

RIT MAGIC DCP Exhibition

Exporting Picture DSM for Tier 2 Workflow Outline

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Prepared For
SOFA Faculty & Students

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I. Introduction

As mentioned, in documents **MSS-2019-01P** and **MSS-2019-02P**, finishing your film via Tier 2 for DCP exhibition will require a proper DSM (Digital Source Master) to be made. For your reference, the options for Tier 2 DSMs are listed below:

Option A - TIFF Image Sequence

The recommended option. TIFF sequence DSMs are common industry practice for DCP creation. A TIFF sequence preserves the quality level that is required to get the most out of the Digital Cinema projector. This is ideal for films that will screen using a DCI aspect ratio (1.85 or 2.39) and want to retain the *highest-quality* image pipeline (12 to 16 bit RGB 444). Useful for Thesis Films, Workshop Films, etc. No compression. This is a sequence of image files (one per frame of video) and will be large. *This is the recommended format and works very well for Live Action students who shot RAW or Animators who already have a frame sequence.* Consult **fvasa@rit.edu** for help if needed.

Format: TIFF

Bit Depth: 16 Bit

Data Levels: Full Range

Note that TIFF requires audio DSMs be delivered separately to the DCP packaging step.

Option B - DNxHR

The DNxHR workflow is not recommended because of some support inconsistencies. However, it is supplied for those that require it's benefits of being an easy-to-manage format. This option exists for those films who do not require the benefits of Option A. DNxHR is useful for films that only need minimal Tier 2 features (5.1 surround with standard image quality or widescreen with stereo sound, for examples). Tier 2 can be used for Workshop Films, Production Processes, Animation Workshop 2, etc.

If you can export and handle a TIFF sequence that is the recommended DSM format.

Format/Container: MOV/QuickTime

Codec: DNxHR HQX 10/12 bit - (Premiere/Resolve)

Data Levels: Full Range

Note: The Image & Sound DSM can accompany the same MOV using this format ONLY if you are finishing in STEREO out of Premiere. If finishing audio out of Protools, it is not

recommended to bring your audio back to your editing program. Finishing in 5.1 surround requires Audio and Video be brought separately to DCP packaging. Consult fvasa@rit.edu for help.

If finishing from Resolve or Avid, ensure that you use DNxHR HQX 12bit. Using DNxHR 12bit 444 can cause image artifacts and other problems when making your DCP.

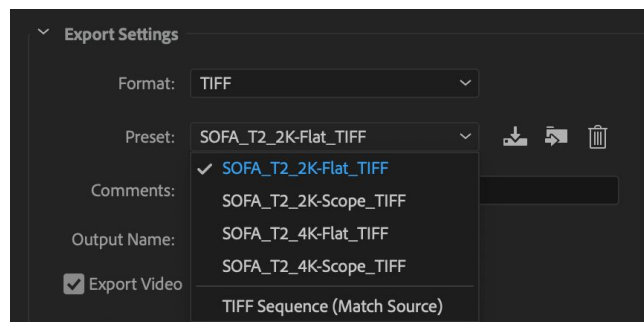
In order to make exporting DSMs easier, export presets have been created for Adobe Premiere Pro, Adobe Media Encoder and Adobe After Effects. Preset Details and instructions are below. If you are finishing your film via Davinci Resolve, Avid Media Encoder, FilmLight Baselight or some other finishing software of your choice, please refer to the Avid and Resolve specifications above or refer to document MSS-2019-02P for general export settings you should use.

II. Adobe DSM Presets

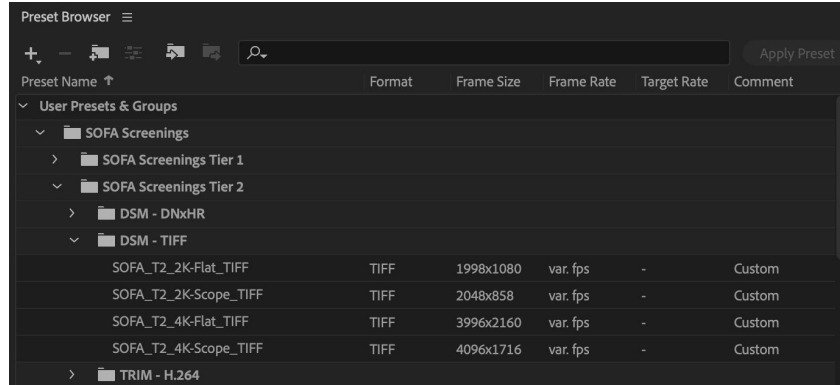
NOTE: YOU MUST IMPORT THE ADOBE PRESETS INTO PREMIERE OR MEDIA ENCODER. THE PRESETS CAN BE FOUND ON THE DESKTOP IN SOFA_Presets. Email fvasa@rti.edu for assistance.

A. TIFF DSM Presets

In Premiere, these presets can be found on the export page by selecting **Format: TIFF** and selecting a preset from the **Preset** dropdown.



In Media Encoder, these presets can be found in the preset window browser under **User Presets & Groups**.

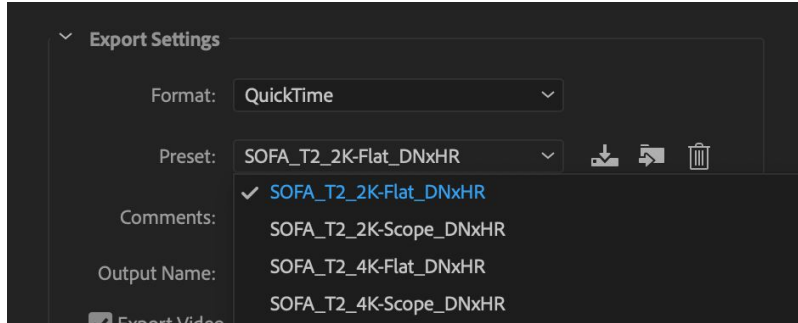


For your reference, the table below describes all export details/settings that are included in the TIFF DSM Presets for Adobe. Please choose the preset that matches the resolution and aspect ratio you intend to make your DCP with.

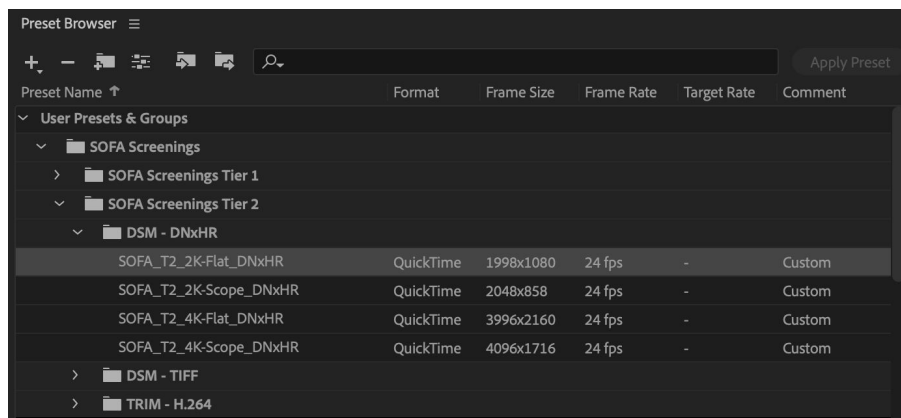
	SOFA_T2_2K-Flat_TIFF	SOFA_T2_2K-Scope_TIFF	SOFA_T2_4K-Flat_TIFF	SOFA_T2_4K-Scope_TIFF
Format	TIFF	TIFF	TIFF	TIFF
Width/Height	1998/1080	2048/858	3996/2160	4096/1716
Export as Sequence	Yes	Yes	Yes	Yes
Frame Rate	24	24	24	24
Field Order	Progressive	Progressive	Progressive	Progressive
Aspect	Square Pixels	Square Pixels	Square Pixels	Square Pixels
Render @ Max Depth	No	No	No	No
Bit Depth	16	16	16	16
Use Max Render Quality	Yes	Yes	Yes	Yes

B. DNxHR DSM Presets

In Premiere, these presets can be found on the export page by selecting **Format: Quicktime** and selecting a preset from the **Preset** dropdown.



In Media Encoder, these presets can be found in the preset window browser under **User Presets & Groups**.



For your reference, the table below describes all export details/settings that are included in the DNxHR DSM Presets for Adobe.

	SOFA_T2_2K-Flat_DNxHR	SOFA_T2_2K-Scope_DNxHR	SOFA_T2_4K-Flat_DNxHR	SOFA_T2_4K-Scope_DNxHR
Format	Quicktime	Quicktime	Quicktime	Quicktime
Video Codec	DNxHR/DNxHD	DNxHR/DNxHD	DNxHR/DNxHD	DNxHR/DNxHD
Video Codec Resolution	DNxHR HQX 10-bit (Adobe)	DNxHR HQX 10-bit (Adobe)	DNxHR HQX 10-bit (Adobe)	DNxHR HQX 10-bit (Adobe)
Alpha	None	None	None	None
Width/Height	1998/1080	2048/858	3996/2160	4096/1716
Frame Rate	24	24	24	24
Field Order	Progressive	Progressive	Progressive	Progressive
Aspect	Square Pixels	Square Pixels	Square Pixels	Square Pixels
Render @ Max Depth	Yes	Yes	Yes	Yes

Use Max Render Quality	Yes	Yes	Yes	Yes
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C. Embedded Audio Option for DNxHR (Not Recommended)

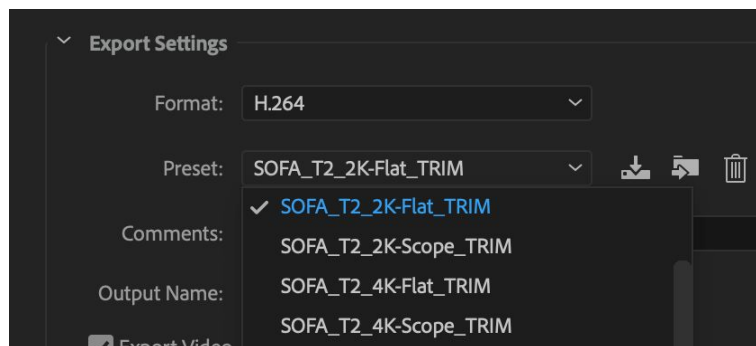
By default in the presets **Audio Export is not enabled for DNxHR DSM export**. This is because standard practice for DCP creation is to make the Picture DSM and Audio DSM separately and recombine them in DCP-o-Matic 2 (also REQUIRED if you are finishing in 5.1 surround sound). The recommended procedure is to create a separate Audio DSM.

If you have simple, final stereo sound for your Tier 2 film that never left your **Premiere timeline**, you can choose to pack your audio within your DNxHR Image DSM. Follow the steps below to embed your audio correctly.

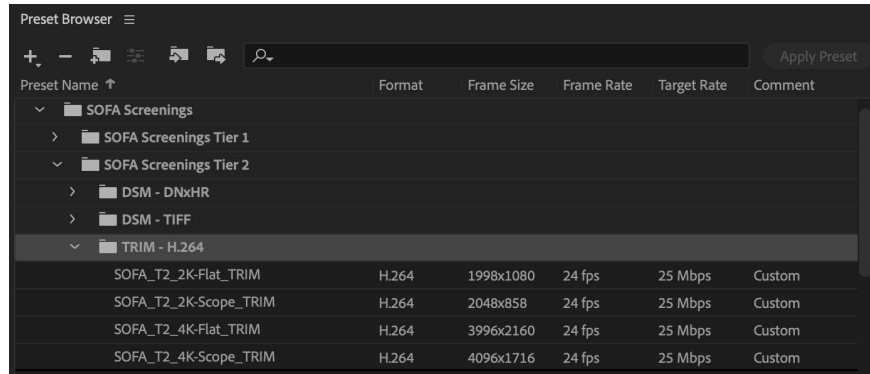
1. Check the **Export Audio** checkbox after selecting the appropriate preset.
2. Verify the Audio Export settings: **Uncompressed Codec, 24 bit, 48 kHz, Stereo**

III. Adobe SOFATube Trim Presets

In Premiere, these presets can be found on the export page by selecting **Format: H.264** and selecting a preset from the **Preset** dropdown. Note the TRIM designation.



In Media Encoder, these presets can be found in the preset window browser under **User Presets & Groups**.



For your reference, the table below describes all export details/settings that are included in the Trim Presets for Adobe.

	SOFA_T2_2K-Flat_TRIM	SOFA_T2_2K-Scope_TRIM	SOFA_T2_4K-Flat_TRIM	SOFA_T2_4K-Scope_TRIM
Format	H.264	H.264	H.264	H.264
Width/Height	1998/1080	2048/858	3996/2160	4096/1716
Frame Rate ¹	24	24	24	24
Field Order	Progressive	Progressive	Progressive	Progressive
Aspect	Square Pixels	Square Pixels	Square Pixels	Square Pixels
Render @ Max Depth	Yes	Yes	Yes	Yes
Profile, Level	Main, 4.2	Main, 4.2	Main, 5.1	Main, 5.1
Bitrate Encoding	VBR, 1 pass	VBR, 1 pass	VBR, 1 pass	VBR, 1 pass
Target Bitrate	25 Mbps	25 Mbps	25 Mbps	25 Mbps
Audio Format	AAC	AAC	AAC	AAC
Sample Rate ²	48 kHz	48 kHz	48 kHz	48 kHz
Channels	Stereo	Stereo	Stereo	Stereo
Audio Quality	High	High	High	High
Bitrate	320 kbps	320 kbps	320 kbps	320 kbps
Precedence	Bitrate	Bitrate	Bitrate	Bitrate
Multiplexer	MP4	MP4	MP4	MP4
Stream Compatibility	Standard	Standard	Standard	Standard
Use Max Render Quality	Yes	Yes	Yes	Yes

¹The framerate will default to 24 fps. Change this in your export settings if you prefer 23.98 for your H.264 trim or need 23.98 for broadcast reasons.

²Assure you are using your folded down Stereo mix from Protools if your Tier 2 DCP was finished in 5.1 Surround.

IV. AVID Media Composer DSM Presets

Presets for exporting DSMs out of AVID Media Composer will be detailed here once available in a future version. Refer to **MSS-2019-03P** for encoding specifications.

V. AVID Media Composer SOFATube Trim Presets

Presets for exporting SOFATube Trim deliverables out of AVID Media Composer will be detailed here once available in a future version. Refer to **MSS-2019-03P** for encoding specifications.

VI. Blackmagic DaVinci Resolve DSM Presets

Presets for exporting DSMs out of DaVinci Resolve will be detailed here once available in a future version. Refer to **MSS-2019-03P** for encoding specifications.

VII. Blackmagic DaVinci Resolve SOFATube Trim Presets

Presets for exporting SOFATube Trim deliverables out of DaVinci Resolve are not yet available and will be detailed here in a future revision. Refer to **MSS-2019-03P** for encoding specifications.