Xelas Energy 61850 Product Overview

For over 25 years, Xelas Software products have been performing management operations for millions of network elements around the world. Xelas Software provides market leaders such as Alcatel-Lucent, Nokia Siemens Networks (NSN), Motorola, Ericsson, IBM, NTT, NEC, Samsung, and Huawei with key software components and outstanding support for their network management solutions.

Building upon this experience, Xelas Energy Software has developed an advanced product line, the **Xelas Energy Management (XEM) product** suite for comparable functionality in smart grid management.

This Product brochure describes the products in the XEM Product portfolio:

- ➤ **IEC 61850 Client Toolkit**
- ➤ **IEC 61850 Server Toolkit**
- ➤ **IEC 61850 Simulators**
- ➤ **XEM Dynamic Integration Platform**
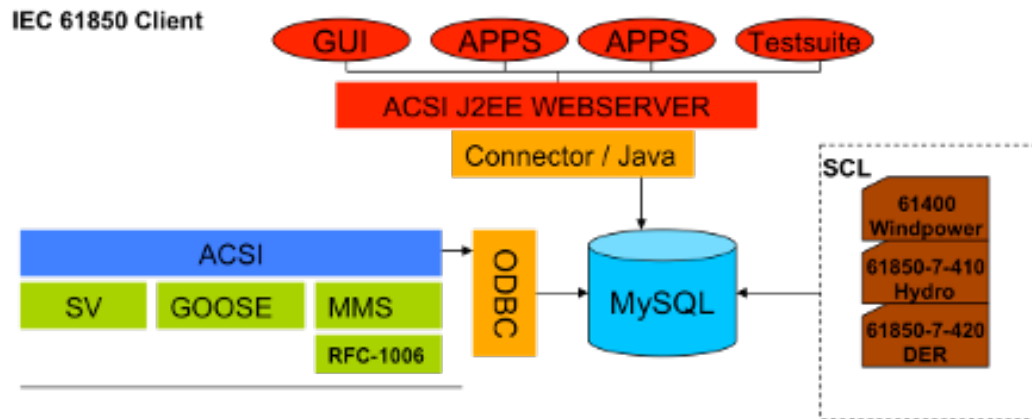- ➤ **IEC 61850 Protocol Suite**

Supported Platforms for the products described below:

- ➤ Linux Redhat
- ➤ Linux Suse
- ➤ Windows
- ➤ Other UNIX platforms available upon request
- ➤ Embedded RTOS (61850 Server Toolkit only)

IEC 61850 Client Toolkit

The Xelas Energy Management Product line includes the **61850 Client Toolkit.** The 61850 Client Toolkit was developed with the latest technology including Java, and is based upon Xelas Software's more than 25 years of expertise in delivering reliable and scalable communication solutions.

Figure 1 – IEC 61850 Client Toolkit Architecture

Product Highlights

- ➢ 61850 edition 1 and 2 fully supported including all operations
- ➢ JAVA, C++ and C development
- ➢ ACSI API for quick 61850 Product Development
- ➢ Standard Web GUI and Database Integration
- ➢ Multiple transport protocols supported: MMS, GOOSE, Sample Values
- ➢ Multiple information models supported such as 61850-7-420(DER), 61850-7-410(Hydro), 61850-7-x(substations) and 61400(Windpower)
- ➢ Extendable Common Information model (CIM) based on IEC 61850
- ➢ Extendable with IEC 62351-4 Security plug-in
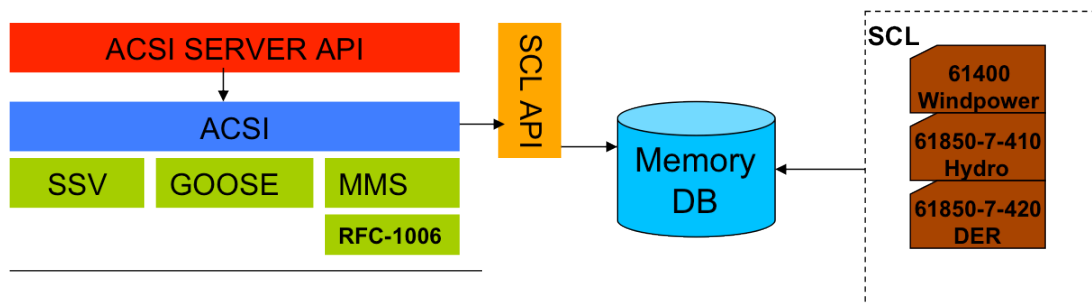
IEC 61850 Server Toolkit

The 61850 Server Toolkit was developed with the latest technology and is based upon Xelas Software's more than 25 years of expertise in delivering reliable and scalable embedded communication solutions.

The 61850 Server Toolkit focuses on the delivery of fully functional but lightweight and highly performant software. The product is written in portable C-code and can easily ported to different embedded RTOS.

Figure 2 – IEC 61850 Server Toolkit Architecture

IEC 61850 Server

Platform: RealTime OS

Product Highlights

- ➢ 61850 Edition 1 and 2 fully supported including all operations
- ➢ ACSI API for quick 61850 Product Development
- ➢ Architecture optimized for embedded RTOS
- ➢ C development Environment
- ➢ Multiple transport protocols supported: MMS, GOOSE, Sample Values
- ➢ Multiple information models supported such as 61850-7-420(DER), 61850-7-410(Hydro), 61850-7-x(substations) and 61400(Windpower)
- ➢ Extendable Common Information model (CIM) based on IEC 61850
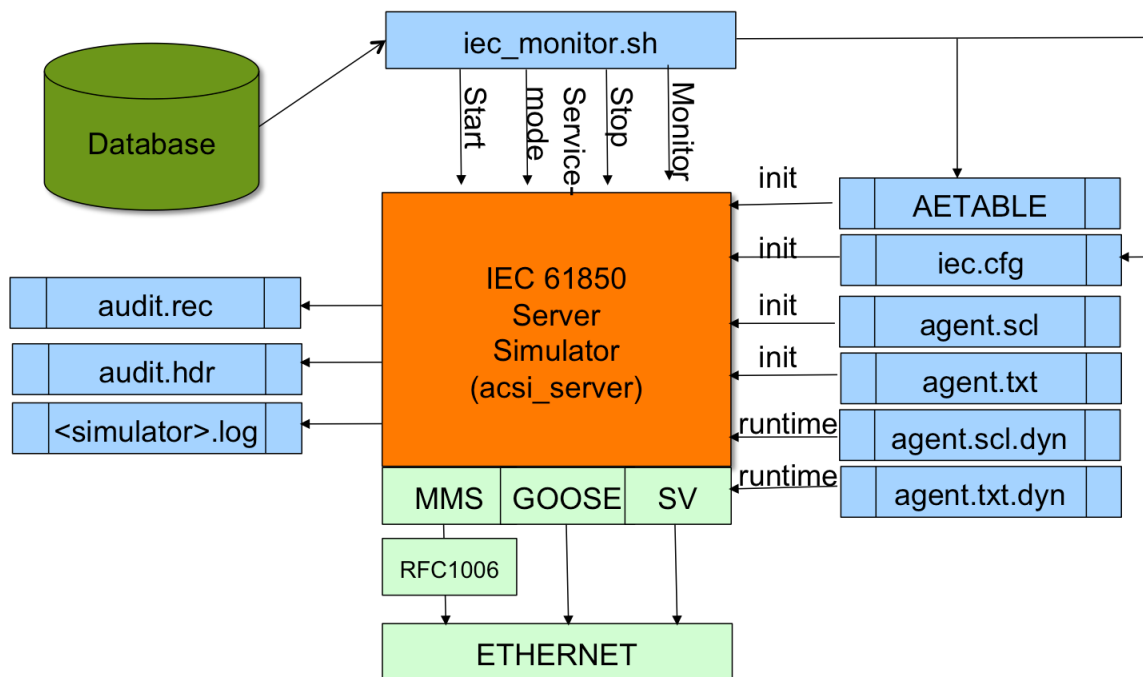- ➢ Extendable with IEC 62351-4 Security plug-in

IEC 61850 Client and Server Simulators

61850 Client and Server simulators are powerful tools for the development, but also for the testing and validation of IEC 61850 communication. The Xelas Energy Management (XEM) 61850 Product Portfolio contains these simulation tools to compliment the XEM development environments.

Product Highlights

➢ Multiple transport protocols supported: MMS, GOOSE, Sample Values
➢ Individual tests as well as regression test capabilities
➢ Web GUI as well as test script interface
➢ SCL import and browse capability
➢ 61850 Edition 1 and 2 fully supported
➢ Multiple information models supported such as 61850-7-420(DER) and 61400(Windpower)
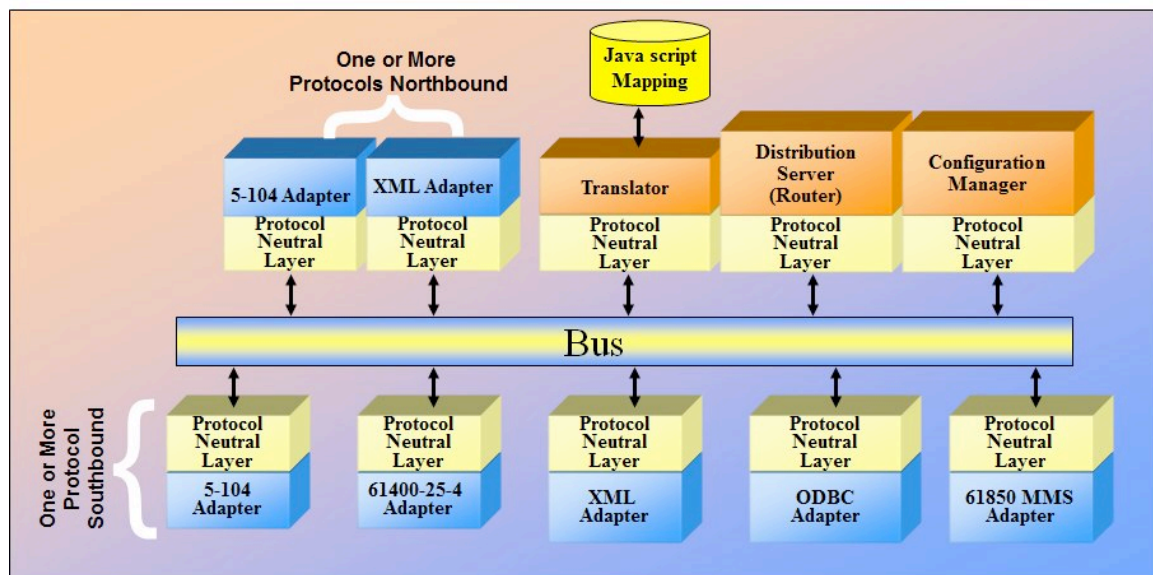
Figure 3 – 61850 Server Simulator Architecture

XEM Dynamic Integration Platform

The Dynamic Integration Framework provides a generic, high performance solution for Smart Grid integration, based on open standard information modeling of the IEC models and the DMTF common information model (CIM).

It provides a number of ready-made, off-the-shelf protocol adapters (MMS, SNMP, 60870-5-104, ODBC, ASCII, XML) feeding script driven translators for easy integration of your existing equipment types and applications, adaptable without downtime.

Protocols can be adapted 100% in runtime through dynamic SCL loading. Logical translation provided by the script driven translators can also be updated without downtime.

Figure 4 – Dynamic Integration Platform Architecture

Product Highlights

- ➢ Built-in 61850 mediation
- ➢ Scada 5-104 Mediation
- ➢ Out of the box adaptors for MMS, GOOSE,OPC, XML, SNMP
- ➢ Adaptor development kit to quickly integrate proprietary protocols
- ➢ Dynamic Reconfigurable with Java Script
- ➢ Distribution Service provides for highly Scalable platform
- ➢ XEM Dynamic Integration Framework is tested for conformity and interoperability, and documented using PICS, PIXIT and TICS templates.

IEC 61850 Protocols

Xelas Energy Software has implemented the complete IEC 61850 protocol suite, including the following stand-alone protocols:

- ➢ MMS (Manufacturing Message Specification) (for core ACSI Services)
    - o Including RFC1006 and ISO CO T-Profile TP4/CLNP
- ➢ SV (Sampled Values) (for Multicast)
- ➢ GOOSE (Generic Object Oriented Substation Event)
- ➢ GSSE (Generic Substation Status Event) (between the network servers)
- ➢ SNTP (for time Synchronization)

About Xelas Energy Software

Xelas Energy Software is a dedicated division of Xelas Software. The Xelas Energy Software products and solutions are based on twenty five years of experience of implementing complex network management solutions.

Xelas Software established its market role through intense participation in industry collaboration, and developed standard software components now widely used by market leaders such as Alcatel-Lucent, Nokia Solutions Networks (NSN), Motorola, Ericsson, IBM, NTT, NEC, Samsung, Huawei and Telefonica.

Xelas Energy Software, a division of Xelas Software, with development offices in the U.S. and Europe, is one of the few software vendors worldwide to have implemented in-house the IEC 61850 standards, including MMS protocol, GOOSE, SV and OSI Protocols (RFC1006.)

Xelas Energy Software

Headquarters
13160 Mindanao Way, Suite 252
Marina Del Rey, CA 90292
Web: www.xelasenergy.com
Phone: +1-310-301-7222
E-mail: info@xelasenergy.com

Europe
Kleine Loo 284
2592 CK Den Haag
Netherlands
+31-6-5151-4346