NETFLIX

Netflix Originals Delivery Specifications

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version OC-3-0

NETFLIX

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1 Objective

The Netflix® streaming service offers an outstanding, high-quality viewing experience that preserves original artistic intent. This level of quality requires Netflix to work with source files that match the original frame rate and aspect ratio as it was originally shot. If Distributor does not have the source Netflix requests, Netflix will work closely with Distributor to see if there are acceptable alternatives. Netflix may be referred to as "Netflix" or "our" and Distributor may be referred to as "you" and "your" in this schedule.

For each Title, all Source Material elements set forth in this schedule shall work in conjunction (conform) with one another as a properly functioning single asset. Source Material must be compliant with the specifications below detailed in this document.

2 Source Material Requirements

2.1 General Overview

There are no exceptions to the following requirements.

- All video or image sequences must consist of the feature program with one (1) second of black at the head and tail of program is required.
- No commercial blacks can be contained in the program.
- Video or image sequences must not contain bars and tones, advertisements, slates, ratings cards, FBI warning cards, VITC time code, placards, overlay branding or website link callouts before, during and/or after the program.
- Our requirement is to receive a **non-subtitled version** of the content. Netflix defines "non-subtitled" as the presence of main titles, end credits, narrative text, location call-outs, and other supportive/creative text, but **no burned-in subtitled dialogue, regardless of the language** in the primary video.
- Netflix only accepts **IMF Application 2 Extended** files for primary A/V delivery.
- **Titles must be delivered as long-play and cannot be delivered as multi-part files**, e.g., if a title is 90 minutes in duration, a single file with a 90-minute duration must be delivered. Two (2) files with 45-minute durations will not be accepted.
- Netflix requires files to be delivered in their **native frame rates**. Netflix defines this to mean what the material was originally shot in or edited with regards to frame rate. If it was originally a film, Netflix requires the native film frame rate (either 23.976p or 25p). This is often different from the frame rate that is used for tape, archival storage, and delivery to broadcasters (typically 29.97i df, or 25i). **No 3:2 Pulldown flags allowed.**
- Netflix requires files to be delivered in their **original aspect ratio**. Netflix will not accept a 4x3 version when a 16x9 version was originally created.
- Source material must be **uncensored**.
- **Distributor shall deliver Source Material via Netflix's Content Partner Portal (aka Backlot: https://backlot.netflix.com/).** The Netflix Backlot is accessible via GUI (graphical user interface) and/or through API (application programming interface) integration with the vendor's Asset Management System.
- Source material shall be delivered in the highest quality and resolution including, but without limitation to, High Definition (HD), 2K, Ultra High Definition (UHD) and 4K.
- PSE (Photo-Sensitive Epilepsy) Compliance (Harding Test) must be performed for all animated content.

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3 Primary Digital Asset Specifications

3.1 IMF Specifications (4K/UHD & 2K/HD)

4K/UHD & 2K/HD content must be delivered to Netflix in Interoperable Master Format (IMF). The following tables and information specify the priority order in which Netflix accepts 4K/UHD & 2K/HD content in IMF, details on IMF Application 2 Extended, as well as the preparation of an IMF source deliverable for Netflix.

3.1.1 IMF Primary Source Prerequisites

Acceptable 4K/UHD & 2K/HD Video Formats (in order of preference)			
Format	**PAR**	**Scan Type**	**Frame Rates**
Native 4K DCI 4096x2160	1:1	Progressive	23.976 24 25 29.97 30 50 59.94 60
Ultra HD 3840x2160	1:1	Progressive	
Native 2K DCI 2048x1080	1:1	Progressive	
HD 1920x1080	1:1	Progressive	

3.1.2 IMF Source Requirements

4K/UHD and 2K/HD deliverables must be created according to SMPTE IMF Application 2 Extended specifications. All essence files must be referenced by the CPL and PKL.

The final IMF package must contain the following:

- 1 Asset Map XML File
- 1 Packing List XML File
- 1 Composition Playlist XML File, representing a single audio language
    - CPL may contain up to 2 audio tracks, representing either 1 stereo audio track (2 channels), 1 surround audio track (6 channels), or both
- 1 Volume Index XML File
- 1 Output Profile List XML File
- All Essence Track Files referenced by CPL

3.1.2.1 Rec.709 IMF Application 2 Extended

This section defines the requirements to create a Rec.709 IMF Package. If the video was mastered in Dolby Vision HDR then disregard this section and refer to section 3.1.2.2 “Dolby Vision IMF Application 2 Extended with Dolby Vision Metadata” for requirements.

Image Track File	
Image Track File Container	MXF Operational Pattern 1(a)
Image Essence	JPEG2000
4K/UHD Image Width	4096 or 3840
4K/UHD Image Height	2160
4K/UHD J2K Level / Sub-level	Frame rates up to 30 fps use: ● IMF Mainlevel 6 (Sublevel 3, Max 800 Mbit/s) Frame rates above 30 fps use: ● IMF Mainlevel 7 (Sublevel 4, Max 1600 Mbit/s)
2K/HD Image Width	2048 or 1920
2K/HD Image Height	1080
2K/HD J2K Level / Sub-level	Frame rates up to 30 fps use: ● IMF Mainlevel 4 (Sublevel 2, Max 400 Mbit/s) Frame rates greater than 30 fps use: ● IMF Mainlevel 5 (Sublevel 3, Max 800 Mbit/s)
Pixel Aspect Ratio	1:1
Timecode Start	00:00:00:00
Color Encoding	YCbCr / 4:2:2 / Legal Range (1920x1080 to 3840x2160) or RGB / 4:4:4 / Full Range (1920x1080 to 4096x2160)
Colorspace	BT.709
Bit Depth	10 bit
Acceptable Frame Rates	23.976 24 25 29.97 30 50 59.94 60
Scanning Type	Progressive
Electro Optical Transfer Function	ITU-R BT.1886 (Gamma 2.4)
Audio Track File (5.1 Surround)	
Audio Track File Container	MXF Operational Pattern 1(a) and SMPTE ST382-2007 ("Material Exchange Format -- Mapping AES3 and Broadcast Wave Audio into the MXF Generic Container")
Audio Essence	AES3 / WAV / BWAV
Sampling Rate	48 KHz
Bit Depth	24 bit
Channel Mapping	● 5.1 Surround: ○ Channel 1 – Left ○ Channel 2 – Right ○ Channel 3 – Center ○ Channel 4 – LFE

	○ Channel 5 – Left Surround ○ Channel 6 – Right Surround
Audio Track File (Stereo)	
Audio Track File Container	MXF Operational Pattern 1(a) and SMPTE ST382-2007 ("Material Exchange Format -- Mapping AES3 and Broadcast Wave Audio into the MXF Generic Container")
Audio Essence	AES3 / WAV / BWAV
Sampling Rate	48 KHz
Bit Depth	24 bit
Channel Mapping	Stereo: ● Channel 1 – Left Total ● Channel 2 – Right Total
Asset Map XML File	
Composition Playlist XML File	
Packing List XML File	
Volume Index XML File	
Output Profile List XML File	

3.1.2.2 Dolby Vision IMF Application 2 Extended with Dolby Vision Metadata

This section should only be referred to if the video was mastered in Dolby Vision HDR. This section defines the requirements to create a Dolby Vision IMF Package which includes the Dolby Vision Metadata. This requires the use of the Dolby Mastering Tools SDK version 2.6 or greater. If the video was not mastered in Dolby Vision HDR then refer to Section 3.1.2.1 “Rec.709 IMF Application 2 Extended” for requirements.

Image + Metadata Track File	
Image + Metadata Track File Container	MXF Operational Pattern 1(a) using Dolby Mastering Tools SDK version 2.6 or greater
Image Essence	JPEG2000
4K/UHD Image Width	4096 or 3840
4K/UHD Image Height	2160
4K/UHD J2K Mainlevel / Sublevel	Frame rates up to 30 fps use: ● IMF Mainlevel 6 (Sublevel 3, Max 800 Mbit/s) Frame rates above 30 fps use: ● IMF Mainlevel 7 (Sublevel 4, Max 1600 Mbit/s)
2K/HD Image Width	2048 or 1920
2K/HD Image Height	1080
2K/HD J2K Mainlevel / Sublevel	Frame rates up to 30 fps use: ● IMF Mainlevel 4 (Sublevel 2, Max 400 Mbit/s) Frame rates greater than 30 fps use: ● IMF Mainlevel 5 (Sublevel 3, Max 800 Mbit/s)
Pixel Aspect Ratio	1:1
Timecode Start	00:00:00:00

Color Encoding	RGB / 4:4:4 / Full Range
Colorspace	P3 D65
Bit Depth	12 bit
Acceptable Frame Rates	23.976 24 25 29.97 30 50 59.94 60
Scanning Type	Progressive
Electro Optical Transfer Function	SMPTE ST-2084 (PQ)
Mastering Display Color Volume Metadata	SMPTE ST-2086
Content-Dependent Metadata for Color Volume Transformation	SMPTE-ST 2094
Audio Track File (5.1 Surround)	
Audio Track File Container	MXF Operational Pattern 1(a) and SMPTE ST382-2007 ("Material Exchange Format -- Mapping AES3 and Broadcast Wave Audio into the MXF Generic Container")
Audio Essence	AES3 / WAV / BWAV
Sampling Rate	48 KHz
Bit Depth	24 bit

Channel Mapping	• 5.1 Surround:
	  ○ Channel 1 – Left
	  ○ Channel 2 – Right
	  ○ Channel 3 – Center
	  ○ Channel 4 – LFE
	  ○ Channel 5 – Left Surround
	  ○ Channel 6 – Right Surround

Audio Track File (Stereo)	
Audio Track File Container	MXF Operational Pattern 1(a) and SMPTE ST382-2007 ("Material Exchange Format -- Mapping AES3 and Broadcast Wave Audio into the MXF Generic Container")
Audio Essence	AES3 / WAV / BWAV
Sampling Rate	48 KHz
Bit Depth	24 bit
Channel Mapping	Stereo: • Channel 1 – Left Total • Channel 2 – Right Total
Asset Map XML File	
Composition Playlist XML File	

Packing List XML File	
Volume Index XML File	
Output Profile List XML File	

4 Audio Specifications

4.1 Audio Prerequisites

Titles with surround sound require 5.1 audio. When 5.1 audio is supplied, preferably an additional 2-channel true stereo mix (2-channel stereo mix) will be supplied on the same audio track as the surround.

If conformed 5.1 audio was never created, stereo audio will be accepted (mono audio is acceptable if the program's original source is mono and no stereo and/or 5.1 mix exists). Do not create a 2.0 track by simply mixing down the 5.1 track.

4.2 Audio Mix Requirements

4.2.1 Original Version from Production and Dubbed Languages

4.2.1.1 Near Field 5.1 Surround Mix - Mastering and Archive

- Use 79db spl as your standard reference level for mixing
- Meet a -24 LKFS (+/- 2 LKFS) using ITU-R BS.1770-3 measured over entire program
- Maintain +18db (-2 dbfs) maximum level (true peak) over reference of -20 dbfs, achieved by peak limiting and not lowering the M&E volume
- Provide Dialogue/Vocal Stems with the same specs

4.2.1.2 Near Field 2.0 Stereo Mix - Mastering and Archive

- Use 79db spl as your standard reference level for mixing
- Provide a separate Lo/Ro or LT/RT mix with -24 LKFS (+/- 2 LKFS) using ITU-R BS.1770-3 measured over entire program
- Lo/Ro or LT/RT mix must be mono compatible
- Maintain +18db (-2 dbfs) maximum level (true peak) over reference of -20 dbfs, achieved by peak limiting and not lowering the M&E volume
- When creating Lo/Ro or LT/RT 2.0 mix, fold Low Frequency Effects (LFE) forward into LEFT and RIGHT CHANNELS at -12db and adjust to match 5.1
- Lo/Ro or LT/RT mix to be done in a decoded environment

4.2.2 Music & Effects (M&E) Mix

4.2.2.1 Near Field 5.1 Surround M&E Mix

- 48kHz/24-bit minimum, 96kHz/24-bit preferred
- Provide a separate fully filled 5.1 surround submix containing only Music & Effects (no dialog)
- Room Tone references should be included to correctly match creative intent
- All levels should mirror what was used for final Mastering and Archive so that any newly added dubbed dialog can be mixed in easily later

- For mixers creating the M&E, Netflix has a M&E Creation Guidelines document available on our Backlot Help site
    - https://backlothelp.netflix.com/hc/en-us/articles/115006122187-M-E-Creation-Guidelines

4.2.2.2 Near Field 2.0 Stereo M&E Mix

- 48kHz/24-bit minimum, 96kHz/24-bit preferred
- Provide a separate fully filled 2.0 stereo submix containing only Music & Effects (no dialog)
- Room Tone references should be included to correctly match creative intent
- All levels should mirror what was used for final Mastering and Archive so that any newly added dubbed dialog can be mixed in easily later
- For mixers creating the M&E, Netflix has a M&E Creation Guidelines document available on our Backlot Help site
    - https://backlothelp.netflix.com/hc/en-us/articles/115006122187-M-E-Creation-Guidelines

4.2.3 Audio Description

4.2.3.1 Near Field 5.1 Surround Mix - Audio Description

- Use 79db spl as your standard reference level for mixing
- Audio Description dialog shall be mixed into the center channel
- Meet a -24 LKFS (+/- 2 LKFS) using ITU-R BS.1770-3 measured over entire program
- Maintain +18db (-2 dbfs) maximum level (true peak) over reference of -20 dbfs, achieved by peak limiting and not lowering the M&E volume
- Provide Dialogue/Vocal Stems with the same specs

4.2.3.2 Near Field 2.0 Stereo Mix - Audio Description

- Use 79db spl as your standard reference level for mixing
- Audio Description dialog shall be mixed into both LT and RT equally
- Provide a separate Lo/Ro or LT/RT mix with -24 LKFS (+/- 2 LKFS) using ITU-R BS.1770-3 measured over entire program
- Lo/Ro or LT/RT mix must be mono compatible
- Maintain +18db (-2 dbfs) maximum level (true peak) over reference of -20 dbfs, achieved by peak limiting and not lowering the M&E volume
- When creating Lo/Ro or LT/RT 2.0 mix, fold Low Frequency Effects (LFE) forward into LEFT and RIGHT CHANNELS at -12db and adjust to match 5.1
- Lo/Ro or LT/RT mix to be done in a decoded environment

5 Secondary Asset Specifications

5.1 Subtitle as a Separate File

Subtitles must encompass the spoken dialogue intended to be understood that differs in language from the subtitle file. Subtitles must also translate any narrative burned-in text that is in a different language from the subtitle file.
For example, if a film is to be streamed in Germany, the German subtitle file would contain translation for all the non-German dialogue spoken.

- Subtitles must conform, within a half second, to the Primary Video Mezzanine that is delivered or to the Netflix-provided Proxy File. Raster image-based subtitles will not be accepted.
- Subtitle files must not be censored or contain advertisements, placards, overlay branding, or website link callouts.
- All subtitle files need to start at hour 00. Netflix does not accept the subtitle timestamps starting at hour 01 or 10, which is common on tape.
- Include positional data in the subtitle file if the subtitles would otherwise obscure burned-in text.

To ensure the best quality and consistency please reference our Timed Text Style Guide https://netflix.box.com/NetflixTimedTextStyleGuide

Acceptable formats:

- DFXP (see Netflix Timed Text Style Guide for detail) - preferred
- CAP - for Japanese subtitles only

If your text-based subtitle format is not listed above, please contact Netflix to discuss other options.

5.1.1 Forced Narrative Subtitles

Our requirement is to receive a **non-subtitled version of the content**.
To support the **non-subtitled** source, Netflix requires Forced Narrative subtitles delivered as ancillary files.

- Examples of text to be included in Forced Narrative subtitles:
  - Translation where an alternate language is spoken
  - Transcription of inaudible dialogue if it would have been included in broadcast or theatrical presentation
- *For example: An English-language film has 5 minutes of Japanese dialogue and is to be streamed to U.S. customers. The desired video would not include burned-in subtitles for the Japanese sections. A Forced Narrative subtitle file would be supplied that contains the Japanese dialogue translated into English. The Forced Narrative file would not have the original English dialogue transcribed.*

The technical format of Forced Narrative subtitles must follow the same rules as standard subtitles. Please refer to the File Naming Conventions in section *5*.

5.2 Accessibility Files (SDH)

SDH – Subtitles for the Deaf and Hard of Hearing
SDH must encompass the spoken dialogue intended to be understood in the content. If the content has multiple spoken languages, they all must be translated and present in the SDH file.

5.2.1 SDH as Separate File

When delivering SDH, it must be submitted in one of the acceptable formats listed below.

- Raster image-based SDH will not be accepted.
- SDH files must conform, within a half second, to the Primary Video Mezzanine that is delivered or to the Netflix-provided Proxy File.
- SDH files must not be censored or contain advertisements, placards, overlay branding, website link callouts or company credits unless required by law.
- All SDH files need to start at hour 00. Netflix does not accept the SDH timestamps to start at hour 01, which is common on the tape.
- Include positional data in the SDH file if a caption or subtitle would otherwise obscure burned-in text.

For more detail, please reference our Timed Text Style Guide
https://netflix.box.com/NetflixTimedTextStyleGuide

Acceptable SDH Files:

- DFXP (see Netflix Timed Text Style Guide for detail) - preferred
- STL (EBU) - alternate if DFXP is an issue

If your SDH format is not listed above, please contact Netflix to discuss other options.

5.3 Alternate Language and Audio Description as a Separate File

If alternate language and/or audio description tracks are required under the Agreement, they shall be conformed to the primary digital audio/video asset delivered. Acceptable formats for alternate-language audio tracks are stereo or multi-channel AES3 LPCM audio (in a MPEG-2 Transport Stream, .mpg, or WAVE Extensible Format, .wav), or iTunes QuickTime format as described in iTunes Package Asset Specifications. Either format shall be encoded at the highest possible bitrate to maintain fidelity. Deliver both a 5.1 file and a

2.0 file separately if both formats were originally mastered. Do not create a 2.0 track by simply mixing down the 5.1 track. If no 2.0 track exists, only deliver the 5.1 track. If no 5.1 track exists, only deliver the 2.0 track.

For Alternate Language Audio file naming please follow the file naming convention described in section *5.2 Alternate Language Audio File Naming*.

For Audio Description file naming please follow the file naming convention described in section *5.3 Audio Description File Naming*

Please note: Lectern-style dubbing (single narrator speaking the role of each character) is only acceptable for Polish alternate language audio files and some documentaries or unscripted content. For all other languages and types of content, lip-sync dubbing is required for alternate language audio.

5.3.1 Acceptable Alternate Language and Audio Description Formats (non-QuickTime)

1. **Audio Codec and Container:**
   a. Uncompressed PCM audio in a WAVE Extensible Format (.wav) or AES3 LPCM in MPEG-2 Transport Stream (.mpg)
2. **Bitrate:** Highest bitrate possible (CBR)
3. **Sample rate:** 48 kHz
4. **Bit-depth:** 24-bit or 16-bit
5. **5.1 Audio Channel Mapping for WAV (.wav) or AES3 LPCM in MPEG-2 Transport Stream (.mpg)**
   a. Channel 1 – Left
   b. Channel 2 – Right
   c. Channel 3 – Center
   d. Channel 4 – LFE
   e. Channel 5 – Left Surround
   f. Channel 6 – Right Surround
6. **2.0 Audio Only Channel Mapping for WAV (.wav) or AES3 LPCM in MPEG-2 Transport Stream (.mpg):**
   a. Channel 1 – Left Total
   b. Channel 2 – Right Total

5.3.2 Acceptable Alternate Language and Audio Description Formats (QuickTime)

- iTunes QuickTime format as described in iTunes Package Asset Specifications is acceptable.
- **Please pay special attention to the audio track / channel assignments defined in the iTunes Package Asset Specifications.**
- **All channels must be tagged in accordance with the iTunes spec.**
- **Also, note that the labels "Left Total" and "Right Total" are used to label the stereo mix channels only used when 5.1 + 2.0 audio is included in a single file (Options 1-4). If stereo only files are delivered (Options 5 & 6) then the labels "Left" and "Right" are used since there is no ambiguity.**

1. **Audio Codec**
   a. Uncompressed LPCM – 16 bit or 24 bit, 48 kHz (Big or Little Endian)
2. **5.1 Surround + 2.0 Stereo Audio Channel Mapping for QuickTime .mov**
   a. **Option 1 (2 tracks)**
      i. **Track 1 (6 channels)**
         1. Channel 1 – Center
         2. Channel 2 – Left

3. Channel 3 – Right
4. Channel 4 – Left Surround
5. Channel 5 – Right Surround
6. Channel 6 – LFE

ii. **Track 2 (1 channel)**
1. Channel 1 – Left Total

iii. **Track 3 (1 channel)**
1. Channel 1 – Right Total

b. **Option 2 (8 tracks)**

i. **Track 1 (1 channel)**
1. Channel 1 – Left

ii. **Track 2 (1 channel)**
1. Channel 1 – Right

iii. **Track 3 (1 channel)**
1. Channel 1 – Center

iv. **Track 4 (1 channel)**
1. Channel 1 – LFE

v. **Track 5 (1 channel)**
1. Channel 1 – Left Surround

vi. **Track 6 (1 channel)**
1. Channel 1 – Right Surround

vii. **Track 7 (1 channel)**
1. Channel 1 – Left Total

viii. **Track 8 (1 channel)**
1. Channel 1 – Right Total

c. **Option 3 (2 tracks)**

i. **Track 1 (6 channel)**
1. Channel 1 – Left
2. Channel 2 – Right
3. Channel 3 – Center
4. Channel 4 – LFE
5. Channel 5 – Left Surround
6. Channel 6 – Right Surround

ii. **Track 2 (2 channel)**
1. Channel 1 – Left Total
2. Channel 2 – Right Total

d. **Option 4 (7 tracks)**

i. **Track 1 (1 channel)**
1. Channel 1 – Left

ii. **Track 2 (1 channel)**
1. Channel 1 – Right

iii. **Track 3 (1 channel)**
1. Channel 1 – Center

iv. **Track 4 (1 channel)**
1. Channel 1 – LFE

v. **Track 5 (1 channel)**
1. Channel 1 – Left Surround

vi. **Track 6 (1 channel)**
1. Channel 1 – Right Surround

vii. **Track 7 (2 channel)**
1. Channel 1 – Left Total
2. Channel 1 – Right Total

3. **2.0 Stereo Audio Only Channel Mapping for QuickTime .mov**

a. **Option 5 (2 tracks)**
    i. **Track 1 (1 channel)**
        1. Channel 1 – Left
    ii. **Track 2 (1 channel)**
        1. Channel 2 – Right
b. **Option 6 (1 track)**
    i. **Track 1 (2 channel)**
        1. Channel 1 – Left
        2. Channel 2 – Right

5.3.3 Dub Cards / Dub Credits

If dubbed audio files are sent, distributor shall deliver such Dub Cards to Netflix formatted exactly as they are to appear on-screen. No extraneous information can be included beyond studio name, cast and other key personnel or as otherwise required by law in the territory of exhibition.

Acceptable Dub Card Formats

- **Image Files**
    - Each Image must represent one frame of dubbed actor credits
    - Only one language can be represented on a dub card and the dubbed language must be specified in the dub card text
        - Example: "Version Française"
    - We accept the following flat file types in order of preference (no layers or pages):
        - TIFF
        - PNG
        - BMP
        - JPG
    - Minimum Resolution: 640x480
    - Pixel Aspect Ratio (PAR): 1:1 square pixels

In cases where multiple dub cards are needed for an individual language, the multiple dub cards must be stored in a ZIP archive.

- **ZIP Archive**
    - Each Image must meet the image file spec described above
    - Each image must match the file format and resolution of the other images in the ZIP archive
    - All images in ZIP archive must be for the same language
    - Images will be rendered to screen in alpha-numeric sorted order (case insensitive)
    - Acceptable Compression modes: “DEFLATE” or “STORE”
        - Note: WinZip and WinRAR use DEFLATE by default
    - **Examples:** (note that the ZIP file name does not need to adhere to any specific convention. Image files contained in the ZIP archive must be named in case-insensitive alphanumeric order)
        - Brazilian Portuguese
            - ZIP File name: SomeTitle_pt-BR.zip
            - Image names: dubCard01.tiff, dubCard02.tiff, dubCard03.tiff
        - French Parisian
            - ZIP File name: FrenchDubCards.zip
            - Image names: FrenchActors01.png, FrenchActors02.png, FrenchActors03.png

6 File Naming Conventions

6.1 Alternate Language Audio File Naming

The file naming convention of the alternate language audio file is as follows:
[PackageID]_[framerate]_[channel1]_..._[channelX]_[langCode]_audio.[ext]

Definitions:
[PackageID] – This is the package identifier and it provides a way of identifying a group of conformed assets. A unique ID will be provided by Netflix for each set of conformed assets per title.
[framerate] – This is the frame rate of the conformed video asset. Acceptable frame rates are: 23976p, 25p, 2997p, 5994p, 50p.
[channelX] – Audio channel mapping

- 2 channel WAV .wav file = _LT_RT_
- 2 channel QuickTime .mov file = _L_R_
- 6 channel WAV .wav file = _L_R_C_Lfe_Ls_Rs_
- 8 channel WAV .wav file = _L_R_C_Lfe_Ls_Rs_LT_RT_
- 8 channel QuickTime .mov = _L_R_C_Lfe_Ls_Rs_LT_RT_

[langCode] – Used to specify the language of the audio track. Please follow the language codes exactly as defined in Appendix section *11.1 Language Codes.*

The file name should match the channel mapping of the audio file.

Examples:
WAV audio only files
1937512_50p_LT_RT_es-ES_audio.wav
1937512_50p_L_R_C_Lfe_Ls_Rs_es-ES_audio.wav
1937512_50p_L_R_C_Lfe_Ls_Rs_LT_RT_pt-BR_audio.wav

QuickTime MOV secondary audio only
124578_2997i_L_R_en_audio.mov
135791_2997i_L_R_C_Lfe_Ls_Rs_LT_RT_en_audio.mov

6.2 Audio Description File Naming

The file naming convention of the audio description file is as follows:
[PackageID]_[framerate]_[channel1]_..._[channelX]_[langCode]_desc.[ext]

Definitions:
[PackageID] – This is the package identifier and it provides a way of identifying a group of conformed assets. A unique ID will be provided by Netflix for each set of conformed assets per title.
[framerate] – This is the frame rate of the conformed video asset. Acceptable frame rates are: 23976p, 25p, 2997p, 5994p, 50p.
[channelX] – Audio channel mapping

- 2 channel WAV .wav file = _LT_RT_
- 2 channel QuickTime .mov file = _L_R_
- 6 channel WAV .wav file = _L_R_C_Lfe_Ls_Rs_
- 8 channel WAV .wav file = _L_R_C_Lfe_Ls_Rs_LT_RT_
- 8 channel QuickTime .mov = _L_R_C_Lfe_Ls_Rs_LT_RT_

[langCode] – Used to specify the language of the audio track. Please follow the language codes exactly as defined in Appendix section *11.1 Language Codes.*

The file name should match the channel mapping of the audio file.

Examples:
WAV audio only files
1937512_50p_LT_RT_es-ES_desc.wav
1937512_50p_L_R_C_Lfe_Ls_Rs_es-ES_desc.wav
1937512_50p_L_R_C_Lfe_Ls_Rs_LT_RT_pt-BR_desc.wav

QuickTime MOV secondary audio only
124578_2997i_L_R_en_desc.mov
135791_2997i_L_R_C_Lfe_Ls_Rs_LT_RT_en_desc.mov

6.3 Subtitle & Forced Narrative Subtitle File Naming

The file naming convention of the secondary subtitle file is as follows:

Standard Subtitles
[PackageID]_[framerate]_[langCode]_sub.[ext]

Forced Narrative Subtitles
[PackageID]_[framerate]_[langCode]_forcedsub.[ext]

Definitions:
[PackageID] – This is the package identifier and it provides a way of identifying a group of conformed assets. A unique ID will be provided by Netflix for each set of conformed assets per title.
[framerate] – Frame rate of the text asset. Acceptable frame rates are: 23976, 24, 25, 2997.
[langCode] – Used to specify the language of the text. Please follow the language codes exactly as defined in Appendix section *11.1 Language Codes.*

Examples:
1921345_23976_es_sub.xml
1921345_24_en_sub.xml
1236547_2997_fr-CA_sub.stl
1236547_2997_pt-BR_forcedsub.xml

6.4 SDH File Naming

The file naming convention of the secondary SDH file is as follows:

[PackageID]_[framerate]_[langCode]_cc.dfxp

Although we require SDH files to be created, the file name must denote "cc" as the asset type due to limitations in our ingest system.

Definitions:
[PackageID] – This is the package identifier and it provides a way of identifying a group of conformed assets. A unique ID will be provided by Netflix for each set of conformed assets per title.
[framerate] – Frame rate of the text asset. Acceptable frame rates are: 23976, 24, 25, 2997.
[langCode] – Used to specify the language of the text. Please follow the language codes exactly as defined in Appendix section *11.1 Language Codes.*

DFXP Examples:

1313576_23976_es_cc.dfxp
1313576_2997_fr-CA_cc.xml
1313576_24_pt-BR_cc.xml

EBU-STL Examples:
1313576_25_en_cc.stl

6.5 Test File Naming

If Netflix requests Distributor to deliver test files, a full-length file is preferred in HD and/or SD (as specified by Netflix), along with conformed subtitles, closed captions or audio files if applicable. When delivering test files for review, follow the naming conventions described in section 5, but substitute package ID with "TEST_VENDORNAME."

Examples:
TEST_YOURCOMPANY_23976p_185_1080_L_R_es_primary.mov
TEST_YOURCOMPANY_23976p_235_1080_L_R_C_LFE_LS_RS_LT_RT_es_primary.mov
TEST_AudioDubCompany_23976p_L_R_fr-CA_audio.mov
TEST_NICKSCAPTIONHOUSE_24_es_cc.dfxp

7 Movie Content Metadata

Movie metadata is required for all content and is to be submitted via the approved Netflix Metadata Excel Template to your Netflix Operations contact.

Distributor shall provide all film/television ratings information that exists for each Title with respect to the licensed Territory and the United States, if any.

All dubbed and/or subtitled content is to be accompanied with the relevant metadata in the original and alternate language to support the source delivered.

8 Delivery via Content Partner Portal

Distributor shall deliver Source Material via Netflix's Content Partner Portal (aka Backlot: https://backlot.netflix.com/). The Netflix Backlot is accessible via GUI (graphical user interface) and/or through API (application programming interface) integration with the vendor's Asset Management System.

Netflix uses Aspera exclusively for network delivery. Distributor must push content to Netflix via Aspera. Netflix will not pull content. Please discuss this with your Netflix Video On-Boarding Engineer if you have any questions about this requirement.

Please be prepared to provide the following information in order to set up an Aspera account.

- Whether you have your own licensed Aspera client/server or will use the free Aspera Connect® web application.
- Public outbound IP address(es) for which your host(s) will use for transferring files to Netflix via Aspera.
    - You must have a static IP or range of IPs.
- Technical contact (name, email and phone number) of the person responsible for setting up the Aspera connection on your end.

8.1 Backlot Source Delivery UI

Netflix supports delivery of source assets via the Backlot Source Delivery UI which utilizes the Aspera® Connect Plugin. Information on how to use this feature can be located on the Partner Help Center here: https://backlothelp.netflix.com/hc/en-us/articles/223351987

8.2 Backlot Source Requests & Delivery Management API

Delivery via the Backlot Source Request & Delivery Management API is available. If you are interested in delivering via this method please review the documentation located here: https://backlothelp.netflix.com/hc/en-us/articles/225591608

9 Artwork

In addition to any other art requirements under this Agreement, Distributor shall deliver to Netflix the following art for each Title in compliance with the below requirements: Vertical, Horizontal, Title Card, Story Art, Stills, Character Art, Title Treatment, Title Treatment Stacked, Billboard, Gallery/Cast and Environmentals (each as defined below) delivered via The Netflix Backlot in the highest quality available to Distributor or its affiliates (including if available to Distributor from another of Distributor's licensees for the Title(s)).

Images provided will be used within the Netflix service (including, without limitation, on all Netflix Ready Devices, through the website, User Interfaces, applications, blogs, social networking sites and our communications with members and potential members) and in marketing materials promoting the titles' availability on Netflix. Netflix shall have the right, but not the obligation, to modify (e.g., edit size, placement, crop, or make other alterations to) and/or create any additional artwork discussed in this Section 10.1.

In addition, all artwork layered photoshop document assets (hereinafter called "layered PSD") shall be provided in a completely layered format that allows background images, foreground images, every cast member to be re-positioned or otherwise modified.

Title Treatments in each language in which the Title may be exhibited under the Agreement.**

****All art shall be provided in localized format (i.e., as it is marketed in the Territory) including Title Treatments in each language in which the Title may be exhibited under the Agreement.****

Please refer to the Netflix Artwork Style Guide for all art requirements and requests. A Style Guide can be requested via email at productcreative@netflix.com.

9.1 Display Art – Vertical, Horizontal, and Title Card

Display Art includes three (3) sizes / orientations of the original key image with title treatment: One (1) Vertical image, one (1) Horizontal image, and one (1) Title Card image. Original Display Art images shall be designed from the same key image.

Each Display Art asset shall reflect the following guidelines:

- No extraneous text such as quotes, taglines, credits, copyrights, billing blocks.
- No extraneous logos such as DVD, Blu-ray, award laurels, studio logos.
- No weapons pointing at camera, extreme gore, or nudity.

- Fully Layered PSD.

Artwork Asset	Image Specifications	File Formats	Requirements
Display Art Vertical	7200 (w) x 10088 (h) 300 ppi RGB (8-bits/channel)	Fully Layered PSD	For television shows, Vertical artwork shall not have title treatment in the lower 1/5 of the image area.
Display Art Horizontal	9000 (w) x 5063 (h) 300 ppi RGB (8-bits/channel)	Fully Layered PSD	For television shows, Horizontal artwork shall not have the title treatment in the lower 1/5 of the image area.
Display Art Title Card	3050 (w) x 1715 (h) 300 ppi RGB (8-bits/channel)	Fully Layered PSD	TItle Cards shall feature a legible, prominent title treatment on a contrasting background devoid of characters or objects.

9.2 Story Art

Story Art is a textless, designed, high-quality image of the main character(s) in a scene that depicts the theme of the feature film or television series.

A minimum of fifteen (15) high-resolution images are required for every feature film and every television series.

Artwork Asset	Image Specifications	File Format	Requirements
Story Art	3840 (w) x 2160 (h) 300 ppi RGB (8-bits/channel)	Fully Layered PSD or High-Resolution JPG	No title treatments, text, logos, or copyright lines. No weapons pointing at camera, extreme gore, or nudity.

9.3 Stills

A minimum of fifteen (15) high-resolution images are required for each feature film and a minimum of fifteen (15) high-resolution images per *episode* are required to represent a television series as a whole. All images must be cleared for promotional use.

Artwork Asset	Image Specifications	File Format	Requirements
Still image	3840 (w) x 2160 (h) 300 ppi RGB (8-bits/channel)	High-Resolution JPG or TIFFs	No text, logos, or copyright lines. No weapons pointing at camera, extreme gore, or nudity.

9.4 Character Poses

Character Poses must be forward-facing, full-body character renders on a transparent background. Variety in poses and expressions are strongly preferred.

For Animated titles, a minimum of five (5) high-resolution character images are required for *each* main and supporting character in every feature film or season of an animated television series.

Artwork Asset	Image Specifications	File Format	Requirements
Character Art	Variable (w) x 3000 (h) 300 ppi RGB (8-bits/channel)	Fully Layered PSD, EPS	Artwork shall not be obstructed by text, objects or other characters. Artwork shall not include any borders or frames.

9.5 Title Treatment Unstacked

Unstacked Title Treatments fill the image width and are bottom-left aligned on a transparent background.

Two (2) high-resolution unstacked Title Treatments are required for every feature film or television series; one dark tone (visible on a light background) and one light tone (visible on a dark background) are required.

Artwork Asset	Image Specifications	File Format	Requirements
Title Treatment	5000 (w) x 1125 (h) 300 ppi RGB (8-bits/channel)	Vector EPS, AI, or layered PSD	Artwork shall not include any borders, frames, logos, copyright lines, taglines, or quotes

9.6 Title Treatment Stacked

Stacked Title Treatments fill the image height and are bottom-left aligned on a transparent background.

Two (2) high-resolution stacked Title Treatments are required for every feature film or television series; one dark tone (visible on a light background) and one light tone (visible on a dark background) are required.

Artwork Asset	Image Specifications	File Format	Requirements
Title Treatment Stacked	5000 (w) x 2000 (h) 300 ppi RGB (8-bits/channel)	Vector EPS, AI, or layered PSD	Artwork shall not include any borders, frames, logos, copyright lines, taglines, or quotes.

9.7 Billboard

Billboards are designed, high-quality images of the main character(s) placed on the right hand side with additional environment extending to the left of the image.

Five (5) high-resolution images are required for every feature film or season of a television series.

Artwork Asset	Image Specifications	File Format	Requirements

Billboard	5200 (w) x 2113 (h) 300 ppi RGB (8-bits/channel)	Fully Layered PSD	No title treatment, text, logos, or copyright lines. No weapons pointing at camera, extreme gore, or nudity

9.8 Gallery/Cast Images

A minimum of five (5) high-resolution gallery images are required for each main cast member in every feature film or season of a television series that is live action. Characters individually captured in both seamless and in environment, also in groups/pairings as appropriate.

Artwork Asset	**Image Specifications**	**File Format**	**Requirements**
Gallery	3840 (w) x 2160 (h) 300 ppi RGB (8-bits/channel)	Fully Layered PSDs, High-Resolution JPGs or TIFFs	Photography of the featured cast on a simple background with and without props.

9.9 Environmentals

Five (5) high-resolution images are required for every feature film or season of a television series. Consider scenes, landscapes, buildings or various background elements that help give a sense of the environment/look/feel/world of the content.

Artwork Asset	**Image Specifications**	**File Format**	**Requirements**
Environmentals	3840 (w) x 2160 (h) 300 ppi RGB (8-bits/channel)	Layered PSD or High-Resolution JPG	Environment plates or background images shall be devoid of any characters. No title treatment, text, logos, or copyright lines.

10 Appendix

10.1 Language Codes

Please note that if the desired language code is not found in the table below please contact Netflix Operations.

Language Name	Language Code
Acoli	ach
Afrikaans	af
Albanian	sq
Arabic	ar
Aramaic	arc
Armenian	hy
Bambara	bm
Bashkir	ba
Bengali	bn
Bosnian	bs
Bulbovian	XA
Bulgarian	bg
Burmese	my
Catalan	ca
Chechen	ce
Cheyenne	chy
Chinese Cantonese	yue
Chinese Mandarin	zh
Chinese Simplified	zh-Hans
Chinese Traditional	zh-Hant
Croatian	hr
Czech	cs
Danish	da
Dari	fa-AF
Dinka	din
Dutch	nl
Dzongkha	dz
Efik	efi
Elamite	elx
English	en
English (UK)	en-GB
Esperanto	eo
Estonian	et
Latvian	lv
Faroese	fo
Filipino	fil
Finnish	fi
Flemish	nl-BE
French	fr
French-Canadian	fr-CA
Gaelic	ga
Georgian	ka
German	de
Greek	el
Gujarati	gu
Hawaiian	haw
Hebrew	he
Hindi	hi
Hokkien	nan
Hungarian	hu
Icelandic	is
Indonesian	id
Inuktitut	iu
Italian	it
Jamaican Patois	jam
Japanese	ja
Javanese	jv
Kannada	kn
Kazakh	kk
Khmer	khm
Kikuyu	ki
Kinyarwanda	rw
Kirghiz	ky
Korean	ko
Kurdish	ku
Lango	laj
Latin	la
Spanish (Neutral)	es

Lebanese	ar-LB
Lingala	ln
Lithuanian	lt
Maasai	mas
Macedonian	mk
Malagasy	mg
Malay	ms
Malayalam	ml
Maltese	mt
Marathi	mr
Maya	myn
Mende	men
Mongolian	mn
Nepali	ne
Newari	new
None	zxx
Norwegian (Bokmål)	nb
Norwegian (Nynorsk)	nn
Pashtu	ps
Persian	fa
Polish	pl
Portuguese (Brazilian)	pt-BR
Portuguese	pt
Punjabi	pa
Romanian	ro
Romansh	rm
Romany	rom
Russian	ru
Sami	smi
Sanskrit	sa
Scottish Gaelic	gd
Serbian	sr
Sinhala	si
Slovak	sk
Slovenian	sl
Somali	so
Songhai	son
Spanish (Castilian)	es-ES

Swedish	sv
Swiss-German	gsw
Tagalog	tl
Tamashek	tmh
Tamil	ta
Telugu	te
Thai	th
Tibetan	bo
Tonga	to
Turkish	tr
Tuvan	tyv
Ugaritic	uga
Ukrainian	uk
Urdu	ur
Vietnamese	vi
Welsh	cy
Wolof	wo
Xhosa	xh
Yiddish	yi
Zapotec	zap
Zulu	zu

10.2 Change Log History

Change Log OC-3-0 (2017-6-7)

- Updated “non-subtitled” from a preference to a requirement
- Added PSE Compliance testing (Harding) for all animated content
- Added Output Profile List XML File as a required asset for IMF packages
- Updated minimum Dolby Vision Mastering SDK version to 2.6
- Removed ProRes 422 HQ as an acceptable primary A/V deliverable for HD
- Updated Artwork section with new requirements
- Added Lo/Ro as acceptable stereo format
- Updated Content Partner Portal section
- Changed overall title of document
- Updated IMF requirements to support 2K/HD resolutions
- Updated IMF requirements to use IMF Mainlevel. BCP Levels have been replaced in SMPTE IMF standards by IMF Mainlevels
- IMF Packages no longer need to be ZIP’ed
- Updated ProRes 422 (HQ) specs to support additional 2K resolutions
- Updated ProRes 422 (HQ) specs to restrict to Rec.709 color space
- Removed XML Manifest requirements since XML Manifests are no longer needed nor supported by Backlot
- Updated the Note in Alternate Language Audio Files regarding lectern dubbing
- Removed EBU-STL files as an acceptable
- Updated Artwork section with new requirements
- Minor editorial changes

Change Log OC-2-5 (2015-7-31)

- Updated audio mix specifications with LKFS units rather than dialnorm since BT.1770-3 is used
- Specified LKFS measurement should be across entire program
- Added +/- 2 threshold variance for LKFS measurement
- Specified the use of true peak for peak values
- Updated IMF requirements to support creation of Dolby Vision IMF Packages

Change Log OC-2-4 (2014-10-09)

- Update 4K / UHD IMF spec by requiring luminance to be in HEAD/LEGAL range and removed full range as a requirement.

Change Log OC-2-3 (2014-10-01)

- Reorganized document to be clearer
- Significant update to Artwork section

Change Log OC-2-2 (2014-8-05)

- Removed 2 erroneous example file names

Change Log OC-2-1 (2014-8-05)

- Removed AAC (.mp4) as acceptable audio format
- Added specifications for Audio Description files

Change Log OC-2-0 (2014-7-03)

- Deprecated 4K DPX and replaced with IMF specs
- Added detail for audio mix specifications to use ITU-R BS.1770-3 for reference
- Updated to new Netflix logo

Change Log OC-1-9 (2014-4-29)

- Updated Dub Credits to read Dub Cards / Dub Credits
- Updated Dub Cards / Dub Credits deliverable requirements to image format

Change Log OC-1-8 (2014-4-14)

- Updated Dub Cards to read Dub Credits

Change Log OC-1-7 (2014-4-2)

- Added Dub Card specifications
- Updated description to Netflix Timed-Text Style Guide for quality and consistency purposes

Change Log OC-1-6 (2014-3-21)

- Fixed issue with heading numbering for Primary Digital Asset Specifications section
- Updated file names to support 23976

Change Log OC-1-5 (2014-3-1)

- Integrated 4K spec

Change Log OC-1-4 (2014-2-25)

- Added Audio Mix Requirements
- Changed wording of Primary Mezzanine Audio Prerequisites (no "simple" mixdowns allowed)
- Reformatted layout

Change Log OC-1-3 (2014-2-6)

- Removed SMPTE24 conformance since all timed-text should be synced to video playback (media time aka wall clock)
- Added acceptance of WAV file for secondary audio
- Updated Artwork section

Change Log OC-1-2 (2014-1-17)

- Added Movie Content Metadata section
- Added Artwork section

Change Log OC-1-1 (2013-11-22)

- Removed references to CC in lieu of SDH
- Cleaned up Language Code layout to two columns

Change Log OC-1-0 (2013-10-23)

- First version