AMIRA & ALEXA SXT / SXT W / LF / Mini

ARRI META Extract 4.0 (CMD)

USER MANUAL

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1 Introduction

ARRI META Extract (AME) 4.0 is a utility to retrieve the static and dynamic camera metadata from ALEXA LF SUP 4.0, ALEXA SXT 2.0, ALEXA 65 SUP 2.0, ALEXA Mini Sup 5.0 and AMIRA SUP 5.0

2 Supported Input Formats

- ALEXA - QuickTime/ProRes
- ALEXA - MXF/DNxHD
- ALEXA – ARRIRAW
- ALEXA Mini – MXF/ARRIRAW
- DPX files rendered with the ARRIRAW Converter 3.x and higher
- AMIRA – QuickTime/ProRes
- OpenExr files rendered with the ARRIRAW Converter 3.4.5 and higher

3 Supported Output Formats

- .csv and XMP .xml files command –o
- .xml or .aml Look file with default Iridas 3DLUT command -l
- Add --lutformat to create different 3D LUT manufacturer format
- .wave audio files from MXF/ARRIRAW command –a
- crc checksum verification command -c
- range selection command –r
- print metadata to console command -q
- XMP .xml output file -q and -o

4 Getting Started

The command line version of AME 3.5 offers the same basic functionality as the GUI version, adds a few extra options. It will also read metadata from a single frame, one take/file sequence or several takes/file sequences and recursively processes the input path it is given.

To display the set of available options, run **./ARRIMETAExtract -h**.

Options:

-a [--audio]	Extract audio (ARRIRAW/MXF only)
-c [--crc]	Perform CRC checking (ARRIRAW & ARRIRAW/MXF)
-d [--debug]	More console output
-h [--help]	
-i [--input] arg	Sequence input path, i.e. - a directory containing ARRIRAW, DPX, or OpenEXR (*.ari|*.dpx|*.exr) - a directory containing QuickTime or Mxf (*.mov|*.mxf) - a single QuickTime or Mxf file (.mov|.mxf)
-k [--keys]	Display Quicktime key
-l [--look]	Extracting Look as .xml or .aml look file with Iridas 3DLUT (.cube format, 33 Meshpoints, Colorspace REC-709 and without CDL)
-l --lutformat arg	Add --lutformat to create different 3D LUT File Format: NAME (in quotes) MESHPOINTS COLORSPACE WITHCDL e.g. --lutformat "AutoDesk Lustre" 33 REC-709 false
-m [--mdvers] arg	Force dynamic metadata version
-o [--output] arg	Directory for csv output (default: current)
-p [--pick] arg	Pick metadata. Available options: [all|basic]
-s [--separator] arg	Set separator char, e.g. -s ";", or -s tab for "\\t". Default is tab
-r [--range] arg	Select index range, e.g. -r 5-17, or -r first|last
-v [--version]	Print version info
-x [--xml] arg	Apply metadata settings (AME GUI settings file)

--- -q[--query] special keyword ---

'-q list', to display known metadata item names (instead of selecting)

--- NAME and MESHPOINTS options ---

Autodesk	16 17 32 33
Autodesk Lustre	17 33 65
Cinespace	33
Filmlight	16 32 64
Houdini	33
Iridas	16 17 32 33 64 65

--- COLORSPACE options ---
P3-D60 P3-D65 P3-DCI REC-2020 REC-2100-HLG REC-2100-PQ REC-709

--- WITHCDL options ---
true false

5 Examples for Mac OSX and Windows

Mac OS X terminal:

./ARRIMetaExtract_CMD -i /Volumes/Footage/A012C001 -l -o /Volumes/Footage/A012C001

Windows command line:

ARRIMetaExtract_CMD.exe -i D:\Footage\A012C001 -l -o D:\Footage\metadata

6 Examples for export ALF-2 Look as 3D LUT

The embedded ALF-2 look can be extracted as 3D LUT in various LUT formats and point sizes of all ARRIRAW, MXF/ARRIRAW and ProRes recording formats.

The 3DLUT extract function is always activated when the command -l is used, a 3D LUT is always exported in Iridas .cube format with 33 points without CDL parameters.

To create the 3D LUT for other manufacturers formats you need to add the argument --lutformat to the command - l for Look file export.

The 3D LUT export can be additionally defined by 4 LUT parameters.

```
--lutformat arg > NAME MESHPOINTS COLORSPACE WITHCDL
```

For example:

```
./ARRIMetaExtract_CMD -i /Volumes/Footage/A012C001 -l --lutformat Iridas 33 REC-709 false
-o /Volumes/Footage/A012C001
```

or

```
./ARRIMetaExtract_CMD -i /Volumes/Footage/A012C001 -l --lutformat "Blackmagic HDLink Pro"
17 REC-2020 true  -o /Volumes/Footage/A012C001
```

***(Note:** LUT Format name with space characters in quotes)*

3D LUT parameter options:

NAME	MESHPOINTS	COLORSPACE	WITHCDL
Autodesk	16 17 32 33	P3-D60	true
Autodesk Lustre	17 33 65	P3-D65	false
Cinespace	33	P3-DCI	
Filmlight	16 32 64	REC-2020	
Houdini	33	REC-2100-HLG	
Iridas	16 17 32 33 64 65	REC-2100-PQ	
		REC-709	

7 Example for extract into Console

The embedded metadata can be piped to the console and exported as XMP file with command -q. Command -q list is listing all known metadata item names.

For example:

```
./ARRIMetaExtract_CMD -i
/Volumes/References_for_all_cameras/APP_reference_camera_original_clips/ALEXA_LF_Open_Ga
te -o/Volumes/AME_Out
-q "Reel,Camera Clip Name,Image Width,Image Height"  -r first


Index  Reel      Camera Clip Name      Image Width  Image Height
    0  D401R1ZA  D401C001_180614_R1ZA  4448         3096
```

In combination with -o, for each clip an XMP.xml file is written to the AME output folder instead of a .csv file.

8 XMP Example

The command -o extracts an XMP file beside the .csv file.

```
<x:xmpmeta xmlns:x="adobe:ns:meta/" x:xmptk="XMP Core 5.6.0">
   <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#">
      <rdf:Description rdf:about=""
            xmlns:axm="http://ns.arri.de/xap/1.0/arriCameraMetadata/"
            xmlns:tiff="http://ns.adobe.com/tiff/1.0/"
            xmlns:photoshop="http://ns.adobe.com/photoshop/1.0/"
            xmlns:aces="http://ns.adobe.com/xap/1.0/aces/"
            xmlns:stArea="http://ns.adobe.com/xap/1.0/sType/Area#"
            xmlns:xmpDM="http://ns.adobe.com/xmp/1.0/DynamicMedia/"
            xmlns:xmp="http://ns.adobe.com/xap/1.0/"
            xmlns:exifEX="http://cipa.jp/exif/1.0/"
            xmlns:exif="http://ns.adobe.com/exif/1.0/"
            xmlns:acesInterim="http://ns.arri.com/xap/1.0/interimACESClipInfo/">
         <axm:MetadataMapperVersion>1</axm:MetadataMapperVersion>
         <axm:AdoptedNeutral>
            <rdf:Seq>
               <rdf:li>9674/30937</rdf:li>
               <rdf:li>86451/262769</rdf:li>
            </rdf:Seq>
         </axm:AdoptedNeutral>
         <axm:ArriUuid>DB0AEB71-0000-4000-8254-6C5200000000</axm:ArriUuid>
         <axm:BayerColorOrder>DB0AEB71-0000-4000-8254-6C5200000000</axm:BayerColorOrder>
         <axm:HardwareVersion>1</axm:HardwareVersion>
         <axm:LookCdlMode>CDL LogC</axm:LookCdlMode>
         <axm:LookCdlSlope>
            <rdf:Seq>
               <rdf:li>1.000000</rdf:li>
               <rdf:li>1.000000</rdf:li>
               <rdf:li>1.000000</rdf:li>
            </rdf:Seq>
         </axm:LookCdlSlope>
         <axm:LookCdlOffset>
            <rdf:Seq>
               <rdf:li>0.000000</rdf:li>
               <rdf:li>0.000000</rdf:li>
               <rdf:li>0.000000</rdf:li>
            </rdf:Seq>
         </axm:LookCdlOffset>
         <axm:LookCdlPower>
            <rdf:Seq>
               <rdf:li>1.000000</rdf:li>
               <rdf:li>1.000000</rdf:li>
               <rdf:li>1.000000</rdf:li>
            </rdf:Seq>
         </axm:LookCdlPower>
```

```
<axm:EyeIndex>SINGLE</axm:EyeIndex>
<axm:ColorVersion>5</axm:ColorVersion>
<axm:Dst>0.000000</axm:Dst>
<axm:ImageOrient>No flip</axm:ImageOrient>
<axm:UnitPref>Imperial</axm:UnitPref>
<axm:LdsEncFocusMax>11546</axm:LdsEncFocusMax>
<axm:LdsEncFocusMin>8</axm:LdsEncFocusMin>
<axm:LdsEncFocusRaw>2037</axm:LdsEncFocusRaw>
<axm:LdsEncIrisMax>3069</axm:LdsEncIrisMax>
<axm:LdsEncIrisMin>16</axm:LdsEncIrisMin>
<axm:LdsEncIrisRaw>1435</axm:LdsEncIrisRaw>
<axm:LdsLagType>CONSTANT</axm:LdsLagType>
<axm:LdsLagValue>1</axm:LdsLagValue>
<axm:LensLinearIris>6.072000</axm:LensLinearIris>
<axm:lensType>ARRI SP75 T1.8</axm:lensType>
<axm:LookFileName>ARRI 709</axm:LookFileName>
<axm:LookLiveGrading>Unchanged</axm:LookLiveGrading>
<axm:LookLutMode>3D Look LUT</axm:LookLutMode>
<axm:MasterSlave>OFF</axm:MasterSlave>
<axm:LookPrintLight>
   <rdf:Seq>
      <rdf:li>0.000000</rdf:li>
      <rdf:li>0.000000</rdf:li>
      <rdf:li>0.000000</rdf:li>
   </rdf:Seq>
</axm:LookPrintLight>
<axm:Product>8</axm:Product>
<axm:Roll>-0.100000</axm:Roll>
<axm:LookSaturation>1.000000</axm:LookSaturation>
<axm:Sharpness>100.000000</axm:Sharpness>
<axm:SmpteUuid>060A2B340101010501010F0013000000DB0AEB710000400082546C5200000000</axm:SmpteUuid>
<axm:SupVersion>AlexaLF_3.0devel:41738</axm:SupVersion>
<axm:SubProduct>3</axm:SubProduct>
<axm:ColorGamma>LogCWGam</axm:ColorGamma>
<axm:Tilt>409.500000</axm:Tilt>
<axm:TimeBase>24.000000</axm:TimeBase>
<axm:WbTintCc>0</axm:WbTintCc>
<axm:Variframe>0</axm:Variframe>
<axm:WbFactor>
   <rdf:Seq>
      <rdf:li>1.393138</rdf:li>
      <rdf:li>1.000000</rdf:li>
      <rdf:li>1.778736</rdf:li>
   </rdf:Seq>
</axm:WbFactor>
<tiff:SamplesPerPixel>3</tiff:SamplesPerPixel>
<tiff:BitsPerSample>
   <rdf:Seq>
      <rdf:li>10</rdf:li>
      <rdf:li>10</rdf:li>
      <rdf:li>10</rdf:li>
   </rdf:Seq>
</tiff:DitsPerSample>
```

```
<tiff:PrimaryChromaticities>
   <rdf:Seq>
      <rdf:li>179392/262269</rdf:li>
      <rdf:li>48633/155377</rdf:li>
      <rdf:li>221/1000</rdf:li>
      <rdf:li>677485/798921</rdf:li>
      <rdf:li>3680/42741</rdf:li>
      <rdf:li>-106993/1048951</rdf:li>
   </rdf:Seq>
</tiff:PrimaryChromaticities>
<tiff:WhitePoint>
   <rdf:Seq>
      <rdf:li>9674/30937</rdf:li>
      <rdf:li>86451/262769</rdf:li>
   </rdf:Seq>
</tiff:WhitePoint>
<tiff:imageWidth>3096</tiff:imageWidth>
<tiff:Orientation>0</tiff:Orientation>
<tiff:Make>ARRI</tiff:Make>
<tiff:Model>Alexa LF Plus W</tiff:Model>
<photoshop:ColorMode>3</photoshop:ColorMode>
<aces:SampleFormat>3</aces:SampleFormat>
<aces:dataWindow rdf:parseType="Resource">
   <stArea:x>2223.500000</stArea:x>
   <stArea:y>1547.500000</stArea:y>
   <stArea:w>4447.000000</stArea:w>
   <stArea:h>3095.000000</stArea:h>
   <stArea:unit>pixel</stArea:unit>
</aces:dataWindow>
<aces:displayWindow rdf:parseType="Resource">
   <stArea:x>2223.500000</stArea:x>
   <stArea:y>1547.500000</stArea:y>
   <stArea:w>4447.000000</stArea:w>
   <stArea:h>3095.000000</stArea:h>
   <stArea:unit>pixel</stArea:unit>
</aces:displayWindow>
<aces:aperture>5.799788</aces:aperture>
<aces:cameraIdentifier>ARRI-Alexa_LF_Plus_W-SN_R1ZA</aces:cameraIdentifier>
<aces:imageCounter>12850</aces:imageCounter>
<aces:originalImageFlag>True</aces:originalImageFlag>
<aces:recorderFirmwareVersion>sim2-3.1.0-04847</aces:recorderFirmwareVersion>
<aces:recorderMake>Codex Digital</aces:recorderMake>
<aces:recorderModel>Outboard</aces:recorderModel>
<aces:reelName>D401R1ZA</aces:reelName>
<xmpDM:videoPixelAspectRatio>1/1</xmpDM:videoPixelAspectRatio>
<xmpDM:screenArea rdf:parseType="Resource">
   <stArea:x>0.000000</stArea:x>
   <stArea:y>0.000000</stArea:y>
   <stArea:w>1.000000</stArea:w>
   <stArea:h>0.696043</stArea:h>
   <stArea:unit>pixel</stArea:unit>
</xmpDM:screenArea>
</tiff:BitsPerSample>
```

```
            <xmpDM:cameraLabel>D</xmpDM:cameraLabel>
            <xmpDM:videoCaptureRate>24000/1000</xmpDM:videoCaptureRate>
            <xmpDM:videoFrameRate>24000/1000</xmpDM:videoFrameRate>
            <xmpDM:rotationAngle>0.000000</xmpDM:rotationAngle>
            <xmpDM:storageSerialNumber>281F4164050000EE</xmpDM:storageSerialNumber>
            <xmpDM:timeValue>00:08:55:10</xmpDM:timeValue>
            <xmpDM:timeFormat>smpteTC24</xmpDM:timeFormat>
            <xmp:CreatorTool>41738</xmp:CreatorTool>
            <xmp:CreateDate>2018-06-14T15:57:57+00:00</xmp:CreateDate>
            <exifEX:BodySerialNumber>2566</exifEX:BodySerialNumber>
            <exifEX:ISOSpeed>800</exifEX:ISOSpeed>
            <exifEX:LensModel>ARRI SP75 T1.8</exifEX:LensModel>
            <exifEX:LensSerialNumber>4</exifEX:LensSerialNumber>
            <exif:ExposureTime>20000/1000000</exif:ExposureTime>
            <exif:FocalLength>75/1</exif:FocalLength>
            <exif:SubjectDistance>74243/21101</exif:SubjectDistance>
            <acesInterim:cameraClipName>D401C001_180614_R1ZA</acesInterim:cameraClipName>
            <acesInterim:shutterAngle>172.800003</acesInterim:shutterAngle>
            <acesInterim:takeName>C001</acesInterim:takeName>
            <acesInterim:wbKelvin>4300</acesInterim:wbKelvin>
        </rdf:Description>
    </rdf:RDF>
</x:xmpmeta>
```

9 Known Issues

- Extract of Master TC value for project rates > 30fps (only AMIRA) is not consistent with ALE file.
- Extracting metadata values to the console with the -q command is not always consistent, sometimes displaying more metadata than requested.

10 Questions and Contact

If you have any questions about the application, please contact us via digitalworkflow@arri.de.