

Release of CLIPSTER® V 5.7



Mastering Excellence – that is what CLIPSTER® is dedicated to.

In the last release, the focus was clearly on DCI: with full SMPTE / phase 2 compliance, DCI naming convention guide, support for audio labeling, extended trusted device list for KDM creation and the well-known high frame rate related additions, the DCI Mastering package was, and is, the most complete and flexible on the market.

The objective remains the same, but the focus changes. The demands for digital file-based material exchange rise day by day – and along with it the need for standardized solutions. Being a pioneer in the DCI domain again and again, DVS perfectly understands the importance of standard compatibility. However, one single solution for B2B material exchanges does not exist – this is why we support them all.

DVS is proud to release its IMF and AS-02 Mastering features with the new version 5.7. Both formats are handled on a project level – in the same way as CLIPSTER® handles DCPs or its own project files. Transforming from one of these mastering formats to another is done easily. With the IMF Delivery Tool, creating versions for multi-language packages is just as easy as creating any other file-type. And with AS-02 and CLIPSTER's new shim support, thousands of existing packages can be opened, QCed, played out and re-mastered.

Any File, Any Style meets Mastering Excellence – welcome to CLIPSTER® 5.7

- 1.) **General**
 - Project Menu

- 2.) **IMF Mastering**
 - Introduction
 - IMF Read
 - IMF Delivery Tool
 - Supplemental IMP Support
 - 4K Playback for Quality Control
 - IMP Audio Configuration
 - In-/outpoint Handling
 - Supported Application Layers
 - DVS MXF Wrapping

- 3.) **AS-02 Mastering**
 - Introduction
 - AS-02 Read
 - Closed Caption .SCC File Read Support

- 4.) **DCI Mastering**
 - HFR Rasters
 - Advanced JPEG2000 Hardware Encoding Settings

- 5.) **RAW**
 - ARRI SDK 4.4

- 6.) **Licensing**

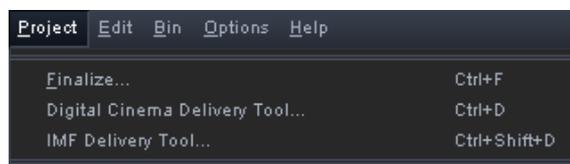
- 7.) **Important Information**

1.) General

Project Menu

As version 5.7 introduces IMF Mastering to CLIPSTER®, the project menu is updated in the Finalize & Delivery Tool section.

For easy access, the IMF Delivery Tool can also be launched by the hotkey Ctrl+Shift+D.



2.) IMF Mastering

Introduction

The new Interoperable Master Format (IMF), partially based on the experiences with DCPs, targets the area of file-based mezzanine format exchange which can be quite challenging at times. Standardized by the SMPTE, it is set up as business-to-business format with the ability to support day-by-day exchange tasks as well as allowing for flexible versioning. Supplemental IMPs can be generated referring to their corresponding Master IMPs. That said, a single IMF package can contain all material for a world-wide distribution.

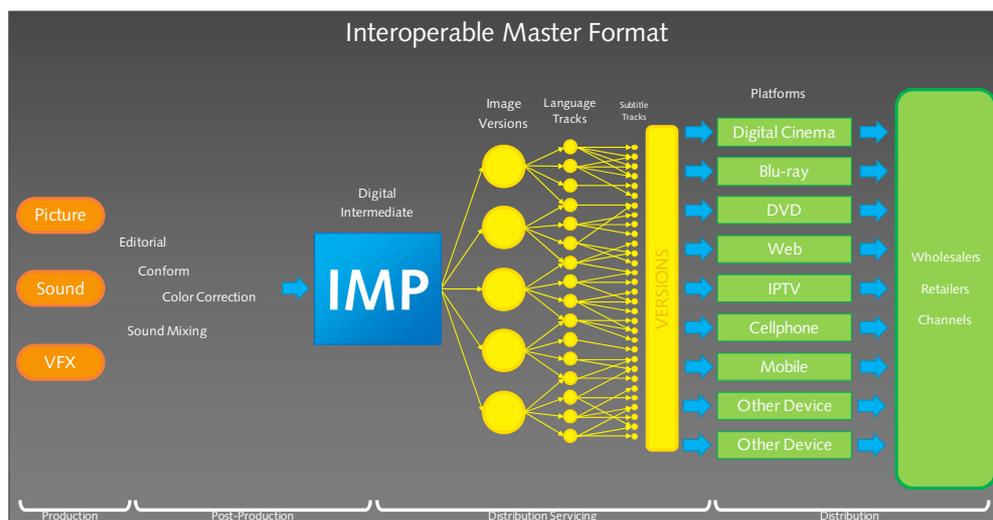


fig. 1: The domain of the IMF (Interoperable Master Format)

Standardized application layers are used to define compression codecs and their settings to assure package compatibility: Application Layer #2 defines video coding with JPEG2000 broadcast profile and (maximum) HD resolution, while Application Layer #2 Extended uses the same coding but allows higher resolutions.

The IMF package has a flat single-folder structure and takes advantage of UUID file naming, thus it is suitable to be stored in media asset management systems.

IMF Read

IMPs are handled on project level: in order to open an IMP you select the specific CPL (Composition Playlist) that is typically located inside the IMP's folder. One CPL corresponds to one version, so if multiple CPLs exist in a package, there are multiple versions available.

When a CPL is opened, all related media files are brought into the timeline as described in the CPL and can then be handled like any other CLIPSTER® project. Typically, opening an IMP is used for quality control and to create a new version (e.g. other language, other soundfield configuration, new video inserts).

IMF Delivery Tool

With version 5.7, the process of creating an IMP is treated with a new delivery tool. Based on our (and our customers') experiences with the Digital Cinema Delivery Tool, we created the IMF Delivery Tool as its sibling for easy and failsafe package creation.

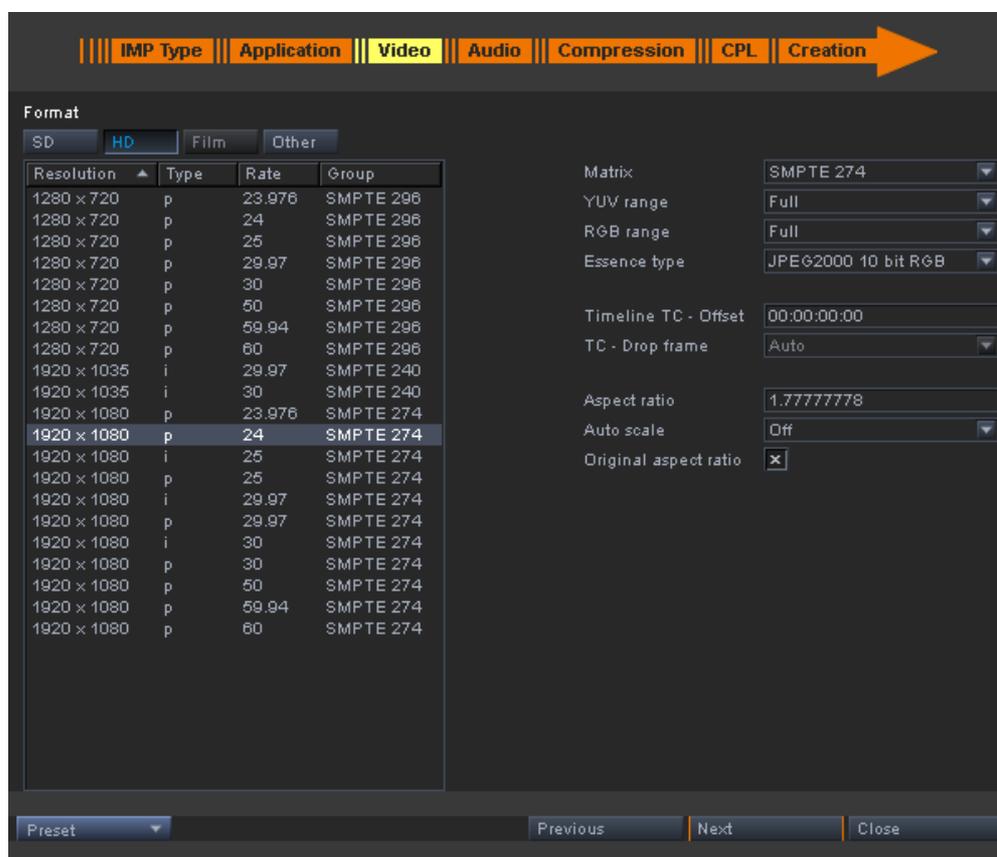


fig. 2: all-new IMF Delivery Tool

The individual steps guide through the main areas of the IMP's settings:

- IMP Type: new IMP or supplemental IMP
- Application: the application layer #n used for the creation
- Video: resolution, ranges, timecode etc.
- Audio: the audio field configuration (see below)
- Compression: level setting according to the application layer

- CPL: metadata settings for the CPL like title, content kind and annotation
- Creation: render path and name

Presets can be set up and all settings are additionally stored with the CLIPSTER® project file.

Supplemental IMP Support

With an existing master package (e.g. the main version of a movie) loaded, CLIPSTER® allows to create supplemental IMPs. After adding video inserts or changing the audio language by replacing the files in the audio tracks, the IMF Delivery Tool can be used to create a supplemental IMP. On the first page of the tool, the IMP type can be changed.

CLIPSTER® will create a subfolder with the new CPL as well as all corresponding additional track files, with the CPL pointing to the new files and also to the already existing files in the folder above that subfolder. When opening a CPL in a subfolder, missing files are automatically being checked up in the folder above and loaded accordingly.



fig. 3: IMP type selection with supplemental IMP

4K Playback for Quality Control

CLIPSTER®, being a 4K-ready system for years, already offers options for the not-yet standardized Application Layer #2 Extended IMPs. For those, a special playback mode is introduced that allows the playback of even 4K J2K broadcast profile files with high data rates. These demanding packages are shown in full 4K resolution in stop-mode and in 2K resolution during playback.

With that, lip syncing can be easily accomplished on playback while detail check on the full 4K can be done in steps frame-by-frame.

IMP Audio Configuration

The audio configuration page in the IMF Delivery Tool allows an audio label-related track assignment. The preconfigured soundfields offer the ability to connect the individual outputs to the specific labeled channels.

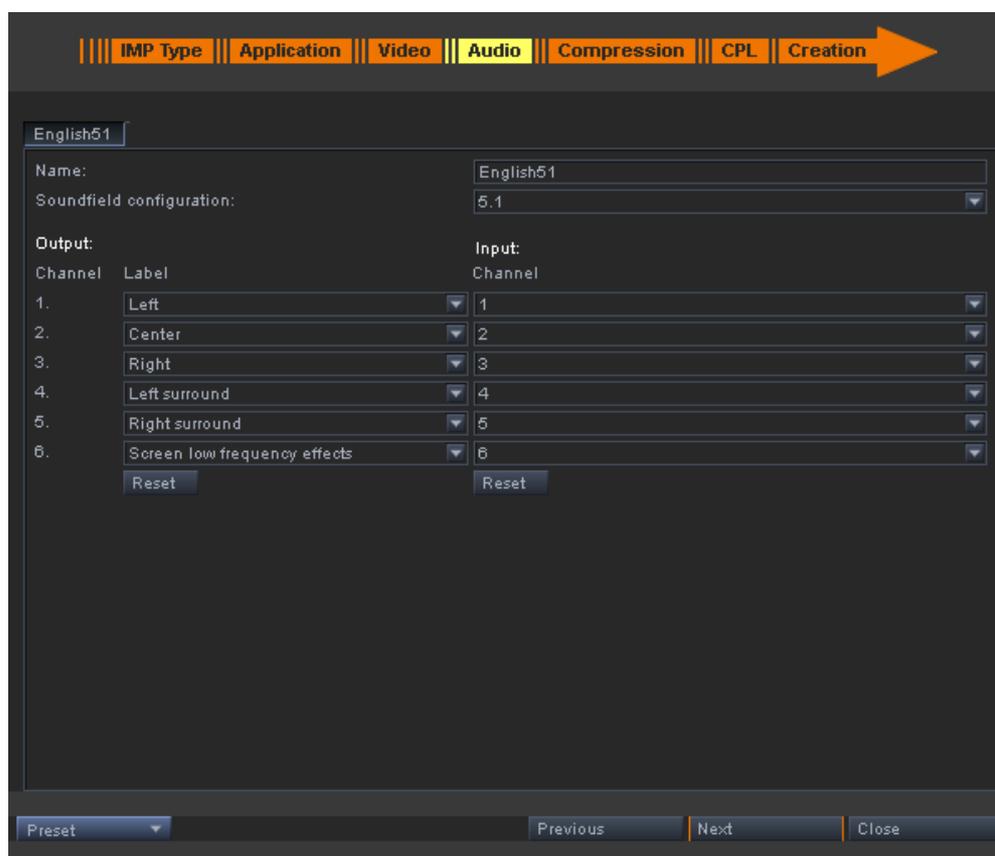


fig. 4: Audio soundfield configuration

In-/outpoint Handling

In cases where you only want to show a part of the timeline, but the complete length shall be preserved in the package, action in- and outpoints can be used to mark the main content. The resulting CPL then refers to these action points, showing only that content part when opened again in CLIPSTER®. However, the written essence tracks contain the full length which can be brought back by using the trimming tools.

A typical use case is content with color bars or technical charts placed before the main video, that have to be conserved, but not to be shown, except for QC reasons.

Supported Application Layers

Currently the following application layers are supported:

- Application Layer #2 (J2K broadcast profile), HD resolution
- Application Layer #2 Extended (J2K broadcast profile), resolutions above HD including 2K and 4K (Draft)

Important note: Application Layer #2 Extended is not yet published by SMPTE and changes in the final list of resolutions are likely to occur.

DVS MXF Wrapping

To provide the latest developments in SMPTE specifications and to guarantee a quick market response time, the MXF wrapping for the essence files is now a completely re-designed DVS MXF Wrapper.

3.) AS-02 Mastering

Introduction

The AS-02 format was created by the AMWA to provide an elegant and easy-to-use solution for the B2B mezzanine file exchange – thus, the intention is very similar to what IMF is targeting at. The difference is that AS-02 uses a special paradigm to define the coding and the image settings, called a “shim”. Each shim includes information about what codec to use and what resolution and frame rate to set for the encoding of the AS-02 package. With that, it is less restricted than IMF’s application layer and allows adoption to non-standard demands without a standardization process.

The AS-02 package contains all essence files and additional information in a subfolder tree-structure including the media folder with the essence tracks and an extra folder that can be filled with additional custom information.

AS-02 Read

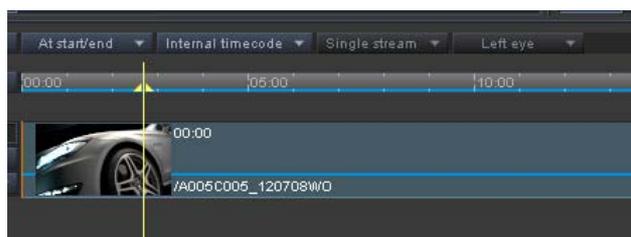
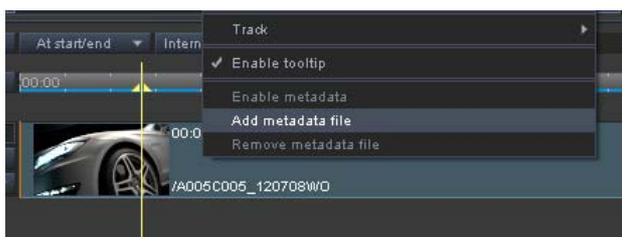
As with DCPs and IMPs, AS-02 packages are handled on project level: in order to open an AS-02 package you select the version file which is a .mxf file inside the root folder of the package.

When a version file is opened, all related media files are brought into the timeline as described in the version file and can then be handled like any other CLIPSTER® project – exactly as described in the IMF section.

Being used in the domain of broadcast, VANC data like closed caption, AFD and V-Chip are important aspects of an AS-02 package. If it contains VANC data, this data is passed to the SDI-outputs on playback and playout (see also Closed Caption section below) and preserved in the .auxdata track when a new AS-02 is created.

Closed Caption .SCC File Read Support

As part of the AS-02 format introduction in CLIPSTER®, closed caption support is also implemented into the core abilities of the system. With version 5.7, it is now possible to add a closed caption file in .scc format to a video track with the help of the “add metadata file” option in the video track’s context menu.



When a track includes metadata – either attached or already existing in an opened package – the video track is marked with a blue line which gives visual feedback for the integrated additional data. The

handling in playback, playout and package creation is as described in the AS-02 Read section: the closed captions are passed to the SDI-outputs and preserved in the .auxdata track on package creation, making the handling of CCs more comfortable.

4.) DCI Mastering

HFR Rasters

Several new rasters have been added to the DCI Mastering domain. They can be found under the new “Special” tab in the raster settings, both, in the Digital Cinema Delivery Tool as well as in the timeline settings.

As these rasters are not supported by the SDI outputs, they are mainly used for the previewing of that content and for finalizing / package creation.

Advanced JPEG2000 Hardware Encoding Settings

Amongst other things, the advanced JPEG2000 hardware encoding settings, introduced with version 5.3, allow the control of the color component data rates. Due to several requests, here are the typical settings:

- Default values are: Luma(Y) 70, Chroma(U) 15, Chroma(V) 15
- Values used for the first major HFR production: Luma(Y) 64, Chroma(U) 18, Chroma(V) 18

Please keep in mind to create a sum of 100 when balancing Luma(Y), Chroma(U) and Chroma(V).

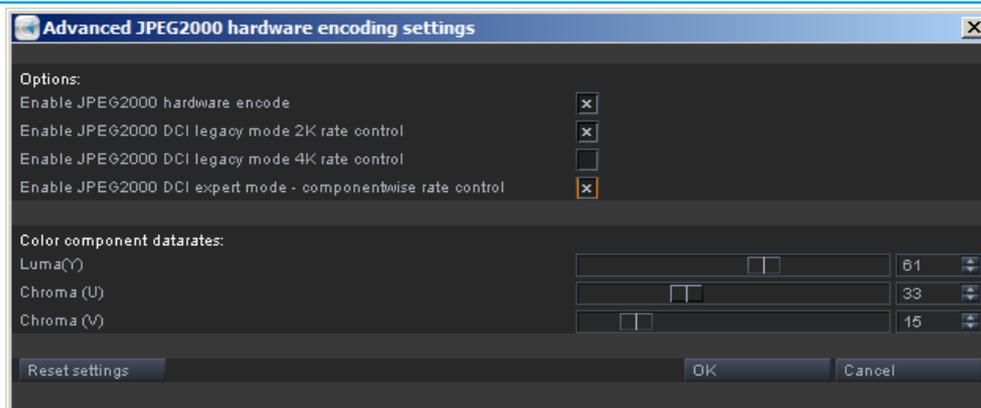


fig. 4: Advanced JPEG2000 hardware encoding settings

5.) RAW

ARRI SDK 4.4

To keep track of the latest developments in ARRI RAW, the SDK was updated to version 4.4.

6.) Licensing

Due to changes in the licensing, a new license is required for version 5.7.

7.) Important Information

Software version 5.7 runs on CLIPSTER® Generation 4 hardware. Older hardware generations cannot be supported due to internal software changes along with the new render pipeline.

Software version 5.7 is available as an optional upgrade for customers using software version 4.x.

Headquarters:

Rohde & Schwarz DVS GmbH

Krepenstr. 8
30165 Hannover
Germany

sales@dvs.de

Rohde & Schwarz DVS GmbH

www.dvs.de
