

SUCCESS STORY

Saving energy intelligently

The energy crisis and its effects are omnipresent. Saving gas for a safe winter has become the new top priority in Europe. In this situation, the new Indabox from Teréga Solutions, which includes our Revolution Pi, is just what we need to facilitate energy saving initiatives.

Teréga Solutions, a subsidiary of the Teréga Group, a major player in gas infrastructure in France, was founded in 2021 with the ambition of making an even greater contribution to the energy transition.

Project Description

The task was to develop a solution based on a digital twin that would enable the major customers connected to the gas transmission network to access their consumption data in real time, control and adapt their processes in the context of the current crisis situation and thus directly support them in saving energy. The security and plannability of the processes should also be improved.

But how can a digital twin for industrial plants be created with a connection to the cloud without neglecting security aspects? To prevent cyber attacks, production networks must be closed in case of emergency. Is it possible at all to implement this requirement with data updating in real time?

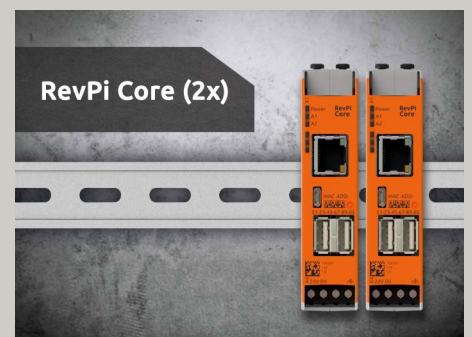
Project implementation

Teréga Solutions has developed and patented an electronic diode-based module that ensures one-way data transmission from the PLC to the cloud. This device is designed in such a way that there is no possibility of hacking industrial processes from the Internet. Together with two Revolution Pi modules and the digital platform solution IO-BASE, it forms the Indabox, which works as follows: One RevPi Core reads the data from the PLC and sends it via the electronic module to the second RevPi Core connected to the internet. Via API (protected by device authentication) or MQTT, the data is transmitted directly to the digital twin, the platform solution IO-BASE. Internet communication takes place via 4G. Via the serial Modbus interface, data processes can be read out locally and shared by customers. The Indabox transmits 1500 data records every 5 s.

Teréga chose Revolution Pi because of the following features: embedded Linux, 24 VDC power supply, its industrial suitability and small size. The possibility of freely assigning two of the



Modules used



REVOLUTION PI

Web revolutionpi.com
E-mail info@kunbus.com



[linkedin.com/showcase/revolution-pi](https://www.linkedin.com/showcase/revolution-pi)

three status LEDs on the front panel for diagnostic support was also a plus. Teréga's boxes are now installed at more than half of the delivery stations and will soon be made available to all industrial customers and large consumers connected to the grid. Making this data available enables companies to correlate consumption indicators with the operating parameters of their industrial processes and adjust them in advance or in real time to achieve greater savings. In concrete terms, this means that energy consumption can be controlled more efficiently. Teréga has designed the Indaboxes in such a way that they can also be easily installed in existing plants,

making them a particularly practical and economical solution.

About Teréga

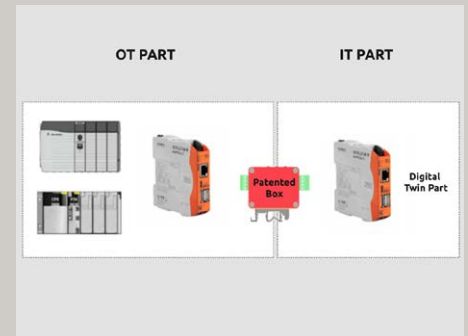
Teréga Solutions develops practical solutions for energy efficiency and the reduction of CO2 emissions. Projects concerning hydrogen, biomethane, NGV (Natural Gas Vehicle) and bioNGV, waste recycling, climate-friendly produced hydrogen, digitalisation, etc. are supported from the initial outline to their operational launch.

Further information on Teréga Solutions is available via:

<https://www.terega-solutions.fr>

or via email to the responsible Business Developer Jean CAZORLA:

jean.cazorla@terega.fr.



REVOLUTION PI

Web revolutionpi.com
E-mail info@kunbus.com



[linkedin.com/showcase/revolution-pi](https://www.linkedin.com/showcase/revolution-pi)