

NEXT-GENERATION AUDIO

# Dolby<sup>®</sup> AC-4

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For more information on Dolby AC-4, please visit [Dolby.com/AC-4](https://dolby.com/AC-4).



 DOLBY

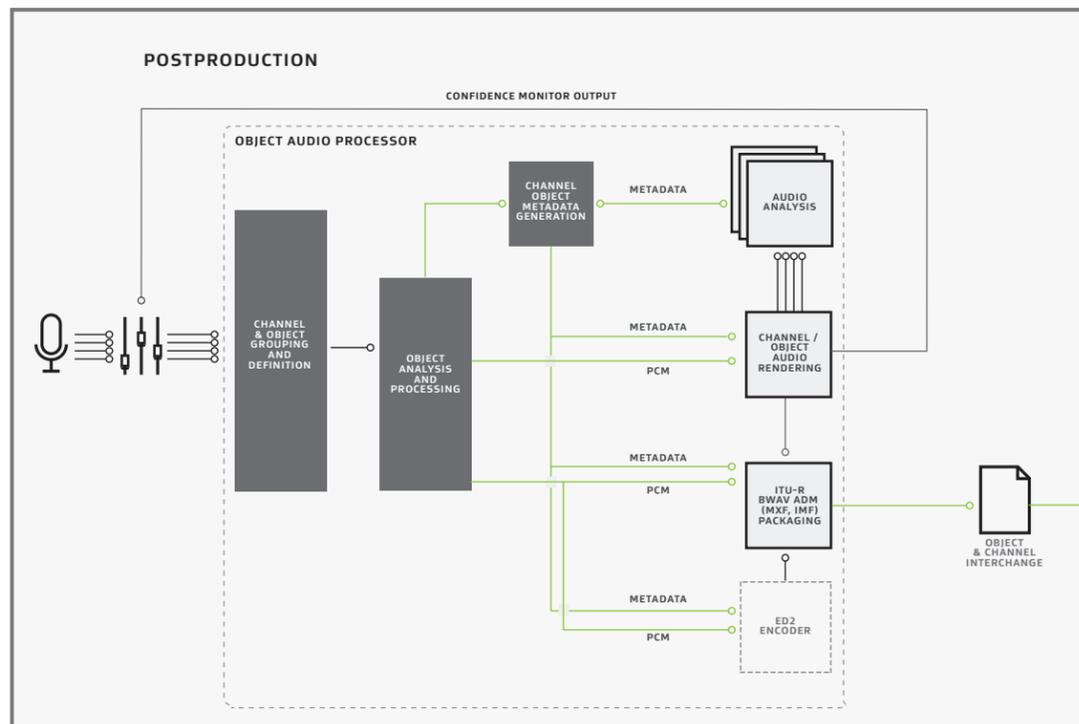
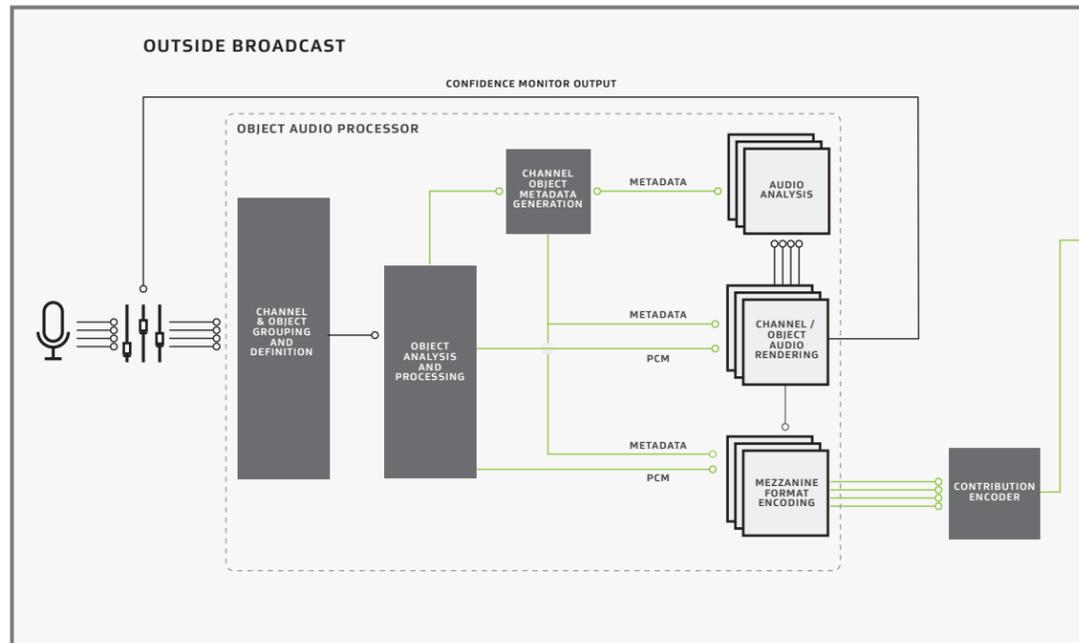
# NEX T-GENERATION AUDIO

## Dolby AC-4

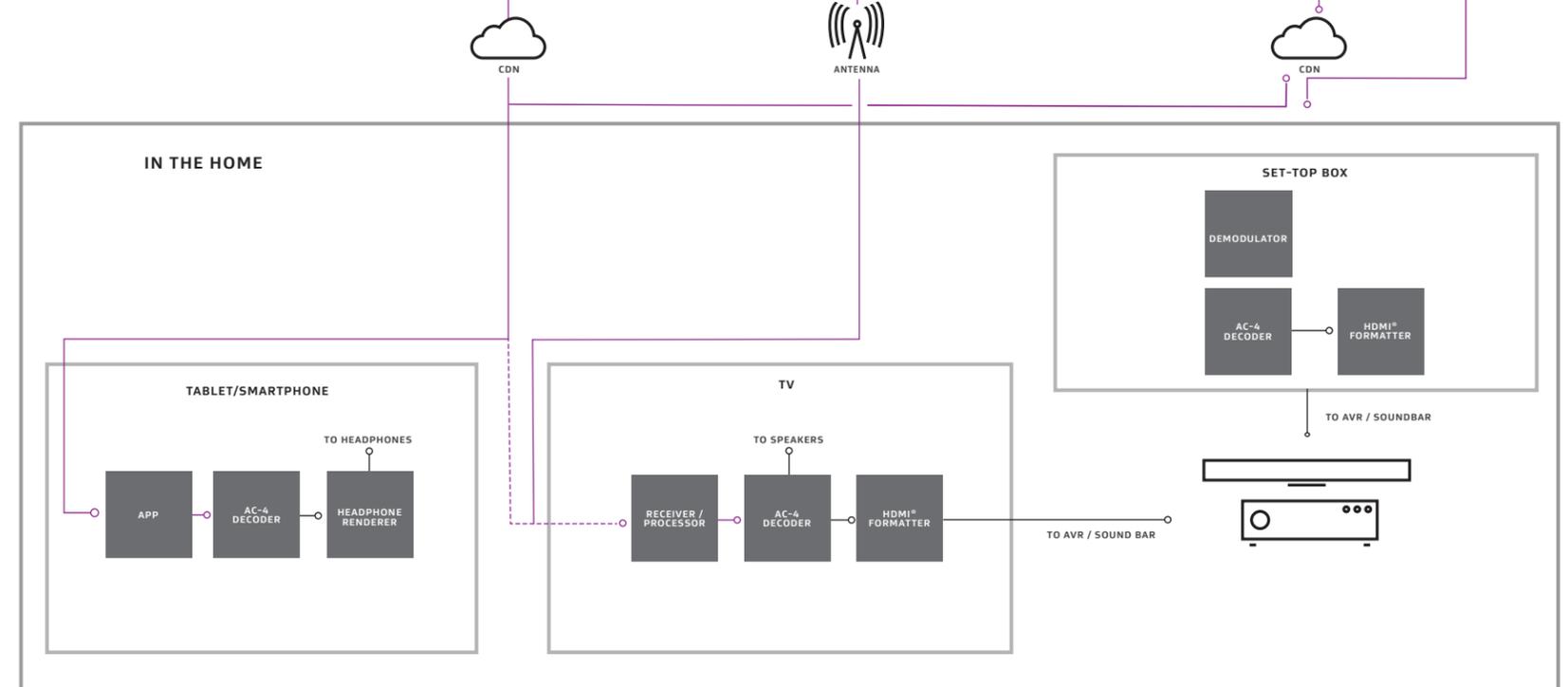
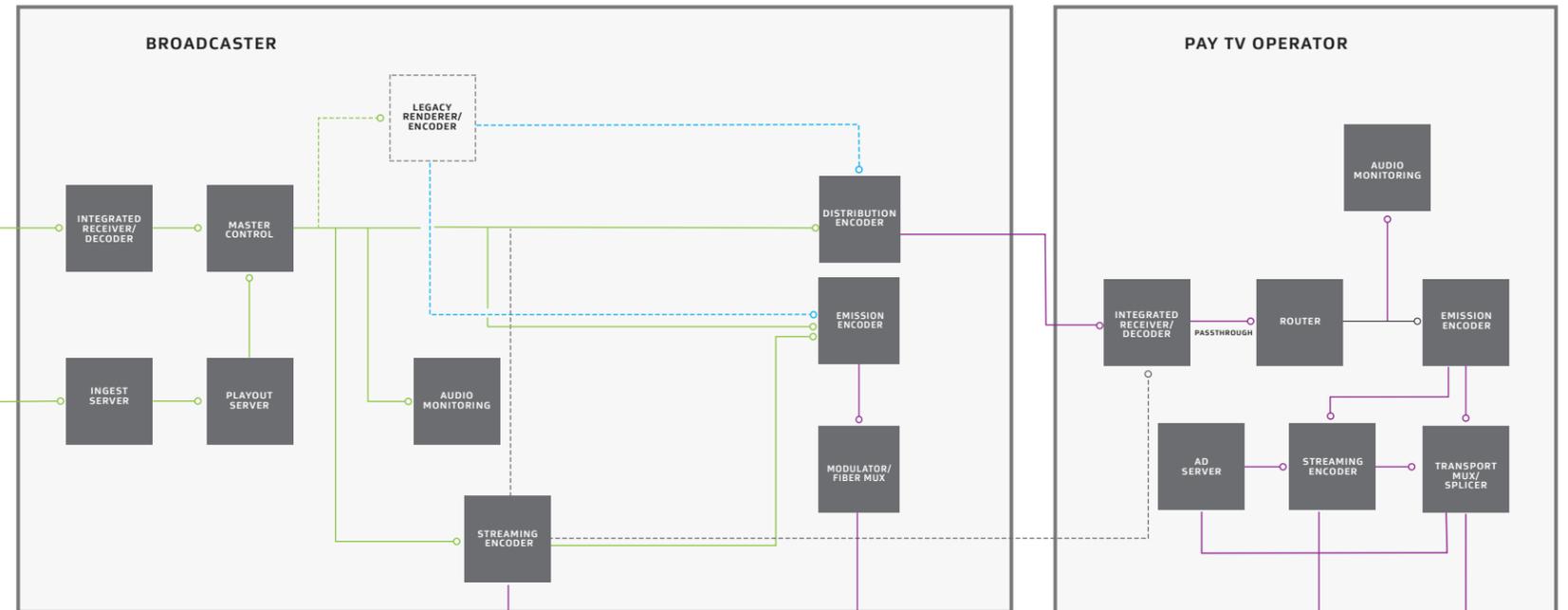
Integrating Personalized and Immersive Programming into Broadcast Operations  
 The diagram below outlines a representative end-to-end signal flow for live and post-produced content through the broadcast ecosystem.

ED2 OR PCM & METADATA    AC-3    AC-4    PCM

### PRODUCTION



### OPEN STANDARDS



AC-4

## **IMMERSIVENESS**

Dolby AC-4 natively supports immersive audio to move sound around the audience in three-dimensional space. Both channel-based and object-based immersive audio can be delivered to the home and played back on speakers or headphones.

## **ACCESSIBILITY**

Dolby AC-4 lets broadcasters efficiently deliver both descriptive audio and immersive surround sound for consumers with visual and hearing disabilities. This creates a far richer, inclusive, and more dynamic audio experience for all.

## **PERSONALIZATION**

New production techniques delivered by Dolby AC-4 satisfy audience personalization needs by delivering the individual audio program elements with metadata (crowd mics, alternative language track, announcer mics, music, and sound effects) all the way to the playback device, where those elements can be mixed based on the preferences of the viewer.

## **ADAPTABILITY**

The Dolby Audio System splits the representation and decoding of object-based audio from the composition and rendering to a specific output configuration. Dolby AC-4 enables efficient decoding on low-complexity devices and full decoding on discrete playback systems in the home. These features enable a consistent, premium user experience regardless of the final reproduction device.

## **EFFICIENCY**

Dolby AC-4 provides state of the art audio compression efficiency and builds upon Dolby's long focus on system efficiency in practical deployment.

## **DIALOGUE ENHANCEMENT**

Dolby AC-4 gives the audience the new ability to adjust the level of dialogue according to their personal preference. This includes support for both legacy (pre-mixed audio) and next-generation (music and effects plus dialogue) program sources.

## **INTELLIGENT LOUDNESS**

Dolby AC-4 provides ITU-R relative and speech-gated loudness control and regulatory information for automated loudness management throughout the delivery and playback chain.

## **ADVANCED DYNAMIC RANGE CONTROL**

Dolby AC-4 enables multichannel and multiband dynamic range information and control, including downmix and rendering loudness control.

## **AUDIO PRESENTATIONS**

Dolby AC-4 has a unique bitstream design that allows a set of audio elements to be combined into multiple audio presentations for multiple language support, descriptive video services and other new applications. This technique enables multiple versions of the audio to be delivered in a single bitstream in a bandwidth-efficient manner.

## **ENHANCED METADATA**

The AC-4 codec and the broader Dolby Audio™ system support an expanded and enriched set of metadata in many new categories including presentation, loudness, advanced dynamic range, dialogue enhancement, spatial representation, dynamic rendering control, program identification/synchronization, and interactive control. All metadata, both in AC-4 and throughout the Dolby Audio System, takes advantage of a secure authentication mechanism that ensures robust and reliable delivery throughout the distribution and redistribution pathways.

## **AUDIO/VIDEO FRAME ALIGNMENT**

Dolby AC-4 takes a new approach that makes encoded audio frames the same length as video frames to facilitate seamless content splicing. By adding a video sync input to the Dolby AC-4 encoder, the system aligns the boundaries of the audio to the video frames.