

MacCaption  and CaptionMaker 



XDCAM MXF OP1a Closed Captioning with CaptionMaker™ and MacCaption™

Contents

Introduction	Page 2
MXF Closed Captioning Workflow	Page 3
For More Information	Page 8
Copyright and Trademark Notice	Page 8

Introduction

Telestream CaptionMaker and MacCaption Pro / Enterprise system have been optimized to work directly with Sony XDCAM HD MXF files for caption retrieval and encoding. Demonstrations of our MacCaption XDCAM HD MXF workflow were on exhibit at the 2009 NAB convention in Las Vegas both in the CPC and Sony booths.

As of 12/1/2010, CaptionMaker (Windows) software can also read and write Sony XDCAM HD .MXF files with SMPTE 436M closed captions, V-chip/XDS and AFD (Active Format Description).

XDCAM HD MXF files can be generated by the Sony XDCAM HD deck and through a non-linear editing system like Avid or Final Cut Pro 7 (FCP requires Sony XDCAM Transfer tool software). MacCaption and CaptionMaker Pro / Enterprise can then add captions directly to the MXF file without any rendering or recompression of the video or audio essence data.

Captioners looking for an affordable MXF CC Professional Disc workflow can use the Sony PDW-U1 drive, which costs about \$2500 USD and allows you to read & write MXF files to XDCAM discs using your Mac or Windows computer via USB port.

Sony XDCAM EX and HDV decks currently do not support HD closed captioning.

Figure 1. Example Caption Output



MXF Closed Captioning Workflow

The following workflows explain how to export closed caption data to .MXF files and how to import caption data from .MXF files.

Exporting Captions to MXF

1. First, start with a XDCAM MXF OP1a file. This file can be copied from a Sony XDCAM HD deck, or generated by the Sony XDCAM Transfer Tool plug-in for Final Cut Pro, or generated by newer Avid systems or some compression programs (e.g. Telestream Episode, Vantage etc.). If your source movie is a QuickTime or another format, you can convert it to XDCAM MXF using any available tools (for Final Cut Pro users, the Sony XDCAM Transfer Tool is a free download.)
2. For caption preparation it's important to generate a proxy movie. This video file can be a small compressed video such as MPEG-1, H.264 codec, or WMV. You can optionally use the Sony XDCAM Transfer Tool for Final Cut Pro 7 to re-wrap the MXF file into a QuickTime movie for playback. This QuickTime is used only as a reference for the captioner to create the caption project, so it is not necessary if you already have a proxy movie or a completed timed & formatted caption file such as .CAP or .SCC.?

Note: The time code of this proxy should either match the actual MXF time code, or start at 00:00:00:00 being the first frame of the MXF file.

3. If you want to use the original MXF file instead of a proxy movie as your video reference, you need a MXF codec for QuickTime (such as Calibrated{Q} MXF Import, MXF4Mac, Sony Cinemon!), or for DirectShow on Windows.
4. To insert caption data in both CEA-608 and CEA-708 In Telestream MacCaption / CaptionMaker software, once the captions are ready, go to top menu and follow:

MacCaption:

File > Export > Embed CC into Media > Sony Material eXchange Format (.mxf).

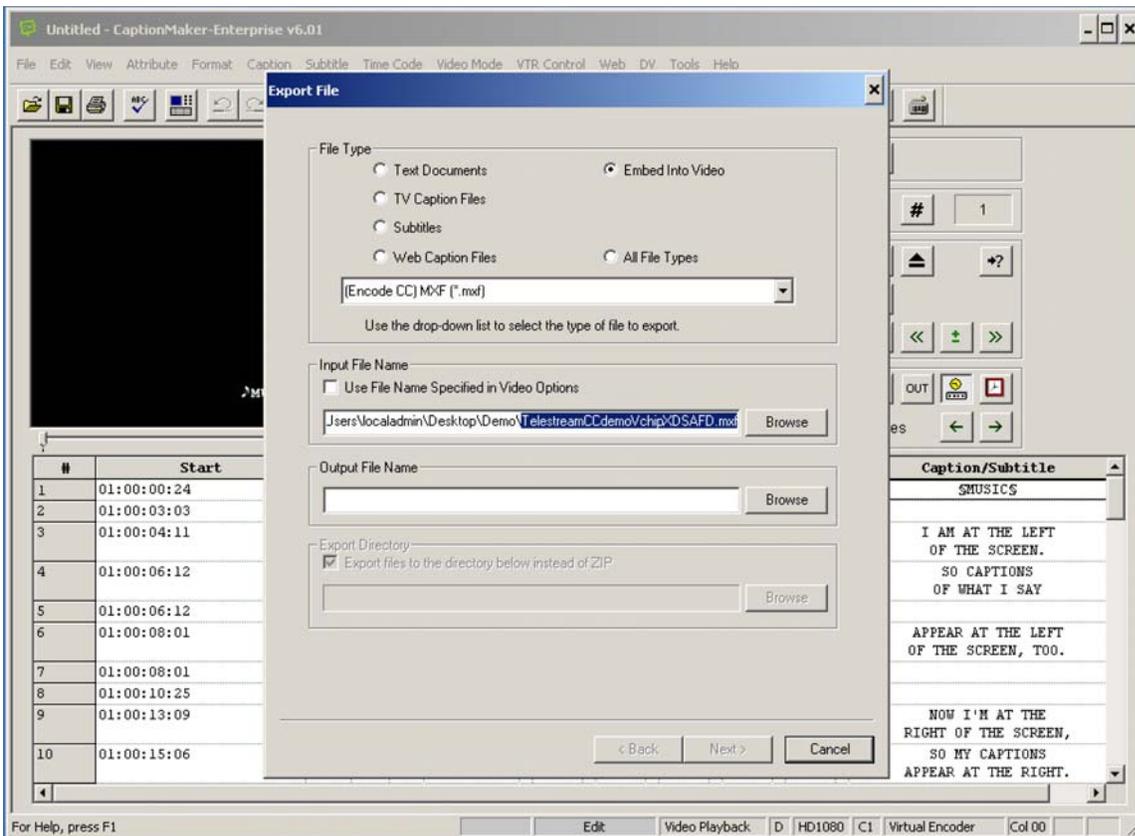
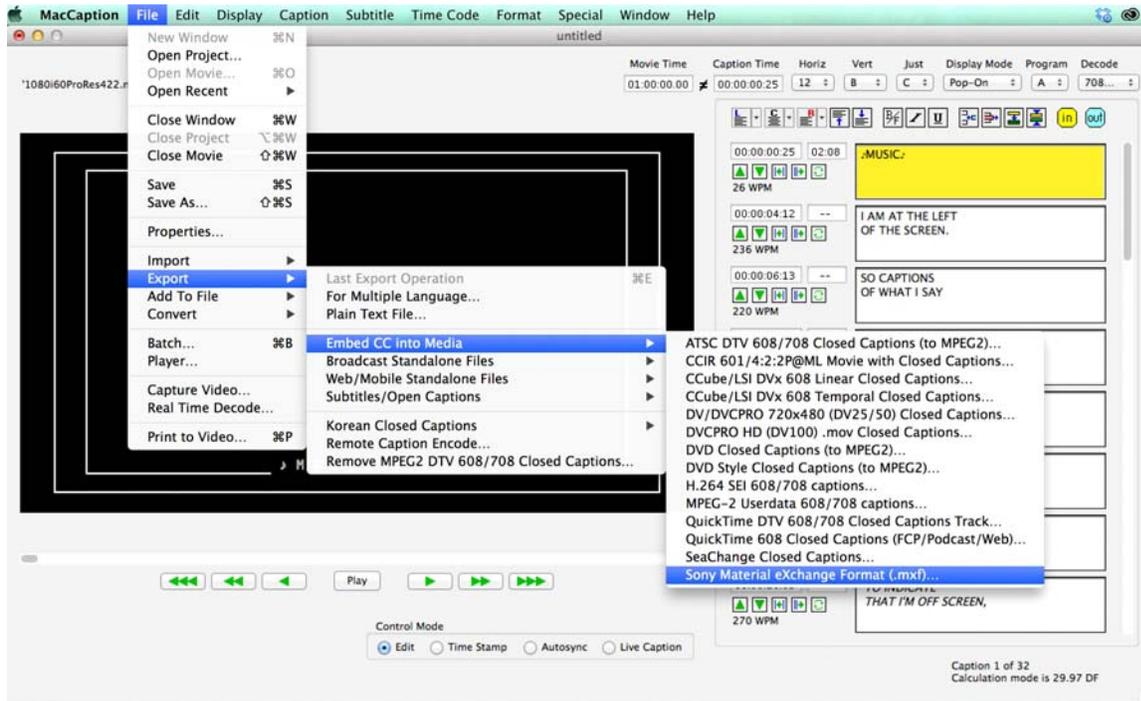
CaptionMaker:

File> Export > Embed into Video File > [Encode CC] MXF (*.mxf)

Telestream captioning software will export a new MXF file, containing the original video/audio data unchanged (no recompression), plus the closed captions. This file can then be copied to an XDCAM disc, or to other systems which support Sony XDCAM MXF files with closed captions (e.g. Seachange, Omneon, DMDS, etc.).

4 | XDCAM MXF OP1a Closed Captioning with CaptionMaker™ and MacCaption™ MXF Closed Captioning Workflow

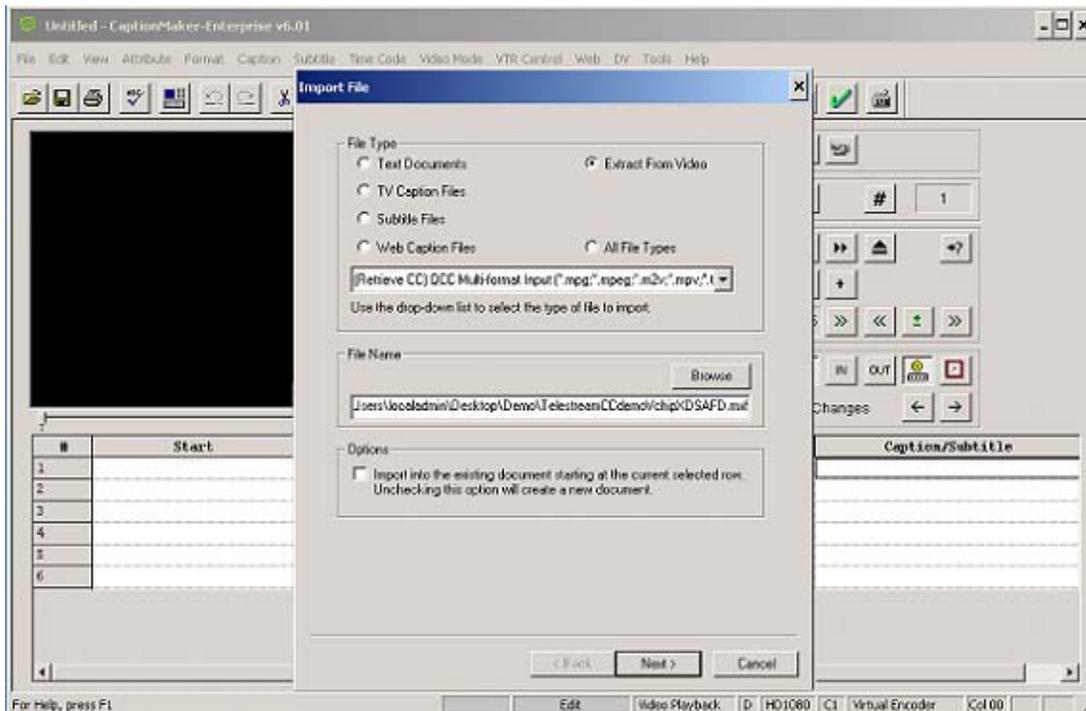
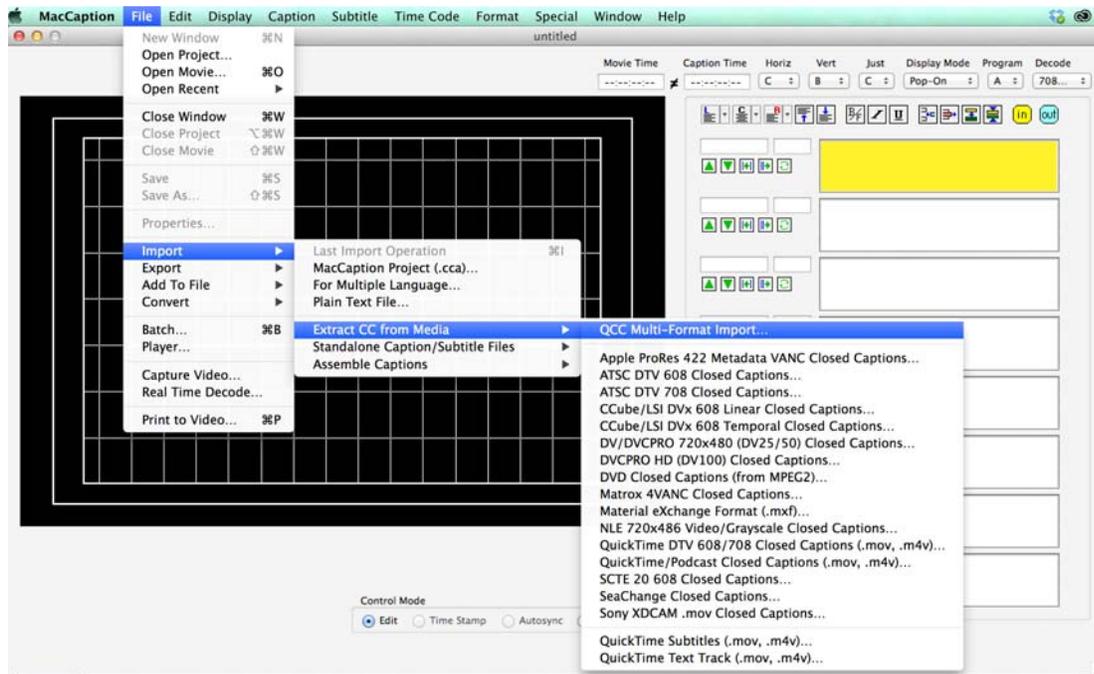
Figure 2. Menu Selections for Embedding Captions in an MXF Video File



Importing from MXF

To extract or check for SMPTE 436M data inside of an .MXF file using both the MacCaption and CaptionMaker mechanism called QCC-Multiformat Import, select these menu options: File > Import > Extract CC from Media > QCC Multi Format Import.

Figure 3. Import Caption Menu Selections



This mechanism is valuable when you want to verify that CC data was inserted into MXF OP1a without having to use a hardware mechanism for play out to a scope monitor with CC decoding capabilities. In addition, CC data, once extracted, can be edited and repurposed for a variety of new media captioning deliveries such as Internet player viewing.

Note: For Omneon server users, the Omneon must be set to decode "SMPTE 436M" VANC data (this is the spec for closed captions within MXF files). Please see: <https://cpcweb.zendesk.com/entries/20970453-omneon-and-hd-caption-file-playback>

Sony HD Deck Settings

To record an HD-SDI signal with closed captions (for example, from a AJA/Blackmagic/Matrox card, Avid Mojo/Nitris DX, or coming from another HD deck), your HDCAM (SR) or XDCAM HD deck must be configured to record closed caption packets on VANC Line 9, DID 61, SDID 01. Settings for some Sony decks are listed below. If your deck is not listed or you have any questions about configuring your Sony deck, please contact Sony directly for assistance.

PDW-HD1500:

1. Holding PAGE/HOME and SHIFT simultaneously, press MENU.
2. Turn PUSH SET(S.SEL) knob to select "M3 OTHERS", and then press PUSH SET(S.SEL).
3. Turn PUSH SET(S.SEL) knob to select "M3B: VANC RX PARAMETER", and then press PUSH SET(S.SEL).
4. Turn PUSH SET(S.SEL) knob to select "M3B1: LINE1 SEL" , and then press PUSH SET(S.SEL).
5. Turn PUSH SET(S.SEL) knob to select "9LINE" , and then press PUSH SET(S.SEL).
6. Press SAVE (F5). Deck should display "NOW SAVING..."

PDW-F70/F75:

1. Press the MENU button. Use the arrow keys to navigate to the SETUP menu, and then select Metadata > HD VANC INPUT.
2. In the HD VANC INPUT area, set 'Line' to 9, 'DID' to 61 and 'SDID' to 01. While you can use both the arrow keys and the jog/shuttle wheel to make these selections, it is best to use the arrow keys to move from field to field, and then use the inner jog wheel to select the values.
3. Press the SET button to save the changes. "Now Saving" will be displayed on the LCD. While the deck does not force you to power off/on at this point, it is recommended that you cycle power before attempting to record captions.

HDW-2000:

1. Enter the maintenance menu by pressing Home and Menu.
2. Enter Menu M3 select "B".
3. Enter VANC RX.
4. Enter ANC1.
5. Line 1 enter data 09.
6. DID Data set to 61. SDID Data set to 01.
7. Hold the Home key while making the changes.
8. Press Set Button to save new settings.

HDW-1800:

1. Alt - f9
2. MAINT MODE/OTHERS/VANC RX PARAMETER (For 708 Compliant CC): Line 1: 009,
Line 2: 572, DID: 61, SDID: 01
3. Don't blank any lines

Sony PDW-U1 XDCAM desktop drive:

For a .MXF file-based captioning workflow, enable the DATA ITEM OUT checkbox (Setup > User Settings) in the PDW-U1 Utility Software.

Not caption compatible:

PDW-700 or PDWF-800 XDCAM camcorders? XDCAM EX devices (e.g. PMW-EX30)? HDV devices (e.g. HVR-1500)

For More Information

For more information about CaptionMaker and MacCaption, please contact:

Giovanni Galvez,
Caption Team Expert
giovannig@telestream.net

Copyright and Trademark Notice

© 2013 Telestream®, Inc. All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, altered, or translated into any languages without written permission of Telestream, Inc. Information and specifications in this document are subject to change without notice and do not represent a commitment on the part of Telestream.

Telestream, Episode, Flip4Mac, FlipFactory, Flip Player, Lightspeed, ScreenFlow, Vantage, Wirecast, GraphicsFactory, MetaFlip, MotionResolve, and Split-and-Stitch are registered trademarks and Pipeline, Launch, Videocue, CaptionMaker, and MacCaption are trademarks of Telestream, Inc. All other trademarks are the property of their respective owners.

All other brand, product, and company names are the property of their respective owners and are used only for identification purposes.