

Cambridge Wireless International Conference

What are the advanced TV use cases for mobile and who benefits..

Alex Buchan, DTG

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THE CENTRE OF
UK DIGITAL TV



5G/Mobile for media

DTG are active in many areas looking at a future roadmap for media delivery over 5G/Mobile

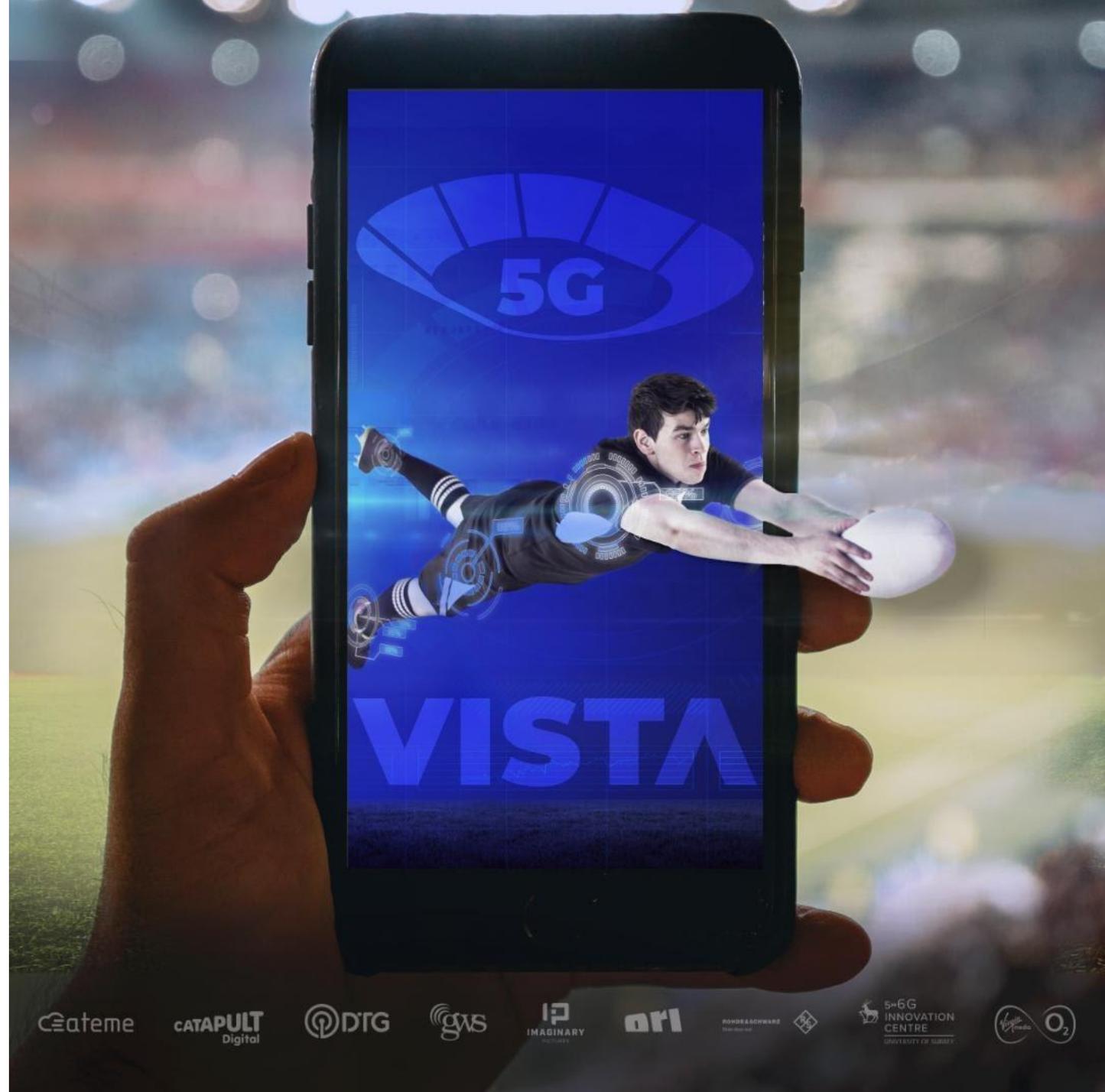
- DTG are the lead partner and a founder member of 5G VISTA (<https://5gvista.co.uk>), a Government funded project looking at 5G Broadcast
- A founder member of the 5G Media Access Group: <https://www.5g-mag.com/>
- Were an active participant in EBU 5G deployments groups establishing use cases for 5G media distribution and production: <https://tech.ebu.ch/publications/tr054>
- We have written a white paper on 5G for media delivery: <https://dtg.org.uk/publication/5g-for-media-report>





Advanced use cases

- 5G Broadcast can provide enhanced use cases for live events direct to devices
 - Multi- angle views
 - Synchronised audio options
 - Stats and analysis
 - Inclusive features to improve event accessibility
 - Relevant stadium info
 - Advertising and sales opportunities
- Possibilities for linear TV and Radio distribution
- The VISTA project is working to drive the supporting ecosystem for 5G Broadcast





Who benefits?

5G broadcast technology offers some exciting new business opportunities for organisations looking for a cost effective and efficient way of delivering new services and reaching new audiences.

Venue owners

Differentiate and add value to in the in-venue experience through access to more content and venue information

Mobile network operators

Opportunity to provide premium video services at key locations at a much lower cost than is possible with standard mobile delivery

Content providers

Opportunities to enhance offering and extend reach to new audiences

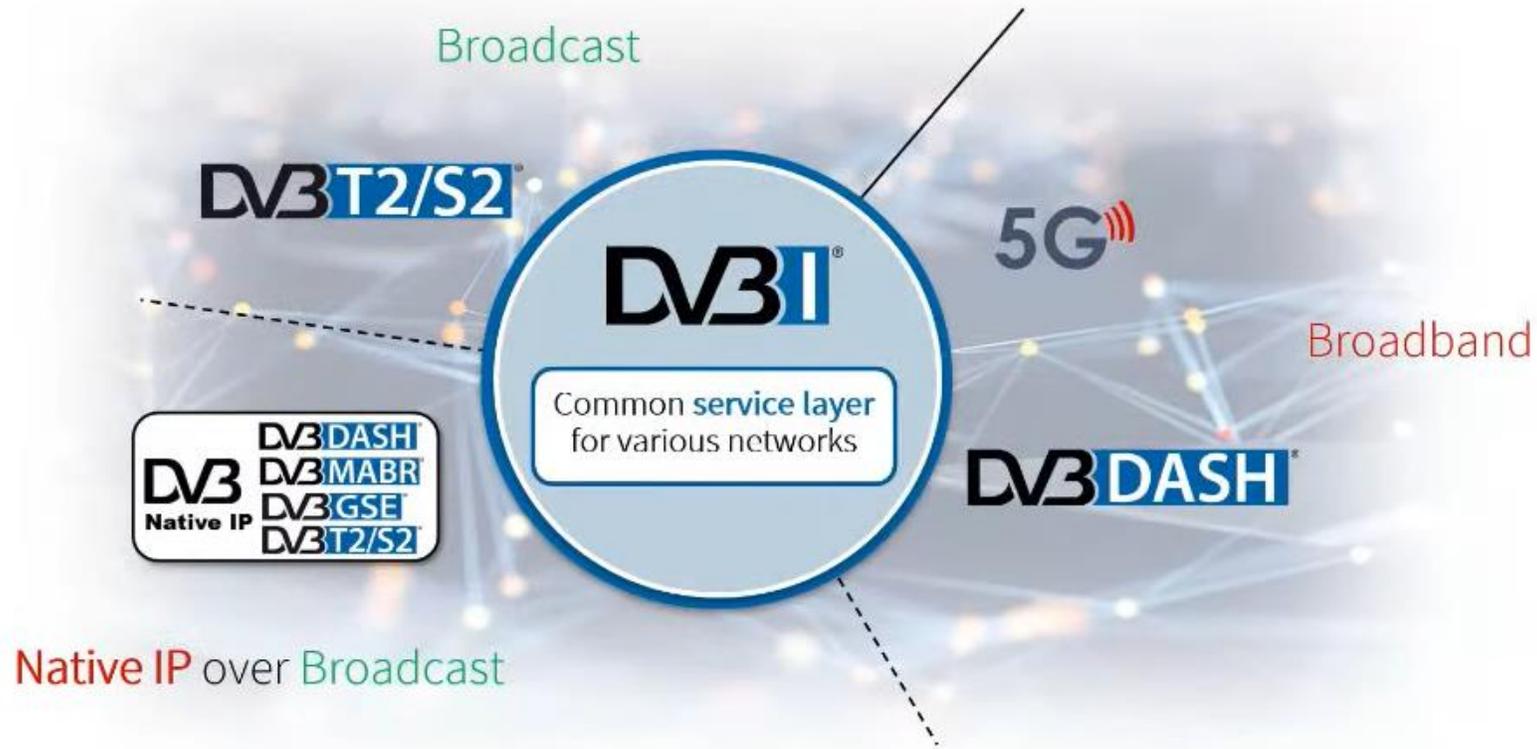
Rights holders

New ways to access and engage with fans, also opening new opportunities for merchandising



Technology is now available that can converge traditional broadcast with IP delivery and optimise this for mobile delivery

DVB-I offers a common service layer across networks





Environment

As part of VISTA we are looking at the environmental impact of 5G Broadcast and MEC compared to other forms of content delivery.

Reduced energy usage

Providing mobile capacity for video services in stadium via unicast requires many times more cells than if broadcast was used

Reduced operational support

Due to the reduced infrastructure requirements of broadcast, much less maintenance is needed – reducing the need for resource and travel to support this

Remote production

We are using MEC to understand possibilities for remote video encoding services being shared across venues

Efficient use of hardware

Using MEC solutions, video encoding can be deployed on generic servers using an application



Advanced coding

- Our State of the Nation Report highlighted that consumers are increasingly aware of the environmental impact of their viewing
- Higher resolutions require more data which impacts CO2 emissions

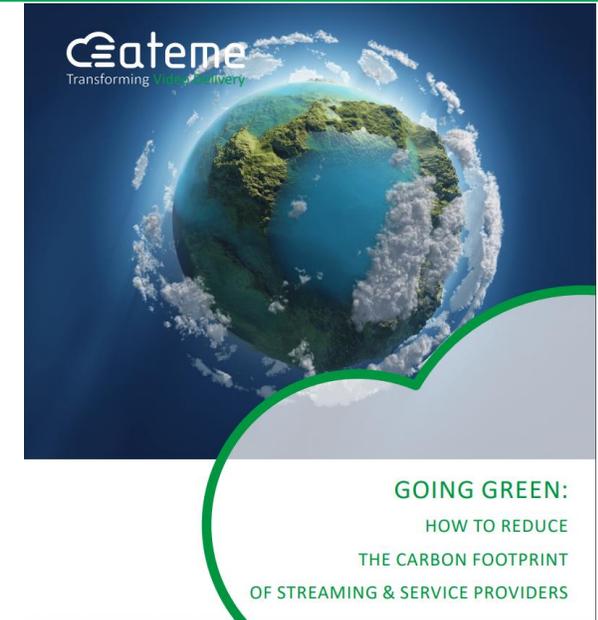
Watching a 4K streaming service on a 4K TV contributes 71gCO2e per hour, over twice the equivalent on HD.

- 45% of video streamers would be willing to use a “green streaming” alternative that reduces energy and emissions
- Our Distribution Working Group working on the future of content encoding and packaging

34% of UK consumers understand that their choice of video service has an impact on the environment.

“One hour of streaming on Netflix in 2020...[is] equivalent to driving a gas-powered passenger vehicle a quarter mile (or 400 meters). These results are consistent with our peers and validated by our independent advisory group.”

Emma Stewart, Ph.D., Sustainability Officer, Netflix^[2]



DTG member Ateme’s “Going Green” report highlights the impact streaming has on the environment and how advanced techniques for compression and cloud implantation can mitigate this <https://www.ateme.com/how-to-reduce-the-carbon-footprint-of-streaming-service-providers/>



Environment

AI and, more specifically, machine learning, is beginning to impact all aspects of the video supply chain, unlocking a range of opportunities for the content creation and broadcast industries. Indeed, up to 30% of companies in this sector have either adopted or are in the process of incorporating machine learning and AI either within their daily operations or product lines.

AI-based cataloguing of video footage enables fast retrieval and discovery, reducing the effort required for search and enabling assets to be reused, potentially avoiding unnecessary video shoots. This indirectly improves environmental sustainability.



IBM's Watson AI engines are used to automatically create highlight reels for sports. IBM is also employing AI to recreate the ambient crowd noise absent from empty stadia during the pandemic
Image credit: IBM



Thank you

Alex Buchan:
abuchan@dtg.org.uk
<https://dtg.org.uk/>

A large, stylized blue and white logo for VISTA 5G, with a circular icon containing '5G' to the left of the word 'VISTA'.

How can mobile operators avoid becoming a data pipe?

David Owens, VM02

According to our research*, the majority of consumers going to live events typically use their smartphones at the event (*76% music/77% sports*), with photography, messaging, filming, and voice calls being the most used functions.



*(Source: GWS research June 2021)

While some respondents predictably expressed reservations about phone usage during events, over a third of sports and music fans who regularly attend live shows said they would be interested in using an app based on VISTA technology.

Most interested were:

- VIP tickets purchasers (41%)
- 25-44 (38%), esp. 35-44 (42%) in age
- AB (34%) & C1/2 (33%) social grade
- London (44%)



As the research was conducted during the project's early stages, consumers expressed their level of interest based simply on a description of the proposed concept; as the project matures and we are better able to demonstrate the technology's benefits, we expect consumer interest to increase even further.

Cricket, Football, Rugby

Using 5G broadcast to augment the match day experience

POTENTIAL FEATURES

Synchronised
commentator
options

Advertising and
sales opportunities

Relevant stadium
information

Broadcast stream with
multiple views of the
action to your phone

Inclusive features to
improve the matchday
experience for those with
disabilities

Updates from games
taking place around
the country

Pre-game, half-time and
post match statistics and
analysis

Motor Racing, Golf, Olympics

Using 5G broadcast to expand the live experience beyond the single viewing location

POTENTIAL FEATURES

Synchronised
commentator
options

Advertising and
sales opportunities

Relevant event
information

Broadcast stream
with action from
around the venue

Inclusive features to
improve the event
experience for those with
disabilities

Ability to follow a range of
competitors, events,
drivers

Pre-game, half-time and
post match statistics and
analysis

Stadium concerts and large experiences

Using 5G broadcast to expand the live experience

POTENTIAL FEATURES

See additional interactive content that feeds into the audience playback experience

Advertising and sales opportunities

Relevant event information

Select what, and how to follow the action

Inclusive features to improve the event experience for those with disabilities

Get close up views of the stage from distant seats

View additional visual content during the event

Updates from games taking place around the country

Smaller event venues nationwide, fanzone, large events

Using 5G broadcast to broadcast the event to fan areas and sites away from the direct action

POTENTIAL FEATURES

Ability for attendees to receive the signal direct to their device for additional features

Advertising and sales opportunities

Relevant event information

Select what, and how to follow the action

Inclusive features to improve the event experience for those with disabilities

See additional interactive content that feeds into the audience playback experience

Broadcast quality signals delivering live action to mass audiences

Updates from games taking place around the country

What is 5G Multicast Broadcast Service?

Internationally standardised

5G Multicast Broadcast Services will be a rel 17 NR 3GPP mobile standard technology, formerly known as FeMBMS (rel 14 LTE)

Efficient deployment

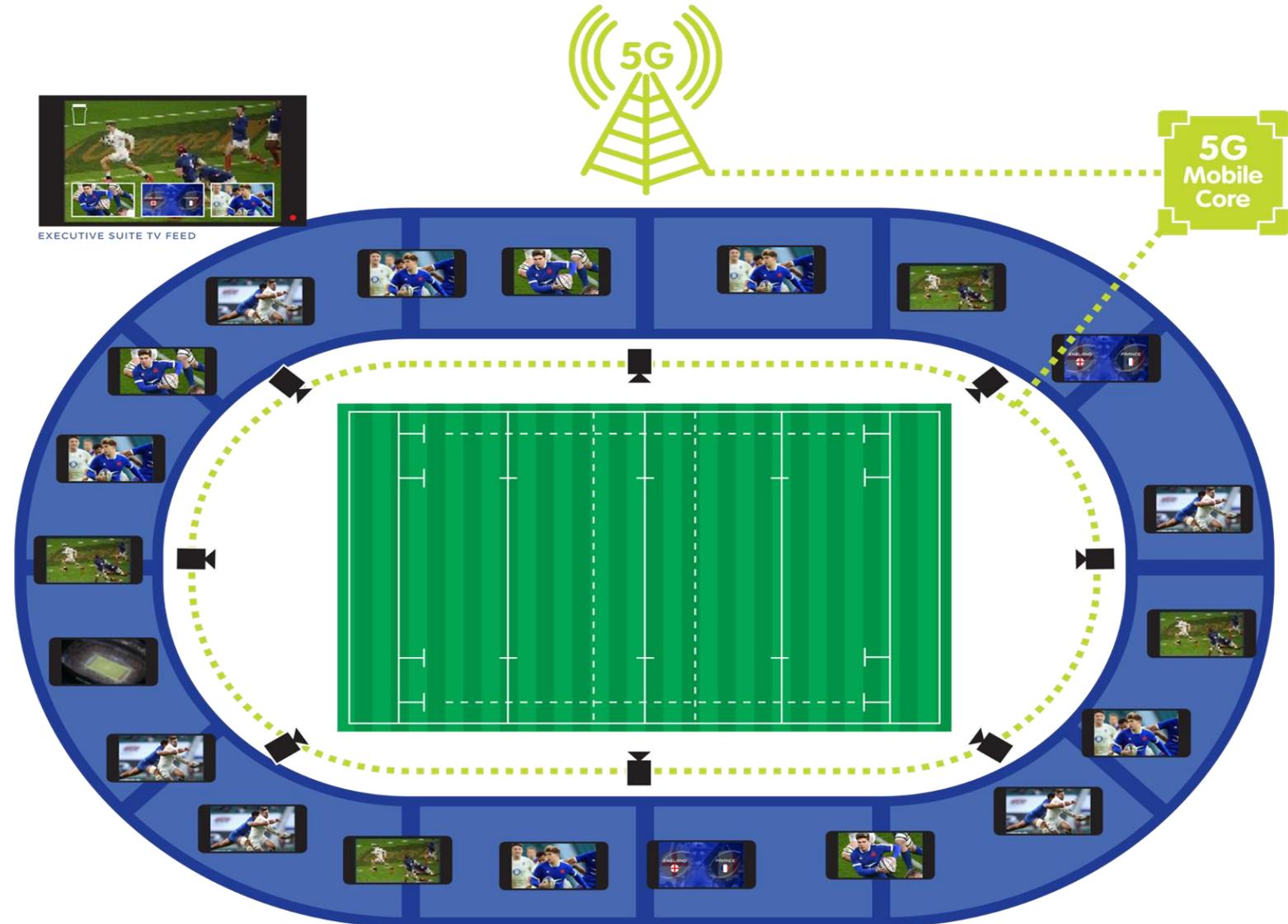
5G MBS overlay can be deployed over a more traditional unicast network - allowing complementary services

Network integration

5G Multicast Broadcast Services integrate seamlessly with a 5G NR network, benefiting from MEC, and other services too.

Cost effective

5G Multicast Broadcast Service is a low cost solution, that provides premium video services on mobile networks, esp. in congested areas





VISTA

GET CLOSE TO THE ACTION

THANK YOU

For more information
please visit

5GVISTA.CO.UK

OR contact

PRESS@5GVISTA.CO.UK



[@5gVista](https://twitter.com/@5gVista)



[/the-5G-vista-project/](https://www.linkedin.com/company/the-5g-vista-project/)