



# Advanced, Integrated Security for New Photovoltaic Power Plants

Comal Impianti selects Allied Telesis to provide advanced, integrated security solution.

## Customer

**Comal Impianti S.r.L.**  
www.comalgroup.com

Founded in 1989, Comal Impianti develop power plants for major international clients, including Tirreno Power, Ansaldo Energia, Alstom Power, ABB, and Mitsubishi.

Comal Impianti designs and assembles complex industrial plants, and performs maintenance of all machinery and equipment, including gas, steam and hydraulic turbines.



## Challenge

Photovoltaics is the process of converting sunlight directly into electricity, and is the most popular form of harnessing solar energy. Comal Impianti is a leader in this field, and was the natural choice for five new photovoltaic (PV) plants located in Montalto di Castro, in Italy.

Comal Impianti had some important requirements for the new network. Security for the PV plants was an absolute necessity, but problematic to provide for two main reasons: the plants are located in isolated areas where it is cost-prohibitive to have permanent security staff; and there is an extensive perimeter area that must be secured.

Further, the video surveillance cameras and anti-intrusion sensors are all next-generation devices, which use the IP network to transmit information to the management system. These devices required a highly-reliable communication infrastructure—one that could survive any breakdowns within the network.

Finally, all the security system components, including cameras, sensors and network devices, had to tolerate the harsh environmental conditions of the PV plants. The rural location is exposed to the most diverse summer and winter environmental conditions, experiencing extremes in heat, cold, and humidity. Although some devices are located indoors in a control room, others are installed around the perimeter of the photovoltaic field, in non-air-conditioned cabinets, and are exposed to a wide temperature range.

## Solution

To meet these extenuating needs, Comal Impianti turned to Allied Telesis. Allied Telesis designed and implemented an advanced, integrated security solution, with a video surveillance system and an anti-intrusion system together covering the entire plant perimeter.



Allied Telesis has proven to be the ideal partner for us, and for this project. Their robust industrial switches support an extended temperature range, and allowed us to implement highly-reliable infrastructure in a really simple way, which was absolutely essential for the project's success.

**Ing. Alfredo Balletti**  
Comal A.D.

## Partner Profile

### Tesy Lab S.r.L.

Address Via Carlo Pesenti, 109  
00156, Rome

Website: [www.tesylab.com](http://www.tesylab.com)

Founded: 2007

### About

Tesy Lab is a System Integrator providing turnkey solutions and integrated voice, data and security services. The company supports customers to re-engineer communication infrastructures, focusing on design, installation, maintenance and technical assistance.



“ We always take the opportunity to use Allied Telesis products in our projects. The quality and performance of Allied Telesis products are in line with all our needs, and their customer support is always timely and effective.

### Corrado de Bellis

Tesy Lab A.D.

### Solution

The new IP network carries digital information from the intrusion detection system and video surveillance cameras, to the control room. Both the intrusion sensor data, and the video surveillance camera streams, are part of the integrated management platform that enables security monitoring of the entire PV plant.

Allied Telesis IFS802SP managed industrial switches are installed around the PV plant perimeter. These switches can operate in a wide temperature range from -40°C to +75°C, and so provide reliable operation even in the extremes of summer and winter weather.

Each IFS802SP has 8 copper ports to connect intrusion sensors and video cameras, and 2 Gigabit copper or fiber uplink ports. These industrial switches were able to be installed in outside cabinets using standard DIN rail mounting, which further simplified the solution.

Using the X-Ring protocol for the plant-wide network ensures that any link failure is recovered automatically in as little as 20ms, ensuring high-availability of the security sensor data and video camera streams sent to the control room.

In the control room, Allied Telesis CentreCOM GS924M switches provide an intelligent, energy-efficient, and cost-effective solution for connecting to the outdoor industrial switches.

### Success

The new network has provided Comal Impianti with an integrated solution, with all the high reliability and specific safety features this challenging project required.

With wide temperature support and ultra-fast network recovery, the new industrial network ensures the security of the extensive and isolated PV plant. Their control room management system enables easy detection of any problems highlighted from either intrusion sensors or video surveillance cameras, so they can be easily dealt with.

The resilient new network allows Comal Impianto to concentrate on their core business of producing electricity from the power of the sun.

### Future Plans

Comal Impianto are very happy with their reliable and robust new industrial network solution, and plan to use Allied Telesis equipment again for future implementations of security systems, in photovoltaic fields located in Sardinia and in Lazio.