SEMS

SEMS is a full-featured storage and hybrid control platform that includes controllers, software, cloud, data monitoring, device management, data analytics, maintenance management, and VPP.
SEMS provides full command, control, monitoring and management for storage and hybrid assets located anywhere in the world.
SEMS was designed by experienced engineers to maximize safety, profitability, simplicity of storage and hybrid systems.

Data visualization

Web

App

Site controller

Storage unit controller

Turnkey controls

Full stack controls and software. Our team designs, installs and commissions the controls, networking, cloud, historian and HMI.

Full-featured

Applicable to a wide range of solar, storage, hybrid scenarios. Provide functionality including design, management, diagnostics, VPP and app.

Data analytics

Cutting-edge battery and asset data analytics technology. Maximize safety, performance and uptime.

Reliable

Well validated in GWh projects. Hardened equipment backed by a high availability guarantee.

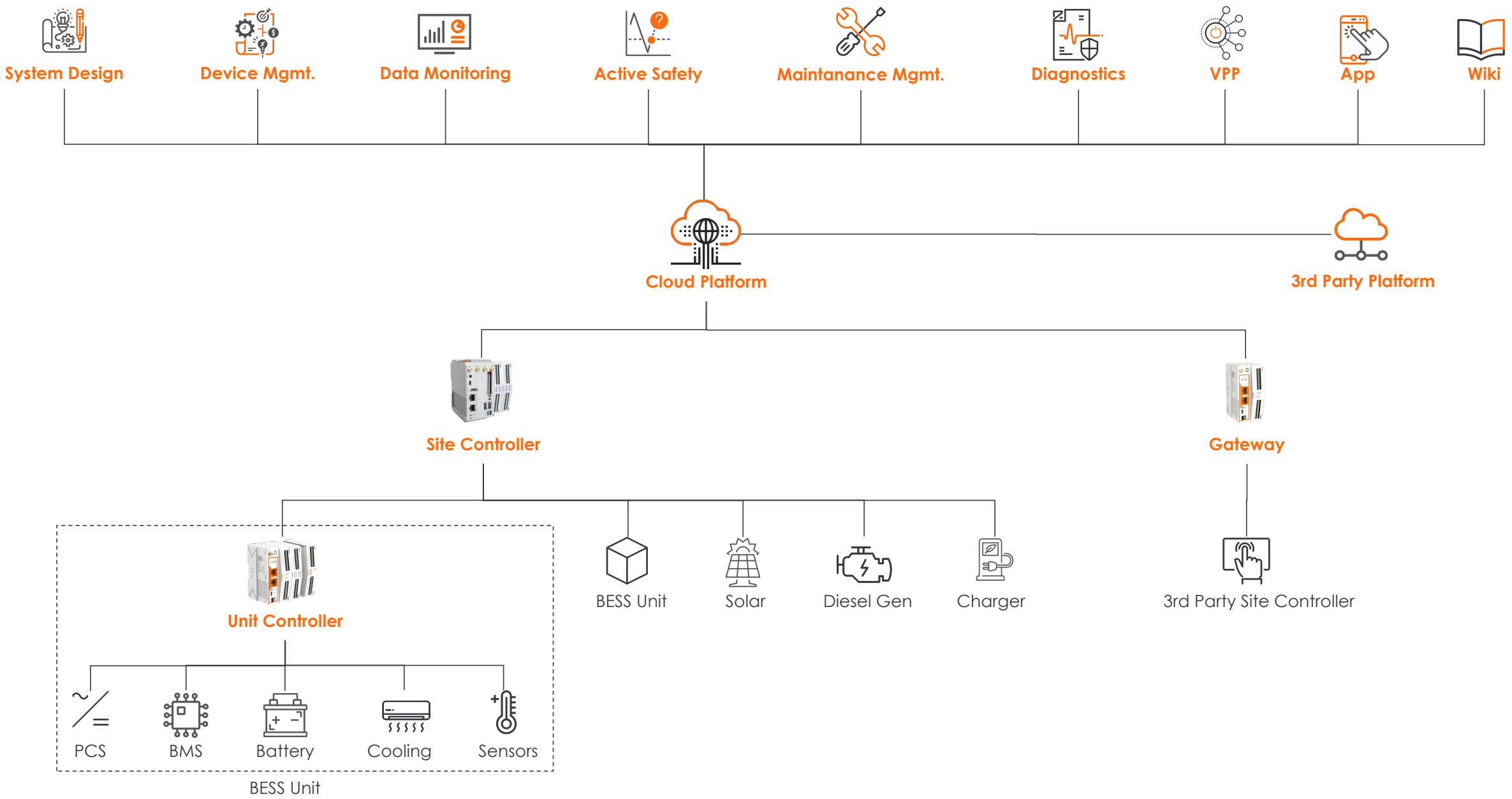
Experienced team

Our team has over a decade of energy storage controls development, integration, commissioning and operations.

Hardware independant

Flexible architecture that allows you to use different types of batteries, inverters and accessories

SEMS Functions and Architecture



SEMS Applications

Self-consumption optimisation	Use more energy from renewable sources and minimise feed-in: this application aims to maximise the consumption of renewable energy by striving for an output of zero watts. The battery is completely discharged when power is being drawn from the grid and is charged until full when power is being fed into the grid. This enables various control options for consumers and generators, and these options can be switched on and off depending on the available energy supply.
Physical peak shaving	Shave consumption peaks and cut demand rate costs: the grid connection must be capable of supplying all loads. If a peak load exceeds a defined limit, it is restricted by the storage system. By supplying the necessary electricity, the storage system helps to keep the grid load within the defined value.
Charging station control	Smart control of an individual charge set points. This allows the charge points to be controlled together with other generators and consumers in order to reduce peak loads, adapt grid consumption for charging an electric vehicle, or define the maximum drawing capacity of the charge set point, for example
Off-grid	SEMS offers a solution for off-grid systems that consist of a photovoltaic installation and batteries and diesel generators. The battery inverter is configured to run in grid-forming (voltage-controlled) operation continuously. Load and generation are controlled by SEMS to make sure the up-time
Micro-grid	A small power grid can be supplied both with or without a connection to the public utility grid. A micro-grid consists of a battery storage system in addition to other generator systems and controllable consumers. SEMS connects and controls a multitude of generators and consumers to enable stable operation of a small distribution grid. From a technical perspective, a micro-grid is equivalent to an expanded off-grid installation or a more extensive back-up power system.
Time of use	Time-dependent use of energy features and services allows the definition of time series that are then evaluated in the decision tree. This means the user can deploy different energy management strategies depending on the time of day. Time series can include individual points in time or recurrent periods. Switching points with varying periodicity can be stored in a time series.
Back-up power	Storage system immediately takes over the power supply in the event of a power outage. The grid connection protection detects the disturbance and activates one or more isolating contactors, while the battery inverter switches from current- to voltage-controlled operation in order to operate the system as an off-grid installation. As soon as the utility grid is available again, the battery inverter returns to current-controlled operation.
Dynamic electricity tariffs	With a suitable electricity supply contract, the use of dynamic electricity tariffs automatically defers the drawing of power from the grid to times when prices are low to make optimum use of price fluctuations during the day. With the SEMS, consumers and battery charging are controlled in real time based on price fluctuations and forecast tariff data. This maximises the efficiency of energy use and minimises the costs of drawing energy from the grid.
Multi-use	An adaptable decision tree can be used to combine multiple energy management strategies. The threshold of the SoC in the decision tree determines when certain strategies, such as SCO or PS, are to be applied. This allows multiple energy services to be linked to a single battery efficiently. The decision tree is flexible enough to integrate time series to determine when certain actions should be taken. Depending on whether the time series is activated or deactivated, a corresponding energy management strategy, such as PS or SCO, can be applied. The decision tree is adaptable and can encompass multiple levels.