TOO MANY QUICKTIMES!
(and other related confusion):
thoughts from an emerging audiovisual archivist

Becca Bender
Digital Preservation | CINE-GT 1807
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Or How I Learned To Stop Worrying
And Just Give This Presentation
QuickTime is a complete multimedia architecture, not just a media player. It supports creating, producing, and delivering a broad variety of media.

–2005 QuickTime Developer Guide

Codec(s) (aka QuickTime)

Player(s) (aka QuickTime)

Container(s) (aka QuickTime)
THE EASY PART: Codec(s) (aka QuickTime)

“The codec is also known as **QuickTime Video**, by its FourCC **RPZA** and the name **Road Pizza**.” –Wikipedia

- Apple Video codec introduced with QuickTime Player 1.0 in 1991

- Other “QuickTime” Codecs:
  - Animation
  - Cinepak
  - Component Video
  - Graphics
  - Photo - JPEG

“Back in the 90s, people didn’t define containers and encodings as being separate from each other, so for Apple, they referred to both the container and the encoding as **QuickTime**, when really the codec was Road Pizza.” –Dave Rice
THE EASY PART: Codec(s) (aka QuickTime)

<table>
<thead>
<tr>
<th></th>
<th>02 Digital Preservation/Assignments/02 Final Project/QT Sample Files/RPZA/rpza2.mov</th>
</tr>
</thead>
<tbody>
<tr>
<td>Format</td>
<td>QuickTime</td>
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<td>Format/Info</td>
<td>Original Apple specifications</td>
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<tr>
<td>Duration</td>
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<tr>
<td>Overall bit rate</td>
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<td>Writing library</td>
<td>Apple QuickTime</td>
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</table>

Video:
- ID: 0
- Codec ID: azpr
- Duration: 13s 733ms
- Bit rate: 1 858 Kbps
- Width: 320 pixels
- Height: 240 pixels
- Display aspect ratio: 4:3
- Frame rate: 15,000 fps

Codec ID: rpza
- Duration: 9s 715ms
- Source duration: 9s 733ms
- Bit rate: 1 707 Kbps
THE ANNOYING PART: Player(s) (aka QuickTime)

- QuickTime 1.x – released in 1991
- QuickTime 2.x – released in 1994
- QuickTime 3.x – released in 1998
- QuickTime 4.x – released in 1999
- QuickTime 5.x – released in 2001
- QuickTime 6.x – released in 2002
- QuickTime 7 (Pro) – released in 2005
- QuickTime X – released in 2009
THE ANNOYING PART: Player(s) (aka QuickTime)

QuickTime 7 (Pro) vs QuickTime X

- Frame Number –
- Boundaries –
- Audio in 2x speed –
- Ease of trimming –
- Ability to play older files –
- Windows Support –
THE WICKED HARD PART: Container(s) (aka QuickTime)

Classic QuickTime File Format vs Current QuickTime File Format
aka QuickTime vs QuickTime

“CLASSIC”
(but I unintentionally made this file last month)

“CURRENT”
(as of 2005)
### THE WICKED HARD PART: Container(s) (aka QuickTime)

Classic QuickTime File Format vs Current QuickTime File Format
aka **QuickTime vs QuickTime**

<table>
<thead>
<tr>
<th>CLASSIC</th>
<th>CURRENT</th>
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<tbody>
<tr>
<td><strong>General</strong></td>
<td><strong>General</strong></td>
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</table>
THE WICKED HARD PART: Container(s) (aka QuickTime)

The MPEG-4 Standard
ISO 14496 – Coding of audio-visual objects

• Overall standard introduced in 1998
• Built on QuickTime File Format (Classic)
• Currently consists of 33 parts
THE WICKED HARD PART: Container(s) (aka QuickTime)

MPEG-4: Part 12 – ISO base media file format

- Storage of NAL-Unit Video (14496-15) [AVC and HEVC file format]
- Motion JPEG-XR (29199-3)
- 3GPP and 3GPP2 Formats (*_3gp, *_3g2)
- MP4 File Format (14496-14, *.mp4)
- Motion JPEG-2000 (15444-3, *.m2i)
- MPEG-21 File Format (21000-9, *.m21)

QuickTime File Format (current *.mov)

MPEG-4:12 (IBMFF) / QuickTime Profile

- Format: QuickTime
- Codec ID: qt 2005.03 (qt)
- File size: 9.92 MB
- Duration: 368.950ms
- Overall bit rate: 2.661 Kbps
- Encoded date: UTC 2017-12-10 17:48:12
- Writing library: Apple QuickTime

MPEG-4:12 (IBMFF) / MPEG-4:14 (mp42)

- Format: Base Media / Version 2
- Codec ID: mp42 (mp42/mp41)
- File size: 9.93 MB
- Duration: 368.950ms
- Overall bit rate: 362 Kbps
- Encoded date: UTC 2017-12-10 17:44:40
- Tagged date: UTC 2017-12-10 17:44:40

Format/Extensions usually used:
- mov
- mp4
- m4v
- m4a
- m4b
- m4p
- 3ga
- 3gp
- 3gpp
- 3gp2
- 3g2
- k3g
- jpm
- jpx
- m4v
- ismv
- isma
- ismt
- f4a
- f4b
Implications for PRESERVATION:

“If I was talking to a programmer, I would refer to the file as ISO Base Media File Format, but if I was talking to someone at AMIA, I would just say QuickTime.”

–Dave Rice