

## **VC2 / Dirac Compression, a new approach – designed by the BBC for broadcasters**

With higher spatial and temporal resolutions comes the need for greater bandwidths to cope with an ever increasing bitrate. Low level, low delay, high quality, mezzanine compression solves these problems allowing you to dovetail new video standards into existing infrastructure or build equipment with practical cost effective interfaces including IP networks. VC-2 (Dirac) compression meets all these requirements and has been developed by one of the most respected broadcasters, the BBC, for broadcasters.

### **As a broadcaster the BBC considered the main requirements they needed from a compression system:**

#### **Low latency**

– required for practical news gathering, sport, simulcast transmissions, multi-hop transmission links, where the video is fed directly from the camera to the viewer

#### **Negligible degradation, effectively lossless**

– for contribution/studio post processing and at a quality suitable for archiving

#### **Capable of multiple generations**

– consider that a picture is compressed at the camera, transmitted and uncompressed for routing to post production, edited, compressed for distribution, transmitted through a multi-hop transmission link being compressed and uncompressed each time ... six, eight or even more compression cycles might be performed! The compression system needed to perform impeccably well in this type of transmission chain.

#### **An Open Standard**

– there is no license fee to use the VC-2 standard and the software version is free to download from the BBC

#### **A practical engineering solution**

– simplicity of use and a low cost implementation to encourage a broad take up by equipment manufacturers

### **No compression system met their criteria so they developed their own the VC-2 / Dirac compression system (SMPTE ST 2042)**

### **Westwood Rock's unique FPGA implementation:**

#### **Small form factor**

– the FPGA version uses up minimal resources. Fewer gates means lower power and more space for other functions

#### **Low memory requirements**

– memory usage kept to a minimum and no external memory is required on the majority of FPGAs

#### **An Open Standard**

– Westwood Rock only require a commercial license for our IP

#### **Future Proof**

– fully customisable, future proof and designed to operate at all the new 4K/8K standards

**Pushing the compression into the interface**

- clean, deterministic and reliable compression
- quickly recovers from transmission disruptions, making it more ‘interface like’ than ‘compression like’

**Verifiable and deterministic**

- making it suitable for high reliability and mission critical applications.

**Custom versions**

- bit depth can be adapted to any application
- fully parameterised
- can be customised for any spatial or temporal resolution, any aspect ratio, any colour system or to have any number of components
- compression parameters can also be customised to meet more specific end user requirements
- altogether a very flexible and customisable solution

**Extremely cost effective**

**Now shipping and in equipment at NAB 2015**

***– contact Westwood Rock for more details***