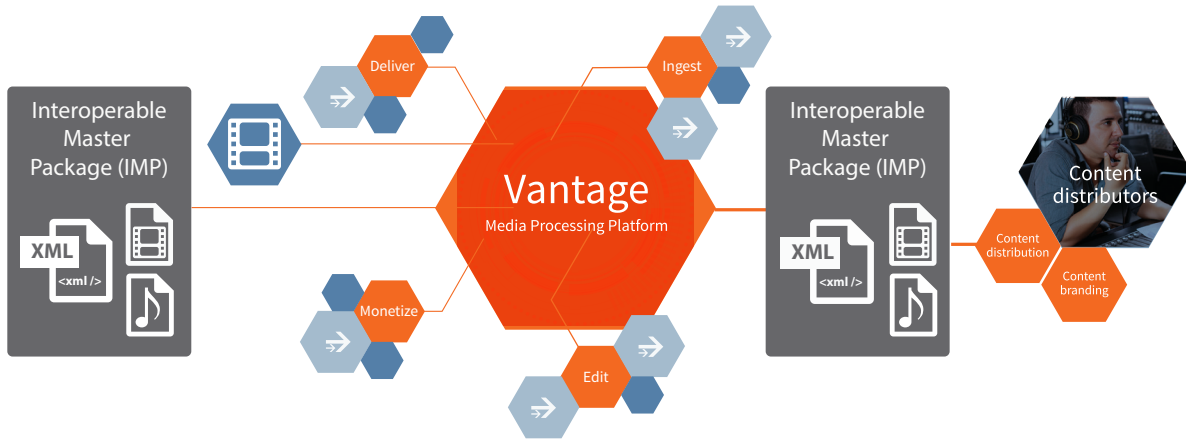


Vantage

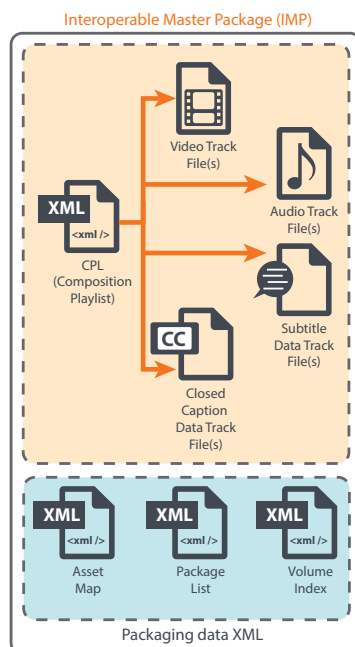
Application Brief: Interoperable Master Format



Vantage Support for Interoperable Master Format (IMF)

Overview

Interoperable Master Format (IMF) is a SMPTE standard for providing a single, interchangeable master file format and structure for the distribution of content between businesses around the world. IMF provides a framework for creating a true file-based final master.



Description of IMF components

IMF is an evolution of the Digital Cinema Package (DCP) architecture, providing a complete file interchange unit to the distribution channel. While DCP is about theatrical content distribution, IMF is about providing businesses with a master format for creating multiple tailored versions of the same piece of content for different audiences. It allows distribution of unique versions from content owners to service providers, or distributors—and multiple final destinations such as airlines, broadcaster, OTT (e.g. Netflix), DVD authoring, and more.

For example, a widely distributed major motion picture may require dozens of different versions in order to support multiple market segments such as airlines, VOD providers, promo spots, or an edit for cable television. IMF eliminates the need to create a dozen plus master copies by separating each market requirement into individual 'component formulas' (Composition Play Lists or CPLs) that reference the available essence components (namely MXF media files) included in an IMF package. Individual CPLs are used to create versions based on the master essence components for each of the differing market audiences.

An IMF asset is not a single file. It is a standard specifying individual components which together create a complete IMF package. An IMF package includes the following:

- Essence wrapped into MXF track files
 - Video essence (J2K up to UHD)
 - Audio essence (24bit uncompressed, any number of channels)
 - Data essence (subtitles & captioning using IMSC Timed Text)¹
 - Dynamic metadata (metadata changes over time)¹
- Composition playlist (CPL) - a readable XML
 - Similar to an Edit Decision List (EDL)
 - References track files via UUID instead of directory paths
- Packaging data XML (asset map, packing list and volume index)

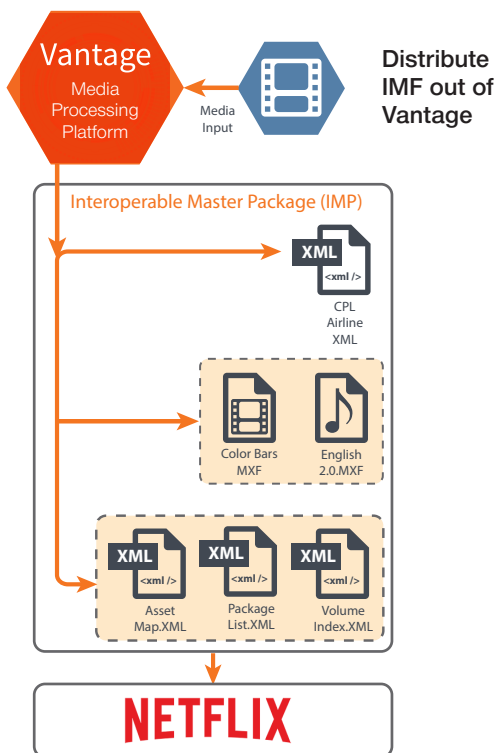
IMF essences are defined by application specifications that allow for different codec types, frame rates and resolution. Two application specifications, Application #2 and #2 Extended², are applicable to the broadcast media market. Application #2 supports SD/HD with JPEG-2000 Broadcast Profile; #2 Extended supports UHD (up to 4K) with JPEG-2000 Broadcast Profile media up to 10bit. More information on IMF can be found [here](#)³.

Vantage support for IMF

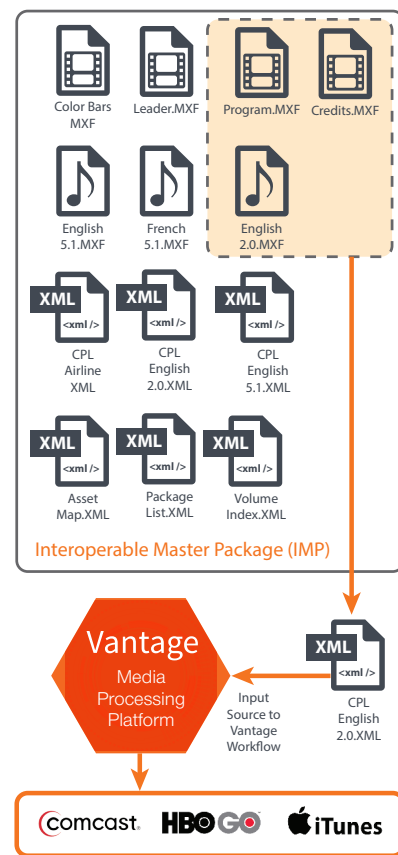
Vantage can ingest an IMF CPL as a master source input to create all appropriate outputs, and can create single segment IMF Master Packages as an output. Vantage supports ingesting and outputting IMF Application #2, and Application #2 Extended IMF packages.

Ingesting an IMF package into Vantage

Vantage supports multi-segment Application #2 and Application #2 Extended IMF packages as inputs. Vantage takes an IMF CPL file as an input source for a Vantage workflow and processes it to create any output that may be required. Note: Vantage 7.0 currently does not support IMF subtitle or closed caption essence files. Telestream is committed to IMF in the broadcast industry, and these features will be supported in a future release of Vantage.



Ingest IMF into Vantage



Creating an IMF package from Vantage

Today Vantage supports the creation of single segment (one video and audio file) Application #2 and Application #2 Extended IMF packages. Vantage writes the files needed to create an IMF package into the directory specified within the workflow. Files consist of a video and audio essence file (MXF), a CPL XML, an Asset Map XML, Package List XML and Volume Index XML. Vantage 7.0 does not support the creation of IMF subtitle or closed caption essence files. These features will be supported in a future release of Vantage.

Some IMF processing is simple transcoding of a single essence. Other IMF processing involves rendering a complex EDL into the target output format. Vantage allows you to automate both types of processing.

For more information—or if you have a questions—contact Telestream or your regional sales manager.

Notes:

¹ Not currently supported in Vantage.

² Standard adopted by Netflix

³ https://www.smpte.org/PDA_On-demand/IMF