Remote workplace technology in sports video production

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The idea and development of remote workplace technology began quite a long time ago. For optimal locations of the video referee workplace and the server, a proprietary system for a remote workplace was developed. It included a Full HD referee monitor with a remote console connected to a Linux-driven box. The server and remote workplace were connected using standard IP technology via gigabit LAN. When sports leagues wanted to have a centralised location capable of remotely serving sports arenas, this solution had to be modernised.

First of all, the DCT-based i-frame codec was replaced by H.264 compression, significantly reducing video data flow, which allowed for painless switching from LAN to internet. It also defined the criteria for comfortable operation of the system – ping should not exceed 200 milliseconds.

In this case the video referee does not feel the difference between working remotely or on site. (The 300 milliseconds ping is the maximum value for comfortable work). In order to meet the requirements of football VAR systems, the next step in the development of the technology was providing the signal for two monitors in the command centre from the server.

In fact, from this moment on, the technology has become fully capable of setting up a remote replay operator workplace for sports broadcasts. A Linux-driven box, which is the basis of a remote workplace, two monitors, a keyboard, a replay remote console and a high-speed internet with acceptable ping are all you need now to enable the replay operator to work from any place.

The work is possible even if ping is high enough. In this case it is recommended to do replays using GPIO interfaces.

How does it benefit the user?

During the pandemic, broadcasting companies are able to continue working while reducing the number of staff present in the studio, OB van or at the broadcast site. It also reduces the possibility of infecting personnel or those people staff come into contact with on the way to the workplace. The only requirement at the moment is to provide a fast internet connection with minimal ping from the arena to the operator's location.

Another benefit is avoiding the usually limited space in OB vans. Sometimes it is just impossible to provide two large monitors for each replay operator. In the case of remote replay production, it is easy to place two monitors of any size at the operator's location, while the operator works in comfortable conditions.

With this set up, the same replay functions remain available for broadcasters as with all members of the creative team in person, however the requirements for remote work are observed, there is no need to come to the studio or to the site, travel expenses are reduced.

Does this technology have a future?

This technology is not just a temporary solution while there are limitations; it will not lose its relevance after the pandemic. The idea of sending employees to remote work to reduce traffic volume, reduce costs associated with flights and hotel accommodation, rental of large OB vans, office maintenance, payment for business trips for staff is not new.

It is also worth understanding that remote replay production provides the possibility of using the same operator on the same day on two or more different events taking place in different parts of the world.

The pandemic unexpectedly contributed to making a huge step forward in remote workflow and creating the necessary infrastructure in various industries.

Switching to remote replay production allows making broadcasting and video-refereeing more cost-effective without sacrificing quality and operational speed.