

Case Study: IEC 61850 Client Gateway to IEC 101,104 and DNP3

Provider Name : KALKI Communication Technologies (P) Ltd.
Client Name : Internal Customer
Project Title : IEC 61850 Gateway Client to IEC 101,104,DNP3

The Problem

The client, Kalki's products group building IEC 61850 Gateways to IEC 104, IEC 101 and DNP3, required IEC 61850 Client to be implemented on their Gateway Family. This included platforms based on RISC and CISC processors with multiple OS'es including embedded Linux, Real-Time Operating Systems, task schedulers etc.,

The Solution

The stated protocol was developed using the following Resources:

1. Linux Platform with GNU development tools
2. Real-Time Development Platform using GNU tool chains
3. ANSI C Source Code for IEC 61850
4. Gateway Specifications
5. IEC 61850 Client Specifications as per IEC 61850 Conformance Blocks

The said hardware platform support's a common architecture for gateway functionality, running on various operating systems. It was required to implement the IEC 61850 functionality to ensure that the same architecture and design can be replicated on all types of hardware. The interface design and function requirements as well as XML and SCL file management were suitably designed to achieve this.

The IEC 61850 Client was tested with various 3rd Party IED's and RTUs with support for IEC 61850 Server.

Tools Used:

- Visual C Compiler
- IEC 61850 Protocol Stack
- Hardware platforms running real-time and embedded operating systems