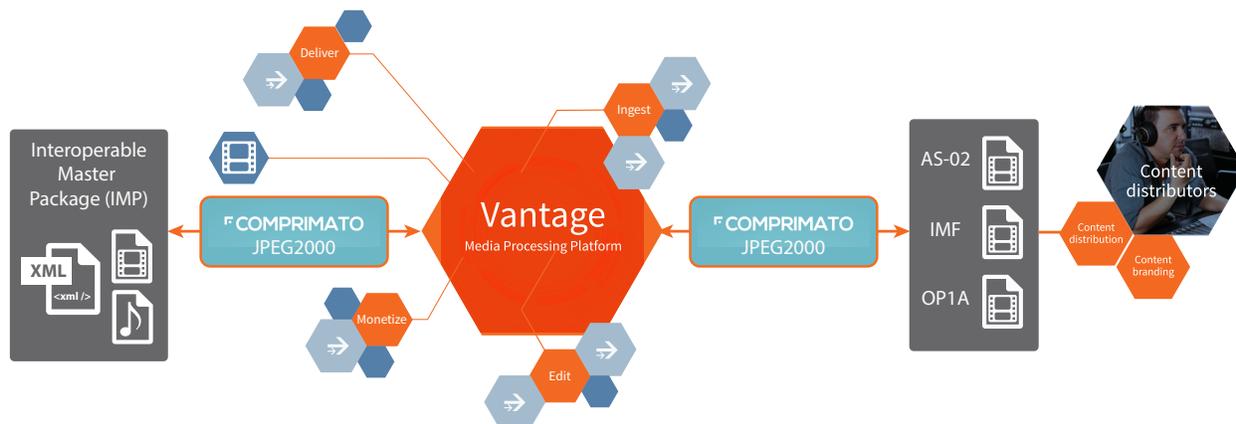


# Vantage and Comprimato

Solution Brief



## Solution Brief: Vantage with Comprimato JPEG2000

### Overview

Comprimato is a unique JPEG2000 encoder and decoder component option now being offered for Vantage systems operating on Lightspeed server hardware. Specifically the Comprimato JPEG2000 component accelerates decoding and encoding of JPEG2000 based video. To achieve this acceleration the Comprimato components utilize the power of a Lightspeed GPU.

### Dramatically improve productivity with Vantage Comprimato JPEG2000

JPEG2000 is an encoding system that uses state-of-the-art compression techniques based on wavelet technology and is fast becoming the format of choice for media distribution, archive and master edit formats. Its architecture lends itself to a wide range of uses.

Vantage's Comprimato JPEG2000 component running on a Lightspeed server enables the highest image quality and unmatched performance for both compression and decompression. The Comprimato JPEG2000 video codec utilizes the GPU processors of Telestream's Lightspeed servers to provide dramatic productivity gains over traditional CPU-only techniques. These dramatic productivity gains allow for file-based processing of JPEG2000.

### Benchmarking - JPEG2000 Decoding

When decoding JPEG2000 contained in IMF, AS02 or MXF OP1a media files, a Vantage system with Comprimato JPEG2000 option can reduce overall workflow processing by as much as 20%.

Workflow: MXF OP1a JPEG2000 -> MXF OP1a XDCAM HD 4:2:2

Source: MXF OP1a JPEG2000 - 60 minutes in duration

Vantage CPU-only	60 minutes
Vantage with Comprimato running on the GPU	48 minutes

### Benchmarking- JPEG2000 Encoding

When encoding JPEG2000 into IMF, AS02 or MXF OP1a media files, a Vantage system with Comprimato JPEG2000 option reduces overall workflow processing time by up to 12X.

Workflow: MXF OP1a XDCAM HD 4:2:2 -> MXF OP1a JPEG2000

Source: MXF OP1a XDCAM - 60 minutes in duration

Vantage CPU-only	56 minutes
Vantage with Comprimato running on the GPU	5 minutes

### Software/Hardware Requirements

- Lightspeed server with NVidia v354.56 (or latest Lightspeed approved) driver
- Vantage Transcode Pro v6.3
  - Transcoder 2016.1 (or later)

### Licensing, Cost and Availability

- Part # - V-GPUJ2K
- Availability – February 2016

### Encoders

Comprimato JPEG2000 is available within the Flip Transcoder.

- MXF Application Specification
  - AS02 MXF
  - IMF
- MXF Encoder
  - MXF OP1a Telestream

### Decoders

Comprimato JPEG2000 decoding can be performed by selecting the Comprimato decoder within a Flip encode action.

### Use Cases

#### IMF Netflix workflow

The IMF standard is intended to streamline content creation workflows and apply a common set of processing and rules that transform a master file into varying distribution formats needed for film, broadcast television cable, airlines and the Internet.

The Society of Motion Picture & Television Engineers (SMPTE), the key institution for setting industry standards, has standardized on JPEG2000 as the format used for Interoperable Master Format (IMF).

See Vantage Support for IMF - <http://www.telestream.net/pdfs/datasheets/App-brief-Vantage-IMF.pdf>

### Archiving workflows

JPEG2000 has many advantages over other codecs as an archival format. Unlike the standard, baseline JPEG, JPEG2000 offers a fully lossless option. JPEG2000 also incorporates “smart decoding.” This feature enables the decoder (or plug-in) to access and decode only the required portion of the code stream. This means a single JPEG2000 image can supply multiple, reduced-resolution versions of the original. These might include specific file sizes, and/or a high-quality, high-resolution view of a specific portion of the image. This makes JPEG2000 an excellent format if you require the ability to smoothly zoom, pan and rotate images.

The JPEG2000 format is a valuable option for archiving film, video and historical materials. Many cultural heritage and digital preservation communities (such as The Library of Congress, Harvard University Library, Library and Archives of Canada and the Google Library Project) use it as the basis for their collections to preserve the highest image quality with efficient storage and delivery capabilities.

### Edit Master

One of the big challenges facing broadcasters is the upcoming transition to 4K/UHD (Ultra-High Definition) television, with increased images sizes, expanded color ranges, and higher frame rates. These new requirements present a major challenge for data networks within the broadcast facility. Routers, switches, and other equipment supporting 4K/UHD bandwidths will require the use of extremely expensive Ethernet infrastructures.

JPEG2000 technology provides a solution to the infrastructure dilemma. By deploying a cost-effective, high quality codec capable of reducing 4K/UHD signal bandwidths, production facilities can utilize their existing high speed network equipment. JPEG2000's high video signal quality coupled with an intra-frame only compression, creates a perfect solution for master files. With JPEG2000, UHD production and post-production become affordable even for small facilities with limited budgets.