# Dolby DP590 Broadcast Audio Object Authoring

The Dolby DP590 Broadcast Audio Object Authoring tool is a key element of Dolby's industry leading object–based audio authoring toolkit that assists broadcasters, live audio mixers and engineers in the adoption and deployment of immersive audio for live events.

Dolby's object-based audio (OBA) authoring toolkit for broadcast applications consists of the DP590 Broadcast Audio Object Authoring tool (DP590), the DP591 Audio Encoder (DP591) and the DP580 Professional Reference Decoder (DP580). This toolkit provides the ability to do immersive audio authoring, encoding, and monitoring.

The DP590 provides a user friendly interface to give the audio engineer easy access to set up and deliver a new immersive audio experience as channel-based audio (e.g. 5.1.2, 5.1.4). It does this by ingesting audio groups from the mixing console and providing a simple way to create object audio presentations, including mapping sounds to locations in 3D space, and developing associated metadata. It also provides an easy way to monitor the changes to the immersive audio content that has been created, including emulating different speaker configurations.
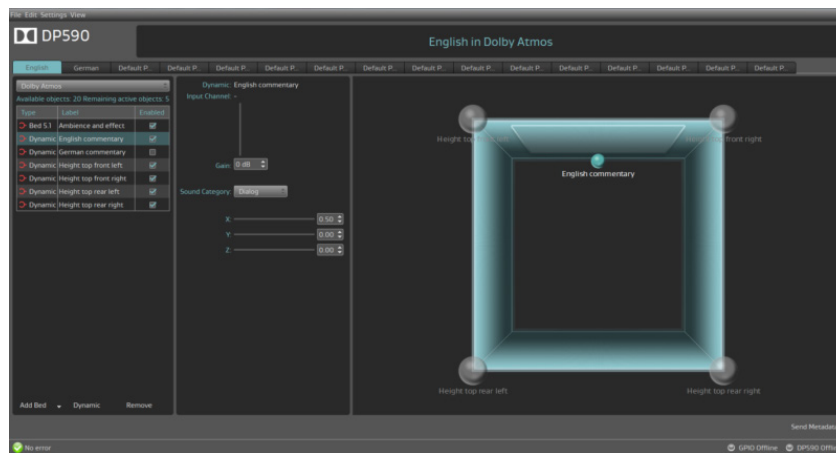
Dp590 user interface

The DP590 wraps around an audio mixing console as show in the diagram shown below. It enables audio engineers to define and monitor the various combinations of the audio elements that they wish to create. Each defined combination is referred to as a Presentation, and downstream decoders can be set to decode and render each presentation—for example, "5.1 English"—whenever this is required. The metadata used within the presentation is fully defined in the DP590 and is therefore under the control of the audio engineer. Presentations can be appropriately named for the production and may refer to languages, targeted delivery paths, or enhanced experiences as desired by the producers.

Simplified Live Production Workflow
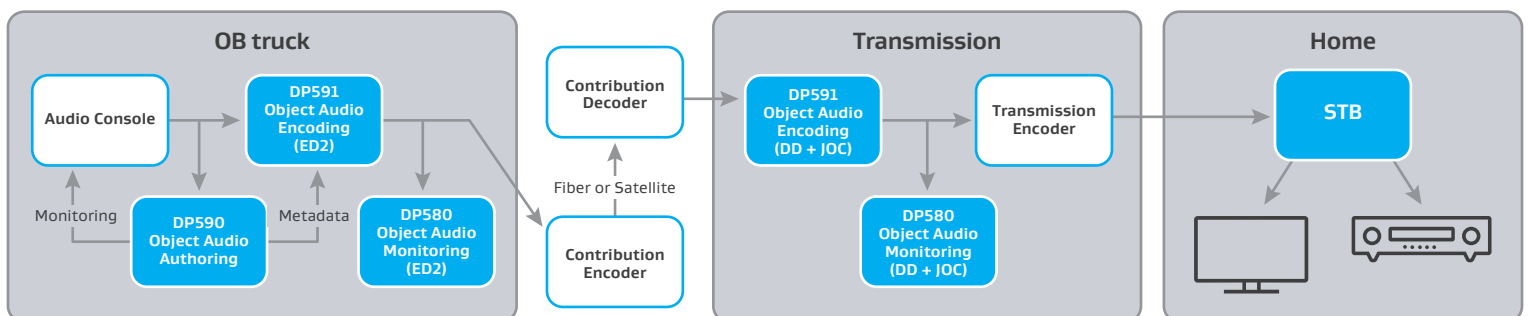
Dolby DP590 Broadcast Audio Object Authoring

TECHNICAL BENEFITS

- Supports the creation of the different presentations and the associated metadata required for immersive audio delivery
- Provides local confidence monitoring of the presentations created for different playback environments without the need for additional equipment
- Supports loudness measurement of the monitored presentation to ensure regulatory compliance
- Provides proven design and reliability for installation in existing OB trucks.
- Interfaces with industry leading mixing consoles and provides external control of DP590 functionalities from existing mixing consoles thru GPIO using JNIOR device
- Provides an easy to use user interface that simplifies the process of creating immersive audio for live events.

BUSINESS BENEFITS

- Eliminates the need for broadcasters to make a major investment in new production capabilities to deliver compelling immersive audio entertainment experiences to the home and on mobile
- Works with existing microphone configurations with limited modification needed to bring fans closer to the action. Allows broadcasters to deliver immersive audio for live events that leverages the growing number of Dolby Atmos enabled playback devices
- Supports the transition to 4K/UHD/HDR with enhanced audio experiences while allowing these experience to get better over time as platforms and skills develop.
- Simplifies the workflow for live production of immersive audio.
- Gives producers and audio mixers the creative freedom to mix audio as desired to create the immersive audio experience that will pull fans into the action.

DP590 SPECIFICATIONS

Front panel

Rear panel

Input / Output

SDI Input

- Two auto detecting BNC female connectors, 75Ω, unbalanced
- Supports SD-SDI (SMPTE 259M-1998), 1.5 GB/s HD-SDI (SMPTE 292M-1998), 3.0 GB/s HD-SDI (SMPTE 424M-2008)

AES Input or MADI input

One BNC female connector, unbalanced, 75Ω,
- AES: signal levels per AES-3id-1995 (SMPTE 276M)
- MADI: signal levels per AES-10id-2055

VREF input

One BNC female connector, unbalanced, 75Ω, support for video reference signal

SDI Out

- Two auto detecting BNC female connectors, 75Ω, unbalanced
- Supports SD-SDI (SMPTE 259M-1998), 1.5 GB/s HD-SDI (SMPTE 292M-1998), 3.0 GB/s HD-SDI (SMPTE 424M-2008)

Dolby DP590 Broadcast Audio Object Authoring

AES Outputs

Four BNC female connectors, unbalanced, 75Ω, signal levels per AES-3id-1995 (SMPTE 276M)

MADI Output

One BNC female connector, unbalanced, 75Ω, signal levels per AES-10id-2005

Headphone Output

6.35 mm (1/4-inch) standard stereo headphone jack for confidence monitoring

Media Ethernet Port

RJ45 connector for 1000Base-T Ethernet; not used

Control Ethernet Port

RJ45 connector for 1000Base-T Ethernet; provides status and control through a web-based user interface

Audio processing

Input:

Up to 32 PCM channels at 48 kHz

Output:

Up to 32 PCM channels at 48 kHz

Loudness measurement

ITU-BS.1770-4 and EBU R-128

System management:

SNMP 1.2 support

Power Specifications

• Power supply	Dual, hot-swappable from rear
• Input voltage range	100–240 VAC
• Input frequency range	50–60 Hz, autosensing
• Power consumption	350 W

Physical

• Dimensions	1-U rackmount: 44 × 483 × 394 mm (1.75 × 19 × 15.50 inches)
• Weight	Net: 6.5 kg (14.5 lb.)

Environmental

• Cooling	Front to rear airflow
	Temperature-controlled fans
• Operating Temperature	0°C–40°C (32°F–104°F),
• Storage Temperature	0°C–40°C (32°F–104°F),
• Operating Humidity	20%–80% relative humidity (noncondensing)

Regulatory Notices

North America:

UL, FCC, and CE compliant

Europe:

Complies with the European Union Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHs), as amended by Commission Decisions 2005/618/EC, 2005/717/ EC, 2005/747/EC (RoHs Directive), and WEEE