Master control room

A master control room is a technological masterpiece of video monitors, servers, transmission equipment and computer broadcast automation equipment. **Kamarul Arifin A H** delves deeper …

Axon's SynMC Master Control System can be controlled through automation, or manually controlled through software or hardware panels such as the MCP1000 fully featured master control panel with screens (above).

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ithin any broadcast operation setting, master control systems act as the critical safety value in complex workflows, providing a set of tools to rapidly correct issues and adapt the broadcast output to suit changing real-world conditions. It is a crucial part, and the beating heart, of any broadcast operation.

Therefore, reliability is vital, asserts Peter Schut, CTO of Axon. "The ability to scale master control operations as and when the broadcaster needs it is crucial in today's rapidly evolving media landscape. Ease-of-use and easy integration with other requirements is also a key feature in the facilities," he elaborates.

Jason Salyards, director of product development at Imagine Communications, sees flexibility as key, as he points out that broadcasters are entering into a time period where their operations need to become more agile and better equipped to support the changing demands of their viewers.

He tells *APB*: "Shifting consumption patterns are putting pressure on media companies to offer more services and provide increased variety for how their content is delivered. However, this also provides for increased opportunities for the monetisation of media."

Imagine Communications' Versio solution provides this flexibility, al-

> ❝By allowing master control systems to seamlessly interact with other key business systems, master control becomes an interactive node in a content ecosystem.❞
>
> — **Jason Salyards,**
> **Director of Product Development,**
> **Imagine Communications**

IP, baseband or hybrid infrastructures, providing broadcasters a future-proof solution that can be a snap-in addition to any facility.

"In addition, Versio also simplifies and reduces necessary infrastructure, and provides a streamlined user experience by collapsing needed human interfaces for channel management into an ergonomic, unified user interface."

Released in September this year, the new Versio is equipped with the widest range of operating options, from premises-based COTS servers to cloud-based virtual machines, including a traditional integrated playout appliance model. It also features software-only graphics with 2x2D DVE, as well as baseband, IP-only, baseband and IP, and cloud deployment models.

Versio also supports both internal and external automation, and any-to-any transport, including compressed

Part of Axon's modular signal processing range Synapse, the master control system enables an easy integration with signal processing or multi-view requirements.

SynMC allows broadcasters to take complete control of the automation and transmission hardware and software panels. Control can be either through the Cortex control software, Axon Control Protocol or via third-party automation software through a dedicated Ethernet port.

Dutch broadcaster Omroep Zeeland has deployed Axon's SynMC system to operate more efficiently, having gone without a master control prior to this.

Alex Bogaert, project manager of media and ICT at Omroep Zeeland, reveals: "When we wanted to install a master control system, we turned to Axon because of its proven stability

– the vital nerve centre

an increased hands-off approach, providing easy-to-implement recovery methods from unforeseen conditions will become increasingly necessary."

KVM (keyboard, video and mouse) technology is quickly developing into an essential element within a master control room, bearing an almost similar significance in managing the dedicated tools used throughout the broadcast workflow.

Enno Littmann, managing director of IHSE, aptly points out: "The major contribution of a dedicated KVM system is in streamlining the broadcast workflow, allowing any broadcast device such as Pro Tools, Vizrt, Lawo or EVS to be accessed from any user workstation.

"This means that programme directors, OB van engineers, editors and producers can connect to any device instantly and as though it were physically located right at their desk; and switch between them whenever they need to work on something else."

The benefits are "huge", claims Littmann, adding that workspaces can be universal and configured the way they need to be for a particular programme or editing task.

He explains: "In crowded locations, such as every gallery or OB van ever built, operators can access a particular tool without having to move to a dedicated workstation — contributing to greater personal efficiency and a better working environment. Editing studios can access the editing programmes

from any room, leading to better allocation of resources and restricting the number of processing units and licences."

Indeed, broadcasters today demand instant access with no latency of images, as well as responsiveness without lag for keyboards, mouse and touch panels.

Littmann also reminds users not to lose sight on how a KVM solution responds to changes in a simple and controllable manner.

He elaborates: "This is achieved through user selection by hotkey or button panels and features such as pre-programmed configuration. In addition, integration with common broadcast control systems, such as L-S-B's VSM and BFE, permits full integration of KVM systems into the broadcast environment."

Restrictions and control of access to allow only authorised paths to be set up, prioritised and even switched by administrators, provides additional security and enables the system to be configured in the way that users require, Littmann adds.

Recently, Broadcast Engineering Services (BES), systems integrator for Singapore's iconic venue The Star Performing Arts Centre (Star PAC), chose the IHSE

Singapore's Star PAC achieves flexible computer access and signal routing with IHSE's Draco tera enterprise matrix switch.

Draco tera enterprise KVM matrix switch to provide the desired level of switching capability between the numerous source devices in the central equipment room (CER) and user terminals located throughout the building.

An 80-port Draco tera switch currently supports 37 audio-visual inputs from the range of servers and computers employed within the broadcast centre of the venue. These signals are distributed to 20 workstations and video processing devices. Each port can be configured as an input or output using

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the inherent Flex-Port dynamic configuration technology, thus allowing for future expansion of the system as the broadcasting tasks of the company expand and grow.

The sheer size of the complex — covering 38,000sqm and nine floors — means that some data has to travel in excess of the normal maximum distance for HD video signals on copper cables of around 140m. BES took advantage of the ability of the Draco tera system to mix fibre outputs alongside Cat X copper, allowing connection to be made to workstations up to 1km away from the switch, using multi-mode fibre.

With new signals, formats and resolutions constantly appearing and evolving, KVM technology must be future-proof, stresses Littmann.

Practising what it preaches,

IHSE recently launched the first Draco 4K DisplayPort KVM ultra extender, which uses the Lici codec developed in partnership with the Fraunhofer Institute for Integrated Circuits. This enables the transfer of fully digital video at 4K/Ultra HD (UHD) resolutions up to 4096 x 2160 at 60Hz refresh rate in full colour.

The KVM extender also supports audio transmission via the DisplayPort interface. This eliminates the need for additional audio modules, enabling playback of the audio signal on monitors with integrated loudspeakers. Integration of optional Draco vario upgrade modules for digital audio input and output as well as data signals, such as USB 2.0 and RS232, is also possible.

In addition, the Draco ultra extender series can be individually combined with other video interfaces, such as HDMI, DVI and Dual Link, at the workstation and source end, without additional plug-ins.

As broadcast workflows become increasingly more complex, there will be an even greater demand to access a wider portfolio of devices.

Littmann concluded: "The best, and by far the most efficient way to do this, is to have individual workstations, comprising a high-resolution screen, keyboard, mouse and other devices such as USB, audio, touch devices that can instantly connect to any of them. That is precisely what KVM solutions permit." **APB**