

SASensor – Future-proofing the power grid

CPC delivering intelligent substation monitoring and efficient operation

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Key Benefits

Business and financial

- Reduction in Customers Minutes lost and Customer Interruptions.
- Lower initial and lifetime cost compared to traditional technologies.
- Reduced need for network reinforcement.

Installation operation and maintenance

- Limited device types, limited stock holding.
- Easy to install, operate and maintain.
- Simplification of device management and version control
- Limited Manpower skills needed.

Reliability

- Dual redundancy.
- High availability and long MTTF.
- Easy remote settings check.

Flexibility

- High fidelity data on real time platform.
- Able to host best in class algorithms for protection, condition monitoring, control, data analytics.
- Active protection and management schemes.

Security

- Hardened single access point.
- reduction of attack vectors.
- Easy management of role based access.

The energy sector is rapidly changing. New challenges arise on our mission to ensure a sustainable future. The current infrastructure for transmission and distribution of electrical energy will be adapted to support integration of renewable resources and transition towards a climate neutral society.

Renewed protection, automation and control strategies take advantage of available technologies. As such Centralised Protection and Control is the next step future-proofing the power grid.

“Centralized substation Protection and Control (CPC) is a high performance computing platform capable of providing Protection, Control, Monitoring, Communication and Asset Management functions by collecting the data those functions require using high-speed, time synchronized measurements within a substation” (Source: IEEE)

Locamation deployed *SASensor* as a Centralised Protection and Control solution for substation automation. With over 100+ substations at Alliander and international customers such as SSE, Ellevio and Elektrilevi *SASensor* has more than 4-million operation hours.

“This is really smart grid in practice. The open platform enables a flexibility that we have been striving for. I believe that this will be the start of a technology shift in the control equipment area.”

Bengt Almgren, Head of Regional Networks, Ellevio

Digital Substation Platform

SASensor is a Digital Substation Platform making High fidelity measurement data available for flexible software based functionality that can be adapted to changing needs of the Network. Locamation’s knowledge partners, universities and Network operators can implement new functionality to improve network performance and stability.

Bundled Knowledge leads to Innovative Solutions.

Locamation partners with:



PHASE TO PHASE

Balfour Beatty



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Network Operators about SASensor's performance

Reduced Customers minutes lost and Customer interruptions at Alliander

Alliander reduced Customer Interruptions and Customer minutes lost by digitising their grid. SASensor was installed to monitor, control and protect the substation and integrate the generated information into the IT infrastructure. In this new situation in case of a fault, Digital Fault Recordings are automatically sent to the back office where they are analysed. Within moments the location of the fault is presented to the responsible technician enabling him to take immediate action.



This resulted in a reduction of the customer minutes lost by 15% and reduction of Customer Interruptions by 5%

Back to simplicity for Ellevio

Ellevio (former Fortum) wanted a simplified, standardisable, easy to install and maintain substation platform with flexible functionality. Supported by local partner 'Protrol' the SASensor Digital Substation Platform solution was installed on the primary substation Kyrkviken.

Ellevio now reports simplified maintenance and spare-part management due to limited number of device types resulting in reduced effort in training and knowledge management.



End to end testing at the PNDC

SASensor has been installed on a test network at PNDC. The PNDC test environment enables a multitude of different test scenario's to be applied, including phase and earth-faults.

PNDC confirmed positive test results, demonstrating excellent system performance under a variety of real life environments. The high quality fault recordings are now used for analysis of live network behaviour.



Further to the customer statements above the following results were achieved;

- Reduction in cable failures of 10%, target of increasing these to 25% with partner cooperation.
- Reduction of fault restoration time from 1hr30 minutes to 1 hour.
- Simple to retrofit, train, operate and maintain, minimal wiring required. Standardisation of device types.
- Simplifying engineering, commissioning and material management by reduction of device types.
- Integration of top of class third party protection functions onto the Digital Substation Platform.
- Separation of slow and fast ageing components.
- Reduction in manpower due to remote access for settings check

SASensor is a Centralised Protection and Control system with over 100+ systems in operation, 10 years of experience and over 4 million working hours.