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# Introduction

This document contains the requirements for carriage of depth and alpha elementary streams.

# Requirements for carriage of depth and alpha

A depth elementary stream is an elementary stream representing a timed depth sequence.

An alpha elementary stream is an elementary stream representing a timed alpha sequence.

1. Carriage
   1. Type of content
      1. This specification should support the carriage of depth elementary streams as the main content.
      2. This specification shall support the carriage of video elementary streams associated with depth elementary streams.
      3. This specification shall support different types of depth elementary streams, which are video-based depth elementary streams and image-based depth elementary streams.
      4. This specification shall support the carriage of depth elementary streams with depth-native data formats.
      5. For video-based depth elementary streams, this specification shall support the usage of at least AVC and HEVC video codecs.
      6. For image-based depth elementary streams, this specification shall support the usage of JPEG, PNG, and uncompressed formats.
      7. This specification shall support the carriage of alpha elementary streams associated with video elementary streams.
      8. This specification shall support different types of alpha elementary streams, which are video-based alpha elementary streams and image-based alpha elementary streams.
      9. For video-based alpha elementary streams, this specification shall support the usage of at least AVC and HEVC video codecs.
      10. For image-based alpha elementary streams, this specification shall support the usage of JPEG, PNG, and uncompressed formats.
   2. Metadata
      1. This specification shall support the carriage of metadata describing depth data characteristics (e.g., near/far plane, focal plane/point, inverse/linear mapping, units, distance type, etc.).
      2. This specification shall support metadata that signal the association between depth elementary streams and video elementary streams captured from a single device.
      3. This specification shall support metadata that signal the spatial and temporal relationship between associated depth elementary streams and video elementary streams captured from a single device.
2. Playback
   1. This specification shall allow legacy players to ignore playback of depth elementary streams.
   2. When both depth elementary streams and video elementary streams are present, this specification should allow legacy players to playback the video elementary streams.
   3. This specification shall allow legacy players to ignore playback of alpha elementary streams.
   4. When both alpha elementary streams and video elementary streams are present, this specification should allow legacy players to playback the video elementary streams.
3. Delivery
   1. This specification shall support streaming of depth elementary streams.
   2. This specification shall support streaming of associated depth elementary streams and video elementary streams.
   3. This specification shall support random access of associated depth elementary streams and video elementary streams.
   4. This specification shall allow segmentation of associated depth elementary streams and video elementary streams.
   5. This specification shall support description of associated depth elementary streams and video elementary streams.
   6. This specification shall support different quality levels of both depth elementary streams and video elementary streams.
   7. The specification shall support initial selection, and dynamic adaptation of both depth elementary streams and video elementary streams.
   8. This specification shall support streaming of associated video elementary streams and alpha elementary streams.