

## ELIPSE E3 ALLOWS SAAE TO CONTROL THE WATER SUPPLY SYSTEM IN MARECHAL CÂNDIDO RONDON (SOUTH OF BRAZIL) WITH MORE AGILITY

SAAE (which stands for Serviço Autônomo de Água e Esgoto, or WWAS - Water and Wastewater Autonomous Service) uses the Elipse platform to monitor, remotely and in real time, the municipality's system; previously, this action could only be performed in person, in its operational units, daily for distribution and monthly for water production

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### Needs

SAAE (Serviço Autônomo de Água e Esgoto, or WWAS - Water and Wastewater Autonomous Service) is the local authority responsible for executing and exploring water and wastewater services in Marechal Cândido Rondon, a municipality in the countryside of Paraná, in the south of Brazil. In order to automate the local water supply system, SAAE has decided to adopt Elipse E3.



Figure 1. SAAE (Serviço Autônomo de Água e Esgoto, or WWAS - Water and Wastewater Autonomous Service)

The company has adopted the solution developed by Eclipse Software mainly due to how easily it can be adjusted, improved, and expanded upon. The platform was implemented in SAAE by Alfacom Automação Industrial.



Figure 2. System's initial screen

## Solution

Remote stations and Eclipse E3 communicate via Modbus protocol, through radio networks operating on the 900MHz range. These radio networks are illustrated on a screen, where each station's communication time with the software can be monitored; the screen also allows editing communication parameters such as read and write retries.



Figure 3. Remote stations' communication time with Elipse E3

Elipse E3 allows SAAE to monitor and execute commands for the 31 units of the municipality's water supply system. To do so, the software provides each unit with its own screen, through which it's possible to supervise level, flow, pressure, voltage, and current that are measured and recorded by the PLCs in the telemetry panels installed in each remote station.



Figure 4. Control screen in one of the wastewater lifting units

On the same Elipse E3 screen, it's possible to follow the water pumps' operational conditions: malfunctioning, under maintenance, or active. Additionally, it's also possible to track or reset the time period during which the water pumps will work, and to view and edit standard settings for voltage, current, and pressure.



Figure 5. Water pumps' settings screen

This control also applies to water level settings in the reservoir, which can be adjusted to automatically turn water pumps on or off as needed, in order to ensure supply and reduce waste. For rational use of water and power, Elipse E3 enables selecting which stations will work in peak hours according to demand.

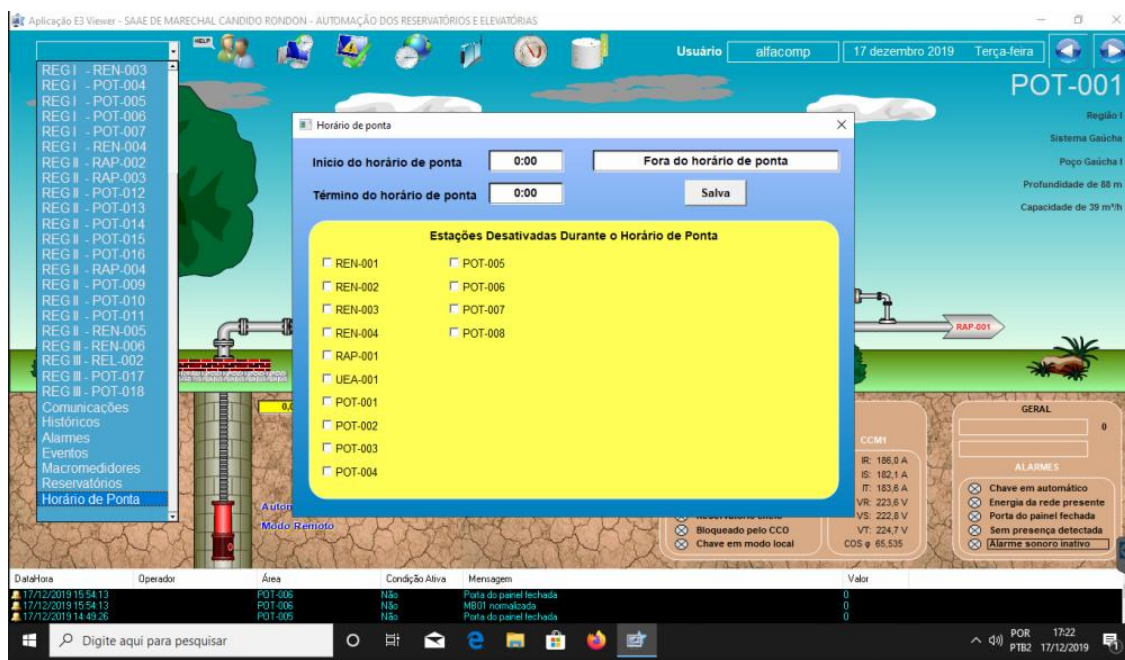


Figure 6. Screen for selecting which stations will work during peak hours

The software displays the overall and distinct water levels and volume, thus providing access to adjustable standard water settings in each reservoir. Also monitored are the flow levels measured in the water pumps, both overall and hourly, as well as the automation system's scan time for each unit.

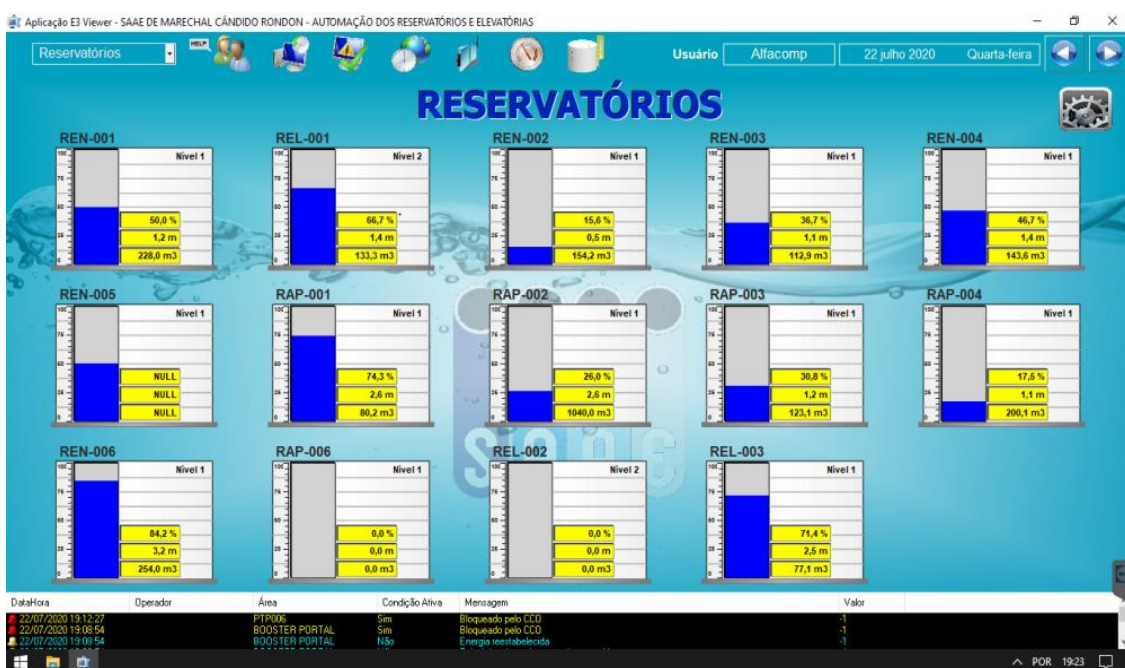


Figure 7. Water level control in the reservoirs

The Eclipse solution can also issue reports for the event, histories, and alarms at user-defined periods. For alarms, specifically, if any pre-set value is not being respected, the software will warn operators via visual and sound signals.

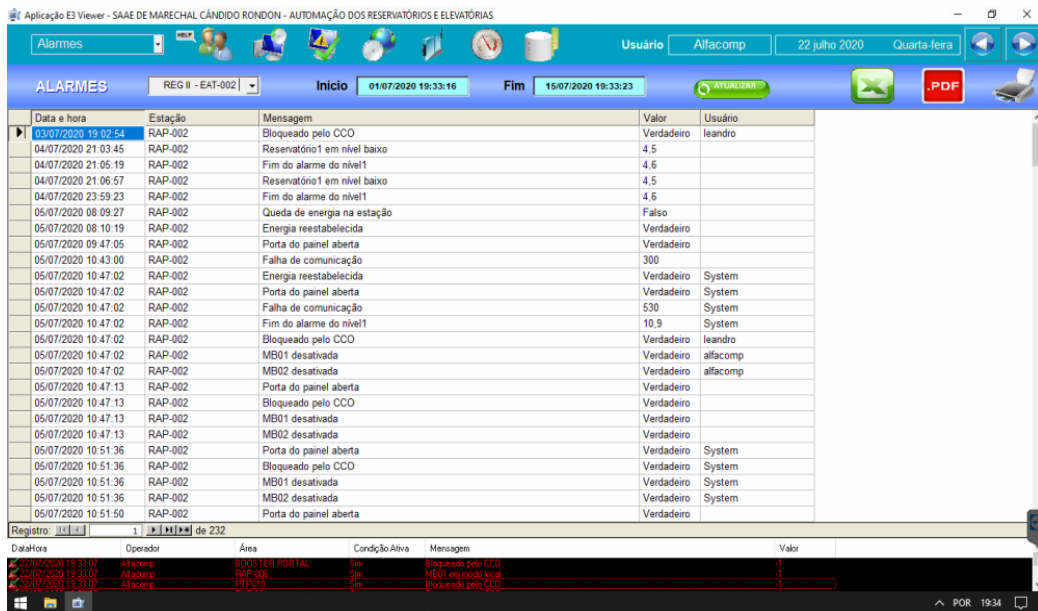


Figure 8. Alarm control

Finally, the software allows the units' performance analysis to be visualized as charts. Both reports and charts can be exported to PDF or Excel, and are valuable tools for auditing and control.

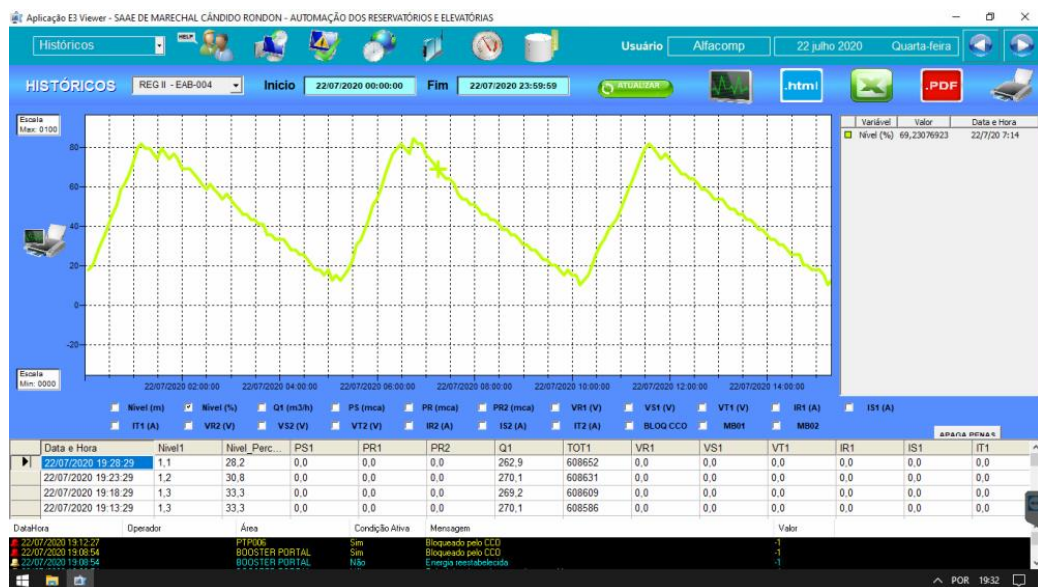


Figure 9. Historic charts analysis

## Benefits

Eclipse E3 allows SAAE to monitor, in real time, all 31 water supply units in Marechal Cândido Rondon. Then, the operator is briefed by the software of any inconsistencies in the system, such as water leakages, which enables them to act more quickly to solve the issue.

According to SAAE's Operation's Control Center, before Eclipse E3, they had to wait for the community to report directly to them whenever their houses had suffered any water supply occurrences. This is no longer the case: now, the operators at SAAE can act more readily to detect any failures and maintain the system via Eclipse's platform.

Check out the list below for other important benefits obtained by SAAE with Eclipse E3 in this application:

- **Improved monitoring:** follows the water distribution system in real time.
- **Greater accuracy:** follow-up historic charts that record alarms and events at every minute.
- **Faster spotting of failures and inconsistencies:** less water is wasted via greater control of reservoir levels, fewer power outages, fewer failures at water pumps groups, and fewer issues in pumping pressure and outflow.
- **Accelerated processes:** remote operation commands; in-site maintenance is required only sporadically, for specific adjustments.
- **Failure alarms:** checking system issues is faster, easier.
- **Customized programming:** shutdown for recharging supply sources can be programmed as needed. This can be done to all systems, thus making it easier to operate stations at peak energy hours.
- **Fewer costs:** keep down costs with water, power, and fuel via remote control; teams aren't required to perform system maintenance in site as frequently.

## Datasheet

**Client:** SAAE (Serviço Autônomo de Água e Esgoto)

**Systems integrator:** Alfacom Automação Industrial Ltda.

**Eclipse product used:** Eclipse E3

**Platform:** Windows 10 PRO

**Number of copies:** 4 (1 E3 Server + 1 E3 Viewer Control + 1 E3 Viewer Only + 1 E3 Studio)

**Number of I/O points:** 1500

**I/O driver:** MODBUS RTU