

Integrated Surveillance and Security System for Stadium

Atanasio Girardot Stadium – Medellín

Client

- Municipal Government of Medellín.

Challenges

- Disputes between the hooligans of both the local football teams, Independiente Medellín and Atlético Nacional, are an unfortunate tradition of the Atanasio Girardot Stadium. Sometimes, this fierce rivalry results in violence. This causes not only damage to the stadium, but also injuries to innocent match-goers.
- Manually checking the tens of thousands of people at the entrance of the stadium is not enough.
- Local authorities do not have the necessary tools to fight violence within the stadium.
- The stadium has a video surveillance system that is not sufficient to monitor all internal and external areas of the stadium.

Solution

- Fifty high-resolution cameras were installed at the stadium entrances, equipped with NEC Facial Recognition Technology, and 25 HD cameras to monitor viewers in the grandstands.
- NEC's NeoFace® Watch is the fastest and most accurate face recognition system on the market, able to identify millions of images per second, what allows the detection of trouble makers – already registered in a database – with high accuracy level.
- Using this highly reliable system, the employees of the arena are able to keep people with a history of violence out of the stadium.
- A total of 170 cameras were integrated to the control room located inside the stadium and operated by the Metropolitan Police, providing a safer, more secure and comfortable experience for visitors.

Results

- Parents, children and friends, men and women of all ages who wish to support their favorite teams may go to the stadium safely.
- People with a history of violence will be kept out of the stadium thanks to the high reliability of NEC's Facial Recognition System.
- The work quality of employees in the stadium has been greatly enhanced, improving their efficiency and increasing the speed of response to incidents.
- Now, Medellín can be proud of offering one of the most advanced monitoring and safety technologies in the world. Through the rollout of NEC's technology, the city and its leaders have just climbed another step in building a positive and innovative image.

Introduction

In the game against violence, Medellín has fared better

Safety has always been a critical theme for the city of Medellín. However, current data show that this scenario has been changing. Homicide, for instance, has reduced drastically. Results like this reflect the commitment of the Mayor of Medellín with the protection of the population. Today, Medellín is the city that invests most on security in Colombia.

Challenges

One of the most innovative projects is the "Safer Stadium"

As part of making further contributions to the city's quality of life, the Mayor of Medellín has overseen the establishment of the "Safer Stadium Project" at the Atanasio Girardot Stadium.

A sport with strong appeal among people of all ages, such as football, deserves to be appreciated with total peace of mind. The ball and players should be the center of attention. However, the rivalry between opposing supporters was getting out of control, endangering the safety of parents and children who were there to cheer for their favorite teams. At football matches, there were disputes between the hooligans of both the local teams: Independiente Medellín and Atlético Nacional. In some moments, it was necessary to allow the admittance of only one of the two groups of club supporters and fans at any one time.

Eng. Carlos Guarín, ICT Solution Manager of NEC Colombia, addresses the challenges: *"At full capacity, the stadium can seat up to 45,000 spectators. It is a great challenge to screen that many people going in and out of multiple exit and entry points. It was very important for us to provide an efficient and robust security solution for our client."*

Solution

Recognizing the risk situation before it happens

NEC provides an intelligent surveillance solution by Facial Recognition (NeoFace® Watch) to identify individuals fast and accurately against a database of known troublemakers. That way, it is possible to restrict their entrance at each gate for a safer operation.

To achieve this, it was necessary to integrate NEC's NeoFace® Watch



Results

The sporting spirit enters the field again in the stadium of Medellín

After the rollout of the system, thousands of people are checked immediately when they are admitted in the stadium and also while they remain there. Potential troublemakers are identified fast and accurately and will be deterred from entering the stadium preventing disturbance. Another crucial result is the significant improvement for the work efficiency of stadium employees.

And the results for society are also crucial

Finally, the population of Medellín was given back the majesty of its main stadium which has always been the stage of the most exciting football matches, in addition to other events. Safety, protection and peace of mind are part of the show, as well as the sport and entertainment are part of the quality of life of the citizens.

According to the Department of Public Safety, today, fans and club supporters can be accommodated at the Atanasio Girardot Stadium without violent incidents. Thanks to the use of the facial identification at the admission and grandstands, we can have a situational control, also with no need of barriers between the audience and the stage where the show develops. That has only been possible through the implementation of NEC's technology.

About the Stadium

The Atanasio Girardot Stadium is the third biggest stadium in Colombia with capacity of 45 thousand spectators. Major football matches between the Atlético Nacional and DIM, the local teams, have already been watched by thousands of residents of the city of Medellín.

The stadium will be in the history of the world football forever once it was the stage of the recent tribute to the victims of the Brazilian team Chapecoense. This ceremony gathered more than 100 thousand people inside and outside the sports arena, being one of the most impactful images of human solidarity in recent times.

into existing stadium infrastructure. In collaboration with the local company ROBOTEC, NEC developed the integration of 50 cameras with facial recognition at the stadium entrances, and these were added to 25 high resolution in the stands to reach 170 cameras in total connected to the control room operated By the Metropolitan Police.

Guaranteed strategy to provide the population with the "Safer Stadium"

NEC's technology integrates cameras located at the entrances of the stadium. These cameras capture the faces of people and the images are compared to a "black list". As soon as the Face Recognition System identifies a person of this list at the ratchet row, an SMS is sent to the employees of the stadium advising them to deter the troublemaker from entering the stadium.

The technology efficiency cycle is then complete, since the "black list" is also fed by data obtained by the police and other public authorities. That is, hundreds of people are analyzed by the monitoring system all the time and, when a disturbing or violent situation is identified, the cameras capture the faces of the involved individuals, increasing safety and also feeding the "black list" database.

The best and most advanced Face Recognition Technology to be used during great matches

NEC's Face Recognition is the fastest and most accurate face recognition system on the market. Proven by the U.S. government – NIST, the NEC's facial recognition technology won first place with a matching accuracy of 99.2%. There are several other face recognition solutions, however, none of them is able to join accuracy and speed as NEC, also in adverse conditions, such as moving images. For those situations, highly-advanced techniques are required, in order to capture accurate images, even when the object is moving fast, in poor lighting conditions, among other adversities. NEC's Facial Recognition is able to deal with all those situations and also offer a very reliable result.

Now, all this accuracy plays in the safety team at the main stadium of Medellín, as considerations of Mr. Chris de Silva, Vice President of NEC Europe:

"Face recognition is not a new technology. However, stadiums and public places need faster and more accurate face recognition than normally found in systems on the market today. NEC's NeoFace® Watch is the fastest and most accurate face recognition system on the market, able to handle millions of images per second with a very low miss rate."

The integration of NEC's technology with the stadium's existing infrastructure was a key element for a successful project, as mentioned by Eng. Carlos Guarín:

"The system was designed to use the stadium's existing infrastructure as far as possible. Currently, the stadium has 170 cameras. Of these, 50 are located at the entrances and 25 high resolution cameras are used for the grandstand. These cameras are connected to the control room operated by the Metropolitan Police."