

ContentAgent Media Processing and Automated Workflow Management System

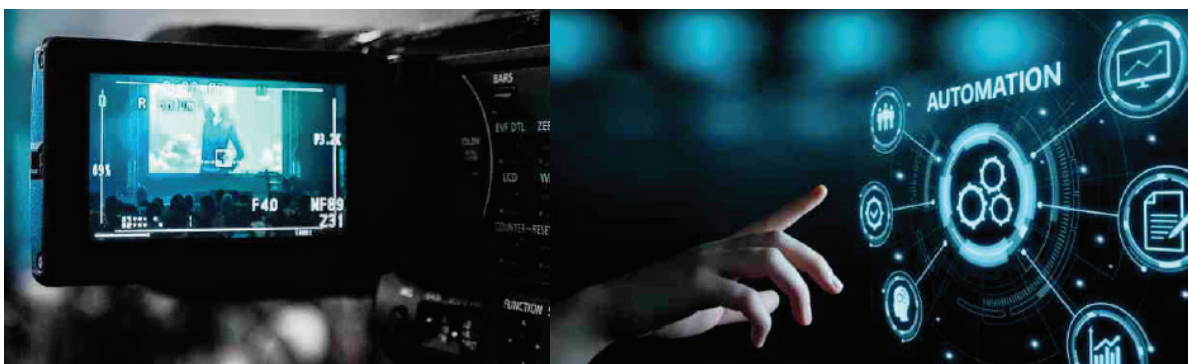
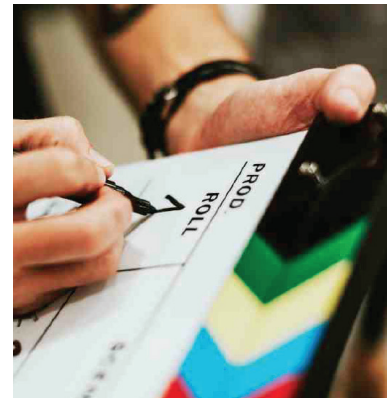
Simply Powerful and Powerfully Simple

Overview

The proliferation of broadcast and consumer file types and formats can cause headaches and bottlenecks in the post production and broadcast process, tying up valuable equipment and manpower.

ContentAgent eliminates the need for human intervention by automating commonly performed tasks from camera card ingest to delivery workflows, improving accuracy and efficiency with subsequent cost savings. Designed with considerable input from the post and broadcast communities, ContentAgent echoes industry practices and presents an easily understood way of working.

At the heart of ContentAgent is a powerful workflow engine which orchestrates job automation. JobAgent's provide affordable superfast parallel processing nodes enabling jobs to scale - from one PC to many - for the most demanding transcode intensive operations. JobAgent's incorporate the Platinum Engine, Telestream's proprietary transcoding powerhouse, incorporating CPU and GPU acceleration to meet the stringent demands of broadcast, film and post production. Resolution independent, the transcoding engine can process files from SD through to UHD/4K and beyond.

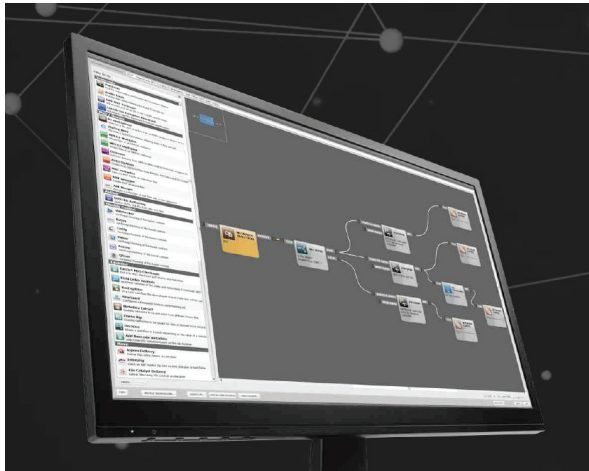


ContentAgent Workflow Designer

The Workflow Designer enables individual processes (tasks) to be linked together; from simple one-off jobs to the most complex workflows, in an intuitive process-tree style operation.

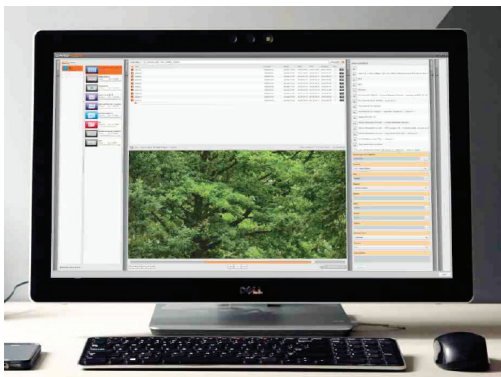
The process nodes also provide integration with leading third-party technologies (such as file based quality control tools) considerably adding to the versatility of the system.

Decision nodes add intelligence to the workflow, using technical or user-generated metadata to examine files and determine the appropriate action. Once created, workflows may be stored and repeated infinitely by CA non-technical staff



ContentAgent enables the automated ingest of camera card originated media. This has significant implications for editorial as it frees up equipment and manpower.

The system supports all commonly used card structures from which media and metadata are ingested; then transcoded (or rewrapped for greater efficiency) and imported into the post production workflow, including automated archiving and proxy generation.



CardAgent CardAgent builds on the automated card ingest capabilities of ContentAgent providing a simplified user interface enabling non-technical staff to select, playback, trim, add custom metadata and submit local and remote jobs to initiate an CA automated workflow.



JobAgents allow you to effortlessly scale processing power to suit your media throughput. Each JobAgent license allows for up to 4 simultaneous processing tasks to be completed on each render node. Workflows and tasks are distributed by ContentCentral's Render Management tools, making sure that all available process threads and hardware are utilised to the full. Furthermore each remotely attached JobAgent is easily managed in the main ContentAgent interface.



Integrations

ContentAgent's deep integration into 3rd party software allows you to seamlessly orchestrate tasks as part of a workflow.

These can all be accessed via their own dedicated tool nodes in the workflow designer.

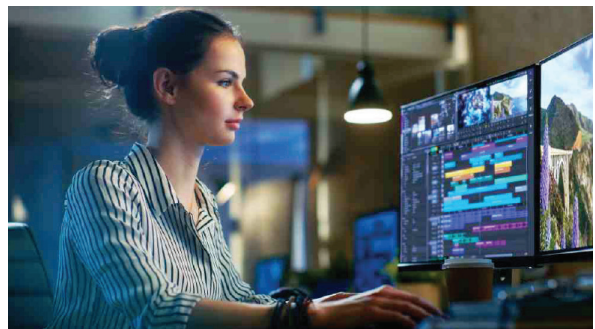
ContentAgent supports all the major QC vendors as well as accelerated file transfer products. However the integration goes even deeper with the Platinum node having inbuilt access to advanced scaling and motion compensated framerate standards conversion, utilising Cinnafilm's Dark Energy and Tachyon technology, in the UI. For delivery workflows, there are also options for dedicated forensic watermarking, via NexGuard, and legalisation, via our fully featured Video Legaliser, both available within the transcoding engine.



Interoperability

Interoperability into editorial environments further enhances ContentAgent's automated ingest and delivery capabilities. Comprehensive AVID integration allows ContentAgent to provide a seamless workflow experience into both standalone and PAM editing environments.

From optimised media transcoding and rewrapping to best in class metadata handling, ContentAgent is the perfect partner for any sized Media Composer based facility. There are also specific nodes in the Workflow Designer for AVID based ingest processes as well as extensive delivery options from editorial, including full watchfolder support for MediaCentral | Production Management and advanced workflow triggering directly from Media Composer's timeline.



CONFIGURATION base



Integrated Watchfolder Engine with scheduling support	Video Cropping / Padding / Scaling	Comprehensive MXF Op1a Wrapping Toolset
User friendly Graphical Workflow Designer	MD5 Checksum Creation / Verification	Clip Concatenation from Camera Cards, Reels and Playlists (Stitching)
Intelligent Field Order Analyser	DVD Authoring (manual or automated)	API tools - SOAP or XML driven
Software Framerate Conversion	Automated metadata-based decision making during workflows	CMD Line processing to harness external applications
Advanced Metadata Management	Burn in Subtitling support	E-mail Alerts/Notifications with metadata driven dynamic fields
Camera Card Processing	FTP Upload with dynamic metadata driven folder creation	Clip Trimming for selective transcoding
Advanced Network / Local Copying with comprehensive options	Advanced Multiplexing	Graphical Audio Patching
Customised XML, CSV & TXT output options	Integrated Playback (non-SDI)	Timecode Burn-In with offset and format options
H.264 NVENC GPU acceleration	Graphics Module for image and metadata driven dynamic text	Web based Monitoring Tool

OPTIONS configurator

Additional options can be easily added to the ContentAgent base configuration to expand the tool-set and functionality. The features and bundles below are currently available.



AVC-Intra and XAVC Codecs CA-AVC-I Support for encoding of AVC-Intra and XAVC material.	Avid MXF File Generator CA-AVID-MXF Creates Avid MXF formats incl. DNxHD, JFIF, XDCamHD, XAVC, H.264 Proxy, IMX, DV, DVCPro, XDCam EX. AAF creation, Multires support for dynamic relinking. Includes Media Composer "Send To" ContentAgent feature.
Additional ContentAgent user interface CA-SW-UI Allows users to connect to a host ContentCentral database and build, edit and submit workflows.	Avid Turbo Pack CA-AVID-TURBO Creates DNxHR files at HD, 2K, 4K & UHD. The pack also contains an optimised DNxHD encoder for faster transcoding. *Note - The R6CA-AVID-MXF option above is a prerequisite.
Integration Module for file-based QC tools CA-QC-INT Telestream VidChecker and Aurora, Interra Baton, Venera Pulsar and LWKS QScan. *Note - QC software must be purchased separately.	Apple QuickTime ProRes Encoder CA-PRORES Encode as ProRes, ProRes LT, ProRes Proxy, ProRes 422, ProRes 422 HQ, ProRes 4444.
Image Sequence Option CA-IMG Decode and encode of DPX, JPEG, BMP, TIFF, PNG, TARGA and Open EXR frame sequences. Red R3D and ARRI RAW decoding. ARRI RAW and RED R3D decoding require a qualified NVIDIA GPU (not supplied).	Legaliser CA-LGL Corrects illegal video levels during Platinum transcodes. Industry standard presets included. Supports up to 4 simultaneous streams.
	Avid Media Central Production Management CA-AVID-INT Including Check-in, Edit While Transcoding and Watchfolder support.

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JPEG 2000 Support

CA-J2K

Encode & decode J2K Op1 a .mxf files. Requires qualified Nvidia GPU (not supplied)

Social Media Uploader

CA-SOC-INT

Upload media files directly to YouTube, Twitter and Vimeo.

H.265 Encoder

CA-HEVC

Create H.265/HEVC up to 4K resolutions. Includes support for acceleration via qualified Nvidia GPU (not supplied)

Integration with NexGuard

CA-CIV-INT

Supports automated forensic watermarking. (NexGuard license NOT included).

WAN Acceleration

R6CA-WANA-INT

Aspera (via PTP/Faspex) and FileCatalyst and Amazon S3 Uploader. (Aspera, FileCatalyst and Amazon S3 licenses NOT included).

Video Output

CA-OP

Digital video monitoring output over HDMI and SDI when used in conjunction with an AIA LHI card (not included). *Note - also works with other AIA cards - Deck control not supported.

AS-11 DPP Broadcast Delivery Bundle

CA-SWB-DPP

- CA-DPP-IE UK AS-11 DPP Insert Edit option
- CA-AVC-I AVC-Intra/XAVC codec.
- CA-QC-INT QC Integration module.
- CA-DPP-IE UK AS-11 DPP Insert Edit option.

Cinnafilm Tachyon phase correlation-based motion compensation engine

CA-FRC

- Standards conversion
- Frame rate conversion
- Resolution conversion (resizing)
- Cadence correction

* Note that this option requires that a qualified NVIDIA GPU (not supplied) is installed in the host CPU.

Dark Energy for Advanced Standards Conversion Module

CA-FRC-DE

- High Quality image
- Denoise/degrain
- Renoise/regrain with Texture Simulation

* Note that this option requires the above CA-FRC option

Integration with Teletrax

CA-TLTX-INT

Supports automated watermarking via Teletrax (Teletrax licence NOT included).

Integration with Spectra Logic BlackPearl

CA-SLB

Automate media backup workflows to and from the BlackPearl storage platform.

Integration with Minnetonka Audio Tools Server

CA-ATS-INT

Use Minnetonka Audio Tools

Dolby Digital Plus Encoder

CA-DD-5.1

Supports Dolby Digital and Dolby Digital Plus audio encoding.

* Note this option requires CA-ATS-INT.

Dolby E Encoding

CA-DBE-ENC

Supports Dolby E audio encoding.

* Note this option requires CA-ATS-INT.

Dolby E Decoding

CA-DBE-DEC

Supports Dolby E audio decoding.

* Note this option requires CA-ATS-INT.

Audio Frame Rate Toolbox

CA-ATS-AFR

Provides multichannel, phase coherent pitch shift, time stretch and sample rate conversion for format and frame rate adjustment.

* Note this option requires CA-ATS-INT.

Loudness Analysis and Correction

CA-ANA-LOU

Supports 1 loudness analysis and 1 correction simultaneously for ITU-R BS.1770, EBU R128 and ATSC A/85 etc

* Note this option requires CA-ATS-INT.

UPMAX

CA-ATS-LIN

Linear Acoustic UPMAX is a module that upmixes mono or stereo to surround formats such as 5.1 and 7.1

* Note this option requires CA-ATS-INT.

ATS DownMix

CA-ATS-DNMIX

Provides down mixes of surround formats such as 5.1 and 7.1. to mono or stereo.

* Note this option requires CA-ATS-INT.

Sony X-OCN and RAW Decoder

CA-SONY-XOCN

Enables X-OCN and RAW MXF debayering. Requires qualified NVIDIA GPU (not supplied).

Nielsen Integration

CA-NLSN-INT

Supports automated audio watermarking (Nielsen license NOT included).

ADD-ON software packages

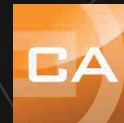


ContentAgent workflow functionality and processing capacity can be further enhanced with the addition of the extra software add-on packages listed below.

JobAgent - External software rendering engine installed on a separate host PC, increasing simultaneous transcode capabilities. Connects to ContentAgent via LAN. Additional software licenses need to be applied to JobAgent if render acceleration is needed for that option.



CardAgent - Simple, intuitive interface allowing operators to submit card-based media to ContentAgent for workflow processing. Supports playback, trimming, renaming and custom metadata entry. Single-user license. Windows only.



ContentAgent GUI allows for additional graphical interfaces to be installed around the facility. Utilising ContentAgent's multi user capabilities means that multiple people can access a central ContentAgent server simultaneously. Each user is presented with the full functionality and capabilities of ContentAgent but remotely.



MetaAgent - Allows offline preparation of DPP Metadata and submits to ContentAgent processing with relevant media file.



FORMAT support



ContentAgent's comprehensive format support sets it apart from other transcoding solutions. Extensive decode and encode functionality is included with every Base Package installation which can be further expanded by purchasing specific codec bundle packages.

Wrapper	Format	Base Package		Additional Option	
		Decode	Encode	Decode	Encode
AVI	Uncompressed				
	DV				
	Cineform				
MXF OpAtom	DNxHD				
	DNxHR				
	JFIF				
	AVC-Intra				
	DV25, DV50, DV100				
	XAVC				
	JPEG2000				
	H.264 Proxy				
	XDCAM HD				
	IMX				
MXF Op1A	XDCAM HD				
	XDCAM EX				
	DNxHD				
	DNxHR				
	XF-AVC				
	XF-HEVC				
	IMX (D10)				
	AVC-Intra				
	XAVC / XAVC-S				
	JPEG2000				
	DV				
	DVCPro				
	X-OCN				
	Sony RAW				
	AS11				
RED	.r3d				
	.rmd				
MPEG	MPEG1				
	MPEG2 (PS, TS)				
H.265	.mov				
	.mp4				
	.mxf				
H.264	.mov				
	.mp4				
	.m4v				
	.3gpp				
Image Sequence	.dpx				
	.tga				
	.tiff				
	.bmp				
	.exr				
	.png				
	.ari				
Windows Media	WMV / VC1				
DV	.dv				
	.avi				
Quicktime	H.264				
	Legacy Codecs				
	AVID Codecs				
	3rd Party Codecs				
	ProRes 422 / 422HQ / 4444				
Audio	WAV / PCM				
	MPEG				
	AAC				
	AC3 5.1				
	Dolby-E				

CAMERA CARD package support

ContentAgent and CardAgent both have unparalleled support for the latest camera card formats and structures. Below is a list of the currently supported formats and manufacturers.

Wrapper	Base Package		Additional Option	
	Decode	Encode	Decode	Encode
ASO2			✓	
ARRI ALEXA & AMIRA	✓			
ARRI RAW			✓	
DJI	✓			
GoPro	✓			
RED			✓	
Panasonic P2	✓			
AVCHD	✓			
Sony XAVC and XAVC-S	✓			
Sony SXS	✓			
Sony XDCAM HD / EX	✓			
Sony X-OCN			✓	
Sony RAW			✓	
Canon XF	✓			
Canon EOS	✓			

