

World Championship Hockey games analyzed with Axis 4K cameras.

Czech hockey team uses remote monitoring with 4K Ultra HD resolution for unbeatable game analysis.



Organization:
Czech hockey team at
2015 World Championship

Location:
Czech Republic

Industry segment:
Stadiums/Venues

Application:
Remote monitoring, video
analysis of play

Axis partner:
Amden s.r.o.

Mission

Success in professional sports is increasingly conditioned on a scientific approach. Representatives of the Czech Hockey Team therefore sought ways to improve the quality of hockey match analysis. Statistical data about goals, fouls, face-offs or game stoppages had previously only been recorded manually in conjunction with the available footage from television cameras. The 2015 Hockey World Championship in Prague and Ostrava was therefore the perfect opportunity to trial new IP video technology.

Solution

Amden, in cooperation with the Czech Hockey Team, installed a special camera system in Prague's O2 Arena, which used 2 AXIS P1428 Network Cameras with 4K Ultra HD resolution. The streams from both cameras were merged by software into a single panoramic video, which provided a complete overview and details of each moment in the match. Several other Axis cameras were installed in order to supply data for automatic game analysis via Amden software.

Result

The video recording that was created by combining two streams from the AXIS P1428 Network Camera provided unbeatable study material for the team's video coaches. The panoramic video from the two 4K Ultra HD cameras made it instantaneously possible to access and view detail, the moving puck and a complete overview of the situation on the ice. The video analysis software also managed to accurately process statistical data about goals, game stoppages, face-offs and fouls with the use of other Axis cameras. "The output from the camera system, which we saw and utilized at the 2015 World Championship, convinced me that it was exactly what we needed and that IP video with high definition is the right choice for better quality game analysis," said national team video trainer Jan Procházka. The successful test proved that future fully automatic analysis of the game could be based on 4K Ultra HD cameras.

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Video analysis is worth gold in sport

In order to achieve success in the increasingly tougher environment of professional sport, it is necessary to determine the exact causes of success and failure, and they are often only visible during detailed game analysis with the help of video recordings and precise statistical data. Television cameras provide moving footage for viewers, but they are often not enough for game analysis by a video coach because footage of the entire playing surface may be missing at important moments. In addition, statistical data about the course of the game must be recorded manually and are incomplete. Therefore, the first fully automatic solutions for analysing sport matches, using IP video, have begun emerging worldwide. What benefits do such solutions bring? First of all, they provide more accurate information about the team's training. It is no secret that betting offices are also interested in objective evaluation of game developments, and online analysis can enable them to adjust betting rates continuously. Finally, video obtained from IP cameras can expand the offer of television station broadcasting, for example, through internet streaming. The 2015 Ice Hockey World Championship confirmed this increasing demand for quality video

A puck is not a ball – hockey waited for 4K resolution

Ice hockey is a huge challenge when it comes to video analysis. Unlike basketballs and footballs, a hockey puck is very small and quick, and cameras must therefore have high resolution. Amden has tackled this challenge and used two AXIS P1428 Network Cameras with 4K Ultra HD resolution to create panoramic video. The resulting image has exceptional quality for analysis purposes because it not only instantaneously offers a complete overview, but also optional digital footage, and it is thereby no wonder that one third of the recording uses 40 GB of data.

The software-based analysis system, which ran parallel with the help of other Axis network cameras, meanwhile managed to accurately record fouls, stoppages, face-offs and goals, and therefore complemented manual records created by the video trainer. For Amden's developers, the test clearly demonstrated the direction of further development, which will probably lead to a platform based on IP cameras with 4K Ultra HD resolution.

Cheaper data storage and the sporting future of 4K video

The testing operation at the 2015 World Championship demonstrated the huge potential of 4K cameras along with other challenges. The price for storing data has seen a rapid decrease, and therefore it is obvious that working with large capacity video will increasingly become easier in the future. Another logical step that Amden is aiming for is the processing of panoramic video from multiple 4K cameras in real time rather than just recordings. Such footage will provide the video coach with an important overview of the situation already during the game, which until now has not been possible. Another function that Amden is currently testing with the aid of panoramic images obtained from 4K cameras is automatic monitoring of players' positions on the ice. The system will be able to provide complete statistical data about fouls, stoppages, face-offs and goals, as well as about the team's strength, which cannot be obtained through human effort alone. So it appears that IP video with 4K Ultra HD resolution will play an increasingly important future role in Czech professional hockey.



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