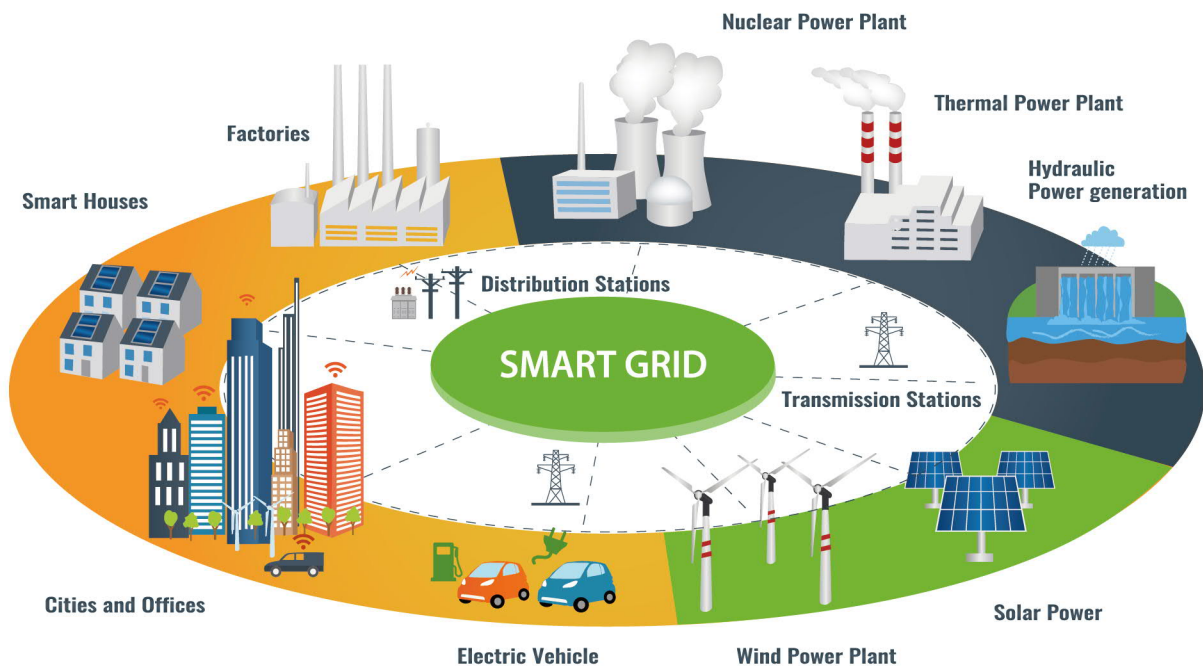


DISTRIBUTED ENERGY RESOURCES PLATFORM

Connectivity, Interoperability, and Security



CLoud-BASED IEC 61850 XMPP DER PLATFORM

The growing penetration of Distributed Energy Resources(DER) reflects the potential impact to the electrical power system stability and quality due to its intermittent power generation and diversity. An innovative architecture of Cloud-based IEC 61850 XMPP DER Platform is developed with the following key features.

- Developed based on IIoT and Smart Grid Reference Architecture
- Follow IEC 61850-8-2 XMPP communication protocol for distributed energy resource
- Built in Common Information Model (CIM) adapter
- Interface with third party application over RESTful API and IEC 61850
- Provide Device Management System (DMS), Facilities Diagnosis and Preventive Maintenance
- Implement the Visualization Web server by built in dashboard
- Use EPM Analytic Platform to analyze the data and apply Machine Learning Algorithm
- Support south bound protocols such as OPC UA, XMPP, IEC 61850, MQTT and TR-069
- Design for easy development, maintenance and operation

PLUG & PLAY INTELLIGENT GATEWAY-**MEC-1200**

Function

- Integrating different PV power plant information rapidly with plug-and-play according to international smart grid standard modeling (IEC 61850-7-420) .
- Integrate different communication protocols Multi-channel uploading information to Power Company (DNP3.0), Cloud Platform (IEC 61850XMPP), Control Center.
- Standardized design can be quickly set to reduce costs.
- With the PV field control system to collect the whole plant output data.

Embedded

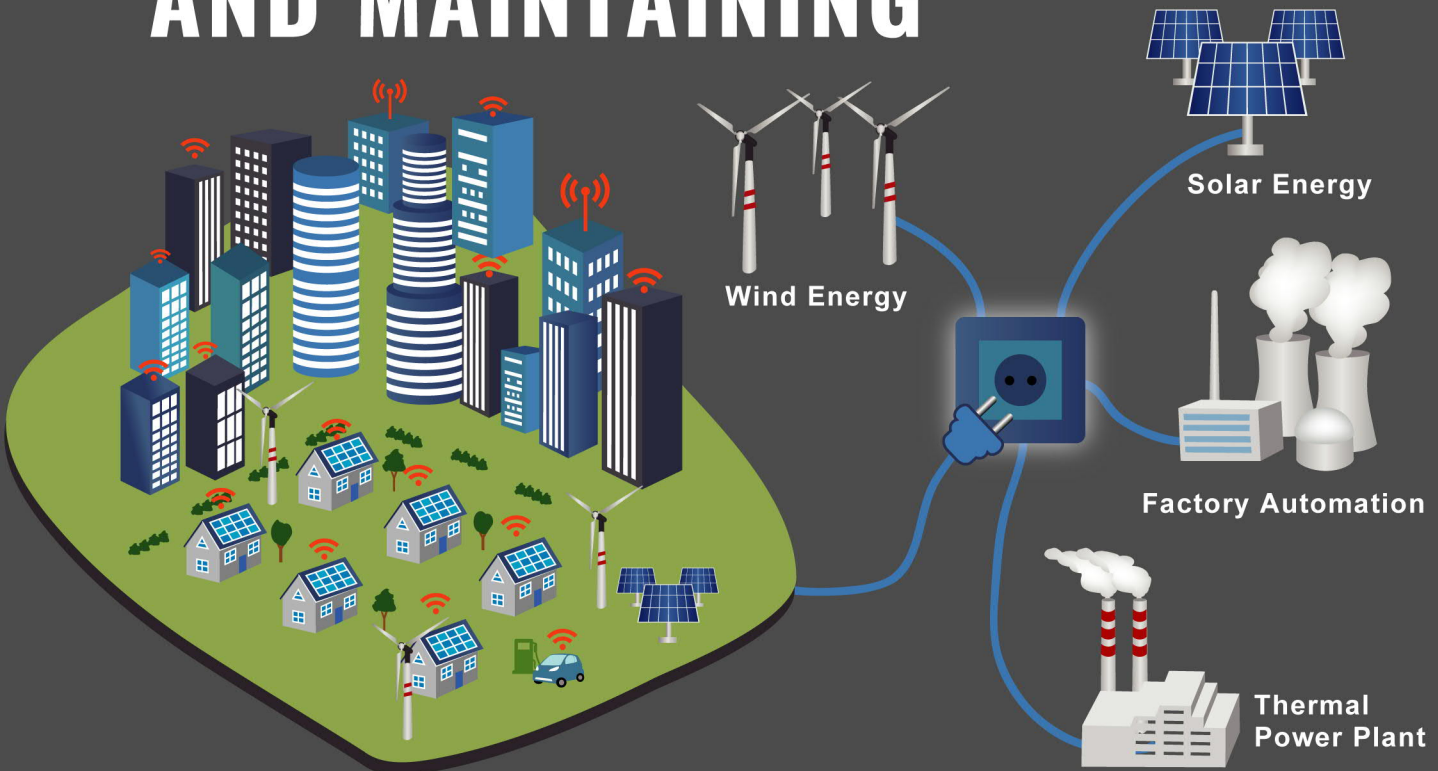
TR-069 Agent-Facilities Management
IEC-61850-7-420 Standard

Protocol Support

IEC 61850 Client/ Server
IEC-60870-5-101/103/104
DNP3.0
Modbus RTU/ TCP
OPC
BACnet
Others 450+protocols



MONITORING, PREVENTING AND MAINTAINING



MANAGE YOUR SMART GRID EASILY-**DER PLATFORM**

Managing your grid could never be an easy task. DER Platform is developed by three professional companies that could help industries to overcome the difficulties in establishing, managing and monitoring.

Devices

Advanio provides the devices which do not only meet the requirements of IIoT but also offer a wider range of applications in Power Energy such as Substation Automation and Feed-in Management.

Software

Elipse Software has already developed 450 I/O drivers for various protocols or manufacturers, ensuring full compatibility with equipment (field devices, control centers, etc...).

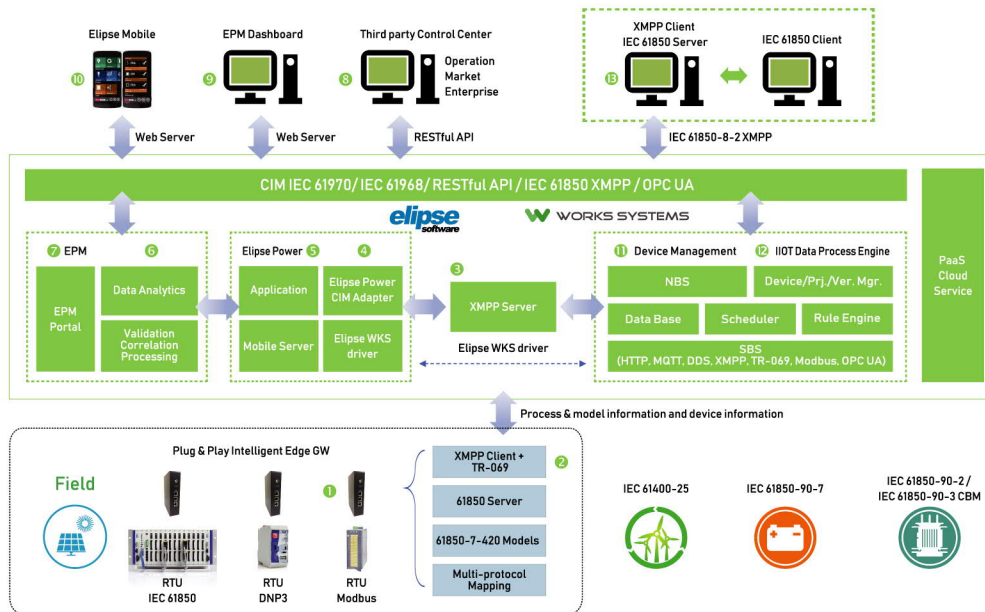
Platform

Works Systems provides carrier-grade DER Management Solution that allows remote management of power resources located in different locations.

Powerful, flexible for different application!

ARCHITECTURE OF DER PLATFORM

Cloud-based IEC 61850 XMPP Smart Grid / DER Platform

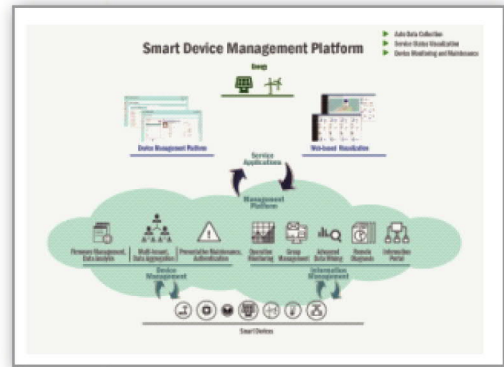


- ① Plug & Play intelligent Multi-protocol Gateway with DER Modeling embedded
- ② Hybrid IEC 61850-8-2 XMPP Client & TR-069 protocol
- ③ XMPP Server
- ④ Power CAD Editor /CIM converter / Front communication
- ⑤ Power energy Application / Mobile Server
- ⑥ Historian and Data Analytic
- ⑦ EPM Portal application for visualization and dashboard web server
- ⑧ Control Center – Operation / Market / Enterprise
- ⑨ Dashboard / Web Client
- ⑩ Elipse Mobile Application
- ⑪ Device Management System – AltoCumuli DMS
- ⑫ IIOT Data Process Engine
- ⑬ IEC 61850 XMPP Client application / IEC 61850 Server- A bridge to IEC 61850 Client in other domain



In the Taipower DER project, Elipse Software utilized ICT technologies based on the Industry Internet Reference Architecture (IIRA) and the International Smart Grid Reference Architecture. In this pilot project, PV model was built following IEC 61850-7-420 and IEC 61850-80-2 with the implementation of IEC 61850-8-2 XMPP Client, and converted to Common Information Model (CIM) based on IEC 61970 for third party application. An XMPP Server in the cloud is designed to manage all the users (DER sites).

In the Taipower DER Platform project, Works Systems provides the Smart Device Management Cloud Platform offering the Devices Management with TR-069 embedded agent. Administrators could remotely configure, upgrade and monitor the end devices. In addition, Works Systems provides a Visualized Management Interface with APIs to fetch power data, allowing power status to be displayed on web pages as of graphic or tabular insights.



In the Taipower DER Platform project, Advanio not only provides all hardware devices but also leads the team for project management, site commissioning and services.

Our mission is to create an eco-business model with all partners and customers in energy and industrial markets.

advanio

敏·捷·工·控



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