

## CASE STUDY

### BRADANO E METAPONTO, ITALY

### WATER AND IRRIGATION CONTROL SYSTEM



## BACKGROUND

In October 2002 the Rural Water Association of Bradano E Metaponto, located in Matera, Italy, has commissioned, together with the civil works contractor and the director of works, the IRRInet telecontrol and ICC SCADA system manufactured by Motorola Israel LTD.

The Rural Water Association of Bradano E Metaponto selected Motorola IRRInet controllers to monitor and control their water distribution and irrigation system. The requirement was to remotely monitor and control the water sources, pump stations and irrigation processes.

## CUSTOMER NEEDS

The Rural Water Association of Bradano E Metaponto needed reliable communication to cover the whole system area.

- Remote control and monitoring
- Advanced wireless and wireline communication system
- Full control of all system features from the control center and from any other control point
- Water leakage monitoring
- Round-the-clock operation
- Generating and viewing summary event reports on demand
- Flexibility and scalability
- User-friendly interface



**BRADANO E  
METAPONTO,  
ITALY**

**WATER  
DISTRIBUTION AND  
IRRIGATION  
CONTROL SYSTEM**

**MOTOROLA SOLUTION**

The control center is located at the San Giuliano Dam. The ICC (IRRInet Control Center) SCADA Software is managing the water and irrigation control over an area of 5,000 Hectares (50,000,000 square meters). The most distant controlled point is located approximately 60 km from the control center.

The IRRInet RTUs are used to monitor and control the various equipment installed in the system.

The unique Motorola radio communication protocol (MDLC) is utilized in order to provide full radio coverage over the hills and valleys which are typical to Bradano region. Using MDLC (Motorola Data Link Communication) protocol, based on ISO/OSI seven layers reference model, ensures efficient and reliable data communication.

The MDLC packet-style communications protocol allows for a system-wide report by exception procedure, channel monitoring and prioritizing site communication.

The system is comprised of two IRRInet FIUs (Field Interface Units), ICC SCADA Package, over 100 IRRInet controllers and approximately 4000 Single Cable Piccolo RTUs controlling and monitoring San Giuliano Lake water level, 14 separated areas, including 7 pump stations, 7 reservoirs and irrigation fields. The communication link between the FIUs and the IRRInet Field Units is done through conventional UHF radio.

Motorola Israel was fully responsible for the programming, set up and implementation of the ICC SCADA Software in the control center. Motorola Israel had closely supervised and guided the IRRInet installations in the pump stations, reservoirs and irrigation areas.

The ICC SDACA Software, apart from controlling and monitoring, is also collecting data for analyzing and decision-making purposes.

The ICC overview screens convey on-line information on the status of pumps, water reservoir levels, water flow values, water pressure and other information critical to maintaining the system. With these screens an operator can tell at a glance if an alarm has occurred and take immediate action if required. Additional screens convey information pertinent to irrigation, pump control, communication and diagnostics.

The system is functional since 2002 and the customer is fully satisfied of the system's performances.



**BENEFITS**

- Whole system control
- Increased reliability in cases of infrastructure faults – redundant communication paths ensure continued system operation
- Remotely monitoring system performance
- Substantial reduction in water and energy losses due to efficient water leakage detection
- Data retrieving capabilities
- Ability for future expansion of