

# **AMAZON**

# STUDIOS

## **Global QC SOP**

**Version 1.0**

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**Amazon Studios**  
**Post Production Operations**  
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# 1 INTRODUCTION

## 1.1 PURPOSE, SCOPE, AND INTENDED AUDIENCE

This document outlines Amazon Studios' (AS) standard operating procedure (SOP) for administration of Quality Control (QC) on all of its content types. All Amazon Studios Post Operations (Post Ops) employees working on a title should reference this SOP for any QC-related questions; all Post Ops vendors should reference this SOP to QC AS content and provide reporting to AS standards.

## 1.2 HOW TO USE THIS DOCUMENT

This Global QC SOP is intended to be a comprehensive document that covers all aspects of the QC process for Amazon Studios (AS) content. Please refer to the Table of Contents to find the section most relevant to your need. These guidelines are updated on an as-needed basis. If you wish to request an update please contact:

[as-globalqc@amazon.com](mailto:as-globalqc@amazon.com).

## 1.3 COMMUNICATIONS WITH AMAZON STUDIOS POST

Except where noted, all communications related to QC should be directed to the title's Delivery Manager and Post Executive. If you lack the contact info for either, please contact: [as-globalqc@amazon.com](mailto:as-globalqc@amazon.com).

# 2 QC PROCESS

The QC process should proceed as outlined below:

1. **File Delivery:** The Production Master file (inclusive of Fully Texted, Non-Subtitled, and Fully Textless), & Textless Element Reel are delivered to the Master/QC Facility by the date designated as "Delivery to QC" on the Post Milestone Calendar (PMC). All files must follow the Amazon Studios (AS) naming conventions and should immediately be flagged if incorrect.

2. **QC Reports:** Reports are emailed to the Production Company (ProdCo) contacts as well as the Amazon Studio (AS) Delivery Manager, Post Exec, and Localization Team alias ([originals-localization@amazon.com](mailto:originals-localization@amazon.com)).
3. **Review and Fix:** The QC report is reviewed by the ProdCo and AS to determine if fixes are needed and are then implemented as deemed necessary. The Mastering/QC vendor will be notified accordingly.
4. **QC Reports Fix Check:** Same as #3 above. Reports should specify what was fixed, what wasn't, and why.
5. **Video Rejections:** Determining how patches should be handled should be done in consultation with the AS Delivery Manager and Post Exec on the show. Fix files are sent to the Master/QC facility in file packages. For Series, this should be per episode; episodes should not be combined.
6. **Audio Rejections:** Any audio fixes require a full re-delivery of the master file.

Turning around fixes as quickly as possible is ideal. For time budgeting, note it can take up to 2 weeks between Delivery to QC and Final Delivery of approved assets to AS.

**The QC vendor will return a QC report within 48 hours of receipt of files.**

The assigned Amazon Studios (AS) Delivery Manager/Post Exec will determine with the QC vendor how all files will be delivered. Final Passing/Approved QC Reports will be delivered to AS Post Ops via upload to Box and via email to the assigned title managers. For easier referencing, the Final Passing/Approved QC Report will have the same file name as the final QC pass file.

**Files must be delivered within 24 hours of QC approval. Files are considered delivered once the files are QC approved and Amazon Studios' title managers confirm they've been correctly uploaded to Amazon.**

## 3 TYPES OF QC

### 3.1 MASTER QC (AKA CONTENT QC)

A Master QC is the most detailed QC evaluation performed for AV media. As such, it is designed to identify potential quality/content concerns that production and the studio may want to improve upon before it is distributed or reaches inventory.

**3.1.1 A Master QC-A:** includes multiple linear reviews (typically used for Scripted content):

- 1) 5.1 audio with picture
- 2) 2.0 audio with picture
- 3) Technical/Framing/On-Screen (OS) Text

**3.1.1 A Master QC-B:** includes two linear reviews (typically used for Unscripted content):

- 1) 5.1 audio with picture (including Framing and OS Text)
- 2) 2.0 audio with picture (including Framing and OS Text)

### 3.2 TECHNICAL QC

A Technical QC is intended to identify any video or audio issues that may have been induced during the creation of the media asset as opposed to the production and finishing of the creative content. Commonly, though not always, Technical QC will be performed subsequent to a Master QC of the same content, to ensure technical issues were not induced during derivative media transformations or alterations.

A Technical QC includes one linear review:

- 1) 2.0 audio with picture

### 3.3 SPOT CHECK QC

A Spot QC is the minimum-level QC and does not typically involve generation of a QC report because the scope of technical validations is so narrow. The spot QC is used on assets derived from sources that have already undergone a higher level of QC evaluation.

The Spot QC is intended to surface any significant issues induced through the media transformation process, including incorrectly mapped audio tracks, media corruptions, assembly errors, audio/video sync, video compression or artifacting issues, etc.

Spot checks can be either a Three Point Check or a Five Point Check.

### **3.3.1 THREE POINT CHECK**

The Three Point Check is typically required for content under 20-minutes TRT and looks at three sections of an asset:

- First 2 Minutes
- 1 minute at 50% Program
- Last 2 Minutes + Credits

### **3.3.2 FIVE POINT CHECK**

The Five Point Check is typically required for content over 20-minutes TRT and looks at five sections of an asset:

- First 2 minutes
- 1 minute at title sequence (“Find the titles”)
- 1 minute at 50% program
- 1 minute at 75% program
- Last 2 minutes

## **4 PHOTOSENSITIVE EPILEPSY (PSE) TEST**

Titles may need to pass a qualitative analysis to check the program for instances of photosensitivity that could cause seizures for viewers, e.g., but not limited to, flashing or strobing lights.

Consult your AS Post Ops contact to determine if a PSE test is required and if remediation is necessary, keeping in mind a PSE test should be performed for all children’s content.

# 5 QC REPORTING

Amazon Studios requires all vendors to conform to our QC reporting guidelines. Vendors may use their own template, but it must contain the following information:

## 5.1 TOP TILE

The top tile is present on every page of the QC report and provides the following essential information:

- Amazon Studios Logo
- Title Name
- Episode Number (if applicable)
- Production Company
- Element being QC'd
- Passed or Failed
- QC Report Number
- QC Pass
- Date of QC
- Page Number

## 5.2 COVER PAGE

The cover page is the first page of every QC report and is divided into three sections: Element Information, Technical Specifications, and General Notes. The inputs for each are listed below.

### **Element Information:**

- Title
- Total Run Time (TRT)
- Episode Name (if applicable)
- Episode Number (if applicable)
- Part (for multiple-part projects)
- Format
- Deliverable
- Medium
- Aspect Ratio with a flag if several aspect ratios are present
- Language

### **Technical Specifications:**

- PSE Test
- Luminance Peak
- Chroma Subsampling
- SetUp
- First/Last Line
- Sampling Ratio
- Color Space
- Frame Rate
- Resolution
- Aperture
- Video Codec

- Production Number
- Vendor
- QC Operator
- Filename
- File Size
- File Container
- Bit Rate Mode
- Video Bit Rate
- Video Bit Depth
- Captioning
- Audio Codec
- Audio Format
- Samples
- Audio Bit Depth
- Audio Bit Rate
- LKFS Compliant
- LUFS Compliant (if applicable)
- Audio Loudness
- Audio Configuration
- Total Number of Ad Breaks
- Trim Passes

**General Notes:**

This section contains information relevant to the QC operator and Delivery Manager.

**Example:**

**GENERAL NOTES**

QC monitored ProRes UHD SDR video and all audio channels. Luminance levels peak at 940 bits. Audio is a 5.1 surround mix on channels 1-6 with peaks at -2.5 dBTP (-23.4 LKFS 1770-1) and 2.0 stereo mix on channels 7&8 with peaks at -2.5 dBTP (-22.9 LKFS 1770-1). Textless material to be provided as a separate file. **FIXED/APPROVED (3/21/2022):** Formatting Error. Framing Error. Luminance Shifts. Noticeable Edits. Pixel Errors. Production Crew/Equipment. Shading. Video Artifacts. Video Stepping. Audio Pop. Audio Snat. Camera Flag. Color Correction Errors. Dropped Frame. Extraneous Audio. Lens Flare. Low Resolution. VFX Error. Pixel Error.

**5.3 ADDITIONAL REPORTING**

Subsequent pages will report on the below:



- **Format** – This section identifies main events that occur throughout program such as start of file, logo, main titles, credits, and end of file.
- **Issues:**
  - **Audio** – This section identifies significant audio events across multiple channels.
  - **Video** – This section identifies significant video events.
  - **Production** – This section identifies the presence of any production elements in the video.
- **In-Scene Text** – This section identifies any instances of text appearing in any scene

## 6 ISSUE SEVERITY CLASSIFICATIONS

When issues are identified on QC reports they are given a severity rating, which helps to determine what response is required.

### 6.1 SEVERITY CATEGORIZATION AND SCALE

CATEGORIZATION	SCALE
QC Flags	Stop Down
	Severity 3
	Severity 2
	Severity 1
Responses to QC Flags	FYI
	Creative Intent
	Best Possible
	Fixed

- **Creative Intent** - Approved as-is. A QC note that is not actually an impairment since it was intended per the filmmakers, Post or Delivery Executives (e.g. a purposeful freeze frame).
- **Best Possible** - A previous issue that may have been improved (if it was possible), may be noticeably present in the file, but will not be worked on further.
  - Designated for issues that have been improved to the best of Post’s ability, but is not considered FULLY fixed.

- **Fixed** - A previous issue has been fixed entirely and is no longer present in the file being reviewed.
  - In the event the issue is minimal, and the QC vendor has the ability to fix it, Delivery Executives may allow the QC/Mastering vendor to fix an issue as opposed to requiring Post to redeliver.

## 6.2 SEVERITY BREAKDOWN

The below scale is used to distinguish the severity of the issue being flagged. Specific examples for each category can be found in Appendix section 8.1.

### **Stop Down**

Automatic file failure. Highest severity issue for pre-existing technical parameters, resulting in automatic file failure:

- File is not expected deliverable
- Wrong frame rate
- Wrong aspect ratio
- Wrong version, e.g., TRT is wrong, SDR instead of HDR, Textless instead of Texted, etc.
- Wrong color space
- Interleaved audio
- Missing audio or wrong audio configuration
- Wrong logo or presentation card detected at the head

**QC vendor should notify the Amazon Studios (AS) Delivery Manager and Post Executive to advise when these issues arise and that work has stopped down.**

### **Severity 3**

Requires Fix. A severe issue interferes with program content, customer experience or is technically unacceptable for Amazon Studios.

- If the QC Technician determines the issue interferes with program content, customer experience, or is technically unacceptable for Amazon Studios, it will be flagged as severity 3 and reviewed/confirmed by the AS Delivery Manager, Post Executive and Production Company (ProdCo).

## **Severity 2**

Requires AS Delivery Manager, Post Executive and ProdCo review and direction. Generally, these issues should be fixed, but the vendor should seek consultation prior to proceeding.

- Designated for audio or visual flags that are not objectively launch blocking nor insignificant, and need AS review and direction.

## **Severity 1**

Fix Optional. Negligible impact to average customer experience and not a point of failure.

- Designated for a visual issue that can be paused and screenshot, it is an issue that does not impact talent and does not detract from overall quality of the scene or shot in-hand. If an audio issue, it is not effecting dialogue and does not detract from the overall quality of the scene or shot in-hand.

## **FYI**

For Your Information. Only noted as an objective confirmation of detail in a QC. (i.e. confirming 'Amazon Studios Presents' is the first credit present or the logo type used on the ProRes file).

- Designated for non-customer experience impactful callouts and more of a general communication on observations to Delivery Executives from QC Vendors.

# 7 APPENDIX

## 7.1 ISSUE SEVERITY CLASSIFICATIONS EXAMPLES

- [Missing or augmented Amazon Studios Head or Tail logo](#) (unless otherwise directed, e.g., Amazon Movies should have the logos present at the time of QC while Amazon Series will not) or [aspect ratio discrepancy between logo and program](#): Changing the Amazon Studios logo, in any way, requires approval from Senior Creative leadership and/or Head of Post Production. If not established upon kick-off the first QC, please confirm with the title's delivery executive.
- [Entirely missing 'Amazon Studios Presents' Presentation card or not in 1st position](#): This is a legal obligation for all Amazon Studios titles.
- [Non-native framerate upon delivery](#): If the title's native framerate is not established upon kick-off the first QC, please confirm with the title's Delivery Executive.
- [Interleaved audio](#): Interleaved audio combines multiple audio channels into a single track / data stream. Amazon Studios requires non-interleaved audio, which uses a discrete track / data stream for each audio channel.
- [Incorrect audio configuration](#): All Amazon Studios ProRes files have a desired audio configuration and channel mapping based on the title's tech specs. Please confirm the title's tech specs with your Delivery Executive to create benchmark expectations for audio configuration per ProRes.
- [Incorrect timecode or FFOA](#): All Amazon Studios content come with a technical specifications document specific to the content vertical and country of origin. Please confirm the title's tech specs to create benchmark expectations for TC or FFOA for the title.
- [TRT Discrepancies](#): Discrepancies in the Total Run Time (TRT) of Dolby Vision/HDR/UHD SDR ProRes files, unless approved due to narrative changes. If the title's total run time is not established upon kick-off the first QC, please confirm with the title's Delivery Executive.
- [Loudness must fall within QC guidelines](#): QC Facilities should measure loudness with the following scales:
  - BS 1770-1 loudness scale with dialogue gating exclusion algorithm/Dolby Dialogue Intelligence
  - BS 1770-4 loudness scale (for integrated loudness).

Amazon Studios reference measurement model is Nugen Audio VisLM2. Include the values for both loudness scales for 5.1 and Stereo within the QC Report. If the 1770-1 loudness scale with dialogue gating exclusion algorithm/Dolby Dialogue Intelligence is not within -27 +/- 2 LU range, please flag as a rejection on the QC report. For the 1770-4

loudness scale (integrated loudness), the target should be -24 LKFS with an acceptable tolerance of +/-2. Anything outside +/- 2 please flag on the QC report but do not reject.

- [Newly Induced Freeze Frame](#): If a title has a single instance of Freeze Frame that is newly induced on a second pass QC, this would be a Stop Down.
- [Pixel hits on main casts' face](#): Pixel hits and their severity are often subjective, however if there is even a single frame pixel hit on the face of a member of the title's main cast Amazon Studios will automatically fail the file and require the DI vendor to revise.
- [Audio dropout or clipping during plot pertinent dialogue](#): Audio dropouts/clipping and their severity are often subjective, however if there is even a single audible audio pop during plot pertinent dialogue Amazon Studios will require this instance to fail the file unless Delivery Executive provides override.
- [Luminance Shift](#): "Luminance Shift / Flicker" refers to a change/ multiple changes in the brightness levels within a shot/scene.
- [Loose effect, more than 2 frames](#): A sound effect or ADR is more than 2 frames loose to movement/action in-frame.
- [Frame edges errors](#): An abrupt change in previously established image framing that is not related to an "in-camera" zoom, or an intentional jump cut. Can occur at top, bottom, left, or right edge. Can be multiple sides, one side, or only part of a side. Often the result of errors when resizing material.
- [Archival-based Dropped/Duplicate Frames](#): "Dropped Frame" refers to a single or sequence of frames which are missing or corrupted in the video essence. "Duplicate Frame" refers to a single or sequence of frames which are redundant in the video essence.
- [Archival footage with baked-in aliasing](#): Archival footage is used in a scene and contains baked-in aliasing.
- [Macro-blocking in Archival footage](#): Often associated with compression artifacting; a pattern of large, square pixels/ artifacts which contaminate the smooth gradient of color and/or shading of an image. If baked-into archival this will be Sev3.
- [Continuity Errors: A "Continuity Error" refers to any visual or audible inconsistency](#) with on-screen characters or objects between similar shots/scenes.
- [Lens Flare](#): "Lens Flare" is the dispersion of light through a camera lens, causing a flash or glare to be visible in frame.
- [Camera Bump](#): "Camera bump" is the unintended movement of the image due to camera operator error or camera support movement.
- [Crushed Blacks](#): "Crushed Blacks" is when black levels are underexposed causing an overall loss of detail in the shadows/darker portions of the image.

- [ADR Evident \[different than Loose Effect Sync\]](#): Automatic dialogue replacement, or ADR, is the process used to re-record dialogue under controlled conditions to replace original production dialogue which may be un-usable due to background noise or poor quality. Often noticeable due to tone, levels and/or sync not matching rest of scene.
- [Compositing Error](#): "Compositing Error" is any artifact or impairment induced by or related to poorly implemented VFX/CGI. Can encompass many different types of errors from color and matte shifts on a character/object to extraneous artifacts that are not creatively inherent to a scene.
- [Noticeable Edit](#): An incomplete transitional effect or abrupt cut that may not be creatively intended.
- [Full Frequency LFE \(in ProRes or Audio Description master\)](#): The LFE channel contains significant frequencies above 120 hz, indicating the channel has not been rolled off per spec.
- [Low resolution Archival footage](#): Archival footage is used that is natively low resolution.
- [Single dead pixel not on talent](#): A single fixed pixel (or a couple pixels) that could be black, white, or discolored remains stuck on screen but is not located on talent.
- [Visible production marker](#): A visible production mark, for example a visual effect tracking mark, or colored tape marks on the ground for actor or object placement.
- [Boom shadow in frame \(not on talent\)](#): The shadow cast from the boom mic is visible in-scene, but not on talent.
- [Production crew reflections](#): A distorted image of a camera/crew in the reflection of a car window/mirror that is brief and does not detract from the narrative of the scene.
- [Loose effect, within 2 frames](#): A sound effect or ADR is loose to movement/action in-frame, but is within 2 frames.
- [Compliance Issues \(i.e., nudity or smoking\)](#): While the parameters of this flag are deep dived, it is helpful for QC vendors to flag issues like nudity and smoking during QC, as it is often an issue for Compliance.
- [Audible 'Alexa' references \(or characters named Alexa\)](#): Audible 'Alexa' references [or characters named Alexa] can trigger customers' Alexa/Echo devices inadvertently. This issue should be flagged in QC and fingerprinted.
  - Alexa Fingerprinting Wiki: [https://w.amazon.com/bin/view/Alexa\\_Media\\_Portal/](https://w.amazon.com/bin/view/Alexa_Media_Portal/)
  - Media Upload Link: <https://alexa-media-portal.corp.amazon.com>
  - Tech Specs for this process: Either .mov , .wav , .mp3 , .mp4... but not MXF . Either Stereo or Mono. Either should be acceptable. Audio only, not video. Higher quality is better. We recommend 24bit/48k. Maximum file size for the instance is 400mb. Smaller files are better for ingestion and file sharing. Ideally less than 4-5 minutes, but if Alexa is used several times in 2-3 minutes, then 1 file is ok.