



From ARTWORK to FILE and back to THE ARTWORK

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Context




- Tate Tibm collection approx. 750 artworks
- Tibm ARTWORK is made of different components that live in storage
- Components are reunited in the display
⇒ ARTWORK!
- Context of the display determines Exhibition Format File
- Master File ⇒ Exhibition Format File

No Ghost Just a Shell

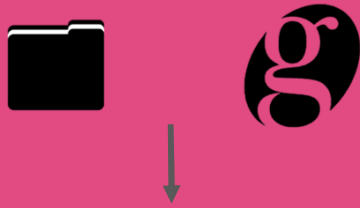


No Ghost Just a Shell
Tanks display 2018



NO GHOST
JUST A SHELL

Observe the artwork and its history and look for clues



Documentation of media prep for Whitney loan in 2016



**KEEP
CALM
AND
GOOGLE
IT**

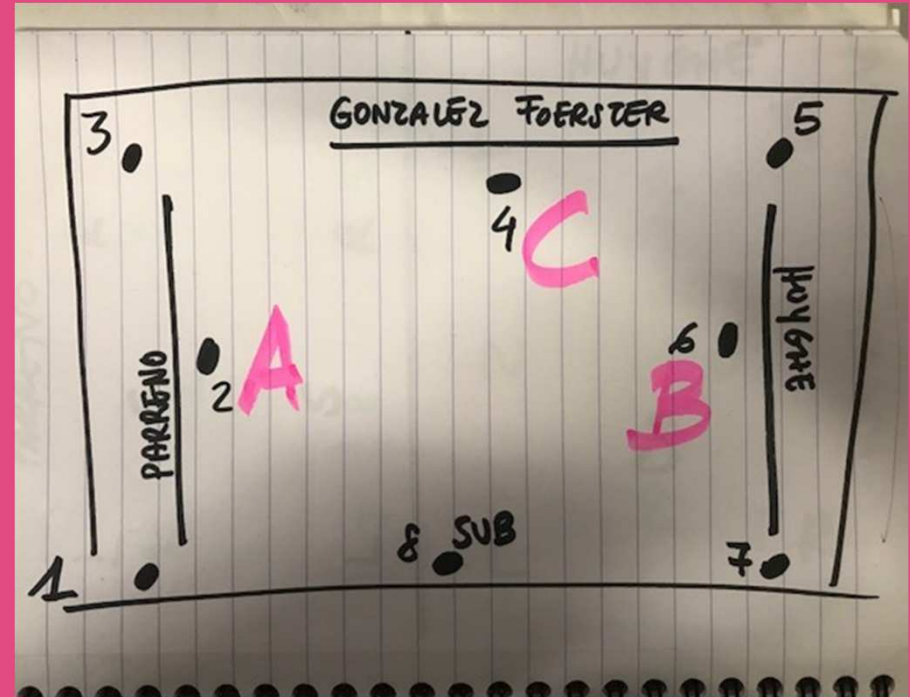
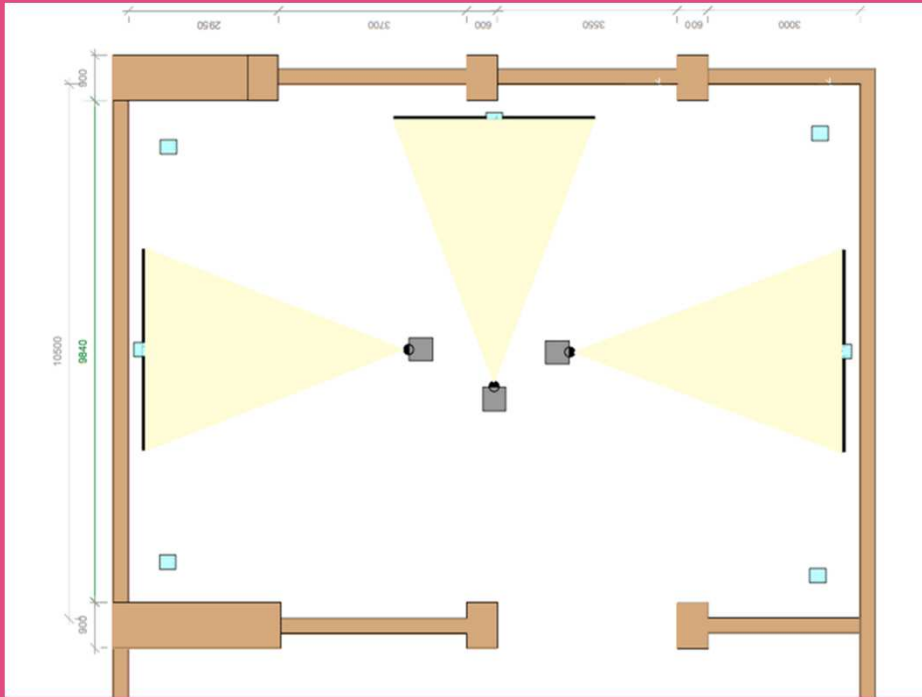
Analyze the files and their relationship with the equipment

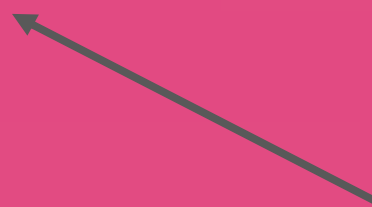
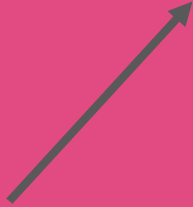


Listen, watch, compare and ask for help and opinions
Reach out



Gallery layout







Media Prep for the display what we discovered in the process



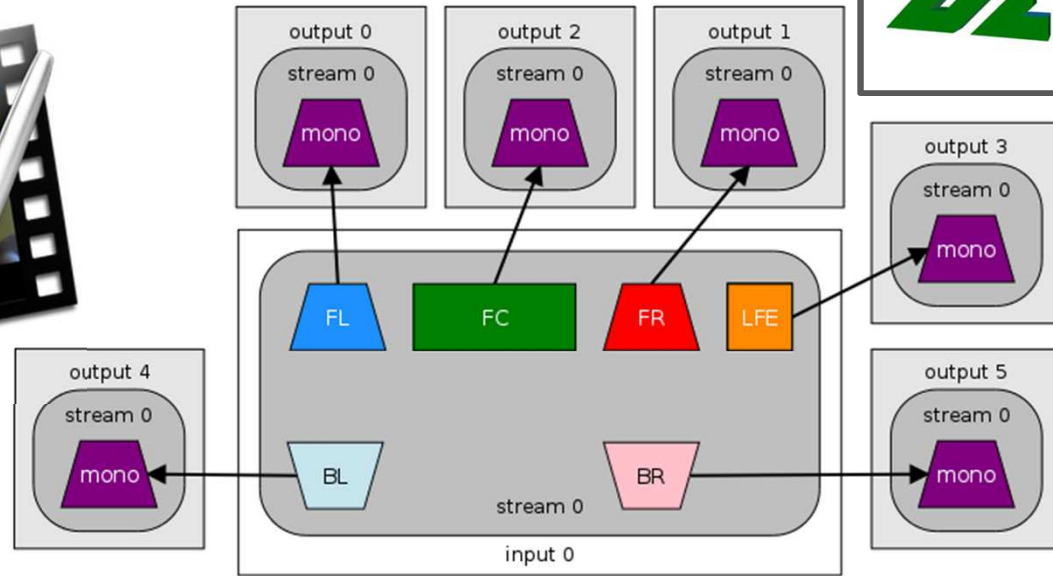
- **The 3 video files don't have the same framerate but we needed to combine them in one timeline and assure correct playback**
- **Although it was not explicit from the specs there was no way to get the Hyperdeck to play a 4:3 video!**
- **We had 4:3 .mpeg and .mp4 files and needed to create 16:9 ProRes for compatibility issues with Hyperdecks ... the selected projectors were 4:3 though! Agh!**
- **In order to output 8 channels of audio via SDI on Hyperdeck we had to create a 16 channel multitrack.**

https://trac.ffmpeg.org/wiki/AudioChannelManipulation

5.1 to individual channels

Apps TIBM Wiki MiniDV Transfer · ID Sony-HVR-M25U-M

5.1 → 6 × mono



Split a 5.1 channel input into individual per-channel files using the [channelsplit](#) audio filter:

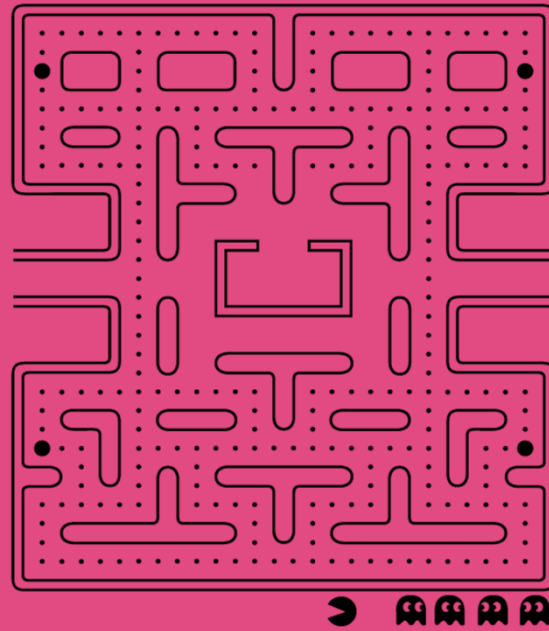
```
ffmpeg -i in.wav \  
-filter_complex "channelsplit=channel_layout=5.1[FL][FR][FC][LFE][BL][BR]" \  
-map "[FL]" front_left.wav \  
-map "[FR]" front_right.wav \  
-map "[FC]" front_center.wav \  
-map "[LFE]" lfe.wav \  
-map "[BL]" back_left.wav \  
-map "[BR]" back_right.wav
```





Media Prep summary

MASTER



EXHIBITION
FORMAT

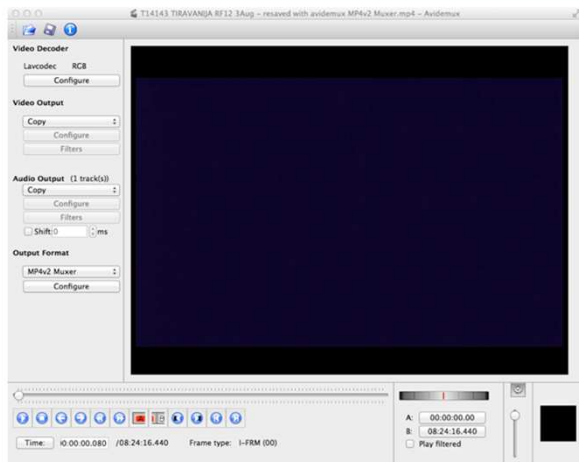
DETOURS

How are we documenting the decision making process?

EXHIBITION FORMATS (codecs/ containers)			
Apple ProRes <input checked="" type="checkbox"/>	H.264/ AVC <input checked="" type="checkbox"/>	H.265/ HEVC <input type="checkbox"/>	PCM <input checked="" type="checkbox"/>
WAV <input checked="" type="checkbox"/>	MPEG-2 <input checked="" type="checkbox"/>	MPEG-3 <input checked="" type="checkbox"/>	MPEG-4 <input checked="" type="checkbox"/>
AIFF <input checked="" type="checkbox"/>	QuickTime MOV <input checked="" type="checkbox"/>	DVD <input checked="" type="checkbox"/>	Other <input checked="" type="checkbox"/>
<i>List of exhibition copies used</i>			
<i>Screen grab that captures how the media was encoded (e.g.. was it interlaced or not, bit rate, etc)</i>			
Email sent to Rob Kennedy by Francesca about the preparation of the files			
<p>1) I worked from the EFs that were made for the Whitney loan and changed the aspect ratio of the pixels to 1 (square). 2 of the original files were PAL and 1 was NTSC so the decision was to output 50p</p> <p>2) The Hyperdeck only plays avid or Quicktime codecs so after a few tests the best solution I could find was to create in Premiere a 50p Pro Res 422 sequence 1280x720 -- the reason why the sequence aspect ratio is 16:9 is because the Hyperdeck does not play 4:3 files. The original files have been stretched to fit the frame and will be then squeezed back to 4:3 with the projector settings.</p> <p>3) The videos will play in the space in the following order A-Parreno (north wall), B-Huyghe (south wall), C-Gonzalez Foerster (east wall) -- see super arty drawing attached. We will use 3 Hyperdecks synchronised via ArtAV sync unit (you will find instructions on my desk otherwise ask Jack).</p> <p>4) The Premiere Project contains 3 sequences that correspond to the 3 different videos. I doubled checked with ArtAV and we have to create a multichannel 16 channels audio track to have all 8 channels playing in the space outputted from one unit. The sequence containing the audio is the Parreno one. I assigned the audio to the appropriate channels -- channel 1 first speaker on the right, the rest clockwise. I haven't exported anything yet because I think there's still a bit of work to be done to make sure the sound levels are ok. If you need any help this is the number from ArtAV +44 (0)1642 686086 I called them today to ask a few questions about outputting audio, but unfortunately the person who's specialised in this was not available.</p> <p>5) The equipment is in the prep area in V. The projectors control panel is disabled from Kanwar, it needs to be reactivated, but in the meantime you can use a remote control.</p>			
MEDIA SET-UP			
Audio <input checked="" type="checkbox"/> 7.1	Video synchronization <input checked="" type="checkbox"/>	Audio synchronization <input type="checkbox"/>	Colour <input checked="" type="checkbox"/>
Looped <input checked="" type="checkbox"/>	Subtitles <input checked="" type="checkbox"/>	Resolution <input type="checkbox"/>	B/W <input checked="" type="checkbox"/>
Lenses <input checked="" type="checkbox"/>	Software <input checked="" type="checkbox"/>	Other <input checked="" type="checkbox"/>	

Installation Report

- Context
- Audiovisual Equipment
- Exhibition formats
- Media set-up
- Decision making
- Relates this specific display back to the artwork.



The compatibility of the resultant files was as follows:

Player	MP4v2 8hr+ video file	TS 8hr+ video file
<u>XD Brightsign</u>	Yes	Yes
<u>Brightsign HD 220</u>	Yes	Yes
<u>Brightsign HD210</u>	No	Yes
<u>Quicktime 7 (mac)</u>	No	No
VLC	Yes	Yes
<u>Quicktime 10</u>	No	No
<u>Mpregstreamclip</u>	No	No

For the 2016 Whitney display, the file was supplied as a TS and MP4.

Screenshots of tools used

Media Info Reports

```
Wrana:~ anacristribeiro$ mediainfo -f /Users/anacristribeiro/Desktop/T14139.011\ EF.mp4
[General
Count                                     : 322
Count of stream of this kind             : 1
Kind of stream                           : General
Kind of stream                           : General
Stream identifier                        : 0
Count of video streams                   : 1
Count of audio streams                   : 1
Video_Format_List                        : AVC
Video_Format_WithHint_List              : AVC
Codecs Video                             : AVC
Audio_Format_List                        : AC-3
Audio_Format_WithHint_List              : AC-3
Audio codecs                             : AC3
Complete name                            : /Users/anacristribeiro/Desktop/T14139.011 EF.mp4
Folder name                              : /Users/anacristribeiro/Desktop
File name                                 : T14139.011 EF
File extension                            : mp4
Format                                   : MPEG-4
Format                                    : MPEG-4
Format/Extensions usually used           : mp4 m4v m4a m4b m4p 3gpp 3gp 3gpp2 3g2 k3g jpm jpx mqv ismv isma f4v
Commercial name                          : MPEG-4
Format profile                           : Base Media / Version 2
Internet media type                      : video/mp4
Codec ID                                  : mp42
Codec ID                                  : mp42 (isom/iso2/avc1/mp41)
Codec ID/Url                              : http://www.apple.com/quicktime/download/standalone.html
CodecID_Compatible                       : isom/iso2/avc1/mp41
Codec                                     : MPEG-4
Codec                                     : MPEG-4
Codec/Extensions usually used            : mp4 m4v m4a m4b m4p 3gpp 3gp 3gpp2 3g2 k3g jpm jpx mqv ismv isma f4v
File size                                 : 296395092
File size                                 : 283 MiB
File size                                 : 283 MiB
File size                                 : 283 MiB
File size                                 : 283 MiB
File size                                 : 282.7 MiB
Duration                                  : 249080
Duration                                  : 4mn 9s
Duration                                  : 4mn 9s 80ms
Duration                                  : 4mn 9s
Duration                                  : 00:04:09.080
Duration                                  : 00:04:09:02
Duration                                  : 00:04:09.080 (00:04:09:02)
Overall bit rate                          : 9519675
Overall bit rate                          : 9 520 Kbps
Frame rate                                : 25.000
Frame rate                                : 25.000 fps
Frame count                               : 6227
```

But what about all the detours?

How can we link a file prepared for a specific hardware and context back to the artwork in a more efficient way?

How to combine technical information and personal notes on decision making?

- A) Screenshots - sometimes we use GUIs like HandBrake (+ annotations)**
- A) Outputting FFmpeg logs (+ annotations)**
- A) Combining files MediaInfo reports with information about treatments and storing them in our artwork folders - separate from the file. (inspired by the work of Agathe Jarczyk)**
- A) Aggregating technical reports and storing documentation in the container of our exhibition format files**



THANK YOU!

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