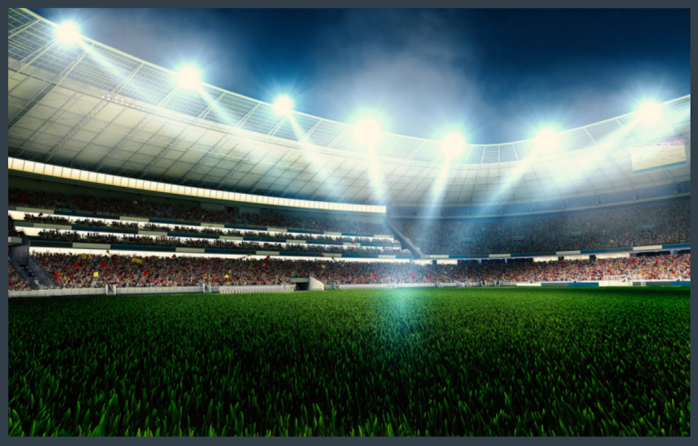
CASE STUDY

Delivering UHD feeds through lower-capacity fibre



Industry: Sports broadcasting

AT A GLANCE

CLIENT: BT Media & Broadcast

LOCATION: UK

CHALLENGES

- Delivering UHD feeds from venues with lower-capacity fibre
- Using HEVC to deliver highest quality UHD services via more cost-efficient use of bandwidth
- Long-term growth option needed

SOLUTION

NTT Electronics

- **HC11000 series encoder/decoder**
  - *single channel UHD/HD per 1RU platform*
- **HC32000 series**
  - *multi-channel solution 2 x UHD/8 x HD per 1RU platform*

"We appreciate the reliability that NTT's solutions provide to us. They have been instrumental in helping us build HEVC capability into our portfolio. This allows us to deliver additional UHD production feeds at lower bandwidths, which is of particular benefit for venues with reduced fibre capacity"

John Sitkowski
Head of Operations – Occasional Use
BT's Media & Broadcast division

BACKGROUND

The world's largest global broadcasters rely on **BT Media & Broadcast** to create and distribute high-capacity content securely and resiliently from camera to screen. Supporting more than 600 media production and broadcasters globally, this live UHD TV OB delivery specialist moves 24,000 hours of content per day.

In 2019, **BT Media & Broadcast** began expanding their capacity by adopting **NTT Electronics'** HEVC technology. Members of the **Zest Technologies** team have been assisting them from the start, recently introducing NTT's new multi-channel HC32000 encoders into the mix for delivery of UHD sports services, including for English Premier League football, European Club football (Champions League, Europa League, Europa Conference League), International European football (EUROS, Nations League), and English rugby and boxing.

CHALLENGES

The majority of this sports coverage passes over the BT TVOB, Next Gen and VENA fibre networks. BT also regularly transmits over satellite via their TVOB hybrid trucks. and occasionally over 7G digital microwave radio links. This extensive, high-capacity fibre network connects stadiums and other venues around the UK. As sports content is fast moving, UHD is essential for maintaining high-quality video output for viewers.

At top-tier venues, due to the network bandwidth going into customers' premises, BT need to use HEVC encoding to deliver a UHD feed. To offer its UHD services universally at venues with lower-capacity fibre or no fibre at all, BT needed to adopt its HEVC capability for such sites. They needed a way to allow their team to deliver the highest quality UHD services via more cost-efficient use of lower bandwidth. Having NTTs at the venues helped BT improve their remote production services by improving flexibility and workflow efficiency and having minimal presence at the stadiums.

They also needed a long-term, reliable solution that would allow them to easily expand their services capacity over several years.

SOLUTION

At the recommendation of current members of the Zest team, BT began investing in **NTT Electronics' HC11000** single channel encoders and decoders for high-end UHD contribution. They offer exceptional video quality, feature-rich video and audio profile options, fast boot time, low latency, and low power consumption — all combined with the highest level of reliability.

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BT uses **NTT's HC11000s** primarily to deliver video provided for UK and international broadcasters for Champions League, European and National league events. They used the encoders and decoders in four of BT's satellite trucks and four fibre trucks. A fifth fibre truck will have NTT solutions installed in 2023.

Other uses of NTT solutions

BT's core broadcast network called VENA is set to transform the industry by intelligently connecting clients' media supply chains. It allows for workflows to be optimised, capacity for fast file movement, and enhanced network control. All connectivity for rugby is over VENA, and NTT encoder/decoder solutions are used for the production and produced feeds.

Also, on the NTT HC11000s BT use the BISS1, BISS2 and SMPTE 2022-7 seamless protection licences — the standard for protecting a video stream from data loss by switching seamlessly between two incoming streams.

RESULTS

The reliability of NTT's solutions have kept BT investing in them since the initial installation in 2019. This investment has allowed BT to continue to significantly expand their capacity. They now have a large pool of NTT encoders and decoders, including a recent investment in the new HC32000 series of multi-channel encoders and decoders.

Most recently, BT has used NTT's UHD kit for the King's Coronation and to decode the Europa Cup final feeds via BT Madley downlinks for BT Sport.

Some of the NTT11000s that BT Media & Broadcast have at BT Tower for UHD delivery.

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