

CPE Best Practice for Determining Entitlement

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REVISION HISTORY

Version	Date	Description

1 INTRODUCTION

This document defines the best practice for implementing **xxxx** functionality with CPE.

To keep these documents short, the information common to application can be found in CPE Application Best Practice Overview, found at www.movielabs.com/cpe/app.

1.1 Normative References

[CM]	Common Metadata, www.movielabs.com/md/md
[Manifest]	Common Metadata Media Manifest Metadata, www.movielabs.com/md/manifest
[CPE-Manifest]	Cross-Platform Extras, Manifest, www.movielabs.com/cpe/manifest
[CPE-HTML]	Cross-Platform Extras, HTML, www.movielabs.com/cpe/html
[Avail]	EMA Content Availability Data (Avails), TR-META-AVAIL, www.movielabs.com/md/avails
[Delivery]	BP-META-MMMD, <i>Using Media Manifest, File Manifest and Avails for File Delivery (Best Practices)</i> . www.movielabs.com/md/manifest
[MMC]	Media Manifest Core, TR-META-MMC, www.movielabs.com/md/mmc

1.2 Informative References

[AdID]	Ad-ID advertisement identifier, www.ad-id.org
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2 DETERMINING ENTITLEMENT

An Interactivity Player must only play content the user is allowed to play. We use the term entitlement to refer to a set of user rights as they relate to a set of content. If a user has an entitlement to play a particular title, the player can play that title. To do so, the player must have the means to determine whether it should play the content for the user.

Both Media Manifest and CPE provide information and mechanisms that allow Player to use entitlement information, wherever it may come from, to determine what the user may see and play. The following information must be determined:

- Content associated with entitlement
- State or ‘Condition’ of offering and ownership (e.g., pre-sale, acquired, etc.). [Manifest], 9.2.
- Region and language
- Media Profile(s) included in the entitlement (e.g., SD, HD, UHD)

2.1 Matching Avails to Media Manifest

2.1.1 Logical Asset ID (ALID)

Media Manifest uses the term ALID to refer to identifier associated with an entitlement; in particular, does a user have playback rights to the functionality associated with an Experience.

2.1.2 Connecting Avails to Experiences

This section describes how to map Avails (particularly EMA Avails [Avails]) to Experiences. This model is also used in the delivery model ([Delivery] and [MMC]).

ALIDs map to an ExperienceIDs. In summary, the process follows these steps:

- Map the ALID to one or more Experience elements
- Narrow to one localized top-level Experience based on language and region
- Determine which tracks match the entitlement Media Profile

This is done using MediaManifest/ALIDExperienceMap. This defines the set of Experiences that satisfy a set of entitlements.



2.1.3 Selecting Localized Experience

Entitlements may be specific to a given locale or set of locales. The potential top-level Experiences must be filtered based on allowed locales. This is done using Experience/Language, LanguageExcluded, Region and RegionExcluded. These are described in [DManifest] with additional information provided in [Delivery] Section 8.1.

Only Experiences that satisfy the locale information in the entitlement are allowed. This should be enforced by the Player.

2.1.4 Matching Media Profile

Each track in a Presentation is associated with one or more Media Profiles. This information is found in Presentation/TrackMetadata/[Audio|Video|Subtitle|Ancillary]TrackReference/TrackProfile. Each TrackProfile is associated with a profile definition that is either pre-defined in [Manifest], Section 2.3.3, or an organization-specific namespace. Within the Manifest, namespace is in TrackProfile/Namespace and that namespace will have zero or more instance of TrackProfile/Profile. A match occurs when the entitlement's media profile matches one instance of TrackProfile/Profile where TrackProfile/Namespace matches the namespace used by the entitlement.

If there are no instances of Namespace in any TrackProfile/Namespace for that track, then it is assumed that the track is associated with all profiles. Typically, timed text would not be associated with Media Profile and therefore Subtitle tracks would not include any TrackProfile instances. These subtitle tracks would then match all media profile entitlements. Note: Do not confuse this with subtitle resolution which could determine the best esthetics for playback—completely independently from entitlement.

Therefore, to determine if a track is playable, first determine the entitlement media profile and the namespace for that media profile. For a given track, if there are no instances of TrackProfile/Namespace that match the entitlement namespace—including the case of no instances of TrackProfile—then the track is playable. If there is a matching namespace, then the track is playable if one instance of TrackProfile/Profile matches the entitlement's media profile.

2.1.5 DECE/UltraViolet Entitlements

The UltraViolet (DECE) ecosystem uses ALID as its primary entitlement identifier. This is the same ALID used in Media Manifest, so the mapping can be direct.

MediaManifest/@condition is subject to the actual condition of the sale. If the ALID is in the User's DECE Account, @condition would be "Acquired". Any pre-sale conditions would have to be known to the player.

Once the candidate Experience elements are identified the player must select the appropriate one based on region and language. This is generally either a retailer setting or determined by the player based on its physical device.

Finally, the Rights Token specifies which media profiles are allowed. This is determined by matching the Media Manifest Presentation's track reference to the Rights Token. Specifically, where TrackProfile/Namespace='org:decellc.org' and TrackProfile/Profile matches the Rights Token's Media Profile (PurchaseProfile/@MediaProfile). Matching rules are in [Manifest], Section 2.3.3.

2.1.6 DMA Entitlements

TBD

2.2 Cross-Platform Extras HTML (CPE-HTML) Entitlements

The CPE-HTML API [CPE-HTML] defines APIs to determine entitlements. The Package presents content accordingly. However, the Framework should prohibit playback of content for which there is no entitlement. That is, even if the Package makes a mistake and says to play a movie the user does not own, the Framework must not play that movie.

The scope of the ALID is the subject of agreement between the studio and retailer. It could be cover both all media (feature, bonus, etc.) or each pieces of media could be covered by its own ALID. In the near term, ALIDs cover everything. In the long term we expect ALIDs to be more specific. In either case, the studios and retailers must agree on the ALID. Use of EIDR is strongly recommended.

The CPE-HTML Package must know the ALID. The Player determines entitlement by passing the ALID as the contentID argument to the `getAvailability()` call. `getAvailability()` is part of the Content Availability API Group found in [CPE-HTML], Section 5. This API returns information about the entitlement.

The Package must know the localized language and region. Generally, this is obtained from the browser, although it could be known via other mechanisms.

In a CPE environment the Framework is responsible for identifying and loading the Package that will instantiate an Experience for a given ALID. Since a single Package *may* be capable of handling multiple ALID, the Framework will pass the ALID to the Package as the `context` argument when it invokes the Package `initialize()` function (see [CPE-HTML], Section 4.3.1.1).

The Package is responsible for identifying the appropriate Experience for an ALID based on entitlement information provided by the Framework. The Package obtains the entitlements by passing the ALIDs as the `contentID` argument to the `getAvailability()` call (see [CPE-HTML], Section 5.2.1.1). The Package may then select the appropriate Experience using the

ALIDExperienceMaps contained in the manifest. The Framework may obtain the selected ExperienceId from the Package by invoking the Package's `getExperienceId()` function (see [CPE-HTML] Section 4.3.1.6).

The Package will next select specific Experience elements based on multiple factors. These include the region, the capabilities provided by the current operating environment, and user preferences (e.g. language). The Package will obtain this information via the `getEnvironmentDesc()` function ([CPE-HTML] Section 4.2.3.1), `getAccountProperties()` function ([CPE-HTML] Section 6.1.1.4), and `getPreferences()` function ([CPE-HTML] Section 6.1.1.5). If an Experience supports multiple media profiles (e.g., SD or HD), Entitlement information for specific profiles is obtained by passing the TrackID as the `contentID` argument of a `getAvailability()` call.