 are being released and auctioned off by the FCC. The usage of the spectrum will largely be left to the new frequency owners.

Technology provider Qualcomm reserved channel 55 (700 MHz) in the USA early on, and created MediaFLO™ USA, a wholly-owned subsidiary. The company will deploy and operate a nationwide wireless media delivery network for the FLO™ standard, delivering up to 100 channels with multimedia content to third-generation mobile phones (see box). The transmission network is scheduled to be launched by the end of 2006.

**Strong partners**

In terms of engineering, setting up a network in a short amount of time is an enormous organizational and logistical challenge. Accomplishing this ambitious goal requires cutting-edge technology and quick availability, combined with a consistent logistics concept. Qualcomm therefore is working with Rohde & Schwarz as a transmitter supplier. Both companies as technological pioneers act as catalysts for new trends and technologies in the wireless industry.

With its state-of-the-art exciters, Rohde & Schwarz is the world’s only company that can easily integrate new DTV standards into its transmitters. In a joint collaboration, the FLO™ code was implemented in the R&S®SV700 exciter in a very short time. Afterwards a supply contract for 5 kW DTV transmitters of the R&S®NV 7500V family was awarded.

The first test transmitter was successfully put into operation in San Diego in November 2004. Two to three transmitters forming a single-frequency network are planned for each city or coverage area. Since cities in the USA are spread out, high transmitter powers between 5 kW and 10 kW are usually preferred.

“One of the key operational factors of utilizing Rohde & Schwarz product is its modularity,” states Richard Azer, Director of Operations, for MediaFLO™ USA. “That functionality assists both in the deployment and operational support of the equipment.”

**Impressive transmitters**

Rohde & Schwarz clearly beat its competitors in the first stage with its R&S®NV 7500V transmitters and their excellent price/performance ratio. The liquid-cooled 5 kW TV transmitters with their outstanding features meet the requirements of the described scenario. Low power consumption, easy servicing, effective liquid cooling, high redundancy, simple mechanical concept, state-of-the-art LDMOS amplifier technology
that ensures high linearity, best-rated exciters with integrated GPS receiver, and the modern remote-control concept — these were just some of the arguments speaking in favor of Rohde & Schwarz.

Purely practical aspects, which often help considerably to save costs, are also important. The clear, straightforward mechanical structure of the transmitters allows even third-party companies to set up the systems quickly and safely. This is an important prerequisite if you want to work successfully with subcontractors. The compact design with its minimal footprint is another important cost criterion if operating rooms have to be leased.

In the USA, fast spare-parts availability and 24-hour service are crucial. The Rohde & Schwarz office in Columbia, Maryland, was able to provide the necessary prerequisites within minimum time.

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Basic setup of a nationwide network of MediaFLO™

The new FLO™ digital standard from Qualcomm is based on signals with COFDM modulation and 6 MHz bandwidth that can be received by 3rd-generation mobile devices specially developed for this purpose. The MediaFLO™ network operations center receives content in realtime from different content providers via satellite, or terrestrially via transmitters or cable. Other content is fed in via the Internet or from an archive. The signals are multiplexed and converted into a FLO™ data stream. The network operations center passes the data streams on to the local centers, which are also the transmitter locations. The data streams can be fed via satellite, microwave link or optical fiber. The local centers are allowed to insert additional content into the data streams before they are sent to the transmitters. The data streams are subsequently COFDM-modulated with the FLO™ codec and transmitted via a terrestrial single-frequency transmitter network. Users can receive the service on a mobile phone and watch TV on the go.

National and local centers in a MediaFLO™ network distribute multimedia content to mobile devices.