Dolby

Dolby Vision + Dolby Atmos live broadcast

Frequently asked questions

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Introduction

Dolby partners with broadcasters and ecosystem stakeholders to enable live content playback experiences with the highest possible audiovisual quality and consistency. Our ready-to-implement, end-to-end technologies optimize broadcast workflows for live HDR productions while enabling growth and adaptation to ever-changing market conditions.

This FAQ provides guidance for broadcasters and ecosystem partners looking to support their existing live-linear distribution. For more in-depth information and links to optimized HDR and audio workflows, refer to the enclosed links, published by Dolby and industry partners.

1

Production / Content Creation / Contribution

1.1 Can Dolby Vision video be distributed from any Live Production?

Yes. The three major formats for HDR production are HLG, PQ and SLOG. Broadcasters can distribute in an HDR format independent of Live Production using available format conversion solutions. Even SDR production or legacy feeds can be up converted to HDR. The consumer experience with HDR content delivered with PQ and HLG formats can be enhanced with Dolby Vision.

1.2 What is needed from Live Production to deliver in Dolby Vision?

Making the best HDR possible is all that is required from a live production. With an HDR-first live production workflow, SDR is automatically derived from the HDR, and both SDR and HDR can be monitored pre- and post-contribution encoder. The HDR contribution feed can be either HLG or PQ, and will be encoded as Dolby Vision at the broadcast center(s).

1.3 What is needed from Contribution links to deliver in Dolby Vision?

HDR contribution feed can be either HLG or PQ, and will be encoded as Dolby Vision at the broadcast center(s).

1.4 What is needed from Live Production to deliver in Dolby Atmos?

Dolby Atmos live production is becoming increasingly common. In response to broadcaster demand, support for Dolby Atmos has been added by many of the major OB facility providers using commercially available products such as audio mixing desks, monitoring systems and up-mixing to incorporate non-Dolby Atmos content.

1.5 What is needed from Contribution links to deliver in Dolby Atmos?

Dolby Atmos Live Production delivers contribution audio signals to broadcasters as 5.1.4 CBI (Channel Based Immersive) via baseband PCM or encoded ED2 compressed bitstreams (in some regions).

2

Primary Distribution & Secondary Distribution

2.1 How does a live-linear broadcast in Dolby Vision and Atmos work?

At the point of distribution (after the playout server), content is encoded for both broadcast and OTT. Dolby technologies sit inside the encoding solutions and generate Dolby-enabled content that is playable on a broad array of playback devices.

2.2 What solutions are required to enable Dolby Vision and Dolby Atmos broadcast?

Dolby has partnerships with multiple major Encoding and QC solution providers. These partners enable Dolby technologies to support both live and file-based Encoding and QC services. Solutions are also available on premise or in the cloud. A partner list for both live and file can be provided upon request.

2.3 Is distribution in Dolby Vision HDR and Dolby Atmos only for UHD Broadcasts?

No. Distribution in HDR / Dolby Vision and Dolby Atmos are independent of resolution or bitrate. However, a common broadcasting practice is to avoid introducing new technology on an existing broadcast channel. It is more cost efficient to introduce HDR / Dolby Vision and Dolby Atmos when launching a new channel, which is typically done in UHD.

2.4 How is non-Dolby Vision and non-Dolby Atmos content handled in the workflow?

Audio / Video from live events is normalized to a common distribution format then encoded with Dolby Vision and Dolby Atmos. This includes multiple flavors of HDR and the up-mapping and up-conversion of SDR content to HDR, along with audio up-mixing. From this common format, both video and audio content are encoded to enable Dolby playback on supported devices.

2.5 Is advertising insertion supported?

Yes. Advertisements can be inserted pre-emission encoder and then encoded to enable Dolby playback with the distribution feed. They can also be inserted post-distribution, which is a common practice today.

2.6 Are graphics supported?

Yes, all graphics that are applied pre-emission encoder are supported.

2.7 Which transmission types can support Dolby Vision and Dolby Atmos?

Dolby Vision and Dolby Atmos Transmission via Cable/Satellite/IP & OTT is supported. In the U.S., ATSC 3.0 – also known as NEXTGEN TV – is the third generation of digital TV technology that is currently being deployed in several U.S. markets. ATSC 3.0 natively supports Dolby Atmos for OTA applications and optionally supports Dolby Vision [2094-10].

3
Playback

3.1 What devices are capable of decoding the Dolby Vision and Atmos broadcast feed?

Dolby-enabled TVs, coupled with a capable set-top box or digital media adaptor, can playback a Dolby-enabled broadcast feed.

3.2 As a consumer, what do I need to experience [the Tokyo Olympics] in Dolby Vision and Atmos?

Content in Dolby Vision and Dolby Atmos can be experienced by those who are Comcast subscribers and have both a 4K- capable STB Xi6 [Vision and Atmos-capable] or XG1v4 [Atmos only] and a Dolby Vision-enabled 4K HDR display. Customers who have a Dolby Atmos TV, Soundbar or AVR will also experience Dolby Atmos, even if they don't have a Dolby-enabled 4k HDR display.

3.3 How can consumers who have 'cut-the-cord' experience content in Dolby Vision and Dolby Atmos?

Dolby Vision and Dolby Atmos can be supported through OTT platforms as well as Cable/IP. Dolby Atmos is supported for over-the-air transmission via ATSC 3.0 and over time Dolby Vision using 2094-10 will also be supported.

Additional Resources & Documentation

4.1 Dolby Vision Live Solution Brief

Dolby Vision Live Encoding Solutions Brief 2019 in Dolby Vision Solutions

4.2 SDR to HDR conversion guidelines

SDR To HDR Conversion Guidelines v1.0 in Dolby Vision Solutions

4.3 ITU-R-REC-BT.2390 – High dynamic range television for production and international program exchange

https://www.itu.int/dms_pub/itu-r/opb/rep/R-REP-BT.2390-2-2017-PDF-E.pdf

4.4 UHD Forum

https://ultrahdforum.org/guidelines/

4.5 ATSC 3.0 Dolby Audio Handbook

https://professional.dolby.com/SysSiteAssets/tv/home/dolby-vision/dolby_atsc3_hdbk_digi_v04_share.pdf

4.6 ITU-R BT.2408 – Operational practices in HDR television production

https://www.itu.int/dms_pub/itu-r/opb/rep/R-REP-BT.2408-2017-PDF-E.pdf