Panorama E2

Lille Metropole Stadium

Control center :
The stadium's nerve center during a match

AIMS

Single supervision for all applications.

Analysis of the stadium's power consumption.

BENEFITS

Powerful energy efficiency solution.

User comfort and ergonomics.

Centralized information, commands, and applications.

Designed for efficient operation and maintenance.

The Lille Metropole Stadium, inaugurated August 17 2012, chose Panorama E² to manage and control the stadium's entire FM/BMS system.

The Eiffage Group was responsible for the construction of the Lille Métropole Stadium as part of a public-private partnership (PPP) with the Metropolitan Lille Regional Municipality. ELISA - Eiffage Lille Stadium Aréna, the commercial arm of Eiffage - will operate the facility for 31 years.

Sports and cultural activities

The 50,000-seat Lille Métropole Stadium, in the shape of a translucent vessel, is a symbol of innovation. It is the first French stadium with a retractable roof, featuring two 7,200 ton rigid sections at a height of 31 meters that can be deployed in only 30 minutes. Furthermore, the northern half of the field is designed to raise and slide over the southern half, thus transforming the stadium into a theater in just 24 hours. The facility is used for major sports events, with priority going to LOSC (the local football club), the 2016 Euro football tournament, rugby matches, etc. Yet it also hosts private events such as concerts, shows, large-scale cultural events, etc. This stadium is unique in Europe.

The Eiffage Group built the Lille Metropole Stadium as part of a 31-year public-private partnership (PPP) with the Metropolitan Lille Regional Municipality.

CODRA

Mimic of the DCS
Southwest sector

All the Group's skills were applied to this project: Eiffage Construction for the building, Eiffage Metallic Structures for the roof design and the theater layout, and Eiffage Energy for technical and energy management.

Construction began in May 2009 and the stadium was inaugurated on August 17, 2012 when LOSC played Nancy in a 1-1 draw. It was a real victory for the development team responsible that helped Eiffage ensure the smooth operation of the stadium and the safety of the fans.

Choosing a SCADA solution

Eiffage Energie Nord selected the Panorama E² SCADA system to manage the stadium's Facilities Management (FM) and Building Management System (BMS).

At the start of the project, Eiffage organized a day for each SCADA vendor to make a technical presentation of their product. Eiffage then chose the product with the best technical score.

> " Eiffage chose the product with the best technical score "

The Panorama E² platform, the European market leader, proved to be a reliable, ergonomic, and easy-to-use solution. It is intuitive to use with an easy-to-learn graphic editor. Furthermore, Panorama E² greatly reduces development lead times — a key benefit from a financial standpoint, and crucial in order to meet the project's tight deadlines.

"Panorama's key advantage is its object-oriented development solution. Once you have created a component, you can easily model it and instantiate it directly. This greatly reduces the time required to develop the current application, as well as future applications," said Nathanaël MORELLE, FM-BMS Research Manager. "These are 'real' technical objects, unlike the other solutions which only provide graphics".The teams' professional experience enabled them to use many of the Panorama software tools.

Panorama E² manages the redundancy, and can natively handle 12 redundant servers simultaneously, distribute the workload, and anticipate failure scenarios. The stadium is currently managed with two redundant servers for the East and West sections of the building; they communicate using the BACnet protocol. This was another reason for choosing Panorama and integrating it in an OEM BACnet HVAC system provided for the stadium by Sauter.

While ease of use for the operations and mainte-

nance teams was the top priority, the comfort of developers was not forgotten. Panorama manages the import/export of automation data, saving considerable time in the development process and avoiding manual data entry errors.

Aside from the product features, Eiffage chose Codra for the quality of its team. The response from the technical support team and experts was decisive, as well as the accessibility and availability of the Codra staff.

The scenario

The initial specifications called for a separate SCADA system for each technical domain: heating, energy management, water and gas networks, lighting, wastewater, opening of gates, etc. In the end the development team chose a single Panorama supervision system applying the same logic for all users.

"At the end of the day, the hardest part of the project was deciding how to manage the stadium! " said Nathanaël MORELLE. "We had to put ourselves in the operator's position, go beyond technical issues and focus on processes". A scenario was set up to cover all possible hypotheses.

The modifiable and expandable application was progressively enhanced with new scenarios: "On inauguration day, August 17 2012, we had to quickly create a new button when it became apparent that we had to open 450 gates at the same time, 15 minutes before the end of the game" said Stéphane GAUTHEREAU, Project Manager at Eiffage Energie.

There have been no failures since the inauguration. Each scenario was simulated in order to limit possible errors, check the equipment and networks, and practice the procedures.

The SCADA solution manages the electricity, temperature control, fire safety, video surveillance, the IT network, the LV/HV supplies, etc. It displays the entire installation, device by device, grouped into six different zones. For instance, Elisa can control the high-risk areas via the "PCS" security workstation.

Supervision is accessible from any workstation: Maintenance, Control Center (the stadium's nerve center during a match), Energy, Administrative Services, etc. Furthermore, technicians use tablets to access the SCADA system when working on site.

Built to meet the high environmental standard

The Lille Metropole Stadium is compliant with the High Environmental Quality standard.

Contrary to conventional practices, the stadium receives its electricity from the traditional EDF power grid. In the event of a blackout, dynamic electrical converters and backup generators take over in under 20 seconds. They can provide the 2.8 MW required to operate the building. Priority is given to restoring power to the playing field, the control room and the press room—the latter offers 300 simultaneous network access points as well as a

The first French stadium with a retractable roof, comprising two 7,200 ton rigid sections, that open in just 30 minutes.

CÖDRA

Wiring closet :
Linking the controllers to all the technical equipment.

Reporting solution

A football match between PSG and Lille involves 2,000 active participants, 500 police officers, 300 stewards, 450 gates to monitor, and 30 maintenance staff.

Panorama IT was selected to provide information on the stadium's power consumption. The software continuously updates a database and analyses the stadium's cost for each workstation.

"The stadium's basic power requirements total 0.8 MW, but on game days we consume 2.2 MW of electricity. We turn on the lights, set up the catering facilities, prepare for the arrival of the press corps, and start heating the oil for the French fry machines ! " said Armel LOURIOUX, Director of the Lille Metropole Stadium project at Eiffage Energie. We have 50 refreshment stands, 350 projectors for lighting the playing field, 456 fan coil units (including 250 master units), 2,700 IT hotspots, two giant 60 sq. meter screens, a 70,000 W sound system with 1,000 loudspeakers, the front of the stadium featuring LED animations, etc. All these facilities require efficient energy management.

"The various data is captured and sent to a customer monitoring tool in order to optimize their consumption within the site, from their arrival until their departure. When coupled with the SCADA solution, which itself can recover traffic information, we can advise fans on the best time to leave so as to avoid traffic jams for example, and encourage them to stay in the stadium in order to regulate traffic and ensure safety", said Armel LOURIOUX.

That gives the fans something to cheer about!

wireless network.
The stadium is designed to recycle rainwater for the toilets. Over 40,000 liters of water are used every game day. Seventeen wastewater evacuation tanks are needed to drain off the water within 24 hours.
The stadium also features two wind turbines and 170 sq. meters of photovoltaic panels and wood in the roof.
Due to the project's magnitude, custom processing was required for managing energy, water, and waste; it called for a powerful energy efficiency solution such as Panorama IT, Codra's reporting solution.

From industrial SCADA to a global information system

Panorama E2

CODRA

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