



## SPARTA PRAGUE

### RELIES ON FUTURE-PROOF VIDEO SECURITY IN THE GENERALI ARENA

Sparta Prague is one of the oldest, most famous and most popular football clubs in the Czech Republic. The club has played its home games in the Generali Arena (formerly “Letná Stadium”) since 1917. In view of the Czech Football Association’s plans to implement stricter requirements for grand stand surveillance and in order to address criminal fan behaviour, in the summer of 2017 the club took the decision to evaluate a new video security solution. Besides outstanding performance, particular emphasis was also placed on the need for a system which would continue in use well into the future. The club finally found the solution it was looking for in the German video technology manufacturer Dallmeier and its “Panomera® multifocal sensor systems”, which are already in use in various stadiums all over the world.

#### Video surveillance of grand stands will become mandatory in Czech stadiums...

The Generali Arena has relied on analogue cameras to watch over the “Ultras” fan areas for quite some time. Unfortunately, the quality of the recordings from these cameras is not good enough to allow the unequivocal identification of individuals who engage in punishable behaviour – such as lighting Bengal lights or fighting. Furthermore, the Czech Football Association intends to make high-performance video surveillance systems for the grand stand areas a mandatory condition for issuing licences to all first and second division stadiums.



#### ...but how can stadium operators implement it efficiently and sustainably?

Accordingly, the challenge for the Generali Arena was to be able to capture all areas of the grand stands fully and at all times with video security technology. The basis for this was the minimum resolution density “pixels per metre (px/m)” specified in DIN EN 62676-4: With a value of 250 px/m or



more, for example, it may be assumed that a judge will admit the video recording as evidence in court in almost all cases. The combination of this minimum resolution density and a smooth depiction of events is thus normally sufficient to ensure incontrovertible evidence which is usable in court. But modern video analysis applications such as AI-based object classification, e.g., for people counting, also need a minimum level of image quality. For these reasons, in the summer of 2017 the managers at Sparta Prague decided to purchase a new video security system which would not become obsolete – with a resolution density of at least 250 px/m in all parts of the stadium and a frame rate of 30 images per second.

#### “Shootout” in direct sunlight – A dazzling success

In order to finalise their decision, the security managers of the Generali Arena invited two video technology manufacturers (one of which was Dallmeier) to take part in a “shootout” during a football match in the Generali Arena. Within just a few minutes, the patented Panomera® multifocal sensor system from Dallmeier convinced the managers with images of razor-sharp clarity and a high level of user friendliness.





The managers in charge of video surveillance in the Generali Arena recall: “Despite one Dallmeier Panomera® camera being deliberately aimed straight into the sun, we had no difficulty in using the video recordings for spectator identification and providing the police with video backups within a few minutes.”

Because in contrast to the usual combination solutions involving megapixel and PTZ cameras, Panomera® systems always capture everything that happens with the defined minimum resolution density and with a light level which is suitable for the respective image area. Besides this, they also enable high-resolution detail zooms – both live and in the recording, and by several operators simultaneously. This not only reduces the number of cameras needed, together with the associated infrastructure (masts, cables, etc.) to a minimum, it also ensures that stadium operators can track occurrences of interest conveniently, or reconstruct them in detail after the fact. In the context of the shootout, the competitor was unable to deliver comparable results under the same conditions.

### Just 17 Panomera® cameras for maximum grand stand security

In the course of several on-site assessments, Dallmeier’s stadium experts identified possible installation points for the cameras needed. In a virtual 3D model of the Generali Arena, the Dallmeier planning team then placed the cameras so that they completely captured all areas of the grand stands and in the required minimum resolution density. The Czech installation partner Made in PUBLICITY (MinP) also received training on the system at the Dallmeier company headquarters in Regensburg, Germany. At the same time, the MinP managers were able to assure themselves that the solution would function as planned, based on the proven procedures of the Dallmeier Factory Acceptance Test (FAT) Centre. Today, Sparta Prague is able to guarantee video surveillance of all the grand stands using in total just 15 Panomera® S8 Ultraline and two Panomera® S4 Ultraline cameras. These cameras capture everything that happens, in some cases with resolution density up to 320 px/m. Another 16 megapixel cameras of type DDF5400HDV-DN-IM deliver additional perspectives of events in and all around the stadium. The recorded video material is archived on 15 recording appliances of the IPS 10.000 model.

### A flexible, sustainable solution – also suitable for video analysis applications

The Dallmeier solution enables operators to work simultaneously at four workstations, and because of the open interfaces of the Dallmeier software, MinP was also able to integrate the existing analogue cameras of a third-party provider without difficulty. With these, Sparta Prague can now safeguard less

critical regions as well, such as the access paths or refreshments areas.

In addition, modern, AI-based video analysis applications are also possible with the solution. In keeping with the concept “Quality In, Quality Out”, the full-coverage minimum resolution density of the Dallmeier solution enables “crowd analyses” for example, for counting people or objects, or a range of “intrusion detection” systems, for protecting “sterile areas” for example, or providing accurate object classification on the perimeter, thereby reducing the number of false alarms to a minimum. The same applies for analysis applications which might be still in development: They too need input data of a certain minimum quality.

### Economic efficiency is everything

The managers at Generali Arena sum up: “When modernising the video security system at our stadium, it was important to us to find a solution which is capable of high performance and at the same time future-proof. With the Panomera® multifocal sensor systems from Dallmeier we have found exactly that. We are really very satisfied with the system and appreciate the professional, uncomplicated project management.”

