Redwood GREEN

Multipurpose Video Engine
Fully Integrated with ASTRA Automation

Product Data Sheet

AVECO

Powered by Harmonic

⊙ KEY FEATURES:

▍ **Hybrid IP & SDI Workflows**

▍ **HTML5 Graphics**

▍ **COTS Hardware**

▍ **Dolby® E encode/decode**

▍ **Video processing core powered by Harmonic**

▍ **Modular and scalable software**

▍ **Live and clip playout, master control switching including DVEs, subtitling, independent branding of simulcast channels, live and file ingest and more**

🔍 OVERVIEW:

Aveco's Redwood GREEN is a multipurpose video engine that provides integrated channel origination, ingest and playout features. It is a proven broadcasting solution with integrated IP and SDI interfaces, graphics, DVE effects, to-from live switching, and support for formats up to UHD HDR for end video delivery – for applications where quality and reliability are paramount. Redwood GREEN is powered by Harmonic.

💡 SYSTEM DESCRIPTION:

Integrated Channel Workflow

As a platform for ingest, clip playout, graphics insertion, master control switching with DVEs, subtitling, independent branding of simultaneous channels and many other broadcast features, Redwood GREEN's hardware and software are both modular and scalable to deliver the right feature set.

Further providing a complete IP workflow using the industry standards SMPTE ST 2022-6 and ST 2110, together with the SDI interfaces, means streamlined delivery of professional content in today's hybrid world where the adoption of IP into the existing SDI infrastructures is in progress.

Best of Both Worlds

As a result of the combined technologies of Harmonic and Aveco – the worldwide leader in video delivery infrastructure solutions, and robust, industry-leading automation systems, Aveco delivers integrated solutions that meet the current as well as future needs of the most demanding users.
No compromises.

Video Engine

Renowned for the quality of video processing as well as reliability of the product itself, the video engine has been designed in a modular way to easily plug into any architecture of a media company. It scales to any number of channels, any media capacity, and meets the requirements of any workflow.

Automation Platform

The ASTRA automation can manage your facility's workflow. By automating ingest, media asset management, master control playout and studio operation, your costs are lower and your workflows are simpler. Built on powerful media asset management, ASTRA provides tools to streamline the lifecycle of all of your content locally or from remote locations.

CONNECTIVITY

SDI Inputs	Up to four SD/HD channels, one UHD channel
	Up to two Live inputs per channel in standard channel mode
	Up to six Live inputs per channel in combined channel mode
SDI Outputs	Up to four SD/HD channels, one UHD channel
	Up to two simulcast outputs per channel
	Independently configurable up/down/crossconversion
IP Inputs/Outputs	Optional 10GE for ingest, play from compliant NAS and 25/10 GE ports module for HD/UHD 2022-6/2110
Connectors	AES, LTC and GPIO (multi-pin connector; available adapter cable)
	Ethernet ports for connection to the system management software, file transfer or API control
Reference	Analog black with color burst, PTP for IP I/O
Media Network	Optional automatic failover
	Access: FTP, CIFS, AFP

VIDEO

Codecs SD (525i 29.97, 625i 25)	MPEG-2: 3-24.9 Mbps LGOP; 25-50 Mbps I-frame
	DV: DV 25, DVCPRO25, DVCPRO50
Codecs HD 1.5G (1080i 50/60, 720p 50/60)	MPEG-2: 18-85 Mbps LGOP; 50-100 Mbps I-frame
	DV: DVCPRO HD
	XDCAM HD: 18, 25, 35, 50 Mbps
	RP 2027 Class 50/100: Class 100, 1920x1080i (25/29.97 Hz); Generic 1280x720p (50/59.94 Hz)
	AVC-Ultra (Panasonic): Class 50 and Class 100, 1920x1080i (25/29.97 Hz); 1280x720p (50/59.94 Hz)
	XAVC-I Class 100 (Sony): Class 100, 1920x1080i (25/29.97 Hz); 1280x720p (50/59.94 Hz)
	XAVC-L: High 422, Level 4, 25, 50 Mbps
	AVC-LongG: Record: 25, 50 Mbps; Playback: 12, 25, 50 Mbps
	VC-3 (SMPTE 2019-1): 120, 145, 220 Mbps
	ProRes: 122, 147, 220 Mbps; SQ and HQ modes
Codecs HD 3G (1080p 50/60)	AVC I-Frame: XAVC-I, AVC-Intra , AVC-I RP 2027 Class 100 (generic)
	XAVC-L: XAVC, High 422, Level 4.2, up to 50 Mbps
	AVC-LongG: 35, 40, 45, 50 Mbps
	AVCU-LongG: 12, 25, 50 Mbps
	VC-3 (SMPTE 2019-1): 190, 220, 367, 440 Mbps, HQX mode
	ProRes: 440 Mbps, LT mode
Codecs UHD Quad-3G (2160p 50/60)	XAVC: I-Frame, Class 300, 422, 10-bit, 50p/60p, L-Gop 10bit 4.2.2 200mbs 50p/60p
	AVCU: I-Frame, Level 5.2, 422, 10-bit, 50p/60p
	VC-3 (SMPTE 2019-1): 145-180 Mbps, LB mode
	ProRes: 821 Mbps LT mode
Media File Wrappers	QT MOV (self-contained and referenced), MXF OP1a (also low latency), GXF
Aspect Ratio Conversion	Configurable

AUDIO

Channels	SMPTE 299M/272M
	Up to 16 embedded per video channel
Formats	Uncompressed: 16, 24, 32-bit PCM @ 48 kHz
	Compressed: passthrough, Dolby® decode/encode
Features	Audio down-mix
	Audio track swapping, track tagging, language rules
	Audio mix effects, VO insertion

AUXILIARY DATA

Closed Captions	EIA-608, EIA-708
	Up convert: EIA-608 captions translated to EIA-708
	Down convert: EIA-608 compatibility bytes extracted from EIA-708 data to create EIA-608 captions
Subtitles	Line 21, OP47
	Up convert: Line 21 OP-42 subtitles translated to OP-47
	Down convert: OP-47 subtitles translated to line 21 OP-42
Digital Cuetone	SCTE 104
VBI, VANC	Passthrough

CHANNEL ORIGINATION

Branding & Graphics	Adobe® Creative Cloud compatibility
	Integrated DVE; single and dual 2D DVE mode
	Independent branding for each primary and simulcast channel
	Up to eight layers of graphics per channel
	Static and animated graphics, logo, full-screen slate, rolls, crawls, voice-over
	Dynamic text substitution from ASTRA or external source
Graphics Formats	PNG, JPG, TIFF, GIF, FLV, Targa, WEBM, MP4, with HTML5 or SWF
Master Control Switching	1-6 live inputs (configurable)
	Switch between live and recorded clips
	Key + fill support
Typefaces	All standard font formats are supported
Captions & Subtitles	Localized and customized open captions
	Live & file-based open- and closed-caption insertion
Audio	Integrated voice-over
	Independent duck-mix-shuffle of live, clip and graphics audio sources

PLAYOUT & INGEST

Media Ports	Up to 4 bidirectional SD/HD ports (decoder/encoder) or one bidirectional 4K UHD port

INTEGRATION

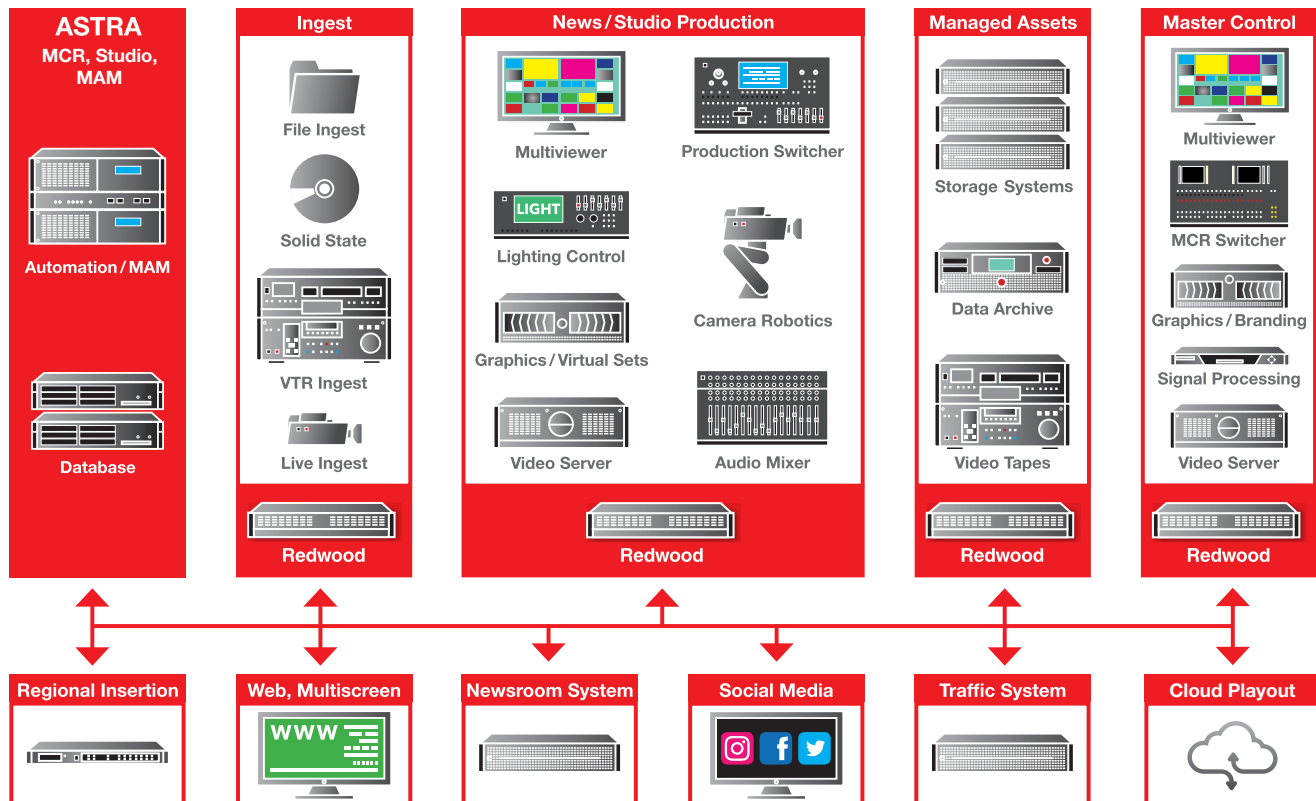|	
Applications	Integrated Channel Playout, videoserver for playout and ingest
Automation	ASTRA Studio, ASTRA Take 2, ASTRA MCR, ASTRA MAM and ASTRA Ingest
MAM	Proxy encoding (MPEG4)

STORAGE

Capacity	Choice of four internal 3.5" 2TB, 4TB or 6TB HDDs or 1.9TB SSDs
Redundancy	3+1 modified RAID 4 (single parity)

POWER

Power Supply	Dual redundant, hot-swappable
Input Voltage Range	90-260 V, 45-63 Hz
Power Consumption	Max. 800 W

PHYSICAL

Dimensions (W x H x D)	2RU 17.53 in x 3.44 in x 28.75, 44.55 cm x 8.74 cm x 73.03 cm
Weight	46 lbs/20.8 kg (with HDDs), 38.5 lbs/17.5 kg (without HDDs)

ENVIRONMENTAL

Operating Temperature	+5° to +40° C
Operating Humidity	10% to 85% non-condensing

■ Master Control Playout
■ News Production Automation

■ Integrated Channel Playout
■ Hybrid On-Prem & Cloud, IP & SDI, On-Air & OTT

AVECO | ASTRA

ASTRA
MCR, Studio, MAM

Automation / MAM

Database

Ingest
File Ingest
Solid State
VTR Ingest
Live Ingest

Redwood

News / Studio Production
Multiviewer
Production Switcher
Lighting Control
LIGHT
Camera Robotics
Graphics / Virtual Sets
Video Server
Audio Mixer

Redwood

Managed Assets
Storage Systems
Data Archive
Video Tapes

Redwood

Master Control
Multiviewer
MCR Switcher
Graphics / Branding
Signal Processing
Video Server

Redwood

Regional Insertion

Web, Multiscreen
WWW

Newsroom System

Social Media

Traffic System

Cloud Playout

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All product and application features and specifications are subject to change at Aveco's sole discretion at any time and without notice.