*act*LINE ™

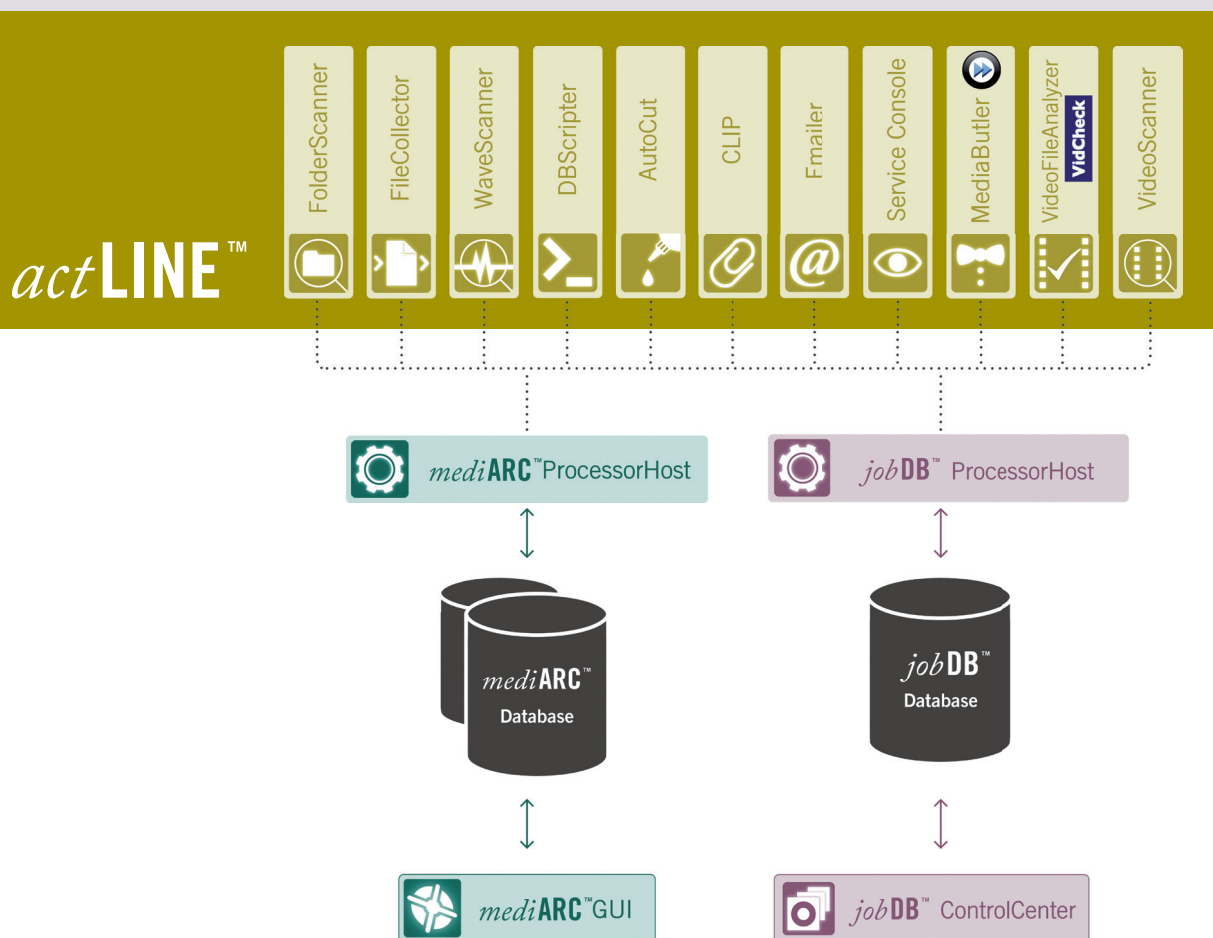PROCESSORS TO RESHAPE YOUR CONTENT

*act*LINE ™

ПOΔ
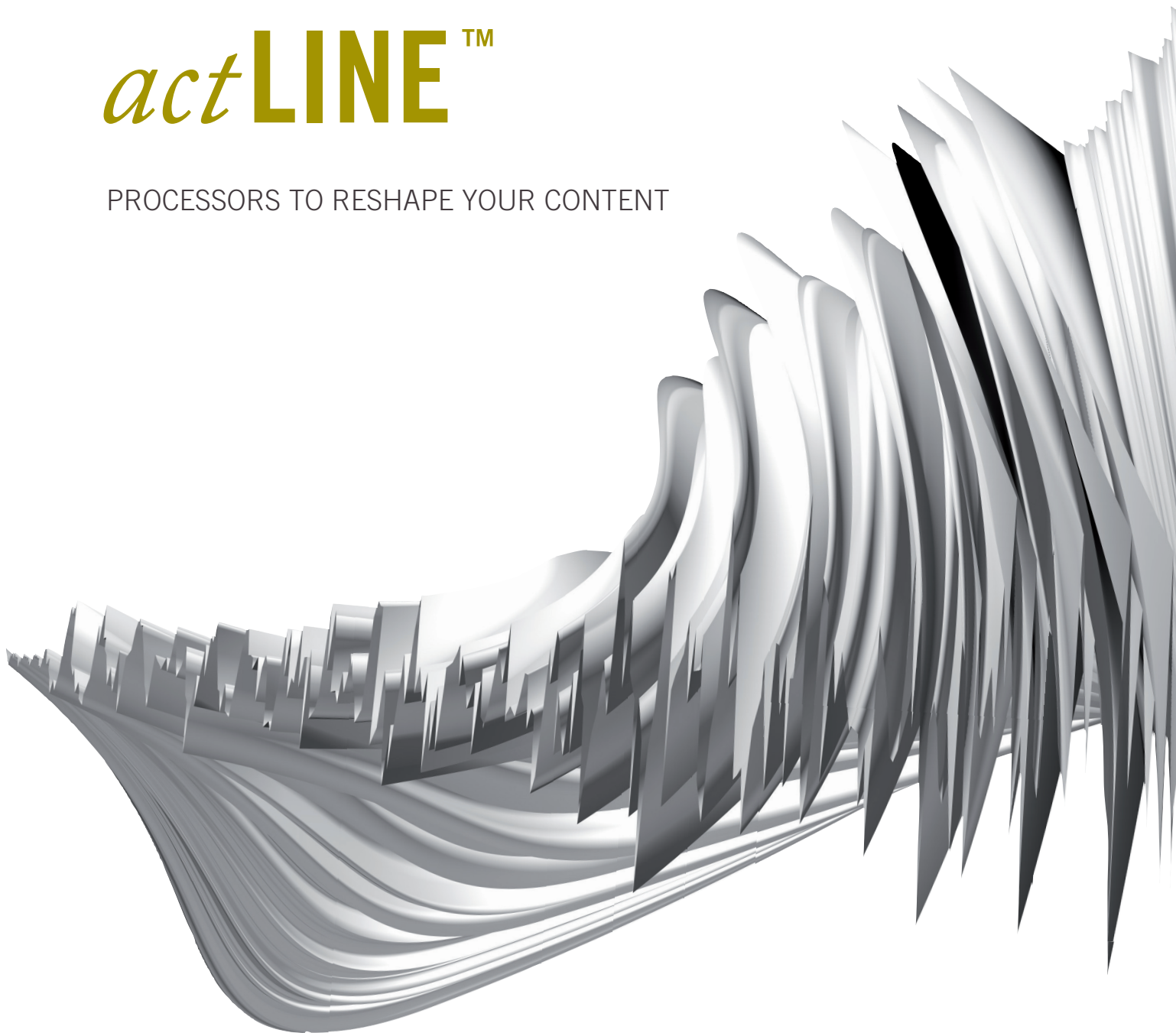
WHAT IS actLINE™?

actLINE™ gives users a powerful set of tools that allows them to reshape content during the archiving process while extending the effectiveness and power of NOA's existing systems. Now, instead of using a combination of products from different vendors, you can perform all of the functions in a workflow with one integrated system, which helps save time, ensure compatibility, and lower costs.

The actLINE software package contains tools for triggering workflows, moving files among workflows, decoding and transcoding files, recombining segmented archives, and much more – all while integrating seamlessly with NOA's jobDB™ workflow creation tool and the mediARC™ workflow, media, and metadata system.

The tools are actually processors that perform specific functions within a workflow. By grouping together certain processors in certain combinations, actLINE helps the system process tasks more efficiently. actLINE applications connect to the jobDB engine or mediARC system through the respective ProcessorHost.

*act*LINE ™

FolderScanner | FileCollector | WaveScanner | DBScripter | AutoCut | CLIP | Emailer | Service Console | MediaButler | VideoFileAnalyzer VidCheck | VideoScanner

*medi*ARC™ProcessorHost

*job*DB™ ProcessorHost

*medi*ARC™ Database

*job*DB™ Database

*medi*ARC™GUI

*job*DB™ ControlCenter

*act***LINE**™

ΠΟΔ

MediaButler

MediaButler is a generic media-transcoding processor that can transcode files from linear format to many other formats. MediaButler can perform multiple audio- and videotranscodings within one discrete task.

MediaButler allows you to set up an adjustable, XML-based profile for embedding and segmenting metadata. You can also set the profile's internal parameters to correspond with task parameters, allowing for seamless integration into workflows. MediaButler can be delivered as a single-instance or multiple-instance application, where each instance adds a grid-based processing chain so that identical processes can run in parallel.

AUDIO OUTPUT FORMATS

→ WAV (32, 44.1, 48, 88.2, 96, 176.4, 192 kHz / 16, 24, 32bit)
→ MP2 (64 kbit-384 kbit/s)
→ MP3 (64 kbit-384 kbit/s, VB)
→ FLAC (for 16 and 24 bit files)
→ AAC, OGG and WMA

HEADER WRAP

→ BWF
→ MP3v1 for the corresponding MP3 files

AUDIO INPUT FORMATS

→ WAV
→ Other input formats can be supported using the optional UniPort WaveScanner

PROCESSING

→ Start/stop file-splitting based upon workflow parameters
→ Normalization values towards target value or peak value (processing in 32 bit float) Within the WAV-to-WAV step, a normalization towards a dedicated value can be performed
→ Dithering: on/off based upon triangular-shape dither
→ Bit width: change of target bit rate towards 16-bit, 24-bit and 32-bit IEEE float .
→ Channel mode: stereo, mono, left to mono, right to mono, leave original
→ Resampling: target sample rate 32, 44.1, 48, 88.2, 96, 176,4 and 192 kHz, as well as normal and double

VIDEO OUTPUT FORMATS

→ FFv1+ PCM 24bit multichannel (AVI)
   Supports following pixel formats:
      YUV 4:2:0 8/10bit
      YUV 4:1:1 8bit
      YUV 4:2:2 8/10/12bit
      YUV 4:4:4 8/10/12bit
      RGB 24bit
      RGB 32bit
      for native and lossless video preservation
→ VC-1 + WMA (WMV)
   mainly used for proxy file generation (browse copy)
→ other Output formats such as
      IMX50-D10
      XDCAM HD422
      DVCPro50
      VC-3
      AVC-Intra50/100
      etc.
   supported by optional third party encoder
   (i.e. Harmonic ProMedia Carbon, ...)

VIDEO INPUT FORMATS

→ HuffYUV/FFvHuff + PCM 24bit multichannel (AVI) used as workflow-internal lossless mezzanine format Other input formats can be supported using NOAs
→ VideoScanner (transcodes different input codecs into one linearized mezzanine format (FFvHuff), in its native pixel format)
→ Optional video transcodings by integrating third-party libraries; can be added to parameters via the same XML profiles

NOA

DBScripter

AutoCut™

ServiceConsole

DBScripter is a script interpreter for executing scripts in NOA systems through a basic interpreter language and an embedded integrated development environment (IDE).
You can use DBScripter scripts to perform tasks within workflows or for cyclic maintenance tasks. DBScripter comes with a set of standard scripts for typical operations, such as standard exports to a broadcast radio- or video-production system.
With the IDE, you can easily develop your own custom scripts, which you can deploy manually or over an NOA service. Whether you're importing metadata and associated files, or delivering metadata to an outside system, DBScripter is the bridge between the metadata in your database, and the metadata in your source or destination.

AutoCut™ automatically aligns and concatenates split or segmented-recordings coming from NOARecord into a single, digital file, which eliminates the need for time-intensive manual alignment in external editing applications.
All that is required for a successful match is a common portion of signal information between the files, such as exists in a simple stop / repair of a splice or manual adjustement of azimuth / 20 sec´s rewind / rerecord. AutoCut can thus merge carriers where suboptimal conditions – such as variations in speed, dynamics, frequency response, and noise floor – handicap the correlation. With only two stops and rewinds/restarts per tape, AutoCut will provide major time savings compared to conventional manual processes.

The ServiceConsole provides a centralized, real-time overview of nearly all NOA processors running on distributed servers.
With ServiceConsole, you can quickly and easily troubleshoot and pinpoint an error with no downtime. ServiceConsole links to almost all native NOA processes, where you can see the individual activity and access parameters for each one. You can also use the ServiceConsole for shared display of all tasks taking place in the archive, including throughput levels, as a simple activity barometer.
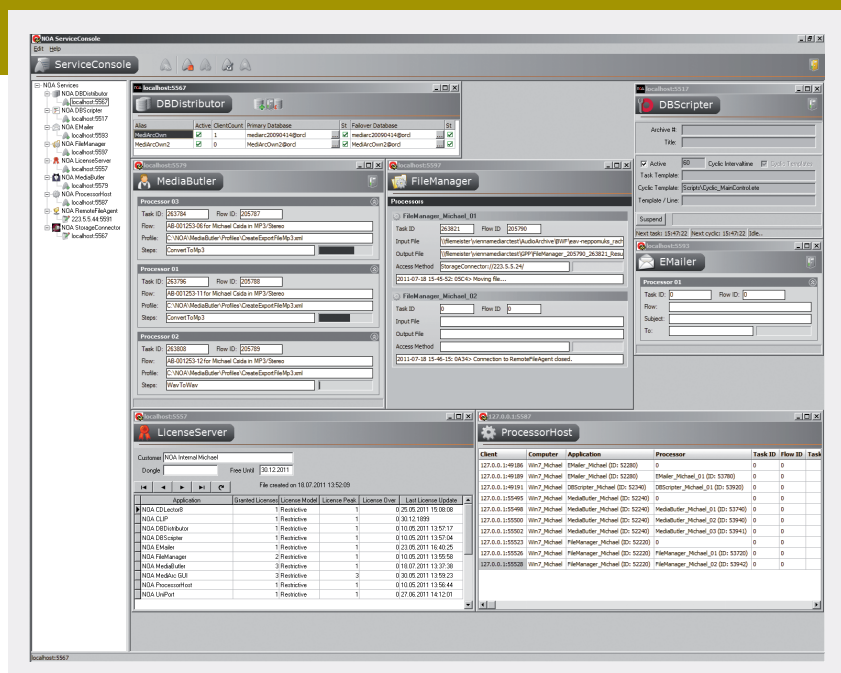
ServiceConsole giving access to different actLINE and mediARC modules, including MediaButler which is running in three instances.

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CLIP

CLIP (Command Line Interface Processor) is a generic processor that executes operating system commands within an NOA workflow. With a minimum amount of configuration, CLIP will recognize any third-party, CMD-line-enabled application as a workflow processor for use with the NOA workflow engine.

CEDAR Dehiss for NOA

Integrated over CLIP, CEDAR Dehiss for NOA is an advanced algorithm that determines and reduces the noise content of a recording with minimal loss of high frequencies, and without introducing unwanted artifacts. It is tolerant of changing signal conditions, which makes it ideal for processing large numbers of tracks with little or no user intervention.

CEDAR Declick For NOA

Developed from CEDAR's Declickle™ process, CEDAR Declick for NOA removes clicks and many instances of crackle from damaged audio without introducing unwanted side effects and/or artifacts. It automatically handles and corrects a wide range of impulsive noise durations and amplitudes, which makes it ideal for processing large numbers of tracks with no user intervention. It is integrated over CLIP.

eMailer

eMailer is a processor application built into a workflow that notifies you of specific workflow conditions. When the condition arises, it triggers an email. For example, you would receive an email when a certain workflow completes or fails.

VideoFileAnalyzer

VideoFileAnalyzer acts as interface between the NOA workflow engines (mediARC and jobBD) to common 3rd party analyzer tools (currently implemented VidChecker™,...) to make video container/codec based quality checks and to integrate them into mediARC or jobDB workflows.

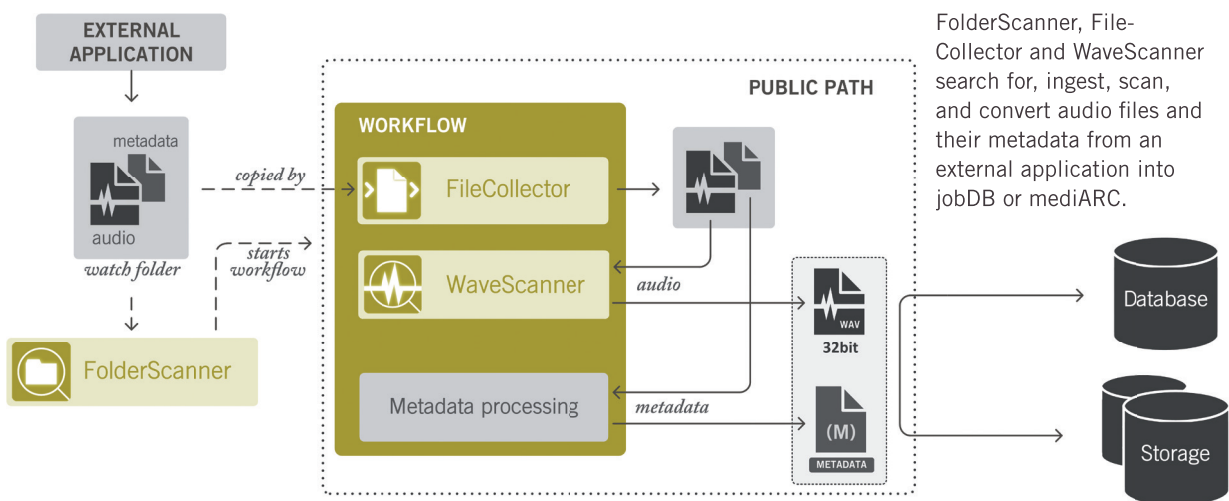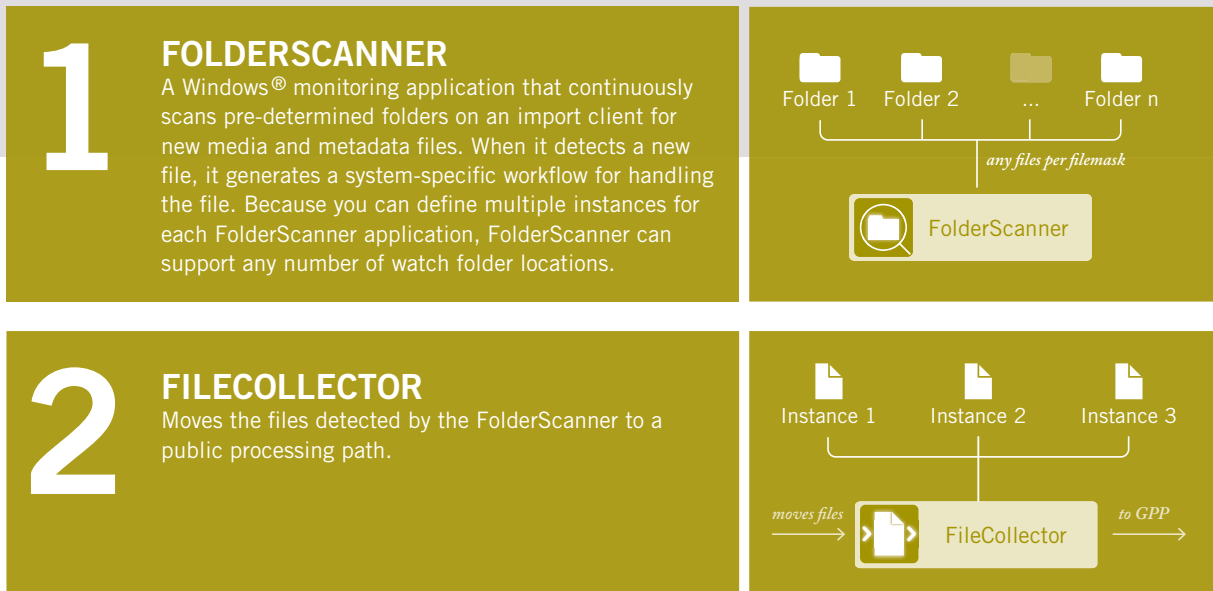VideoFileAnalyzer performs comprehensive checks on video, audio and container parameters. When quality issues are detected, the NOA workflow engine may be configured based upon thresholds to respond in different ways such as:

- Flagging it as a warning
- Aborting the workflow on error or by
- Requesting approval from a skilled operator interactively

NOA

FolderScanner and FileCollector
with WaveScanner or VideoScanner

These are general ingestion tools for media files and the metadata with which they will eventually be associated. They transfer the external media and metadata files, matches them up, scans them, and then integrates them into the mediARC or jobDB system.

1 FOLDERSCANNER

A Windows® monitoring application that continuously scans pre-determined folders on an import client for new media and metadata files. When it detects a new file, it generates a system-specific workflow for handling the file. Because you can define multiple instances for each FolderScanner application, FolderScanner can support any number of watch folder locations.

Folder 1   Folder 2   ...   Folder n

any files per filemask

FolderScanner

2 FILECOLLECTOR

Moves the files detected by the FolderScanner to a public processing path.

Instance 1   Instance 2   Instance 3

moves files   FileCollector   *to GPP*

EXTERNAL APPLICATION

metadata

audio

watch folder   *copied by*   *starts workflow*

FolderScanner

PUBLIC PATH

WORKFLOW

FileCollector

WaveScanner   *audio*

Metadata processing   *metadata*

WAV
32bit

(M)
METADATA

Database

Storage

FolderScanner, File-Collector and WaveScanner search for, ingest, scan, and convert audio files and their metadata from an external application into jobDB or mediARC.

3 WAVESCANNER

UniPort WaveScanner analyzes and scans a variety of audio files for quality, decodes them to a WAV file, reads out metadata from the resulting header file, and creates corresponding MD5 checksums. The output results become parameters and result files for the workflow.

Instance 1   Instance 2   Instance 3

wav, mp3, aac, mp2, ...   WaveScanner   *wav*
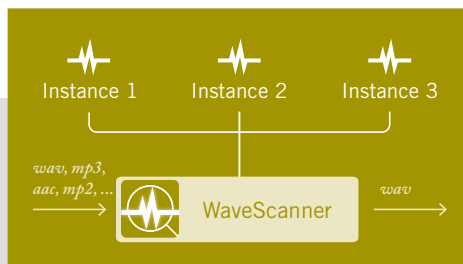
3.1 WAVESCANNER DECODES THE FILES

WaveScanner decodes and converts the following formats to WAV:

→ BWF (32, 44.1, 48, 88.2, 96, 176.4, 192 kHz, normal, double, quad / 16, 24, 32 bit)
→ WAV (32, 44.1, 48, 88.2, 96, 176.4, 192 kHz, normal, double, quad / 16, 24, 32 bit)
→ MP2 (64kbit – 384kbit/s)
→ MP3 (64kbit – 384kbit/s)
→ RF64 (2-channel)
→ AAC, FLAC, OGG, WMA

3.2 WAVESCANNER PER-FORMS QC AUDIO ANALYSIS

The analysed data gives an immediate hint towards problematic transfer zones, such as loss of bandwidth due to smeared heads, correlation swap due to mis-phased replayers and/or tapes, as well as direct indication of anomalities of noisefloor raise. An especially viable azimuth analysis helps to evaluate correct transfers from i.e. third party service providers.

This quality-related information – collected at the moment of WaveScanner analysis – is then stored in the jobDB™ or mediARC™ workflow system, allowing for a centralized quality assessment.

NOA Audio's WaveScanner algorithmic analysis tool may be used as part of an offline process in the archiving workflow or to perform QC on files being handled by our ingestLINE products. In some cases, not all ingestLINE products will require a full audio scanning QC approval stamp, since the transfer parameters are sufficient to indicate a correct transfer of the initial ingest (such as tape splice detection in NOARecord, BLER detection in MediaLector, or E32 detection in CDLector).

QC analysis can be moved to WaveScanner.

3.3 WAVESCANNER READS OUT METADATA AND PROVIDES MD5 CHECKS

Typically BWF- related metadata can be parsed out from the headerfile; additional header files may be available on request (such as i.e. Sequoia files). WaveScanner provides also an MD5 scan and reports the calculated MD5 back to the workflow.
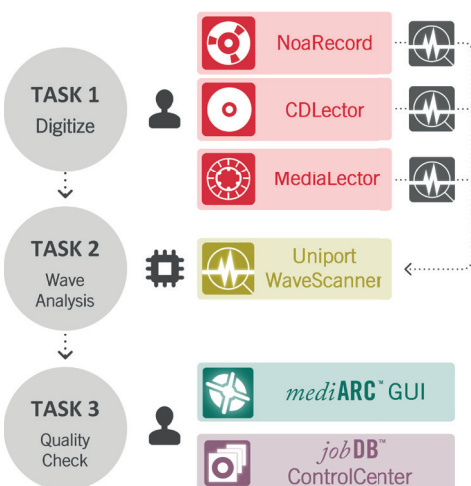
TECHNICAL SPECIFICATIONS ALGORITHMIC RECOGNITION:

Event-related parameters
→ Clicks L/R
→ Modulation Start L/R
→ Modulation Stop L/R
→ Digital overload L/R
→ Mutes L/R
→ Break L/R

**Traces-aided spot listening (tas)**
→ Bandwidth L/R (x10 kHz)
→ Correlation (-1/+1)
→ Azimuth (degree shift @10 kHz)
→ RMS L/R (dBfs)
→ Peak L/R (dBfs)
→ Noise L/R (dBfs)

Overall statistics
→ Number of Mutes L/R
→ Number of Clicks L/R
→ Mean Noise L/R
→ Mean RMS L/R
→ Mean Bandwidth L/R

TASK 1 Digitize

NoaRecord
CDLector
MediaLector

TASK 2 Wave Analysis

Uniport WaveScanner

TASK 3 Quality Check

*medi*ARC™ GUI
*job*DB™ ControlCenter

3 VIDEOSCANNER

VideoScanner is a video file normalizing gateway, translating a typically lossy production format to a unified, mathematically lossless, and open mezzanine format
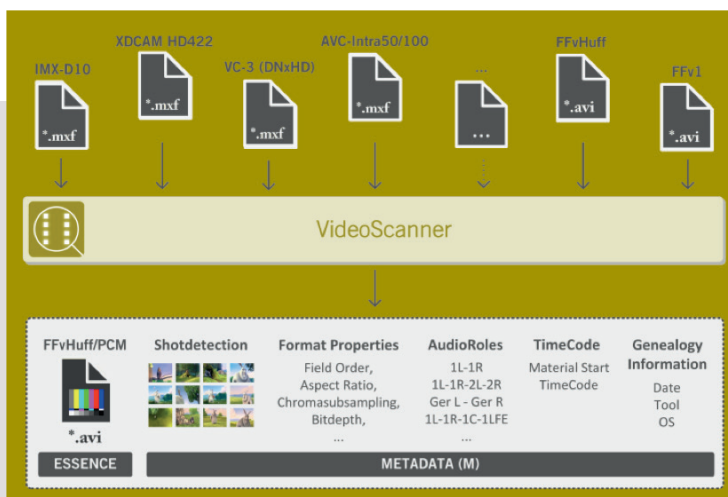

The multiple-format situation in a broadcasting and archiving environment will raise the challenge in the near future (i.e. the coming 5-10 years) of incompatible software re-players, proprietary decoders, and finally generation loss from one format to the next platform, not to mention the vendor lock-in of certain proprietary formats. VideoScanner decodes this variety of codecs to a consolidated and open mezzanine format, which then – in return – allows deciding for the final archival format (see MediaButler)

Codec / Wrapper:
VideoScanner enables the decoding of a wide range of frame - and pixel formats, which will remain unchanged. VideoScanner copes with various interlacing modes and progressive material. Currently, VideoScanner supports packages with one Video stream and n (up to 32) audio channels (see website for a complete list of supported formats). Metadata / other information: VideoScanner extracts Format properties (Field Order, Aspect Ratio, Chroma sub-sampling, Bit depth, …),

TimeCode offsets, and creates a shot-detect index to help with describing the content, and creates so-called Audio Roles: These are technical metadata descriptors, which serve flagging the individual audio channels with their position and language.
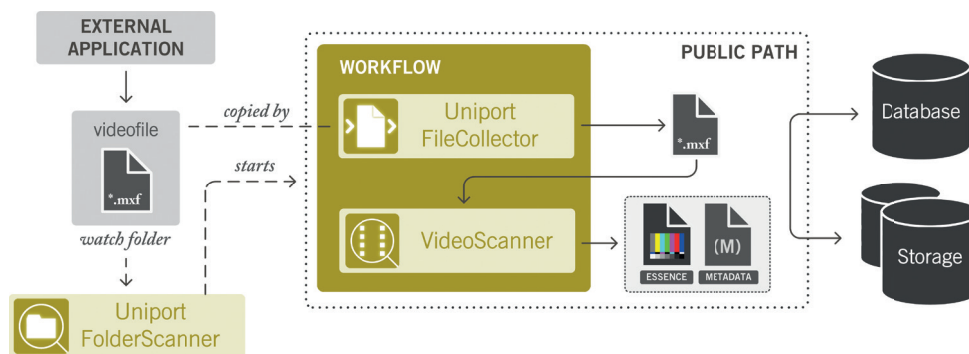
FolderScanner, FileCollector and VideoScanner collect, ingest, scan, and normalize production video files and their metadata towards a lossles compressed mezzanine format.