ENABLING INTEROPERABILITY IN CUSTOMER DEVICE
BY INCORPORATING DLMS/COSEM PROTOCOL

Company
A US-based multinational conglomerate
Region
Global
Industry
Metering

Kalkitech Solutions
• SYNC 500, DLMS server and client Source Code Library
• Automation support for the DLMS implementation using Kalkitech’s SYNC 6500 Meter Explorer, DLMS/COSEM meter testing tool
• Extensive hardware and software implementation consultancy services
• On-site training program on DLMS and its implementation

With extensive rollouts of the smart grid in the European Union, the Middle East and the Asia-Pacific region, the client needed to develop a new line of IEC compliant meters to gain a foothold in these markets.

Client Context
The client operated in several geographies but its metering portfolio comprised ANSI meters conforming to the requirements of the North American market. However, with extensive rollouts of the smart grid in the European Union, the Middle East and the Asia-Pacific region, the client needed to develop a new line of IEC compliant meters to gain a foothold in these markets. The IEC 62056 DLMS/COSEM protocol has emerged as the global standard for smart meters, owing to features such as inter-operability, conformance testing and the ability to adapt to emerging technologies in wireless or power line communication. Also, DLMS/COSEM has the capability to meet country specific requirements without compromising interoperability. This ensures the interoperability required by Advanced Metering Infrastructure, an essential prerequisite to enabling the smart grid. Clearly, meter manufacturers would need to adapt to this trend to stay competitive and the client recognized the pressing need to incorporate the protocol in its meters. Given the time-to-market pressures and the need to leverage multiple global opportunities, the client needed to partner with an expert to gain competence in the DLMS/COSEM protocol. With world leading expertise in the DLMS/COSEM space and successful previous engagements relating to substation automation and IEC61850 protocol, Kalkitech was a natural choice for this implementation as well.

Subsequent to an important project win, the client decided to revamp its hardware and software and partnered with a leading IT company for software development. With proven technical expertise in metering and the DLMS/COSEM protocol, Kalkitech was tasked with collaborating with the IT player for software development and for installing the in-house hardware.
The client is the energy & utilities division of an American multinational conglomerate and a major solutions provider and thought leader in the effort to modernize the generation, transmission and distribution of electric power.

To summarize, the client faced the following challenges:

- Need for timely incorporation of DLMS/COSEM protocol
- Knowledge gap and lack of competence in DLMS/COSEM
- Hardware and software upgrades for implementing the project
- Securing certification from global agencies such as KEMA
- Quick time-to-market

Solution
Kalkitech’s solution included the following components:

- Supply of SYNC 500, DLMS server Source Code Library
- Installation of SYNC 500 client source code library along with relevant licenses
- Conducting training program
- Providing hardware and software consultancy services
- Deploying SYNC 6500 Meter Explorer, DLMS / COSEM meter testing tool, DLMS client driver with OPC-Addin server interface
- Automating the testing process and providing testing services

Kalkitech implemented the project in two stages; the first stage involved the supply of the SYNC 500 DLMS Server and Client source code library along with the relevant licenses as well as an extensive onsite and offsite training program on DLMS protocol for their staff. The DLMS User Association Certified SYNC 500 server was installed within timelines.

In the second phase, Kalkitech provided hardware and software consultancy services in several areas including protocol consulting, support for integration, customization and testing including certification support. It also helped in the adaptation of the client’s meters to make them compatible with multiple communication mediums such as PLC, RF medium etc.

Kalkitech deployed its SYNC 6500 DLMS/COSEM meter testing tool with OPC Server support for DLMS data validation by developing test scripts that used the OPC interface for automated testing of the client’s meters. By adhering to international IEC standards, Kalkitech helped the client to secure IEC approved KEMA certification for its smart meter models.

Results
With Kalkitech’s solution, the client realized multiple benefits:

- Faster time-to-market and reduced R&D risk
- Bridged knowledge gap and gained competence through extensive training programs
- Saved costs in the design, development and testing phases by leveraging Kalkitech’s expertise in implementing the stack in multiple software and hardware platforms
- Ensured quick testing and validation of DLMS client enabled devices through testing automation
- Improved testing efficiency

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