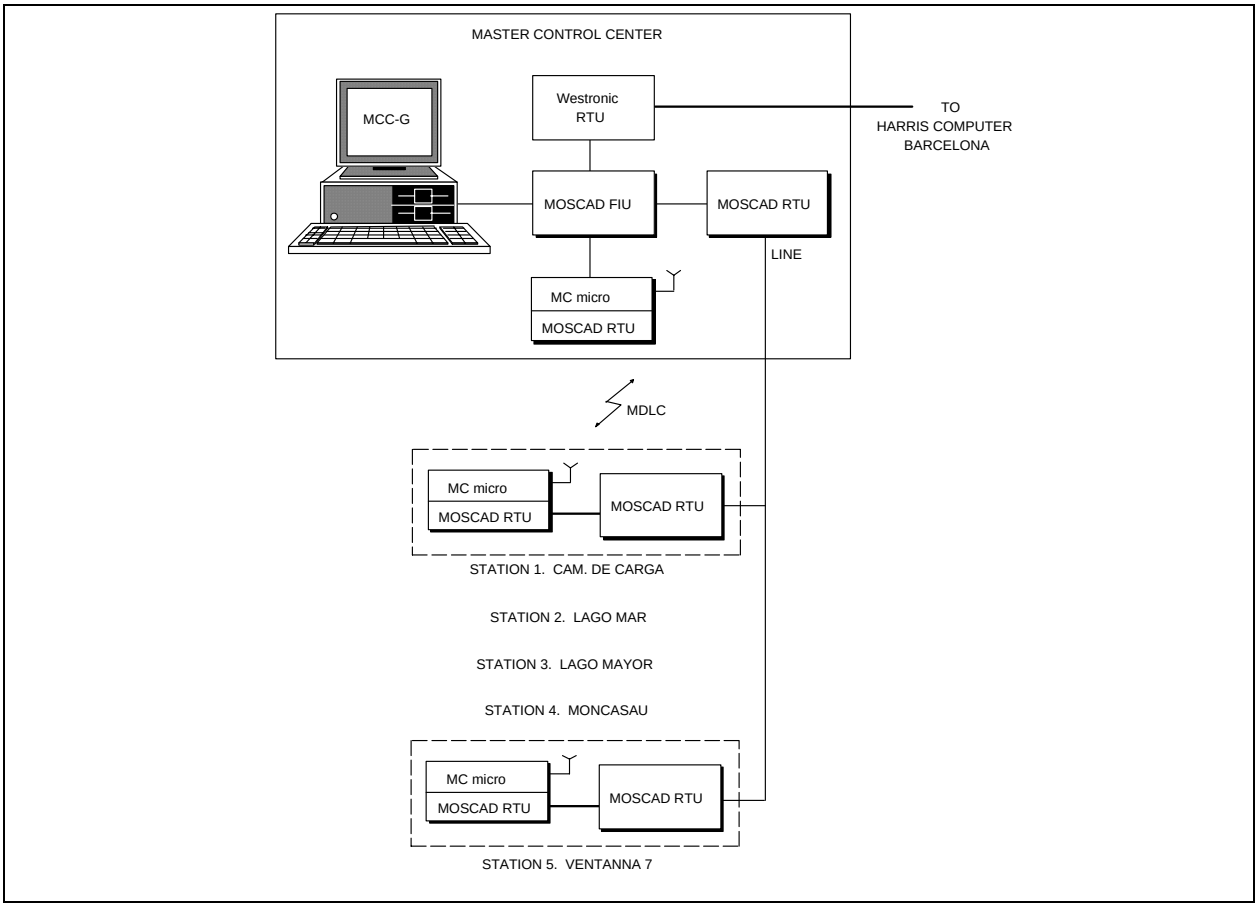
FECSA

Electricity Utility/Water Control System

Water SCADA Application

Project Description



GENERAL

Fuerzas Electricas De Cataluna, S.A. (FECSA), the electric utility company of Barcelona, has placed an order with Motorola Inc. for the supply of an advanced radio control system for their hydroelectrical production stations installed in the Pirineos mountains in the northen part of Spain.

FECSA generates, transmits, and distributes electrical power throughout Cataluna for about 5 million citizens.

Motorola's system is based on its MOSCAD RTU, that controls and monitors the operation of well pumps and water valves at five different stations.

MOSCAD–MDLC

In this project, Motorola has combined for redundancy purposes, two types of links, radio and line, into one complete control system.

Thus, each station consists of two MOSCAD RTUs: one for radio communication and the other for line communication. The radio communication is implemented over VHF using the MC micro radio.

Using MDLC protocol (based on ISO/OSI seven layers reference model) over radio ensures efficient and reliable data communication.

The features of the MDLC protocol have allowed the connection of the MOSCAD system to the central SCADA system located at Barcelona which controls the operation of the hydro-power generators, as required by FECSA. The connection is achieved by connecting the MOSCAD FIU to the Westronic RTU. MOSCAD emulates the Harris protocol using the sophisticated ladder diagram language.

The Master Control Center (MCC) uses Motorola's MCC-W DOS-based control center to control the system.

CAPACITY & FUTURE EXPANSION

The complete system includes 5 stations (two MOSCAD RTUs in each station).

MOSCAD and its MDLC protocol allow the expansion of existing systems based on other vendors' RTUs, therefore, providing the system with more sophisticated and advanced features. □

FEATURES	BENEFITS
MDLC communication protocol	Optimized, efficient, and reliable data communication
MDLC–Harris connectivty	Allows to expand an existing system without any modifications
Multi-protocol processor based on Motorola 68302	Allows multi-tasking operation with on-line network monitoring, traffic analysis, on-line diagnostics, remote monitoring and error logging
Various communication links support	Allows to configure the system in redundancy mode using different communication links
Upload/download capability	Application program can be easily changed and downloaded to the RTUs in the field
Remote control of water pumps	Leak detection and faster response in case of emergency situations save precious water
Remote diagnostics	Permits maintenance staff to identify and correct problems at the RTUs from any site in the system

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