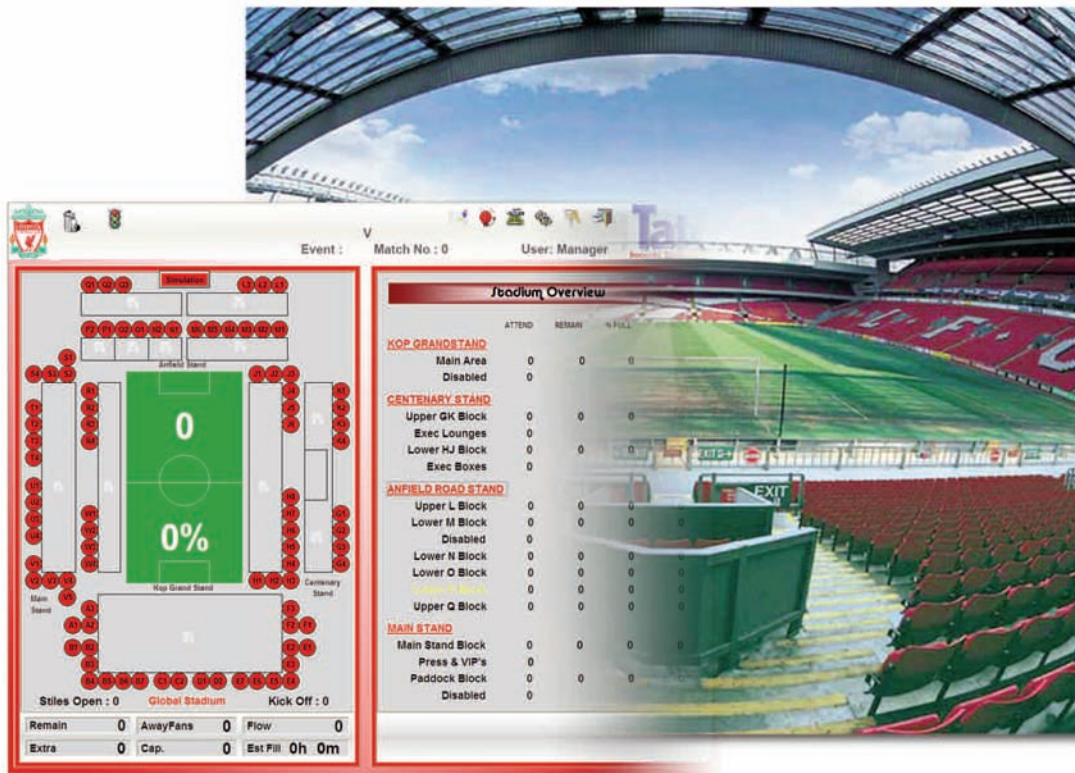


InduSoft Scores Big in British Football

Tate Security Uses InduSoft HMI to Keep an Eye on the Ball



The primary screen displays a global representation of the stadium along with overall traffic and seating data acquired from turnstiles as attendees enter the stadium.

- Using InduSoft, Tate was able to coordinate closed circuit TV cameras, gate locks in various locations, and turnstiles to assist with traffic flow and capacity regulations.
- Tate was able to coordinate crowd entry with flow rates approaching or sometimes exceeding 1,000 people per minute.
- InduSoft enabled Tate to break down and monitor seating into Home fan and Away fan seating and also program the time turnstiles open and close.

Background

Football, or soccer, as it's known in America, is the most popular sport on the planet, and fans around the world are renowned for their enthusiasm for the sport. With all of that enthusiasm, though, most fans don't consider the behind-the-scenes details that make their beloved matches possible. Among the hundreds of details that must be addressed are those associated with basic security—and that's the concern of a prominent English company: Tate Security Technology Limited.

The laws regulating stadium management are very strict because concern for public safety must be paramount. At sporting events the sheer volume of people means that crowd control and environmental safety are every bit as important as access and concessions.

Terrorist attacks, fire, unruly crowds, and overcrowding are just a few of the potential threats that can turn an otherwise

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enjoyable sporting event into an unpleasant or even dangerous ordeal. Tate Security understands this fact and they take crowd safety very seriously; they have to, because it's their business. For that reason, they are always seeking out new ways to improve safety, and it was during such a search that they discovered a way to create a superior, cost effective HMI/SCADA security solution using InduSoft Web Studio.

The Challenge

Tate Security manages approximately 24 stadia altogether, but two years ago they began employing InduSoft to assist with the task of managing, these complex facilities. A typical facility has multiple systems such as closed circuit TV cameras, gate release locks in various locations, and turnstile monitoring to assist with traffic flow and capacity regulations. All of these systems have to work together in order to ensure public safety and regulatory compliance that compose the Green Guide.

Obviously, the stadium cannot be monitored with any degree of meaningful detail at a macro level, so the stadium is divided into sectors. Each sector must be monitored and the management staff must ensure that each sector is monitored in a coordinated way. Information such as how many people are in a particular area is critical to the staff, who must also constantly remain alert to conditions in the stadium. In the event of a fire or an out-of-control crowd, action to protect all attendees must be taken immediately.

That's not the only concern, however. As fans arrive, the control room staff must understand how quickly the stadium is filling up. It's not unusual for entry rates to approach or even exceed 1,000 people per minute. Obviously, allowing enough time to fill the stand safely without exceeding capacity can be very complex for a crowd in numbers that dwarf the individuals trying to manage access.

Compounding that problem is the need to ensure that only ticketed attendees are allowed entrance. The stadium must be equipped with multiple access points, because in the event of an emergency, the stadium must be emptied quickly and safely. The problem with multiple access points is that the more access you provide, the more difficult it is to control those points in a coordinated way.

Tate also needed an upgrade path for clubs that employed turnstile and gate release safety systems previously installed by Tate Security over the past 20 years.

An alarm feature automatically notifies security officers if the gates are not properly disabled at the end of the game or in the event of an emergency.

The screenshot shows a software interface for monitoring stadium alarms. The main title is "Alarms" in a red banner. Below it, there are two sections: "Current" and "History", each containing a table of alarm events. The "Current" table has columns for Active Time, Message, Group, and Username. The "History" table has the same columns. Below the tables are "Print" buttons. At the bottom, there is a "Filters" section with buttons for various stadium blocks (A through T) and a "Door Alarms" button. At the very bottom, there is a row of buttons for different alarm types, including "Back", "ABEF", "GK", "L", "II", "P", "RW", "All", "CD", "HJ", "M", "O", "Q", and "STUV".

Active Time	Message	Group	Username
21/10/2005 14:29:37	TURNSTILE V5 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE W3 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE W2 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE W1 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE V4 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE V3 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE V2 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE W4 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE V1 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE U4 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE U3 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE U2 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE U1 CLOSED	Turnstiles	Manager

Active Time	Message	Group	Username
21/10/2005 14:29:37	TURNSTILE V5 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE W3 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE W2 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE W1 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE V4 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE V3 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE V2 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE W4 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE V1 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE U4 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE U3 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE U2 CLOSED	Turnstiles	Manager
21/10/2005 14:29:37	TURNSTILE U1 CLOSED	Turnstiles	Manager

Filters

All	Block D	Block H	Block M	Block Q	Block U	Door Alarms
Block A	Block E	Block J	Block N	Block R	Block V	
Block B	Block F	Block K	Block O	Block S	Block W	
Block C	Block G	Block L	Block P	Block T	Date	

Back

ABEF	GK	L	II	P	RW	All
CD	HJ	M	O	Q	STUV	

The Solution

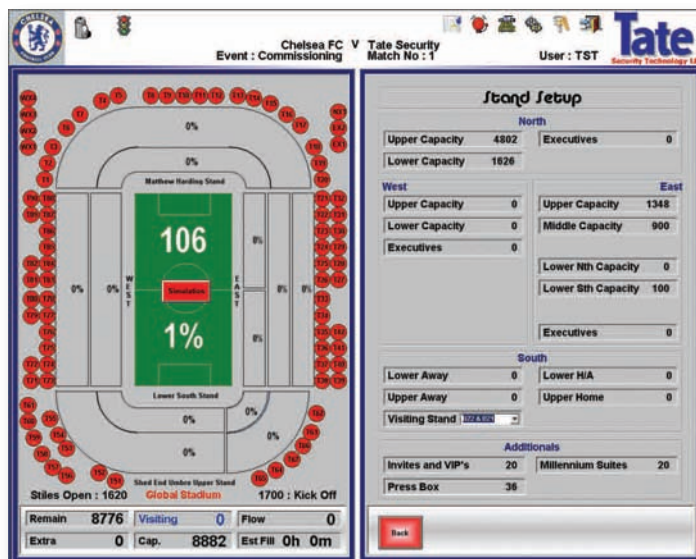
Given all these requirements, Tate Security turned to InduSoft to implement an HMI/SCADA system at the football stadia in Liverpool, Chelsea, and Sunderland. According to Richard Williams, Technical Director at Tate Security “What we really needed was to enhance our existing stadia software with a complete facilities management system—one that would help us visualize an entire stadium, and then allow us to selectively monitor individual sectors or even multiple sectors concurrently. InduSoft enabled that capability and more.”

The InduSoft offering, InduSoft Web Studio, is a Rapid Application Configuration Environment (RACE) that allowed them to quickly create the system they needed. The primary screen displays a global representation of the stadium along with overall traffic and seating data that is acquired from turnstiles as attendees enter the stadium.

The global view is continually updated to show flow rates for each section, the number of fans that have entered, and the total number of attendees as a percentage of capacity. The screen even breaks down seating into *Home* fan and *Away* fan seating. There’s also a control for programming the time turnstiles open and close.

As attendees enter and leave the stadium the system constantly updates the statistics and allow management staff to drill down and view details about each turnstile. With the click of a mouse, a safety officer can simultaneously monitor the flow rate and seating statistics for both the stadium at large and for specific turnstiles of interest.

All this data can then be compiled and stored as a report—an invaluable tool for managing future events. The system provides both *In Match* reports and *End of Match* reports. In the event of some incident, such as an unruly crowd, Tate has a complete record of incoming and outgoing traffic patterns and flow for each section. These reports can then be used to allay any concerns that might be raised about overcrowded seating.



The application has been extended to secure 24 different stadia including Liverpool, Chelsea, and Sunderland.



Another advantage provided by the system is the ability to understand and manage alarms. The alarm system notifies the staff about the status of turnstiles if they are not properly enabled or disabled. If, for example, a turnstile is not enabled at the preprogrammed time, an alarm is set and the safety officer can take the appropriate action.

Likewise, at the end of the match, all exit gates are opened simultaneously to empty the stadium as quickly as possible. Richard explained “If the gates are not properly disabled at the end of the game or in the event of an emergency, an alarm is triggered. As a final safety precaution, the gates are equipped with a panic feature that enables the gate to be opened if the enablement switch fails. If so, that event is also recorded and included in the match reports.”

Results

Tate Security was able to greatly improve their ability to monitor and manage the stadia in Liverpool, Sunderland, and Chelsea. “It isn’t that we couldn’t manage the stadia without InduSoft.” said Richard. “It’s really the case that we are able to do it better—much better. Without InduSoft, it takes significantly more effort to work cohesively as a team.”

In fact, Tate Security has experienced such great success with InduSoft they are considering expanding into a whole new market. Their expertise in managing stadia is a perfect match for securing detention centers as well, and they’re now considering InduSoft for that endeavor.

According to Williams, “With InduSoft we have access to products and services that really accelerate our success, not only at Liverpool, but in our larger business as well. Now we can better serve our current customers, and—because of our success there—we can realistically consider expanding to other types of customers as well.”

At the end of the day, Tate Security is doing more than just providing a service to stadium owners. They’re ensuring a quality experience for the owners’ patrons—a safe, enjoyable experience that will keep patrons coming back again and again. And in this high-tech entertainment age of high definition TV and high quality audio, that’s a ringing endorsement.



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