

MODERN TECHNOLOGIES IN SPORTS GAMES

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The paper examines in detail the impact of technology on sports. It also shows how many different technologies are currently used in sports.

We live in the 21st century—the age of information technology. And of course, technology could not bypass sports. It seems to me that every person who loves sports has asked such questions: «Was it there a goal? », «Who came first? » or «Was it offside» and others. Technologies help answer these questions.

We will start with the most popular sport. In my opinion, it is football. Recently, the European Football Championship 2021 was held, where a lot of modern technologies were used. Let's take a look at a some of them. Video Assistant Referee, or abbreviated VAR, is one of the most useful technology in football. This is a video assistance system for referees, allowing them to make the right decisions in controversial moments of the match. How does it function? There are a lot of cameras installed on the football field, information from which enters a special room. A team of referees in a special room watches the events taking place on the field from the cameras and helps the chief referee in making decisions. Communication between them is carried out using an earphone and a microphone.

We can not also forget about goal-line technology, abbreviated GLT. The most popular goal-taking technologies are GoalRef and Hawk-Eye. They are arranged in different ways. The GoalRef system is based on the principle of electromagnetic induction: sensors that create a magnetic field are installed in the goal posts. When the ball crosses the goal line, the chip starts making a sound, and a special clock on the referee's hands transmits a signal about a goal scored. The second one is based on the image from a lot of cameras that are installed in the stadium and constantly reproduce everything that happens in the penalty area [1].

Now move from football to sports, where the main goal is to reach the finish line first. Here, the most useful technology is a photo finish. Photo finish is a system for determining the order of crossing the finish line by the participants of the competition, which gives an image that can be viewed repeatedly in the future.

Many people think that a photo finish and an ordinary photo are the same thing, but this is not the case. The difference between photo finish cameras and conventional cameras is that cameras use only one vertical row of pixels for shooting. That is, only the finish line gets into the camera's field of view, and the camera does not record the space around the finish line. Also important is the speed of fixing the finish lines, which reaches 20,000 lines per second! Such a high speed is necessary for high-speed sports, for example, in auto racing or motorsport. For athletics, cameras up to 6,000 lines per second are used. The final image of the photo finish is not a static image, but a dynamic series of finish lines, each part of which has its own timestamp. It is thanks to this feature that we are able to assign a very accurate result to each athlete [2].

Therefore, I considered the technologies used right during the competition, but in order to achieve a result, an athlete must train very hard and modern technologies help him. There are many different sensors and trackers that help monitor the athlete's condition during training. An example of the use of modern technologies in a football player's inventory is the Adidas miCoach Smart Ball. This ball helps in practicing the technique of strikes and power, in improving the accuracy of bends and gears. Sensors are installed inside the ball that determine all of the above parameters.

There are also technologies that help athletes train, for example, ski simulators such as SkyTechSport Sochi Simulator. This is a development that combined professional sports and video games. A ski simulator that uses GPS data and 3D virtual reality glasses accurately conveys the feeling of passing a real track.

There is also a large amount of technology for fans. For example, VR is a technology that allows you to immerse yourself in virtual reality while watching a game. This technology is available to fans who have the ability to control the camera, track the nuances of the game from a different angle.

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Now there are many different developments for various sports that will raise the quality of refereeing and enhance the perception of sports in the future.

In the paper, I considered the use of information technology in sports. Of course, in recent years, the informatization of society is gaining new scales every day. The most important thing is that today, with the use of the most modern information technologies, the training of professional athletes and qualified specialists does not cause difficulties.

References:

1. FIFA — [Electronic resource]. — Access mode: <https://www.fifa.com/technical/football-technology> — Date of access: 22.03.2022.
2. Speed Endurance — [Electronic resource]. — Access mode: <https://speedendurance.com/2016/09/18/understanding-how-a-photo-finish-camera-works/> — Date of access: 22.03.2022.