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IBC continues to expand initiatives, experiences and partnerships designed to help the industry navigate change and create new opportunities at a time when audience expectations, skills requirements and regulatory challenges are reshaping media and entertainment (M&E) worldwide. New initiatives include the launch of Future Tech Ignite, including a dedicated Start-up Zone and Ignite Stage, alongside growing exhibitor participation and an IBC2026 Conference programme focused on the key trends reshaping M&E.

"As the media and entertainment industry continues to evolve, the IBC community increasingly wants not only to discover new technologies, but also exchange knowledge, address challenges, share expertise and connect with others around the topics that matter," said Michael Crimp, CEO of IBC. "From Future Tech Ignite and the Accelerator Programme to IBC Exchange and the Conference, IBC2026 is designed to help industry players turn ideas into action and unlock opportunities."

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from the Editor

The Technology Behind Tomorrow's Viewing Experience

Most audiences never think about the technology that delivers their favourite programmes. They simply expect crystal-clear pictures, uninterrupted live coverage, trusted information, and seamless access across every screen.

Yet behind every broadcast lies a complex ecosystem of innovation that is evolving faster than ever before.

This edition of *ABU Technical Review* explores some of the technologies quietly transforming the future of broadcasting. From RTM's groundbreaking study on UHD television transmission over C-band satellite networks to the growing possibilities of 5G Broadcast, the articles in this issue demonstrate how broadcasters are continuously pushing the boundaries of quality, efficiency and reach.

At the same time, technology is introducing new opportunities and new responsibilities. Artificial Intelligence is rapidly reshaping production workflows and content creation, while initiatives such as C2PA and content provenance standards are helping the industry address one of its most pressing challenges: maintaining trust in an era of synthetic media. Together, these developments remind us that innovation is not solely about capability; it is also about accountability.

This issue also highlights the practical realities of modern broadcasting. Automated monitoring systems, real-time network management and resilient transmission infrastructures may not capture headlines, but they are essential to ensuring that audiences receive reliable services every day. The success of broadcasting is often measured by what viewers do not notice: technical failures that never occur because the right systems are in place.

As reflected in the insights from the ABU Digital Broadcasting Symposium 2026, our industry stands at an important crossroads. The convergence of AI, next-generation transmission technologies, cloud-based workflows and trusted media frameworks is redefining how content is created, distributed and consumed.

Whether you are an engineer, broadcaster, policymaker or simply someone interested in the future of media, we hope this edition offers valuable perspectives on the innovations shaping our industry today.

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RTM 4K CASE STUDY: AN EXPERIMENTAL STUDY ON UHD-TV TRANSMISSION OVER C-BAND FOR BROADCAST SYSTEMS USING DVB-S2X MODULATION

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ABSTRACT

The progression of broadcast technology from monochrome to Standard Definition (SD), High Definition (HD), and now Ultra High-Definition (UHD) has intensified the need for more efficient and robust satellite transmission systems. As satellite links remain a critical backbone for contribution and distribution, particularly within C-band due to its resilience to atmospheric attenuation, broadcasters must reassess system parameters to support UHD delivery. This study presents a comprehensive experimental trial of UHD-TV transmission over C-band using the DVB-S2X modulation standard. The methodology covers link configuration, bandwidth allocation, modulation and coding adaptations, and real-world performance measurements. Findings highlight the achievable throughput, signal robustness, and operational constraints when integrating UHD services into existing broadcast satellite infrastructures. The results demonstrate the feasibility of UHD implementation over C-band while identifying key technical considerations necessary for large-scale deployment.

1. INTRODUCTION

1.1 OVERVIEW OF SATELLITE BROADCASTING

Satellite broadcasting has undergone a continuous cycle of technological transformation since the first commercial television relay experiments of the 1960s. Early systems relied on analogue video transmission using large transponder bandwidths and operated primarily within lower frequency allocations such as L-band and S-band. As global demand for higher-quality television services grew, major satellite operators gradually transitioned to higher frequency bands and more efficient transmission methods, beginning with the introduction of C-band and Ku-band fixed satellite services.

A key historical milestone was the introduction of digital video compression and the standardization of DVB-based broadcast transmission in the mid-1990s by the Digital Video Broadcasting (DVB) Project. This step marked the shift from analogue to digital modulation, enabling far higher spectral efficiency, improved link robustness, and new broadcast formats including SDTV, HDTV and, more recently, Ultra High-Definition Television (UHD-TV).

Today's UHD contribution and distribution workflows rely heavily on advanced compression technologies such as High Efficiency Video Coding (HEVC), high dynamic range

(HDR) transfer functions such as Hybrid Log Gamma (HLG), and high-order modulation under DVB-S2X. These innovations require stable satellite links and significant carrier-to-noise performance, which directly influences the operational suitability of different satellite frequency bands.

1.2 VIDEO RESOLUTION FOR BROADCASTING

Video resolution classifications are often used interchangeably, but they represent distinct formats with different pixel dimensions and application domains. HD typically refers to 1920 × 1080 pixels and is the long-established broadcast standard for television services. 2K resolution, defined as 2048 × 1080, is primarily a digital cinema format rather than a broadcast one, offering a slightly wider image than HD.

In contrast, UHD and 4K are frequently mistaken as equivalent. UHD, at 3840 × 2160, is the internationally recognised broadcast and consumer standard for next-generation television. Meanwhile, 4K, defined as 4096 × 2160, originates from the Digital Cinema Initiatives (DCI) specification and is intended for theatrical projection, not broadcast distribution. Although both formats share a similar vertical resolution, their production, encoding, and transmission requirements differ. Further comparison can be found in **Table 1** below.

Format	Pixel Resolution	Aspect Ratio	Industry Use-case
HD	1920 x 1080	16:9	TV broadcast, streaming, production
2K	2048 x 1080	17:9	Digital cinema, post-production
UHD	3840 x 2160	16:9	TV broadcast, OTT, consumer displays
4K	4096 x 2160	17:9	Digital cinema mastering, theatrical projection

Table 1: Comparison of HD, 2K, UHD, and 4K resolutions

These distinctions are crucial when evaluating satellite transmission performance. UHD, not 4K, aligns with broadcast industry standards and device compatibility, making it the appropriate format for technical testing in a satellite-based delivery environment.

1.3 SATELLITE FREQUENCY BAND FOR BROADCASTING

The suitability of different satellite frequency bands for UHD distribution depends on multiple technical factors including propagation characteristics, transponder bandwidth availability, uplink and downlink power requirements, antenna aperture, modulation robustness, and environmental resilience. Each band provides distinct performance trade-offs that influence how broadcasters design UHD workflows.

a) C-band

C-band remains one of the most reliable distribution platforms for satellite broadcasting because of its strong resistance to rain attenuation and atmospheric absorption. This makes it an ideal choice in tropical regions where heavy rainfall is frequent. The moderate frequency allows stable carrier performance even under adverse weather conditions, enabling consistent reception for contribution and distribution links.

However, C-band typically requires larger antenna apertures, often ranging from 3.7 metres to more than 7 metres for professional-grade reception. While this increases deployment complexity, the larger dish sizes also benefit link margins, supporting more robust modulation schemes in the DVB S2 and DVB S2X standards. Transponders in C-band commonly offer 36 MHz or 54 MHz bandwidth, which is sufficient for a single HEVC-compressed UHD service at moderate frame rates and bit depth.

b) Ku-band

Ku-band has become the dominant operating band

for many commercial direct-to-home platforms due to its balance of antenna size, coverage flexibility, and transponder power. Typical consumer dishes range from 60 cm to 120 cm, enabling satellite TV distribution to households without requiring oversized receive antennas. Ku-band supports higher power transponders, which allows more flexible modulation options under DVB S2X. However, Ku-band experiences significantly more rain fade compared to C band due to higher frequency propagation losses. The rain attenuation curve becomes particularly steep during tropical downpours, requiring broadcasters to employ strategies such as uplink power control, adaptive coding and modulation, or larger fade margins.

c) Ka-band

Ka-band offers the highest overall bandwidth among widely used satellite broadcast bands, enabling multi-channel UHD distribution and even 8K trials. Its wide transponder capacity and higher carrier-to-noise potential make it a strong candidate for next-generation broadcast systems. However, the benefits come with significant operational challenges. Ka-band signals experience severe rain attenuation and atmospheric absorption, especially due to oxygen and water vapour resonance near 22 GHz and 60 GHz. This requires highly adaptive link management including advanced uplink power control, real-time modulation adjustments, and, in some systems, site diversity or fade mitigation techniques.

As a summary, the comparison between C-band, Ku-band, and Ka-band is tabulated in **Table 2** below.

Parameter	C-band	Ku-band	Ka-band
Rain Fade Resistance	Excellent	Moderate to Poor	Very Poor
Typical Antenna Size	Large	Medium to Small	Small
Transponder Bandwidth	36 – 54 MHz	27 – 54 MHz	Up to 250 MHz
UHD Feasibility	Very stable	Multiple services but weather-sensitive	Excellent capacity but requires strong fade mitigation

Table 2: Comparison of C-band, Ku-band, and Ka-band

1.4 SATELLITE TRANSMISSION STANDARDS

The introduction of DVB-S2 in 2005 was a major engineering breakthrough with the new standard improved spectral efficiency up to 30% through a Low-Density Parity Check (LDPC) coding, a higher-order constellations such as 16APSK and 32APSK, and more flexible roll-off factors. This had prepared the early expansion of HD-TV distribution. With the DVB-S2X, it extends the capability by introducing 64APSK, 128APSK, and 256APSK constellations, up to 0.05 roll-off values, and offer high-efficiency mode for 4:2:2 10-bit for UHD content. This enhancement significantly increases throughput and spectrum efficiency, enabling UHD transport stream to be carried over satellite links with constrained bandwidth.

Early HD-TV contribution relied on MPEG-2 at 50Mbps bitrates. Advanced Video Codec (AVC) or H.264 standard has improved the compression efficiency by roughly 50% enabling HD contribution at 15 – 25Mbps. As for the

introduction of H.265, the bitrate continues to reduced. This enables the contribution of 4:2:2 10-bit UHD content typically in the range of 25 – 40Mbps depending on scene complexity.

2. METHODOLOGY

2.1 EXPERIMENTAL SETUP

The experimental study on UHD-TV was conducted to evaluate the technical feasibility, performance, and operational readiness of the contribution and transmission workflow within the existing broadcast infrastructure of the Department of Broadcasting Malaysia (RTM), with a focus on the satellite facilities in Angkasapuri, Kuala Lumpur. The objectives were to assess the end-to-end capability of the system in supporting UHD delivery, including encoding, modulation, transmission, and decoding processes.

The testing was validated against several key criteria, including available bandwidth allocation, selected

modulation schemes, and antenna aperture sizes. The assessment covered the complete end-to-end transmission chain, as illustrated in **Figure 1**. Test configuration for this assessment is shown in **Table 3**.

For this experimental setup, the uplink process was conducted at the TM Cyberjaya facilities, while the downlink reception was performed at RTM Angkasapuri. At the uplink site, UHD content captured from cameras was encoded using an HEVC H.265 encoder (Evertz 5782XPS) to optimise bandwidth efficiency before being fed into the satellite modulator (Evertz 7880MD) for RF signal preparation. The modulated RF signal was then amplified by a High-Power Amplifier prior to transmission to the satellite transponder. Two antenna systems which are a 2.4-metre dish and an 8.1-metre dish were used for uplink, enabling comparative evaluation of transmit power performance, link margin behaviour, and modulation robustness.

At the downlink site in RTM Angkasapuri, three antenna systems were deployed to assess reception quality across different dish apertures. The dishes used were 3.8-metre, 4.5-metre, and 7.5-metre units. Each antenna was connected to a Low Noise Block and a downconverter to condition the received RF signal for the demodulation stage. The DVB-S2X demodulator (Evertz 7882DM SAT4) reconstructed the transport stream, which was subsequently decoded by an HEVC decoder (Evertz 5782XPS) to produce the UHD baseband video output. The decoded video was displayed on a 4K monitor and analysed using video quality measurement instruments to evaluate visual fidelity.

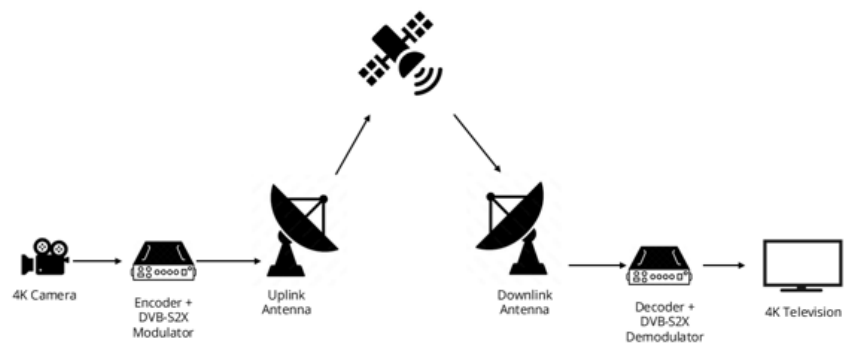


Figure 1: Setup for the UHD-TV transmission testing

Configuration	Value
Video Format	UHD Progressive (3840 x 2160)
Frame Rate	30 fps
Colour Sampling	4:2:2
Bit Depth	10-bit
Video Codec	HEVC (H.265)
Transport Stream	MPEG-TS
Transport Protocol	RTP
Transmission Standard	DVB-S2X
Transponder Bandwidth	9 MHz / 11 MHz / 18 MHz

Table 3: Test configuration overview

This configuration enabled a comprehensive assessment of system capability, identification of the most suitable antenna configuration, and detailed analysis of link performance for supporting UHD television broadcast services using the satellite systems operated by TM and RTM.

2.2 SYSTEM OVERVIEW

The system setup for uplink and downlink broadcasting processes follows a standard architecture that begins with baseband signal acquisition, followed by signal encoding for digital broadcasting, and final modulation for satellite

transmission. The downlink process reverses these stages, where the received signal is first demodulated and then decoded to restore it to its original baseband format.

For this case study, Evertz equipment was utilised for the encoder, modulator, decoder, and demodulator. The Evertz 5782XPS encoder supports HEVC video encoding and AAC-LC 2.0 audio encoding. The same Evertz 5782XPS unit was used as the decoder. **Figure 2** illustrates the configuration of the Evertz 5782XPS.



Figure 2: Evertz 5782XPS

As mentioned earlier, the system employs HEVC video encoding using the 4:2:2 10-bit profile in Constant Bitrate (CBR) mode, while the audio stream is encoded using AAC-LC 2.0 at 256 kbps. The encoder supports multiple transport protocols, including SRT, RIST, ZiXi, UDP, RTP, and others.

For modulation, the Evertz 7880MD was used. This modulator supports DVB-S2X and accommodates various modulation schemes such as 16APSK and 32APSK. It supports variable FEC and roll-off factors of up to 5%. **Figure 3** presents the configuration of the Evertz 7880MD modulator.

To provide a diverse antenna configuration, the case study utilised both TM and RTM facilities. At TM

Cyberjaya, the 4K content was transmitted using two uplink antennas: a large 8.1-metre dish and a 2.4-metre DSNG-class antenna to simulate a mobile scenario. At the receiving sites, three downlink antennas were used which are 3.8-metre, 4.5-metre, and 7.5-metre systems.

The demodulator used in this case study was the Evertz 7882DM-SAT4, as shown in **Figure 4**. It features automatic changeover between multiple RF, ASI, or IP inputs and supports advanced transport stream processing, including service PID filtering and remapping with bitrate management. It can automatically detect the modulation scheme and configure parameters such as roll-off, symbol rate, pilot presence, and frame length. Additionally, it provides built-in signal quality monitoring.

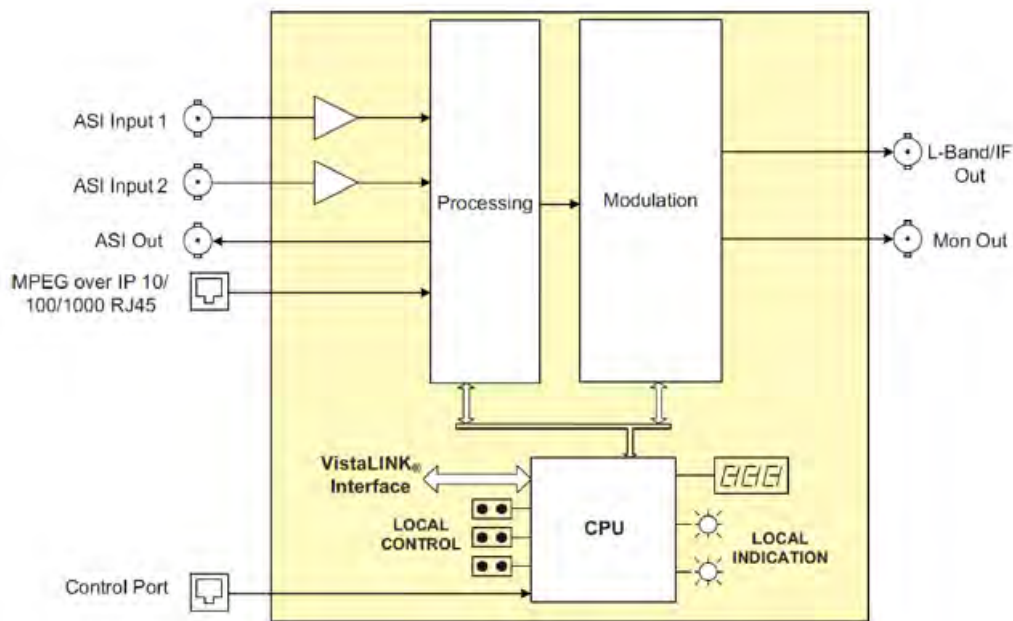


Figure 3: Evertz 7880MD modulator

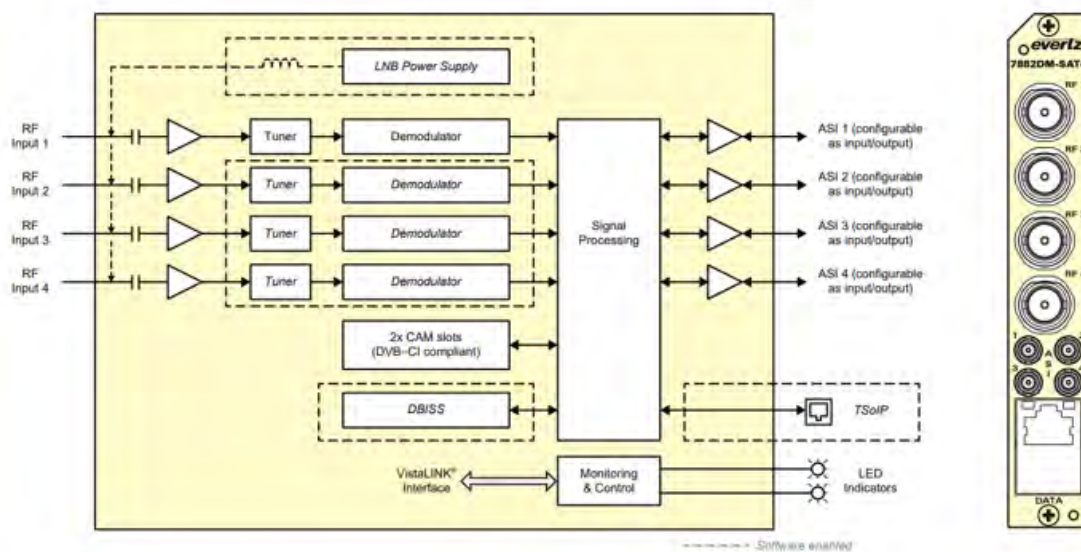


Figure 4: Evertz 7882DM-SAT4 demodulator

3. RESULTS & DISCUSSIONS

The results are divided according to several system configurations. First, two antenna sizes were used for the uplink: a 2.4-metre DSNG antenna and an 8.1-metre fixed earth station antenna. For the downlink sites, three antenna sizes were evaluated: 3.8-metre, 4.5-metre, and 7.5-metre dishes. The carrier bandwidths tested also varied, with configurations using 9 MHz, 11 MHz, and 18 MHz.

3.1 RESULTS FROM 2.4-METRE DSNG ANTENNA

The results obtained using the 2.4-metre DSNG antenna with a 9 MHz, 11 MHz, and 18 MHz carrier bandwidth are presented in **Table 4**, **Table 5**, and **Table 6**.

Based from the results, for 9 MHz and 11 MHz, 32 APSK recorded very low or zero ES/NO margin for 3.8 m antenna which indicates non-viable links despite adequate bitrate. For 18 MHz, both 16 APSK and 32 APSK modulations exceed the minimum bitrate threshold. However, only 16 APSK maintains reliable link margins across antenna sizes. The 32 APSK only viable with larger downlink antennas.

Table 4: 2.4-metre DSNG antenna using 9 MHz bandwidth

Equipment	Parameter	3.8-metre		4.5-metre		7.5-metre	
		16APSK	32APSK	16APSK	32APSK	16APSK	32APSK
Encoder	Output Bitrate (Setting)	18.1	0	18.2	27.2	18.1	27.2
	Output Video Bitrate	16	0	15.7	24.4	15.6	24.4
	Total TS Bitrate	18.1	0	18.2	27.2	18.1	27.2
Modulator	FEC	2/3	2/3	2/3	5/6	2/3	5/6
	Roll-off	0.2	0	0.2	0.2	0.2	0.2
	Channel Capacity	18.5	0	18.5	27.5	18.5	27.5
	Total Input Bitrate	18.1	0	18.2	27.2	18.1	27.2
	RF Out Level	-19	0	-11	-11	-12	-12
HPA / BUC	Forward Power	48.8	48.9	49.8	49.8	48.8	48.9
Demodulator	Satellite Frequency	1377.5	No Lock	1377.5	1377.5	1377.5	1377.5
	Symbol Rate	7.5	No Lock	7.5	7.5	7.5	7.5
	Frequency Offset	180	No Lock	192	192	176	176
	FEC	2/3	No Lock	2/3	5/6	2/3	5/6
	Roll-off	0.2	No Lock	0.2	0.2	0.2	0.2
	C/N Ratio	13.7	No Lock	16	16.1	16.6	16.7
	ES No Ratio	14.5	No Lock	16.8	16.6	17.4	17.5
	ES No Margin	6.1	No Lock	8.4	2.3	9	3.2
	RF Power	-52	No Lock	-66	-66	-63	-63
	BER	0	No Lock	0	0	0	0
Decoder	TS Output Bitrate	18.1	No Lock	18.2	27.2	18.1	27.2
	Input Bitrate	18.1	No Lock	18.2	27.2	18.1	27.2
	Video Bitrate	15.4	No Lock	15.7	24.4	15.4	23

Table 5: 2.4-metre DSNG antenna using 11 MHz bandwidth

Equipment	Parameter	3.8-metre		4.5-metre		7.5-metre	
		16APSK	32APSK	16APSK	32APSK	16APSK	32APSK
Encoder	Output Bitrate (Setting)	21.1	39	23.45	35	21.1	35
	Output Video Bitrate	16.76	35.7	20.77	32	16.76	32
	Total TS Bitrate	21.1	39	23.5	35	21.1	35
Modulator	FEC	3/5	9/10	2/3	5/6	3/5	5/6
	Roll-off	0.2	0.2	0.2	0.2	0.2	0.2
	Channel Capacity	21.33	40.1	23.72	35.33	21.33	35.33
	Total Input Bitrate	21.1	39	23.45	35	21.1	35
	RF Out Level	-13	-16	-10	-10	-13	-11
HPA / BUC	Forward Power	47.9	49.9	50.8	50.7	47.9	49.9
Demodulator	Satellite Frequency	1377.5	No Lock	1377.5	1377.5	1377.5	1377.5
	Symbol Rate	9.165	No Lock	9.165	9.165	9.165	9.165
	Frequency Offset	180	No Lock	191	191	175	176
	FEC	3/5	No Lock	2/3	5/6	3/5	5/6
	Roll-off	0.2	No Lock	0.2	0.2	0.2	0.2
	C/N Ratio	12.2	No Lock	16	16.2	14.8	16.9
	ES No Ratio	13	No Lock	16.8	17	15.6	17.7
	ES No Margin	5.6	No Lock	8.4	2.7	8.2	3.4
	RF Power	-52	No Lock	-65	-65	-64	-62
	BER	0	No Lock	0	0	0	0
	TS Output Bitrate	21.1	No Lock	23.5	35	21.1	35
Decoder	Input Bitrate	21.1	No Lock	23.41	35	21.1	35
	Video Bitrate	18.23	No Lock	20.77	32	18.23	31.83

Table 6: 2.4-metre DSNG antenna using 18 MHz bandwidth

Equipment	Parameter	3.8-metre		4.5-metre		7.5-metre	
		16APSK	32APSK	16APSK	32APSK	16APSK	32APSK
Encoder	Output Bitrate (Setting)	No Lock	No Lock	60.4	62.7	60.4	62.7
	Output Video Bitrate	No Lock	No Lock	56.42	58.7	56.42	58.7
	Total TS Bitrate	No Lock	No Lock	60.4	62.7	60.4	62.7
Modulator	FEC	No Lock	No Lock	9/10	3/4	9/10	3/4
	Roll-off	No Lock	No Lock	0.05	0.05	0.05	0.05
	Channel Capacity	No Lock	No Lock	60.44	62.96	60.44	62.96
	Total Input Bitrate	No Lock	No Lock	60.4	62.7	60.4	62.7
	RF Out Level	No Lock	No Lock	-8	-8	-8	-8
HPA / BUC Demodulator	Forward Power	No Lock	No Lock	53	53	53.3	53
	Satellite Frequency	No Lock	No Lock	1381	1381	1381	1381
	Symbol Rate	No Lock	No Lock	17.197	17.197	17.197	17.197
	Frequency Offset	No Lock	No Lock	192	192	176	177
	FEC	No Lock	No Lock	9/10	3/4	9/10	3/4
	Roll-off	No Lock	No Lock	0.05	0.05	0.05	0.05
	C/N Ratio	No Lock	No Lock	15.4	14.8	16.7	15.6
	ES No Ratio	No Lock	No Lock	15.6	15	16.9	15.8
	ES No Margin	No Lock	No Lock	2.5	2.3	3.8	3.1
	RF Power	No Lock	No Lock	-63	-63	-58	-58
	BER	No Lock	No Lock	0	0	0	0
	TS Output Bitrate	No Lock	No Lock	60.4	62.7	60.4	62.7
Decoder	Input Bitrate	No Lock	No Lock	60.4	62.7	60.4	62.7
	Video Bitrate	No Lock	No Lock	56	58.8	56	59

3.2 RESULTS FROM 8.1-METRE FIXED EARTH STATION ANTENNA

The results obtained using the 8.1-metre fixed earth station antenna with a 9 MHz, 11 MHz, and 18 MHz carrier bandwidth are presented in **Table 7**, **Table 8**, and **Table 9**.

Based from the results, 32 APSK modulation delivers higher total bitrate value compared with 16 APSK at 9 MHz, 11 MHz, and 18 MHz bandwidth with the largest gains recorded at 18 MHz. 16 APSK modulation maintains significantly higher ES/NO margins as antenna size decreases. At 9 MHz and 11 MHz, 32 APSK falls to very low ES/NO margin for 3.8 m downlink antennas indicating a non-viable links despite adequate bitrate. For 18 MHz, both 16 APSK and 32 APSK modulation exceed the minimum UHD bitrate threshold. But, only 16 APSK maintains comfortable link margins across antenna sizes. 32 APSK is viable only with larger downlink antennas.

3.3 FINDINGS AND DISCUSSIONS

For modulation selection, the 16 APSK is recommended as the baseline modulation for UHD satellite broadcast operation due to its superior ES/NO margin and link robustness. 32 APSK can be applied if the large antenna aperture is available, a sufficient link margin guaranteed under worst-case scenario such as rain-fade or uplink power constraints and maximum throughput is required and reduced robustness is acceptable.

18 MHz bandwidth provides the most effective balance between total TS bitrate and link margin and is recommended for UHD-TV service delivery. 9 MHz and 11 MHz bandwidths which capable of meeting a minimum UHD-TV bitrate requirement however offer limited margin headroom especially when combined with a higher order modulation and smaller antennas. That is why 18 MHz bandwidth is the most efficient for UHD-TV.

Based from 3.8 m, 4.5 m, and 7.5 m antennas, the 7.5 m antennas support both 16 APSK and 32 APSK modulation across all evaluated bandwidth and is recommended for high-capacity especially for UHD-TV services. 4.5 m antennas are suitable for UHD-TV distribution using 16 APSK only at 18 MHz under favourable link conditions. 3.8 m antennas are not recommended for 32 APSK modulation as the ES/NO margins fall below an operational threshold. Only 16 APSK remains the only viable option for this aperture size.

For UHD-TV service feasibility, minimum bitrate targets of 27 to 35 Mbps are consistently achievable using 16 APSK at 11 MHz and 18 MHz bandwidths and 32 APSK at 18 MHz bandwidth only with adequate antenna size. High motion UHD such as 60 to 80 Mbps are feasible only at 18 MHz and primarily when paired with large antennas and robust link margins.

Table 7: 8.1-metre Fixed Earth Station antenna using 9 MHz bandwidth

Equipment	Parameter	3.8-metre		4.5-metre		7.5-metre	
		16APSK	32APSK	16APSK	32APSK	16APSK	32APSK
Encoder	Output Bitrate (Setting)	17	30	18.1	31	17	30
	Output Video Bitrate	14.4	27.12	15.1	28.88	14.4	27.12
	Total TS Bitrate	17	30	18.1	31	17	30
Modulator	FEC	2/3	9/10	2/3	9/10	2/3	9/10
	Roll-off	0.2	0.2	0.2	0.2	0.2	0.2
	Channel Capacity	17.84	30.5	18.45	31.17	17.84	30.5
	Total Input Bitrate	17	30	18.1	31	17	30
	RF Out Level	-19	-17	-14	-14	-19	-17
HPA / BUC	Forward Power	37.7	37.7	40.6	40.5	37.7	37.7
Demodulator	Satellite Frequency	1377.5	No Lock	1377.5	1377.5	1377.5	1377.5
	Symbol Rate	7.5	No Lock	7.5	7.5	7.5	7.5
	Frequency Offset	180	No Lock	192	191	175	175
	FEC	2/3	No Lock	2/3	9/10	2/3	9/10
	Roll-off	0.2	No Lock	0.2	0.2	0.2	0.2
	C/N Ratio	13.3	No Lock	17.5	17.7	16.8	16.9
	ES No Ratio	14.1	No Lock	18.3	18.5	17.6	17.7
	ES No Margin	5.1	No Lock	9.9	2.4	8.6	1.6
	RF Power	-53	No Lock	-65	-65	-63	-63
	BER	0	No Lock	0	0	0	0
	TS Output Bitrate	17	No Lock	18.1	31	17	31
Decoder	Input Bitrate	17	No Lock	18.1	31	17	30.1
	Video Bitrate	14.52	No Lock	15.59	27.28	14.52	28.08

Table 8: 8.1-metre Fixed Earth Station antenna using 11 MHz bandwidth

Equipment	Parameter	3.8-metre		4.5-metre		7.5-metre	
		16APSK	32APSK	16APSK	32APSK	16APSK	32APSK
Encoder	Output Bitrate (Setting)	21	39	23.45	39.8	21	39
	Output Video Bitrate	17.1	35.7	20.4	33.8	17.8	35.8
	Total TS Bitrate	21	39	23.45	39.8	21	39
Modulator	FEC	3/5	9/10	2/3	9/10	3/5	9/10
	Roll-off	0.2	0.2	0.2	0.2	0.2	0.2
	Channel Capacity	21.33	40.1	23.72	40.1	21.33	40.1
	Total Input Bitrate	21	39	23.5	39.8	21	39
	RF Out Level	-16	-16	-13	-13	-16	-16
HPA / BUC	Forward Power	38.7	38.7	41.4	41.4	38.7	38.7
Demodulator	Satellite Frequency	1377.5	No Lock	1377.5	1377.5	1377.5	1377.5
	Symbol Rate	9.165	No Lock	9.165	9.165	9.165	9.165
	Frequency Offset	180	No Lock	191	192	176	176
	FEC	3/5	No Lock	2/3	9/10	3/5	9/10
	Roll-off	0.2	No Lock	0.2	0.2	0.2	0.2
	C/N Ratio	13.7	No Lock	17.7	17.6	16.9	16.9
	ES No Ratio	14.5	No Lock	18.5	18.6	17.7	17.7
	ES No Margin	7.1	No Lock	10.1	2.5	10.2	1.6
	RF Power	-51	No Lock	-64	-63	-62	-62
	BER	0	No Lock	0	0	0	0
	TS Output Bitrate	21	No Lock	23.5	39.8	17	39
Decoder	Input Bitrate	17	No Lock	23.43	39.8	17	39
	Video Bitrate	13.7	No Lock	20.77	36.6	13.73	35.27

Table 9: 8.1-metre Fixed Earth Station antenna using 18 MHz bandwidth

Equipment	Parameter	3.8-metre		4.5-metre		7.5-metre	
		16APSK	32APSK	16APSK	32APSK	16APSK	32APSK
Encoder	Output Bitrate (Setting)	No Lock	No Lock	60	66.5	60	66.5
	Output Video Bitrate	No Lock	No Lock	56.2	62.5	56.2	62.5
	Total TS Bitrate	No Lock	No Lock	60	66.5	60	66.5
Modulator	FEC	No Lock	No Lock	9/10	5/6	9/10	5/6
	Roll-off	No Lock	No Lock	0.05	0.05	0.05	0.05
	Channel Capacity	No Lock	No Lock	60.64	66.73	60.64	66.73
	Total Input Bitrate	No Lock	No Lock	60.00	66.5	60	66.5
	RF Out Level	No Lock	No Lock	-13	-11	-13	-11
HPA / BUC	Forward Power	No Lock	No Lock	41.5	43.5	41.5	43.5
Demodulator	Satellite Frequency	No Lock	No Lock	1381	1381	1381	1381
	Symbol Rate	No Lock	No Lock	17.197	17.197	17.197	17.197
	Frequency Offset	No Lock	No Lock	192	192	176	176
	FEC	No Lock	No Lock	9/10	5/6	9/10	5/6
	Roll-off	No Lock	No Lock	0.05	0.05	0.05	0.05
	C/N Ratio	No Lock	No Lock	15.5	17	17.4	18.4
	ES No Ratio	No Lock	No Lock	15.7	17.2	17.4	18.6
	ES No Margin	No Lock	No Lock	2.6	2.9	4.3	4.3
	RF Power	No Lock	No Lock	-63	-61	-58	-57
	BER	No Lock	No Lock	0	0	0	0
	TS Output Bitrate	No Lock	No Lock	60	66.5	60	66.5
Decoder	Input Bitrate	No Lock	No Lock	60	66.5	60	66.5
	Video Bitrate	No Lock	No Lock	56.2	62.5	57	63

To ensure service continuity during atmospheric degradation, minimum ES/NO margin threshold must be preserved, prioritizing modulation robustness over raw capacity. Relying on 32 APSK at marginal ES/NO levels are not recommended for a continuous broadcast service and should be limited to controlled use cases environment.

4. CONCLUSIONS

Based from the case study, there are several findings were observed. For 9 MHz bandwidth, the maximum channel capacity achievable is 31.17 Mbps using an 8.1 m uplink and 4.5 m downlink antennas with the configuration of 32 APSK, 9/10 FEC, and 20% Roll-off on the downlink. For 11 MHz bandwidth, the maximum channel capacity is 40.10 Mbps using an 8.1 m uplink and 4.5 m downlink antennas with the configuration of 32 APSK, 9/10 FEC, and 20% Roll-off on the downlink. However, this meets the minimum requirements for a standard content only and it is not sufficient to handle fast-action or sport contents. For 18 MHz bandwidth, the maximum channel capacity is 66.7 Mbps using an 8.1 m uplink and 4.5 m or 7.5 m downlink antennas with the configuration of 32 APSK, 5/6 FEC, and 5% Roll-off on the downlink. This configuration is sufficient for both standard and fast-action content delivery.

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REFERENCES

1. European Telecommunications Standards Institute (ETSI), *Digital Video Broadcasting (DVB); Second Generation Framing Structure, Channel Coding and Modulation Systems for Broadcasting, Interactive Services, News Gathering and Other Broadband Satellite Applications; Part 1: DVB-S2*, ETSI EN 302 307-1, Nov. 2014.
2. European Telecommunications Standards Institute (ETSI), *Digital Video Broadcasting (DVB); Second Generation Framing Structure, Channel Coding and Modulation Systems for Broadcasting, Interactive Services, News Gathering and Other Broadband Satellite Applications; Part 2: DVB-S2 Extensions (DVB-S2X)*, ETSI EN 302 307-2, Aug. 2024.
3. A. Raake et al., "Multi-Model Standard for Bitstream-, Pixel-Based and Hybrid Video Quality Assessment of UHD/4K: ITU-T P.1204," *IEEE Access*, vol. 8, pp. 193020–193049, 2020.
4. D. Keller, R. R. Ramachandra Rao, and A. Raake, "Assessing Quality Differences for 8K/UHD-2 and 4K/UHD-1 HDR Video Based on Viewing Distance," *IEEE Access*, vol. 12, pp. 1–15, 2024. ■



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Zakaria (Zak) Alhaddad, originally from Palestine, currently serves as the Product Manager for RF Products at Evertz Microsystems. Over a career spanning more than a decade at the company, he has advanced from a specialized RF Application Engineer into an engineering leadership role based in Burlington, Ontario, Canada. He possesses extensive expertise in

satellite telecommunications, hardware signal routing, and advanced software orchestration frameworks. Throughout his tenure, he has been central to the design, deployment, and industry presentation of major satellite ground infrastructure projects and broadcast hardware rollouts. His core specializations include Digital IF (Intermediate Frequency) transformation, satellite ground digitization, multi-channel spectrum processing, and compact high-density hardware architecture. He is widely recognized for his advocacy of open global standards, notably representing his organization within the Digital IF Interoperability Consortium (DIFI) to foster seamless vendor interoperability.

His technical focus remains centered on driving next-generation broadcast automation and high-capacity transport lines. Through managing flagship platforms like the high-density Evertz RF Probe, the 670WSP channelizer, and the compact XRU1 and XRF4 routing platforms, he continues to support the modernization of global satellite earth stations and teleport facilities by engineering highly flexible, bandwidth-efficient, and resilient signal distribution workflows.

TECHNICAL BUREAU MEMBERS REFLECT ON DBS SUCCESS AND PLAN AHEAD FOR 2026



The Technical Bureau Mid-Year Meeting 2026 was held on 3 April at the Berjaya Times Square Hotel in Kuala Lumpur, immediately following the successful conclusion of DBS 2026 at the same venue. Conducted in a hybrid format, the meeting brought together Technical Bureau members and regional representatives, both onsite and online.

Attending in person were Chairperson **Mr. Masashi Kamei** (NHK Japan), Vice-Chairperson **Mr. Nguyen Duc Tue** (VTV Vietnam), NBT Thailand delegates **Mr. Anusorn Srimalaikul**, **Mr. Nawatsakon Sonsana**, and **Mr. Narongpun Rungcharoen**, Technical Liaison Officer **Mr. Tatsuya Fujii** (NHK Japan), and Topic Area Chairpersons **Dr. Hirokazu Kamoda** (NHK Japan), **Mr. Akhlesh Sharma** (Prasar Bharati India), and **Mr. Bander Alrasheedi** (SBA Saudi Arabia). Joining online were Mr. Terence Yiu Shun Tat (Phoenix TV Hong Kong, China), Mr. Prakash Veer (Prasar Bharati India), Mr. L. S. Priyankara (MTV Sri Lanka), and Mr. Chumpol Siri Wattanasit (NBT Thailand), who participated on behalf of Mr. Pattana Ustasiri.

The meeting commenced with the Chairperson, Mr. Kamei, approving the agenda, followed by welcome remarks and updates from the Technical Bureau leadership. Members were presented with the updated ABU Technical Bureau composition for 2026–2027, reflecting changes endorsed at the 2025 Technical Committee Meeting in Mongolia. The newly elected Vice-Chairpersons, Mr. Zhang Wei (RTPRC China), Dr. Mohieddin Moradi (IRIB Iran), and Mr. Nguyen Duc Tue (VTV Vietnam), were formally noted. The Bureau also

welcomed TDM Macau and PBS Philippines as members, following the completion of their terms by RTM Malaysia and RRI Indonesia.

A key part of the meeting focused on updates from member organisations across the region. MTV Sri Lanka shared its ongoing efforts and challenges in transitioning to digital broadcasting, while Phoenix TV Hong Kong, China, highlighted its implementation of artificial intelligence tools to support translation, transcription, voice-over production, and workflow efficiency. Prasar Bharati India reported on the launch of Waves OTT, a public service broadcasting platform featuring more than 100 channels and provided updates on Digital-to-Mobile (D2M) trials under ATSC 3.0. Conducted through a public-private partnership involving approximately 150 transmission sites, the initiative is helping shape future broadcasting strategies. The broadcaster also noted that DVB-T2 deployment had proven unsuccessful and is approaching decommissioning, with consultancy support engaged for transition planning and future transmitter deployment.

VTV Vietnam presented developments related to MChannel and its national OTT platform, while NBT Thailand reported progress in channel upgrades, licensing, and the nationwide rollout of emergency warning systems. NHK Japan shared updates on revisions to the Broadcasting Act, the testing phase of its new broadcasting centre, and developments relating to the transition of radio services from AM to FM. The broadcaster also invited members to participate in its upcoming STRL Workshop on Radio.

Members were also updated on ongoing training and technical initiatives. **Dr. Veysel Binbay** briefed the meeting on VOV Vietnam's technical assistance request and highlighted the Engineering Fundamentals Course scheduled from December 2025 to February 2026. The webinar conducted by Dr. Mohieddin Moradi in December 2025 was also acknowledged. Updates on Technical Bureau study projects confirmed that the Terms of Reference period has been extended until October 2026, while reports from several Topic Areas remain pending.

Considerable discussion centred on the proposed establishment of the ABU Technical Consultancy Board (ATCB), an advisory mechanism intended to support technical projects and consultancy requests across the region. Members welcomed the concept but emphasised the need for clear governance structures, sustainable appointment mechanisms, and a better understanding of current consultancy demands before implementation. Regulatory considerations and the long-term availability of expert personnel were also highlighted. Dr. Binbay proposed that the Board be established in principle, with governance and operational details to be refined in subsequent phases.

Reflecting on DBS 2026, members expressed satisfaction with the event's success, particularly the strong participation and engagement from broadcasters and industry stakeholders. The meeting recognised DBS as an important platform for knowledge exchange and regional collaboration. NHK Japan described its first participation in the event as highly positive and encouraged greater representation from Asian broadcasters in future editions, noting the value of DBS as a learning and networking opportunity for young engineers.

Looking ahead, the Bureau discussed preliminary arrangements for the Technical Bureau online meeting and the Technical Committee Meeting to be held in conjunction with GA2026 in Sri Lanka. A tentative five-day schedule was proposed, with the meetings expected to take place in late October or early November 2026, pending final confirmation.

The meeting also noted Dr. Binbay's appointment as Chairperson of the WBU Technical Committee Training Programme. Members further discussed a proposal from NRTA, including the possibility of expanding the initiative by incorporating artificial intelligence tools. ABU's participation remains subject to approval by the Head of the Technical Bureau.

In closing, Chairperson Mr. Masashi Kamei thanked all participants for their active contributions and continued support. Dr. Binbay likewise expressed his appreciation to members, the Chairperson, and the organising team for their cooperation and commitment. With no further business to discuss, the meeting was formally adjourned. ■



WBU TECHNICAL COMMITTEE ADVANCES C2PA INTEGRATION AND CONTENT PROVENANCE STANDARDS

World
Broadcasting
Unions



The WBU Technical Committee met online on 3 June 2026, chaired by **Dr. Veyssel Binbay** (ABU), with Vice-Chair **John Lee** (NABA). Representatives from the world's broadcasting unions joined to discuss developments related to the Coalition for Content Provenance and Authenticity (C2PA) and other emerging technical issues affecting the broadcasting industry.

A key focus of the meeting was an update on Deutsche Welle's ongoing C2PA project. Presented by **Frederik Sandbrink**, the session examined the status of efforts to integrate C2PA standards into production and distribution workflows. The project reflects growing industry interest in technologies that can provide verifiable information about the origin and history of digital content, helping audiences distinguish authentic media from manipulated or AI-generated material.

The discussion highlighted the growing importance of content provenance frameworks as broadcasters adapt to a rapidly evolving digital environment. With generative AI tools becoming more accessible, industry organizations are exploring ways to embed authentic

information directly into media assets, enabling greater transparency throughout the content lifecycle.

Beyond C2PA, participants also reviewed WBU Technical Committee spectrum positions in preparation for the 2027 World Radiocommunication Conference (WRC-27), recognizing the ongoing importance of spectrum policy for broadcasting services worldwide.

The meeting underscored the role of international cooperation in addressing technical challenges that transcend national borders. As broadcasters confront both opportunities and risks posed by AI-generated content, tools like C2PA are vital for strengthening public trust and supporting innovation across the global broadcasting sector.

As artificial intelligence and computer-generated media become more widespread, ensuring the credibility of news and media is increasingly important. By working together and using reliable tools to verify content origin and creation, broadcasters worldwide can help safeguard the truth and maintain public confidence in the information they provide. ■

ABU AI WORKSHOP EXPLORES HOW BROADCASTERS CAN ADAPT TO THE AI ERA



The Asia-Pacific Broadcasting Union (ABU), in collaboration with China's National Radio and Television Administration (NRTA) and China Broadcast Network Corporation (CBN), organized the ABU AI Workshop during CCBN2026 at the Shougang International Convention and Exhibition Center in Beijing.

Held under the theme *"How Do We Evolve in the Era of AI?"*, the workshop formed part of the 2nd CCBN-ABU NEXUS Event and brought together approximately 120 participants, including broadcasters, regulators, technology companies, research institutions, and members of the foreign press corps based in China.

The event attracted representatives from ABU members and industry stakeholders across Asia-Pacific and beyond, including China's NRTA, Korea Broadcasting System (KBS), JSC Khabar Agency, RT, and media professionals from Japan, South Korea, Vietnam, Russia, Kazakhstan, Spain, Hungary, Argentina, Belarus, and other countries and regions.

As artificial intelligence continues to reshape the media

landscape, the workshop examined how broadcasters can adapt to this technological shift while preserving the core values of professional journalism. Discussions focused on AI applications in content creation, production, distribution, workflow management, and content governance, while also addressing emerging concerns surrounding content authenticity, copyright protection, professional standards, and public trust.

Opening the workshop, **Dr. Veysel Binbay**, Director of Technology & Innovation at the ABU, highlighted the growing importance of AI in media innovation, governance and capacity building. His remarks reflected a broader industry reality: AI is no longer a future consideration for broadcasters but an increasingly practical tool influencing everyday media workflows.

This view was echoed by **Zhang Wei**, Deputy Director-General of the Science and Technology Department at NRTA and Vice-Chairman of the ABU Technical Bureau. He described AI as a transformative force across the media value chain, from production and distribution to management and governance. While acknowledging



its potential to drive innovation and efficiency, he also cautioned that challenges such as misinformation, synthetic media, authenticity, and technical standards must be addressed.

Other speakers reinforced the need for cooperation between media organizations, regulators, and technology providers. **Chang Jin**, Second Grade Counsel of NRTA's International Cooperation Department, emphasized the role of technology in driving media transformation, while **Han Xinxing**, Deputy Director of the Beijing Municipal Radio and Television Bureau, stressed the importance of collaboration in turning emerging technologies into practical industry solutions.

Throughout the workshop, a recurring theme was the industry's transition from AI experimentation to operational deployment. **Nguyen Thi Le Hong** from Vietnam's Authority of Broadcasting and Electronic Information outlined how Vietnamese media organizations are increasingly applying AI in content production, distribution, and audience services. She noted that successful adoption must be supported by appropriate policies, regulatory frameworks, and workforce training.

South Korea's KBS shared several examples of AI integration within public broadcasting. **Oh Juhyun**, Deputy Director of Media Technology Research at KBS, described how AI is being used

in production support, subtitling, and educational services, demonstrating a shift from pilot projects to routine operations while maintaining public-service values and editorial credibility.

Expanding on these developments, **Song Keun-Yung**, Deputy Director of Production Technology at KBS, highlighted AI's growing influence on audio production through sound processing, voice synthesis, translation, and localization technologies. Such tools are helping broadcasters adapt multilingual content and create more personalized audience experiences.

Offering a similar perspective, **Boris Gorlov**, Head of Creative Development and Innovations at RT, explained how AI is already contributing to content generation, image processing, and production management. However, he emphasized that journalism continues to rely on human judgment, editorial responsibility, and professional standards, positioning AI as an enabler rather than a replacement for media professionals.

The workshop also provided insight into the next generation of AI-powered production tools. **Hu Zhengkun**, Head of Public Affairs at PixVerse, demonstrated how generative video technologies are streamlining visual storytelling workflows. Media organizations are increasingly using AI-generated concepts, visual drafts, and rapid prototyping tools to accelerate content development and adapt material across multiple platforms.

Meanwhile, **Han Yudong**, AI Agent Engineer at Nami AI, explored the growing role of

AI agents and large language models in animation and short-form content production. Through intelligent storyboarding, character management, and multi-model collaboration, these technologies are helping creators streamline workflows and develop new forms of AI-generated content.

Despite the enthusiasm surrounding innovation, discussions repeatedly returned to the importance of governance and trust. **Xue Ziyu**, Deputy Director of MediaAI Lab at NRTA's Academy of Broadcasting Science, presented ongoing research into AI-assisted content creation, content labeling, copyright protection, and governance frameworks. He emphasized the need for transparency, accountability, and responsible implementation as generative AI technologies continue to evolve.

A clear message emerged from the workshop: while AI offers significant opportunities to enhance efficiency, creativity, and audience engagement, long-term success will depend on establishing robust standards and ethical frameworks that safeguard public trust.

For ABU members, the workshop provided valuable insights from regulators, public broadcasters, researchers, and technology developers working at the forefront of AI adoption. More importantly, it reinforced a growing industry consensus that the challenge is no longer whether AI will transform broadcasting, but how broadcasters can harness its benefits while preserving the editorial integrity, accountability, and public trust that remain at the heart of professional media. ■



ABU TECHNOLOGY EXPLORES THE POTENTIAL OF 5G BROADCAST AT BROADCASTASIA 2026



On 22 May 2026, ABU Technology organised the workshop *"Unlocking 5G in Broadcasting"* at Hall 5 of the Singapore Expo during BroadcastAsia 2026. Bringing together professionals from the broadcasting, telecommunications, and technology sectors, the session examined how 5G Broadcast could transform content distribution and explored the opportunities, challenges, and future direction of the technology.

The workshop opened with a presentation by **Mr. Tham Wai Hoong**, Chief Commercial Officer of Astrum Mobile, who introduced the concept of 5G Broadcast and its growing significance within the media landscape. Tracing the evolution of broadcasting technologies, he highlighted the convergence of terrestrial and non-terrestrial networks, as well as the role of 3GPP standards in shaping next-generation content delivery.

Mr. Tham explained that 5G Broadcast combines the efficiency of traditional broadcasting with the flexibility of mobile networks. Unlike conventional streaming services, which require individual data streams for each user, 5G Broadcast enables a single transmission to reach large audiences simultaneously, offering a more scalable and efficient approach to content distribution.

His presentation outlined two key deployment models: terrestrial 5G Broadcast and non-terrestrial networks (NTN). While terrestrial systems rely on conventional ground-based transmission infrastructure, NTN leverages satellite technologies to extend coverage to remote and underserved regions. The integration of both approaches, he noted, could create a more resilient and comprehensive broadcasting ecosystem.

The presentation also highlighted developments across successive 3GPP releases, from Release 16 through

Release 19, which continue to enhance 5G Broadcast capabilities. These advancements are expected to improve delivery efficiency, expand coverage, strengthen emergency communications, and unlock new opportunities for both consumer and enterprise applications. Potential benefits include lower distribution costs, reduced dependence on mobile data networks, wider audience reach, and improved scalability for major live events. At the same time, challenges such as infrastructure investment, spectrum allocation, device compatibility, and regulatory readiness remain important considerations.

Building on these insights, the workshop continued with a panel discussion moderated by **Mr. Peh Beng Yeow**, Lead of the Content Preparation Hub Department at Mediacorp Singapore. The panel included **Mr. Aale Raza**, Director of Whiteways Systems; **Mr. Satriyo Dharmanto**, Chief Technology Officer of TVRI; Mr. Tham Wai Hoong, Chief Commercial Officer of Astrum Mobile; and **Ir. Ts. Ahmad Shafiq Mirza Bin Mansor**, Principal Assistant Director of RTM. The central theme of the discussion was the relatively slow pace of large-scale 5G Broadcast deployment despite years of technological progress and industry interest. While the panelists agreed that the technology itself has reached a high level of maturity, they noted that widespread adoption will depend on several interconnected factors, including regulatory frameworks, spectrum availability, device ecosystem readiness, and commercially sustainable business models.

The importance of industry-wide collaboration emerged as a recurring topic throughout the discussion. Panelists emphasized that successful implementation would require close cooperation among broadcasters, telecommunications operators, regulators, technology providers, and device manufacturers. They also



examined the role of satellite-based delivery, describing satellite and terrestrial 5G Broadcast not as competing technologies but as complementary solutions that can support a hybrid broadcasting environment with broader coverage and greater operational resilience.

One of the more thought-provoking observations came from Mr. Aale Raza, who noted that the rise of streaming services has gradually shifted control of content distribution towards mobile network operators and internet service providers. In his view, 5G Broadcast offers broadcasters an opportunity to regain greater control over content delivery through a one-to-many transmission model that can efficiently serve large audiences without generating additional network traffic for each viewer.

The panel further discussed how 5G Broadcast could reduce reliance on Content Delivery Network (CDN) operators, particularly during major live events where audience numbers can increase dramatically. Because broadcast transmissions do not require separate streams for individual users, distribution costs could potentially

be reduced while maintaining service quality for mass audiences. Nevertheless, the panelists agreed that 5G Broadcast should be viewed as a complementary platform rather than a replacement for existing broadband and streaming services. Instead, it is likely to become part of a broader hybrid distribution strategy that combines the strengths of both broadcast and broadband networks.

The workshop provided valuable insights into the current state and future potential of 5G Broadcast technology. While the technical foundations continue to mature, participants agreed that long-term success will depend on ecosystem collaboration, regulatory support, spectrum availability, and sustainable business models.

As broadcasters seek more efficient and resilient methods of content distribution, 5G Broadcast is increasingly viewed as a strategic evolution in media delivery. The discussions at BroadcastAsia 2026 reflected a clear shift in focus, from proving the technology's viability to identifying practical pathways for industry-wide adoption and deployment. ■

MODERNIZING NBT BROADCAST MONITORING: AN AUTOMATIC MONITORING SYSTEM WITH REAL-TIME ALERTS FOR DVB-T2 TRANSMISSION

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ABSTRACT

This paper presents an automatic monitoring and alerting system for DVB-T2 transmission. The system uses Simple Network Management Protocol (SNMP) and Modbus Communication Protocol (Modbus) to collect parameters from TV transmitters and generator controllers. A computer application developed in Python processes operational data in real time and delivers instant notifications through Telegram application. The proposed solution improves fault detection, reduces response time, and enhances the reliability of nationwide broadcasting services.

Keywords—DVB-T2, SNMP, Modbus, Telegram, Broadcast Monitoring

I. INTRODUCTION

In the present, Digital Video Broadcasting – Second Generation Terrestrial (DVB-T2) services are operated by the National Broadcasting Services of Thailand (NBT) constitute importance infrastructure for distribution information to the public. The continuity and stability of broadcasting signals are of paramount importance. Signal interruptions (Dead Air), even for a few seconds, can significantly affect both the credibility of the station and the reliability of government communications. Traditionally, fault monitoring of television transmitters and backup power systems relied on technicians continuously observing monitoring screens or conducting

periodic inspections, which created a risk of delayed awareness when failures occurred. This paper proposes an automatic monitoring system with real-time alerts.

II. SYSTEM ARCHITECTURE

This system was developed using the Python programming language. SNMP is employed to monitor TV transmitter parameters, while Modbus/TCP and Modbus/RTU are used to communicate with generator controllers such as the Deep Sea Electronics DSE7320, as shown system overview in **Fig. 1**. The NBT transmission infrastructure consists of two major subsystems operating in close coordination:

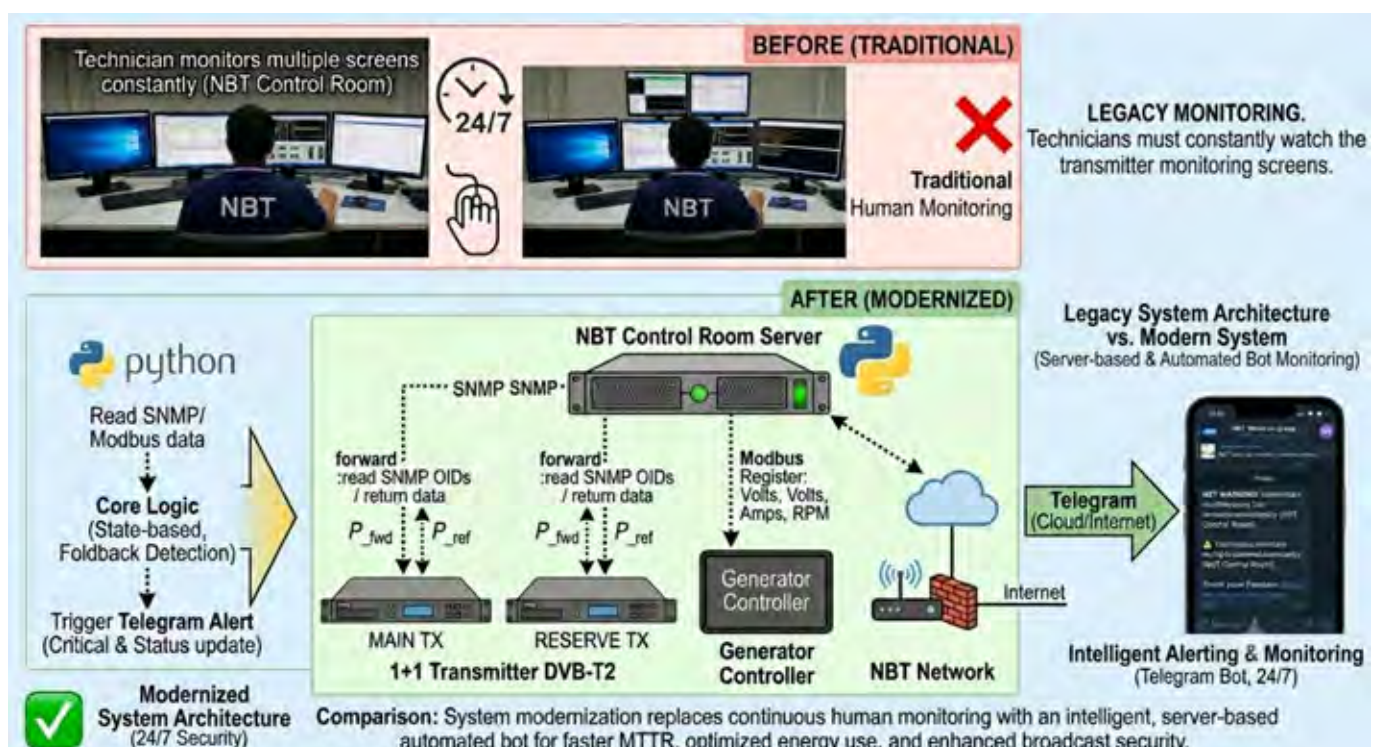


Fig. 1. System Overview

1. DVB-T2 Transmission System

The transmission system consists of two transmitters operating in a 1+1 Main/Reserve architecture. Both transmitters are connected to an automatic coaxial changeover switch. If a critical fault occurs in the main transmitter and the output power decreases below a defined threshold, the mechanical switching system automatically transfers operation to the reserve transmitter.

2. Emergency Power Supply System

The emergency power supply system consists of a standby generator controlled by an intelligent controller (e.g., DSE7320). The controller automatically starts the generator when a commercial power outage occurs. The monitoring system acts as a central station, polling device status through the station LAN network. SNMP GET commands are used to retrieve forward power and reflected power values from both the main and reserve transmitters using specific Object Identifiers (OIDs). Simultaneously, the system communicates with the generator controller to obtain engine RPM, voltage, and load current measurements.

III. CENTRALIZED MONITORING DASHBOARD

To overcome the limitations of conventional monitoring methods, the new system centralizes operational information from multiple transmission sites into a single dashboard. Important parameters from stations throughout the country are displayed using color-coded indicators and status tables, enabling rapid analysis and remote monitoring. Engineers and technicians can observe transmitter status, utility power status, generator status, AC voltage, current, battery voltage, and engine RPM from a single screen. When the status of any device changes from a normal condition to a critical condition, the backend system automatically identifies the abnormal parameters and initiates the alerting process, as shown in Fig. 2.



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STATION INFO		TX1		TX2		MAINS POWER			GENERATOR SYSTEM									
No.	Station Name	POWER	REFLECT	POWER	REFLECT	FREQ	L1-N	L2-N	L3-N	FREQ	L1-N	L2-N	L3-N	V-L1	V-L2	V-L3	RPM	BATT
1	CHAITAPHUMDVB	791W	0W	0W	0W	50.0Hz	234V	237V	238V	0.0Hz	0V	0V	0V	0.0A	0.0A	0.0A	0	27.3V
2	BAKHORRATCHASIMDVB	1545W	0W	0W	0W	50.0Hz	234V	234V	232V	0.0Hz	0V	0V	0V	0.0A	0.0A	0.0A	0	27.2V
3	UDORNTHANIDVB	1755W	0W	0W	0W	50.0Hz	223V	225V	223V	0.0Hz	0V	0V	0V	0.0A	0.0A	0.0A	0	27.4V
4	SAKONNAKHONDVB	1870W	2W	0W	0W	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
5	LOEIDVB	767W	0W	0W	0W	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR	ERR
6	BURINGKANDVB	801W	0W	0W	0W	50.0Hz	25V	218V	230V	50.0Hz	231V	231V	230V	4.4A	6.5A	4.6A	1500	28.1V
7	NONGBUADVB	80W	0W	0W	0W	50.0Hz	233V	231V	230V	0.0Hz	0V	0V	0V	0.0A	0.0A	0.0A	0	27.4V
8	KHONKAENVB	1700W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
9	CHUMPHALDVB	407W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
10	CHUPHPUANGDVB	0W	0W	404W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
11	KHAOYATHIANGDVB	416W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
12	KHAOWONGDVB	120W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
13	WANGNAKHONGDVB	61W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
14	NONGBUADAENG2DVB	79W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
15	PHUPHADAENG2DVB	80W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
16	NAHSONDVB	300W	1W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
17	PHAKDICHUPHONGDVB	100W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
18	THEPSATHIDVB	98W	0W	90W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
19	PHUWANGDVB	142W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
20	CHANGKLODVB	199W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
21	NONGKINDVB	199W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
22	NONGBUADAENG1DVB	200W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
23	PHONDVB	180W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-
24	PHUSINDVB	159W	0W	0W	0W	-	-	-	-	-	-	-	-	-	-	-	-	-

Fig. 2. The centralized dashboard

IV. REAL-TIME TELEGRAM ALERT FRAMEWORK

A key feature of the system is its ability to send push notifications directly to engineers and technicians through Telegram. This eliminates the need for personnel to continuously monitor screens 24 hours a day. The system sends HTTP POST requests to the Telegram Bot API immediately to them when abnormal conditions are detected. Notifications include transmitter failures, automatic power-source switching events, generator start/stop events, and recovery notifications when the system returns to normal operation, as shown in Fig. 3.

V. RESULTS

The deployment of the system significantly improved operational awareness. Engineers and technicians receive notifications within seconds, reducing Mean Time to Repair (MTTR) and minimizing service interruptions.

VI. CONCLUSION

The transition from manual screen monitoring to an automated



Fig. 3. Real-time automated Telegram notification logs pushed to engineers and technicians mobile endpoints.

system integrating a centralized dashboard and intelligent Telegram notifications has significantly improved the efficiency of DVB-T2 transmission monitoring. Technicians can immediately detect abnormal operating conditions, transmitter

switching events, and backup power operations remotely. As a result, maintenance response times are reduced, severe equipment damage can be prevented, and NBT can continue reliably under all operating conditions. ■



National Broadcasting Services of Thailand (NBT) is the television network operated under the supervision of the Thai government, broadcasting nationwide through its national and regional stations.



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Popular Shows

On-Demand Content

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Connecting Thailand to the World

News from The ABU Region

MEASAT CHARTS A MULTI-ORBIT FUTURE UNDER RETURNING CTO JOHN LOKE

Having previously spent more than a decade at MEASAT in senior leadership positions, industry veteran John Loke has returned to the company as Chief Technology Officer (CTO). This move reflects MEASAT's ambition to strengthen its position in an increasingly competitive satellite and digital communications landscape.

In his new role, Loke is responsible for driving the company's digital transformation and regional growth strategy, overseeing Satellite and Network Engineering & Operations, Information Technology, and Digital Transformation. He will also lead the technical aspects of satellite and launch procurement.

Loke is no stranger to MEASAT. During his earlier tenure, he played a key role in several major projects, including the MEASAT-3a and MEASAT-3b satellite programmes, as well as the CONNECTme broadband initiative, which has expanded connectivity to underserved communities across Malaysia. Most recently, he served as CTO of a Singapore-based satellite operator, overseeing the delivery of broadband services across the Asia-Pacific region.

Loke outlined a vision centred on resilience, digital integration, and the growing role of artificial intelligence in satellite operations.

A key priority is the continued evolution of MEASAT's multi-orbit strategy. While the company's 91.5°E orbital slot remains a cornerstone of its video distribution business, serving more than 20 million direct-to-home television viewers across the region, Loke emphasised that future growth will require a broader approach that combines geostationary (GEO) and low earth orbit (LEO) capabilities.

MEASAT has already established partnerships with providers such as Starlink and Shanghai Spacesail for LEO broadband services, as well as Guodian Gaoke for Tianqi LEO Internet of Things (IoT) applications. Rather than viewing LEO systems as a replacement for GEO infrastructure, Loke sees them as complementary technologies that can improve network resilience and support new applications, particularly in Southeast Asia's challenging climatic conditions, where heavy rainfall can affect satellite performance.

Artificial intelligence is also expected to play an increasingly important role in the company's operations. According to Loke, MEASAT is advancing towards greater

automation at its Cyberjaya Teleport, with AI being deployed for functions such as real-time bandwidth optimisation and predictive mitigation of rain-fade disruptions. These initiatives are intended to enhance service reliability while supporting the company's long-term objective of maintaining its leadership position in the regional SpaceTech sector.

Beyond connectivity, Loke envisions MEASAT evolving into a broader digital platform enabler. Building on the success of the CONNECTme programme, which has connected more than 500,000 rural Malaysians, the company is exploring opportunities to integrate satellite connectivity with digital services such as e-government, telehealth, and financial inclusion initiatives.

The strategy also reflects a growing emphasis on data sovereignty across the Asia-Pacific region. As governments seek greater control over critical communications infrastructure, MEASAT is positioning itself as a trusted regional provider capable of delivering secure and independent connectivity solutions. Through its hybrid teleport infrastructure, local expertise, and expanding multi-orbit ecosystem, the company aims to support government, defence, and industrial applications while bridging satellite and cloud-based environments.

Internally, workforce development remains a central focus. Loke highlighted the importance of preparing employees for an increasingly AI-driven operating environment through continuous training and upskilling. The objective, he noted, is to ensure that organisational capabilities evolve alongside technological advancements and support the company's transition towards more data-driven operations.

As satellite operators across the region adapt to changing market demands, MEASAT's strategy under Loke's leadership signals a continued commitment to combining traditional satellite strengths with emerging digital technologies. By leveraging AI, expanding multi-orbit partnerships, and broadening the role of satellite-enabled services, the company aims to strengthen its position as a key enabler of connectivity and digital transformation across Asia-Pacific. [\[APB News\]](#)

GATESAIR PARTICIPATES IN ATSC 3.0 DIRECT-TO-MOBILE TRIAL IN INDIA

GatesAir has completed a three-year Direct-to-Mobile (D2M) field trial in Delhi, India, partnering with public broadcaster Prasar Bharati and Tejas Networks.

The project evaluated ATSC 3.0 technology for delivering terrestrial broadcast content directly to mobile and consumer devices. The trial team deployed GatesAir's Maxiva XTE ATSC 3.0 exciter and Tejas Networks' Broadcast Radio Head platform in the test deployment.

The companies employed a hybrid transmission architecture that combined GatesAir's High Power High Tower (HPHT) transmission system with Tejas Networks' Low Power Low Tower (LPLT) Broadcast Radio Heads in a Single Frequency Network (SFN) configuration. This approach assessed coverage performance and service delivery across different reception environments.

The deployment delivered content to various devices, including televisions, set-top boxes, home gateways, laptops, tablets, smartphones, and feature phones. The organisations ensured that the network provided both outdoor and indoor coverage throughout the trial period.

This project furthers ongoing efforts in India to explore Direct-to-Mobile broadcasting capabilities using ATSC 3.0 technology. GatesAir indicated that the trial demonstrates the potential of hybrid HPHT and LPLT network architectures for future D2M deployments and large-scale terrestrial content distribution.

The company also noted that the project's findings and technologies would be discussed at BroadcastAsia 2026, where GatesAir plans to present insights from the Delhi field trial and its implications for future D2M services. [\[TvTech\]](#)

VTVCAB EXPANDS STREAMING CAPABILITIES WITH ATEME OTT PLATFORM DEPLOYMENT

Vietnamese pay-TV operator VTVcab has deployed Ateame's OTT solutions to power its VTVprime streaming service, expanding streaming operations across Vietnam.

The deployment gives VTVcab a streamlined workflow for both live and on-demand services, spanning the entire content delivery chain from video processing and encoding through to distribution. Built on a single, integrated platform, the solution aims to streamline operational management while creating a more reliable, efficient streaming ecosystem.

According to Ateame, the platform offers improvements in video quality for both video-on-demand assets and live channels. It also enables lower-latency streaming for live sports coverage, where the viewing experience is especially sensitive to delay. The deployment is further engineered to boost bandwidth efficiency and help optimize content delivery network (CDN) costs as audience demand and streaming consumption continue to rise.

The implementation also equips VTVcab with a clear technology roadmap for future expansion, including support for advanced video codecs such as AV1, low-latency streaming, and broader cloud-based services. These advancements are expected to drive the operator's long-term digital transformation and OTT development.

VTVCab stated that delivering a stable, exceptional viewing experience, particularly for live sports, was central to its technology selection. The integrated platform was chosen to elevate quality and reduce latency while ensuring seamless compatibility with the company's existing OTT infrastructure.

For Ateame, the project demonstrates the increasing demand among broadcasters and operators for comprehensive streaming solutions that unify performance, scalability, and operational efficiency. The company indicated that such deployments are becoming vital as audiences migrate toward online and on-demand platforms. [\[C+T\]](#)

CML MICRO SHOWCASES MULTI-STANDARD DRM AND DAB+ RECEIVER PLATFORM

CML Micro has introduced a multi-standard receiver supporting DRM (Digital Radio Mondiale), DAB+, and analogue AM/FM radio services. The platform was presented during the DRM General Assembly in Jakarta, Indonesia.

The receiver was developed through a collaboration involving CML Micro, Newglee, and Glovane. The announcement follows Indonesia's recent decision to adopt both DRM and DAB+ digital radio standards as part of its digital broadcasting roadmap.

According to the companies, the platform combines DRM technology from CML Micro, DAB+ technology from Glovane, and system integration and manufacturing expertise from Newglee. It is designed to support multiple radio standards within a single receiver platform.

Indonesia's digital radio strategy envisages the use of DRM across medium wave and VHF spectrum, while DAB+ is planned for deployment in the upper Band III spectrum. The approach is intended to support digital radio services across the country's varied geographical landscape, which includes more than 10,000 islands and a mix of urban and remote communities.

The companies stated that the receiver platform is designed to support wide-area coverage through DRM and regional broadcasting through both DRM and DAB+. This design improves technical efficiency by maximizing spectrum use across varied transmission environments, resulting in improved broadcast quality and capacity.

Key technical benefits highlighted by the companies include low-power operation that extends battery life in portable and battery-powered devices by reducing energy consumption, efficient use of available spectrum for cost-effective receiver deployment across various environments, and compatibility with a wide range of digital radio applications. Additionally, the platform is designed to be scalable, allowing for adaptation to emerging digital broadcasting standards and future technological requirements.

The announcement also noted that the receiver design may be relevant to other markets considering multi-

standard digital radio implementations. The African Union of Broadcasting (AUB), for example, has previously recommended the use of DRM for wide-area coverage alongside DAB+ for urban broadcasting within its Digital Sound Broadcasting (DSB) framework.

The new platform adds to ongoing developments in digital radio technologies aimed at supporting broadcasters and regulators as they implement digital broadcasting services across diverse coverage and spectrum environments. [\[RadiolInfo\]](#)

GLOBECAST COMPLETES MODERNISATION OF SINGAPORE BROADCAST FACILITY

Globecast has transformed its Singapore facility into a cloud-centric, IP-enabled hub to support Asia-Pacific customers in the evolving media landscape.

After launching its upgraded location in Westlake Village, California, Globecast modernised its Singapore facility as part of a broader infrastructure strategy. The company states that this initiative aligns its operations with the growing adoption of hybrid and software-defined media workflows.

Globecast originally established the Singapore facility more than a decade ago to support traditional linear broadcasting. The company has now redesigned the facility to accommodate cloud, IP, and over-the-top (OTT) workflows. The team optimised the physical infrastructure and integrated new technologies to support more flexible and scalable operations.

The team reconfigured key areas of the facility, such as the Technical Operations Centre, Master Control Room, and Playout Control Room. They incorporated cloud-based processing, IP connectivity, and centralized monitoring systems. The upgraded environment now supports both conventional broadcast services and next-generation media workflows.

Globecast considers the facility an important operational hub in Singapore. It provides connectivity, teleport services, playout, and media management for channels and media services across the region.

Globecast's in-house engineering and integration teams largely delivered the project and oversaw the design, migration, and implementation phases. The company notes that the upgrade reflects ongoing industry trends towards cloud-enabled and IP-based broadcast operations and supports the evolving requirements of media organisations in the Asia-Pacific market. [\[APB News\]](#)

MEDIACORP EARNS DUAL 'BROADCASTER OF THE YEAR' HONOURS IN INTERNATIONAL AWARDS RECOGNITION

Singapore's national media network, Mediacorp, strengthened its international standing in 2026 after being named Broadcaster of the Year at both the World Media Festivals (WMF) Television & Corporate Media Awards and the New York Festivals (NYF) TV & Film Awards.

The dual recognition reflects a strong year across journalism, documentaries, entertainment, digital content and audio, highlighting the breadth of Mediacorp's portfolio and its commitment to delivering quality content across multiple platforms.

At the World Media Festivals, Mediacorp secured its second consecutive Broadcaster of the Year title, along with 48 awards comprising one Grand Award, 21 Gold and 25 Silver medals. Leading the wins was One "Orphan" Every Hour, which received both a Grand Award and a Gold for its powerful exploration of social issues.

Other recognised productions included Insight: Asian Gen Zs Rise Up, CNA Correspondent: They Are Coming Home, The Nuclear Option, Tuesday Report: Troubled Youths – Please Stay, The Earthquake Detectives and Bones of Contention. The broadcaster's entertainment portfolio also performed strongly, with awards for Cuci, Fixing Fate, Makan on Wheels 2, Forbidding No More 3, Korban 2 and Pinky Promise Thozhi, reflecting Mediacorp's commitment to serving Singapore's multicultural audience.

Just weeks later, Mediacorp received a second Broadcaster of the Year title at the New York Festivals TV & Film Awards, where it also collected 22 awards across the TV, Film and Radio categories, including 13 Gold, three Silver and six Bronze medals.

Among the notable winners were One "Orphan" Every Hour, Vapours of Death, Addicted: The Synthetic Curse and Undercover Asia S12: Inside the Illegal 'Dunki' Route, recognised for their investigative and documentary storytelling. Mediacorp also earned awards for its creative and promotional work, including the Emerald Hill launch campaign and Blockbuster Sunday: Mission Impossible – Dead Reckoning. In audio, CNA Correspondent received a Bronze award in the News Podcast category.

Together, these achievements underscore Mediacorp's strength as an integrated media organisation spanning television, digital, streaming and audio platforms. Beyond recognising individual productions, the twin Broadcaster of the Year honours reflect the broadcaster's ability to consistently deliver trusted journalism, compelling factual content and engaging entertainment to audiences in Singapore and beyond. [\[Mediacorp\]](#)

RTM MARKS EIGHT DECADES OF BROADCASTING AND PUBLIC SERVICE

Malaysia's national broadcaster, Radio Televisyen Malaysia (RTM), marked its 80th anniversary on 1 April 2026, commemorating eight decades of broadcasting service and its longstanding contribution to the country's media and communications landscape.

Established as Radio Malaya on 1 April 1946, RTM is Malaysia's oldest broadcaster and has played a central role in the development of public service broadcasting in the country. From its origins as a radio service, the organisation expanded into television broadcasting in 1963 before

integrating its radio and television operations under the RTM brand, laying the foundation for the national broadcasting system that exists today.

Over the past eight decades, RTM has evolved alongside the changing media environment, adapting to technological advances and shifting audience expectations. What began as a traditional radio broadcaster has grown into a multi-platform media organisation operating a range of television channels, radio networks, and digital services designed to reach audiences across Malaysia.

To commemorate the milestone, RTM produced a special documentary tracing the broadcaster's journey from its establishment in 1946 to the present digital era. The documentary features reflections and historical narratives from former Directors-General, offering perspectives on key milestones that shaped the organisation's development over the decades. It also highlights lesser-known stories from RTM's history, providing audiences with a deeper understanding of the broadcaster's institutional legacy.

The programme places particular emphasis on RTM's role as both a custodian of the nation's audiovisual heritage and a platform for public communication. Through archival footage and historical records, it revisits significant events that have defined the broadcaster's contribution as a source of information, education, and national unity throughout Malaysia's history.

RTM's history mirrors the broader transformation of the broadcasting industry, from analogue transmission and terrestrial broadcasting to the adoption of digital technologies and online content distribution. Throughout this transition, the broadcaster has maintained its role as a provider of news, educational programming, cultural content, and public information services.

Beyond its domestic contributions, RTM has also maintained a significant presence within the regional broadcasting community. As one of the founding members of the Asia-Pacific Broadcasting Union (ABU) in 1964, the broadcaster has participated in regional initiatives to promote technical development, professional collaboration, and knowledge sharing among broadcasters across the Asia-Pacific.

The 80-year milestone comes at a time when public service broadcasters worldwide continue to navigate a rapidly evolving media landscape shaped by digital platforms, changing consumption habits, and increasing competition for audience attention. Like many national broadcasters, RTM has sought to balance its traditional public service responsibilities with the demands of digital transformation and multi-platform content delivery.

As it enters its ninth decade, RTM remains an important institution in Malaysia's media sector, with a legacy spanning multiple generations of viewers and listeners.

Its continued evolution reflects both the challenges and opportunities facing public service broadcasting in an increasingly connected and digital-first environment. [\[ABU News\]](#)

TDM SIGNS FOUR REGIONAL MEDIA MOUS AT ABU COUNCIL MEETING

Teledifusao de Macau (TDM) signed cooperation agreements with broadcasters from across the Asia-Pacific during the 121st Asia-Pacific Broadcasting Union (ABU) Administrative Council Meeting, hosted by TDM in Macau on 13 May.

The agreements were established with Korea Broadcasting System (KBS) of the Republic of Korea, Sri Lanka's MTV Channel, Mongolian National Broadcaster (MNB), and Radio Television Hong Kong (RTHK). The signings were witnessed by ABU Vice Chairman and Director of International Cooperation of China's National Radio and Television Administration (NRTA), Zhou Jihong.

The memoranda of understanding establish frameworks for collaboration across program exchange, personnel exchange, professional development, and technical cooperation, reflecting a shared commitment among the participating broadcasters to strengthen regional partnerships and enhance knowledge sharing.

Among the agreements signed was a memorandum of understanding between TDM and KBS. The document was signed by Park Jang-beom, Vice-President, President, and Chief Executive Officer of KBS, and Lo Song Man (Lorman), Chairwoman of the Executive Committee of TDM. The agreement provides a basis for future cooperation in content exchange, professional development initiatives, and the sharing of broadcasting expertise.

The signings took place during the ABU Administrative Council Meeting, which brought together broadcasting leaders from across the region to discuss industry developments and opportunities for collaboration. The agreements underscore the continuing role of regional partnerships in supporting content exchange, capacity building, and cooperation among public service broadcasters in the Asia-Pacific. [\[TDM\]](#)

RTHK AND THAI PBS FORGE NEW ALLIANCE TO DEEPEN ASEAN MEDIA COLLABORATION

Radio Television Hong Kong (RTHK) has expanded its engagement with Southeast Asian broadcasters following the Director of Broadcasting, Angelina Kwan's, visit to Bangkok on 27–28 May.

During the visit, RTHK and the Thai Public Broadcasting Service (Thai PBS) signed a Memorandum of Understanding (MOU), aiming to expand opportunities for knowledge sharing, professional development, and creative collaboration. This partnership enhances both organizations' access to diverse news and cultural content,

supports talent growth, and encourages innovation through joint productions and staff exchanges. The agreement establishes a framework for exchanging production teams and collaborating on on-location filming projects, delivering enriched programming and broader perspectives to audiences.

The MOU was signed by Ms. Kwan and Thai PBS Director General Vanchai Tantivitayapitak. The partnership forms part of RTHK's broader efforts to strengthen ties with broadcasters across the Association of Southeast Asian Nations (ASEAN) region.

In addition to the signing ceremony, Ms. Kwan met with executives from Thailand's Nation Group to gain insights into Thailand's media landscape and to identify potential areas for future collaboration.

RTHK has already established cooperation agreements with public broadcasters in Indonesia, Malaysia, and Vietnam, and continues to expand its network of regional partnerships. The broadcaster promotes programme exchanges, joint productions, and professional collaboration initiatives to foster greater knowledge sharing and strengthen connections among broadcasters across the region. [\[RTHK\]](#)

ABC AND MAHARAJA MEDIA NETWORK SIGN MOU TO EXPAND MEDIA COOPERATION

The Australian Broadcasting Corporation (ABC) signed a MoU with Sri Lanka's Maharaja Media Network (MMN), formalising and expanding their partnership.

MMN operates the MTV Channel (Private) Limited and the MBC Networks (Private) Limited. It ranks as one of Sri Lanka's leading media organisations. The agreement creates a framework for the organisations to share content and collaborate on production. It also enables professional exchanges and the development of media initiatives. The partnership encourages participation in ABC's international media development program. It links the parties to regional networks such as the Asia-Pacific Broadcasting Union (ABU).

The partnership builds on a relationship established in 2022. That year, ABC Australia, the ABC's international service, signed a licensing agreement with MMN's MTV Channel. This gives Sri Lankan audiences greater access to ABC content in current affairs, entertainment, culture, and sports. The partnership enriches local content and fosters cross-cultural exchange.

Since then, the two organisations have launched joint editorial, promotional, and regional media initiatives. These efforts increased visibility and impact for both partners. Recently, MMN supported the second season of Culture by Design. This series showcases Sri Lankan artisans and designers and encourages collaborations across Asia. ABC used MMN's News 1st network for emergency coverage during Cyclone Ditwah in 2025. This provided reliable reporting for local audiences.

The MoU was signed by representatives of both organisations, with Chevaan Daniel, Group Director of Capital Maharaja Group and The Maharaja Media Network, said the partnership has grown since it began in 2022. He noted that the organisations have worked together during major national events and challenges in Sri Lanka.

ABC International Head Claire M. Gorman said the agreement formalises an existing relationship. It enables more content collaboration. The agreement encourages both partners to co-develop digital media initiatives. They plan to create joint storytelling projects on digital platforms. She emphasised that the partnership would foster innovation by piloting new digital storytelling formats. The agreement aims to broaden the reach of public-interest media and strengthen cultural ties between Australia and Sri Lanka.

This agreement deepens the broadcasters' cooperation, laying the groundwork for future joint content production, knowledge exchange, and regional media engagement. [\[ABC\]](#) ■

DIGITAL BROADCASTING *Updates*

ATSC RELEASES NEW GUIDANCE FOR INTERACTIVE CONTENT DEVELOPMENT IN ATSC 3.0 ECOSYSTEM

The Advanced Television Systems Committee (ATSC) has published a new Recommended Practice, A/381:2026-03, titled "*Use of ATSC 3.0 Interactive Content*," aimed at helping broadcasters and application developers create more effective interactive television experiences within the ATSC 3.0 framework.

Approved by the full ATSC membership on 11 March 2026, the document provides implementation guidance for broadcasters and developers working with the interactive operating environment defined in A/344, "*ATSC 3.0 Interactive Content*."

The A/344 standard establishes a suite of application programming interfaces (APIs) that enable Broadcaster Applications (BAs) to interact with ATSC 3.0 receivers. The newly released Recommended Practice offers practical guidance on how developers can leverage these APIs to build seamless and reliable interactive services across a diverse range of receiver devices.

A key focus of the document is addressing the varying levels of API support across receiver implementations. Since not all ATSC 3.0 receivers support every available API, the guidance encourages developers to incorporate fallback mechanisms and contingency plans to ensure a consistent user experience when specific functions are unavailable.

The Recommended Practice also provides broadcasters with operational guidance on implementing the protocol stack and preparing the data required to support interactive applications on receiver devices.

Several common use cases are covered in detail, including:

- Closed captioning and the APIs used to support accessibility features.
- Transactional television (T-commerce), enabling viewers to purchase products and services directly through compatible receivers.
- Content replacement and dynamic content management applications.

For each scenario, the document outlines best practices for developing interactive broadcaster applications and details the data requirements broadcasters should provide to ensure smooth application functionality.

In addition to publishing A/381, ATSC has approved an update to another key Recommended Practice. Amendment No. 1 to A/327:2025-07, titled "*TDM of ATSC with Other Broadcasting Systems*," received membership approval on 9 March 2026.

The updated document expands guidance on physical-layer configurations that enable time-domain sharing of broadcast resources between ATSC systems and other transmission technologies, including LTE-based 5G Broadcast networks. ATSC has indicated that a consolidated rollup version of A/327 incorporating the amendment will be released soon.

Looking ahead, ATSC members are expected to vote on the annual revision of A/300, "*ATSC 3.0 System*." The proposed update includes enhancements to Annex B, which covers ATSC 3.0 operating configurations, as well as updates to references and technical schemas across the broader family of ATSC 3.0 standards and recommended practices.

The latest developments reflect ATSC's continued efforts to refine the ATSC 3.0 ecosystem, improve interoperability, and support emerging interactive and hybrid broadcast-broadband services. [ATSC]

MINISTRY OF INFORMATION INDIA LOWERS REGULATORY BARRIERS FOR IPTV IN DRAFT TELECOMMUNICATIONS RULES 2026

The Ministry of Information and Broadcasting's draft *Telecommunications (Television, Radio and Associated Services) Rules, 2026*, propose a significantly simplified regulatory framework for Internet Protocol Television (IPTV), potentially reducing barriers to entry for a technology that many industry stakeholders view as critical to the future of television distribution.

Under the proposed rules, companies seeking to offer IPTV services will no longer be required to obtain a separate broadcasting authorisation. Instead, eligible entities can commence IPTV operations by filing a declaration with the government, provided they already possess either authorisation to offer internet services under telecom regulations or registration as a Multi-System Operator (MSO) under the Cable Television Networks Rules.

The proposal represents a notable shift from the traditionally licensing-intensive regulatory regime governing television distribution in India. Industry participants have long advocated for a lighter-touch

approach to IPTV regulation, and the draft framework suggests that policymakers are increasingly receptive to these demands.

The timing of the move is particularly significant as the broadcasting sector navigates slowing growth in the direct-to-home (DTH) market, evolving consumer viewing habits, and the rapid migration of audiences towards broadband-enabled content consumption.

Internet-delivered television has emerged as a key pillar of the industry's future distribution strategy. Over the past two years, India has witnessed growing traction for Free Ad-Supported Streaming Television (FAST) channels, especially on connected-TV platforms. In response, broadcasters and digital-first media companies have accelerated their FAST channel initiatives to capitalise on the expanding connected-TV audience base.

Several platforms, including DistroTV, have expanded their FAST offerings in India, while media companies have introduced dedicated FAST channels aimed at connected-TV viewers. As adoption grows, regulatory attention has increasingly shifted from market development to oversight.

The Telecom Regulatory Authority of India (TRAI) is currently examining Application-based Linear Television Distribution (ALTD) and FAST services to determine whether internet-delivered linear television should be governed under a dedicated regulatory framework. The consultation process has revealed divergent views within the industry. While some broadcasters have called for regulatory parity between internet-based and traditional television distribution platforms, others have warned against imposing legacy broadcast regulations on emerging digital delivery models.

Against this backdrop, the draft rules' streamlined IPTV framework appears consistent with a broader policy direction favouring the growth of internet-based television services. By enabling internet service providers and registered MSOs to launch IPTV services through a declaration-based mechanism rather than a separate authorisation process, the government is effectively lowering entry barriers for a technology that bridges traditional television and streaming ecosystems.

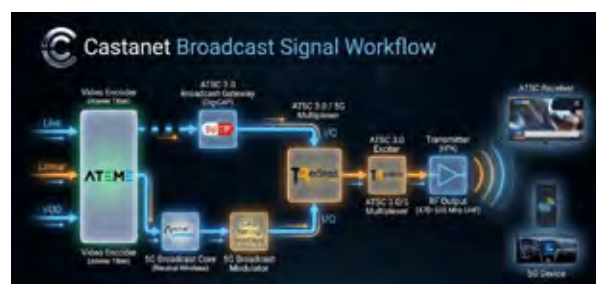
For broadcasters, telecom operators, and cable distribution companies, the proposed framework could unlock greater flexibility in bundling live television channels, broadband connectivity, and digital content offerings. It may also strengthen IPTV's position as a regulated and scalable alternative within an increasingly competitive landscape that includes connected-TV platforms, FAST channels, and other forms of internet-delivered television. [[Bestmediainfo](#)]

HYBRID ATSC 3.0 AND 5G BROADCAST MODEL POSITIONS BROADCASTERS FOR NEXT-GENERATION DISTRIBUTION

For years, broadcasters and Low-Power Television (LPTV) spectrum holders have largely viewed ATSC 3.0 and 5G Broadcast as competing pathways for the future of content distribution. Industry discussions often framed the decision as a choice between investing in next-generation broadcast infrastructure through ATSC 3.0 or pursuing mobile-first audience reach via 5G Broadcast technologies.

However, recent developments suggest that the two technologies may be more complementary than competitive.

Castanet Corporation has unveiled a commercial-ready implementation that integrates ATSC 3.0 and 5G Broadcast into a unified delivery architecture. Rather than operating as separate distribution systems, the hybrid approach leverages ATSC 3.0 as a transport layer for 5G Broadcast services, creating a framework that serves both fixed and mobile devices through a single broadcast infrastructure.



The integrated network has been deployed in operational environments, including a parallel rollout with Major Market Broadcasting in Silicon Valley. Designed to comply with the Federal Communications Commission's Broadcast Internet framework and aligned with 3GPP Release 19 standards, the platform supports a range of services, including live streaming, video-on-demand, AI-generated content delivery, software distribution, and IoT applications.

According to the company, the architecture demonstrates several advantages over traditional unicast delivery models. By using a one-to-many transmission approach, the network can distribute content simultaneously to large audiences without the congestion and scaling challenges commonly associated with content delivery networks (CDNs). The system can also deliver services directly to compatible mobile devices without requiring a SIM card or reliance on a mobile network operator.

While the technical integration represents a significant milestone, the broader commercial implications may be even more important for broadcasters and spectrum owners.

The model is built around the economics of broadcast distribution, where a single transmission can reach unlimited users within a coverage area. This approach significantly reduces content delivery costs compared with unicast streaming, while opening new monetisation opportunities beyond traditional television services.

Potential applications include low-latency live sports streaming, AI-powered content distribution, connected-device services, software updates, and enterprise data delivery. For LPTV operators in particular, these opportunities could transform spectrum assets from traditional broadcasting infrastructure into platforms for next-generation internet and data services.

The transition path is another notable aspect of the model. Castanet's framework enables LPTV licensees to begin generating new revenue streams using existing ATSC 1.0 infrastructure through its C5G Interactive Live Sports platform, creating a bridge toward future ATSC 3.0 and 5G Broadcast deployments.

As the broader network footprint expands, proponents of the technology argue that broadcasters need not choose between ATSC 3.0 and 5G Broadcast. Instead, ATSC 3.0 can serve as the foundation for 5G Broadcast services, allowing broadcasters to maximise the value of their spectrum assets while participating in the growing market for internet-based content and data distribution.

For broadcasters evaluating long-term infrastructure investments, the emergence of hybrid ATSC 3.0 and 5G Broadcast architectures suggests that the industry's future may lie not in choosing one standard over another, but in combining the strengths of both to create scalable, cost-efficient distribution networks for the connected era. [[ATSC](#)]

DVB'S HIGH PERFORMANCE FOR NGSO SATELLITES NOW CONFIRMED FOR MEDIUM EARTH ORBIT

The Digital Video Broadcasting (DVB) Project has released an updated version of its white paper on system-level simulations for Non-Geostationary Satellite Orbit (NGSO) constellations, extending the analysis to include Medium Earth Orbit (MEO) satellite systems.

Conducted by Magister Solutions, the study evaluates the performance of DVB-S2X and DVB-RCS2 technologies against the 5G New Radio (5G-NR) physical layer operating in the Ka- and Ku-band frequencies commonly used by NGSO satellite networks.

The original white paper focused primarily on Low Earth Orbit (LEO) constellations, where the high satellite velocity generates significant Doppler-shift

effects. Those simulations demonstrated that Doppler-related challenges can have a substantial impact on 5G-NR performance in satellite environments.

The revised study broadens its scope by examining MEO constellations operating at approximately 8,000 kilometres. At these orbital heights, Doppler effects are considerably less pronounced, shifting the performance comparison toward factors such as spectral efficiency and behaviour under realistic channel conditions.

According to the simulations, DVB-S2X consistently delivers higher downlink spectral efficiency in MEO environments. The results indicate that DVB technologies offer a clear performance advantage for high-capacity, fixed connectivity applications, including VSAT networks and satellite backhaul services, even when operating under real-world channel conditions.

The analysis also highlights areas where 5G-NR demonstrates relative strengths. For applications involving lower traffic loads or requiring lower latency, the 5G-based approach can provide certain advantages. The white paper explores these trade-offs in greater detail, offering a balanced assessment of the suitability of each technology for different deployment scenarios.

Taken together, the findings from both the LEO and MEO simulations reinforce the position of DVB-S2X and DVB-RCS2 as mature, open-standard technologies capable of supporting NGSO satellite networks across multiple orbital layers.

The updated white paper provides industry stakeholders with a comprehensive evaluation of performance characteristics across varying satellite architectures and offers insights into the evolving role of DVB and 5G technologies in next-generation satellite communications. [[DVB](#)]

NHK DEVELOPS COMPACT VVC DECODER COMPATIBLE WITH SUB-CONTENT SERVICES

NHK's Science & Technology Research Laboratories (STRL) has developed a compact Versatile Video Coding (VVC) decoder. Versatile Video Coding (VVC) is a video compression standard designed to efficiently encode and decode digital video. The decoder is intended to support sub-content services in next-generation broadcasting systems.

Sub-content services enable broadcasters to deliver a program's main video alongside supplementary content. Supplementary content refers to additional materials, such as alternative camera feeds (showing the program from different angles), enhanced viewing experiences (features like on-screen statistics or interactive graphics), or sign language interpretations (a separate video window displaying a person translating the spoken

content into sign language). Viewers can choose which additional content to display based on their preferences and accessibility requirements, creating a more personalised and inclusive viewing experience.

The newly developed decoder uses content composition information embedded within the broadcast signal to identify available sub-content and present viewing options in an intuitive format. This allows users to seamlessly switch between different content streams, including accessibility-focused services such as sign language commentary.

VVC, introduced in 2020 as the successor to HEVC (High Efficiency Video Coding), offers improved compression efficiency and is increasingly being adopted for next-generation broadcasting systems worldwide. NHK is leveraging VVC's multi-layer coding capabilities, which enable multiple related video streams—such as different camera angles or resolutions—to be transmitted efficiently by leveraging their similarities. This approach helps support sub-content services, like supplementary program feeds, within limited broadcast bandwidth.

The decoder is compatible with Japan's next-generation video coding standard for broadcasting, ARIB STD-B32, which was updated in March 2025. Combined with NHK's previously announced VVC multi-layer encoder, the technology paves the way for practical end-to-end broadcasting systems that support flexible content selection and enhanced accessibility.

The development is part of NHK STRL's ongoing research into advanced video coding technologies to enable more versatile, viewer-centric broadcasting services in the future. [[NHK STRL](#)]

TELXIUS PARTNERS WITH SYNAMEDIA TO EXPAND MULTI-CDN STREAMING CAPABILITIES

Global connectivity provider Telxius has partnered with Synamedia to enable content providers to achieve greater flexibility and scalability through a multi-CDN delivery model.

The collaboration integrates Telxius' carrier-grade Content Delivery Network (CDN) with Synamedia's Quortex Switch multi-CDN management platform, enabling content providers to dynamically route streaming traffic across multiple CDNs based on quality of experience (QoE), network performance and cost considerations.

By leveraging content steering technology, service providers can optimise content delivery in real time, improve streaming quality and extend their reach to new audiences and markets.

Telxius' CDN is supported by a global network of

strategically located Points of Presence (PoPs), directly connected to its Tier 1 IP backbone and submarine cable infrastructure. This architecture provides end-to-end traffic control, high reliability, enhanced security and the ability to scale rapidly to meet growing streaming demand.

Launched in March 2025, Quortex Switch is a cloud-based Software-as-a-Service (SaaS) platform designed to simplify multi-CDN deployment and management. Built on industry-standard content steering technologies, it enables instant deployment without requiring modifications to existing applications or video players.

Unlike traditional CDN selection solutions that rely on fixed rules or software development kits (SDKs), Quortex Switch continuously optimises traffic routing based on real-time network conditions, viewer experience and operational costs. The platform also supports mid-stream CDN switching, helping ensure uninterrupted viewing experiences while improving resilience and disaster recovery capabilities.

According to the companies, the integration will allow content providers to enhance streaming performance, improve delivery efficiency and gain greater operational flexibility as video consumption continues to grow globally.

The partnership also strengthens Telxius' content delivery offering by combining its global network infrastructure with Synamedia's advanced traffic management and multi-CDN orchestration capabilities. [[APB+](#)]

VIZRT UNVEILS AI-POWERED GRAPHICS AND VIRTUAL PRODUCTION TOOLS

Vizrt has introduced AI Keyer, a new artificial intelligence-powered solution designed to simplify live production workflows and enable broadcasters, content creators and enterprises to create broadcast-quality virtual environments without the need for green screens.

The software uses AI to automatically separate presenters from their backgrounds, allowing users to replace environments and insert augmented reality (AR) graphics in real time. The technology is designed for a wide range of applications, including news production, sports broadcasting, corporate presentations, live events and content creation.

Trained on extensive real-world footage and lighting conditions, AI Keyer can accurately detect and track presenters as they move through a scene, enabling seamless integration with virtual sets and graphics. The solution eliminates the need for complex chroma-key setups and specialised lighting, reducing production costs and setup times.

A key feature of the platform is its integration with generative AI tools such as ChatGPT and Claude. By connecting the graphics design workflow to large language models, users can create graphics and visual elements with simple text prompts, automating traditionally complex production processes and accelerating content creation.

According to Vizrt, the streamlined workflow enables production teams to focus more on storytelling and audience engagement while maintaining consistent visual quality across multiple platforms and formats.

The company also highlighted its broader portfolio of AI-powered solutions, including Libero, a sports analysis platform that uses advanced 3D telestration and graphics to enhance viewer understanding and engagement. Vizrt noted that UEFA has reported significant increases in audience interaction through its use of the platform.

Additional solutions showcased include Arena, which enables AI-assisted virtual advertising placement, and Mozart, a newsroom automation platform designed to simplify workflows and improve production efficiency.

With growing demand for faster and more flexible content creation, Vizrt's latest AI-driven tools aim to make advanced broadcast graphics and virtual production capabilities accessible to organisations ranging from individual creators and streamers to major media networks. [\[Vizrt\]](#)

PROOF OF CONCEPT SHOWS APP-LESS DRM IS POSSIBLE IN DVB-I

DVB-I is demonstrating how Digital Rights Management (DRM) can be applied to protected linear IP television channels without requiring dedicated

applications. This development could simplify hybrid broadcast-broadband deployments.

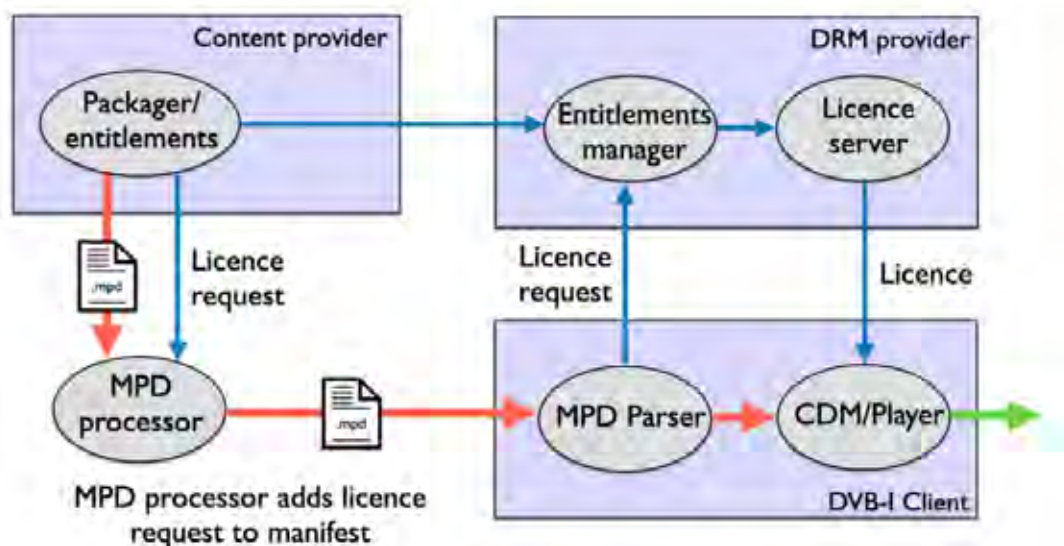
While broadcasters commonly use DRM within streaming apps, growing interest in DVB-I has highlighted the need to protect linear channels delivered over IP, even when the same services are available free-to-air via traditional broadcast networks. Native, or app-less, DRM offers several advantages: reduced app development costs, faster channel switching, support for interactive services, and broader device compatibility.

To explore the concept, OnScreen Publishing and Yotta Media worked with RTÉ on a proof of concept that enabled DRM-protected linear streams to be played directly on a DVB-I-enabled television. The solution embedded the DRM licence request URL within the DASH manifest, eliminating the need for a dedicated application.

The proof of concept was later reviewed by industry groups, including the DVB-I Implementers Task Force, the Streaming Video Technology Alliance (SVTA), and DVB's DVB-DASH technical group. Experts concluded that native DRM could provide content protection comparable to traditional app-based implementations while leveraging existing DRM infrastructure.

Testing on DVB-I-enabled television sets further validated the approach, with most devices supporting native DRM without modification.

The successful demonstration confirms that app-less DRM is a viable option for DVB-I services, offering broadcasters a simpler way to deliver protected linear television channels while improving the viewing experience. [\[DVB\]](#) ■



Equipment Trends

BLACKMAGIC DESIGN INTRODUCES HYPERDECK ISO RECORDER 100G FOR SMPTE-2110 IP PRODUCTION

Blackmagic Design has launched the HyperDeck ISO Recorder 100G, a new SMPTE-2110 IP video recorder with 100G Ethernet. Designed for professional broadcast environments, it records all cameras during live production for DaVinci Resolve live-action replay, ensuring every angle is captured for instant review or post-event analysis. The recorder uses a single 100G Ethernet connection to link all eight video channels simultaneously and records high-quality Apple ProRes video directly to network storage over 100G Ethernet, streamlining file management and transfer. The device features two dedicated 100G data ports for SMPTE-2022-7 seamless protection switching, allowing operators to connect each port to separate network switches for full redundancy.



The HyperDeck ISO Recorder 100G records eight channels of Ultra HD video in various Apple ProRes 422 formats, offering flexibility for different production workflows, and includes RS-422 deck control for seamless integration with broadcast automation systems. Its interface features a responsive touchscreen, a machined metal search dial for precise shuttle control, front-to-back cooling with multiple redundant fans for reliability, and dual AC power supplies to ensure uninterrupted operation even in demanding studio environments.



For broadcasters transitioning to IP-based infrastructure, the HyperDeck ISO Recorder 100G provides a reliable, high-density recording solution that integrates seamlessly into SMPTE-2110 environments and offers the redundancy and control needed for mission-critical live productions. [[Blackmagic](#)]

LIVEU UNVEILS LU900Q INTELLIGENT PRODUCTION UNIT FOR REMOTE LIVE BROADCAST

LiveU has launched the LU900Q, its next-generation field unit for live transmission and production, designed to transform how broadcasters approach remote live news and sports productions. The LU900Q natively integrates LiveU IQ, an AI-driven decision-making engine that combines advanced eSIM technology and seamless dynamic connection switching within a 5G architecture featuring next-generation modems and a MIMO antenna array for enhanced speed, stability, and throughput. The unit comes in an ergonomic backpack with a battery life exceeding 7 hours and is engineered with a rugged, shock-absorbing frame and an advanced cooling system suitable for any climate.



For high-end productions, the LU900Q delivers 10-bit HDR 4:2:2 encoding with up to 32 audio channels. It supports SDI, HDMI, and IP production gear, ranging from ENG cameras and PTZ systems to drones. Key features include dual video return and dual intercom, bringing studio-grade communication to field reporters. The unit also provides native analytics for real-time production monitoring.

Advanced features are activated via dynamic software licenses on demand or by subscription, making the LU900Q a modular platform that can scale with production needs. For broadcasters and news organizations, the unit provides the reliability and flexibility required for live remote productions in any environment. [[LiveU](#)]

SENNHEISER SHOWCASES SPECTERA BIDIRECTIONAL WIDEBAND WIRELESS ECOSYSTEM

Sennheiser has introduced Spectera, the world's first bidirectional wideband digital wireless ecosystem, setting a new benchmark for innovation in professional audio. It enables simultaneous audio transmission, system control, and monitoring within a single RF channel, streamlining workflows and enhancing operational efficiency. The system supports up to 64 channels (32 in/32 out) for audio transmission, monitoring, and control, all in a single rack unit, maximising space and minimising setup time. This reduces RF complexity and improves overall stability in demanding environments. Spectera's bidirectional bodypacks handle both in-ear monitor and mic/line signals simultaneously, making them exceptionally versatile for a range of live and broadcast scenarios.



Flexible Audio Link modes allow users to optimise latency, audio quality, and link performance according to each production's needs. The system has been deployed in high-profile productions, including work with Ed Sheeran, Sam Smith, the Eurovision Song Contest 2026, and Super Bowl LX.

The platform is designed for live production, broadcast, and theatre use. Reducing wireless interference and simplifying RF management are critical in these areas. For audio engineers and broadcasters, Spectera represents a major advancement in wireless audio technology. [\[Sennheiser\]](#)

HOLLYLAND INTRODUCES SOLIDCOM M1 PRO WIRELESS INTERCOM SYSTEM FOR MEDIUM-SCALE PRODUCTIONS

Hollyland introduced the Solidcom M1 Pro, a cutting-edge full-duplex wireless intercom system for medium-scale productions, including concerts, exhibition venues, and broadcast events. It offers four- and eight-user configurations and operates over the 1.9 GHz spectrum. This frequency band typically faces less crowding and interference than the common 2.4 GHz band, ensuring more reliable communication even in challenging environments. The system allows teams to expand up to 24 users through cascading. It pairs robust bodypacks with professional LEMO headsets, aligning with traditional

broadcast intercom workflows and providing greater comfort and durability than all-in-one headset designs.



Experience the M1 Pro difference: each bodypack features a high-definition LCD display for clear status and grouping immediately. Feel confident, even in low light, with three uniquely designed function buttons that reduce accidental presses during critical live productions. Enjoy versatility with both LEMO and standard 3.5 mm headset support for seamless compatibility. The base station's multiple interfaces, including 2-wire XLR, 4-wire RJ45, and PoE/LAN, ensure easy integration into your existing studio or on-location setup.

Grouping is managed from the base station, Solidcom app, or a private web interface. Bodypacks can be assigned to teams such as lighting, camera, or production for organised communication. Each bodypack runs on two removable lithium-ion batteries, each lasting up to six hours. These are hot-swappable to maintain operation during extended events. This design makes the M1 Pro reliable for demanding environments where communication is critical. [\[Hollyland\]](#)

AEQ INTRODUCES FORUM IP PLUS DIGITAL CONSOLE FOR RADIO AND TELEVISION

AEQ has introduced the FORUM IP PLUS, an advanced evolution of its FORUM family of digital consoles, which are engineered specifically for continuous 24/7 radio and television production as well as broadcasting applications. This new console seamlessly blends simple and intuitive operation with powerful, high-level control and a wide range of customisation options. FORUM IP PLUS is available in both SPLIT and LITE versions, offering modular configurations ranging from 4 to 24 faders, enabling studios to tailor the control surface to their precise requirements. Notably, the SPLIT version is equipped with motorised faders for agile, precise management of fader pages, as well as an A/B option for each channel, while the modular motor design ensures



reliable, uninterrupted 24/7 performance. Its Dante and AES67-compatible AoIP architecture make connection to modern IP infrastructures easy. Integrated Bluetooth on the surface connects to external devices, like smartphones and tablets. The FORUM IP PLUS supports flexible signal assignment so users can reorganise channels based on program needs or operator preferences.



The console offers powerful monitoring tools, intuitive touch control, and advanced configuration options. These can be managed from the surface or remotely via FORUM VIRTUAL software. The FORUM IP PLUS stands out as a flexible, future-proof console for radio and television broadcasters. It is ideal for the demands of continuous 24/7 operations. [AEQ]

ROSS VIDEO LAUNCHES XPRESSION DATA SERVER FOR AUTOMATED GRAPHICS PLAYOUT

Ross Video has announced the launch of the XPression Data Server, a powerful data aggregation server designed to simplify and streamline automatic playback of data-rich graphics and dynamic channel branding. This server integrates many real-time data sources and combines them with manually entered content. As a result, automated, unified presentations are delivered. These can be scheduled as video overlays or as standalone information channels to meet broadcaster needs. The platform supports integration with most modern traffic systems and BxP. It ensures seamless program integration and efficiently manages real-time playout and rendering resources.



Key features include automated news ticker management for continuous updates. The system supports elections by parsing data from various wire services. Manual control interfaces let master control operators handle unscheduled or breaking events efficiently. Access to the XPression Data Server is fully browser-based, so users with credentials can retrieve, input, schedule, or control content

securely from any networked location. This remote access ensures flexibility and quick response for broadcast teams in various environments.

The system offers robust user permissions management and a comprehensive audit trail to ensure accountability and security at all access levels. For broadcasters needing automated, data-driven graphics, the XPression Data Server is a centralised, scalable solution. It manages and delivers complex, real-time information reliably and efficiently. [Ross]

CREAMSOURCE EXPANDS VORTEX LINE WITH COMPACT 160W VORTEX2 & VORTEX2 SOFT

Creamsource has expanded its Vortex lighting portfolio by launching the Vortex2 (V2) and Vortex2 Soft (V2S), adding a more compact form factor to its existing ecosystem. These new 160W fixtures are developed for a range of professional applications, including studio productions, location shoots, and fast-paced live environments, particularly where available space and mobility are important considerations.



Both fixtures share the CreamOS operating platform and incorporate the Creamsource Colour Management System (CCMS), as well as IP65 weather-resistant construction for use in diverse environments. The CCMS utilizes an RGBWW LED engine and operates natively in the CIE xy colour space, enabling the V2 Series to integrate with other Vortex fixtures in a manner that maintains consistent colour accuracy across different setups.

The V2 model delivers a 20-degree beam angle for more directional lighting, whereas the V2S provides a 110-degree spread for wide-area illumination. Both fixtures weigh approximately 6kg without the yoke, facilitating ease of handling and installation. Rigging options include a centre-mount gooseneck, various withing points field, and a 3-pin Xwhich enables operation using standard battery systems commonly available in field production environments.

Regarding connectivity and workflow integration, the V2 Series offers built-in LumenRadio wireless capabilities, etherCON networking, pass-through DMX, and power distribution features for daisy-chaining and configuring multiple fixtures together. A selection of lenses and modifiers is available, allowing users to adapt the fixtures for different lighting requirements and production scenarios.

The Vortex2 and Vortex2 Soft build on the platform's colour science, workflow consistency, and durability in a compact 160W form. With beam angles from 20 to 110 degrees, IP65 weather resistance, multiple rigging and power options, and integration with Creamsource Colour Management System, the V2 Series provides flexibility for professional studio, location, and mobile productions requiring space efficiency and rapid deployment.

[\[Creamsource\]](#)

IKEGAMI LAUNCHED NEW VFE-P07D OLED VIEWFINDER.

Ikegami has expanded its on-camera viewfinder lineup with the introduction of the VFE-P07D. The device combines a monocular OLED viewfinder with a tiltable 3.5-inch ultra-compact LCD monitor, designed for use with shoulder-mounted and studio cameras in the company's UNICAM XE series.



The core display components consist of a 0.7-inch OLED display with a 16:9 aspect ratio, paired with a 3.5-inch TFT LCD monitor offering wide viewing angles and adjustable positioning. The LCD monitor offers flexible tilt adjustment, including forward-facing and lateral rotation, enabling adaptation to various shooting setups.

The VFE-P07D includes a tally light and a range of on-device controls, including adjustable brightness, contrast, peak levels, and zebra patterns, as well as customisable user settings. An assignable pushbutton provides quick access to key functions.

For connectivity, a BNC input enables monitoring of external HD and 3G-SDI signals. Both the OLED viewfinder and LCD monitor deliver Full HD resolution with support for 16.7 million colours. Onboard monitoring tools include a waveform monitor, vector scopes, and audio level meters.

The VFE-P07D is compatible with several UNICAM XE series cameras, including the HDK-X500, UHK-X600, UHK-X700, and UHK-X700RF. These cameras feature 3-CMOS global-shutter sensors and support ITU-R BT.2020 high dynamic range standards.

The hybrid design of the VFE-P07D combines a monocular OLED viewfinder with a tiltable 3.5-inch LCD monitor in a single device. With Full HD resolution, 16.7 million colour support, external 3G-SDI input via BNC, and on-board monitoring tools including waveform, vector scope, and audio metering, the viewfinder offers camera operators flexibility for shoulder-mounted and studio configurations within the UNICAM XE series. Compatibility with global-shutter cameras supporting BT.2020 HDR standards positions the VFE-P07D as a monitoring option for broadcast productions requiring consistent colour and exposure tools across different shooting angles and environments. [\[Ikegami\]](#) ■

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WELCOMING ASHWAD ISMAIL AS DIRECTOR GENERAL OF RTM



Mr. Ashwad Ismail
Director-General of Broadcasting Radio
Televisyen Malaysia (RTM)

The Asia-Pacific Broadcasting Union (ABU) extends its warmest congratulations to Mr. Ashwad Ismail, who officially assumed office as Director General of Radio Televisyen Malaysia (RTM) on 23 February 2026.

A respected media professional with nearly two decades of experience in journalism, broadcasting, and media leadership, Mr. Ashwad brings a wealth of expertise to Malaysia's national public broadcaster. Prior to joining RTM, he held various key positions at Astro AWANI, culminating in his role as Editor-in-Chief, where he led editorial strategy, newsroom transformation, digital expansion, and innovation initiatives, including the adoption of artificial intelligence in media operations.

Throughout his distinguished career, Mr. Ashwad has earned recognition for his commitment to journalistic excellence and public service media, including being named Malaysia's Best Newscaster and Journalist at the Anugerah Seri Angkasa Awards. He has also represented Malaysia in numerous international media engagements and continues to contribute to industry and academic development through leadership and educational roles.

As Director General, Mr. Ashwad takes the helm of RTM at a significant moment for the broadcasting industry, as media organisations adapt to rapid technological change, shifting audience expectations, and new opportunities for digital innovation.

The ABU looks forward to working closely with Mr. Ashwad and RTM to strengthen regional cooperation, advance innovation, and support public service broadcasting across the Asia-Pacific. We wish him success in his new role and look forward to fruitful collaborations ahead. ■

New Affiliate Member



Astrum Mobile

Astrum Mobile is a Singapore-based satellite communications company pioneering next-generation 3GPP standards-based 5G Non-Terrestrial Network (NTN) Satellite-to-Device (S2D) services across the Asia-Pacific region. With priority rights granted by the International Telecommunication Union (ITU) to operate in L-band spectrum at 1.4 GHz, Astrum is uniquely positioned to deliver satellite-enabled services directly to 3GPP 5G NTN-compliant standard devices without requiring modifications to the device or terrestrial network infrastructure. The company currently operates the AsiaStar geostationary satellite at 105°E and is developing its next-generation NEASTAR-1 satellite, extending connectivity and content delivery beyond the reach of terrestrial networks.

Leveraging its innovative service architecture, Astrum enables highly scalable delivery of rich media, emergency alerts, mass notifications, software updates, datacasting, and IoT services across vast geographical areas. The resilience of L-band spectrum ensures reliable service availability under challenging weather conditions, making it well suited for public safety, disaster resilience, rural communications, maritime connectivity, and digital content distribution.

Fully compliant with 3GPP Release 17 and Release 19 standards, Astrum successfully demonstrated the world's first 3GPP 5G NTN broadcast service over a geostationary satellite in partnership with Qualcomm in Singapore. Today, Astrum is working with governments, broadcasters, mobile ecosystem players, and enterprises to accelerate digital inclusion and enable innovative satellite-enabled services throughout the region. ■

URL: www.astrum-mobile.com

Contact: marketing@astrum-mobile.com

Address: 60 Paya Lebar Road #07-13, Paya Lebar Square, Singapore 409051



Building Trust in Media: C2PA, Identity Assertions, and the Future of Media Provenance

July 14, 2026 | 2:00 pm - 3:30 pm MYT - Online

[Click here to register.](#)

A LEGACY OF INNOVATION, LEADERSHIP AND QUIET EXCELLENCE

Some leaders leave behind projects. Others leave behind titles and achievements.

Dr Veysel Binbay leaves behind something far more enduring: a legacy of innovation, collaboration, and genuine human connection.

As Dr Veysel concludes his tenure with the Asia-Pacific Broadcasting Union (ABU), the broadcasting community bids farewell to a respected technical leader whose contributions have helped shape not only the Union's technological direction, but also the relationships and partnerships that define the ABU family.

Since joining ABU in 2019 as Specialist Engineer, Transmission, Dr Veysel quickly became a trusted figure within the Secretariat and among Members. Drawing on more than two decades of experience with the Turkish Radio and Television Corporation (TRT), he brought with him deep expertise in broadcasting technologies, transmission systems, and digital transformation. Yet those who worked alongside him often speak first not of his technical knowledge, but of his humility, generosity, and willingness to help others.

During the COVID-19 pandemic, Dr Veysel played a pivotal role in establishing ABU's virtual training and webinar delivery systems. At a time when organisations across the world were forced to

adapt almost overnight, his efforts ensured that ABU Members could continue learning, collaborating, and sharing knowledge despite unprecedented disruptions.

His ability to combine technical expertise with practical solutions quickly earned him the respect of colleagues and Members alike. It was a quality that would come to define his leadership style throughout his years with the Union.

In June 2023, Dr Veysel was appointed Director of ABU Technology & Innovation. The appointment recognised not only his technical capabilities, but also his vision for the future of broadcasting.

In accepting the role, he spoke of building on the strong foundation established by his predecessors while embracing emerging technologies such as artificial intelligence, virtual reality, and immersive media. He believed that innovation should not be pursued for its own sake, but rather as a means to strengthen broadcasting, enhance audience engagement, and ensure broadcasters remain relevant in a rapidly changing media landscape.

Under his leadership, the Technology & Innovation Department continued to support Members through



technological transformation, while fostering collaboration and knowledge sharing across the region.

His expertise and commitment to the industry were further recognised on the global stage when he was elected Chair of the World Broadcasting Unions (WBU) Technical Committee. The appointment reflected the confidence that broadcasting unions around the world placed in his leadership and ABU's growing influence within the global broadcasting community.

As Chair, Dr Veysel assumed responsibility for guiding discussions on technological innovation, spectrum issues, broadcasting standards, and the future development of the industry. It was a role that placed him at the centre of some of the most important conversations shaping broadcasting worldwide.

One of the defining highlights of his final year at ABU was the successful delivery of the Digital Broadcasting Symposium (DBS) 2026, where broadcasters, technology leaders, and industry experts gathered to explore the future of media in an increasingly digital world.

When asked about the most significant conversations that emerged from the event, Dr Veysel pointed to a debate that resonated strongly with both speakers and participants: should broadcasters adopt an "Internet First" approach, or should the internet remain one of several distribution channels?

For him, the discussion captured one of the most pressing challenges facing broadcasters today.

Audience preferences have shifted decisively towards audiovisual content consumed on demand and across multiple platforms. Traditional linear broadcasting no longer operates in a landscape where it is the primary gateway to mass audiences.

"Decades ago, broadcasters were the sole kings of the land," he reflected. "If you wanted to reach a mass audience, there were very few alternatives. Today, technology has created multiple pathways for audiences to access content."



Yet the challenge extends beyond technology itself. As broadcasters navigate increasingly fragmented digital ecosystems, they must also preserve audience trust, maintain relevance, and uphold the public service values that have long defined the industry.

For Dr Veysel, success lies not in resisting change, but in adapting to it thoughtfully. Broadcasters must continually reassess their workflows, strategies, and approaches while ensuring they remain connected to the audiences they serve.

It is a perspective that perfectly reflects his own approach to leadership: embracing innovation while remaining grounded in purpose.

As he returns to TRT and embarks on the next chapter of his professional journey, Dr Veysel leaves behind an organisation that is stronger, more connected, and better prepared for the future.

His achievements can be measured through successful projects, international partnerships, technical advancements, and global leadership appointments. Yet perhaps his greatest contribution lies in the respect and admiration he has earned from colleagues, Members, and

friends throughout the Asia-Pacific broadcasting community.

Technology will continue to evolve. New platforms will emerge. Audience habits will change.

But the values that Dr Veysel brought to ABU throughout his tenure, integrity, curiosity, collaboration, and an unwavering commitment to excellence, will continue to inspire those who had the privilege of working alongside him.

On behalf of the ABU family, we thank Dr Veysel Binbay for his outstanding service, leadership, and friendship, and wish him every success in the journey ahead. ■



ABU TECHNOLOGY **CALENDAR** *of Events*

2026

03 April	ABU Technical Bureau Mid-Year Meeting	Kuala Lumpur, Malaysia
03 April	WBU Technical Committee Meeting	Online
22-24 April	CCBN-ABU NEXUS	Beijing, China
20-22 May	BroadcastAsia Workshop	Singapore
June-July	Engineering Fundamentals Level-2	Online
14 July	C2PA Webinar	Online
20-22 July	World-DAB-ASBU-ABU Workshop	Online
11-13 August	ABU-IPPTAR Workshop	Kuala Lumpur, Malaysia
24-28 August	B26 Global Coordination Conference	Yerevan, Armenia
September	Member Innovation Webinar	Online
October	Technical Bureau Annual Meeting	Online
13 October	Media Provenance Summit Japan	Tokyo, Japan
30-31 October	Technical Committee Meeting	Colombo, Sri Lanka
December	Member Innovation Webinar	Online

Call for Contributions: ABU Technical Review

The ABU Technical Review invites submissions from broadcasters, industry professionals, researchers, academics, and technology practitioners in the media and broadcasting sector to submit articles.

Submit articles on any of these topics:

- Technical research and development
- Emerging technologies and innovations
- New broadcasting systems and workflows
- Case studies and practical implementations
- Industry trends and best practices
- Digital transformation initiatives
- Member projects and success stories
- Other topics of interest to the broadcasting and media technology community

Published quarterly, the ABU Technical Review is distributed to ABU members, industry partners, broadcasters, technical professionals, and organisations engaged in media technology and communications. While engineers and technical specialists form our primary readership, we also present industry news and developments of broader interest.

You may submit articles of any style or length. Add photographs, illustrations, diagrams, or other visuals. Ensure all images are at least 2 megapixels for publication quality.

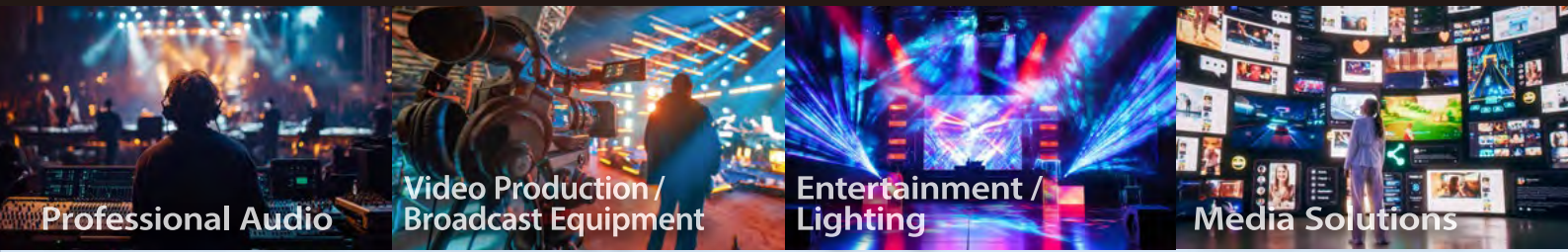
We publish articles on a voluntary basis and do not offer an honorarium. However, if we select your contribution, particularly those covering technical research and innovation, we will provide a complimentary half-page advertisement. We will place the advertisement immediately following your article, giving your organisation additional visibility.

In addition, articles submitted by ABU members in the Case Studies, Research, and Practical Implementation categories will be considered for the annual ABU Technical Review Prizes, which recognise outstanding contributions with a certificate and cash award.

Join us in shaping the future of media technology by submitting your article. Your work can influence industry progress and reach the global ABU community. For further information, please contact balqis@abu.org.my



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