

KVM switching offers more flexibility and efficiency

Keyboard, video and mouse (KVM) solutions are gaining popularity and visibility across the broadcast and post-production sector, according to Terence Teng, managing director, IHSE APAC.

He explained to APB: "Looking back, perhaps one of the most relevant factors was, in fact, the general change from VGA to DVI and DisplayPort displays. That change not only called for new devices to handle digital KVM extension, but kicked off the rapid development of large-scale, fully-featured, digital KVM switches."

IHSE, for instance, manufactures digital KVM switches that can accommodate between eight and 576 ports in a single unit. These, Teng noted, are "very appealing" to the broadcast sector because they allow all the broadcast devices located in centralised equipment rooms to be accessed from operators' own workstations — regardless of their location.

"This system topology delivers enormous flexibility and efficiency," Teng continued. "It means that operators and editors can access any machine from their own desk, or wherever they choose to work from, and instantly switch between them."

"It also makes their environment quieter and less cluttered, thus yielding greater efficiency. It enables machines to be shared and allocated to users as and when needed, which reduces the number of devices and user licences required."

Live broadcast environments can also benefit greatly from KVM switching solutions, as NEP Australia is finding out. IHSE's Draco tera KVM switch is connected to a vast range of on-board equipment via control interfaces in



IHSE's Draco tera KVM switch is connected to a vast range of on-board equipment via control interfaces in NEP Australia's new 4K/UHD outside broadcast truck.

NEP Australia's new 4K/Ultra HD (UHD) outside broadcast (OB) trucks, allowing operators to connect all computers and devices across all trucks to their individual workstation using simple keyboard commands.

When taking into consideration the layout and operations within an OB van or temporary studio, where there is often no room to add dedicated terminals, the benefits of KVM switching is clear, said Teng. "The ability for producers, editors and engineers to be able to reach and manage any desired device from a single workstation — with a monitor, keyboard and mouse — is a huge benefit."

Another critical point to note, he added, is how KVM switches fit into the workflow, rather than change it. "Other

than removing excess monitors and keyboards to simplify the internal layout, there are not really any adjustments or modifications that need to be done in a live environment," Teng said. "KVM switches enhance flexibility by allowing mobile studios to be configured to meet the task in hand, rather than modify the workflow by imposing restrictions."

KVM switches should also not be seen as a replacement to traditional production switchers, because they do not sit within the traditional broadcast chain or handle broadcast images. Rather, KVM switches manage the devices that are responsible for those images, Teng related.

For instance, IHSE's partnership collaboration with EVS permits EVS server operators to control their devices from any location, while the video streams are handled by the production server as they normally are, without passing through the KVM switch.

Teng, however, was quick to add: "Having said that, the Draco tera compact hybrid switch is capable of switching a few SDI streams in parallel with KVM data connections, which is useful in small configurations such as edit suites in which a live video preview stream is available from an editing tool."

With KVM switching systems in broadcast offering instant switching, zero (or negligible) latency and high quality of image, Teng is convinced they will be here to stay. "The ability to interface the KVM switch to the local broadcast content system is also a major benefit, as this eases the integration process and ensures that the system fits cohesively into the workflow," he concluded.

ratio and colourspace conversion issues with precision in the background."

FormatFusion4, Tasker continues, allows Kahuna switchers to evolve to address new video standards, formats and challenges. New formats, he points out, are often deployed on the highest value content and, thus, it is paramount that creative talent is able to focus 100% on the job of storytelling, without having to concern themselves with the technical issues of bringing all the formats together. "That's where FormatFusion4 continues to uniquely and seamlessly deliver with the utmost precision," says Tasker.

Whether it is a high-profile sporting event or a prime-time news programme, multi-format is typically the name of the game. He explains: "The production switcher is required to accurately stitch together, say, 4K/UHD main stadium cameras, HD studio cameras, relay server feeds, special interest cameras, inserts from yesteryear archives and the rapidly becoming ubiquitous, mobile phone feeds."

"Kahuna, powered by FormatFusion, takes all the thinking and guesswork away from the creative talent, allowing them to focus on what they do best — making great productions for viewers to enjoy."

And while Kahuna production switchers support a pure IP (SMPTE 2022-6/7 and 2110) approach, they also continue to support SDI (3G and 12G), or a



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hybrid approach of SDI/IP, where input and output ports can be independently configured to meet the precise needs of any given production.

IP is a "great technology" that is able to robustly take over the familiar SDI flowing through coax and BNC connectors, says Tasker. However, he is quick to point out how IP is currently presenting a huge industry-wide learning curve, as standards continue to be developed and practices honed.

More pertinently perhaps, technological evolution and the ensuing challenges do not always align with business needs. Tasker highlights South Korea's hosting of the 2018 Winter Olympics, where the decision had to be made on whether IP or SDI systems should be built. He details: "While the Games are to be originated in 4K/UHD, they determined that IP was still in its infancy and that the

likely engineering and operational challenges were too great for the event, given that the world will be watching.

"The 4K/UHD requirement also drove the decision to adopt SDI-12, thus avoiding the need to provide four 1080p, 3G circuits in place for each and every 4K/UHD signal path."

For Grass Valley, the company recently celebrated the milestone of shipping more than 100 units of the GV Korona production switcher, which was launched only last year.

GV Korona was developed to meet the needs of customers who do small to mid-sized productions, and who need to operate in tight spaces, reveals Tim Walker, product manager, switchers, Grass Valley. Able to work with any GV K-Frame processing engine, including the new K-Frame V-series, GV Korona offers a

built-in colour touchscreen interface that enables operators to work "quickly and intuitively" to produce compelling content for a variety of applications.

For the Fellowship Bible Church in the US, GV Korona checked all the right boxes, as Kirk Meyers, the church's broadcast director, explains: "It has the right balance, and has enough features to do what we need, without being overloaded with functionality that we'll never use."

"GV Korona K-Frame V-series has the small form factor but still provides big production. Plus, being built on the K-Frame brings a scalability for the future as our needs change."

In the live entertainment marketplace, the challenge lies in consistently providing cost-effective, reliable and powerful video solutions that work day after day in some of the most "gruelling, tech-unfriendly environments", according to David Lemmink, director of engineering, Solotech, and audio-visual equipment supplier based in Canada.

"Our track record with Grass Valley's line of analogue and digital switchers made the choice to go with Grass Valley a no-brainer,

especially as the new V-series offers the power of the K-Frame in a cost-effective and compact format, without sacrificing power and functionality."

For TV3 Lithuania, the decision to purchase the GV Korona stemmed from the TV station's search of solutions

to cover the 2018 Winter Olympics. Dalius Kazlauskas, CTO, TV3 Lithuania, says: "We found that the GV Korona K-Frame V-series offers high-end features and functionality with no restrictions, as well as the famous GV ergonomics and modular design, combined with outstanding build quality and a path beyond HD, with 4K and IP interfacing."

Because of its built-in touchscreen menu, M/E status and ability to perform signal conversions inside the switcher, the GV Korona has also offered TV3 Lithuania a new and easy way of working, Kazlauskas adds. "We now have the ability to produce shows with high-end features, including real 3D DVEs, which is unique for video switchers in this price range."

The GV Korona supports SDI and IP, is 3G/4K/UHD-ready, and supports both quad-split and 2SI, as well as HDR with 10-bit processing. GV adds that at only 3RU, the V-series frame is an "ideal complement" to the GV Korona switcher panel, offering "powerful and flexible" production options with a small footprint and modularity for easy field reconfiguration and serviceability. **APB**