

# IMMERSIVE AUDIO: FROM THE FUTURE TO THE PRESENT

Broadcast immersive audio is not a futuristic issue anymore, now is time to prepare ourselves to produce immersive audio and insert it in workflows.

This panel will show the requirements and tools to produce content and insert it in workflows.

Chair: **Hélio Kuwabara, Support Specialist, TV Globo**

## • DOLBY ATMOS: FROM PRODUCTION TO EXHIBITION

Speaker: **Giovanni Asselta** - Latin America Solutions Engineer, Dolby Laboratories  
Tools and Techniques from production to exhibition in Dolby Atmos: Live and Post-Produced;

Spectrum for equipments able to reproduce Dolby Atmos Content (DD+ and AC4);  
Update about Fórum ISDB-Tb decisions about Dolby codecs.

## • THE EVOLUTION OF IMMERSIVE AUDIO IN SHOWS - RECREATING THE ENVIRONMENT ITSELF

Speaker: **Renato Carneiro** - Support DiGiCo at Brasil, Audio Systems

Unlike the use of AI in image productions - cinema / cel / tv, where a previously captured environment (audio and video) or even “drawn” is recreated in another environment - your living room, a movie theatre, your headset, in EMI The challenge is to recreate the very environment in which the artist / musician is inserted, live, real time. And for Broadcast, recreate the environment where the viewer is live, real time.

## • BROADCAST EXPERIENCE USING THE NEXT GENERATION AUDIO SYSTEM MPEG-H 3D AUDIO

Speaker: **Yannik Grewe** - Sound Engineer, Researcher at Fraunhofer IIS

MPEG-H Audio is the Next Generation Audio (NGA) system developed by MPEG for delivery of personalized and immersive sound. Designed for broadcast, streaming and VR/AR applications, it allows viewers to adjust the sound mix to their preferences, while its support for immersive audio improves the level of realism of the listening experience. With a rich set of metadata, new concepts for loudness and DRC together with an active downmix and rendering features, MPEG-H Audio tailors the sound for optimal playback on a wide range of devices and environments.

Already adopted by ATSC 3.0 and DVB, MPEG-H Audio was most recently selected by the SBTVD Forum for delivery of immersive and Personalized Sound over the existing ISDB-Tb platform. In May 2017, South Korea was the first country worldwide to launch a terrestrial UHDTV broadcast service. The service is using MPEG-H as the sole audio codec.

Additionally, there have been a number of successful trials conducted during major sport and music live events across worldwide, including the Carnival in Rio de Janeiro or the Eurovision Song Contest in Israel.

MPEG-H production tools allow for a native ingest of immersive and personalized content produced according to ITU-R BS.2076, Audio Definition Model. Since ADM is very flexible and applicable to many applications, MPEG-H production tools support various ADM profiles which define interoperability points for ADM tools of different manufacturers.

The talk will focus on experiences gained during productions, 24/7 broadcasts and will demonstrate production tools and workflows using a latest generation technology.



**Chair: Hélio Kuwabara - Support Specialist, TV Globo**

Telecom Engineer graduated by Centro Universitario da Cidade, granted with II Niemeyer prize given by CREA-RJ. Expert in Audio na Communication systems. Works at áudio system support at Estudios Globo since 1995, worked in the implementation of Estudios Globo complex, Fifa World Cup, Carnival and Musical shows; Works with the studies of NGA and AoIP. Published and presented papers at NAB BEIT in 2018 and 2019 about experiences with immersive áudio in carnival and exhibition in UHD and immersive áudio of worldcup matches.



**Giovanni Asselta - Latin America Solutions Engineer, Dolby Laboratories**

Giovanni Asselta was Coordinator and Teacher between 2001 and 2008, in charge of subjects like: Radio and TV Technologies; Advertisement production in Radio and TV; Production and Recording Techniques. Between 2008 and 2015 was Audio supervisor at TV Record and since 2015 is Solutiion Engineer to LAtin América at Dolby Laboratories..



**Renato Carneiro - Suport DiGiCo at Brasil, Audio Systems**

DiGiCo Support in Brazil, by Audio SystemsMonitor Technician / Mixer Monitor - Aero Anta, Starting Capital, Chrystian & amp; Ralf, Zezé di Camargo e Luciano, Lobão, KLB, Natiruts, Mutantes, Programa Musica Boa ao Vivo - Multishow, Multishow Music Award. PA Technician / FOH Mixer - Bruno and Marrone, Natiruts, KLB, Lobão, Mutantes / Broadcast Mixing / Broadcast Mixer - Epah! / Multishow: Salvador Summer Festival, Atlantida, Lollapalooza, Rock in Rio.



**Yannik Grewe - Sound Engineer, Researcher at Fraunhofer IIS**

Yannik Grewe received the B.Sc. degree in 'media technologies' and a M.Eng. degree in 'audiovisual media – sound'. He joined the Fraunhofer Institute for Integrated Circuits IIS in 2013 as a scientist and field application engineer for MPEG-H 3D Audio. His main focus are broadcast productions using MPEG-H 3D Audio and developments of production tools for Next Generation Audio. He acted as principal sound engineer for major Next Generation Audio productions, such as the European Athletics Championships 2018 or the Eurovision Song Contest 2019.