

California Revealed

Statement of Work for Audiovisual Materials

November 2023

Project Description

California Revealed (CA-R) is a California State Library initiative based in Sacramento which helps California's public libraries and other non-profit heritage groups reformat, preserve, and make accessible historic materials that are significant to California. Participating organizations select items from their collections, create discovery metadata, and send materials and metadata to CA-R, which then oversees the digitization and reformatting processes (outsourced to vendors) and provides online access and long-term preservation.

Our 2023/2024 goal is to digitize approximately 1,825 audiovisual objects, consisting of 2,262 individual items (tapes, reels, discs etc.), drawn from 44 public libraries, historical societies, archives, and other organizations. The CA-R team will work with these partner organizations, vendors, and digital repositories to accomplish this goal. To see a list of CA-R's partner organizations from past years and to browse the California Revealed collections, please visit californiarevealed.org.

Processing of these collections will begin in November 2023. We do not yet know the exact item count, duration, or condition of the physical materials but expect to receive and provide digitization services for:

Format	# of Objects	# of Items
Audio cassette	469	678
VHS	409	523
¼ inch audiotape	298	299
16mm film	135	203
U-matic	120	128
Betacam	103	114
½ inch audiotape	88	89
MiniDV	79	79
Video8	22	42
8mm film	27	28
Grooved disc	28	28
½ inch videotape	25	25
Super 8mm film	12	12
Micro-cassette	4	7
2 inch videotape	4	4
35mm	2	3
Total Estimate	1825	2262

We anticipate starting shipments of these physical materials to the vendor beginning November 2023. The shipments will be sent in batches and organized by partner organization; each shipment might include a combination of partner organizations and a variety of formats. Shipments will continue through the end of March 2023. The vendor must complete reformatting and delivery of initial files within 6-8 weeks of receiving the original physical materials from CA-R. For a detailed timeline, please refer to Appendix A.

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Table of Contents

PROJECT WORK PLAN	4
Technical Specifications	4
Analog audio recordings	4
Digital audio recordings.....	5
Analog video recordings	6
Digital video recordings.....	9
Optical disc recordings (Video)	10
Optical disc recordings (Audio).....	11
Motion Picture Film	12
Treatment	15
Technical requirements.....	16
Special handling requirements for audiovisual recordings	16
Review before digitization.....	17
Review after digitization	17
Subcontracting.....	17
File naming and directory specifications	18
Spreadsheet metadata	19
XML metadata	19
Sample model PBCore records	19
Sample standard xml records	20
Embedded metadata	20
Deliverables	21
Shipping.....	21
Billing.....	22
Appendix A: Vendor Workflow and Timeline	23

PROJECT WORK PLAN

Technical Specifications

This section outlines the technical specifications for digital files created from audio, video, and film materials. Each section includes general requests for handling and digitization, as well as specific target format specifications.

Analog audio recordings

- Example Formats
 - Audio cassette
 - Micro-cassette
 - 1/4 inch audiotape
- General Requests
 - Audio must be digitized at the original speed which it was recorded.
- Preservation File
 - Requests
 - Perform transfers with no boosting or processing in the signal chain. This includes, but is not limited to, dropout compensation, noise reduction, audio equalization, limiting and filters.
 - The entire length of the tape must be checked to ensure all recorded audio is captured.
 - Retain mono audio sources as mono/single channel – do **not** split the sound into left and right channels.
 - BWF files cannot exceed 3 GB. Please split recordings into files when necessary so they fit within these parameters. Please name the split files as parts; see the *File Naming and Directory Specifications* section later in this document.
 - Technical Specifications
 - Target Format:
 - Wrapper: Broadcast Wave (BWF)
 - Encoding: PCM
 - Bit depth: 24 bits
 - Sample rate: 96 kHz
 - Bit rate mode: Constant
 - Bit rate: 2,304 Kbps per channel (2304 kbps for mono, 4608 kbps for stereo, etc.)
 - Channel configuration: same as source
- Access File
 - Requests
 - Adjust audio levels so that the entire recording is audible. This will likely require raising audio levels compared to the preservation master for some files.

- Minimize headroom by maintaining peaks around -6 dB. Boost by 5 dB as needed, if it does not cause distortion and potential clipping. If a recording is particularly quiet and has no machine or room noise, boost by 10 db.
- Technical Specifications
 - Format:
 - Wrapper: M4A
 - Encoding: AAC
 - Bit depth: 16 bits
 - Sampling rate: 48 kHz
 - Bit rate mode: Variable
 - Channel configuration:
 - If original was single-channel mono: split the channel so both L and R are identical.
 - If original was dual-channel mono: ensure that both L and R channels are identical.
 - If original was stereo: keep L and R channel in source configuration.
 - If original had more than two channels, consult with CA-R for creation of derivatives.

Digital audio recordings

- Example Formats
 - DAT
- Preservation File
 - Requests
 - Maintain original technical specifications and embedded metadata by transferring the content as digital data exactly as it was recorded on tape.
 - The entire length of the tape must be checked to ensure all recorded audio is captured.
 - Retain mono audio sources as mono/single channel – do **not** split the sound into left and right channels.
 - Broadcast WAV files cannot exceed 3 GB. Please split recordings into files when necessary so they fit within these parameters. Please name the split files as parts; see the *File Naming and Directory Specifications* section later in this document.
 - Technical Specifications
 - Target Format:
 - Same as source if successfully captured via digital migration
 - If digital migration is not possible:
 - Wrapper: Broadcast Wave (BWF)
 - Encoding: PCM

- Sample rate: same as source (typically 44.1 kHz or 48 kHz)
- Bit depth: same as source (typically 16 bits)
- Bit rate mode: Variable or same as source
- Channel Configuration: same as source
- Access File
 - Requests
 - Adjust audio levels so that the entire recording is audible. This will likely require raising audio levels compared to the preservation master for some files.
 - Minimize headroom by maintaining peaks around -6 dB. Boost by 5 dB as needed, if it does not cause distortion and potential clipping. If a recording is particularly quiet and has no machine or room noise, boost by 10 dB.
 - Technical Specifications
 - Format:
 - Wrapper: M4A
 - Encoding: AAC
 - Bit depth: 16 bits
 - Sampling rate: 48 kHz
 - Bit rate: Variable
 - Channel configuration:
 - If original was single-channel mono: split the channel so both L and R are identical.
 - If original was dual-channel mono: ensure that both L and R channels are identical.
 - If original was stereo: keep L and R channel in source configuration.
 - If original had more than two channels, consult with CA-R for creation of derivatives.

Analog video recordings

- Example Formats
 - VHS
 - U-matic
 - Betacam
 - 1/2 inch videotape
 - Hi8
 - Video8
- General Requests
 - All streams should be captured; this includes closed captions and timecode if present.
 - No timecode stream should be present on files if there was no timecode on the original media.

- The entire length of the tape must be checked to ensure all recorded video and audio is captured.
- Any bars and tone, slates, and credits on tape should be captured in full.
- Please adjust luminance, black, and color levels to existing color bars if they are present on tape and look accurate. If color bars are not present or are clearly inaccurate, the vendor should preview each tape to adjust levels according to the content of the tape using known references (such as blue sky, known blacks and whites, flesh tone, etc.).
- Digitize tapes at best light so that luminance and black values are within legal broadcast range limits - a range of maximum 100 IRE and minimum 7.5 IRE respectively. Set these values before starting capture and do not adjust them during capture.
- CA-R is assuming all analog videotapes submitted to vendor were recorded using the NTSC standard. The vendor shall notify CA-R before digitization in case PAL or SECAM tapes are discovered.
- For tapes with both a Linear (regular) and Hi-Fi audio track (VHS, Hi8, etc.), the Hi-Fi track should be captured if it provides better quality than the Linear track. It should be noted in capture metadata (transfer comments) which type of audio track was captured.
- It is possible that some 8mm video cassettes might be Digital8. If determined as such, please treat the Digital8 tapes as a Digital Video Recording and follow the specifications outlined in the Digital Video Recordings section below.

● Preservation File

- Requests
 - Tapes should be captured as v210 uncompressed and subsequently losslessly compressed to ffv1/mkv before delivery to CA-R as preservation files.
 - If closed captions are present on tape, an .srt sidecar will be created and named identically to the preservation master and included in the same directory as the preservation master.
 - If present, closed captions should be embedded in file so that they can be selected or suppressed during playback.
- Technical Specifications
 - Format:
 - Capture
 - Wrapper: MOV
 - Codec: v210 uncompressed
 - Deliver
 - Wrapper: MKV
 - Codec: FFv1 version 3
 - Broadcast standard: NTSC (notify CA-R if standard is otherwise)
 - Scan type: Interlaced
 - Bit depth: 10 bits
 - Chroma subsampling: 4:2:2

- Color space: YUV
- Pixel aspect ratio: 10:11
- Frame width: 720 pixels
- Frame height: 486 pixels
- Display aspect ratio: 4:3
- Frame rate: 30000/1001
- Audio
 - Encoding: PCM
 - Bit depth: 24 bits
 - Sampling rate: 48 kHz
 - Bit rate mode: Constant
 - Bit rate: 1152 kbps per channel
 - Channel configuration: same as source – make no post-digitization adjustments to channel configuration or audio levels.
 - Pre-1970 tapes should be mono.
- Closed Captions
 - .srt sidecar file
 - .scc sidecar file

● Access File

- Requests
 - If present, closed captions should be embedded in file so that they can be selected or suppressed during playback.
 - Access file name should always end with .HD. Example: csf_000066_access.HD.mp4
- Technical Specifications
 - Format:
 - Wrapper: MP4
 - Codec: H.264/MPEG-4 Part 10/avc1
 - Broadcast standard: NTSC
 - Scan type: Progressive
 - Bit depth: 8 bits
 - Color space: YUV
 - Chroma subsampling: 4:2:0
 - Pixel aspect ratio: 1:1
 - Frame width: 720 pixels
 - Frame height: 540 pixels
 - Target bit rate: 5 mpbs / crf 20
 - Frame rate: 30000/1001
 - Display aspect ratio: 4:3
 - Is Streamable: Yes
 - Audio:
 - Encoding: AAC

- Sampling rate: 48 kHz
- Bit rate mode: Variable
- Channel configuration: 2 channels
 - If original was single-channel mono: split the channel so both L and R are identical.
 - If original was dual-channel mono: keep as-is
 - If original was stereo: keep L and R channel in source configuration.
 - If original had more than two channels, consult with CA-R for creation of derivatives.

Digital video recordings

- Example Formats
 - MiniDV
- General Requests
 - All streams should be captured; this includes closed captions and timecode if present.
 - The entire length of the tape must be checked to ensure all recorded video and audio is captured.
 - Any bars and tone, slates, and credits on tape should be captured in full.
 - Do not create mezzanine files for digital video recordings which are migrated as data.
- Preservation File
 - Requests
 - Migrate as “data” so that DV stream is maintained as it is on tape with no transcoding during migration.
 - Retain original encoding of the signal without further transcoding or adjustments.
 - Retain all embedded metadata.
 - Technical Specifications
 - Target Format
 - Wrapper: .dv
 - Encoding: DV (maintain original encoding on tape)
 - Bit depth: same as source
 - Chroma sampling: same as source
 - Scan type: same as source
 - Stream bitrate: same as source
 - Pixel aspect ratio: same as source
 - Frame width: same as source
 - Frame height: same as source
 - Frame rate: same as source
 - Display aspect ratio: same as source
 - Color space: same as source
 - Audio: same as source

- Access File

- Request: Access file name should always end with .HD. Example: csf_000068_access.HD.mp4
- Technical Specifications
 - Format:
 - Wrapper: MP4
 - Codec: H.264/MPEG-4 Part 10/avc1
 - Scan type: Progressive
 - Bit depth: same as source
 - Color space: YUV
 - Pixel aspect ratio: 1:1
 - Frame width: 720 pixels (if original source is 4:3); 960 (if original source is 16:9)
 - Frame height: 540 pixels (if original source is 4:3)
 - Frame rate: same as source
 - Display aspect ratio: same as source (might require changing if PAR has changed from preservation file).
 - Audio:
 - Encoding: AAC
 - Bit depth: same as source
 - Sampling rate: same as source
 - Bit-rate: same as source
 - Channel Configuration: 2 channels
 - If original was single-channel mono: split the channel so both L and R are identical.
 - If original was dual-channel mono: keep as-is
 - If original was stereo: keep L and R channel in source configuration.
 - If original had more than two channels, consult with CA-R for creation of derivatives.

Optical disc recordings (Video)

- Example Formats

- DVD
- Compact Disc-Recordable (CD-R)

- General Requests

- For optical discs used as file storage, follow instructions for Digital Video Recordings above.
- Do not create mezzanine files for optical disc recordings.

- Preservation File

- Requests
 - Capture a disk image as the preservation master.
 - For optical discs used as file storage, follow instructions for Digital

Video Recordings above.

- Technical Specifications
 - Format: Disk Image
 - Wrapper: ISO
- Access File
 - Requests
 - If video and/or audio files are present on the disc, maintain the source technical specifications for the access files.
 - Access file name should always end with .HD. Example: calcfh_000004_d01_access.HD.mp4
 - Technical Specifications
 - Video Format:
 - Wrapper: MP4
 - Codec: H.264/MPEG-4 Part 10/avc1
 - Frame width: 720 pixels (if original source is 4:3); 960 (if original source is 16:9)
 - Frame height: 540 pixels (if original source is 4:3 or 16:9)
 - Pixel aspect ratio: 1:1
 - Audio Format:
 - Wrapper: M4A
 - Codec: AAC
 - Maintain source specifications for all other aspects.

Optical disc recordings (Audio)

- Example Formats
 - Audio CD
- Preservation File
 - Requests
 - When possible, capture a disk image as the preservation master (this can be ignored for formats such as Audio CDs for which capturing a disk image is not possible). Otherwise extract each individual track as it is written to CD, maintaining all original technical specifications and metadata.
 - Name each individual track on the CD:
[marcCode]_000xxx_p01_prsv.wav
 - Important: remove the _p01 designation if there is only one track on the CD.
 - Technical Specifications
 - Format: capture individual tracks as they are written on CD
 - Wrapper: Commonly WAV
- Access File
 - Requests
 - Name each individual track on the CD:
[marcCode]_000xxx_p01_access.m4a

- Important: remove the _p01 designation if there is only one track on the CD.
- Technical Specifications
 - Format:
 - Wrapper: M4A
 - Codec: AAC
 - Maintain original specifications for all other aspects.

Motion Picture Film

- Example Formats
 - 8mm
 - Super 8mm
 - 16mm
 - 35mm
- General Requests
 - Films should not be transported via sprockets through any equipment unless for syncing purposes through synchronizers. This should apply to all phases of film work, including winding, inspection, cleaning, scanning. Please record footage count through scanning as opposed to synchronizer.
 - If there are any sync marks or writing on the leader, ensure that any original leader is captured in full. The entire length of the film must be checked to ensure all image and sound are captured.
 - The vendor should preview each film in order to adjust levels according to the content of the film using known references (such as blue sky, known blacks and whites, flesh tone, etc.). Digitize films at best light.
 - Films on black-and-white film stock should be scanned as if they are color films to preserve any gradient of color that the film might represent. Some scanners allow for a monochromatic scan (akin to grayscale on a printer) - please do **not** use this option for capturing black-and-white films.
 - Please note the film generation in the technical metadata: print, negative, internegative, interpositive, release print, etc.
 - For films with a separate, full-coat, magnetic soundtrack, capture and sync with corresponding picture.
 - For films with no soundtrack, if a frame rate has not been provided by California Revealed, please determine the correct frame rate (the one intended by creator for projection) by previewing a segment of the film to ensure the action does not look too fast or too slow. In such cases, please note the correct frame rate and create mezzanine and access files accordingly.
- Preservation File
 - Requests
 - Two types of files requested: a losslessly compressed FFV1/MKV files and a lossless audio file.

- No grading pre-sets should be applied to the preservation master during or after scanning: no color correction, sharpness enhancement, scratch removal, noise or grain reduction.
- FFV1/MKV file should be created using the application rawcooked and the original frame rate should be recorded in the header metadata of the FFV1/MKV file.
- If a reel of film has multiple segments with different frame rates (18fps and 16fps segments), the metadata for the DPX and ffv1/mkv file should be the higher frame rate (18fps). Please record the in and out timecodes of segments with different speeds in the transfer comments.
- Technical Specifications
 - Format:
 - FFV1/MKV
 - Bit depth: 10-bit
 - Chroma sampling 4:4:4
 - Display aspect ratio: Over-scan to capture edge-to-edge, including perforations and audio track
 - Frame width: 2048 pixels
 - Frame height: 1536 pixels
 - Frame Rate: maintain original frame rate
 - Color space: RGB
 - Audio:
 - Captured as a separate track (AEO-light capture preferred)
 - Format:
 - Wrapper: Broadcast Wave (BWF)
 - Encoding: PCM
 - Bit depth: 24 bits
 - Sampling rate: 96 kHz
 - Bit rate mode: Constant
 - Bit rate: 2,304 kbps per channel (2304 kbps for mono, 4608 kbps for stereo, etc.)
 - Channel configuration: same as source (likely mono)
- Mezzanine File
 - Requests
 - Crop so that all the exposed image is visible but not the perforations nor any of the image from the frames before or after.
 - Apply best light color correction only if the film is obviously faded.
 - For films with no soundtrack: determine the correct frame rate before capture by previewing the film and watching the speed of the movement of people/cars/etc. for reference. Maintain original frame rate in Mezzanine files and do not add frames. Record original frame rate in metadata.

- If a reel of film has multiple segments with different frame rates (18fps and 16fps segments), derive the mezzanine file at the highest frame rate and add frames to the segments with the lower frame rates to make the action look correct.
- Technical Specifications
 - Format:
 - Wrapper: MOV
 - Encoding: ProRes
 - Format profile: 422 HQ
 - Bit depth: 10-bit
 - Chroma subsampling: 4:2:2
 - Pixel aspect ratio: 1:1
 - Frame width: 1920
 - Frame height: adjust according to aspect ratio: 1440 (4:3) or 1080 (16:9)
 - Consult with CA-R to make derivatives in case of other aspect ratios.
 - Display aspect ratio: same as source
 - Frame rate: maintain original frame rate by adding frames³
 - Color space: YUV
 - Scan type: Progressive
 - Audio:
 - Encoding: PCM
 - Bit depth: 24 bits
 - Sampling rate: 48 kHz
 - Bit rate mode: Variable
 - Channel configuration: 2 channels
 - If original was single-channel mono: keep as-is
 - If original was dual-channel mono: keep as-is
 - If original was stereo: keep L and Right channel in source configuration.
 - If the original had more than two channels, consult with CA-R for creation of derivatives.

● Access File

- Requests
 - Crop so that all of the exposed image is visible but not the perforations nor any of the image from the frames before or after.
 - Apply best light color correction only if the film is obviously faded.
 - For films with no soundtrack: determine the correct frame rate before capture by previewing the film and watching the speed of the movement of people/cars/etc. for reference. Maintain original frame rate in access files and do not add frames. Record original frame rate in metadata.
 - If a reel of film has multiple segments with different frame rates (18fps and 16fps segments), derive the access file at the highest

frame rate and add frames to the segments with the lower frame rates to make the action look correct.

- Access file name should always end with .HD. Example:
curiv_000011_access.HD.mp4
- Technical Specifications
 - Format:
 - Wrapper: MP4
 - Encoding: H.264/MPEG-4 Part 10/avc1
 - Video Bit depth: 8 bits
 - Pixel aspect ratio: 1:1
 - Frame width: 1920
 - Frame height: adjust according to aspect ratio: 1440 (4:3) or 1080 (16:9)
 - Consult with CA-R to make derivatives in case of other aspect ratios.
 - Bit rate mode: Variable
 - Bit rate: 10 mpbs
 - Frame rate: maintain original frame rate
 - Display aspect ratio: maintain original (typically 4:3 or 16:9)
 - Color space: YUV
 - Chroma subsampling: 4:2:0
 - Scan type: Progressive
 - Is Streamable: Yes
 - Audio:
 - Encoding: AAC
 - Sampling rate: 48 kHz
 - Bit rate mode: Variable
 - Channel configuration:
 - If original was single-channel mono: keep as-is
 - If original was dual-channel mono: keep as-is
 - If original was stereo: keep L and R channel in source configuration.
 - If original had more than two channels, consult with CA-R for creation of derivatives.

Treatment

For audio and video materials, treatments such as baking, cleaning, re-shelling or rehousing may be necessary for optimal reformatting. For film materials, this may include cleaning, splice repair, or rehousing. If additional preparation to stabilize, repair, or apply other irreversible treatments is needed, vendor must contact CA-R to request permission from the partner organization in order to proceed, and approve additional costs if needed. All such actions should be recorded in the technical metadata by the vendor.

Technical requirements

CA-R asks partners to prepare their materials so objects are secure in their containers before they package them for shipment (see [Shipping Guidelines](#)). CA-R will create an electronic inventory for each shipment for the vendor. Upon arrival at their facility, the vendor will carefully unpack and confirm contents and report back any discrepancies within 30 days of receiving, prior to scheduling digitization. During this 30-day period, the vendor will perform a comprehensive review and inspection of the materials, evaluate overall condition, and inform CA-R if items will incur fees beyond the original estimate due to any reason.

Materials shipped to the vendor will be handled with clean hands (gloves when necessary) and in a clean work environment with clean digitization equipment. The vendor will inspect, prepare, and digitize the recordings exactly according to CA-R specifications (outlined above) and will include a condition report/technical evaluation about the original source that includes any damage, special handling considerations, or errors discovered upon check-in or transfer. Examples include, but are not limited to, the following: sticky shed, brittleness or extreme vinegar syndrome. If the vendor determines that a recording cannot be digitized without damage to the material, CA-R should be notified and the material set aside, pending the partner organization's decision.

Special handling needs will be noted by the partner organization and CA-R in the "Notes to Vendor" field and shipping inventory letter. **The vendor will contact CA-R if the general condition of a recording may impact the quality of the capture results, and if any special handling - such as repair or treatment - is necessary, or if handling costs exceed the initial estimate per item. CA-R can ask the partner organization for permission to proceed and possibly cover the additional handling cost if needed. Please be attentive to fragile materials.** The vendor will record any treatment or condition notes as Transfer Comments.

Once the materials are prepared for digitization, the vendor will make every effort to handle them carefully. The vendor will not introduce any image or audiovisual processing or enhancement at any point in the creation of the preservation master files. The vendor will ensure that the content is captured faithfully and accurately with no information loss or degradation. The vendor will always take responsibility for the safe care and handling of materials. When not being prepared or captured, materials will be stored in a locked, climate-controlled, room. After capture, the vendor will return materials to their original arrangement, as they were packed and shipped to the vendor.

Special handling requirements for audiovisual recordings

The vendor will photograph original audiovisual objects and their containers and save them as jpegs. These photographs should render legible any accompanying text written on labels or otherwise associated with the item, including any paper material located within object containers.

Fully monitored 1:1 transfers are ideal; CA-R should be informed what type of items are scheduled to be batch-transferred in order to lower costs. Please begin all files with

00:00:00;00 timecode, but if there is timecode, capture the tape with its original timecode.

Review before digitization

The partner organization is responsible for identifying duplicate content; CA-R will also attempt to highlight potential duplicates and choose the best source to digitize when possible. Upon arrival at the facility and within 30 days of receiving, the vendor will carefully unpack, confirm contents, and report back any duplicates or discrepancies between the title/metadata supplied and the content.

For some audiovisual objects, the content is unknown before digitization since there is little or no description available and we discourage partners from playing back recordings to avoid damage. We request the option to preview the content before digital capture if we suspect duplicate or irrelevant material. We will note such cases in the metadata and shipping letter and physically mark the recording as well.

CA-R's focus is to preserve archival material related to California history. If upon preview the vendor discovers that content does not match this criterion, do **not** capture the recording and contact CA-R immediately for further instruction. CA-R will consult with the partner on whether the content discovered should be transferred, and partner may be asked to cover the cost of digitization. Otherwise, CA-R prefers to transfer only California content.

To conserve data storage space, please do **not** capture or deliver a file if it is not substantive such as ambient room noise, silence/blank side of a tape, or blue/empty frames. Contact CA-R with questions if such cases are discovered upon initial ingest.

Review after digitization

The vendor is expected to review 100% of the digital files and all associated metadata for quality, completeness, and accuracy. The vendor will check the digital file against the original source to ensure a faithful reproduction of the original and confirm that no artifacts were introduced in the digitization process. The vendor will note inherent abnormalities in the "Vendor Quality Control/Transfer Notes" field in the metadata - these notes will be particularly helpful for California Revealed staff when they inspect the files.

CA-R, with partner participation, will review deliverables within 30 days of receipt of the files to ensure that all project specifications are met. Original materials will be returned directly to the partner after all parties have confirmed that the files are acceptable and there is no necessary rework. Please see Appendix A below for vendor workflow/timeline.

Subcontracting

The vendor will perform all digitization on its premises. No subcontracting of this work will be permitted without prior communication and approval from California Revealed and partner.

File naming and directory specifications

File names are based on the Object Identifier (e.g., clgam_000001), which includes the partner's Marc organization code followed by a unique, sequential number. The Object Identifier serves as the prefix for all file instantiations associated with the digital object. Please see the metadata spreadsheet supplied by California Revealed with each shipment for Object Identifiers.

The directory structure for the digital files and the supporting metadata and documents must be "flat" (without subdirectories) for each recording.

Create a folder for each partner within the shipment by job number, labeled with partner's Marc organization code, followed by a subfolder for each object that is labeled with the Object Identifier (e.g. CAR2082/Deliverables/cwh/cwh_000003). The following items should be within each folder per object:

- preservation file(s)
- preservation file .md5(s)
- access file(s)
- access file .md5(s)
- PBCore metadata XML
- Standard vendor XML
- picture file .jpg(s) of the original recording, its casing, and additional paper or notes included

Label preservation masters [ObjectIdentifier]_prsv.[fileExtension]

Example: **cusb_000001_prsv.wav**

Label video access files [ObjectIdentifier]_access.HD.mp4

Example: **cusb_000001_access.HD.mp4**

Label audio access files [ObjectIdentifier]_access.m4a

Example: **cusb_000001_access.m4a**

Label .md5 checksums in the following manner:

- Media file name: **cusb_000001_prsv.mkv**
- Checksum file name: **cusb_000001_prsv.mkv.md5**

Label subtitle files:

[ObjectIdentifier]_access.HD.srt

[ObjectIdentifier]_access.HD.scc

Example:

calauem_001673_access.HD.srt

calauem_001673_access.HD.scc

If a magnetic media object consists of multiple parts or tapes, add "_t##" to the file name (e.g., cusb_000001_t01_prsv.mkv; cusb_000001_t02_prsv.mkv)

If a film object consists of multiple parts or reels, add “_r##” to the file name (e.g., cusb_000001_r01_prsv.mkv; cusb_000001_r02_prsv.mkv)

If an optical disc object consists of multiple discs, add “_d##” to the file name (e.g., cusb_000001_d01_prsv.iso; cusb_000001_d02_prsv.iso)

If a recording (disc or tape) consists of multiple sides, add “a” or “b” to the file name (e.g., cusb_000001_a_prsv.wav; cusb_000001_b_prsv.wav)

If a recording consists of multiple tapes or reels and multiple sides, file names should be labeled (e.g., cusb_000001_t01_a_prsv.wav; cusb_000001_t01_b_prsv.wav; cusb_000001_t02_a_prsv.wav; cusb_000001_t02_b_prsv.wav).

If there is a need to break up an audiovisual object into multiple parts (e.g., if a recording duration goes beyond the file format capacity, or if a recording is multi-tracked or has speed changes in the middle), add “_p#” (for “part”) to the file name (e.g., cusb_000001_p01_prsv.wav; cusb_000001_p02_prsv.wav)

If a recording includes a blank side, or duplicate content is discovered on a tape/reel and later deleted, please drop the reference to the deleted side(s) or tape(s) in the file names and re-label remaining files accordingly.

Label pictures of the original recording in the following manner: cusb_000001.jpg. If more than one picture is taken of the recording, label .jpg(s) in the following manner: cusb_000001-1.jpg; cusb_000001-2.jpg; cusb_000001-3.jpg; etc.

Spreadsheet metadata

For each item part, the vendor will deliver a set of metadata gathered during the inspection and digitization process. The fields of data requested in this sheet are summarized here:

https://docs.google.com/spreadsheets/d/1kESIYNLx30c_bFQaHDAK77bdCXP6sdM1hKHqxCPRMyk/edit#gid=0

XML metadata

The vendor will deliver two XML metadata records per object. One record will use the [PBCore](#) schema and the other will be a raw or standard XML record generated by the vendor as recordings are prepared and digitized. These metadata records will combine descriptive, rights, and administrative metadata supplied by the partner and CA-R along with technical and preservation metadata supplied by the vendor. They should document information about the equipment used for digitization as well as transfer and quality control notes. Please see California Revealed’s [Metadata Guidelines](#) for a complete list of required fields per object.

Sample model PBCore records

Simple Moving Image Recording (one reel or tape)

https://archive.org/download/csmha_000312/csmha_000312_PBCore.xml

Simple Sound Recording (one tape)

https://archive.org/download/csmha_000315/csmha_000315_PBCore.xml

Complex Moving Image Recording (multiple reels or tapes)

https://archive.org/download/csmha_000306/csmha_000306_PBCore.xml

Complex Sound Recording (multiple tapes)

https://archive.org/download/csf_000593/csf_000593_PBCore.xml

Sample standard xml records

Simple Moving Image Recording (one reel or tape)

https://archive.org/download/cacdoha_000003/cacdoha_000003_vendor-md.xml

Embedded metadata

For audiovisual recordings, the vendor will ensure embedded technical metadata is accurate for all file instantiations, including file size and type, duration, frame size, codec, number of audio channels, and total bitrate for video sources; and file size and type, duration, number of audio channels, and total bitrate for audio sources.

The vendor will embed descriptive metadata supplied by CA-R (via a metadata spreadsheet shared with vendor for each partner-set) in each access file derived from moving image sources. The vendor will embed descriptive metadata in each preservation master (using the bext-chunk segment of the BWF files) and access file derived from audio sources. Here are the four fields of information that should be embedded:

- **Embedded Title** (e.g. Richard Combs Interview).
- **Embedded Institution** (e.g. Tulare County Library)
- **Embedded Comment** California Revealed
- **Embedded Copyright** (e.g. “Public Domain. No restrictions on use.” or “Copyrighted. Rights are owned by Tulare County Library.”)
First two sentences of the copyright statement. Please note if copyright status is unknown, California Revealed will leave the Embedded Copyright field blank and no copyright information should be embedded.

The following BEXT chunk fields should be used to embed metadata provided by CA-R for BWF audio files:

- **INAM:** Embedded Title
- **ISRC:** Embedded Institution
- **ICMT:** Embedded Comment
- **ICOP:** Embedded Copyright

The vendor will **not** embed any descriptive metadata in the preservation masters except for the BEXT-chunk metadata in BWF files.

Deliverables

Please see Appendix A below for vendor workflow/timeline. California Revealed's files will be retained on the vendor's storage system until they are checked and accepted by California Revealed and the partner organization; the deadline for this approval is six months after CA-R receives the files. The vendor will confirm the deletion of the files via email within six months or once California Revealed has given permission to delete the files, after quality control has been completed and all parties approve. The vendor will not delete the files from their servers until CA-R has written the final deliverables from the vendor to LTO tape.

Initially, the vendor will batch-deliver digital files to CA-R for quality control by shipment on borrowed exFAT-formatted storage drives. The vendor will produce an .md5 checksum per file state (preservation, mezzanine, and access) immediately after digitization to verify that files were not modified in transfer.

CA-R will perform quality control on deliverables and may ask the vendor to review the original physical materials to determine whether artifacts are inherent to the source. CA-R will report quality control feedback from the partner and will ask the vendor for replacement files for any deliverables that do not meet specifications. Replacements should be received within 30 days of request.

After quality control and upon approval of the files by CA-R and the partner organization, CA-R will write a set of authoritative files (including preservation files, access files, .md5 checksums, photos, xml metadata, and tech sheets, if included) on a mirror set of two LTFS-formatted LTO-8 tapes. CA-R will include only the final approved files for each object on the LTO and when possible will ensure that all the associated files that represent an object are on the same LTO tape. Unless they do not fit on one tape, CA-R will ensure that files from the same partner are not divided across more than one LTO tape. CA-R will check the checksums on the LTO after writing the tapes to confirm that files were not altered during writing. CA-R will return the borrowed hard drives to the vendor upon finalizing LTO tapes. CA-R will also send a duplicate (B Copy) of each LTO tape to the vendor for storage.

CA-R will create a manifest of the LTO tapes in an Excel spreadsheet, including the following per file, in order:

- LTO_MediaLabel/LT_[Unique Identifier] (e.g., CA0010L8 and/or barcode)
- MARC Organization Code: (e.g., cusb)
- Object Identifier (e.g., cusb_000001)
- Folder Name (e.g., cusb_000001)
- General File Name (e.g., cusb_000001_prsv.mkv)
- Path and File Name (e.g., CAR2019\cusb\cusb_000001\cusb_000001_prsv.mkv)

Shipping

All original physical materials will be shipped from CA-R offices at the California State Library via the vendor's FedEx account. The vendor will invoice CA-R for shipping.

Please send deliverables to:

California Revealed
California State Library
900 N Street
Sacramento, CA 95814
916.603.6719
team@californiarevealed.org

After final approval of the files and metadata by CA-R and the partner organization, the vendor will return the materials, as they were originally shipped, directly to the partner via the vendor's FedEx account. The vendor will ship the originals back early in the week so that they are not in transit more than 3 days or over a weekend/holiday. The vendor will invoice CA-R for shipping. CA-R will confirm and provide shipping addresses and contact information for partners at the time of return request. The vendor should send shipping and tracking information to both the partner and CA-R when shipping has been scheduled.

Please send all shipping notices to: sdowlatshahi@californiarevealed.org and cc pvadakan@californiarevealed.org.

Billing

Califa Group, California Revealed's fiscal agent, handles all payments for California Revealed.

Mail or email invoice(s) per shipment to Pamela Vadakan upon receipt of each shipment; approved invoices will be forwarded to Califa for payment.

Ensure invoices are labeled with the following Bill to/Send to information:

Bill to:
Califa Group
330 Townsend Street, Suite 133
San Francisco, CA 94107
415.796.3901
billing@califa.org

Send to:
Pamela Vadakan
California State Library
900 N Street
Sacramento, CA 95814
916.603.6719
pvadakan@californiarevealed.org

Appendix A: Vendor Workflow and Timeline

Process	Time Frame
California Revealed (CA-R) calls for nominations	60 days
CA-R and State Library review nominations	30 days
CA-R sends award letters to partner organizations	30 days
Partner ships originals to CA-R	Within 4 to 5 months after receipt of Award Letter
CA-R checks inventory against award letter	Upon receipt of originals
CA-R processes and ships batches of originals (minimum 3 partners per batch) to vendor in receipt order	30-90 days
Vendor digitizes or reformats physical materials	6-8 weeks upon receipt of originals
CA-R QC's hard drive tech specs, uploads access files and metadata online per partner and sends first email notification to partner to check files	30 days upon receipt of files from vendor (first round)
Partner QC's, updates metadata, checks image quality of access files, and sends feedback to CA-R. CA-R emails follow-up to partner to order backup files from vendor	45 days upon delivery of email to partner
CA-R QC's files and metadata, responds/relays technical questions from partner, if any, to vendor, and performs in-house rework such as reordering and relating files	60 days upon delivery of email to partner
Vendor responds and provides replacement files if requested by CA-R	Within 30 days of receiving CA-R feedback

Vendor sends CA-R invoice for digitization, including additional costs for rework if needed	30 days upon receipt of CA-R feedback
CA-R QCs replacement files	15-30 days upon receipt of replacement files
CA-R signs off on files and approves LTO creation	Within 90 days of CA-R's receipt of files, including rework
CA-R pays invoice for digitization	30 days upon receipt of replacement files
CA-R responds and relays technical questions from partner, if any, to vendor	30 days upon delivery of email to partner (30-60 days upon receipt of first round of files)
Vendor returns originals directly back to partner and provides backup files, if requested by partner	1-2 weeks following final approval