



GLOBAL TECHNICAL SPECIFICATIONS

October 2025



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1. OVERVIEW

This document contains the required technical specifications for High Definition (HD) & Ultra High Definition (UHD) deliverables for PBS Distribution (PBSd).

PBSd offers streaming of content on various distribution platforms and requires file delivery in accordance with the specifications outlined herein.

2. SOURCE MATERIAL REQUIREMENTS

- All video content delivered must not contain VITC/BITC time code, rating bugs, CC bugs, funder pods/spots, bumpers, advertisements, promotional lower thirds, overlay branding, hashtags, QR codes, social media tags, URLs, website promotion, on-air offer language and visuals, and other calls-to-action before, during, and/or after the program. Distribution, studio and network logos are prohibited from the program. Production company logos are permitted only after the closing credits of the program (please do not place logos before the show open or over program video).
- All video files must consist of the feature program with fifteen (13) seconds of slate and two (2) seconds of black and silence at the head of the program, and fifteen (15) seconds of black and silence at the tail of the program. Do not include bars and tone before the slate.
- PBS Distribution requires seamless content. Commercial blacks & bumpers must be removed.
- When delivering UHD content, a matching HD file must also be delivered.
- All primary audio channels (i.e. audio on the video master) shall contain 5.1 surround and/or stereo. Mono audio is not accepted.
- All audio must be frame synchronous throughout the program. Audio and video may not be out of sync by more than 20 milliseconds.
- PBS Distribution requires closed captioning for all programs, promotional trailers, and bonus material. All caption files must be delivered in .scc format.
- Promos and Trailers are required for all content.
- All content, including bonus video, promos, and trailers, must be cleared according to the rights, term and territory of the contract. This includes but is not limited to funders, video, stock footage, and music.
- All content must pass through a full editorial and technical quality control (QC) process prior to delivery, confirming deliverables are both editorially and technically problem-free. QC reports must be provided when assets are delivered.
- Video, audio, and caption files must be delivered via PBSd's Aspera Faspex. Other delivery methods are not allowed, including but not limited to: SFTP, WeTransfer, Dropbox, or Box.
- Any audio, video or caption configurations or formats not specified in this document require prior approval with your PBSd point of contact.
- Any use of AI-generated material in any aspect of the Program—including in Key Art, Clips, and Promo Materials—must be presented to PBSd for approval in accordance with the Contract Terms.

3. PRIMARY VIDEO ASSET SPECIFICATIONS

3.1 Accepted Video Codecs

Resolution	Preferred Codec	Acceptable Codec	Wrapper
High Definition (HD: 1920x1080)	Apple ProRes 422 HQ	DNxHD MXF OP1a 175 10bit+ or higher resolution	.mov (ProRes) / .mxf (DNxHD)
Ultra High Definition (UHD: 3840x2160)	Apple ProRes 422 HQ, ProRes 4444	DNxHR HQ UHD, 4K UHD IMF Ext.2	.mov (ProRes) / .mxf (DNxHR)
High Dynamic Range (HDR10: 3840x2160; Color Space: Rec.2100)	Apple ProRes 422 HQ, ProRes 4444	DNxHR HQ UHD, 4K UHD IMF Ext.2	.mov (ProRes) / .mxf (DNxHR)
Standard Definition (SD, legacy, pre-approved only) 720x480, 720x486, 720x576	Apple ProRes 422 HQ	DNxHD MXF OP1a 175 10bit+	.mov (ProRes) / .mxf (DNxHD)

When delivering UHD content, a matching HD file must also be delivered in compliance with the above HD codecs.

If delivering HDR content, HDR10 is the required format and a matching SDR file must also be delivered.

3.2 Color Space and Levels

All levels must be within legal limits and a valid range. 1080 High Definition (HD) deliverables must fully conform to the ITU-R recommendation BT.709-6 (aka Rec 709) parameter values. Ultra High Definition (UHD) Standard Dynamic Range (SDR) files must fully conform to Recommendation BT.709-6 (aka Rec 709) or BT.2020-2 (aka Rec 2020) parameter values with BT.2020-2 preferred. UHD High Dynamic Range (HDR) files must fully conform to HDR10 (Recommendation BT.2100 aka Rec 2100). All levels must be within legal limits and a valid range. IRE 0-100 and analogue 0-700 mV. White or black clipping must not be evident.

3.3 Resolution

HD: 1920 x 1080 pixels, compliant with SMPTE ST 274-2008 standard.

UHD (3840 x 2160 pixels) compliant with SMPTE ST 2036-1 for UHDTV1 and UHDTV2, respectively.

SD (**legacy content only, requires prior permission**): (720 x 480 pixels, 720 x 486 pixels, or 720 x 576 pixels).

Source masters should not be upscaled to a higher resolution.

3.4 Frame Rate / Scan Mode

All video assets must be edited and delivered in native frame rate (23.98, 24, 25, 29.97) and native scan mode (progressive/interlaced). Exceptions will need prior approval.

3:2 Pulldown flags are not allowed.

Mixed Frame Rates are not acceptable within the program content. All content must be delivered with a single frame rate used throughout the program.

3.5 Aspect Ratio

The aspect ratio of all HD video content shall be delivered in the original aspect ratio. All content must fit within a 16:9 frame. The postage stamp effect (window boxing) will not be accepted for HD.

4x3 Pillarbox is only acceptable for SD archival content and must be pre-approved by PBS Distribution before delivery occurs.

3.6 Safe Areas

Safe Action is the area within which all significant action must be contained as defined by SMPTE standard 2046-1. The area is defined as 93% of the width and height of the production aperture.

Safe Title Area is the area within which all significant text must be contained as defined by SMPTE standard 2046-1. The area is 90% of the width and height of the production aperture.

3.7 Time Code & Slate Format

All program content must begin at the exact time code (01:00:00;00 or 10:00:00;00). 29.97 content must be drop frame and 23.98, 24, and 25 must be non-drop frame.

A slate should be visible for thirteen (13) seconds before video content begins. The slate must contain the program title, episode title & number (if applicable), program total run time (first frame to last frame of picture, not including slates or textless elements), audio channel configuration, frame rate, date, and production company.

Timecode	Element	Duration
00:59:45;00	Slate	13 seconds
00:59:58;00	Black	2 seconds
01:00:00;00	Program Start	—
End of Program	Black	15 seconds

Example Slate Information:

Program Name

Episode Title & Number (if applicable)

Program Total Run Time

Frame Rate

Aspect Ratio

Texted or Textless

Production Company Name

Audio Channels

3.8 Commercial Blacks

PBS Distribution requires seamless content. Commercial blacks & bumpers must be removed.

3.9 Texted Video

All video content delivered must not contain VITC/BITC time code, rating bugs, CC bugs, funder pods/spots, bumpers, advertisements, promotional lower thirds, overlay branding, hashtags, QR codes, social media tags, URLs, website promotion, on-air offer language and visuals, and other calls-to-action before, during, and/or after the program. Distribution, studio and network logos are prohibited from the program. Production company logos are permitted only after the closing credits of the program (please do not place logos before the show open or over program video).

All graphics and lower thirds must be within title and action safe areas per SMPTE specifications.

Episodic recaps or next-time previews must be removed from the program. If contractually obligated, they must be provided as separate files.

If burned-in subtitles are present for content where the source aspect ratio is widescreen within a 16x9 container (2.20:1, 2.35:1, 2.39:1, etc.). placement should be within active picture, not in the black matte bar.

3.10 Textless Video

PBS Distribution requires textless masters with all of the following removed: identifying lower thirds, burned-in subtitles, translations, credits, open titles, location identifiers, numbers, text on graphics, and any other onscreen text. Texted open titles/credits and end credits must be inserted after the textless main program, separated by two seconds of black.

4. PRIMARY AUDIO ASSET SPECIFICATIONS

4.1 Primary Audio Channels

All primary audio channels on video masters shall be delivered as 5.1 Surround plus Stereo. If 5.1 audio is not available, stereo audio must be provided. Mono audio is not accepted.

4.2 Bit Depth and Rate

All audio should be formatted with a minimum 24-bit depth and 48 KHz sampling rate.

4.3 Audio Quality

All audio mixes must be free of audible clipping, noise, static and other distortions. The mix should be well balanced and equalized, with clear dialogue and narration that are not buried by effects or music.

The individual channels should be in phase to prevent cancellation or artifacts when tracks are down mixed to stereo. Stereo synthesizing is not allowed on any content.

4.4 Audio Levels

The audio mix of long form (“program”) content must conform to the guidelines presented in ATSC A/85:2013, using ITU-R BS.1770-3 for loudness measurement and true-peak measurement and must apply to all channels of a program, except for LFE channels. Measured loudness shall indicate the average loudness of normally spoken dialogue during the body of the program, and the resultant average must conform to -24 LKFS, +/- 2 LU. True Peak levels shall not exceed -2 dBTP at any time.

4.5 Audio Phase and Synchronization

All audio channels must be frame synchronous throughout the program. Audio must not lead or lag video by more than one-half frame.

4.6 Audio Split Tracks

Audio split tracks are required for all content. Split tracks must be provided as separate .wav files and must be in sync with video.

Please refer to the audio split track channel assignment section of this document for configuration information.

4.7 Accessibility and Foreign Language Audio

Accessibility and/or foreign language audio including Audio Description (aka Descriptive Video Service/DVS), Secondary audio programming (SAP/LAS), and other foreign language tracks are accepted, if available. The tracks must be provided as separate .wav files and in sync with video. Audio Description in Spanish can be accepted if available.

Audio file format: .wav

1 or 2 channels (mono or stereo)

24 Bit ; 48 KHz sampling rate; 1152 kbps Bitrate

Timecode should match video master

All Audio Description (DVS) should be mixed to blend conversationally with the program. No automatic ducking or unmixed deliverables are acceptable.

4.8 Primary Audio Channel Assignments for Video Masters

Audio channel assignment on video master files must be configured in accordance with this document.

5.1 + 2.0 Channels:

Channel #	Content
1	Left Front
2	Right Front
3	Center
4	LFE
5	Left Surround
6	Right Surround
7	Stereo Left Full Mix
8	Stereo Right Full Mix
9	Left DME (undipped)*; Dialogue, Music, Effects minus Narration/VO
10	Right DME (undipped)*; Dialogue, Music, Effects minus Narration/VO

Stereo Channels (if 5.1 not available):

Channel #	Content
1	Stereo Left Full Mix
2	Stereo Right Full Mix
3	Left DME (undipped)*; Dialogue, Music, Effects minus Narration/VO
4	Right DME (undipped)*; Dialogue, Music, Effects minus Narration/VO

* NOTE: For content without Narration/VO, a Music & Effects mix without dialogue is required.

4.9 Audio Split Track Channel for .wav file delivery

Discrete .wav files must be delivered as listed below. Zipped audio files are not accepted.

For content without Narration/VO, a Music & Effects mix without dialogue is required.

5.1 Surround Full Mix

Left (Music, Ambience, Effects, Background Dialogue)

Right (Music, Ambience, Effects, Background Dialogue)

Center (Dialogue or Narration, including Dialogue not in English)

Low Frequency Effects (Explosions/Music Effects)

Left Surround (Music, Ambience, Effects)

Right Surround (Music, Ambience, Effects)

Stereo Splits

Full Mix

Dialogue, Music, Effects Mix (DME, undipped)*

Dialogue (mono or stereo, as recorded)

Music

Effects

Narration/VO (mono)

* NOTE: For content without Narration/VO, a Music & Effects mix without dialogue is required.

Other Acceptable Audio, if available*

5.1 Spanish Full Mix

5.1 DME

5.1 ME (only for programs without narration)

5.1 Dialogue

5.1 Music

5.1 Effects

Archival-Only Sound

*PBSd does not collect any additional audio files other than those listed above.

5. CLOSED CAPTIONING

To meet various compliance standards and in the interest of serving deaf and hard of hearing individuals, PBS Distribution requires closed captioning for all video content, including promos, trailers and bonus material.

5.1 Encode Standard

Closed Captioning must be encoded as specified in the CEA 608 or 708 standard.

5.2 Format

All caption files are required in .scc format and must match the time code and frame rate of the master asset. They should not be embedded within the video master. Captions should be no more than 2 lines with no more than 32 characters per line.

5.3 Accuracy

Captions must match the spoken dialogue, narration, and song lyrics.

All dialogue, including paraphrasing, slang, grammatical errors, utterances such as “um” and other spoken irregularities, must be preserved in captions.

Non-verbal audio cues (i.e. offscreen noise) which are not visibly obvious must be conveyed by captions to the fullest extent possible.

Captions must use appropriate punctuation, capitalization, correct verb tense, and proper spacing between words.

Captions reflecting the loudness of dialogue or noises can be all capitalized, i.e., someone yelling or the sound of a gunshot.

There must be accurate representation of numbers, including related symbols such as dollar signs, etc.

Captions must identify speaker, the existence of music, sound effects, and audience reaction to the greatest extent possible, given the nature of the program.

If there is more than one speaker, captioning must identify each speaker (e.g. speaker name, narrator, etc.) to make it clear who is speaking.

When speakers are off-screen, captions must identify who is speaking if hearing viewers are able to discern who is speaking.

5.4 Caption Style and On-Screen Placement

Captions must pop-on and may not roll up.

Captions must not overlap or run off the edge of the screen.

Proper placement requires that caption fonts be sized for legibility.

Closed captioning in ALL CAPS is prohibited. Although captions identifying speakers can be capitalized.

Lines of captioning shall not overlap one another.

No redundant captions are allowed where burn-in subtitles appear on screen.

Captions shall not block important visual content on the screen including (but not limited to) character faces, featured text such as lower-third identifiers, graphics, burned-in subtitles, credits, and other information that is important for understanding program content.

Captions must be placed in the center lower third of picture but should be temporarily moved into the upper third of the picture if other text appears in the lower third of the screen. Placement of captions may not remain in the upper third of the picture throughout the entirety of the video.

Micro-positioning (minor vertical, horizontal, left or right positioning adjustments to avoid on screen lower-thirds, text or graphic overlaps) is not accepted.

Captions should not cover a subject's mouth while speaking.

No dual language captions are currently accepted (example: full Spanish + full English captions simultaneously appearing on screen). This rule does not apply to an English caption file that occasionally preserves a word or line of dialogue in a non-English language for educational or cultural purposes.

5.5 Synchronization

Captions must coincide with their corresponding spoken words and other sounds to the greatest extent possible.

Captions should appear when the corresponding speech or sound begins.

Captions should end when the speech or sound ends.

To the extent possible, captions are to display on the screen at a speed that can be read by viewers.

6. SECONDARY VIDEO ASSET SPECIFICATIONS

Trailers and promos are required for each program. Bonus material can be delivered if available. All promos, trailers, and bonus material must be fully post produced (finished) and meet the same technical requirements as the primary video files (e.g. native framerate, no overlay branding, etc.). Closed caption files are required for these assets.

6.1 Accepted Video Codecs

Please refer to section 3.1 for video requirements.

6.2 Promos and Trailers

A minimum of one commercially cleared 30-second promo and one commercially cleared trailer (between 1 minute and 3 minutes runtime) is required for each series, season, and/or program.

For seasons containing multiple episodes, season-level promos and trailers must be provided. Episode specific promos are requested if available.

Closed captioning, texted, textless, and split audio files are required for promos and trailers. Please follow primary video, audio, and caption specifications as described in sections 3, 4, and 5. Textless promos and trailers do not require texted elements at the end of the file.

6.3 Bonus Material

Bonus materials such as cast and crew interviews, behind the scenes features, deleted scenes, making-of specials, electronic press kits, and other supporting material may be submitted with the primary program content. Closed caption files are required for bonus material.

6.4 Recognition/Funder Card

Recognition card (a.k.a. funder card) is an optional deliverable asset. This deliverable is a single-image static card exactly 5 seconds in length delivered as a separate file. The card should be clean cut at top and tail with no slate, fades, animations, URLs, or audio. The card must be delivered in the same video spec as the PBSd master delivery format (i.e., ProRes, DNX). For full requirements, please review separate guidelines document for overview, usage, and sample cards.

6.5 Audio Requirements

Promos and trailer audio channels should match that of the program and must comply with all program audio requirements.

7. FILE NAMING CONVENTION

All media assets submitted to PBS Distribution must adhere to the following file naming convention:

There are four sections of the file name format defined below. Each section is separated by a dash (-).

File names should have exactly three dashes, no spaces and span no longer than 100 characters in length. Do not use accented letters or the following characters in file names: & # % \$ * \ / ' " ; : . ! ?

[RightslineID#]-[AssetTitleInfo]-[LanguageCode]-[AssetType]



1. **Rightsline ID:** A unique, numerical code for each program and/or episode. This code allows our various departments to track the program. Your PBSd technical contact will provide the Rightsline IDs for your programs as soon as they are available.
2. **Asset Title:** Program Title, season/episode number and descriptors if applicable. Please include full Program Title. Do not include spaces in the asset title section. Underscores can be used to separate version number and technical information from the Program Title. Please do not put underscores in the Program Title. Opening articles (The/An/A) should be included at the start of the Program Title where applicable. Please enter season and episode numbers under 10 beginning with the number "0" to make them 2 digits.
 - i. 102001-LeonardodaVinciAFilmbyKenBurnsSarahBurnsandDavidMcMahonS01E01_51-en-Textless.mov
 - ii. 36023-SanditonS01E01_51_v2-en-Texted.mov
3. **Language Code:** A two-letter code, ISO 639-1 standard. The primary language code of most content is "en" for English, "es" for Spanish, or "fr" for French; [Language Code Reference](#)
 - a. If the language is a specific dialect include a distinction in the file name
 - i. 36023-SanditonS01E01_Castilian-es-Texted.mov
 - ii. 36023-SanditonS01E01_Canadian-fr-Texted.mov
4. **Asset Type:** A particular tag identifying the type of file. The Asset Type allows our system to properly identify and associate all the various files of a program together. Each file must be submitted with one of the following Asset Types:

Video (.mov /.mxf)

- Texted
- Textless
- Promo
- Trailer
- Bonus
- Credits
- FundingPod
- FunderCard

Audio (.wav)

- FullMix
- DVS
- SAP
- DME
- ME
- Dialogue
- Music
- Effects
- NarrationVO
- Left
- Right
- Center
- LFE
- LS
- RS
- ArchivalAudio

Caption (.scc)

- Caption
- BonusCaption
- PromoCaption
- TrailerCaption
- FundingCaption

File naming examples below:

VIDEO MASTERS

98852-FindingYourRootsS10E10-en-Texted.mov
98852-FindingYourRootsS10E10-en-Textless.mov
98852-FindingYourRootsS10E10_UHD-en-Texted.mov
98852-FindingYourRootsS10E10_UHD-en-Textless.mov
98852-FindingYourRootsS10E10_Textlessattail-en-Texted.mov
98852-FindingYourRootsS10E10_Textedattail-en-Textless.mov

PROMO/TRAILER/BONUS/CREDITS/FUNDING

98852-FindingYourRootsS10E10_Texted-en-Promo.mov
98852-FindingYourRootsS10E10_Textless-en-Promo.mov
98852-FindingYourRootsS10E10_Texted-en-Trailer.mov
98852-FindingYourRootsS10E10_Textless-en-Trailer.mov
98852-FindingYourRootsS10E10-en-Bonus.mov
98852-FindingYourRootsS10E10-en-Credits.mov
98852-FindingYourRootsS10E10-en-FunderCard.mov

SCREENERS

98852-FindingYourRootsS10E10_Screener-en-Texted.mp4
98852-FindingYourRootsS10E10_ScreenerBITC-en-Texted.mp4

STEREO AUDIO

98852-FindingYourRootsS10E10_Stereo-en-FullMix.wav
98852-FindingYourRootsS10E10_Stereo-en-DME.wav
98852-FindingYourRootsS10E10_Stereo-en-ME.wav
98852-FindingYourRootsS10E10-en-Dialogue.wav
98852-FindingYourRootsS10E10_Stereo-en-Music.wav
98852-FindingYourRootsS10E10_Stereo-en-Effects.wav
98852-FindingYourRootsS10E10_Stereo-en-ArchivalAudio.wav
98852-FindingYourRootsS10E10-en-DVS.wav
98852-FindingYourRootsS10E10-es-SAP.wav
98852-FindingYourRootsS10E10_StereoLeft-en-FullMix.wav
98852-FindingYourRootsS10E10_StereoRight-en-FullMix.wav
98852-FindingYourRootsS10E10_StereoLeft-en-DME.wav
98852-FindingYourRootsS10E10_StereoRight-en-DME.wav
98852-FindingYourRootsS10E10_StereoLeft-en-ME.wav
98852-FindingYourRootsS10E10_StereoRight-en-ME.wav
98852-FindingYourRootsS10E10_StereoLeft-en-Music.wav
98852-FindingYourRootsS10E10_StereoRight-en-Music.wav
98852-FindingYourRootsS10E10_StereoLeft-en-Effects.wav
98852-FindingYourRootsS10E10_StereoRight-en-Effects.wav

MONO AUDIO

98852-FindingYourRootsS10E10-en-NarrationVO.wav
98852-FindingYourRootsS10E10-en-Dialogue.wav
98852-FindingYourRootsS10E10-en-DVS.wav
98852-FindingYourRootsS10E10-es-SAP.wav

5.1 AUDIO

98852-FindingYourRootsS10E10_51Left-en-FullMix.wav
98852-FindingYourRootsS10E10_51Right-en-FullMix.wav
98852-FindingYourRootsS10E10_51Center-en-FullMix.wav
98852-FindingYourRootsS10E10_51LFE-en-FullMix.wav
98852-FindingYourRootsS10E10_51LS-en-FullMix.wav
98852-FindingYourRootsS10E10_51RS-en-FullMix.wav

CAPTIONS

98852-FindingYourRootsS10E10-en-Caption.scc

98852-FindingYourRootsS10E10-en-PromoCaption.scc

98852-FindingYourRootsS10E10-en-TrailerCaption.scc

98852-FindingYourRootsS10E10-en-FundingCaption.scc

98852-FindingYourRootsS10E10-en-BonusCaption.scc

Replacement Asset File Naming: If a file is redelivered, you must add the version number (e.g. V2, V3, etc.) **within the Program Title (second section)** to indicate which version that file is.

98852-FindingYourRootsS10E10_v2-en-Texted.mov

8. CLEARANCES

All elements within the body of the texted and textless programs, and secondary assets such as bonus video, trailers, and promos, must be cleared according to the rights, term and territory of the contract.

Any content including but not limited to video, stock footage, or audio that has not been cleared as described above must be removed from the master assets before being delivered to PBS Distribution.

Please reference your contract and delivery exhibit for further details.

9. QUALITY CONTROL (QC)

9.1 Technical Quality Control

All content must be run through a full quality control (QC) process before being delivered to PBS Distribution to ensure there are no issues with the video, audio, or captions and the content has been created per the specs listed in this document.

QC reports must be provided to your PBSd contact upon delivery of assets.

Any technical issues found by PBS Distribution post-delivery will be rejected and the production company or post house delivering assets will be required to fix the assets at their own expense and redeliver the content.

9.2 Creative Quality Control

All content must be reviewed to ensure accuracy of the editorial and creative content within the body of the program or promo/trailer. This includes spelling of lower thirds and credits, the inclusion of all names in the credits, accurately used stock footage, information has been fact checked, etc.

9.3 Replacement of Assets

If any technical, legal, or creative issues are discovered by the production company after delivery to PBS Distribution, please alert your production contact immediately and provide the following information:

- 1) The episode(s) and timecode(s) affected
- 2) A detailed description of the problem(s) that need to be addressed
- 3) An estimated date for redelivery of assets

Please see section 7: “Replacement Asset File Naming” for proper naming of replacement files.

While PBS Distribution will make every effort to replace problematic video and audio, all requests are subject to review, and depending on the severity of the issue and timeline for release the content may not be replaced.

Any approved replacements will incur significant manufacturing and redelivery fees, and potential product destruction fees, that will be billed back to the production company for payment to be made to PBS Distribution.

Please follow the QC procedures listed above to avoid replacements.

10. FILE DELIVERY METHOD

Video, Audio, and Caption files must be delivered via PBSd's Aspera Faspex. Other delivery methods are not allowed, including but not limited to: SFTP, WeTransfer, Dropbox, or Box.