

ContentAgent Media Processing and Automated Workflow Management System

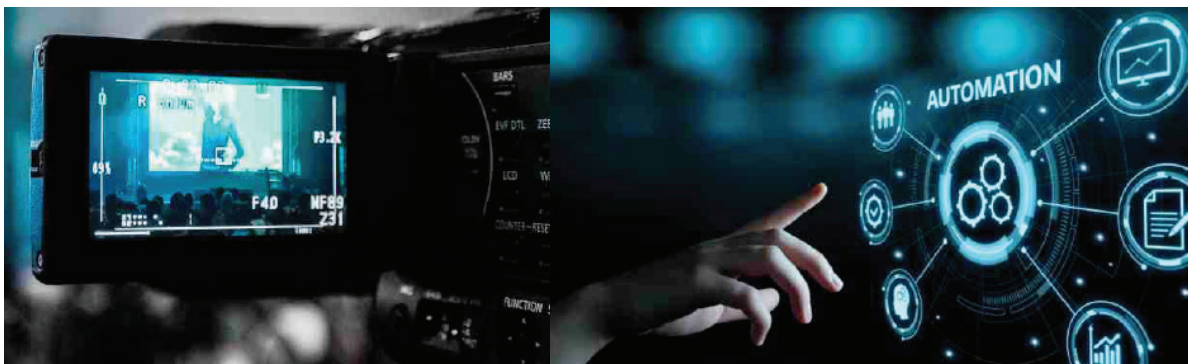
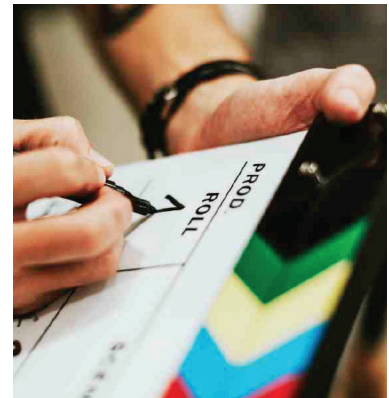
Simply Powerful and Powerfully Simple

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.

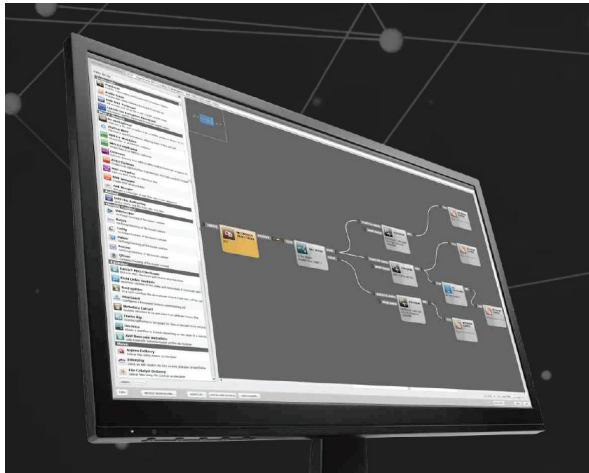


ContentAgent Workflow Designer

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.

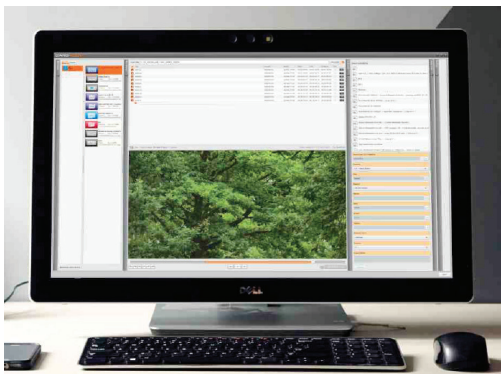
The process nodes also provide integration with leading third-party technologies (such as file based quality control tools) considerably adding to the versatility of the system.

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.

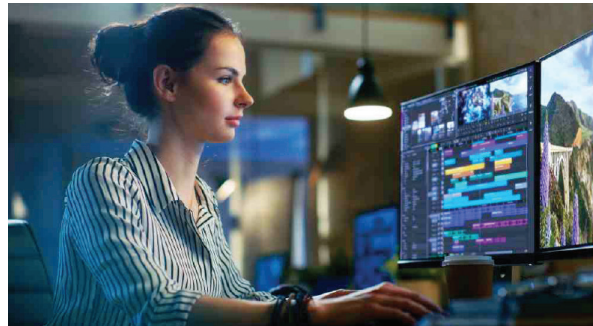
ContentAgent supports all the major QC vendors as well as accelerated file transfer products. However the integration goes even deeper with the Platinum node having inbuilt access to advanced scaling and motion compensated framerate standards conversion, utilising Cinnafilm's Dark Energy and Tachyon 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
- User friendly Graphical Workflow Designer
- Intelligent Field Order Analyser
- Software Framerate Conversion
- Advanced Metadata Management
- Camera Card Processing
- Advanced Network / Local Copying with comprehensive options
- Customised XML, CSV & TXT output options
- H.264 NVENC GPU acceleration
- Video Cropping / Padding / Scaling
- MD5 Checksum Creation / Verification
- DVD Authoring (manual or automated)
- Automated metadata-based decision making during workflows
- Burn in Subtitling support
- FTP Upload with dynamic metadata driven folder creation
- Advanced Multiplexing
- Integrated Playback (non-SDI)
- Graphics Module for image and metadata driven dynamic text
- Comprehensive MXF Op1a Wrapping Toolset
- Clip Concatenation from Camera Cards, Reels and Playlists (Stitching)
- API tools - SOAP or XML driven
- CMD Line processing to harness external applications
- E-mail Alerts/Notifications with metadata driven dynamic fields
- Clip Trimming for selective transcoding
- Graphical Audio Patching
- Timecode Burn-In with offset and format options
- 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.
- Additional ContentAgent user interface**
CA-SW-UI
Allows users to connect to a host ContentCentral database and build, edit and submit workflows.
- 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.
- Image Sequence Option**
CA-IMG
Decodes and encode of DPX, JPEG, BMP, TIFF, PNG, TARGA, and Open EXR. Decode RAW formats including ARRIRAW MXF, ARRIRAW.ARI, CODEX .ARX, Black Magic Design RAW (BRAW) and Red R3D. Note RAW decoding requires a qualified NVIDIA GPU (not supplied).
- IMF Packaging**
CA-IMF-NTFLX
Provides ability to create simple IMF packages that are compatible with Netflix specifications.
- 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.
- Avid Turbo Pack**
CA-AVID-TURBO
Creates DNxHR at HD, 2K, 4K & UHD. The pack also contains an optimised DNxHD encoder for faster transcoding. Includes ability to ingest clips with alpha via the Matte key feature. *Note - The R6CA-AVID-MXF option above is a prerequisite
- Apple QuickTime ProRes Encoder**
CA-PRORES
Encode as ProRes, ProRes LT, ProRes Proxy, ProRes 422, ProRes 422 HQ, ProRes 4444.
- 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.

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.



<p>JPEG 2000 Support CA-J2K</p> <p>Encode & decode J2K Op1a .mxf files. Requires qualified Nvidia GPU (not supplied)</p>	<p>Video Output CA-OP</p> <p>Digital video monitoring output over HDMI and SDI when used in conjunction with an AJA LHI card (not included). *Note - also works with other AJA cards - Deck control not supported.</p>
<p>Social Media Uploader CA-SOC-INT</p> <p>Upload media files directly to YouTube, Twitter and Vimeo.</p>	<p>AS-11 DPP Broadcast Delivery Bundle CA-SWB-DPP</p> <ul style="list-style-type: none"> 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.
<p>H.265 Encoder CA-HEVC</p> <p>Create H.265/HEVC up to 4K resolutions. Includes support for acceleration via qualified Nvidia GPU (not supplied)</p>	<p>Cinnafilm Tachyon phase correlation-based motion compensation engine CA-FRC</p> <ul style="list-style-type: none"> Standards conversion Frame rate conversion Resolution conversion (resizing) Cadence correction <p>* Note that this option requires that a qualified NVIDIA GPU (not supplied) is installed in the host CPU.</p>
<p>Integration with NexGuard CA-CIV-INT</p> <p>Supports automated fornsic watermarking. (NexGuard license NOT included). New Nagra NexGuard SDK v1.12.1 or higher with support for ClipMark</p>	<p>Dark Energy for Advanced Standards Conversion Module CA-FRC-DE</p> <ul style="list-style-type: none"> High Quality Image Denoise/degrain Noise/regrain with Texture Simulation <p>* Note that this option requires the above CA-FRC option</p>
<p>WAN Acceleration R6CA-WANA-INT</p> <p>Aspera (via PTP/Faspex) and FileCatalyst and Amazon S3 Uploader. (Aspera, FileCatalyst and Amazon S3 licenses NOT included). Includes Dropbox Uploader and Importer. Includes IBM Aspera on Cloud</p>	<p>Integration with Teletrax CA-TLTX-INT</p> <p>Supports automated watermarking via Teletrax (Teletrax licence NOT included).</p>
<p>Integration with Spectra Logic BlackPearl CA-SLB</p> <p>Automate media backup workflows to and from the BlackPearl storage platform.</p>	<p>Audio Frame Rate Toolbox CA-ATS-AFR</p> <p>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.</p>
<p>Integration with Minnetonka Audio Tools Server CA-ATS-INT</p> <p>Integration with Minnetonka Audio Tools Server. Includes Audio Tools Server software.</p>	<p>Loudness Analysis and Correction CA-ANA-LOU</p> <p>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.</p>
<p>Dolby Digital Plus Encoder CA-DD-5.1</p> <p>Supports Dolby Digital and Dolby Digital Plus audio encoding. * Note this option requires CA-ATS-INT.</p>	<p>UPMAX CA-ATS-LIN</p> <p>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.</p>
<p>Dolby E Encoding CA-DBE-ENC</p> <p>Supports Dolby E audio encoding. * Note this option requires CA-ATS-INT.</p>	<p>ATS DownMix CA-ATS-DNMIX</p> <p>Provides down mixes of surround formats such as 5.1 and 7.1. to mono or stereo. * Note this option requires CA-ATS-INT.</p>
<p>Dolby E Decoding CA-DBE-DEC</p> <p>Supports Dolby E audio decoding. * Note this option requires CA-ATS-INT.</p>	<p>Sony X-OCN and RAW Decoder CA-SONY-XOCN</p> <p>Enables X-OCN and RAW MXF debayering. Requires qualified NVIDIA GPU (not supplied).</p>
<p>Nielsen Integration CA-NLSN-INT</p> <p>Supports automated audio watermarking (Nielsen license NOT included).</p>	

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.

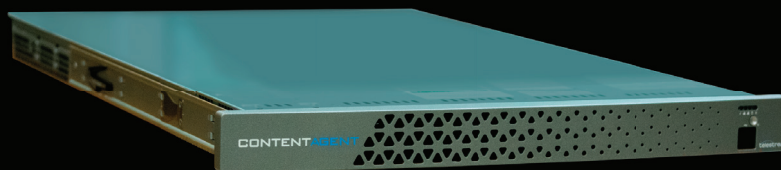
Wrapper	Base Package		Additional Option	
	Decode	Encode	Decode	Encode
ASO2			<input checked="" type="checkbox"/>	
ARRI ALEXA & AMIRA	<input checked="" type="checkbox"/>			
ARRI RAW			<input checked="" type="checkbox"/>	
ARRI RAW MXF Decode			<input checked="" type="checkbox"/>	
CODEX HDE (.ARX)			<input checked="" type="checkbox"/>	
Black Magic RAW (BRAW)			<input checked="" type="checkbox"/>	
DJI	<input checked="" type="checkbox"/>			
GoPro	<input checked="" type="checkbox"/>			
RED			<input checked="" type="checkbox"/>	
Panasonic P2	<input checked="" type="checkbox"/>			
AVCHD	<input checked="" type="checkbox"/>			
Sony XAVC and XAVC-S	<input checked="" type="checkbox"/>			
Sony SXS	<input checked="" type="checkbox"/>			
Sony XDCAM HD / EX	<input checked="" type="checkbox"/>			
Sony X-OCN			<input checked="" type="checkbox"/>	
Sony RAW			<input checked="" type="checkbox"/>	
Canon XF	<input checked="" type="checkbox"/>			
Canon EOS	<input checked="" type="checkbox"/>			
JVC	<input checked="" type="checkbox"/>			



Server

ContentAgent Server (CA-WW-SVR)

ContentAgent Server runs the ContentAgent software or additional JobAgent nodes. Housed in a 1RU chassis, it reduces rack space, power, and cooling requirements while easing processing demands.



ContentAgent server uses powerful Dual 20 core Intel CPUs to drive image and audio processing. The server accelerates these compute-intensive tasks to process media as fast as possible without sacrificing quality or reliability.

The system also includes a powerful GPU required for certain tasks such as RED R3D decoding*, Sony X-OCN decoding*, ARRI RAW decoding*, JPEG2000 decoding/encoding* and accelerated H.264 and H.265* decoding and encoding as well as for use with the Tachyon Advanced Standards conversion option*.

* Additional ContentAgent software options are required for these tasks.

