

MEDIA EXCEL CASE STUDY

MULTICHOICE: 4K/UHD STREAMING FOR FIFA WORLD CUP ON DSTV NOW PLATFORM



MultiChoice delivers media and entertainment services to 49 countries across Sub-Saharan Africa. Its DStv offering provides Live and VoD services to over 12 million subscribers.

OVERVIEW

As the screen size of TVs and other devices get larger and the ability of those screens to display more precise images improves, the challenge for video entertainment providers is to provide higher resolution video streams. We've relatively quickly progressed from standard definition of around 350 000 pixels, to high definition with over 900 000 pixels, to full HD with 2.1 million pixels. And now the next wave of 4K/UHD devices is here, which means we need video streams with enough data to build pictures of almost 9 million pixels.

Fast-moving sports like football add another complexity in that the number of frames per second has an impact on how smooth the action appears.

For DStv Now's technical team, these twin challenges came together at this year's FIFA World Cup. Working with Microsoft Azure, the team managed to go from concept to live test in just three months, making the last four games of the World Cup available in 4K on DStv Now.

"We ran this trial to better understand 3rd party managed cloud solutions, test their real-world effectiveness when run with existing digital rights management systems, and get an idea of the costs involved. Two of the key stipulations from our side were that the trial must remain totally independent of our existing infrastructure, and that there would be no need for us to install hardware. I'm pleased to say that the Microsoft Azure team delivered on all fronts."

"This was the first UHD live stream in Africa, and doing this at 50 frames per second utilising a new codec was a big win for us and sets us up well for future tests and the eventual deployment of UHD as a new standard for streaming."

Muhammad Khan,
MultiChoice Connected Video CTO



THE SOLUTION

With the games being broadcast from stadiums in Russia, and then encoded and streamed to Africa on a live basis, the large jump in video bitrate from the already high level needed for full HD (and more than 25x the bitrate of the lowest bitrate profile) was a key concern for the team.

The live video stream was transmitted to IMG Studio's teleport in the UK via satellite feed, then demodulated and decoded by an NTT Electronics HC11000 4K UHD HEVC decoder. It was then presented as Quad-3GSDI into the IMG gallery for graphics insertion. The resulting video feed was encoded by a Media Excel HERO 4K UHD encoder, which outputs multiple high quality HEVC Smooth Streams (fMP4) into multiple Azure entry points for redundancy. With the assistance of NTT and Media Excel's European Partner Garland, the whole 4K UHD production workflow was managed by IMG Studio in the UK as per the diagram below.

HERO 4K

Multiscreen Encoder/Transcoder for Live



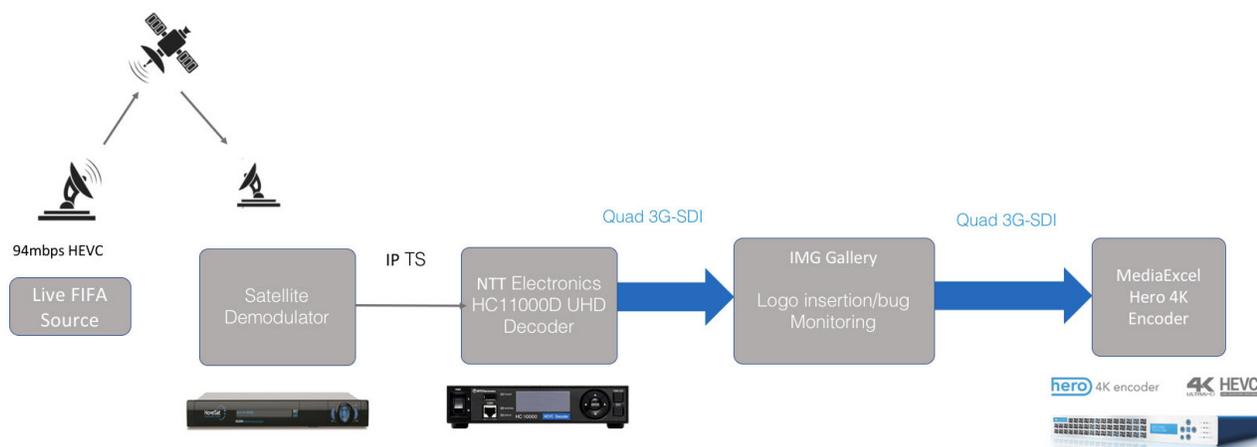
Once encoded, Microsoft Azure took over the streaming portion of the journey to Africa via their primary data centre in Amsterdam with a backup stream in Dublin. The streams were dynamically DRM packaged using Azure Media Services and DStv Now's Irdeto DRM technology and then carried over Microsoft's Azure CDN, powered by Verizon, with a primary and a second failover stream.

This entire process from ball hitting the net in Russia to excited fans in Africa seeing it on the test channel (channel 915) took only ten seconds longer than the usual satellite broadcast. It was also a world-first for Microsoft Azure streaming at 16 Mbps / 50 FPS progressive (not interlaced!).

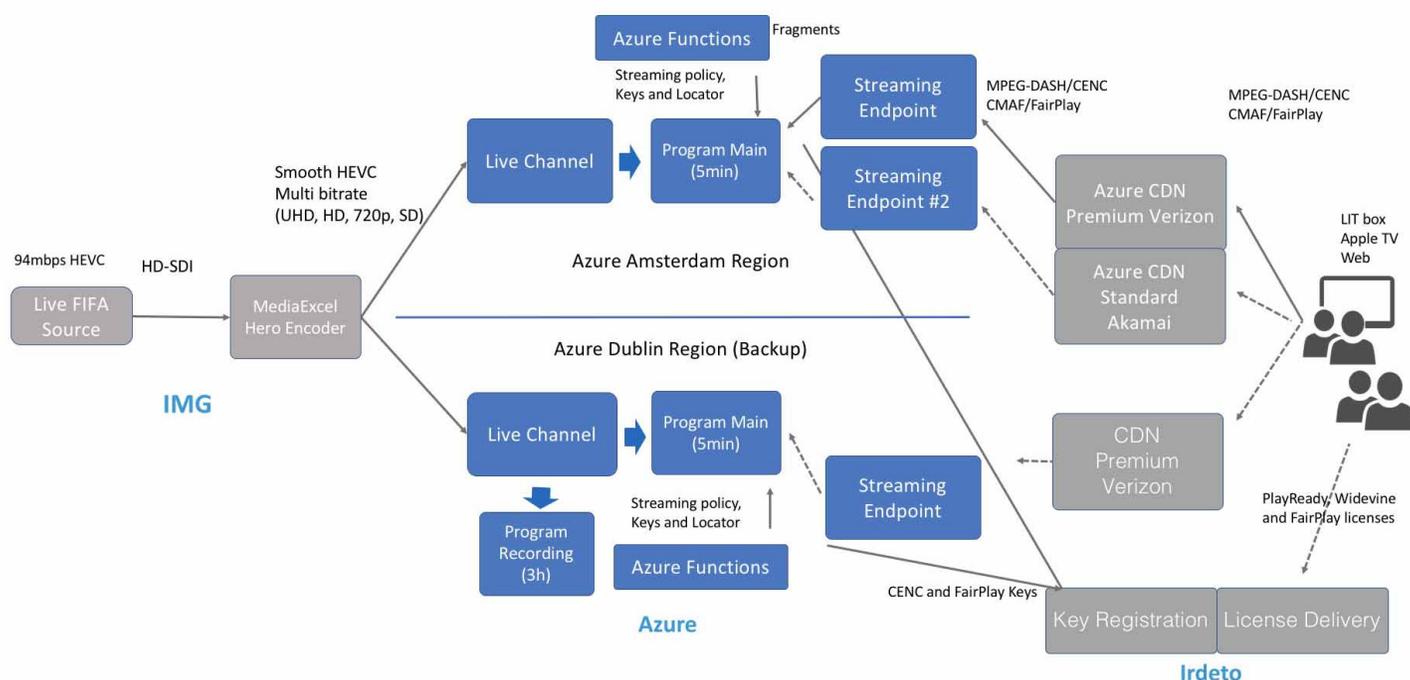


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UHD Studio Architecture supported by IMG



UHD Streaming Architecture supported by Microsoft Azure



"In online content delivery, user experience is everything. Microsoft Azure Media Services with a built in Content Delivery Network (CDN) provides an enterprise grade inherently fast, scalable, and economical solution to deliver content to users globally, whether you're developing or managing websites or mobile apps, or encoding and distributing streaming media, gaming software, firmware updates, or IoT endpoints."

Alkis Fletmetakis,
Microsoft's Account Executive for Media



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