Case Study

UEFA EURO 2020 - a fresh approach to remote reporting between UEFA and MoovIT

UEFA appointed MoovIT to develop remote post-production workflow concepts for UEFA EURO 2020

MoovIT is a long-standing partner of UEFA, providing support with technical planning and the implementation of workflows for reporting at the European Football Championships (or EURO). During UEFA EURO 2020, MoovIT was appointed as a host broadcast supplier for UEFA and delivered a number or remote workflow tools along with their partner companies.

MoovIT supplied part of the post-production infrastructure at the International Broadcast Centre (IBC) in Amsterdam, and remote infrastructure at IMG in London – as well as the mobile technology used by UEFA's ENG teams at the tournament venues.

Jan Fröhling, project manager at MoovIT, spent the duration of the tournament working with his team at the IBC in Amsterdam. In parallel, an additional MoovIT team was stationed at IMG in London to deliver post-production support.

The challenge: remote setup

UEFA decided to operate the core of their broadcast technology at the IBC (International Broadcast Centre) in Amsterdam, and moved their post-production, quality control and edit facilities to UEFA's long-term supplier IMG, based at Stockley Park.

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New challenges

- Transmission from 11 host countries
- Avoidance of large groups
  -> no central editing teams
- Remote signal transmission
- Mobile Electronic News Gathering (ENG) requires mobile data contribution
- Mobile press conferences
- Automated green screen
- Decentralised review & approval

> ### New solutions

- Decentralised reporting of mobile teams
- Remote setup with 2 main sites: Amsterdam & London
- Screen transfer via Teradici CAS
- Mobile data transfer via Aspera, injection points and Aviwest transmitters
- Data storage with Aviwest StreamHubs
- Integration of AI-based tool Unscreen
- Remote use of MoovIT's RevApp

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Remote Postproduction EURO 2020

UEFA tasked Moovit to deliver thin-client systems to London including monitors, audio equipment and Wacom tablets with remote access to the 'craft edits' stored at the IBC. The network infrastructure would be retained as originally planned, with all tools and integrations.

The most important connection for the remote setup was the dedicated fibre-optic line provided by the EBU, which ensured a static link between Amsterdam and London for the real-time transfer of media content. The project planners turned to Canadian vendor Teradici for the necessary software support. Teradici delivered the central PC-over-IP tool for access to the computers. Amsterdam-based desktops were transmitted to England using the Teradici tool and presented in such a way that users felt as if they were physically sat at the computers in Amsterdam. In addition, Teradici also connected audio signals and monitoring, voiceover systems and peripheral devices such as Wacom tablets.

The challenge: data and project management

At the heart of UEFA's technical setup were EVS systems with central storage, the EVS IPDirector video content database, and EVS automation via Xsquare for orchestration.

MoovIT's Helmut4 project management software was 'docked' onto this system to manage the finished content packages based on predefined criteria.

The central editing program in use was Adobe Premiere Pro, with an integrated EVS IPLink panel. IPLink accessed the IPDirector database, which lists content and makes it searchable.

Editors could use the panel to import content from the media asset management (MAM) system into their projects. In line with this automated workflow, the transfer points for further processing of content were contacted automatically.

With its diverse components, Helmut4 served as the central control unit for video project management in this complex environment. As Jan Fröhling emphasises, Helmut4 was not deployed here as a 'customized product'; in fact, it is a standard solution that proved capable of meeting the entirely new requirements of UEFA EURO 2020, as it has done with numerous major projects in the past.
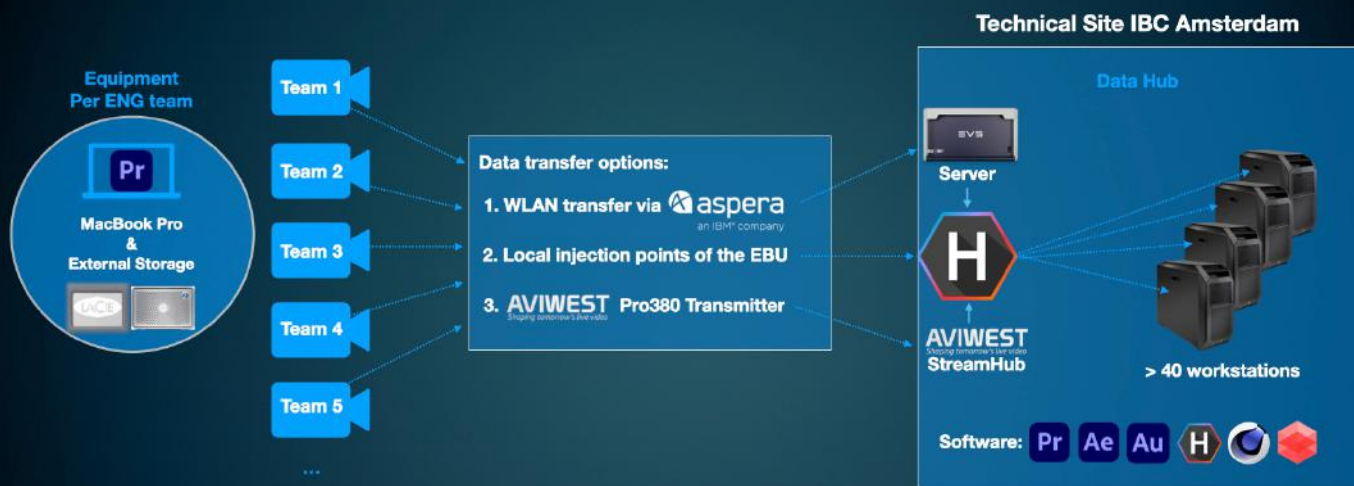
The challenge: transmitting signals in remote operations

Typically, video signals created in Premiere on an IBC desktop in Amsterdam would be transferred via cable to the editor's monitor for visual inspection. But in this remote setup, the sheer distances involved meant that a different approach was required.

The solution consisted of an NDI plug-in developed by NewTek and integrated into Premiere. This plug-in transmitted video signals from Amsterdam to London via the network tunnel, before making them available for review on the editor's monitor. The plug-in generated an NDI signal that was transmitted across the network to England, where decoders from Kiloview received the NDI data streams and converted them into classic video signals.

EURO 2020: Mobile ENG Teams

Technical Site IBC Amsterdam

Data Hub

Equipment Per ENG team

MacBook Pro & External Storage

Team 1
Team 2
Team 3
Team 4
Team 5

Data transfer options:
1. WLAN transfer via **aspera** an IBM® company
2. Local injection points of the EBU
3. **AVIWEST** Pro380 Transmitter

EVS Server

AVIWEST StreamHub

> 40 workstations

Software: Pr Ae Au

The challenge: supporting ENG teams with reporting duties

Live and mobile reporting during the tournament needed to cover the 11 stadiums, numerous training grounds, the host cities and countries, and the supporting sponsors.

MoovIT packed approximately 60 backpack kits to equip the UEFA ENG teams in each broadcast nation with the necessary technology. Each team – consisting of editors, camera operators and media managers – received a backpack containing a MacBook Pro with peripherals, storage media, power adapter kits, hard drives and more.

Premiere Pro and Helmut were pre-installed on all computers, ensuring reporting teams had all the software they needed. This allowed them to produce rough cuts or edits which could then be transferred to the IBC with central metadata profiles and any additional descriptive information.

There were three transfer methods to choose from:

1. Using Aspera as a browser plug-in;
2. Using an EBU box that was available as a transfer system in the stadiums and training grounds and connected to the server in Amsterdam;
3. Mobile transfer via Aviwest transmitters – compact, practical units with 8 LTE modems to transfer video over mobile data networks.

This ensured the maximum possible flexibility for file transfers – no matter which environment and conditions the reporters were working in.

Project partners

Adobe: Premiere Pro as the central editing program
Apple: MacBook Pro
Aviwest: Mobile transmission systems for mobile data, also in combination with WLAN and stationary network
EVS: Central storage, IPDirector database for video content, automation with Xsquare for data organisation
HP: Editing workstations and Helmut render servers
IMG: Production service provider, acting on behalf of the host broadcaster
NewTek: NDI plug-in and Kiloview for converting data into video signals within the remote workflow
Red Giant: Plug-ins for 70 editors for adjusting colours, filters, transitions, font generators, etc.
Synology: Two storage systems for archiving and production
Teradici: Signal transmission for remote production
Wacom: Graphic Tablets

The challenge: mobile press conferences

Teams and squads face the media on the day before each of their games to discuss the latest hot topics and their pre-match preparations. Typically, these press conferences take place at fixed locations close to the stadiums, with many journalists in attendance. However, with COVID-19 restrictions in force, this concept was not viable in many countries. This created a need for a flexible, professional mobile solution for the organisation of press conferences.

The planning team found their answer in collaboration with Aviwest. Using the Aviwest Pro 380, video signals were encoded in H265 10-bit and transferred to the IBC via mobile and/or fixed-line internet connections. The system was able to use stationary network cables, WLAN or mobile 4G data simultaneously and bundle the bandwidths for the transmission of video feeds. Live signals would arrive on the receiving server at the IBC, ready for further processing.

The entire setup was operated by UEFA, supported by Aviwest, and planned, evaluated and integrated by the MoovIT team.

The challenge: automated green screen

A popular part of football match coverage is to introduce the players, accompanied by up-to-date images and information, using green-screen technology.

During EURO 2020, MoovIT's software developers unveiled a system that can automatically remove video backgrounds – developed with the integration of the Unscreen engine (Unscreen.com). Raw material was stored in After Effects templates at the IBC and transferred via API to the Unscreen engine.

The AI-based engine then analysed the footage to determine where a person was situated within the image content (instead of generating a pixel-based mask, as was previously common practice), before extracting the person from the image based on the calculated data. The result would then be integrated back into the template project, where the image content could be scaled and positioned before being sent for further processing.

The challenge: review and approval

When reviewing the content of clips, the editors in London communicated largely automatically using MoovIT's RevApp tool in the MoovIT cloud. Since RevApp was fully integrated into the post-production infrastructure via Helmut4, clips could be assigned to the relevant editors for review directly from the Premiere timeline. Each editor was notified via a link and could respond regardless of their location and platform. The exisiting standard internet infrastructure was fully sufficient for this task.

MoovIT - a key player

MoovIT's team played a central role in the planning, evaluation and integration of selected workflows on behalf of UEFA. As a result, approximately 6,000 clips containing around 17TB of data were exported from Premiere. This equates to around 180 hours of relevant video content that was generated during the four-week tournament.

By combining standardised software management tools with solutions that could be flexibly tailored to the needs of the situation, MoovIT's software development specialists managed to create numerous innovations in an extremely short space of time. Once again, these innovations can provide the foundation for future-ready workflows – and not just in the field of sports coverage.