

Case Study: Modbus to IEC 60870-5-104 Protocol Converter (KSGL/M)

Provider Name : KALKI Communication Technologies (P) Ltd.
Client Name : Fortune 100 Automation Major
Project Title : Modbus to IEC 60870-5-104 Protocol Converter

The Problem

The client, a Major OEM in the RTU and SCADA space, required to provide IEC 60870-5-104 slave protocol to its RTU, which was running on Modbus. Kalki supplied its KSGL/M protocol converter, with 1 Ethernet port and 3 Serial ports with support for Modbus Master and IEC 60870-5-104 Slave protocol. This solution is deployed in a distribution network with numerous such RTU's connected to the central station.

The Solution

The stated solution consisted of the following:

1. KSGL/M Protocol Converter with 2 RS-232, 1 RS-485 and 1 Ethernet port.
2. OEM SCADA Software
3. Modbus RTU from the OEM

The said RTU with necessary Digital and Analogue I/O's, was connected to the KSGL/M protocol converter, over Modbus RTU protocol. The KSGL/M gateway is always connected over TCP-IP protocol to the Central SCADA System over the service provider TCP/IP network. The IEC 60870-5-104 communications is established to the KSGL/M protocol converter, and the Modbus protocol communication is established with the OEM RTU.

Tools Used:

- Microsoft C Compiler
- Proprietary Real Time Task Switching Kernel
- IEC 60870-5-104 ANSI C Source Code Library from M/S Triangle Microworks Inc.
- Embedded Processor Development and Debugging Environment
- Test Harness IEC 60870-5-101 Test Simulator
- VC++ based Configuration Utility