

# Mobile radio – look as you listen?

A new audio service delivers images to go with the radio program – for instance CD covers or concert photos. © Fraunhofer HHI



**Eyes can listen too: Researchers have developed a new audio service for cell phone radios in which the sound is accompanied with matching images – such as CD covers or concert photos. Sound and image take up only a quarter of the bandwidth of conventional radios.**

The listener cheerfully hums along with the music playing on his cell phone radio. It wouldn't be a bad idea to buy this song – but on which CD was it released?

A quick glance at the display reveals the answer: It shows additional information about each song in the form of images such as the CD cover, photos of one of the band's concerts, or – if the music happens to be a soundtrack – screenshots from the film. What's more, even including all pictures the service requires only a quarter of the bandwidth currently occupied by the conventional digital stereo signal via DAB. This cuts the cost of transmitting the image and the sound to only about 25 percent.

To achieve this result, the research scientists at the Fraunhofer Institute for Telecommunications, Heinrich-Hertz-Institut HHI in Berlin, who developed the “visual radio”, first had to compress the audio signal.

“Instead of the usual DAB format, we use the High-Efficiency Advanced Audio Coding (HE-AAC) radio format developed by our colleagues at Coding Technologies, a Fraunhofer spin-off,” says HHI head of department Dr. Ralf Schäfer. “This allowed us to reduce the bandwidth of the sound from 192 kilobits per second to 48 kilobits per second.” In order to economize on transmission capacity for the images, the experts compress those too. They do it with the same technology that is used for mobile television on the cell phone.

“Our goal in this case was to apply the compression technique efficiently to fixed images as well,” says Schäfer. “We succeeded: If we transmit a new image with the sound roughly every two seconds, it only adds about 10 to 15 kilobits per second to the load.” This is achieved by using the currently most efficient video coding method H.264/AVC, in the development and standardization of which the HHI researchers played a significant role.

Visual radio is set to go into trial operation in several regions of Germany this August – on various public radio stations. Anyone who is interested can also try out visual radio at the joint Fraunhofer stand at the IBC trade fair, to be held in Amsterdam from September 7 to 11 (Hall 8, Stand 381). Schäfer sees visual radio as a new service primarily for mobile TV networks. In the long term, the researcher hopes, the new visual format could take the place of traditional radio.

Source: Fraunhofer-Gesellschaft

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