

# Audio-Visual Archiving

## PRISTINE Application Note

The PRISTINE radically accelerates JPEG 2000 encoding and decoding while supporting a wide range of resolutions up to 4K+ (4096x3112). Embedded intoPIX technology allows both Mathematically and Visually Lossless compression providing best-in-class pristine picture quality.

Several of the PRISTINE versions answer the challenge of long term audio-visual content archiving. Figure 1 below shows how PRISTINE boards can be used for Mathematically Lossless storage and exploitation of 2K+ (2048x1556) content.

In the depicted archiving system, one PRISTINE 3 is used for the Lossless JPEG 2000 encoding. This board compresses in average 28 frames per second Mathematically Lossless through its PCI-Express (8 lanes). Its optional software is used for MXF wrapping and encryption.

On the exploitation side, the content is scaled down to 2K by one PRISTINE 2 board, which decodes the stream at 48 frames per second for projection.

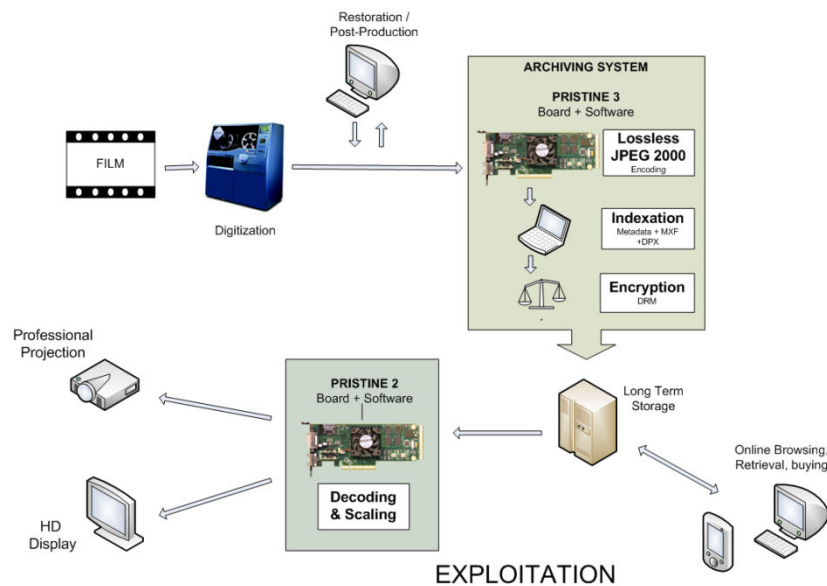


Figure 1. Typical Archiving Workflow. PRISTINE compresses the content. The intoPIX software provides encapsulation and encryption. The PRISTINE can also be used as player (Decoder).

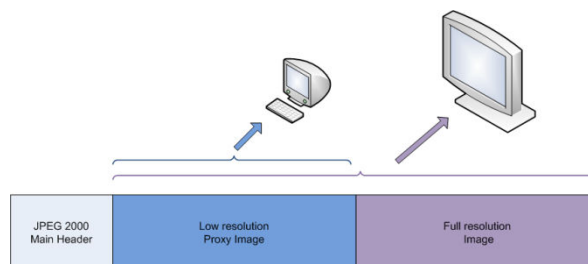


Figure 2. JPEG 2000 Scalability for archiving: several resolutions or quality levels are embedded in a single J2K code stream



intoPIX s.a.  
Place de l'Université 16  
B-1348 Louvain-la-Neuve  
Tel.: +32 10 23 84 70  
Fax: +32 10 23 84 71

[www.intopix.com](http://www.intopix.com)

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### Key benefits of PRISTINE

- Mathematically Lossless and Visually Lossless compression.
- Very high frame rates: up to 120 frames per second for HD (2K) resolution.
- Variable resolutions supported: 1920x1080 (HD), 2048x1080 (2K), 2048x1556 (2K+), 4096x2160 (4K), 4096x3112 (4K+), ...
- Scalability: several resolutions or quality versions embedded within a single code stream (see Figure 2).
- Easily reprogrammable: can be configured as recorder or player.
- Uncompressed Audio.
- Time codes for Audio & Video synchronization.
- OS: Windows, Linux, MacOS X.
- Multiple boards support in one system.
- Rescaling: from 2K (HD) to 4K (QuadHD) and reversely.

### Valuable Options of PRISTINE

- Support of meta-data **file formats**: MXF, DPX.
- **Advanced Rescaling**: currently under development.
- On-the-fly **Quality control**: using 2 PRISTINE boards enables you to control the quality of the compression in real-time.
- The unique **3G-SDI Panel**: 4 inputs and 4 outputs also supporting HD-SDI, Dual-SDI and SDI.

### JPEG 2000 for Archiving

JPEG 2000 is already adopted by numerous initiatives for long term archiving of high quality visual content. This open international standard allows guaranteeing unaltered image quality while saving extensive storage space. Metadata can easily be associated with JPEG 2000 content and the inherent flexibility of the format allows fast archiving operations such as low resolution (proxy) extraction, browsing, search and retrieval.

### Ordering Information

Product Name	Description
PRISTINE 3	JPEG 2000 accelerating board. Mathematically lossless compression 2K+ @28fps through PCIe (8 Lanes).
PRISTINE 2	JPEG 2000 accelerating board. 2K @ up to 58 fps.
Optional Modules	Rescaling
Optional 3G-SDI panel	4 inputs and 4 outputs, also supporting HD-SDI, Dual-SDI and SDI.

For more information, please contact us at:

Email: [sales@intopix.com](mailto:sales@intopix.com) - Phone: +32 10 23 84 70 - [www.intopix.com](http://www.intopix.com)



**intopix** s.a.  
Place de l'Université 16  
B-1348 Louvain-la-Neuve  
Tel.: +32 10 23 84 70  
Fax: +32 10 23 84 71

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