Track Selection
Encoding and Interpretation

This practice defines how to encode and interpret track selection information. This includes encoding TrackSelectionNumber for commentary tracks.

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REVISION HISTORY

Version	Date	Description
1.0	July 27, 2017	Initial publication

1.1 Track Selection Information

The Media Manifest provides information on which tracks can and should be played together. [Manifest], Annex A provides a Default Track Selection Algorithm.

1.1.1 Tracks that can play together

All tracks that play with a given video are included in the same Presentation. That is, all conforming tracks are included in Presentation/TrackMetadata.

A Presentation contains all tracks conformed to play together. In a sense it is the tracks that *can* play together. However, it is not necessarily the tracks that *should* play together.

1.1.2 Tracks that should play together

Audio tracks might be provided for the main video and for commentary. Although one could play the commentary audio track with main title subtitles, it generally makes sense to play main audio with main subtitles and commentary audio with commentary subtitles.

TrackSelectionNumber is used to refer to different groups. There is one set for each combination of tracks that *should* be played together (e.g., main, commentary 1, commentary 2, etc.). TrackSelectionNumber='0' is the primary group and should contain at least 'primary' audio tracks. Note that TrackSelectionNumber does not provide metadata on the track selection group— that must be derived from track metadata. For more on TrackSelectionNumber, see Section 2.

Consider the following example:

- TrackSelectionNumber='0': primary audio en, fr, es; primary subtitles en forced, fr forced, es forced, en SDH, fr SDH, es SDH.

- TrackSelectionNumber='1': commentary audio en; commentary subtitles: en normal, fr normal, es normal

The author can provide additional hints about which subtitle track to use for a given Presentation: LanguagePair. This is intended specifically for markets where the viewers prefer native audio and localized subtitles. Let's say we're talking Japanese. The system language would 'jp'. LanguagePair would be {SystemLanguage='jp', AudioLanguage='en', SubtitleLanguage='jp'}. The default track selection algorithm would then pick English audio and Japanese subtitles turned on. If the user only wanted forced subtitles, they would turn off subtitles.

Generally speaking, the choice of English audio and localized subtitles only applies to live action—people want the sound to match moving lips. For an animated title, authors would not include LanguagePair and the title would default to the system language (e.g., Japanese audio, Japanese subtitles off).

Note that the user should likely be given the choice of playing track combinations that do not necessarily make sense. Let's say, for example, they want director's commentary subtitles with primary audio. Who are we to say no?

1.1.3 Playback

The default track selection algorithm is documented in [Manifest], Annex A.

Using this algorithm and the example above, if your system language is English and no subtitle track preference is given, the track selection algorithm would by default select English audio, and English subtitles (with subtitles turned off). Based on LanguagePair, if the system language is Japanese, English audio would be selected with Japanese subtitles.

If the user preferred commentary (i.e., TrackSelectionNumber='1'), the language would be the same, but with commentary instead of main audio (i.e., TrackSelectionNumber='0').

Forced subtitles are selected via the subtitle track selection. That is, forced subtitles are in the language selected for the subtitle track. If the user has not selected a subtitle track, the track will still be selected, but with subtitles turned off. Forced subtitles are displayed whether or not subtitles are turned on.

Default track selection is much more difficult than it looks—it's hard to get it right in all cases. The algorithm provided has been heavily vetted and appears to work consistently (e.g., as DVD/Blu-ray would). It is strongly recommended you don't try this from scratch. You can always tweak around specific cases you encounter. Keep in mind it's the *default* track selection algorithm. The user should generally be given the option to override.

2 ENCODING TRACKSELECTIONNUMBER

Commentary tracks can have their own subtitles, but without additional information in the Presentation, there would be no way to know which subtitle tracks went with which commentaries. TrackSelectionNumber provides that information.

This information can be used to selecting the default tracks for playback of commentary tracks. However, conceptually, there is no reason to prohibit playing main audio and a commentary subtitle (or vise versa). Again, it's just information—how it's used is up to the ingestion process or the player.

This is best illustrated through example. The following example represents three instances of Presentation/TrackMetadata. Within TrackMetadata, there is a TrackSelectionNumber and VideoTrackReference, AudioTrackReference and SubtitleTrackReference instances.

- TrackSelectionNumber=0
    - Main Video
    - English Audio
    - Spanish Audio
    - English DVS Audio
    - English SDH Subtitle
    - Spanish SDH Subtitle
    - French Subtitle
- TrackSelectionNumber=1
    - Main video
    - English Director's Commentary Audio
    - English Director's Commentary SDH Subtitle
    - Spanish Director's Commentary Subtitle
    - French Director's Commentary Subtitle
- TrackSelectionNumber=2
    - Main video
    - English Actor's Commentary
    - English Actor's Commentary SDH Subtitle

Default Track Selection is defined in the Media Manifest spec (www.movielabs.com/md/manifest), Annex A. Give the data above, some examples of the results of default track selection are:

- If your language is English and you have SDH on
    - If you play the main video defaults to English Audio and English SDH Subtitle.
    - If you select Director's commentary it selects English Director's Commentary SDH Subtitle.

- If your language is French and you have SDH off
    - If you select English Director's Commentary Audio, it defaults to French Director's Commentary Subtitle