



## OVERVIEW

CEMENTOS ARGOS S.A., is a leading multinational concrete and cement manufacturer and is listed as the most sustainable cement company in the world according to the Dow Jones sustainability index. They produce 23 million tons of cement annually and have 13 cement plants across North America. Cementos Argos is focused on innovation and how their infrastructure impacts the environment, and they are extremely conscious of the choices they make for improving their systems.

### Challenge

- Needed a cost-effective solution to offload and protect assets.
- Multiple, hard to reach assets with limited connectivity options.

### Solution

- Intelligent wireless connectivity with I/O control applications

### Results

- Nearly a 75% cost savings
- The new system simplifies data control and connectivity and delivers real-time operations data for improved efficiency.

## CEMENTOS ARGOS CASE STUDY

### Monitor and Control Critical Infrastructure in Real-Time

#### Cementos Argos Deploys Intelligent Network for Flexibility and Efficiency

The Cementos Argos premier cement plant in Río Claro searched for an affordable and reliable solution to offload and protect a remote cement mill from electrical overload. Working with FreeWave and an authorized local integrator - P&I SERVICES S.A.S. – Cementos Argos, S.A. not only found a reliable solution, but also one that saved them nearly 75% of the cost of alternative solutions.

#### Remote locations burden network equipment

Like many cement and concrete manufacturers the heavy burden on equipment takes a toll on generators and power equipment, alike. The remote locations of the Argos mills, make it challenging to monitor and protect these valuable cement mill main motors. In 2021, Cementos Argos turned to P&I Services to help identify a solution to stop and/or to block the operation of energy loads in the remote location where the cement mills main motors is situated to assure that this remote location can process only when the plant's electrical system is connected to the external network. Otherwise, it is possible to allow such loads in "island mode" and under such conditions could overload the mill main motor generator. The overload would cause detrimental damage to not only the mill, but also the overall Argos business – with costly delays and potential repairs.

The Bocatoma Pumping Station is the main source that supplies crude water for the boiler of the Power Plant. The pumping station is controlled by a PLC linked with the control system of the Power Plant via optical fiber. The optical fiber link experienced recurrent problems that required manual operation of the pumping station. Of course, this cost the company time and money each time it occurred.

They also were concerned about the ability to add control functions without affecting the existing physical infrastructure. Lastly, budget was a critical concern.

### Control and Flexibility with Remote Connectivity

Wired solutions are extremely costly to install and maintain, especially at remote distances. Although the two locations are within the same plant there was no direct line of sight between the two even though the distance was nearly 1 km. The installed fiber connection was prone to malfunctions and the 2-3 km of fiber through the jungle proved too much of a challenge.

FreeWave and P&I Services made quick work of identifying a reliable, flexible, and affordable solution that fit the needs of the customer.

The system now includes an intelligent 900 MHz wireless radio network for the interconnection of control circuits with local computational processing capacity to provide flexibility and scalability to grow

as the system needs evolve. This, along with a FreeWave developed IO Control application now wirelessly and dynamically mirrors local digital and analog inputs to remote digital and analog outputs.

Now, when a button type switch (which is connected to a digital input) is pressed at the main power plant, the signal is immediately sent to a remote digital output to control a relay operating a kiln. And the kiln status is automatically mirrored back to the main power plant.

The universal IO Control application runs on the FreeWave ZumEdge™ platform. It does not need to be modified to adapt it to changes in the network topology and/or in the signals involved. The customer can also modify it to accommodate any changes to their IO control in the future.

### Reduced Costs and Increased Efficiency

This successful installation sets the foundation of future improvements in the communications and control systems of the plant.

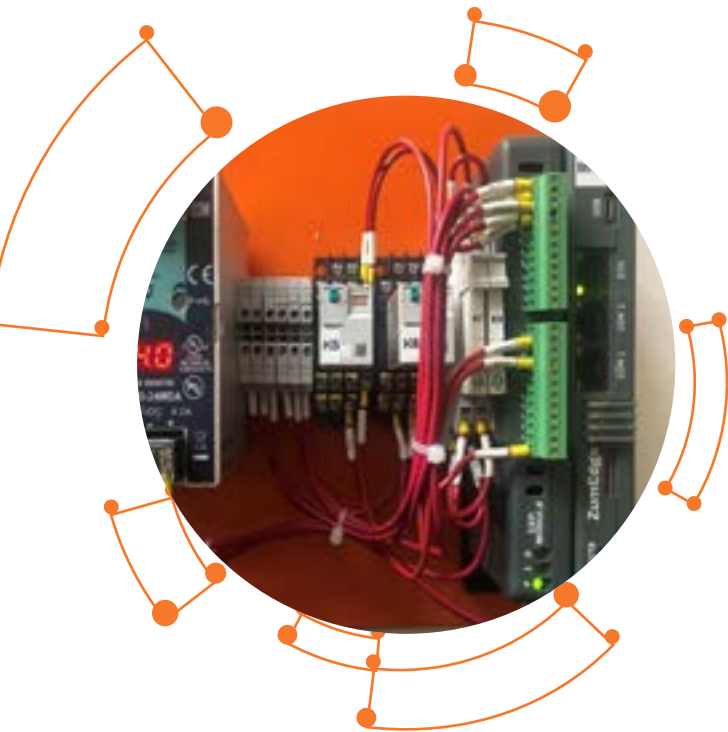
The customer now enjoys

- Reliable, real-time wireless communication over fiber with less downtime
- Reduced maintenance costs and more effective maintenance windows.
- Flexible open-source coding environment to enhance or add services via Edge application.

And, with the offload in place, the operations and maintenance teams at the plant are looking to deploy future Industry 4.0 or Industrial IOT solutions from FreeWave to help reduce downtime and increase productivity to other sites within the plant.

Whether you need a simple solution or a complex innovation, FreeWave has the capability and experience to deliver. We've created IoT solutions for thousands of deployments in many countries leveraging nearly three decades of learning.

Contact us today to allow us to solve your data connectivity and IO control problems.



**FREEWAVE**

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