



GENERAL

CEMIG, Brazil's leading power utility, has placed an order with Motorola Inc. for the supply of an advanced integrated control and radio communication system to control their substations, spread over several regions.

The new system is based on Motorola's sophisticated MOSCAD RTU.

MOSCAD & MDLC

In this project, the MOSCAD RTU performs various functions such as, monitoring and control of transformers, breakers, bays, reclosers, and other general purpose devices.

The MDLC communication is implemented over various media, depending on the limitations of the terrain. The flexibility of the MDLC protocol has allowed to use the following communication media in this project: UHF/VHF radio links, leased lines, and power line carriers.

SYSTEM OVERVIEW

Since the distribution network covers a vast geographical area, CEMIG manages the area by regions, using a Regional Operational Central (ROC) in each region. The system currently includes two ROCs in the cities of Paractu and Uberaba, based on the RealFlex SCADA software of BJ Software Systems. Each ROC features a hot-standby configuration for full redundancy.

It should be noted that the MOSCAD RTUs have received very high approval ratings from two of Brazil's top standards institutes: INPE and IPT, stating that, "based on its wide range of modules and tools, the MOSCAD RTU is well suited for any SCADA application, particularly for the electrical substations environment".

CAPACITY & FUTURE EXPANSION

The complete system, implemented by Control S/A, Motorola's distributor in Brazil, includes 19 MOSCAD RTUs (6 in Paractu and 13 in Uberaba), controlling a total of 3,500 I/O points (analog and digital).

CEMIG has acquired one of the most advanced state of the art SCADA system. The versatility of the communication media allows transferring critical data in a quick and reliable manner.

CEMIG is planning to expand their system to additional regions in Brazil. MOSCAD will do it, no matter the type of communication media. □

FEATURES	BENEFITS
MDLC communication protocol	Optimized, efficient, and reliable data communication to handle large volumes of data over various communication media
MDLC–MODBUS connectivity	Allows connection to RealFlex SCADA software
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
Upload/download capability	Application program can be easily changed and downloaded to the RTUs in the field
Remote diagnostics	Permits maintenance staff to identify and correct problems at the RTUs from any site in the system

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