Updating Open Source AV Preservation Tools to Better Serve the Preservation Community

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Dave Rice

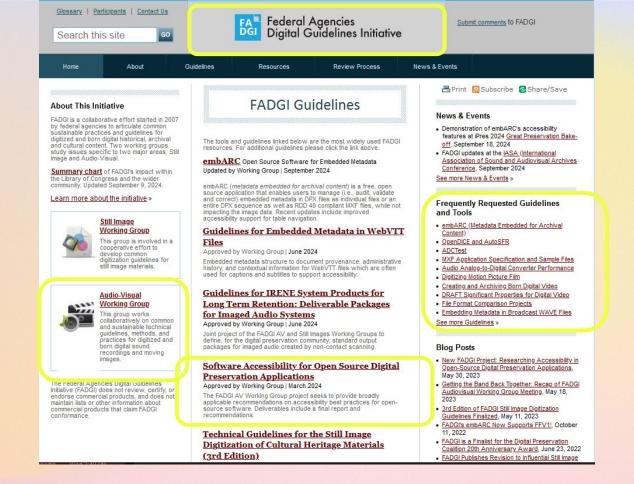
Lead Developer, RiceCapades dericed@gmail.com

Charlie Hosale

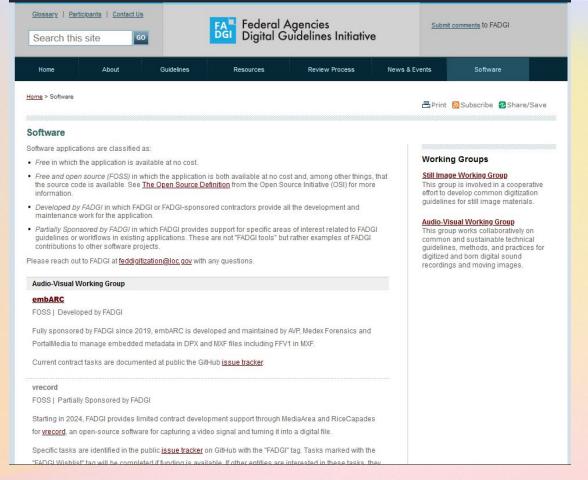
Archivist, Library of Congress chos@loc.gov

IASA September 2024 Valencia, Spain





http://www.digitizationguidelines.gov



http://www.digitizationguidelines.gov/software

Guidelines: Software Accessibility for Open Source Digital Preservation Applications

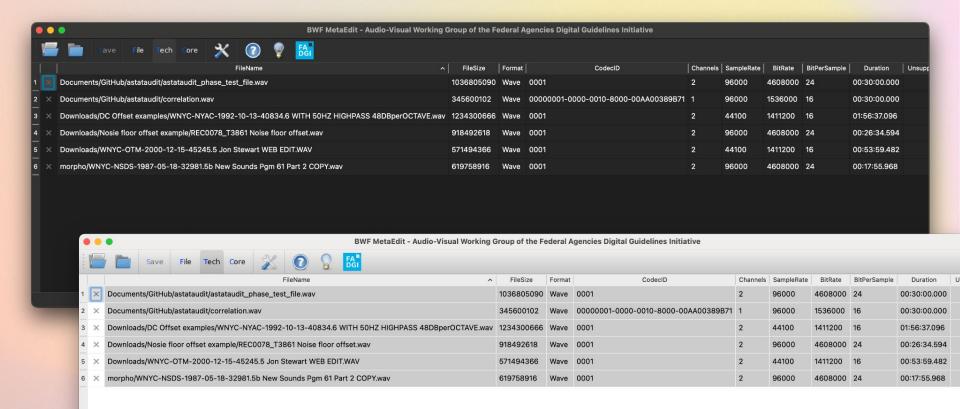
- Literature review and research
- Accessibility testing and analysis of three open-source applications related to digital preservation:
 - embARC ('metadata embedded for archival content')
 - BWF MetaEdit
 - Handbrake
- Reported findings, recommendations, and guidelines for improved accessibility in FOSS apps
- https://blogs.loc.gov/thesignal/2024/01/fadgi-report-software-acces sibility-for-open-source-applications/



BWFMetaEdit

- Character support for CP437, CP850, CP858, Windows-1252, ISO 8859-1,
 ISO 8859-2 encoded fields
- Add options to bypass some EBU R98-1999 (CodingHistory) limitations (ANALOG vs ANALOGUE, comma at EOL, >48k frequencies, ...)
- Support single XML export with all metadata (bext, cues, LIST-INFO, axml, file attributes, etc).
- File management and writing optimization

BWFMetaEdit



FFmpeg

- Copying JPEG2000 from MXF to Matroska
- Copying JPEG2000 from Matroska to MXF

- Copying FFV1 from MXF to Matroska
- Copying FFV1 from Matroska to MXF

SMPTE RDD 48:2018 Amendment 1:2022

SMPTE REGISTERED DISCLOSURE DOCUMENT

MXF Archive and Preservation Format Application Specification – Amendment 1



Page 1 of 6 pages

The attached document is a Registered Disclosure Document prepared by the sponsor identified below. It has been examined by the appropriate SMPTE Technology Committee and is believed to contain adequate information to satisfy the objectives defined in the Scope, and to be technically consistent.

This document is NOT a Standard, Recommended Practice or Engineering Guideline, and does NOT imply a finding or representation of the Society.

Every attempt has been made to ensure that the information contained in this document is accurate. Errors in this document should be reported to the proponent identified below, with a copy to eng@smpte.org.

All other inquiries in respect of this document, including inquiries as to intellectual property requirements that may be attached to use of the disclosed technology, should be addressed to the proponent identified below.

Proponent contact information:

Kate Murray Library of Congress 101 Independence Ave, S.E. Washington, DC 20540-1300

FFmpeg

Timecode in Matroska

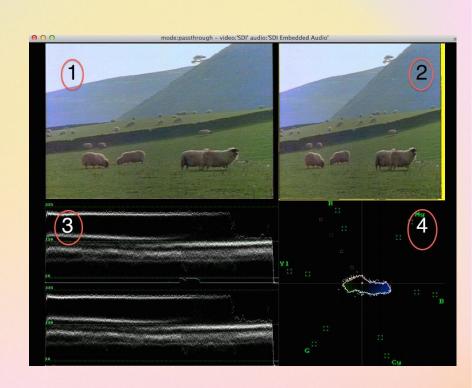
```
<?xml version="1 0"?>
<MediaTimecode xmlns="https://mediaarea.net/mediatimecode">
 <media>
  <timecode stream id="1-Material" format="smpte-st377"</pre>
frame rate="30000/1001" frame count="600" start tc="01:00:00;00"/>
  <timecode stream id="1-Source" format="smpte-st377"</p>
frame rate="30000/1001" frame count="600" start tc="01:00:00;00"/>
  <timecode stream id="2-Source" format="smpte-st377"</pre>
frame rate="30000/1001" frame count="600" start tc="03:00:00;00"/>
  <timecode stream id="3-Source" format="smpte-st377"</pre>
frame rate="30000/1001" frame count="600" start tc="03:00:00;00"/>
  <timecode stream id="4-Source" format="smpte-st377"</pre>
frame rate="30000/1001" frame count="114" start tc="00:00:02;04"/>
  <timecode stream id="SystemScheme1-0-0" format="smpte-st331"</pre>
frame rate="30000/1001" fp="0" bgf="0" bg="0">
   <tc v="01:00:00;00"/>
   <tc v="01:00:00;01"/>
   <tc v="01:00:00:02"/>
   <tc v="01:00:00:03"/>
   <tc v="21:00:04;20"/>
```

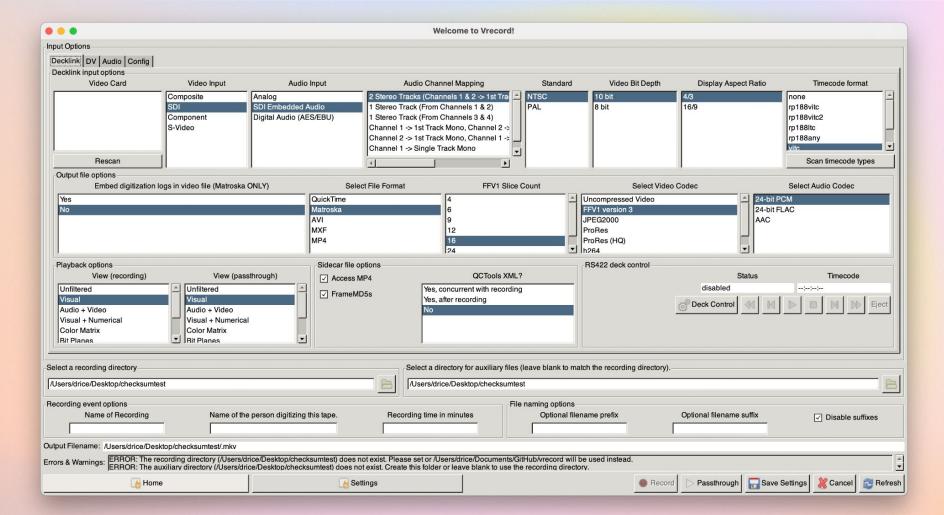
vrecord

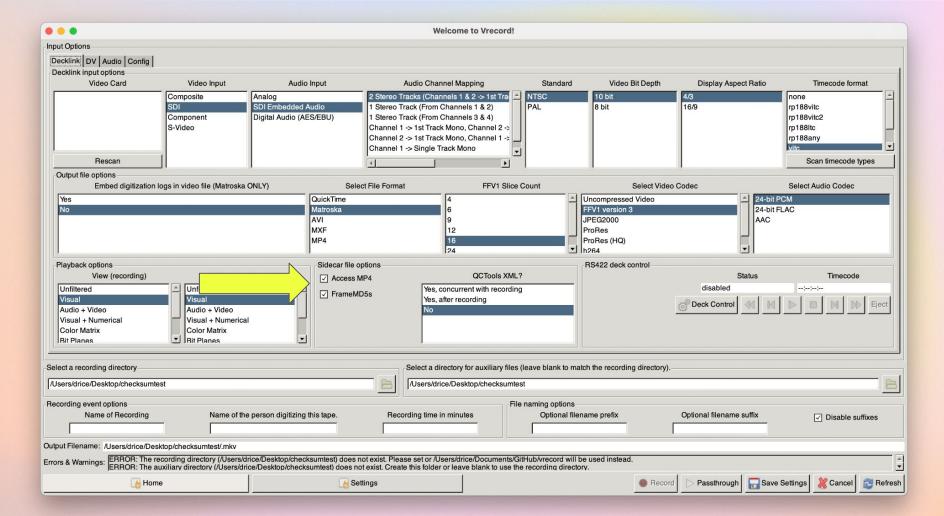
Open Source software for creating preservation-grade digital recordings from video tape

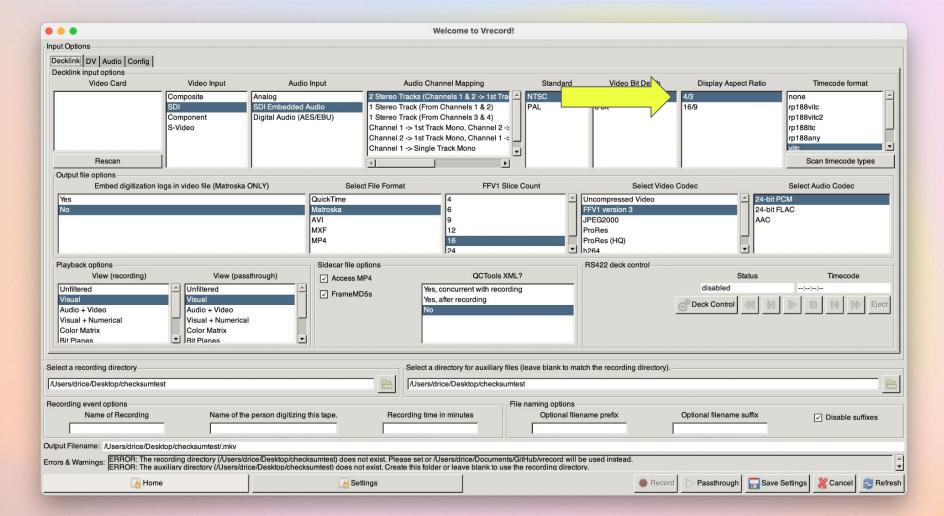
The tool was built by archivist, for archivists, and contains many useful features and tools

- Built-in Waveform and Vector Scopes
- Ability to create FFV1/MKV Files
- Built in QCTools reports and Conformance
 Checking









out Options					
Pecklink DV Audio Config					
Player MP4 Sidecar Aspect Ratio				Invert Audio Phase	Optional Tools
Player AspectRatioSettings				-1	deckcontrol:
Here you can set the sample aspect ratio to use for any display aspect ratio. The recommendation of the vrecord community is the first value of each list. If unset then the recommendation will be used.			WARNING: Do not use this option unless required This options applies only to decklink inputs	gnuplot: mediaconch: mkvpropedit:	
NTSC 4/3	NTSC 16/9	PAL 4/3	PAL 16/9		mpv: 📵
10/11 8/9	40/33 32/27	12/11 16/15	16/11 64/45	☐ Invert channel 2	qcli: 🧓 dvpackager: 🧑
9/10 4320/4739	6/5 5760/4739	128/117	512/351	☐ Invert channel 4	иураскадет.
	FFmpeg Status		Environment	Alternate Depende	ency Source
		OS_TYPE="macOS" RESOURCE_PATH=' DEFAULTFONT="/Sy Mono.tt" CORE_COUNT="8" OPEN_COMMAND=" ZCAT_COMMAND=" COMPUTER_MODEI DIR_SELECTION_DI drop one below). File GTKD/ALOGBIN="/or	"open" gzcat" L NAME="MacBook Air" IALOG="Select an existing folder (or drag/s System/Volumes for external media."	<u> </u>	
Check FFmpeg status Reset Environment Variables					
lect a recording directory Select a directory for auxiliary files (leave blank to match the recording directory).					
Name of Recording Name of the person digitizing this tape.		this tape. Recordi	ing time in minutes Opti	onal filename prefix Optional filename suffix	☑ Disable suffixes
put Filename: //Users/drice/Desktop/checksumtest/.					
ors & Warnings: ERROR: The recording directory (/Users/drice/Desktop/checksumtest) does not exist. Please set or /Users/drice/Documents/GitHub/vrecord will be used instead. ERROR: The auxiliary directory (/Users/drice/Desktop/checksumtest) does not exist. Create this folder or leave blank to use the recording directory.					
Home		Settings		Record Passthrough	re Settings Cancel Refresh

Proposed Enhancements

Create H.264
Access files
concurrently with
Preservation files

Simple Record Mode vrecord .pkg installer

Proposed Enhancements are meant to address the needs of Federal Agencies using vrecord

Tracking Progress

https://github.com/amiaopensource/vrecord/issues

Tags for tickets addressing FADGI-sponsored updates

- 3 Open

 ✓ 4 Closed
- SRT and VTT files are no longer being made FADGI
 - #831 opened yesterday by iamdamosuzuki
- Fadgl

 #792 opened on Mar 5 by iamdamosuzuki
- □ vrecord installer package? FADGI
 #751 opened on Jun 23, 2023 by iamdamosuzuki

- **O 4 Open** ✓ 1 Closed
- Show decoded caption data in Caption viewer FADGI Wishlist
 #810 opened on Jun 28 by iamdamosuzuki
- Ability to send Visual + Numerical view via SD out FADGI Wishlist #809 opened on Jun 28 by iamdamosuzuki
- Include Caption Data in Visual + Numerical View FADGI Wishlist
 #808 opened on Jun 28 by jamdamosuzuki
- Auto-test / Auto-qualify mode FADGI Wishlist #785 opened on Feb 7 by iamdamosuzuki

Tags for tickets addressing wishlist updates

Pre-Testing Survey

Please fill out the following information about digitization station you'll be using for testing. For the sake of consistency please use only this station for testing

morganomorel@gmail.com Switch account



Not shared

Tester Name

Your answer

Tester Email

Your answer

Tester Organization

Your answer

Tape Format

Your answer

User Testing

Testers sent Google Form to fill for pre-testing and for each feature test

Test files sent to me via mediashuttle for further inspection

Users are testing specific versions deployed in homebrew

Current Status & Challenges

Create H.264
Access files
concurrently with
Preservation files

Simple Record Mode vrecord .pkg installer

Completed, tested, and deployed Awaiting a code refactor sponsored by NYPL Currently only possible if x264 library is not included

NAVCC Video Lab





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Digital Guidelines Initiative