5.1 Surround Sound for FM HD Radio at NAB 2005

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Fraunhofer IIS, Telos, Omnia, Axia, Broadcast Electronics and Bose participate in world-premiere live demon-stration of non-matrixed 5.1 Surround Sound for FM HD Radio.
Fraunhofer Institute for Integrated Circuits IIS and its partners join to present at the 2005 NAB show a first live demonstration. The end-to-end demonstration will involve the complete HD Radio broadcasting chain comprising the studio, on-air broadcasting and automotive digital radio receivers. The original multi-channel material will be mixed in discrete 5.1 surround at the Axia booth and then passed over a wireless link to the Telos / Omnia booth to be encoded for surround by Fraunhofer IIS Spatial Audio software. As a next step the encoded material is processed for FM transmission and broadcast on an HD Radio channel using a Broadcast Electronics HD Radio Exciter.

A Visteon car radio modified by Fraunhofer IIS will receive and decode the over-the-air signal for 5.1 surround at the Telos booth. The visitor will also be able to audition HD Radio surround audio in an in-car environment, courtesy of a prototype Bose 5.1 Cabin Surround Sound system at the MPEG Pavilon.

Steve Church, Telos Systems Founder & CEO, says “We will show that genuine, non-matrix surround is practical and doable today. There is no need to compromise.” Further, “We expect that people who experience the demo will be not only impressed with the quality of the audio itself, but surprised at how simple and low-cost it can be to implement.”

The surround encoder / decoder system has been designed by Fraunhofer IIS and Agere Systems. It is part of the reference model of the currently ongoing MPEG Spatial Audio standardization process. The key to the surround system is that all the pieces of the audio that go to the surround channels are present in the two stereo channels created manually by an artistic downmix, while the spatial information is transmitted in the ancillary data channel of the bit stream.

Harald Popp, Head of the Fraunhofer IIS Multimedia Realtime Systems Department notes, “With the help of our long-time partner Telos Systems and our huge experience in audio and video coding, we can prove the high quality of the upcoming MPEG Spatial Audio standard already implemented in real-life broadcast.”

Church concludes, with regard to the Acura exhibit, “The car is the perfect environment for the surround experience, and since that’s where a lot of radio listening happens, we wanted to show what surround can bring to radio’s party in the real world.”

Source: Fraunhofer Institute for Integrated Circuits IIS