CASE STUDY: WINDMILLS

Solution: Embedded solutions
Country: Argentina
Company: IMPSA Wind and ICSA Automation
Summary: Frequency converters which previously only could communicate via the Modbus protocol are now able to communicate with Profinet and other networks as well.

The effects

- Seamless communication between Modbus and Profinet protocols.
- One development project enables connectivity to all major networks.
- Minimum costs spent on network communication issues.

"What is remarkable about the Anybus module is the product quality, availability, good information and the technical support which responds in a quick and effective way."

Cristian Clavero
Research and Development Engineer at ICSA.

IMPSA windmills integrate HMS Anybus CompactCom modules

ICSA Automation is an automation system specialist in Argentina. The company interfaced its frequency converters with Profinet to fulfill the needs of one of its customers, IMPSA. Anybus CompactCom was selected because it was the only communication module offering the necessary speed rate.

ICSA's frequency converters used to communicate with PLCs via ModBus RTU and Modbus TCP. IMPSA, an ICSA customer wanted to use ICSA's frequency converters in a network composed by Profinet I/O controlled units. It was up to ICSA to provide a static frequency converter, whose function is to transform the power from the converter, at variable frequency and voltage, into controlled frequency and voltage power to be injected into the electric supply distribution network.

IMPSA is a leader in the renewable energy market. Today, IMPSA holds a portfolio of projects for power generation from renewable resources which exceed 21,700 MW of generating capacity and more than US$ 8,200 million.

IMPSA's value-adding technology has provided the company with a brilliant trajectory which is backed by hundreds of projects installed throughout the world. IMPSA offers a worldwide business network with offices in: Argentina, Brazil, Chile, Ecuador, Colombia, Venezuela, the USA, Malaysia, China, Vietnam and India.

The company has developed an interesting mix of products which are framed into the following business units: IMPSA Hydro, IMPSA Wind and IMPSA Energy. IMPSA, through its business unit IMPSA Wind, builds windmills for electric power generation. IMPSA Wind is the business unit devoted to the design, production and commercialization of high-powered wind generation equipment. IMPSA Wind has the technological capacity to perform basic studies for setting up a wind farm and to evaluate its feasibility from technical, environmental and economical viewpoints.

Unique high speed communication modules

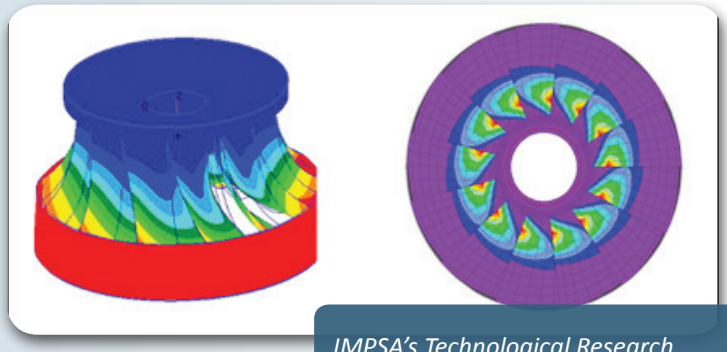
IMPSA Wind implements drivers, actuators and other components on its windmills, which are connected and controlled via Phoenix Contact PLCs. Such PLCs communicate with the rest of the equipment by means of a Profinet network.

Since ICSA's converters could only be connected and controlled using Modbus, the company needed to provide its equipment with Profinet communication capabilities. Thus, it carried out a meticulous search. Besides fulfilling the specific needs of the two companies, ICSA and IMPSA, the solution had to be cost effective.

"We began by testing several modules from other brands, and also other HMS models (the Anybus-IC Chip series). But none of them fulfilled the requirements regarding variable updating speeds" says Cristian Clavero, Research and Development engineer at ICSA.

Eventually, the solution was the acquisition of 12 Anybus CompactCom modules from HMS. "The HMS's wholesaler in Argentina, Branyc, specified a solution offering fast variable updating speed", Clavero explains.

Given the good results, the HMS solution, which was originally meant to answer to a specific customer request, has become a core part of the solutions marketed by ICSA. The Andean company has decided to build Profinet communication into all its equipment which is presently not equipped with it.



IMPSA's Technological Research Center (CIT), known worldwide as one of the most important in its field, is dedicated to research and technological development which is the basis for IMPSA Hydro's prestige. For the hydraulic design itself, IMPSA makes use of its own calculation programs, having recourse to well-known licenses such as the CFX-TASC flow package for fluid-dynamic analysis.

With the Anybus CC modules from HMS, ICSA is now able to place its converters in a Profinet network.

"We chose Anybus CompactCom above others for its fast communication speed, along with its ability to be implemented in a proprietary motherboard in quite a simple manner. In general, what is remarkable about the Anybus module is the product quality, availability, good information and the technical support which responds in a quick and effective way" concludes Clavero with satisfaction.

Learn more on www.anybus.com or www.icsaautomation.com

Anybus CompactCom

Anybus CompactCom is a range of embedded communication modules allowing communication with a specific industrial network. The modules are interchangeable which means that users can easily connect to any desired network. Anybus CompactCom works with all major fieldbus and Industrial Ethernet networks such as Profibus, DeviceNet, CC-Link, CANopen, Profinet, Ethernet/IP, EtherCAT and Modbus TCP.

Anybus CompactCom modules are used as communication interfaces in intelligent automation devices such as drives, HMIs, robots, inverters, instruments, and scales. By embedding Anybus CompactCom into a device, manufacturers get quicker time to market, decreased development costs by as much as 70%, and also the possibility to easily connect to another industrial network by simply switching Anybus module.