

WORLD IN BRIEF

India enforces digital cable broadcasting

NEW DELHI – India's Ministry of Information and Broadcasting has mandated equipment to be seized from cable operators defaulting on the country's mandatory switch to digital cable broadcasting. With effect from April 1 this year, India's cable TV networks should only be carrying digital signals.

Ofcom allocates more spectrum for m-services

LONDON – UK regulatory body Ofcom will be auctioning licences to use 190MHz of spectrum in two frequency bands, which will increase the airwaves available for mobile devices by almost one third. Some 40MHz of spectrum will be auctioned in the 2.3GHz band, while 150MHz of spectrum will be auctioned in the 3.4GHz band.

Mediacorp rides on the wave of media and tech convergence



In the new Mediacorp Campus, the Media Operations Centre leverages IP to interconnect different broadcast systems for the transmission of audio and video content. SDI, however, is still deployed in many of Mediacorp's workflows.

BY JOSEPHINE TAN

SINGAPORE – The history of Singapore television unfolded in 1963 with the launch of *Television Singapore*, the country's first TV broadcast.

In 1974, Singapore TV entered the world of colours as Singaporeans watched the World Cup Finals between Germany and The Netherlands live, in colour.

As Singapore edges closer to a full digital switchover, Singapore terrestrial broadcaster Mediacorp is planning to add new chapters in the republic's TV history, aided by the move from its iconic Caldecott Broadcast Centre to a new home within the Mediapolis@one-north digital media hub.

Dubbed Mediacorp Campus, the 12-storey state-of-the-art production and digital facility houses more than 2,800 staff in a single location. At its heart is the Media

Operations Centre (MOC), which operates round-the-clock to support Mediacorp's entire broadcast chain of services — including seven TV channels, 14 radio stations, and Toggle, Mediacorp's interactive over-the-top (OTT) streaming service.

Currently, the MOC manages all analogue, satellite and digital feeds, before Mediacorp completes its full migration from analogue to digital transmission.

Goh Kim Soon, SVP, broadcast engineering, Mediacorp, told APB: "Our new campus is designed for collaborative workflows, and leverages extensively on IP technology to interconnect different broadcast systems for the transmission of audio and video content."

"This provides us with more flexibility, and enables us to work more efficiently."

"However, we are still imple-
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VTC readies for 4K/UHD broadcast in 2018

HANOI – Founded in 1998, one of Vietnam Digital Television's (VTC) key goals is to provide multimedia services focusing on news and entertainment while expanding its footprint domestically and internationally.

To this end, VTC began rolling out digital terrestrial TV (DTT) based on the DVB-T standard in 2003, and has been producing and delivering HD programming since 2008. Two months ago, VTC

reached another milestone when it launched a 4K/Ultra HD (UHD) broadcast trial on its VTC HD1 channel.

In cities including Ho Chi Minh, Hanoi, Da Nang, Haiphong and Can Tho, households who own a 4K/UHD TV set are able to receive the 4K/UHD programming, provided they are also equipped with an indoor or outdoor DVB-T2 antenna.

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New Mediacorp Campus committed to 'unified digital strategy'

menting SDI in some of our workflows, especially for live video, as the standards for IP are still evolving."

Alongside the MOC, Mediacorp Campus is also fitted with an integrated newsroom staffed by some 700 journalists producing content for digital, TV, radio and print.

A recent visitor to Mediacorp Campus was Dr Amal Punchihewa, director, technology and innovation, Asia-Pacific Broadcasting Union (ABU). Deeply impressed, he particularly lauded Mediacorp's implementation of an "open office concept" at its integrated newsroom.

"Having a flexible working environment breaks down silos across different units, and provides opportunities to drive collaboration, knowledge sharing and creativity among staff," he explained.

"This resembles modern facilities, such as the BBC Broadcasting

House in London, where studios are open, and offers visitors a view over the central newsroom. The resources such as workstations are not assigned to individuals, hence are optimised for utilisation."

The new Mediacorp Campus also allows Mediacorp to push on with its "unified digital strategy" across its online and mobile properties, aimed at commercialising business lines, improving the user experience and creating strategic partnerships.

This strategy is driven by Mediacorp's Digital Group, formed in 2015 to bring clarity and direction to the broadcaster's overall digital strategy. The focus of the Digital Group, said Parminder Singh, Mediacorp's newly appointed chief commercial and digital officer, is to strengthen digital expertise across the organisations.

It also underscores Mediacorp's commitment to staying relevant in the digital age while driving

revenue growth and digital transformation, he added.

As part of Mediacorp's digital roadmap, Singh pointed out three strategies aimed at broadening the organisation's engagement with online audiences, and delivering a "complete and compelling" solution to viewers.

He elaborated: "Firstly, through better personalisation of our user interface and with the latest technologies deployed, we aim to create a more compelling digital experience for our audiences."

"Secondly, through our content marketing arm — Brand Studio — and our Content Creator's Network, we intend to provide more relevant digital advertising for consumers."

"Lastly, we can provide greater value for advertisers on their digital investments through better storytelling capabilities with our cross-media audience planning solution, Customer360."

Singh acknowledged that technology has transformed the way viewers consume media with an increasing usage of digital platforms. To cater to viewers in the digital space, Mediacorp launched Toggle in 2013 to provide a full complement of linear and non-linear services.

He, however, was quick to stress: "The development of Toggle isn't a shift away from our traditional linear channels, but rather an expansion of our content offerings across a full range of platforms."

"With the increasing consumption of media on digital platforms, Toggle's offerings are being enhanced both in terms of content and user features. For instance, Toggle Originals is placing an increasing focus on content offerings that are targeted at digital audiences."

"We plan to double our output of original content this year, with a primary focus on English and

Mandarin drama, thrillers and comedy, in both short- and long-form formats. In addition to the Toggle-it-First and catch-up TV offerings from our free-to-air (FTA) channels, Toggle Originals provide a wide range of additional content offerings to audiences in Singapore."

Toggle is currently available on several devices, including Web, mobile devices, smart TVs, Apple TV and Google's Chromecast. To further enhance its FTA channels, Mediacorp has also launched the Toggle Red Button service, which is powered by hybrid broadcast broadband TV (HbbTV).

"The Toggle Red Button service combines live broadcast TV and Toggle's catalogue of video-on-demand (VoD) services all within a single TV screen."

"In addition, viewers are able to record the programmes and watch it on catch-up via the Toggle menu, all in the TV environment," Singh concluded.

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Mediacorp equips new media centre

As part of its move to the new Mediacorp Campus, Singapore terrestrial broadcaster Mediacorp required a way of connecting and managing an extensive portfolio of production equipment to spread staff widely throughout the facility.

Three separate systems were required in the news, studio and media, and radio operations areas to ensure "instant and flexible" access to equipment for operators. To achieve this, Mediacorp chose a keyboard, video and mouse (KVM) switching system by IHSE.

In the news area, a fully redundant KVM system comprising two Draco tera 160-port enterprise switches, as well as redundant variant CPU and CON units, provide reliable and secure connectivity to a wide range of broadcast equipment using a mixture of DVI, DisplayPort, serial, analogue audio and USB data transfer.

In the studio area, a similar albeit smaller set-up, was created with Draco tera 48-port compact switches, while in the media operations centre and radio studios, an eight-port compact switch is supplemented with several point-to-point KVM extenders. Connection to the switchers from points around the facility is made using Cat X or fibre cabling, depending on the distance involved.

IHSE's KVM system serves as a core component in Mediacorp Campus' daily TV and radio production, Wang Yin, project manager at Mediacorp, told APB. He continued: "The KVM system is



Left: The Lawo team successfully installed a number of Lawo solutions at Mediacorp Campus, including the VSM control system, which provides the overall control layer across the facility.

Below: A KVM switching system supplied by IHSE provides Mediacorp with the flexibility of assigning any production studio to any control room.

used for live productions for both the studios and radio centres, where the separation of the workstation from the working place is required — with particular attention paid to the noise level it emits and the central cooling benefits."

According to Wang, one of the key requirements of Mediacorp Campus' broadcast infrastructure design is to allow flexibility of assigning any production studio to any control room. "With KVM, we can achieve this by pooling all workstations and servers in the studio equipment room and have KVM terminals at various locations connecting to the same matrix. This allows free assignment of any workstation or server based on user profiles," he concluded.

Also providing support to Mediacorp Campus is Lawo, who provided five Lawo mc256 audio production consoles and an mc236 audio console, one Nova73 HD



router, two Nova73 Compact core routers, a large VSM (Virtual Studio Manager) control system, as well as other hardware.

Critically, the VSM (Viable System Model) provides the overall control layer across the facility, and when paired with Lawo systems, provide DSN (Distributed Studio

Networking) and easy handling of workflows in the studios.

The news editing area in Mediacorp Campus comprises four FlashCam positions covering the four main languages spoken in Singapore (Tamil, Malay, Chinese and English), and is equipped with Lawo A_mic8 audio-to-IP units

that support up to eight microphones and four return lines.

The TV production complex comprises two studios — one large and one medium-sized — equipped with Lawo mc256 audio consoles. The large studio houses an mc256 with 64 faders, 16 line I/Os and eight AES I/Os, eight GPIOs as well as four Compact I/O units.

The medium-sized studio houses an mc256 with 48 faders, 16 line I/Os, eight GPIOs and three Lawo Compact I/O units. Each Compact I/O provides 32 Mic/line in, 32 Line outputs, eight AES I/Os and eight GPIOs. Both mc256 consoles are accompanied by a Compact Core with 270 DSP channels and three Ravenna 4 port cards.

The signals from the mc256 consoles are routed to a central NOVA73 HD, each with 256-channel tieline capacity. The Nova73 HD is located in the studio equipment room and serves as the central router for I/Os across all of the studios while providing control of signal distribution, and is equipped with a redundant control system, 128 AES I/Os, and 16 MADI and 16 RAVENNA ports.

A Lawo V_pro8 is also used for embedding/de-embedding audio from HD/SDI signals, and is addressed from the router. Four MADI links connect the Toggle Studio to the Nova73 HD core — Toggle is the Mediacorp Apps service that streams additional content and accompanying broadcasts such as video-on-demand (VoD).