

Research for a multimedia lifestyle

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Listening, viewing, mobile activity – nearly everybody uses digital technology every day without even realizing. At the IFA consumer electronics fair in Berlin, researchers present the latest developments in picture and sound quality and almost unbounded access to information.

New digital solutions for contemporary forms of listening, developed by Fraunhofer researchers, are being presented in Hall 5.3 of the IFA consumer electronics fair (Berlin, September 2 to 7). Ensonido®, for example, combines two elements that were long regarded as irreconcilable: surround sound and portable music players. A new audio system enables 5.1 surround sound to be output through conventional stereo headphones. This makes it the ideal companion to MP3 Surround, the multi-channel extension for MP3 files. At the opposite end of the scale, impressive acoustics are created in movie theaters or other large venues by the IOSONO® sound system, which provides flawless natural sound in all seats. In the RadioMondo project, various DRM transmitters and receivers have been designed, including a complete software radio receiver. This heralds the revival of the classic shortwave radio.

There are new delights for the eyes as well: The digital advertising pillar projects distortion-free images, films as well as 3D objects and panoramas onto curved surfaces from the inside. The 3D effect even persists as the observer walks round the column wearing stereo goggles. The 3D kiosk and “Free2C” display systems are able to create a similar illusion even without the need for goggles. The objects appear to hover in front of the displays and can be moved around using simple hand gestures. This is made possible by a integrated video-based system that

tracks the eye and hand movements of the observer.

The third area of the Fraunhofer exhibit is devoted to “mobile activity”. Can cinema films with brilliant pictures and powerful sound be viewed in real time on a mobile phone or PDA? The pocket cinema makes time-consuming downloads of film data unnecessary. The data stream can be transmitted directly from the network or via WLAN thanks to a combination of two compression techniques. Scaleable video coding enables multimedia content to be processed according to the type of application or the resolution of the terminal device, making optimum use of the bandwidth available for data transmission.

Computers will shrink to the size of a grain of wheat. The tiny computers form networks and communicate by radio. Engineers around the world are developing these electronic grains, or e-grains. At the trade show, scientists will present an e-grain which at present is still the size of a sugar cube. Fitted inside a golf ball, it registers the tee-off angle and the ball’s acceleration, and transmits this data to a display. The player receives instant feedback on the nature and quality of his stroke.

Source: Fraunhofer-Gesellschaft

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