



# Adding Subtitles to a Finished Dolby Vision Master

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## Overview

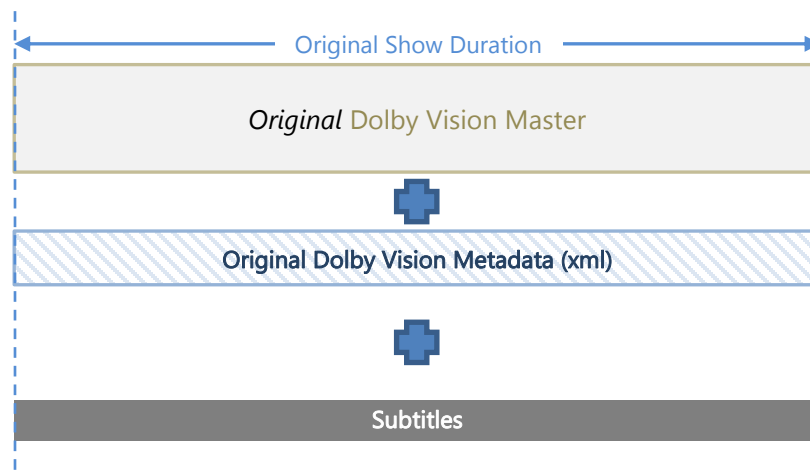
This document provides guidelines for adding subtitles to finished Dolby Vision titles. The assumptions are:

- The starting point is a Dolby Vision Master (16-bit TIFF, ProRes 4444 XQ) along with Dolby Vision Metadata (XML) or a Dolby Vision Master IMF.
- Subtitles will be added using a system that preserves the quality and integrity of the source material.

This document provides guidelines specific to Dolby Vision and does not cover topics related to routine subtitling work such as file format, font, size, position/framing, color, luminance, or frame rate.

## Process

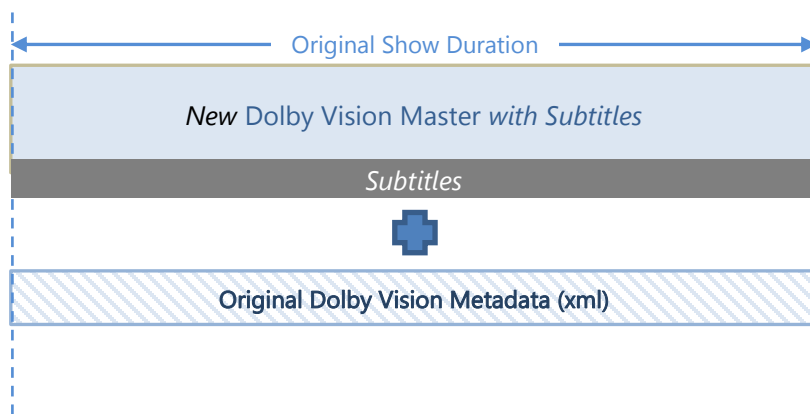
1. The facility receives a finished Dolby Vision Master with the Dolby Vision Metadata and the Subtitle files.



The subtitles can be added to the Dolby Vision Master files using a color correction system or on a mastering system like R&S Clipster, Colorfront Transkoder, MTI Cortex, etc. We recommend that the initial level of the subtitle text be set at about 80 nits across the entire timeline and then viewed/checked through for any shots that may require minor adjustments. The colorist has the flexibility within the 80-90 nit range to adjust for very dark or very bright shots.

Bit Depth	Digital Code Value Range	Absolute Luminance Range cd/m <sup>2</sup> (nits)
10 Bit Full Range	498 – 510	80 – 90
12 Bit Full Range	1990 – 2038	80 – 90

The finished timeline can then be rendered out as a new Dolby Vision Master with subtitles and sent along with the original metadata (XML) file for mastering or encoding.



## Recommendations and Best Practices

1. Keep subtitles within the active image area and outside the letterbox (Blanking) areas of the image.

Non-black pixels (such as subtitles) in the letterbox area cause a Dolby Vision playback device (TV) to process the whole letterbox area with the same dynamic metadata as the active image area, causing the black in the letterbox area to change with the active image area.

2. The finished Dolby Vision Master (with subtitles) along with the metadata are used to create a Dolby Vision Mezzanine file that is used for encoding.
3. It is also recommended to render out a version using CM\_Offline as a test to ensure that the subtitle insertion does not affect the mapping or the sync between the Dolby Vision Master and the original metadata.