IEC61850 Client/Server/Gateway

CGI

One of the strengths of the MD300 range of RTUs is the software that forms the core functionality. A prime example is the support of IEC61850 in the MD300 range.

The implementation of IEC61850 in the MD300 range allows the units to be configured in Client or Server mode while still supporting legacy protocols and physical IO.

The advantage of having an independent IEC61850 Client/Gateway device is that it allows many supported IEDs to be utilised without being tied to a particular vendor. CGI's objective is to provide interoperability to our customers, regardless of the protection relay equipment that they operate.
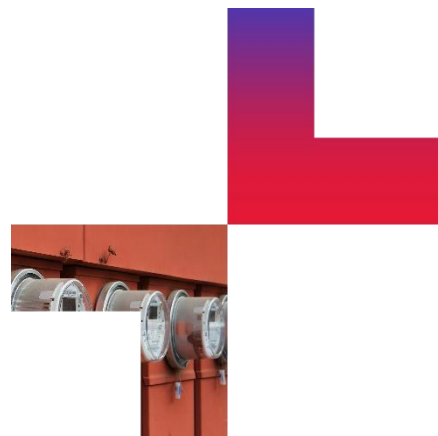
CGI has designed software and configuration tools to allow a staged or integrated approach to implementing IEC61850. This allows hybrid systems to be built. This becomes important especially for brown-field site upgrades. The base RTU and software is the same for the IEC61850 and non-61850 implementations so an RTU that might be installed as a standard RTU can easily be upgraded to IEC61850 by downloading a new configuration.

To take advantage of the self-documenting features of IEC61850, CGI's SCADA Configuration Tool provides a graphical representation of the IEC61850 Logical Node tree that is read either from an ICD/CID file or by directly downloading the configuration from an IED via a network connection.

To allow customers to tailor their systems to their own particular requirements, the CGI implementation of IEC61850 Client allows the following data accessing modes to be configured on a device by device basis:

Data Access modes include:

- Periodic Polling of configured Logical Nodes
- Buffered Reports
- Unbuffered Reports
- General Integrity
- GOOSE messaging
- Disturbance File extraction

Key benefits and features

- IEC61850 Client/Gateway
- IEC61850 Server
- Linux (Gentoo) 2.6 Kernel
- Support for various VM infrastructure
- GOOSE Support
- Buffered / Unbuffered Reports
- IED Device Independence
- SCADA Configuration Tool
- Redundancy supported
- Disturbance file extraction
- Common development/diagnostics tools with MD300 range

The IEC61850 implementation is supported on the CGI MD300 range of RTUs as well as on the Virtual Machine based RTU that is another of CGIs product range.

Uses for VM RTUs are:

- IEC61850 Client/Gateway
- Data concentrator / protocol converters.
- Test Environment RTU
- Load Test simulator
- IEC61131-3 (IsaGrafV6) logic controller

Redundant operation

In common with the entire MD300 range, the RTUs implementing IEC61850 can be run in a redundant pair configuration by simply applying the same SYSTEM ID to two units. Automatic database synchronisation will be enabled with the following data also being kept in sync between the units.

- Alarm and Event Lists.
- Database records (specific list).
- DNP point data.
- DNP event data (acknowledged events are deleted from both online and offline SMUs).
- Site database (compressed DB).

About CGI

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world.

We are insights-driven and outcomes-based to help accelerate returns on your investments. Across 21 industry sectors in 400 locations worldwide, our 78,000 professionals provide comprehensive, scalable and sustainable IT and business consulting services that are informed globally and delivered locally.

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