# DJI Cinema Workflow

In this Guide, we will introduce several standard workflows of film/video production using DJI devices (Inspire 2 as an example), mainly oriented to professional film workers (e.g. practitioners from industries including television, film, variety show, advertising, etc.)

Inspire 2/CineCore 2.0: Flexible and Efficient Filming

DJI Inspire 2 creates an all-in-one solution for professional aerial filming. It is equipped with CineCore 2.0, which supports three high-quality shooting formats: CinemaDNG, ProRes, and H.26X (H.264/H.265). It not only provides great flexibilities for users with diverse needs, but also serves as a seamless bridge for industry-standard post-production procedures and software. Whether you prefer quick editing and delivering or meticulous post production including grading and visual effects, the Inspire 2 with its powerful CineCore 2.0 is always capable of providing an efficient but user-friendly workflow.
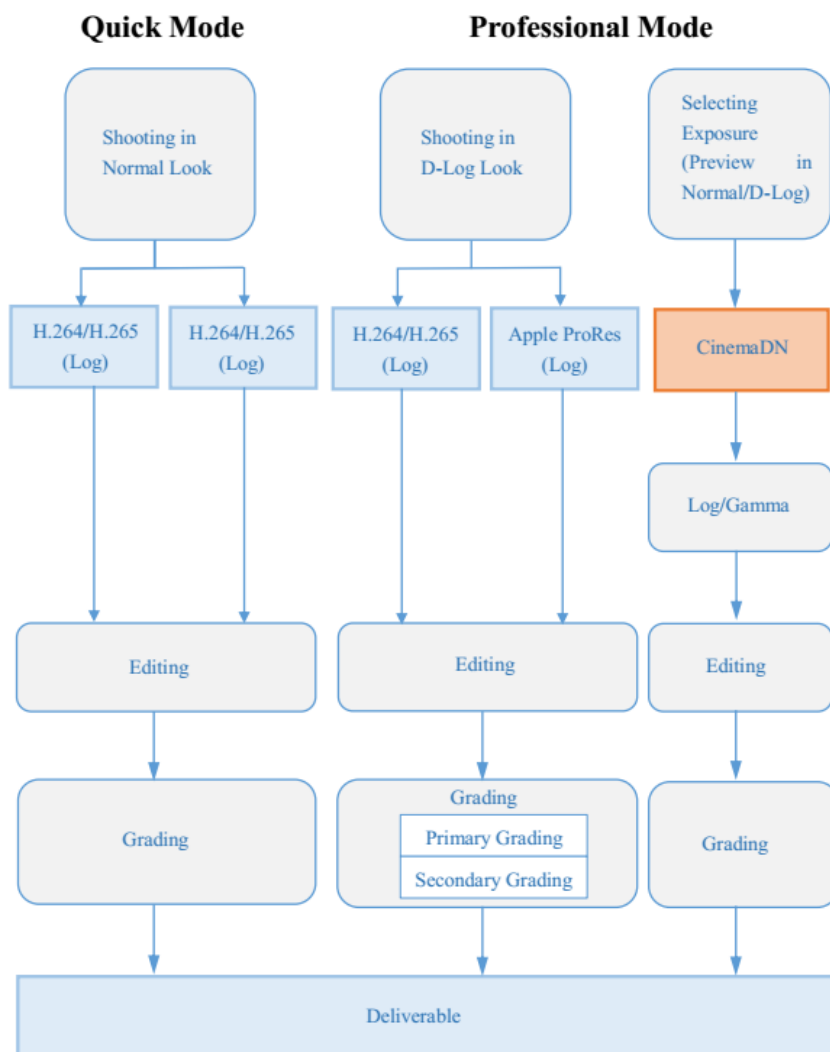
The picture above shows the standard workflows supported by CineCore 2.0. When shooting video, you can choose to record H.264 or H.265 on the SD card. Moreover, either ProRes or CinemaDNG is also available if you have bought related activation keys and CINESSD.
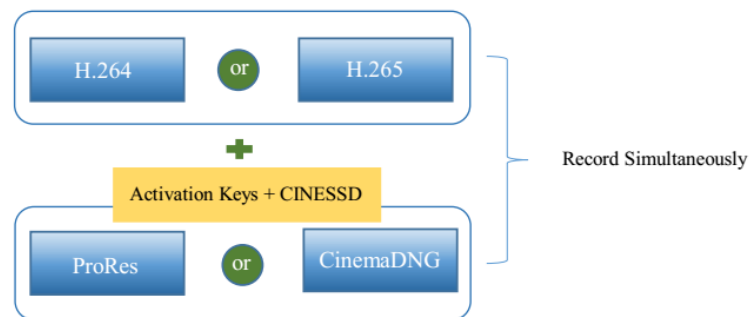

Quick Mode vs. Professional Mode

Inspire 2 provides 2 workflows: Quick Mode and Professional Mode.
In Quick Mode, the footages shot in ProRes and H.26X will be recorded in the true color and greyscale under Rec.709 Color Space. The original video can then be directly output after editing and applying creative color, without the step to change color space or Gamma.

Professional Mode provides wider dynamic range. At this time, the CinemaDNG/ProRes/H.26X footages recorded in the camera are all digital intermediate. Its color and greyscale try to keep as much of the scene information as possible, leaving the largest space for post-processing design though not directly accessible to the user. It is available for the user only when completing the steps of accessing standard Cinema DI procedure, editing, and grading. Setting all color modes to D-Log allows you to record wider dynamic range and broader color gamut as well as conserve more highlight and shadow details (as shown below). This enables colorists to adjust contrast and grading to selected zones based on preferences, and restore the information that cannot be recorded in Quick Mode.

Normal   D-Log
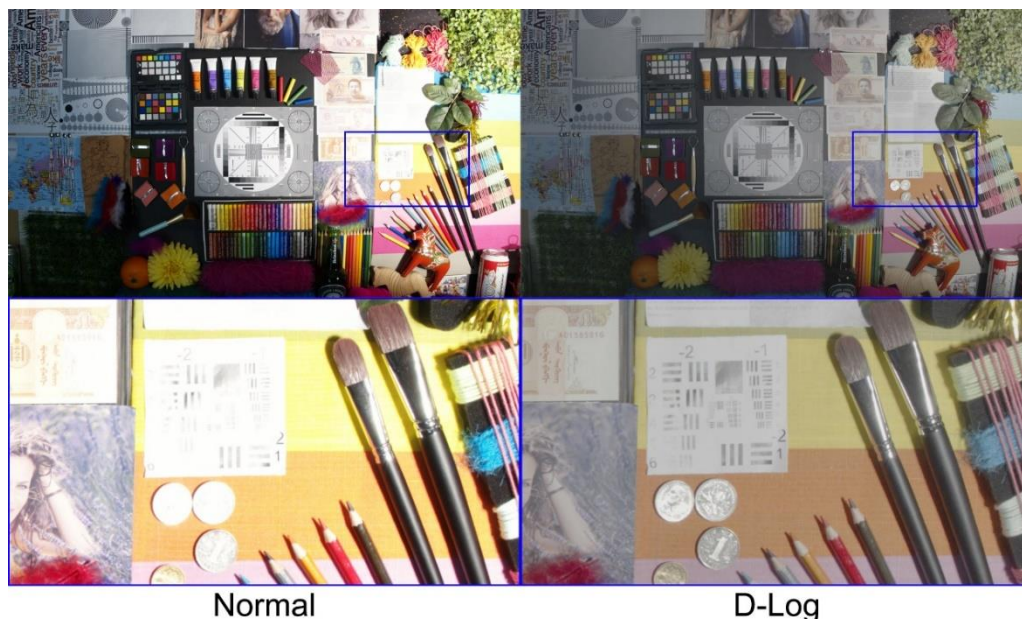
Professional ProRes Workflow

Compared to H.26X footages of 8 bit YUV 4:2:0, ProRes 422HQ/4444XQ with its 10~12bit color depth, higher higher chroma sampling density, and pure intra-frame coding, provides professional users with larger space for post processing. With DaVinci Resolve Software as an example for post-production, we will introduce the workflow to shoot professional videos in ProRes format.

Shooting

1. Choose ProRes records in the app, and set all color modes to D-Log. To achieve the best dynamic range, ISO will be automatically locked.
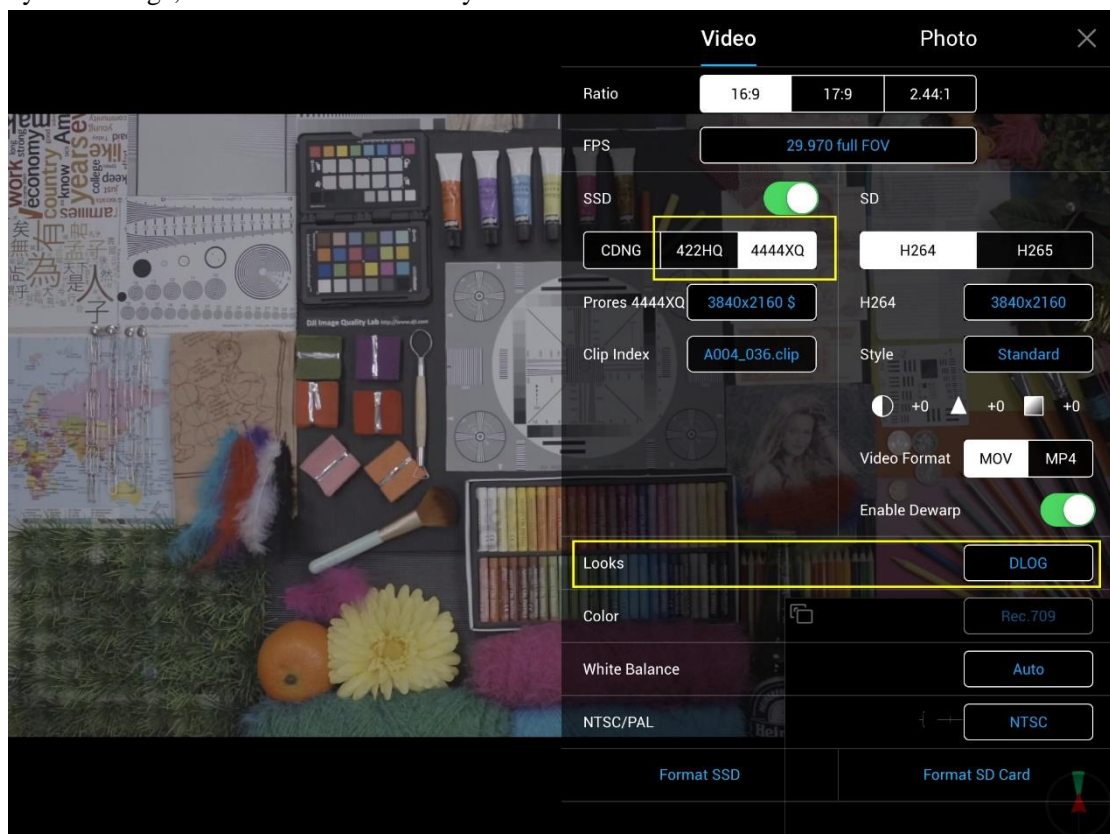

2. Shoot in AE Mode (Auto/A/S Mode) to achieve correct exposure. When shooting in Manual Exposure Mode, refer to the built-in Exposure Indicator, or confirm the exposure settings using a waveform monitor. An ND Filter may be required during outdoor shooting, which enables you to apply the best iris and shutter settings.
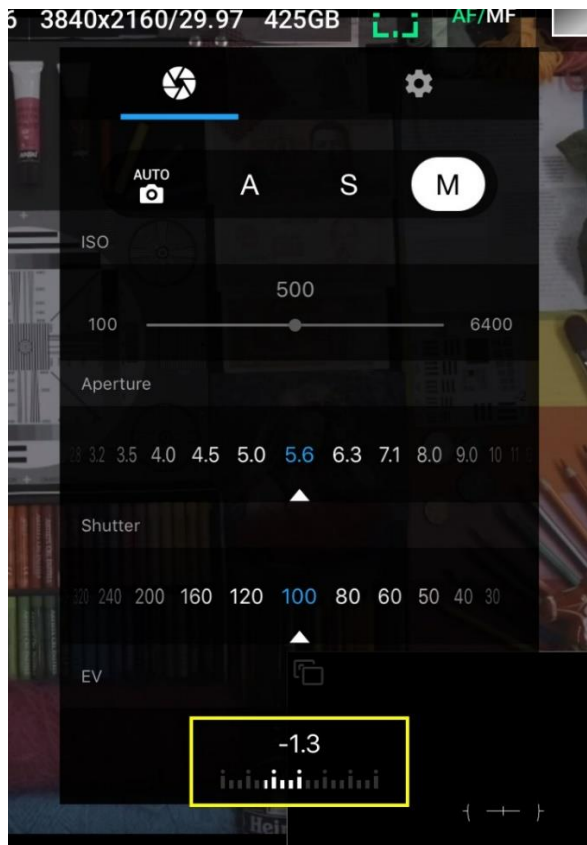
Importing

3. Import the original video shot in D-Log mode to a video processing software, and create a timeline for editing.
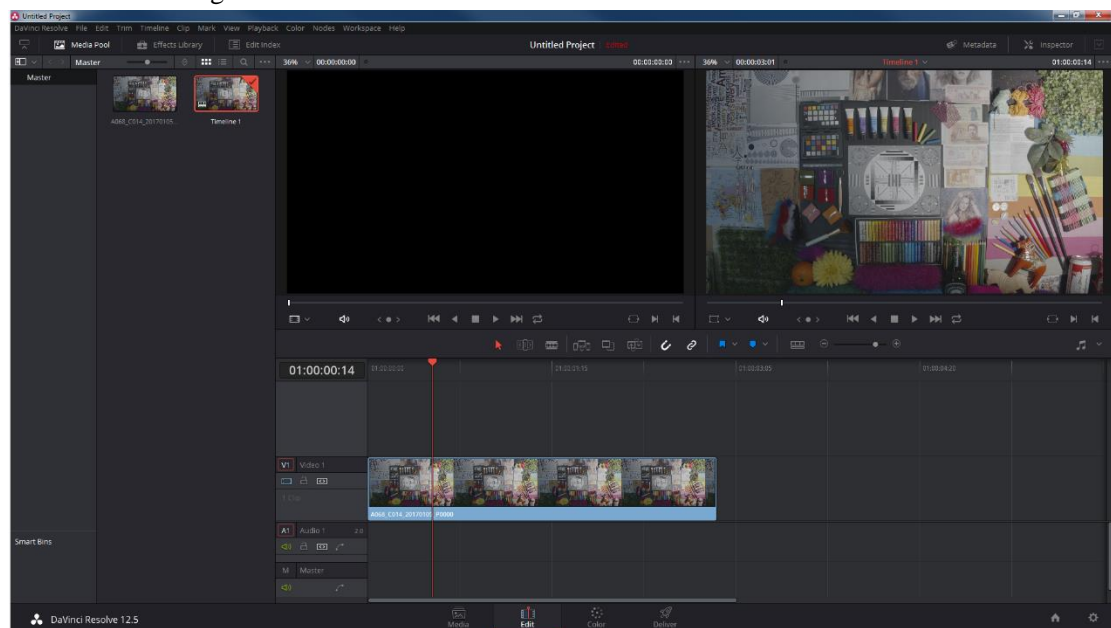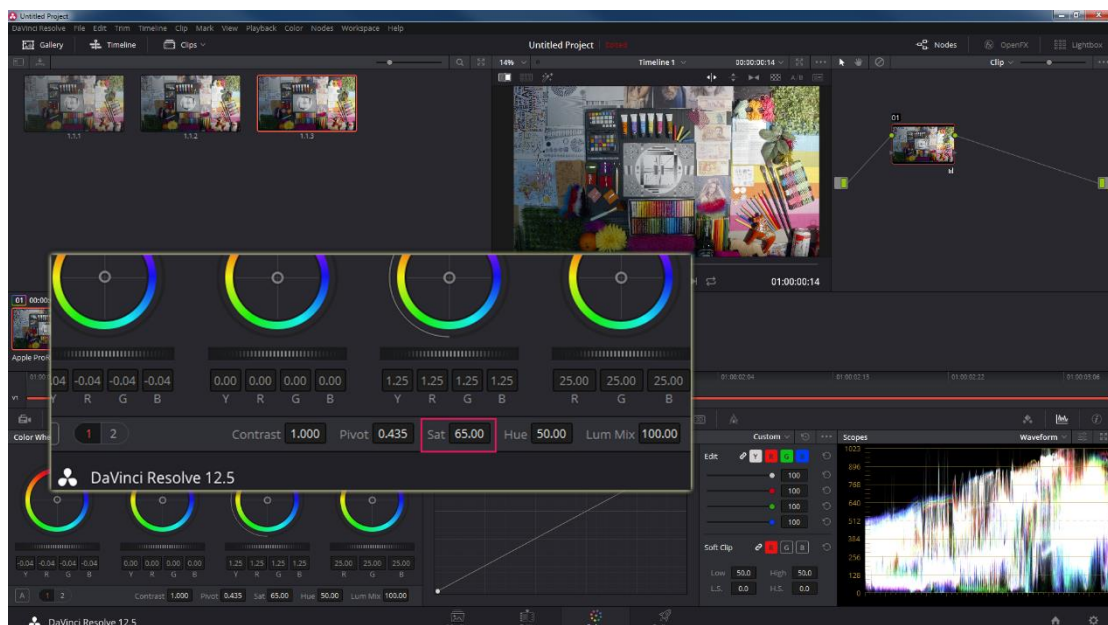
Grading

4. On the Grading interface, adjust the brightness and contrast of the video footage to the appropriate level by adjusting Lift/Gamma/Gain. Refer to the waveform to investigate and control the clipping of highlights and shadows. Generally, reducing Lift and increasing Gain value is adequate to get a proper contrast for the video footage.
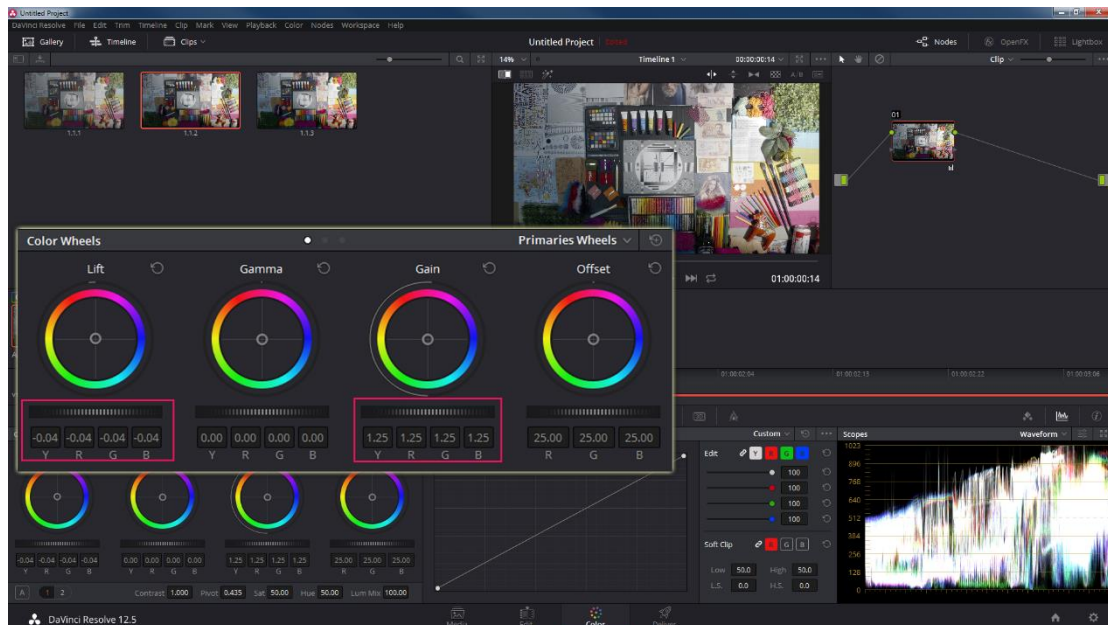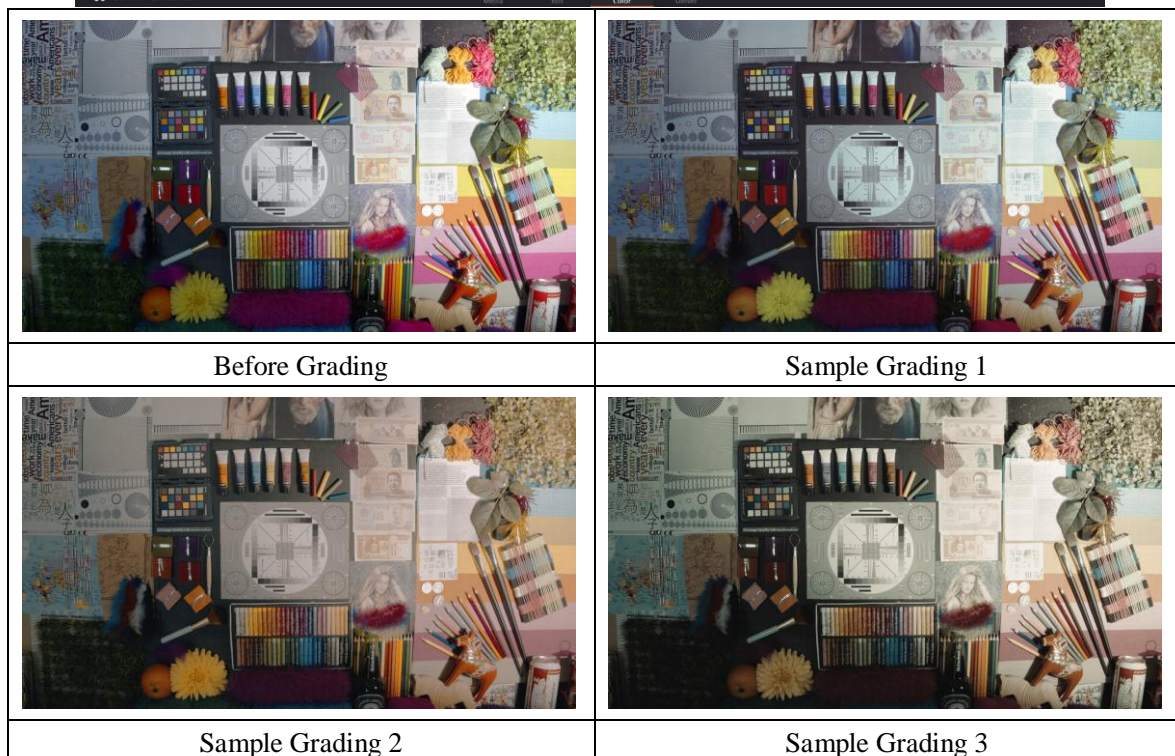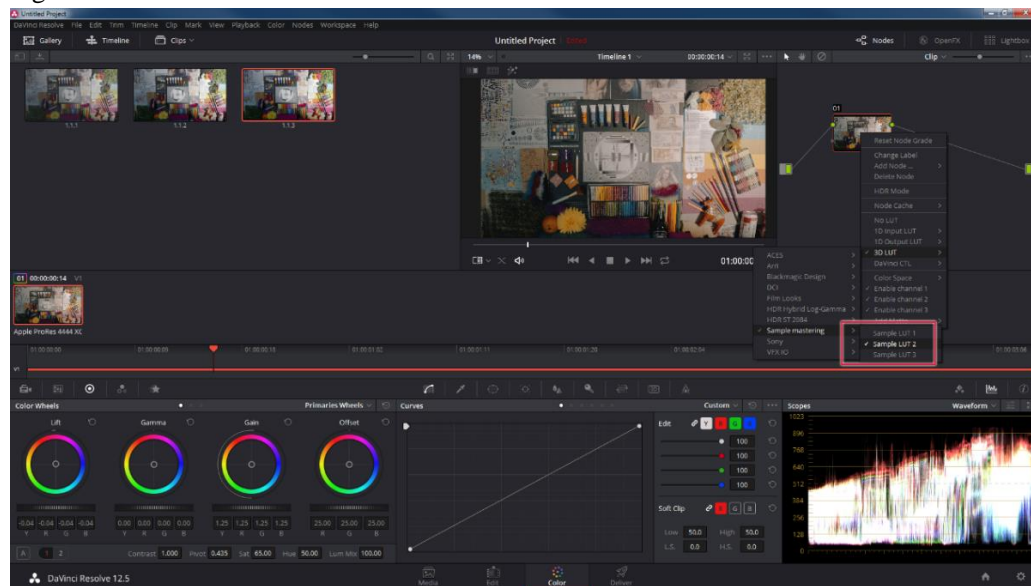

5. You can also increase saturation ratio as needed or make other delicate after effects.

Before Grading	Contrast Enhanced + Saturation Enhanced

6. Apply appropriate 3DLUT to nodes for creative grading, or do secondary grading in selected regions.

|	
Before Grading	Sample Grading 1
Sample Grading 2	Sample Grading 3

7. Render and output the graded footage.

RAW (CinemaDNG) Workflow: Conform to Industry Standard

When using RAW workflow, the raw sensor data of every frame will be recorded in CinemaDNG, which saves all collected information. During shooting, D-Log grading preview becomes possible via HD image transmission. When the shooting is complete, the CinemaDNG data can be decoded or developed, and applied with a Gamma/Log line. To then make it compatible with footages in other formats and shot by other devices, you can apply an industry-standard DI procedure on to it.

Video Shooting

1. Choose CDNG as the record format when shooting, and also choose resolution as needed. Visit the DJI official website for all crop factors under different resolutions and frame rates:

| SIZE	FRAMERATE	CROP FACTOR	CODEC	BITRATE(Gbps)
5280x3956	20(burst)	2.0	DNG	3.7Gbps
5280x2972	29.97	2.0	CinemaDNG	4.2Gbps
5280x2160	29.97	2.0	Apple ProRes 422 HQ	1.3Gbps
4096x2160	59.94	2.7	CinemaDNG	4.0Gbps
	29.97	2.0	CinemaDNG	2.4Gbps
	29.97	2.0	H.264/H.265	100Mbps
3840x2160	59.94	2.7	H.264	100Mbps
	59.94	2.7	CinemaDNG	3.7Gbps
	29.97	2.0	CinemaDNG	2.1Gbps
	29.97	2.0	Apple ProRes 422 HQ	900Mbps
	29.97	2.0	Apple ProRes 4444 XQ (no alpha)	2.0Gbps
	29.97	2.0	H.264/H.265	100Mbps
3840x1572	29.97	2.0	H.264/H.265	100Mbps
2720x1530	59.94	2.7	H.264/H.265	100Mbps/80Mbps
	29.97	2.0	H.264/H.265	80Mbps/70Mbps
1920x1080	120.0	2.0	H.264/H.265	100Mbps
	29.97	2.0	H.264/H.265	60Mbps/50Mbps
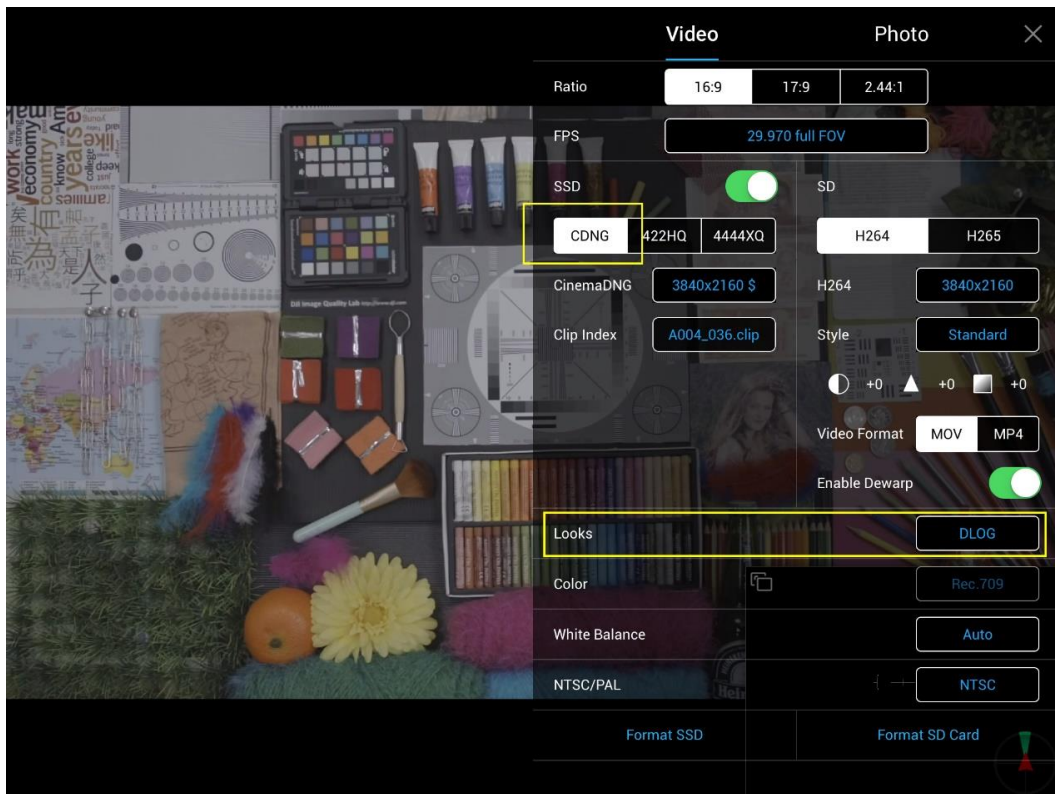
2. Real-time preview will be displayed in D-Log color. Choose exposure and record footage with the reference of EV Indicator and waveform.

Import

3. Import the DNG serial number into DaVinci Resolve. Set the Media Storage to the directory where the CinemaDNG Original Videos are located in DaVinci Resolve. In this way the CinemaDNG files in sequential number can be automatically identified and combined to one footage. Add it to the Media Pool and Timeline.
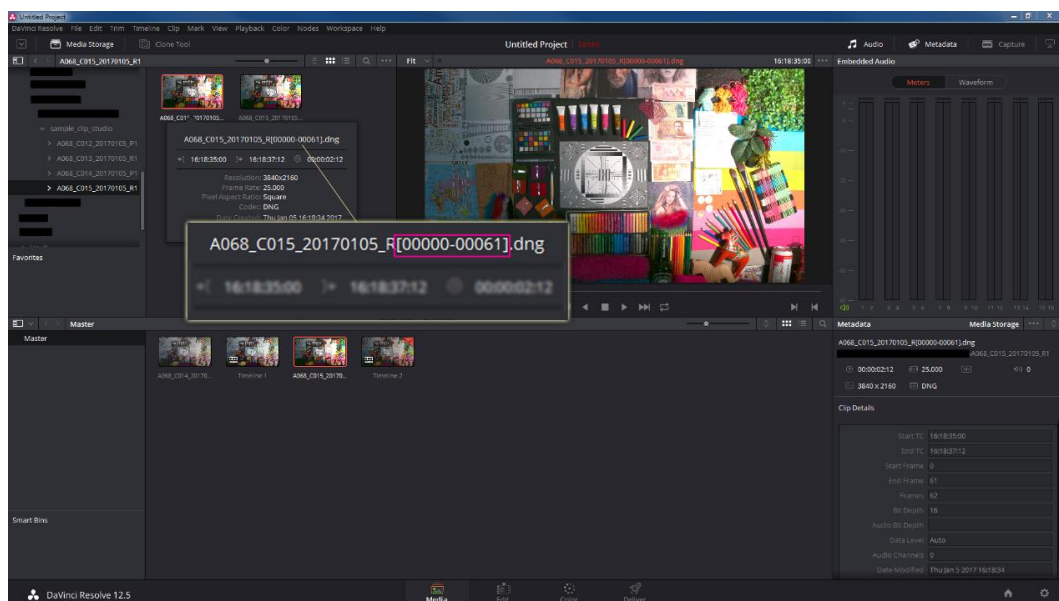
4. Choose Gamma when decoding CinemaDNG. To better converge with footage from other video cameras, choose Decode Using = "Clip" and Gamma = "Linear", and do not make Gamma changes to raw data. This makes it easier to apply the Gamma required in the next step.
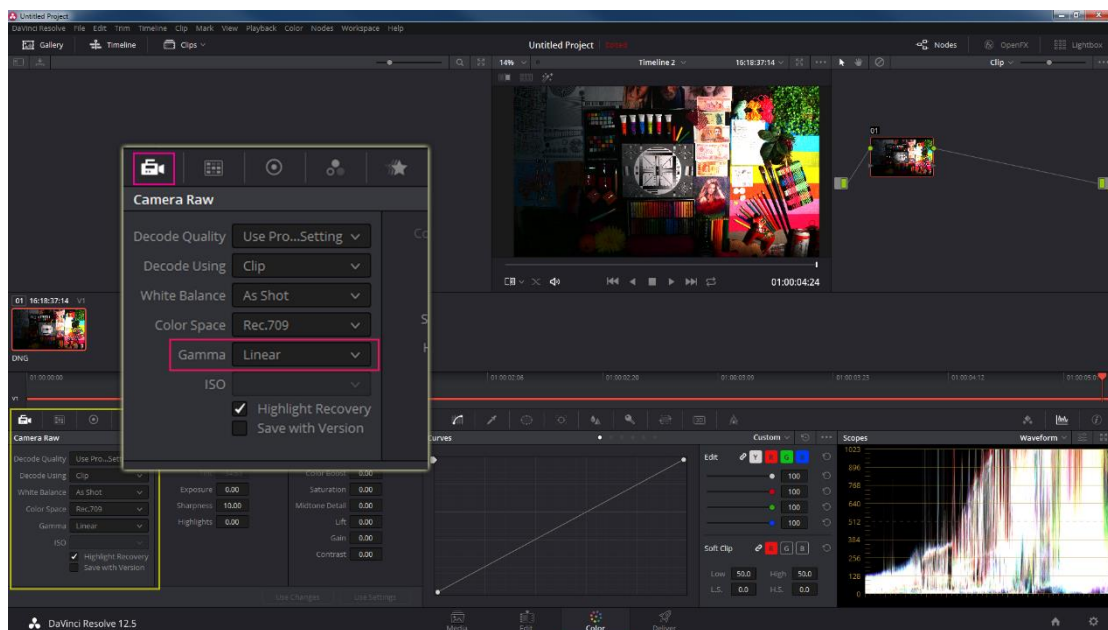

Adapt

5. Apply appropriate 3DLUT to nodes for creative grading and switch linear space to required Gamma/Log space. Different methods can be used according to the film crew's preferences, and this should be established prior to shooting. For example: with the convergence of common RAW workflow, you could apply Linear to ARRI LogC and adapt footages to ARRI LogC space.
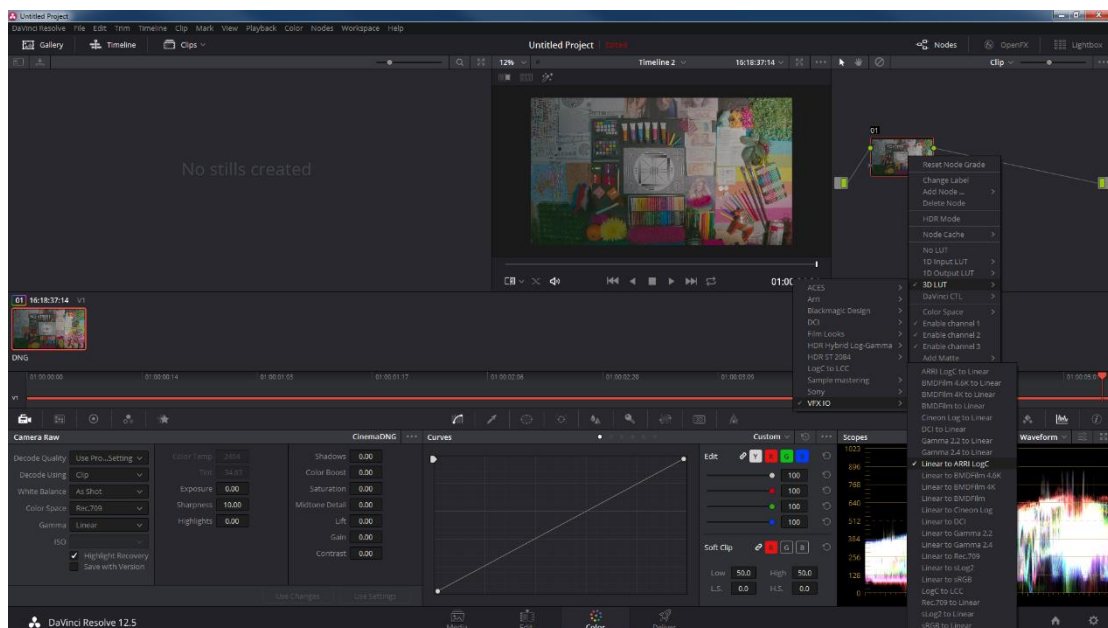
You will then be allowed to make further transfers. For example, using the LUT of LogC to

LCC on serial nodes, in order to access post processing using LCC color:
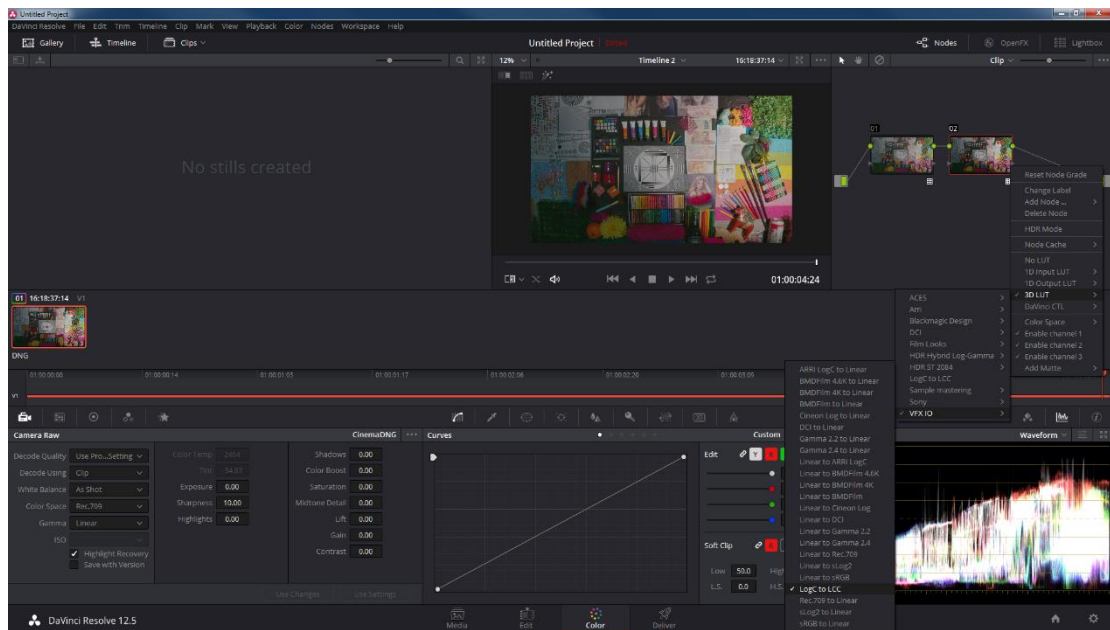
6. Grade and output based on standard DI procedure.