



---

# QUALITY CONTROL CHECKLISTS FOR DIGITIZATION PROJECTS

This document provides a template to use when creating quality control (QC) workflows and checklists. Use this resource to develop a similar document that fits your institution's digitization projects and QC criteria. QC is a part of any digitization project, at multiple stages.

For more information about quality control, digital preservation, and digitization, view related items connected to this resource on the Sustainable Heritage Network in the [“Digital Preservation”](#) and [“Digitization Planning”](#) categories.

- Adding Quality Control To Digitization Projects: Worksheet

This document contains four sections:

- **Suggested Steps in Quality Control** provides general information about steps to include in a QC workflow that apply to any format.
- **Introduction to Quality Control Checklists** provides a brief introduction to using the three checklist templates in this document.
- **Image Quality Control Checklist Template** provides a template for QC steps for images and documents.
- **Audio Quality Control Checklist Template** provides a template for QC steps for audio.
- and **Video Quality Control Checklist Template** provides a template for QC steps for video.

## SUGGESTED STEPS IN QUALITY CONTROL

There are general steps in QC that occur regularly. These steps may fall outside of a regular day-to-day workflow, but are performed on a regular schedule. These suggestions might fit as part of a project plan or in an overall digitization policy, manual, or QC procedure.

## **Equipment and Software for QC**

- Clean and service analog devices according to manufacturer specifications before beginning the project.
- Clean and service devices on a regular schedule, according to manufacturer recommended intervals based on "playing time" or use.
- Regularly check and monitor calibration, software updates on hardware and run virus checks on software.

## **Comparison to Original Analog Material**

- Compare the first file converted of every material type against the analog original to ensure the quality of the specifications identified in the project plan.
  - The goal is to produce a file of high enough quality to faithfully render the content moving forward.

## **First QC Check**

- A staff member who is primarily responsible for digitization is responsible for the first QC check. That staff person will go through the list of decided-upon QC steps from the appropriate Quality Review Checklist below after digitization of each batch of content.
- Some versions of a first QC check may involve checking as individual files are created.

## **Second QC Check**

- Another staff member is responsible for a second QC check. The second QC check occurs on a regular basis, whether it's weekly, daily, etc.
- This QC check ensures that the digital file faithfully represents the analog original. It appropriate metadata and being stored (and backed up) to the appropriate file locations.
- Similar to the first QC check, it is important to go through a list of decided-upon items in the Quality Review Checklist. The second QC check may be different or expanded from the first QC check. Fixity checks may also be a part of this QC check, if not performed separately.

# INTRODUCTION TO QUALITY CONTROL CHECKLISTS

Prior to creating quality control checklists, create a digitization plan and quality control criteria. These documents guide creation of a QC checklist or workflow for formats and projects. The checklists below provide several suggestions of steps to evaluate the quality of digital files. Adapt the steps listed based on your institution's plans and criteria.

## IMAGE QUALITY CONTROL CHECKLIST TEMPLATE

### 1. File Management and Storage

- Verify that preservation, access, and derivative copies are present.
- Ensure the filenames adhere to chosen file naming convention and correspond with content.
- Ensure the organization of files adheres to chosen directory structure.
- Check that file size and count is as expected.
- If a problem is found with one file, check the surrounding files.
- Run a checksum tool at specific dedicated increments to check file fixity. For more information on file fixity, view resources on the SHN in the [Digital Preservation](#) category, including the resource Digital Preservation Glossary.

### 2. Technical Specifications

- Check that technical information matches the project's standards (file format, bit depth, color mode, pixels per inch), for both preservation master and access copies.

### 3. Visual Inspection

- For images:
  - Inspect images while viewing at a 1:1 pixel ratio or at 100% magnification or higher.
  - Check that the image is not rotated or backwards.
  - Check that the image is not skewed or off-centered.
  - Check that the image has clean edges, clear contrast, and legible text.
  - Check that the image has no broken figures (illustrations, maps, etc.).
  - Check that the image has no moiré patterns (wavy lines or swirls usually found in areas where there are repeated patterns).
  - Check that the image has no unwanted materials (sticky notes, paper clips, dust, rubber bands etc.) included in the scan.

- Check that the image has no visible digital artifacts (such as very regular, straight lines across picture).
- Check that the image is not pixelated.
- Check that the image is not too light or too dark.
- Check that the image has no loss of detail in highlights or shadows.
- If available, use targets or histograms scanned with images to check if the capture was faithful to the correct tone and color.
- Check that the master digital image is a faithful representation of the original (if that is the goal).
- For text:
  - Check page completeness.
  - Check contrast, legibility, text density, character size, line widths, and letter clarity.
  - Check for text that is cut off, including page numbers.

#### **4. Metadata**

- Check that metadata exists and is stored in the correct format and location.
- Check that the content of metadata is accurate, complete, and valid.
  - Check file name and accuracy of descriptions.
  - Check spelling and grammar.
  - Check subjects, descriptions, and other fields against actual content.

#### **5. Fixity Check**

- Conduct a fixity check at the moment of transferring files and at decided rate (monthly, quarterly, etc.) for previously transferred files.

## AUDIO QUALITY CONTROL CHECKLIST TEMPLATE

### **1. File Management and Storage**

- Verify that preservation, access, and any other derivative copies are present.
- Ensure the filenames adhere to chosen file naming convention and correspond with content.
- Ensure the organization of files adheres to chosen directory structure.
- Check that the file size is as expected. As files are digitized, your team will get a sense of how large files should be. Investigate files that have an unusually large or small file size.
- If a problem is found with one file, check the surrounding files.
- Run checksum tool at decided increments to check file fixity..

## 2. Technical Specifications

- Check that technical information matches project standards (file format, bit depth, sample rate, bit rate for access copy). For example:
  - Preservation Master: WAV – 24bit, 96 kHz
  - Access file: MP3, 128 Kbps minimum.

## 3. Audio Inspection

- Listen to 30 seconds at the beginning, middle, and end of the recording.
  - Check that file plays and is complete.
  - Check for anything that might have been introduced during digitization and that is not inherent to original recording.
  - Ensure there are no skips and that sound is complete and doesn't undulate.
- Ensure preservation and access copies are same duration. Do the same with derivative copies if applicable.
- Ensure that the master digital file is a faithful representation of the original (if that is the goal) and that access and derivative copies adhere to presentation standards.
- Check waveform for unexpected spikes, lulls, or silences.

## 4. Metadata

- Check that metadata exists and is stored in the correct format and location.
- Check that content of metadata is accurate, complete, and valid.
  - Check file name and accuracy of descriptions while inspecting audio files.
  - Check spelling and grammar.
  - Check subjects and descriptions against actual audio content.

## 5. Fixity Check

- Conduct a fixity check at the moment of transferring files and at decided rate (monthly, quarterly, etc.) for previously transferred files.

# VIDEO QUALITY CONTROL CHECKLIST TEMPLATE

## 1. File Management and Storage

- Verify that preservation, access and derivative copies are present.
- Ensure the filenames adhere to chosen file naming convention and correspond with content.
- Ensure the organization of files adheres to chosen directory structure.

- Check that file size is as expected.
  - Investigate files that have an unusually large or small file size.
- If a problem is found with one file, check the surrounding video files.
- Run checksum tool at decided increments to check file fixity.

## 2. Visual and Audio Inspection

- Watch and listen to 30 seconds at the beginning, middle, and end of the recording.
  - Check that file plays and is complete.
  - Check for anything that might have been introduced during digitization and that is not inherent to original recording.
  - Make sure there are no artifacts (visual issues, lines, distortion, inconsistencies) or problems with video.
  - Make sure sound is in sync with video.
- Ensure that preservation and access copies are the same duration. Do the same with derivative copies if applicable.
- Ensure master digital images are faithful representations of the original (if that is the goal) and that access and derivative copies adhere to presentation standards.

## 3. Technical Specifications

- Check that technical information matches project standards (file format, bit depth, sample rate, bit rate for access copy). For example:
  - .mov specification: H.264 encoding with a 640X480 minimum pixel dimension, 30 bit sample size with a 30 MiB/s data rate.
  - .mp4 specification: H.264 encoding with a 640x480 minimum pixel dimension, between 4,000 - 4,500 kbps data rate (depending on content).

## 4. Metadata

- Check that metadata exists and is stored in the correct format and location.
- Check that content of metadata is accurate, complete, and valid.
  - Check file name and accuracy of descriptions when inspecting video files.
  - Check spelling and grammar.
  - Check subjects and descriptions against actual video content.

## 5. Fixity Check

- Conduct a fixity check at the moment of transferring files and at a decided rate (monthly, quarterly, etc.) for previously transferred files.