Digital Video Standards for "Performing Medieval Narrative Today: A Video Showcase"

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Bibliography

- Performing Medieval Narrative Today: A Video Showcase

- University of North Carolina's MPEG4 User's Group
  - MPEG-4 Conformance Testing (Powerpoint)
  - MPEG-4 Compliance Spreadsheet (Excel)

- 3ivx

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Assumptions & Goals Driving Decision Making

- choose a format that is universally readable
  (i.e. Quicktime, Real, Windows Media Player, etc.)

- create only 1 hi & lo bandwidth version for each video clip
  (cable modem/LAN vs. 56k phone modem)

- Preference for:
  - clean site
  - simple workflow

- Intended users = potentially the whole world, hence:
  - can't depend on broadband access (must consider 56K modem users)
  - functionality can't be difficult
  - no need to download additional player software

- Streaming (vs. download) to protect IP
Assumptions & Goals, continued...

- What do Libraries/Archives Prefer?
  - non-proprietary systems and standards
  - open standards (internationally accepted, widely adopted, etc.)
  - openly documented
  - standards not software/hardware dependent
  - good/strong software support for the standard

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Choosing a Video Standard

- Proprietary Standards
  - Real video
  - Windows Media
  - Quicktime

- Non-Proprietary Standards
  - MPEG1 (VCD) ~ VHS quality
  - MPEG2 = DVD format & quality, but no easy streaming
  - MPEG4 = "standard for very low bitrate audio-visual coding" (MPEG-4 group)

- Why MPEG4?
  - non-proprietary, international standard
  - high-quality, low bitrate coding
  - hinted streaming (optimized for streaming)
  - based on successes of MPEG1, MPEG2, & Quicktime
  - MPEG4 files play in Quicktime, Real, & Windows Media Player
  - MPEG4 standard does not specify encoding process
Video Codecs

- Codecs (COder/DECoder) = algorithms (software) used to encode media files & then decode them at the time of playback.

- Why compress/encode?
  - raw, uncompressed video ~ 1 GB per 5 minutes, 12 GB per 1 hour
  - comparison: DVD holds > 4.5 GB
  - You can't stream this to anyone's desktop

- Compression --> less data per pixel -->
  - smaller video window
  - jerky video (fewer frames per second)
  - tinny audio
  - artifacting
Video Codecs, continued...

- Example: Hi Quality Clip vs. Low Quality version

- GOAL: select a standard designed for high-quality compression
  + standard-compliant codec to achieve that compression

  - 3ivx (http://www.3ivx.com/):
    > MPEG4 video **and** audio,
    > produces "fully compliant MPEG4 files" (3ivx website)
    > **free**!

Perfect, right? ....

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MPEG4, the Reality (the Chimera?)

- University of North Carolina's MPEG4 User's Group
  - Conformance Testing for MPEG-4 Compliance (Winter/Spring 2004?)
  - No MPEG4 codec tested was compliant with the standard! (including 3ivx)

- What happened to Real?
  - RealVideo 9 (RealOne) introduced MPEG4 support
  - Envivio MPEG4 codec pulled from v.10 of RealPlayer (why??)
  - Real can play MPEG4 using Quicktime as plugin... sometimes...
  - Real just re-introduced MPEG4 support in v.10's latest update, but...
    > unknown (non-compliant?) codec
    > no documentation
    > won't play 3ivx files (but can play Quicktime MPEG4 files)

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MPEG4, the Chimera? continued...

- Windows Media Player
  - MPEG4 not natively supported
  - needs MPEG4 codec plug-in such as 3ivx... but...
  - doesn't support RTSP streaming protocol

- Media Players duking it out: Quicktime vs. Real
  - Real can't play the files but insists on trying
  - Q: how to stop Real?

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Performing Medieval Narrative Pilot: Conclusions?

- Performing Medieval Narrative Today: A Video Showcase (Local Version)

- Decisions & Compromises:
  > continue using MPEG4 standard + 3ivx codec
  > embed video files in web page - requires use of Quicktime
  > watch MPEG4 development/ adoption
  > re-encode only when a better solution is obvious

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