Avid integration in Nucoda 2017.1

Avid integration with Nucoda has been tested with Media Composer 8.0 and higher

General notes on using Avid sequences in Nucoda:

There are three main workflows when using Avid and Nucoda:

1. AAF to Nucoda for grading and finishing in Nucoda - this can include pre-computes and mixdowns, material is imported in Nucoda, graded and exported for delivery. This can include creation of a new Record AAF that will reference the new record order file and can be checked into Interplay.

2. AAF to Nucoda for grading and return the source modified AAF to Avid relinking to the new graded material - this is a very common workflow and can include handles added to the graded media to facilitate edit adjustments. Mixdowns are fully supported

3. AAF to Nucoda and return MXF files to Avid for relinking - ensure that the media has a unique tape name, Camroll, LabRoll or Reel for relinking. We will also retain the original Avid SourceID to make relinking material more robust.

In all cases it is recommended that a pre-grade stage is performed on the Avid

- Mixing down and replacing any re-time and freeze frames on the timeline.
- Mixing down complex nested effects breaking them out for re-assembly in the Avid
- Mixing down any non dissolve transitions and AVX effects or breaking out the media for grading and re-assembly.

Media format support:

Nucoda supports the reading and writing of OP-Atom MXF media.

IMX 25
IMX 50
DV25
DV50

DNxHR LB
DNxHR SQ
DNxHR HQ
DNxHR HQX
DNxHR 444

DNxHR encomasses all resolutions and frame rates from HD to UHD and higher

Uncompressed YUV 10 and 8 bit
Uncompressed RGB Files

Nucoda also supports reading a wide range of other media formats including

XAVC 100
ProRes

Nucoda can write the following Op1a formats

XDCAM 50 - Including the HDF01a specification
AVCi-100

Please note that media format availability will depend on the frame rate and resolution. Not all frame rates support all resolutions. *DNxHR will only be available in resolutions larger than HD*.

Composition support:

Nucoda support the import and export of AAF compositions and also EDL
CMX3600, Char16 and Char32)
Avid locators are supported and will be imported into the Nucoda composition by default.

Audio support:

Nucoda supports Mono and Stereo Audio tracks from Avid
Audio must be 48000 / 24 Bit PCM (MXF)
Audio and audio tracks are supported when importing AAF compositions.
The option exists to choose which audio tracks to import - track names are supported.

Avid Interplay and Nexis support:

Nucoda is able to import material directly from an attached Nexis storage system (Avid license is required) Exports can also be made to the Nexis using automatic backup and staging options.

If the Nucoda is attached to an Avid Nexis (ISIS) with Interplay the user can check clips and sequences into Interplay directly while exporting from Nucoda.

Naming:

When exporting MXF files in any *Source order* format, the names are generated by the AMT on export and no user input is accepted. In Mixdown Rec the user can name the file as required.

Metadata

Nucoda supports the LabRoll, CamRoll and Reel fields when importing and exporting media from Avid, this metadata will be passed through from Avid to Nucoda and back to aid a relink workflow.

- The user can inject a custom project name when exporting material
  (currently only in DNxHD projects)

- Exported material can be tagged with a user editable suffix for the Avid name to identify graded media. An upcoming release will add support for all fields including user generated data to be round tripped. *Currently roundtrip material is tagged as DV_Graded*

- Custom project names. *(currently only in DNxHD projects*)
- To aid in file relinking Nucoda will use the SourceID field from 2017.2

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Support for Avid effects:

- Dissolves
- In / Out dissolves
- Dip to colour is described as a dissolve in Avid and needs to be replaced in Nucoda
- Animated PIP, Resize and 3D Resize (option for maintaining animation on import of AAF)
- Avid media Mixdowns are supported on import and export using AAF

- Avid pre-computes - this means that Nucoda can read Avid rendered effects for grading, if a sequence contains pre-computes it cannot go back to Media Composer since pre-computes cannot be relinked in Media Composer.

  - Merging the grades into updated AAF sequences will not work for pre-compute shots because they do not contain timecode or tape name information.
  - Ensure all effects used in the Avid are fully rendered (no partial renders)
  - By default, Nucoda treats all transitions as dissolves, if you sequence contains any transition such as 3D wipes or spins, you will have to mix these down for them to appear in the AAF, renders will just come across as dissolves.

- Nested effects are not supported - it is recommended that they are rendered or mixed down before the AAF is created and imported into Nucoda.

- AVX effects like Boris FX are not supported on import from AAF - it is recommended that they are rendered or mixed down before the AAF is created and imported into Nucoda.

- Retimes and speed affects

  - Standard re-times are supported -speed ramps are not supported at this time
  - It is recommended that re-times and freeze frames are mixed down and replaced on the Avid timeline before importing the composition into Nucoda.
  - Make sure that there are mixed frame rate material with Motion adapters applied.

- Subclips are supported
- Multicam is not supported - multicam edits should be committed before exporting the AAF from Avid, use the "Commit Multicam edits" command when right clicking on the Avid sequence.
- Please also ensure that no Stereo compound clips are in the composition

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AAF import dialog options:

Importing an AAF is done via the import menu in the library, on selecting the AAF the following dialog will appear:
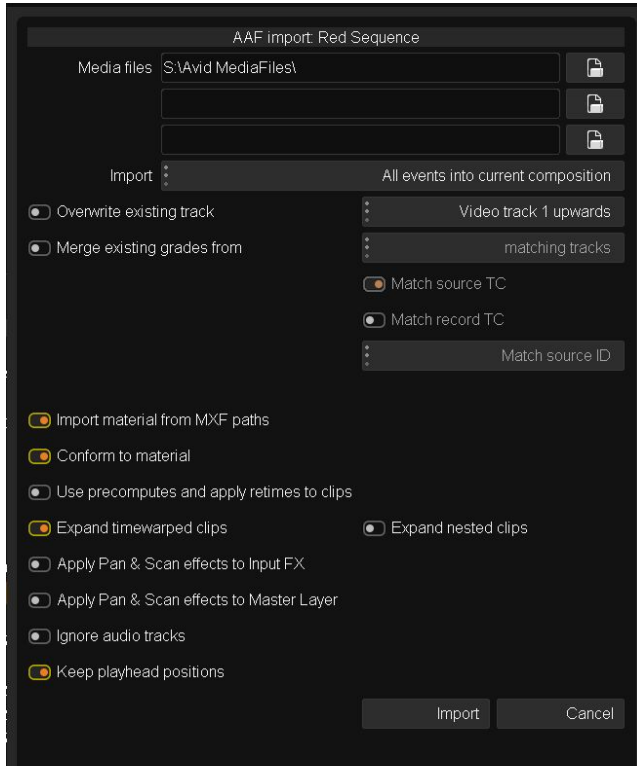

1. Media Files : Set the path to the files needed for import

2. Import: Set to select whether the AAF is imported into a new composition or merged with the current. Please note, that for a round trip only the original imported AAF is used.

3. Overwrite existing track

4. Merge grades -select this to merge grades from a previous composition into a new one.

5. Select to import the material referenced in the AAF file

6. Select to link the material to the imported composition

7. Use precomputes (Avid renders) and apply retimes to clips choosing this option will apply Nucoda retimes to clips with Avid Motion effects (no speed ramps) and use any available pre-computes (renders) that were in the sequence when the AAF was created. Please note, using this option will not allow a successful round trip.

8. Expand timewarped clips and expand nested tracks - this option will replace any Avid retimes with filler on the timeline to represent the actual length of the timewarped clip, and will place the full source media on a separate track, with the start points of the clips at the same timecode. This allows for the grading of the source material which can be returned to the Avid. Nested effects are not supported, clicking the option will however split rendered Avid titles into Matte and Fill and place them on the timeline.

9, 10 Apply Pan & Scan to Master or Input FX layer - Please note that once applied, these effect will be rendered as part of the output file - in a round-trip scenario the effects will have to be removed from the sequence in Avid to avoid them from being resized a second time in the Avid.

AAF export dialog options:

Export as part of a AAF Roundtrip workflow
(only available if an AAF was imported to create the composition)
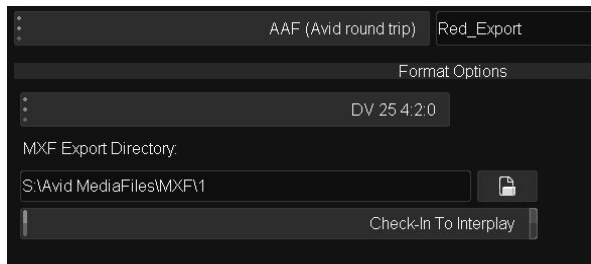
- The name and destination entered in the main file output area is the name and destination of the new AAF file that will be created (please ensure that the original AAF is always accessible since it is accessed during export.
- Set any required handles -if there is not enough the available amount will be exported.
- Format options will vary depending on frame rate and resolution
- MXF Export directory is the destination of the MXG files
- Check in to Interplay select this option to check the MXF files into Interplay (setup is in preferences)

Export MXF source files from Nucoda to Avid for relinking
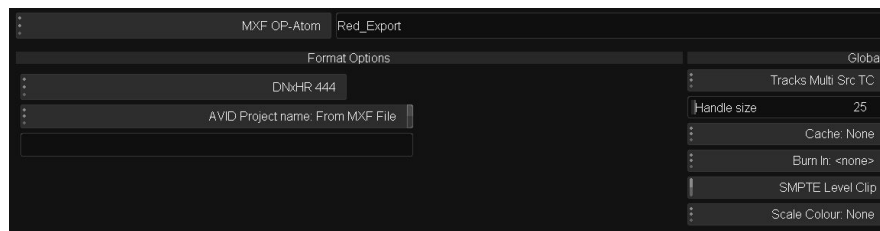
- When doing source order export, names are generated by the Avid media Toolkit, any names will be ignored if entered.
- Avid Project allows the user to use the original project name or specify a unique project name for the MXF files - this is useful to sift files later. **(Only in DNxHD formats)**
- For relink to work in AVID please ensure that the file has a valid and usable source file name that can be used as a relink marker along with TC - please note the correct setting to use in Media COmposer is Start TC and Source FIle Name - do not use Start TC and Source ID.
- You may also need to select the ignore filename extension option when relinking.
- Because Avid cannot reliably differentiate between files that are the same resolution, TC and Source, consider relinking to selected material or to place the new material on a different volume for relinking.
- Also, be aware of the option to relink only to material from current project

Export MXF Record mixdown files to Avid:
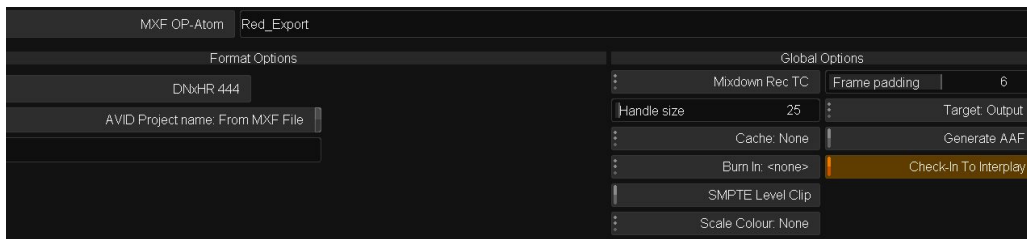
- When choosing MXF OpAtom and Mixdown Record the user can specify a filename for the mixed down MXF clip
- Selecting Generate AAF will create a new AAF referencing the new mixed down file in a Media Composer sequence.

- The use case for this option is as follows:

    - Import an AAF sequence that is complete, apart from grading, this includes audio tracks
    - The grade is performed
    - The files are exported as a single mixed down video file. A new AAF is created referencing the current audio and the new mixed down MXF file. The AAF contains a Media Composer sequence that can go directly to an Interplay ready for playout.

Relink behaviour in Avid

Due to changes made for the support of Subclips in the Avid workflow changes were made that will affect the relinking of clips in Avid when exported from Nucoda.

The change is in the method used for identification when relinking. We source file name that is embedded in the media when creating MXF media in the Avid is automatically copied to the Tape field in Nucoda, any extensions are stripped from the name.

A file named *A008C003_140601_R2E5.mov* will have that name in the Source File column in Avid, importing the file into Nucoda and exporting again as MXF will return the file without a source file name, but with a tape name of *A008C003_140601_R2E5*, see below.

This has not changed between 2015.3 and 2016.1

	Name	FPS	Start	End	Duration	Camroll	Labroll	Soundroll	Source File	Tape	Image Aspect Ratio
	Outside guy and girl.new.02	23.98	02:40:00:00	02:40:18:17	18:17	A010C030_140602_R2E5			A010C030_140602_R2E5.mov		16:9
	MCU Feet on sidewalk.new.02	23.98	01:38:26:09	01:38:45:14	19:05	A010C012_140602_R2E5			A010C012_140602_R2E5.mov		16:9
	Dancing in line going to house.new.02	23.98	02:00:45:10	02:00:58:22	13:12	A010C019_140602_R2E5			A010C019_140602_R2E5.mov		16:9
	Office counter.new.02	23.98	01:05:42:19	01:05:57:20	15:01	A008C003_140601_R2E5			A008C003_140601_R2E5.mov		16:9
	A010C030_1V01.03f0a41d_Nucoda	23.98	02:40:00:00	02:40:18:17	18:17					A010C030_140602_R2E5	16:9
	A010C019_1V01.03efe761_Nucoda	23.98	02:00:45:10	02:00:58:22	13:12					A010C019_140602_R2E5	16:9
	A010C012_1V01.03eed2c1_Nucoda	23.98	01:38:26:09	01:38:45:14	19:05					A010C012_140602_R2E5	16:9
	A008C003_1V01.03ee0491_Nucoda	23.98	01:05:42:19	01:05:57:20	15:01					A008C003_140601_R2E5	16:9

However, to relink in Avid, the selection in the Avid relink dialog used to be: *Start TC and Source ID*
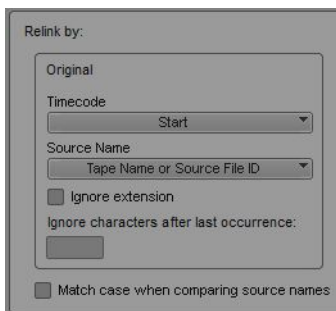
To relink to MXF files created in 2017.1, use: *Start TC and Source Name and check "Ignore extension"*
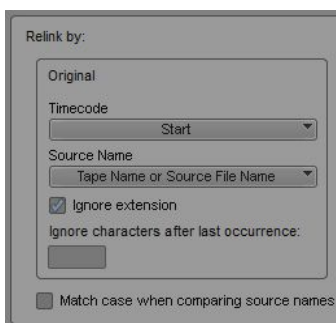
Also remember that you can specify files for relinking to "Selected items" in all open bins.