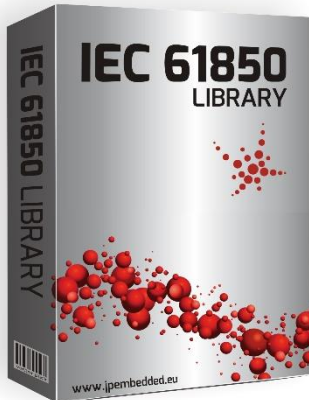


IEC 61850 Library

Lightweight, highly configurable, platform agnostic, delivered as a source code IEC 61850 library for embedded devices.



IEC 61850 is an international standard describing data model and communication services for power grid devices also known as IEDs (intelligent electronic device). Main protocols specified by the standard are MMS (Manufacturing Message Specification), GOOSE (Generic Object Oriented Substation Event), and SV (Sampled Values). Beside generic functionality of power systems, IEC 61850 defines profiles like 61850-7-420 for distributed energy resources (DER)) or hydroelectric power plants which are defined in IEC 61850-7-420.

IEC 61850 library by JP Embedded exhibits object-oriented design and is implemented in C ++ language. This hardware platform independent solution, is easy to integrate on any device with or without operating system. Other advantages of our product are its high configurability in terms of functionality and resources used, and very low memory footprint which is especially important for embedded devices. Depending on data model and functionality of the specific device memory usage could be as low as **240kB of Flash and 150kB of RAM**. Library supports 2nd edition of the standard.

The main components of the solution are: IEC 61850 core library, hardware abstraction layer (HAL), configuration module and user application (please refer to the '61850 library architecture' picture in the product gallery below). Core library implements bulk of the functionality specified by the standard. It handles data model initialization and access APIs, handling of data sets, control blocks and control model. Hardware Abstraction Layer (HAL) also known as 'driver' provides abstraction of hardware platform and operating system (if used). This layer implements well defined API used by the core library for handling TCP/IP connections, transmission of Ethernet frames, thread creation and synchronization, timers and file system access. Configuration file configures library to meet the needs of specific device or application. User application realizes logic specific for given device (e.g. protection relay or merging unit functionality). User application is a top level component, usually implemented by the customer. It initializes IEC 61850 library and defines user specific callback functions. Library is delivered as a source code and it features royalty-free licensing model.

Implemented features:

- MMS server.
- Object oriented data model.
- Data sets.
- Reporting (buffered & unbuffered).
- GOOSE (subscriber & publisher).
- R-GOOSE (routable GOOSE).
- Sampled Values (subscriber & publisher).
- R-SMV (routable Sampled Values).
- Control Model.
- Logging.
- Substitution.
- Setting groups.
- Cybersecurity (IEC 62351).

Compliance of JP Embedded's library with EN 61850 standard has been confirmed by a certificate issued by Instytut Energetyki in Gdańsk. The certification process was implemented thanks to the [European Regional Development Fund](#).

To request a FREE EVALUATION version of the library, please send us an e-mail containing information about the target platform microcontroller and operating system. For more information, licensing details, price quotation requests, please contact us directly: sales@jpembedded.eu, +48 601 088 970

IEC 61850 has been created by IEC Technical Committee 57 which is responsible for development of standards for information exchange for power systems and other related systems including Energy Management Systems, SCADA, distribution automation & teleprotection.