



VISLINK
At the heart of the action



DELIVERING HEVC AND DVB-S2X SATELLITE EFFICIENCY GAINS WITH VISLINK DVE6100 & IRD6200

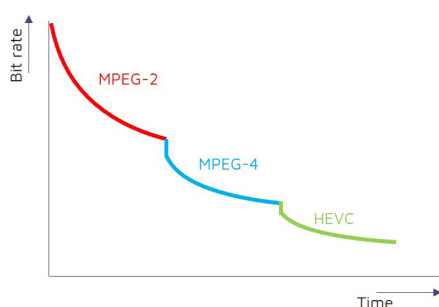
The spread of high bandwidth fiber and the cost-per-bit for interconnectivity continues to drop. But fiber access is still not ubiquitous and buried cable always carries vulnerabilities. For many reasons, network operators still look to satellite to close the connectivity gap when global access is required and when high availability is critical. But the cost of leasing satellite time is the subject of close focus. The advent of two new technologies in the form of HEVC and DVB-S2X has the potential to rebalance financial and technical considerations.

The cost of satellite operations is critically conditional on the efficiency of the data transmission. For video applications the choice of an efficient video CODEC combined with the modulation scheme choice needs balancing to also deliver the required video quality threshold with the necessary link robustness.

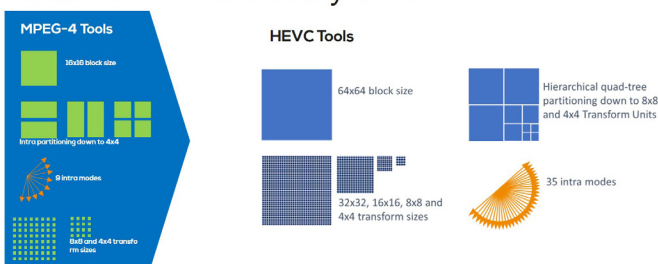
For many years the technology of choice for video contribution over satellite has been MPEG-4 video compression in combination with DVB-S2 modulation. These two technologies, first deployed well over a decade ago to drive the mass rollout of HD resolution video, have delivered an affordable, high quality solution. But technology has moved on...

ENTER HEVC AND DVB-S2X

Each new evolution of video compression standard has a history of delivering an immediate compression gain over previous solutions - followed by successive improvements through implementation updates. HEVC utilizes new tools that promise (over time) to deliver a 50% bit rate reduction compared to MPEG-4.



New HEVC Efficiency Tools

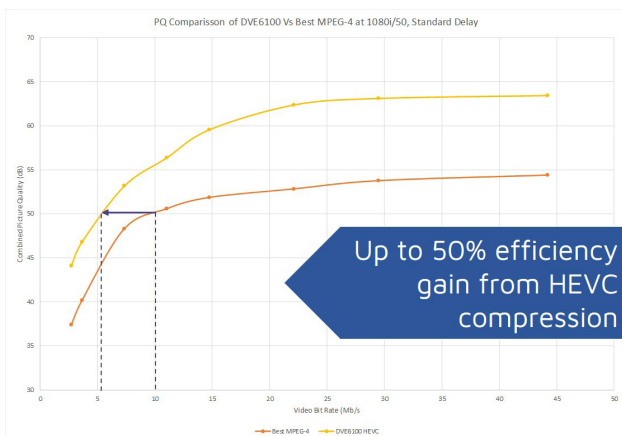


DVB-S2X, as an extension to DVB-S2, enriches satellite transmission capability with a broader choice of modulation tools. Tighter roll-offs, more FEC choices and better optimized constellations can deliver over 20% efficiency gain for the C/N operational range typically used for video transmission - with even greater gains for very high throughput, very large antenna applications.

Making a transition to HEVC video compression and DVB-S2X modulation has the potential to deliver a significant advantage in terms of cost per channel. HEVC and DVB-S2X parameters can be balanced to deliver an increase in video quality within the current satellite bandwidth or an increase in the number of services transmitted within the current leased bandwidth. Probably the most attractive, however, is the ability to rework the transmission parameters to deliver the current service in a dramatically reduced leased bandwidth without a reduction in video quality and without a reduction in link margin.

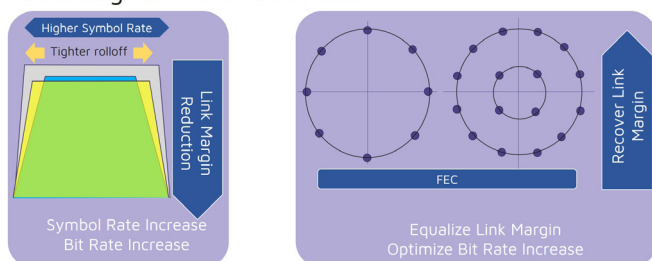
REALIZING EFFICIENCY GAINS

Measurements of Vislink's 2nd generation HEVC encoder core within the Vislink DVE6100 demonstrate that up to 50% bit rate efficiency gain is realisable. Re-balancing of satellite modulation parameters in a transition to DVB-S2X can yield further efficiency gains.

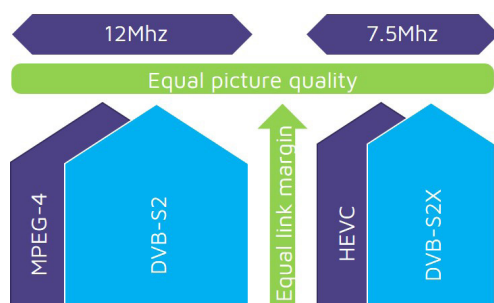


A worked example demonstrates that for a typical, high quality video contribution system, an old MPEG-4, DVB-S2 transmission occupying 12MHz transponder space can transition to a new HEVC, DVB-S2X transmission occupying just 7.5MHz of satellite bandwidth – without loss of video quality, without any link margin impact.

Realizing the DVB-S2X Gain



| | Legacy Transmission | New Transmission |
|-----------------------------------|---------------------|------------------|
| Compression Standard | MPEG-4 | HEVC |
| Video Format | 1080i | 1080i |
| Service bit rate | 20.9Mbit/s | 17.6Mbit/s |
| Modulation standard | DVB-S2 | DVB-S2x |
| Modulation mode | 8PSK | 16APSK |
| FEC | 3/4 | 23/36 |
| Rolloff | 25% | 5% |
| Down-link antenna size | 2m | 2m |
| Symbol Rate | 9.6Msym/s | 7.1Msym/s |
| Leased Satellite bandwidth | 12MHz | 7.5MHz |



ATTRACTIVE RETURN ON INVESTMENT

The financial operational benefit of this system upgrade can be significant. For the example system upgrade, considering typical satellite bandwidth lease costs and typical occasional use on-air time, the OPEX reduction can be \$5,000 per month, every month!

Return on Investment Payback

| | |
|----------------------------------|---------------------|
| Satellite leasing cost (MHz/min) | ~ \$0.75 |
| Operational hours per week | 6 |
| Bandwidth leasing saving | ~ \$5,000 per month |
| Payback | ~ 5 months |

A system upgrade to HEVC and DVB-S2X will likely require an investment to new transmit and receive equipment. Vislink's DVE6100 encoder and IRD6200 decoder offer a high quality and affordable solution in upgrading to this latest technology. Taking into account the costs of a system upgrade offset against the \$5,000 monthly OPEX reduction, a transition to new HEVC and DVB-S2X technology offers a payback in just 5 months.

ABOUT THE VISLINK DVE6100 AND IRD6200

The Vislink DVE6100 DSNG encoder and IRD6200 IRD offer matched support for legacy MPEG-2 and MPEG-4 video compression algorithms as well as delivering latest HEVC support for all formats up to 4k UHD resolutions. With capability for full 10-bit 4:2:2 quality video and bandwidth efficient DVB-S2X modulation the two products, available in a compact and low power half rack-width design, form a perfect pair for DSNG and Sports and Entertainment up-linking.

Vislink Satcoms Encoder and Decoder DVE6100, IRD6200

- MPEG-2, MPEG-4 & HEVC compression formats
- SD, HD & 4k UHD resolutions supported
- DVB-S, DVB-S2 & DVB-S2X modulations



GET IN TOUCH

For more information on any of the products in the Vislink Technologies portfolio please contact: sales@vislink.com

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