ELIPSE E3 IN CONTROL OF THREE AIRPORTS IN BRAZIL: SANTOS DUMONT, CONGONHAS, AND BELÉM INTERNATIONAL

Platform by Elipse Software controls lighting and cooling systems, hydraulic network, and loading and unloading bridges at Santos Dumont. At Congonhas and Belém International, it monitors the lighting system

Published on 19/09/2023

Needs

Located in São Paulo, Congonhas is the second busiest airport in Brazil. Covering an area of 1.6 million square meters, its two landing tracks can handle up to 40/41 landing/take off operations per hour and serve 6,500 passengers/hour.

Based in the state of Pará, the Belém International Airport (Val-de-Cans) is the hub of the Brazilian North region, carrying more than 7.7 million passengers each year. It has one control tower, approach control, and two landing tracks (the longer one is 2,800 meters long).

Aircraft near Santos Dumont Airport, in Rio de Janeiro

Built on an area of 948,503 square meters, Santos Dumont, one of the main airports in Rio de Janeiro, serves over 8.5 million people every year. Located next to the city center, it provides an easy route to Rio de Janeiro's famous South side. It also works as Infraero's operations center's main office for accessing Elipse E3.

With the platform developed by Elipse Software, it is possible to control both remotely and in real time the lighting, cooling, and hydraulic systems at Santos Dumont, as well as the airport's loading and unloading bridges. It is also where the lighting systems at Congonhas and Val-de-Cans (Belém International Airport) are monitored. According to Ricardo Pereira, Infraero's Electronic Engineer, Elipse E3 was chosen "due to the platform's versatility and open protocol."

A single operations center at Santos Dumont Airport can control the three airports

Solution

With Elipse E3, Infraero is able to control the lighting systems at Santos Dumont, Congonhas, and Belém International airports. Via screens, operators can monitor switching on/off light spots at both the regular and the emergency lighting boards of the airports. In the figure below, it's possible to see green areas in the application, which represent the spots where the lights are on. This control can be issued from any device, including tablets with Elipse Mobile at Santos Dumont.
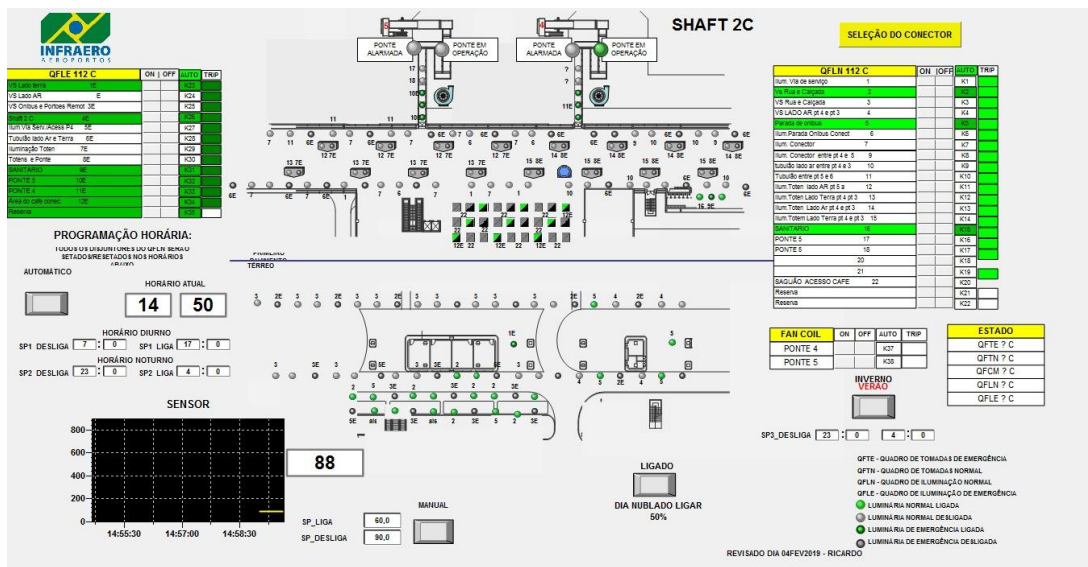
Lighting control

At Santos Dumont, in addition to the lighting system, the software by Elipse also monitors fan coils, which are important appliances for cooling large areas: their speed (rotations per minute), status (on/off, maintenance, out of order), and schedule (what time they should be turned on/off at different zones at the airport).
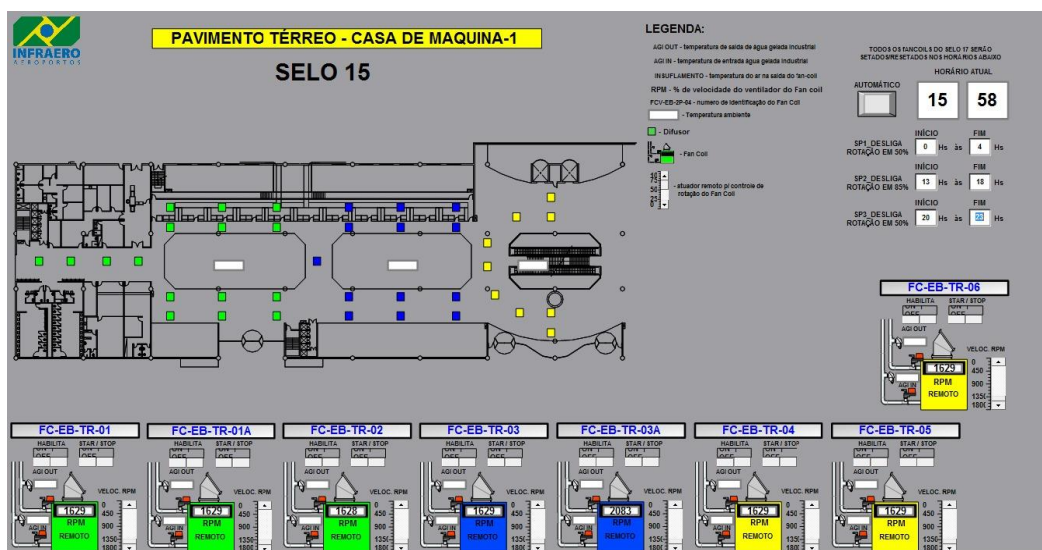
**Cooling system control at ground floor, engine room #1**

Last, but not least, the software also controls the hydraulic system at Santos Dumont Airport. From there, it's possible to monitor the water levels at the

reservoirs supplying water to the restrooms, firefighting systems, and other boarding and arrival areas at the airport. It also allows controlling when ferries will pump water to reservoirs.
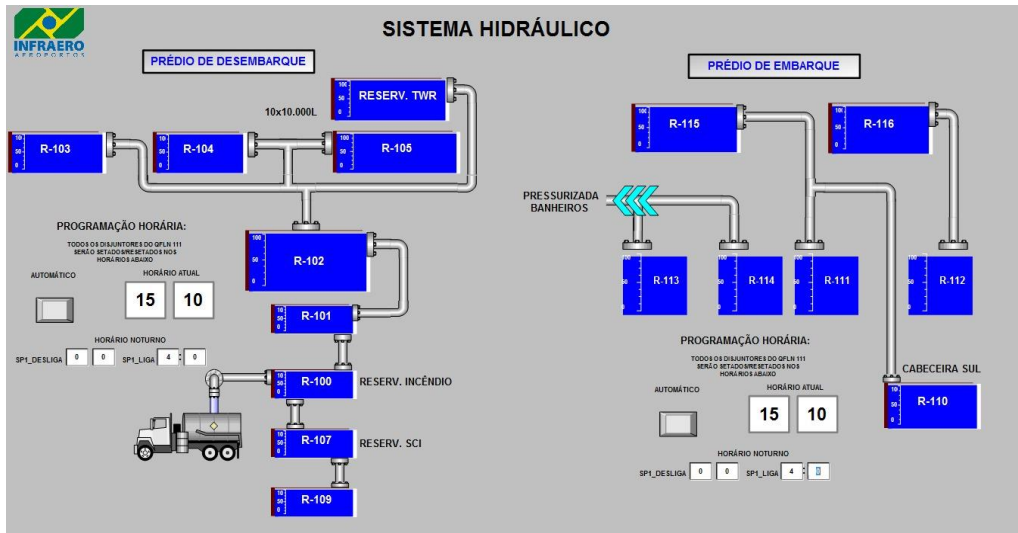
Hydraulic system control at boarding and arrival buildings

Elipse E3 allows monitoring the availability of loading and unloading bridges at Santos Dumont; an alarm sounds off if any issue with them is detected. It will also issue reports that account for how long each aircraft has used them, which is vital information to Infraero for billing purposes.
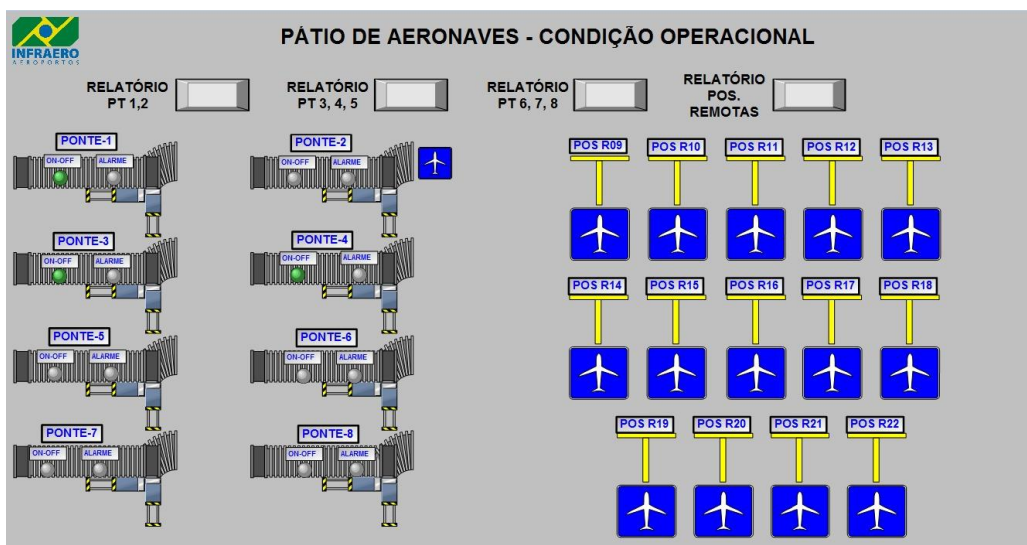
Loading and unloading bridges control

www.elipse.com.br

Benefits

Among the main benefits Elipse E3 has brought to Infraero's automation of Santos Dumont, Congonhas, and Val-de-Cans airports, we highlight the following:

- More energy is saved due to remote and real-time control measures in the three airports' lighting systems.

- Lighting at Santos Dumont airport is controlled via Elipse Mobile.

- More water is saved due to control measures in Santos Dumont's hydraulic system.

- Cooling is more cost-effective at Santos Dumont via fan coils control.

- Safer loading and unloading of passengers at Santos Dumont: the time taken by each aircraft on the loading and unloading bridges is briefed to Infraero, which can then use this information to bill air companies.

Datasheet

Client: Infraero

Solution provider: Infraero

Elipse products: Elipse E3, Elipse Server and Elipse Mobile

Platform: Windows Server 2016

Number of copies: 3

Number of I/O points: around 4,000

I/O drivers: Modbus and TCP