USC Digital Library

Audiovisual Digitization Overview

This guide provides an overview of digitizing audiovisual materials for inclusion in the USCDL

INTRODUCTION

The USC Digital Library stores and provides access to a variety of formats and content types. If you are planning a USCDL project that involves digitizing audio, video, or film, it is strongly recommended that you consult with the USCDL Imaging & Media Lab as early in your planning process as possible.

This document provides an overview of the procedures performed at the USCDL Imaging & Media Lab when digitizing audiovisual materials. For required formats and codecs please consult our Recommended Practices for Digitization document (found at http://digitallibrary.usc.edu/docs).

Please note that the stated instructions are meant for technology currently available and in use by the Imaging & Media Lab, and therefore, may evolve with advances in digitization techniques. Whenever appropriate, an updated version of this document will be issued.

PART I. DIGITIZING AUDIO[1]

SETTING UP

1. Identify the format and speed of the source material.
   - Records: 33 ½, 45 or 78 rpm (revolutions per minute)
   - Audio cassettes: 7/8 ips (inch per second)
   - Reel-to-reel tapes: 3 or 7 ips

2. Confirm that the playback machine is capable of playing at the speed of source audio.

3. Using a stereo audio cable, connect the output of the playback machine to the input of an analog-to-digital (A/D) converter. Then, using a FireWire or USB cable, connect the output of the A/D converter to the computer. (See Figure 1)

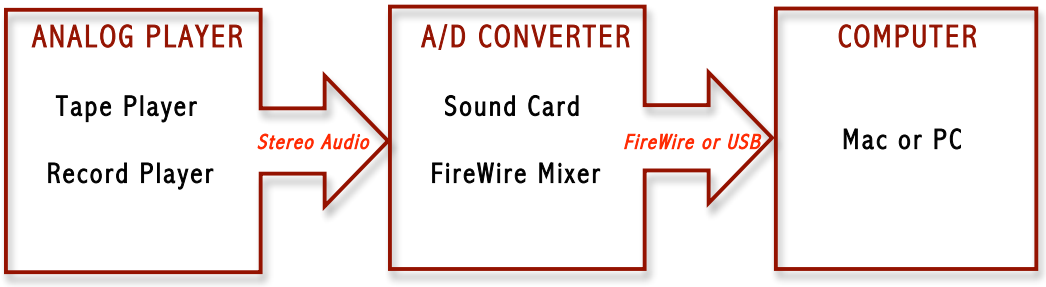

Figure 1. Connection of Audio Equipment

4. Power on all equipment. In the order of Computer → A/D Converter → Analog Player

[1] Based on IASA TC-04. *Guidelines on the Production and Preservation of Digital Audio Objects.* August 2004. International Association of Sound and Audiovisual Archives.

PLAYBACK AND FILE CAPTURING

5. Open the audio editing software available on your computer.
   - For Mac users: Logic, ProTools, etc.
   - For PC users: Sound Forge, Vegas, etc

6. Press the play button on the analog player.

7. Using the tools in the audio software, adjust the input level of the source audio so that the average peak-level is between -3 dB and -6 dB. *NOTE: The highest peak should not be over 0 db.*

8. Once your capture settings have been set, cue your source material and begin playback.

9. **Start capturing** by selecting the record or capture button in the audio software.

10. **Stop capturing** by selecting the stop button in the audio software.

11. Press the stop button on the analog player and rewind the source material.

12. Perform quality control of captured audio. If there are any audio issues, such as dropouts or distortions, re-capture the audio.

POST-PROCESSING DIGITAL AUDIO

13. Using the plug-ins available in the audio software, such as Channel EQ and Normalize, you can reduce the unintended noise (e.g. hiss, hum and clicks) on the digital audio track.

14. Select the in and out points on the audio track, and export the track into the following file formats:

ARCHIVAL COPY	WAV file ▪ At least 96 kHz 24 bit ▪ Average File Size: 1 GB/ hr
ACCESS COPY	MP3 file ▪ 128 kB/s at best encoding ▪ Average File Size: 60 MB/ hr

15. Both filenames should be exactly the same.
    For example: ABC-2009-audio-001.wav
    ABC-2009-audio-001.mp3

PART II. DIGITIZING VIDEO

SETTING UP

1. Identify the format of the analog video.
   - VHS
   - SVHS
   - Video8 or Digital8
   - Video Hi8
   - VHS-C

2. Using an RCA cable (composite video and stereo audio cable), connect the output of the video player to the input of the A/D converter. Then, using a FireWire cable, connect the output of the digital converter to the computer. (See Figure 2)

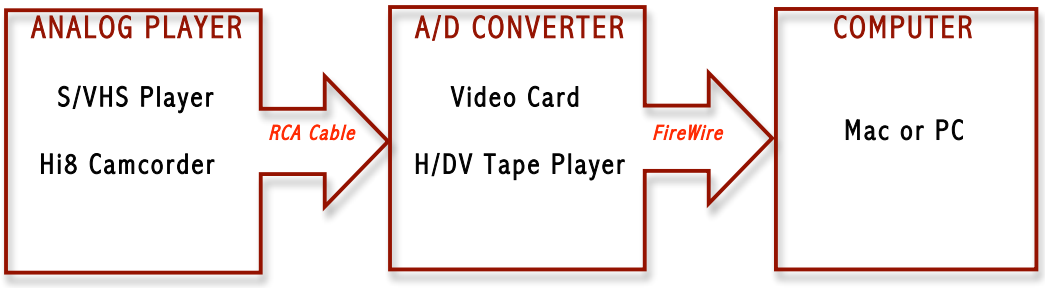

Figure 2. Connection of Video Equipment

PLAYBACK AND FILE CAPTURING

3. Power on all equipment. In the order of Computer → A/D Converter → Analog Player

4. Open the video editing software available on your computer.
   - For Mac users: Final Cut Pro, iMovie, etc.
   - For PC users: Adobe Premiere, Windows Movie Maker, etc.

5. Capture settings should be:
   - Capture both video and audio
   - DV NTSC at 48 kHz

6. Once your capture settings have been checked, cue your source material and begin playback.

7. **Start capturing** by selecting the import or capture button in the video software.

8. **Stop capturing** by selecting the stop button in the video software.

9. Press the stop button on the video player and rewind the source material.

10. Perform quality control of captured video. If there are any audio or video issues, re-capture the video.

POST-PROCESSING DIGITAL VIDEO

11. Using the tools available in the video software, adjust the luma (bright-dark) and chroma (hue-saturation) levels, so that it matches the source material. *Note: You can also open up the Waveform Monitor and Vectorscope to make sure your video is within Broadcast-safe limits (0-100 IRE).*

12. Select the in and out points of the video track, and export the track into the following file formats:

ARCHIVAL COPY	Quicktime movie (MOV) file ▪ Video encoder: Motion Jpeg 2000 ▪ Audio encoder: PCM 48 kHz at 16 bit Average File Size: ▪ 1280 x 720, 24p → 60 GB/hr ▪ 720 x 480, 29.97 → 6 GB/hr
ACCESS COPY	Flash video (FLV) file ▪ Video encoder: On2 VP6 ▪ Audio encoder: MP3 at best data rate Average File Size: ▪ 1280 x 720, 24p → 300 MB /hr ▪ 720 x 480, 29.97 → 50 MB/hr

13. Both filenames should be exactly the same.
    For example: ABC-2009-video-001.mov
    ABC-2009-video-001.flv

PART III. RESOURCES

Association for Recorded Sound Collections
http://www.arsc-audio.org/technical-committee.html

Audiovisual archives: A practical reader
http://www.unesco.org/webworld/ramp/html/r9704e/r9704e00.htm#Contents

Digitization Guidelines Initiatives
http://www.digitizationguidelines.gov/

Film Preservation Guide
http://www.filmpreservation.org/preservation/film_guide.html

Independent Media Arts Preservation: Introduction to Preservation
http://www.imappreserve.org/pres_101/index.html

International Association of Sound and Audiovisual Archives
http://www.iasa-web.org/

International Federation of Television Archives
http://www.fiatifta.org

Library of Congress: Preservation of Cylinder, Disc, and Tape Care in a Nutshell
http://www.loc.gov/preserv/care/record.html

Moving Image Collections: Preservation Portal
http://mic.imtc.gatech.edu/preservationists_portal/presv_index.htm

Preservation and Long-Term Access Through Networked Services
http://www.planets-project.eu/

Training for Audiovisual Preservation in Europe
http://www.tape-online.net/

PART IV. CONTACT US

If you would like to discuss a USCDL digitization project or have questions not addressed in this document, please do not hesitate to contact us.

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