

DIGITAL – Institute for Information and Communication Technologies



DIGITAL AV MEDIA DAMAGE
PREVENTION AND REPAIR



VidiCert

Efficient Video Essence Quality Assessment Tools
DigiBETA & Noise Restoration

Peter Schallauer, NAB 2014, Las Vegas



Focus on Essence Defects

- File integrity
- Wrapper (MXF, MOV, AVI) standards compliance
- Stream (MPEG,....) standards compliance
- **Essence (base band, content based) quality assessment**
 - Analysis of raw image data – independent of encoding
 - Video and movie degradations
 - Detects multi-generation defects
 - Analogue and digitally born
 - Resolution independent
 - No reference video required





Use Cases for Essence Quality Checking

- Archive
 - Archive digitisation/migration QC
 - Selection of / search for content with specific quality properties
- Production & Post
 - Rushes
 - Incoming & outgoing quality assessment in video and movie post-production
 - Estimation of the restoration effort
- Delivery
 - Quality assurance before broadcast / distribution
- Streaming services & portals
 - Quality based video selection



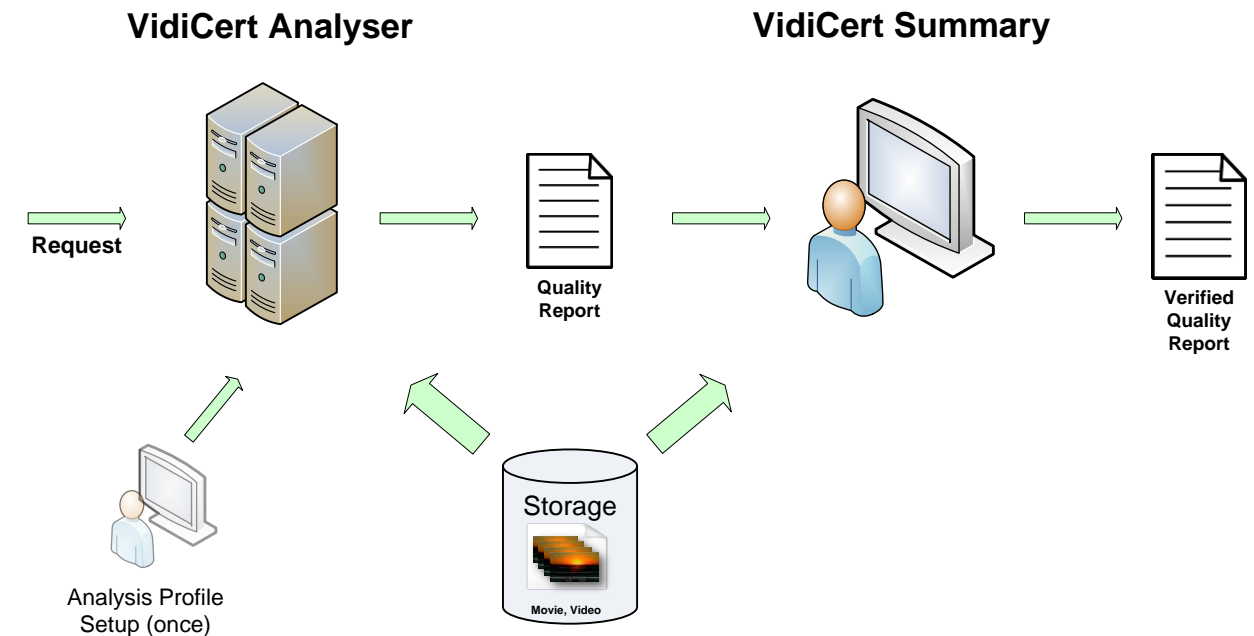
Preservation Use Cases for Essence Quality Checking

- Content Ingest/Migration
 - monitor if the video player shows problems (head clog, drop-out, video breakup, off-lock,.....)
 - monitor the scanning process (instability, out of focus, white/black point, ...)
 - ingest only high quality content (no up-scaled one, ...)
 - check the encoding/transcoding (blocking, sharpness,)
- Content Selection/Access/Usage
 - select my 'best quality copy'
 - search for a video with minimum quality for a certain usage
 - noise reduction necessary?
 - Sharpness high enough?
- Restoration Planning
 - estimate costs
 - select tools/systems



Automation of Essence Checking

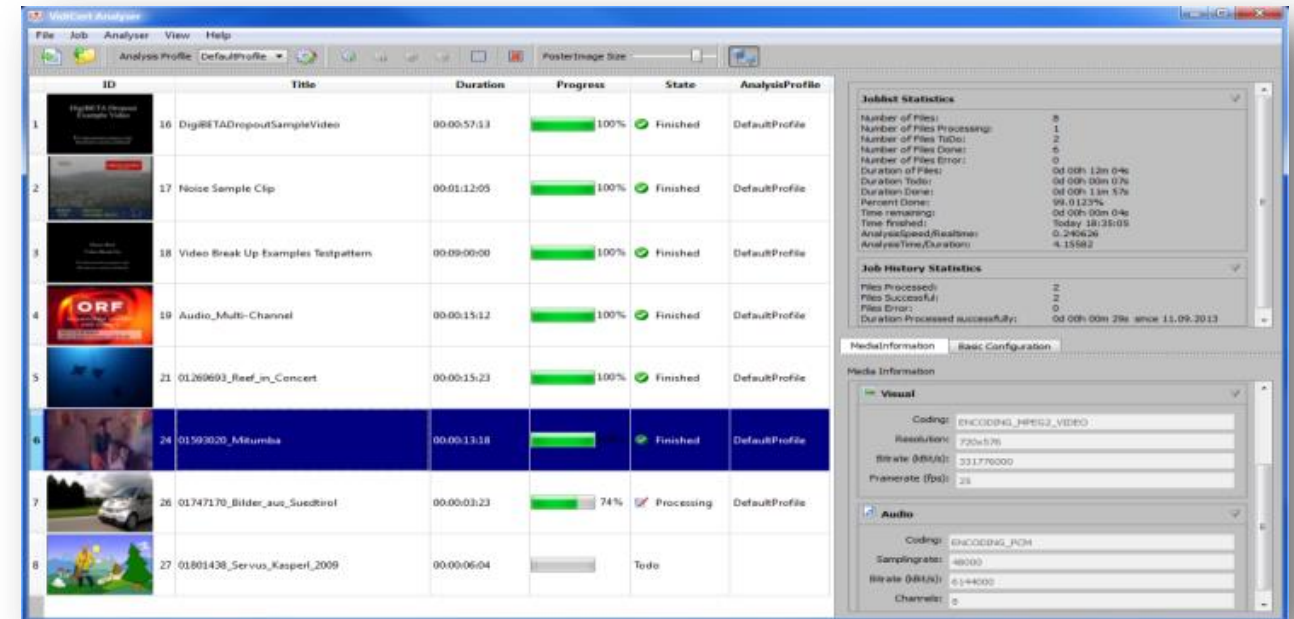
- Fully manual
 - Highest quality, extremely expensive
- Fully automatic
 - Limited functionality, very cheap
- Automatic analysis + Human verified
 - Cost efficient and high quality





Automatic Quality Analysis

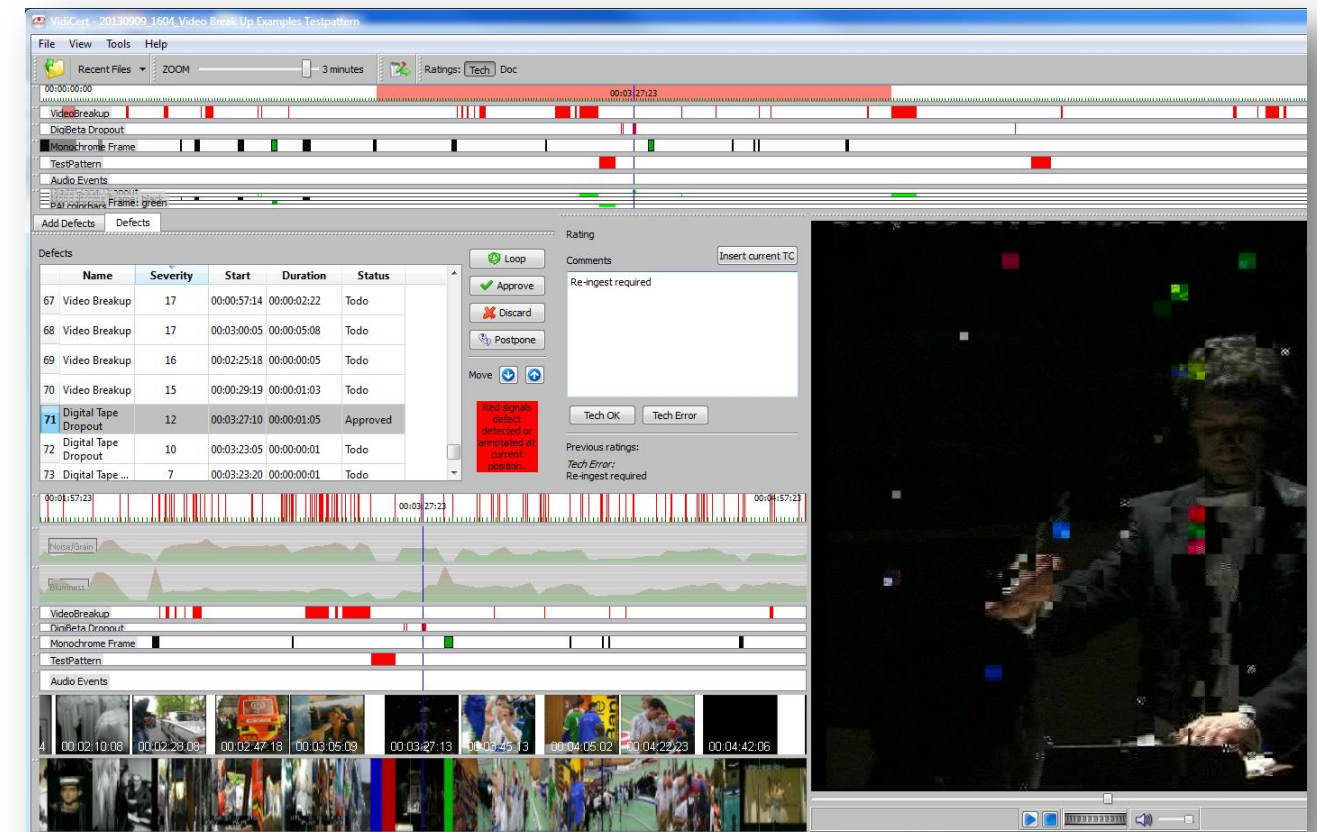
- VidiCert Analyser Integration
 - Detectors
 - Video Breakup (major analog video disruptions)
 - Noise/Grain (electronic & film grain)
 - Digital Tape Dropouts (e.g. Digital BETACAM™)
 - Blurriness
 - Monochrome Frames
 - Test Pattern
 - Silence
 - Dolby®E™
 - Field Order Errors
 - Scanning Type Errors (Progressive, Interlaced)
 - If you need a specific solution we are here to implement it!
 - Metadata fully compliant to MPEG-7/AVDP (XML)
 - Customizable analysis profiles
 - Highly optimised GPU accelerated algorithms
 - Workflow integration via web service & drop folder





Efficient Interactive Essence Quality Verification

- VidiCert Summary Integration
 - Advanced summarisation and navigation by various timeline based metadata views
 - Efficient human quality judgement by severity based inspection
 - Fully customizable user interface (including full screen video player support on second monitor)
 - Rating support for multi-stage QC



Restoration Digital BETACAM Dropout





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Restoration Digital BETACAM Dropout

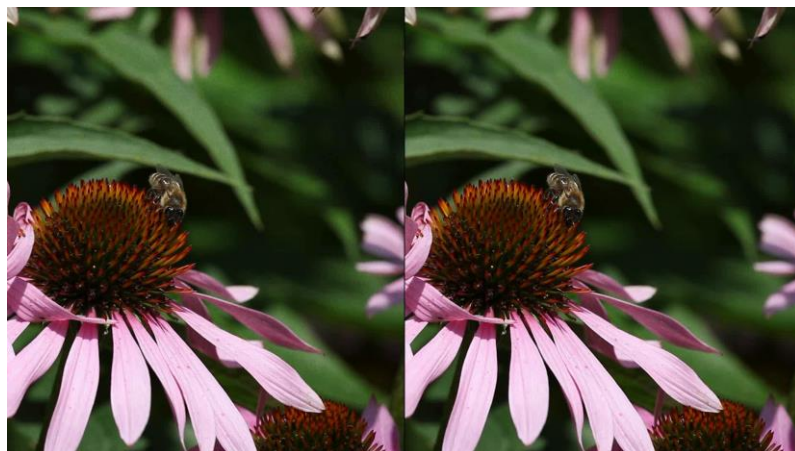




Noise Restoration

Goals

- Support broad range of noise (sensor, film-grain...)
- High degree of automation



Applications

- Restore archive content to reach target program quality
- Avoid blocking problems in distribution channels (satellite, Blu-ray, DVD)
- Video storage reduction





www.vidicert.com

Contact

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