

STUDIO CONTENT OPERATIONS

Technical Specifications for P+ Scripted Content

TABLE OF CONTENTS

01

VIDEO

07

AUDIO

15

AUDIO DESCRIPTION

19

GRAPHICS, TEXT & TEXTLESS

21

TIMED TEXT

28

QUALITY CONTROL

30

REJECTIONS

32

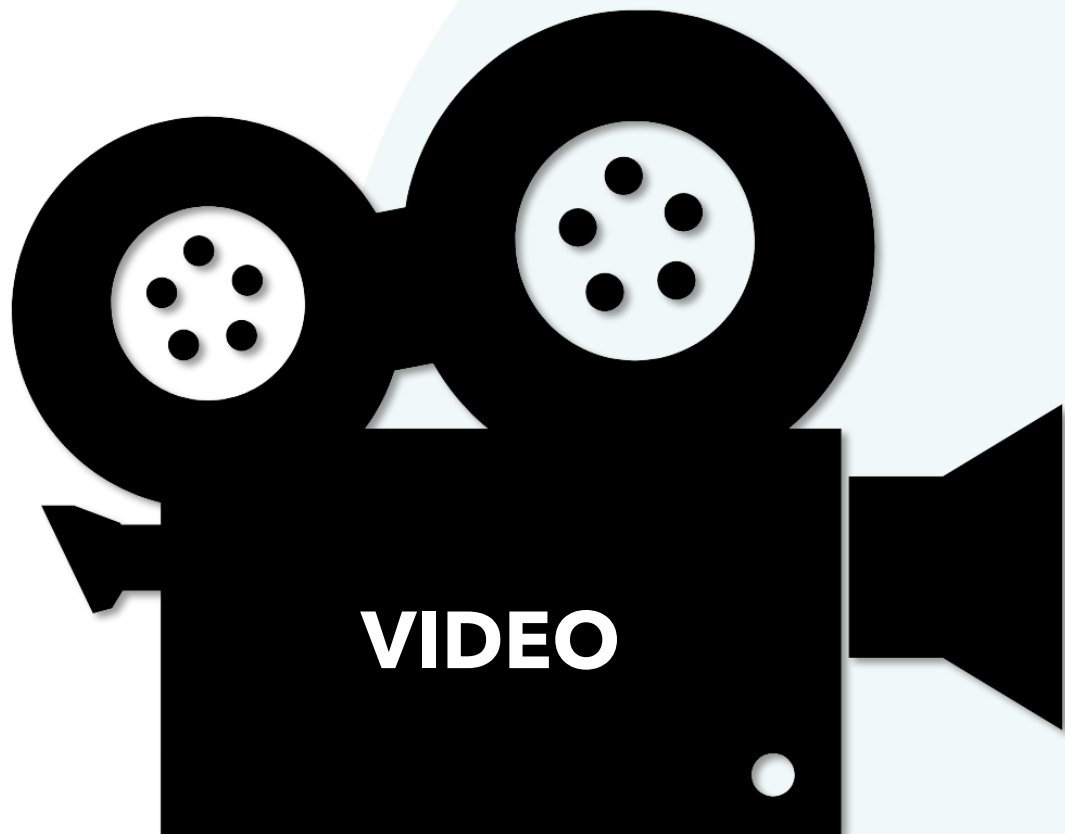
FILM

34

LTO LABELS & SLATES

36

CONTACT US



CAPTURE & MASTERING RESOLUTIONS:	<ul style="list-style-type: none"> 3.8K UHD: 3840x2160 (1.78 Native) 3.8K UHD: 3840x2076 (1.85 Widescreen) 3.8K UHD: 3840x2021 (1.90) 3.8K UHD: 3840x1920 (2.00 Univisium) 3.8K UHD: 3840x1607 (2.39 Widescreen Anamorphic) 4K: 4096x2304 (1.78) 4K: 4096x2214 (1.85 Widescreen) 4K DCI: 4096x2160 (1.90 Native) 4K: 4096x2048 (2.00 Univisium) 4K: 4096x1716 (2.39 Widescreen Anamorphic) 6K 8K <p>Working elements and archive materials will retain the original capture resolution and aspect ratio.</p> <p>The highest possible bit rate for the camera's capture codec should be used.</p>
DELIVERY RESOLUTIONS:	<p>Delivered in a 16x9 container:</p> <ul style="list-style-type: none"> HD: 1920x1080 (1.78 Native) HD: 1920x1038 (1.85 Widescreen) HD: 1920x803 (2.39 Widescreen Anamorphic) 3.8K UHD: 3840x2160 (1.78 Native) 3.8K UHD: 3840x2076 (1.85 Widescreen) 3.8K UHD: 3840x2021 (1.90) 3.8K UHD: 3840x1920 (2.00 Univisium) 3.8K UHD: 3840x1607 (2.39 Widescreen Anamorphic) <p>If shooting 4K or greater with intent to deliver 4K, aspect ratio must be between 1.90LB and 2.39LB and delivered in a 17x9 container. Aspect ratios of 1.78FF or 1.85LB will deliver at a resolution of 3.8K.</p> <ul style="list-style-type: none"> 4K DCI: 4096x2160 (1.90 Native) 4K: 4096x2048 (2.00 Univisium) 4K: 4096x1716 (2.39 Widescreen Anamorphic)
CAPTURE FRAME RATE/SCAN RATE:	<p>23.98fps or 25fps. Progressive scan ONLY.</p>

ASPECT RATIO:	<p>17x9 or 16x9 Original Aspect Ratio (OAR): Full Frame or Letterbox.</p> <p>Side Matte/Pillarbox must be pre-approved by your Studio Post lead. Pan & Scan is not allowed.</p> <p>Matting content to obtain an aspect ratio that was not protected during filming is not allowed.</p>
COLOR SPACE:	<ul style="list-style-type: none"> ▪ SDR: Rec. 709 ▪ HDR: Rec. 2020
DELIVERY BIT DEPTH:	<ul style="list-style-type: none"> ▪ HD SDR: 10-Bit ▪ UHD SDR: 10-Bit minimum ▪ UHD HDR: 10 - 10-Bit minimum ▪ UHD Dolby Vision: 12-Bit minimum ▪ UHD HDR working elements and archive materials: 16-Bit <p>→ SDR content must be captured at highest possible bit depth.</p> <p>→ HDR content must be captured at 16-Bit.</p>
CHROMA SAMPLING:	<ul style="list-style-type: none"> ▪ 4:4:4 RGB (12-Bit and under) ▪ 4:4:4:4 RGBA (16-Bit)
VIDEO SIGNAL:	<p>All measurements shall be made on a calibrated serial digital waveform monitor or rasterizer, where the video signal is measured utilizing a mV graticule scale in RGB (444) and YCbCr (422) color difference modes.</p>
PEAK LUMINANCE:	700mV/100 IRE
PEAK CHROMA:	840mV/120 IRE
VIDEO BLACK LEVEL:	0mV/0 IRE
VIDEO RANGE:	<p>Head Range: UHD SDR 422 and HD SDR 422 deliverables should be head range.</p> <p>Full Range: UHD SDR 4444, UHD HDR 4444XQ and video assembled working files and archive files should be full range.</p>
DOLBY VISION:	<p>Refer to the most recent Dolby Vision Professional Tools for best practices and procedures.</p>

METADATA TAGS:	<p>Metadata tags for a file must match the actual file spec, especially in regards to color space and video range.</p> <p>The Dolby Vision .xml Color Encoding field must be tagged "bt2020" if the ProRes 4444XQ file is P3-D65 within a Rec.2020 container. MaxFALL-MaxCLL metadata must be populated; "0" is not an accepted value.</p>
HDR/SDR RENDER PROTOCOL:	For Dolby Vision (HDR) content, the SDR trim pass must be derived from the HDR mezzanine.
VIDEO TREATMENTS:	Test files for programs containing video treatments and processes (e.g., film grains, filters, scan-line enhancers) must be submitted to Studio Post Production for review, testing and approval <u>prior to finalizing picture.</u>
MIXED MEDIA:	If requested, programs containing mixed media must pass a Distribution Test File QC upon picture lock. Mixed media conversions rejected in QC must be fixed prior to final delivery.
UPRESED FOOTAGE:	When using personal, archival, or stock footage that did not originate in the mastering resolution, up-res is allowed using the best enhancement methods available.
HORIZONTAL BLANKING:	<p>Full frame and letterbox content must fill the entire width of the 16x9 active picture frame.</p> <p>Any horizontal shifts during program will be rejected.</p>
VERTICAL BLANKING:	<p>Full frame content must fill the entire height of the 16x9 active picture frame.</p> <p>Letterbox material must be centrally placed within the 16x9 frame with no geometrical distortion.</p> <p>Any vertical shifts during program will be rejected.</p>
TITLE SAFE & ACTION SAFE:	<p>Studio defines the safe title area as the central 80% of the active picture within the 16x9 frame. For subtitle placement, refer to Timed Text Placement on page 2.</p> <p>Studio defines the safe action area as the central 90% of the active picture within the 16x9 frame.</p>

TIMECODE FORMAT:	<p>SMPTE timecode must be continuous and free of errors, containing all appropriate flagging bit structures. Timecode shall adhere to SMPTE 12M-1 and 12M-2.</p> <p>Start of File: 00:58:27:00</p> <p>End of File: :03 seconds of <u>Black</u> (MOS) post textless materials or Last Frame of Action (LFOA)</p>
START OF PROGRAM:	Start of Program (SOP) MUST be at 01:00:00:00 (Hour 1) .
VIDEO HEAD FORMAT:	<p>00:58:27:00 - 00:58:29:23 - <u>Black</u> (MOS)</p> <p>00:58:30:00 - 00:59:29:23 - <u>Bars & Tone</u> <i>Composite color bars at 100% modulation and 75% saturation, with an accompanying 1kHz tone at 0VU level (+4dBu)</i></p> <p>00:59:30:00 - 00:59:39:23 - <u>Black</u> (MOS)</p> <p>00:59:40:00 - 00:59:49:23 - <u>Head Slate</u> <i>Head slate identifier (audio/video countdown is not required; do not include 2-pop in final deliverables)</i></p> <p>00:59:50:00 - 00:59:59:23 - <u>Black</u> (MOS)</p> <p>01:00:00:00 - <u>First Frame of Action</u> (FFOA)</p>
VIDEO TAIL FORMAT & TEXTLESS:	<p><u>If Program contains textless at tail:</u> :30 seconds of <u>Black</u> (MOS) post LFOA/Studio tail logo :05 seconds <u>Textless Slate</u> :05 seconds <u>Black</u> (MOS)</p> <p><u>Textless Materials :</u> <i>:03 of black between each individual textless shot with a :02 handle at the head and tail of the shot. Consecutive textless shots do not need to be separated by :03 of black. No closed captioning or audio needed for textless.</i></p> <p>:03 seconds of <u>Black</u> (MOS) post textless materials</p> <p><u>If Program does not contain textless at tail:</u> :03 seconds of <u>Black</u> (MOS) post LFOA</p>
TOTAL RUN TIME (TRT):	Refer to Delivery Schedule for minimum/maximum allowances. Total Run Time (TRT) is from the FFOA to LFOA.

END CREDITS:	Use static cards. Rolling credits not allowed.
FULLY TEXTLESS VIDEO FILE:	If delivering a fully textless version of Program, the fully textless files will contain audio tracks that match the corresponding fully texted version.
LTO DATA STRUCTURE:	LTFS <i>only</i> .
LTO TAPE STOCK:	Consult your Studio Post lead regarding current preferred LTO tape stock generation.
EMERGENCY ALERT SYSTEM (EAS) & WIRELESS EMERGENCY ALERT (WEA) WARNINGS:	Per US Federal law, program must never contain actual or stimulated EAS or WEA Attention Signal warnings, tones, imagery, icons, codes, etc. Any violation of this requirement will be Producer's sole responsibility. Visit www.FCC.gov for further guidance.
PHOTOSENSITIVE EPILEPSY (PSE) TESTING:	Some content may need to be tested with a Flash and Pattern Analyzer (FPA) for the Photosensitive Epilepsy audience. Shots/scenes that fail the FPA must be corrected and retested until acceptable. Any violation of this requirement will be Producer's sole responsibility.
VIDEO FILE NAMING CONVENTIONS:	For Video file naming conventions, refer to the File Naming Conventions document in your Post Locker.
SUPPORTING TECHNICAL DOCUMENTS:	<ul style="list-style-type: none"> ■ SDR HD: ITU-R BT.709 and SMPTE ST-295 ■ SDR UHD: ITU-R BT.2020 and SMPTE ST-2036 & ST-2048 ■ HDR UHD: ITU-R BT.2100 and SMPTE ST-2084 ■ Dolby Vision Professional Tools



FRAME RATE:	Native frame rate of Program. See Delivery Schedule for applicable frame rate.
SAMPLE RATE:	48 kHz
BIT RATE:	24-Bit
TIMECODE FORMAT:	SMPTE timecode must be continuous and free of errors, containing all appropriate flagging bit structures. Timecode shall adhere to SMPTE 12M-1 and 12M-2. Start of File: 00:58:27:00 End of File: LFOA
START OF PROGRAM:	Start of Program (SOP) MUST be at 01:00:00:00 (Hour 1) .
TRACK-BASED AUDIO HEAD FORMAT:	00:58:27:00 - 00:58:29:23 - <u>MOS</u> 00:58:30:00 - 00:59:29:23 - <u>Tone</u> <i>1kHz tone at 0VU level (+4dBu)</i> 00:59:30:00 - 00:59:59:23 - <u>MOS</u> 01:00:00:00 - <u>FFOA</u> <i>Do not include 2-pop in final deliverables.</i>
HEAD (2-POP)/ TAIL POP:	Head and tail sync pops should not be present on final deliverables.
REFERENCE LEVEL: (ANALOG)	When viewed using analog metering equipment, peak program levels shall not exceed +18dBu on the VU scale. Peak distortion (THD) shall not exceed 1% at +18dB.
REFERENCE LEVEL: (DIGITAL)	When measured using digital metering, 0VU reference is defined as -20dB down from the maximum full-scale digital level of 0dBFS. (i.e., Studio reference 0VU is equal to -20dBFS).

REFERENCE TONES:	Reference tones (0VU or -20dBFS) should be recorded on all tracks EXCEPT those which are MOS.
TRUE PEAK:	<p>True Peak levels should never exceed -2dBTP in any track. Normal level dialogue should typically produce peaks between -14 and -8dBFS.</p> <p>VU meters are not to be used to determine True Peak Levels (TPL). They are also not to be used as a sole mixing reference.</p>
PEAK PROGRAM:	<p>Peak program levels shall only be determined by using an industry standard True Peak Meter.</p> <p>VU meters are not to be used to determine Peak Program Levels (PPL). They are also not to be used as a sole mixing reference.</p>
PROGRAM LOUDNESS:	Target LKFS/LUFS average level is between -23.0 ± 0.5 , measured with an industry standard Loudness Meter and using EBU R 128 as the basis for measurement.
SUPPORTING TECHNICAL DOCUMENTS:	EBU R 128, EBU Tech 3285, ITU-R BS. 1770, ITU-R BS.2076 and ITU-R BS. 2088 [current "In force (Main)" document].
AUDIO MIX & TRACK CONFIGURATION:	Refer to the Delivery Schedule for audio mix requirements and detailed track configuration.
DOLBY ATMOS:	Refer to the most recent Dolby Atmos Specifications and White Papers for best practices and procedures.
MIX DETAIL:	<p>Audio must be mixed for near-field exhibition.</p> <p>Delivery of a theatrical mix is not acceptable for broadcast.</p>
PHASE:	<p>All multiple track recordings must be properly phased.</p> <p>Phase separation shall correspond properly with visual separation.</p>
SYNC:	<p>Audio must be frame-accurate to picture.</p> <p>There should be no visible irregularities in the sync (e.g., lip flap, sound of door closing out of sync with picture).</p> <p>The Lo/Ro fold-down must be frame accurate sync with its 5.1 source.</p>

MONO COMPATIBILITY:	<p>If program audio is monaural, mono audio should be recorded onto track 1&2 of the AES tracks (2.0 Mono).</p> <p>Mono mix must meet industry standards for mono compatibility. The Left+Right or Lo+Ro summation must produce an acceptable representation of the intended mix.</p>
MOS:	MOS track should be without reference tones.
EMERGENCY ALERT SYSTEM (EAS) & WIRELESS EMERGENCY ALERT (WEA) WARNINGS:	<p>Per US Federal law, program must never contain actual or stimulated EAS or WEA Attention Signal warnings, tones, imagery, icons, codes, etc. Any violation of this requirement will be Producer's sole responsibility.</p> <p>Visit www.FCC.gov for further guidance.</p>
LOW FREQUENCY EFFECTS (LFE)	The LFE audio channel must only contain low frequency sounds and should not exceed 120 Hz.
DIALOGUE:	<p>Dialogue (DIA) Stem should only contain English dialogue, distinct whispering, specific vocalizations and foreign words that have the same translation in English (e.g., rendezvous, déjà vu).</p> <p>Please see Optional Track Stem Mix Guide on page 14 for further direction.</p>
MUSIC:	<p>Music (MUS) should be delivered as "dipped" tracks.</p> <p>If there is on-set recorded music with vocals that overlap character dialogue, a wild track of the music with vocals must be recorded without the dialogue for placement in the Music (MUS) Stem. Dialogue will be ADR'd for placement in the DIA Stem.</p> <p>The original on-set recording can be placed in an Optional Track Stem.</p>

VOCALS:	<p>Licensed Music <u>with dubbing restrictions</u> should live in the MUS Stem. This includes:</p> <ul style="list-style-type: none"> ▪ Licensed music ▪ Licensed music that a character sings along to ▪ A licensed song being sung by a character <p>Studio Post may request clean audio without sang vocal.</p> <p>Licensed Music <u>without dubbing restrictions</u> should be placed in a Sang Vocal Optional Track Stem. This includes:</p> <ul style="list-style-type: none"> ▪ A song confirmed to be public domain that a character sings ▪ Original song(s) with lyrics created for the show <p>See Optional Track Stem Mix Guide on page 14 for further direction.</p> <p>If there is any question as to whether or not a vocal should be in the MUS or Sang Vocal Optional Track Stem, contact your Studio Post lead.</p>
FULLY FILLED EFFECTS:	<p>Fully Filled Effects (FF EFX) tracks must be 100% fully filled.</p> <p>If Effects are present in the English Composite, they must be present in the FF EFX - this includes both off-screen effects and effects present in the recap.</p> <p>If Effects are not present in the English Composite, they should not be present in the FF EFX.</p> <p>Third party footage with dubbing restrictions live in the FF EFX.</p>
FOLEY:	<p>Foley must match in quality and quantity to its English Composite counterpart.</p>
WALLA:	<p>Walla is considered indiscernible background chatter (e.g., muffled crowd noise, indistinguishable conversations at a restaurant) and lives in the FF EFX Stem.</p> <p>Walla should not contain discernable dialogue. Discernable English is presumed to be dialogue and should live in the DIA Stem.</p> <p>If walla does contains discernable dialogue (e.g., reactions in crowd, PA announcement in supermarket, drivers complaining in background over a car accident, playground chatter), the discernable background chatter must be placed in a Background Dialogue Optional Track Stem and seamless clean walla placed in the FF EFX Stem.</p> <p>See Background Dialogue Optional Track Stem and consult with your Studio Post lead for more details for more information.</p>

FULLY FILLED M&E:	<p>Fully Filled M&E tracks must be 100% fully filled.</p> <p>During the QC process, the FF M&E should be checked against the English Composite to ensure EFX are 100% filled and properly placed in the track.</p> <p>If effects are present in the English Composite, they must be present in the FF M&E - this includes both off-screen effects and effects present in the recap.</p> <p>If effects are not present in the English Composite, they should not be present in the FF M&E.</p>
OPTIONAL TRACKS:	<p>Optional Tracks Include:</p> <ul style="list-style-type: none"> ▪ Efforts/vocalizations ▪ Third party footage without dubbing restrictions ▪ Sang vocals that are public domain ▪ Sang vocals for original song(s) created for the show ▪ Sang vocals with no dubbing restrictions ▪ Discernable background chatter ▪ Foreign dialogue <p>See Optional Track Mix Guide on Page 14 for further details.</p>
EFFORTS/ VOCALIZATIONS OPTIONAL TRACK STEM:	<p>The Efforts/Vocalization Optional Track Stem includes character expressions such as sighs, grunts, moans and gasps, etc.</p> <p><u>The 3 Second Rule:</u> An Efforts/Vocalization Optional Track Stem is required when a character's vocalization/effort occurs ≥ 3 seconds after their dialogue.</p> <p>An Efforts/Vocalization Optional Track Stem is <u>not</u> required when a character's effort/vocalization (e.g., grunt) occurs within 3 seconds of that same character's dialogue.</p>
THIRD PARTY FOOTAGE OPTIONAL TRACK STEM:	<p>Any third party footage (personal, archival/stock, licensed/fair-use) composite audio that contractually cannot be altered due to dubbing restrictions should be placed in the FF EFX Stem (whether the clip is in English or foreign language).</p> <p>Third party footage audio <u>without</u> dubbing restrictions should live in the Third Party Footage Optional Track Stem.</p> <p>If there is any question as to whether or not third party footage should be in the FF EFX or Third Party Footage Optional Track Stem, consult your Studio Post lead.</p>
FOREIGN DIALOGUE OPTIONAL TRACK STEM:	<p>All foreign dialogue should be placed in the Foreign Language Optional Track Stem.</p>

BACKGROUND DIALOGUE OPTIONAL TRACK STEM:	<p>Walla should not contain discernable dialogue. Discernable English is presumed to be dialogue and should live in the DIA Stem.</p> <p>If Walla was recorded with discernable background dialogue tied to it, a Background Dialogue Optional Track Stem will be required. This stem will contain only the distinguishable background chatter (e.g., reactions in crowd, PA announcement in supermarket, playground chatter). Seamless clean Walla will be placed in the FF EFX Stem.</p> <p>See Walla and consult with your Studio Post lead for more information.</p>
VOICE OVER STEM:	<p>A voiceover (VO) is considered the spoken words or thoughts of a person or character in the program.</p> <p>Examples of voiceover:</p> <ul style="list-style-type: none"> ▪ Character speaking who is not in the scene ▪ Cut-away to another scene while character dialogue continues ▪ Daydream sequence ▪ Character typing a letter while thinking of the words ▪ Character heard on the other side of the line during phone conversation <p>If program contains voiceover, it should be placed in the DIA track. However, a separate VO Stem will be necessary for instances where the voiceover overlaps with dialogue in the DIA Stem.</p> <p>Consult your Studio Post lead for further instructions.</p>
NARRATOR STEM & MIX MINUS NARRATION:	<p>A narrator is considered a character chronicling events during the program. The narrator is typically not someone who is seen or represented otherwise in the program.</p> <p>If program contains a narrator, a Mix Minus Narration (MMN) Composite Mix and Narrator (NARR) Stem will be required.</p> <p>For more information on this requirement, consult your Studio Post lead.</p>
LOGOS WITH AUDIO:	<p>If any company or Producer logo contains audio, it should be placed in the FF EFX <u>or</u> MUS Stem.</p> <p>Company and Producer logos containing dialogue, vocals, efforts or vocalizations will not be localized/dubbed.</p>
AUDIO FOLDERS & FILE NAMING CONVENTIONS:	<p>For Audio folders and track naming, refer to the File Naming Conventions document in your Post Locker.</p>

OPTIONAL TRACK MIX GUIDE

Audio Type	Audio Track
Moans, Grunts, Gasps, Groans, Sighs:	Efforts/Vocalizations Optional Track Stem*
Coughs:	Efforts/Vocalizations Optional Track Stem*
Smacking (lips):	Efforts/Vocalizations Optional Track Stem*
Kisses:	Efforts/Vocalizations Optional Track Stem*
Chewing:	Efforts/Vocalizations Optional Track Stem*
Spitting:	Efforts/Vocalizations Optional Track Stem*
Heavy Breathing:	Efforts/Vocalizations Optional Track Stem*
Laughs (as part of character DIA):	Efforts/Vocalizations Optional Track Stem*
Laughs (as part of background):	FF EFX Stem
Whispering (Indistinct & not walla):	Efforts/Vocalizations Optional Track Stem*
Whispering (Distinct):	DIA Stem
Walla:	FF EFX Stem
Foreign Dialogue:	Foreign Dialogue Optional Track Stem
Discernable Background Chatter:	DIA Stem or Background DIA Optional Track Stem
Third Party Footage with no dubbing restrictions:	Third Party Footage Optional Track Stem
Third Party Footage with dubbing restrictions:	FF EFX Stem If requested, Studio Post may want clean EFX without the third party footage
Sang Vocals - licensed music:	MUS Stem If requested, Studio Post may want clean audio without sang vocal
Singing by character - Original song created specifically for program:	Sang Vocals Optional Track Stem
Sang Vocals - Public domain songs:	Sang Vocals Optional Track Stem (e.g., "Happy Birthday," "For He's a Jolly Good Fellow")
Humming:	Efforts/Vocalizations Optional Track Stem if it is not a licensed song. Licensed songs live in the MUS Stem.
Whistling:	Efforts/Vocalizations Optional Track Stem if it is not a licensed song. Licensed songs live in the MUS Stem.
"Ugh":	DIA Stem
"Oh":	DIA Stem
"Hmmm":	DIA Stem

***The 3 Second Rule:**

An Efforts/Vocalization Optional Track Stem **is required** when a character's vocalization/effort occurs ≥ 3 seconds after their dialogue.

An Efforts/Vocalization Optional Track Stem **is not required** when a character's vocalization/effort (e.g., grunt) occurs within 3 seconds of that same character's dialogue.

Please consult your Studio Post lead with any questions or concerns.

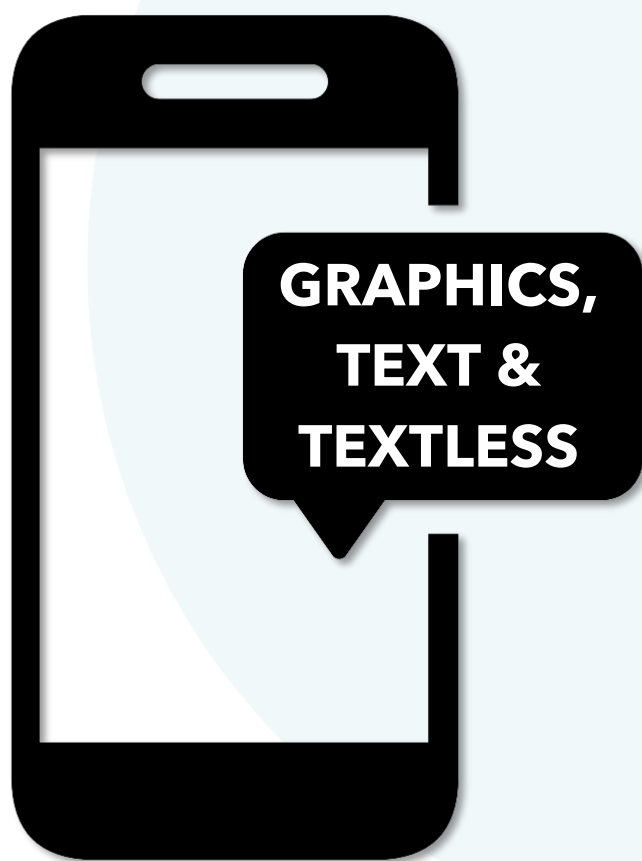


AUDIO DESCRIPTION

FRAME RATE:	Native frame rate of Program. See Delivery Schedule for applicable frame rate.
SAMPLE RATE:	48 kHz
BIT RATE:	24-Bit
TIMECODE FORMAT:	<p>SMPTE timecode must be continuous and free of errors, containing all appropriate flagging bit structures. Timecode shall adhere to SMPTE 12M-1 and 12M-2.</p> <p>Start of File: 00:58:27:00</p> <p>End of File: LFOA</p>
START OF PROGRAM:	Start of Program (SOP) MUST be at 01:00:00:00 (Hour 1).
AUDIO DESCRIPTION HEAD FORMAT:	<p>00:58:27:00 - 00:58:29:23 - <u>MOS</u></p> <p>00:58:30:00 - 00:59:29:23 - <u>Tone</u> 1kHz tone at 0VU level (+4dBu)</p> <p>00:59:30:00 - 00:59:59:23 - <u>MOS</u></p> <p>01:00:00:00 - <u>FFOA</u></p> <p><i>Do not include 2-pop in final deliverables.</i></p>
AUDIO DESCRIPTION TAIL FORMAT:	Audio Description tracks must be frame accurate to the duration of the submission file, from head format through LFOA.
AD VOICEOVER PARAMETERS:	<p>Audio description VO should not occur within three frames of a segment break in or out point.</p> <p>Segment Air Rundown must be provided to Accessibility facility.</p>
HEAD (2-POP)/TAIL POP:	Head and tail sync pops should not be present on final deliverables.
REFERENCE LEVEL: (ANALOG)	When viewed using analog metering equipment, peak program levels shall not exceed +18dBu on the VU scale. Peak distortion (THD) shall not exceed 1% at +18dB.
REFERENCE LEVEL: (DIGITAL)	When measured using digital metering, 0VU reference is defined as -20dB down from the maximum full-scale digital level of 0dBFS. (i.e., Studio reference 0VU is equal to -20dBFS).

REFERENCE TONES:	Reference tones (0VU or -20dBFS) should be recorded on all tracks EXCEPT those which are MOS.
TRUE PEAK:	<p>True Peak levels should never exceed -2dBTP in any track. Normal level dialogue should typically produce peaks between -14 and -8dBFS.</p> <p>VU meters are not to be used to determine True Peak Levels (TPL). They are also not to be used as a sole mixing reference.</p>
PEAK PROGRAM:	<p>Peak program levels shall only be determined by using an industry standard True Peak Meter.</p> <p>VU meters are not to be used to determine Peak Program Levels (PPL). They are also not to be used as a sole mixing reference.</p>
PROGRAM LOUDNESS:	Target LKFS/LUFS average level is between -23.0 ± 0.5 , measured with an industry standard Loudness Meter and using EBU R 128 as the basis for measurement.
SUPPORTING TECHNICAL DOCUMENTS:	EBU R 128 and ITU-R BS. 1770 [current "In force (Main)" document].
TRACK CONFIGURATION:	<p>Discrete and interleaved audio tracks are required.</p> <p>Refer to the Delivery Schedule for detailed track configuration for the Audio Description mix.</p>
MIX DETAIL:	<p>Audio must be mixed for near-field exhibition.</p> <p>VO will be mixed with the Center track of the 5.1 mix.</p>
PHASE:	<p>All multiple track recordings must be properly phased.</p> <p>Phase separation shall correspond properly with visual separation.</p>
SYNC:	<p>VO must be within an acceptable timing to action.</p> <p>The Lo/Ro fold-down and mono VO track must be frame accurate sync with its 5.1 source.</p> <p>Audio description voiceover must not precede first frame of Program or exceed last frame of Program.</p>
MONO COMPATIBILITY:	Mono VO must meet industry standards for mono compatibility.

MOS:	MOS tracks should be without reference tones. Any track that is MOS should be labeled accordingly.
VOICING:	AD must be voiced by a human; synthetic voicing is not permitted. Voice talent and narration style is selected by Producer(s).
CREDITS OVER PICTURE:	<p>Voiced credits should not interfere with dialogue or described action.</p> <p>If opening credits must be read at the start of the end credit sequence, the audio description VO will pre-empt with the word "Credits".</p> <p>For picture-in-end credits, best efforts should be made to describe action but priority must be given to voicing above the line credits.</p>
AD FACILITY CREDIT:	Voiced credit to the Audio Description Facility is not permitted.
AD FOLDER & FILE NAMING CONVENTIONS:	For Audio Description folder and track naming, refer to the File Naming Conventions document in your Post Locker.



<p>GRAPHICS:</p>	<p>If requested, a graphics package will need to be supplied to Studio Post Production.</p> <p>It should include any fonts, layered graphic files and projects (e.g., Adobe After Effects and Illustrator files) plus any specific information that may be useful and pertinent for the creation of territory specific versioning.</p>
<p>TEXT & TEXTLESS:</p>	<p>Text is defined as burned-in subtitles, locators, daters, identifiers, graphics, credits (main, opening, and end), title treatment, and any other on-screen text.</p> <p>All texted portions of the program must be accounted for in the textless materials. Refer to Tail Format instructions on page 5.</p> <p>If program contains text for more than 1/3 of program, a fully textless version of program elements will be required. Consult with your Studio Post lead for more details.</p>
<p>NON-SUBTITLED VERSION:</p>	<p>If requested, an non-subtitled version may be required if program includes subtitles (English and non-English) ensuring all other text (such as locators, dates, main titles, and end credits) remains intact.</p> <p>Consult with your Studio Post lead for further details.</p>



**TIMED
TEXT**

TIMED TEXT STYLE:	<ul style="list-style-type: none"> ➔ Pop-On ➔ White text, mixed case ➔ Two lines maximum per <u>event</u> ➔ An event is defined as every new occurrence of pop-on text ➔ Consult your Studio Post lead regarding territory specific spelling and/or vernacular.
CHARACTER LIMITATION:	<ul style="list-style-type: none"> ➔ Closed Captions: 32 characters per line ➔ Side Car Subtitles: 37 characters per line <p>Spaces and punctuation are included in the character count.</p>
TARGET ADULT READING SPEED:	<ul style="list-style-type: none"> ➔ 200 words per minute/17 characters per second <p>Reading speed can be adjusted to accommodate character and line limitations.</p>
MINIMUM & MAXIMUM DURATION:	<ul style="list-style-type: none"> ➔ Minimum: 20 Frames per event ➔ Maximum: 5 Seconds per event
TIMED TEXT PLACEMENT:	<p>Timed text should move to the top of the screen if there is text present in lower thirds (e.g., identifiers, locaters, VFX/graphics), only for the duration of the lower thirds text.</p>
BURNED-IN TEXT & SUBTITLES:	<ul style="list-style-type: none"> ➔ Burned-in Text (e.g, locator): 42 characters per line ➔ Burned-in Subtitles: 42 characters per line <p>Burned-in subtitles should move to the top of the screen if there is text present in lower thirds (e.g., identifiers, locaters, VFX/graphics), only for the duration of the lower thirds text.</p> <p>Burned-in text & subtitles must be placed in active picture. Descenders (y, j, g, q, p) should remain four pixels above the Letterbox matte line to avoid nearing, touching or crossing the matte line.</p>
JUSTIFICATION:	<ul style="list-style-type: none"> ➔ Captions & Subtitles: Center justified
CAPTIONS STANDARD:	<ul style="list-style-type: none"> ➔ Closed caption files must adhere to <u>both</u> CEA-608 and CEA-708 ➔ Caption files should be formatted for PC
IMSC, .STL & .VTT FILE FORMAT STANDARDS:	<ul style="list-style-type: none"> ➔ IMSC .html files: Must follow closed captions spec ➔ .stl files: EBU STL ➔ .vtt files: 65001 Unicode (UTF-8) <p>The following must be selected in the WebVTT General settings:</p> <ul style="list-style-type: none"> ▪ Write horizontal position ▪ Write vertical position ▪ Line number ▪ Escape Right-to-Left and Left-to-Right marks

<p>MUSIC LYRICS:</p>	<ul style="list-style-type: none"> ➔ Music lyrics and lyrics sang by characters must be captioned and italicized throughout program and through end credits, unless the lyrics interfere with dialogue. ➔ Be sensitive to over-captioning music lyrics in-between dialogue as it may distract from the prominent dialogue and/or tone of the scene. ➔ Lyrics should never end with a period. Quotation marks and exclamation points may be used as the songwriter intended. ➔ One musical eighth note (♪) should be placed at the beginning and end of each lyric line. Use an uppercase letter at the beginning of each line of lyric. <p>Example: ♪Ground Control to Major Tom ♪ ♪You’ve really made the grade ♪</p> <ul style="list-style-type: none"> ➔ If a lyric line needs to be split due to character limitations, the line of lyrics must be two lines with a musical note beginning and ending the event. The second line will not receive capitalization. <p>Example: ♪Take your protein pills and put your helmet on ♪</p> <ul style="list-style-type: none"> ➔ Use ellipses when a song continues in background but is no longer captioned to give precedence to dialogue. <p>Example: ♪Commencing countdown, engines on... ♪</p>
<p>SOUND EFFECTS:</p>	<ul style="list-style-type: none"> ➔ Do not caption every <u>on-screen</u> sound effect. Only caption plot relevant audio/visual cues that happen on-screen for dramatic effect. <p>Examples: [tea kettle bubbling] [labored breathing] [choking, gasping]</p> <ul style="list-style-type: none"> ➔ Any off-screen sound effect relevant to plot should be captioned. <p>Examples: [indistinct whispering] [birds caw]</p> <ul style="list-style-type: none"> ➔ If a major plot-relevant sound effect occurs <u>off-screen</u> during a song lyric, the effect must be transcribed. Lyric interruption should be shown with ellipses. <p>Example: ♪Check ignition...[loud boom]... and may God’s love be with you ♪</p>

DIEGETIC SOUND:	<p>→ When source-motivated music is playing in a scene, the music style and source should be identified as a sound effect with lyrics/musical notes included where applicable.</p> <p>Examples: [sMOOTH R&B plays on TV] ♪Let's get in on, sugar Let's get it on♪</p> <p>[band plays speed metal] ♪ ♪ ♪</p>
NON-DIEGETIC SOUND:	<p>→ When non source-motivated music is playing, the music cue should be identified like music lyrics and bookended with musical notes in the following instances:</p> <ul style="list-style-type: none"> ▪ In a scene that begins or ends <u>without</u> dialogue ▪ In a scene prior to the start of dialogue ▪ Intentionally interrupting a scene ▪ Intentionally playing during an interlude between dialogue ▪ When the music cue's tone/tempo changes <p>Examples: ♪disorienting suspenseful music♪ ♪upbeat pop music plays♪</p>
SCORE/ INSTRUMENTAL MUSIC:	<p>For score or music that doesn't contain lyrics, add a three musical note event (♪ ♪ ♪) as diegetic or non-diegetic music plays uninterrupted through a scene</p>

<p>ITALICS:</p>	<p>→ Italics should be used for narration, voiceovers, and characters not physically present in the scene.</p> <p>Examples of when italics should be used:</p> <ul style="list-style-type: none"> ▪ Phone conversations ▪ Voice(s) in someone's head ▪ Character(s) singing lyrics ▪ Music lyrics ▪ Electronic media audio (e.g., TV, radio) ▪ Names/titles of literary works, films, TV shows, magazines, newspapers, etc. ▪ When transcribing foreign dialogue (unless the foreign dialogue is frequently used in English dialect (e.g., bon appétit, rendezvous, ciao) ▪ When noting a non-English dialogue is being spoken but not intended to be understood (e.g., speaking Russian) <p>Examples of when italics should not be used:</p> <ul style="list-style-type: none"> ▪ Someone talking in another room or outside the door ▪ Sound effects <p>→ Italics can sparingly be used to express emphasis on a word when punctuation cannot convey the emphasis.</p> <p>Example: You <i>must</i> acquit.</p>
<p>BRACKETS:</p>	<p>→ Brackets are used to denote character dialogue or pertinent sound effects that are off-screen or cannot be visually identified. On-screen sound effects should only be captioned in plot-relevant circumstances.</p> <p>Examples of when brackets should be used:</p> <ul style="list-style-type: none"> ▪ Futuristic ball is spinning and making a humming noise, signifying it will explode - [humming] ▪ A close-up of a hand gently knocking on a door - [soft knocking] ▪ Door closes in another room signifying someone has left - [back door closes] ▪ Clothes workshop where sewing machines add tension - [sewing machines whirring] ▪ To add emphasis to a character's line delivery - [deep voice] Don't tell anybody. ▪ If someone mouths words without saying or whispering them - [silently mouths words] ▪ Audible whispered dialogue - [whispers] This is a secret. ▪ Inaudible whispered dialogue - [indistinct whispering] <p>→ Use lower case letters for bracketed sound effects and improper nouns - e.g., [whirring]; [narrator]; [woman].</p> <p>→ Use mixed case letters for proper nouns/names - e.g., [White House Press Secretary]; [Brando]; [Dexter].</p>

PARAPHRASING:	<ul style="list-style-type: none"> → Paraphrasing is only allowed during rapid-fire dialogue.
DUAL SPEAKERS/ SOUND EFFECTS:	<ul style="list-style-type: none"> → Use a hyphen to denote a change of speaker when captions are stacked. → Use a hyphen to denote layered sound effects. <p>Example:</p> <ul style="list-style-type: none"> -[bird caws] > This is placed on line 1 -[baby cries] > This is placed on line 2
QUOTING:	<ul style="list-style-type: none"> → When quoting, use one quotation mark at the front of the quote and one at the end of the quote. Do not use a front quotation mark at every event. → Periods and commas precede closing quotation marks. → Question marks and exclamation points follow end quotation marks unless they are part of a quoted text. <p>Example:</p> <p>Was it Homer who said, "Upon my word, just see how mortal men always put the blame on us gods!"?</p> <ul style="list-style-type: none"> → Quotation marks should be used for episode names of television series and song titles. <p>Example:</p> <p>"All My Loving"</p> <ul style="list-style-type: none"> → Quotations within quotations should use single quotes. <p>Example:</p> <p>She said to me, "'All My Loving' was the first of five songs played by The Beatles on <i>The Ed Sullivan Show</i> in 1964."</p>
PUNCTUATION:	<ul style="list-style-type: none"> → Ellipses can be punctuated with a period or question/exclamation point when appropriate. Trailing off or mid-sentence pick-up dialogue is noted with an ellipsis. <p>Example:</p> <p>Hello...are you there...?</p> <ul style="list-style-type: none"> → Dialogue interruptions should be noted with two hyphens. <p>Examples:</p> <ul style="list-style-type: none"> - I didn't mean to-- - Yes! You did!
METRICS:	<ul style="list-style-type: none"> → Subtitles should never convert measurements from their original/native metric.

<p>NUMBERS:</p>	<ul style="list-style-type: none"> → Numbers from 1-10 should always be spelled out. <p>Example: I have three children.</p> <ul style="list-style-type: none"> → Any number greater than 10 should <u>not</u> be spelled out <u>unless</u> when beginning a sentence or when telling time with "o'clock." <p>Examples: Twelve years ago, I had a child. It's twelve o'clock in the morning.</p> <ul style="list-style-type: none"> → Percentages should <u>not</u> be spelled out. <p>Examples: They need 4% more to meet their goal. I scored 100% on my math test.</p>
<p>CURRENCY:</p>	<ul style="list-style-type: none"> → Currency should always be represented with the proper currency symbol followed by the amount. <p>Example: \$1 million dollars</p> <ul style="list-style-type: none"> → Subtitles should never convert money amounts from its original/native currency.
<p>TIMES OF DAY:</p>	<ul style="list-style-type: none"> → Use lowercase a.m. (ante meridiem) and p.m. (post meridiem) when mentioned in dialogue. → Use numerals when exact times are stated (e.g., "Our meeting is at 9:30 a.m."). → Spell out words/phrases that do not include actual numbers: midnight, noon, quarter of, etc. → When "o'clock" is mentioned in dialogue, always spell out the number (see example in NUMBERS). → Dates are to be captioned with the month written and numbers for the day and year (e.g, December 15, 2018). → Military time should be captioned as "0100 hours".
<p>SONG LYRICS:</p>	<ul style="list-style-type: none"> → Never translate song lyrics into another language.

Any deviation from the above must be cleared by your Studio Post lead.



QUALITY CONTROL

Full Linear QC passes must be completed by a 3rd party vendor prior to final delivery.
Refer to Delivery Schedule for applicable QC requirement.

100% Full Linear QC: Dolby Vision + Atmos Submission File	
PASS ONE:	HDR Video + English 5.1*
PASS TWO:	HDR Video + FF M&E Lo/Ro*
PASS THREE:	SDR Video + 2.0 Audio (using CMU and the Dolby Vision derived metadata .xml) FF M&E should be QC'd against the English Composite to ensure FF EFX are 100% filled.
PASS FOUR:	Dolby Atmos ADM against picture
PASS FIVE:	Closed captions against picture Captions QC notes/approval must be noted on QC report.
*QC Report must indicate 5.1 and Lo/Ro LKFS levels.	

100% Full Linear QC: Dolby Vision Submission File	
PASS ONE:	HDR Video + English 5.1*
PASS TWO:	HDR Video + FF M&E Lo/Ro*
PASS THREE:	SDR Video + 2.0 Audio (using CMU and the Dolby Vision derived metadata .xml) FF M&E should be QC'd against the English Composite to ensure FF EFX are 100% filled.
PASS FOUR:	Closed captions against picture Captions QC notes/approval must be noted on QC report.
*QC Report must indicate 5.1 and Lo/Ro LKFS levels.	

100% Full Linear QC: SDR Submission File	
PASS ONE:	SDR Video + English 5.1*
PASS TWO:	SDR Video + 2.0 Audio*
PASS THREE:	SDR Video + FF M&E Lo/Ro FF M&E should be QC'd against the English Composite to ensure FF EFX are 100% filled.
PASS FOUR:	Closed captions against picture Captions QC notes/approval must be noted on QC report.
*QC Report must indicate 5.1 and Lo/Ro LKFS levels.	



REJECTIONS

REASONS FOR REJECTING AN ASSET

Deviations from the Studio Technical Specifications shall be considered criteria for rejection. The rejection of an asset(s) will result in fix(es) and re-delivery of physical elements and digital files at no extra cost to Studio.

Examples include, but are not limited to:

- Mixed media (multiple frame rates and/or video standards) with improper cadence.
- Video cadence issues, video interlacing, image lag and/or ghosting.
- Poor or improper transcodes or conversions.
- Video digitization, macroblocking, digital artifacts, dead pixels, digital hits or dust.
- Freeze frames.
- Repeated frames.
- Horizontal or vertical blanking shifts.
- Color shifting or mistimes of any duration within a shot, or color being inconsistent between similar shots. This includes Dolby Vision XML errors.
- Closed Captioning or subtitling errors of any kind, including minor formatting issues.
- Titles out of title safe.
- Rolling credits.
- Missing textless.
- Commercial blacks, black slugs or intermissions (unless specifically instructed).
- Any trailers, promos, Home Entertainment notices, advertisements, unapproved bugs (e.g., Twitter, Studio branding, etc.), website references, ratings and/or extraneous video at the head or tail of program.
- Luminance or black levels out of specification.
- Audio levels not to Loudness & True Peak specification.
- Audio dropouts, ticks, distortion, corruption or hits.
- Improper audio phasing.
- Audio out of sync with video.
- Incorrect audio track configuration or detail.
- M&E not 100% fully filled.
- Discernable English dialogue in walla and/or M&E.
- Improper labeling or missing labels.
- Manufacturer defects on LTO tape stock (whereas the stock was not supplied by Studio) and/or damage, both electronic and physical.



FILM

FILM TO DIGITAL TRANSFERS:

1. All film negative should be digitally scanned at 4K/23.98fps.
2. Uncut original negative will be delivered to Studio, per the Delivery Schedule, at show wrap.

FILM PRINTS:

1. All film negatives, positives and prints shall be made in accordance with and in accordance with ASA/SMPTE film output standards and industry practices.
2. All film outputs must be printed on new/un-spliced stock.
3. Studio reserves the right to reject any film transfer master, if the original film source (DN, IP, IN, OCN or various prints) is found to be the source problem due to the one of following:
 - Excessive positive or negative dirt and/or scratches
 - Physical damage
 - Developing stains
 - Fogging
 - Distorted audio and/or extraneous noise as a result of poor printing technique in the optical track
 - Improper color timing or uneven scene to scene color balance
 - Poor splicing technique

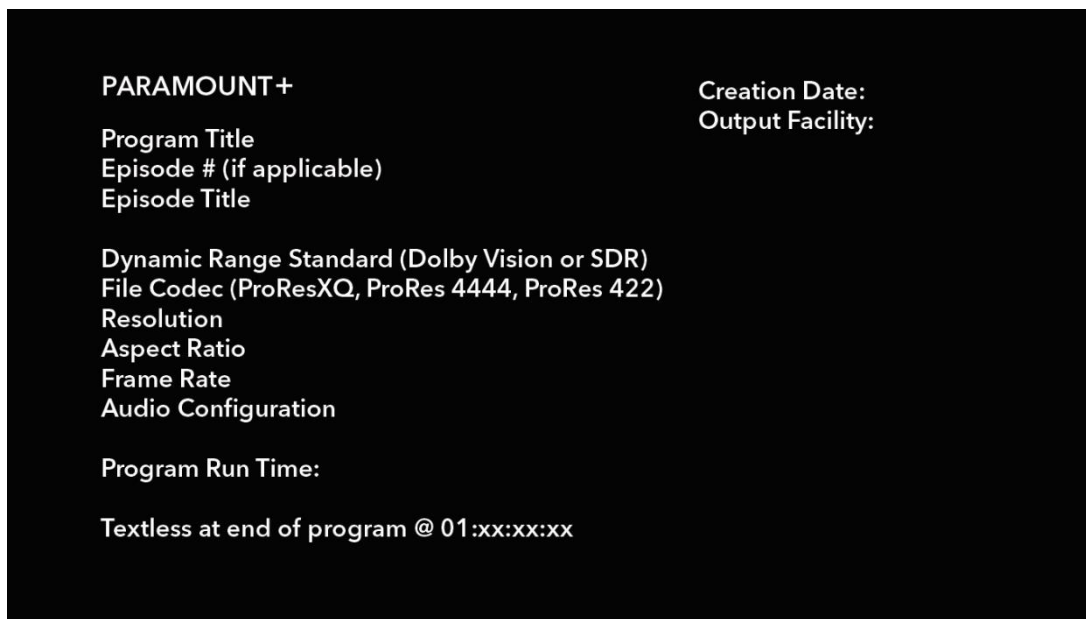


LTO LABELS:

LTO tape labels should include all of the information listed below:

- Studio Name: Paramount+
- Program Title
- Episode Number(s) (if applicable)
- Archival Asset Type
- LTO Generation
- Creation Date
- LTO Barcode #
- Part # of #
- Output Facility
- Master or Protection Copy

HEAD SLATE EXAMPLE:



Refer to Label and Slate examples folder in your Post Locker for further formatting guidelines.



STUDIO POST PRODUCTION & OPERATIONS

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