

# General Introduction

## Company Background

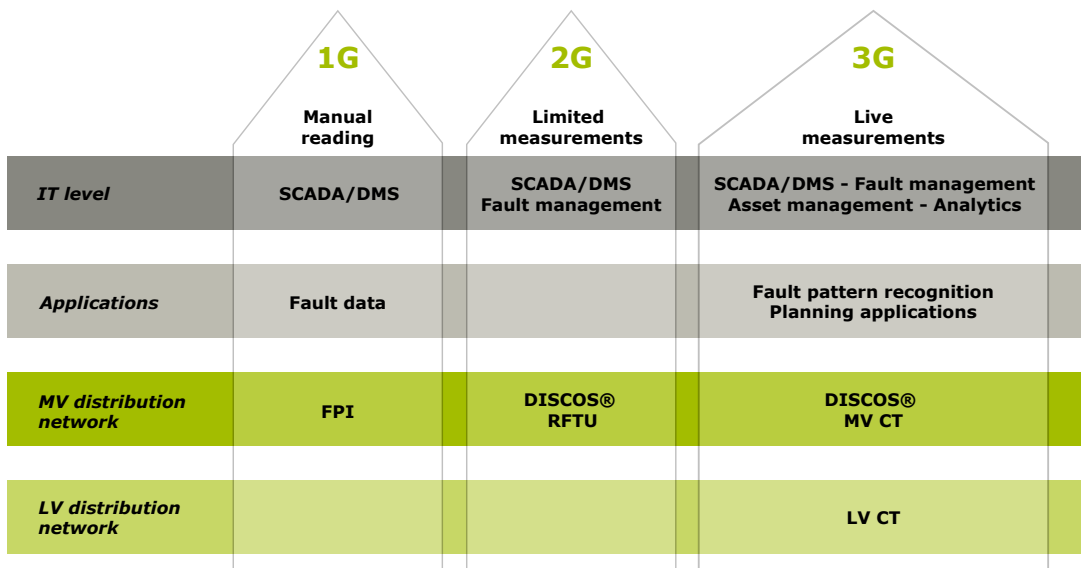
PowerSense A/S was founded on September 1, 2006 as a spin-off of DONG Energy A/S (formerly Nesa A/S). DONG Energy is the largest utility in Denmark with 1.5 million customers. DONG Energy initiated the development of the DISCOS® System in 2002 after having undertaken a survey that confirmed that no standard product existed to meet the needs of the utility. The need identified was for a communicating monitor that could be attached non-invasively to MV cables. The monitor should be able to detect faults and provide accurate current measurements. DONG Energy justified the deployment of the DISCOS® System from benefits derived from faster outage restoration and improved fault and asset management through better planning.

PowerSense is now a private company owned by DONG Energy A/S and the BankInvest Group, a Danish investment bank investing in the energy sector through their New Energy Solutions portfolio of which PowerSense is the most mature of the ventures. Further financial information can be provided on request.

## Smart Grid

PowerSense delivers cutting-edge monitoring and control equipment together with integrated supervision for the MV/LV distribution power grid. This will enable the modern electrical utility to prepare its existing power infrastructure for tomorrow's Smart Grid.

DISCOS®s position in the 2G/3G "Smart Grid" distribution network:



## Why PowerSense?

The DISCOS® System has been developed by a utility to meet the specific needs of providing fault information and accurate current measurements over an extended current range without the disadvantages of the saturation characteristic of traditional current transformer based measurements. The linearity of the sensor from 5 to 20,000 amps, with a accuracy of +/-2 A from 5-100 A and 2 % from 100 A-20,000 A, competes with that of all other non-iron core sensors such as Rogowski coils with the advantage that the sensor signal light is through a non-electrical conducting medium and of higher magnitude. The sensor electronics can thus be placed further away from the sensor. The modularity of the intelligent electronic device which controls and forms the communications interface allows freedom to configure a number of solutions to suit the particular network environment.

The DISCOS® SmartCom RTU module is Linux-based thus providing flexibility for downloading software upgrades for new routines, fault patterns, and communications protocols. Different data paths can be configured externally to provide appropriate information (say fault and periodical measurements) to the operations control room while sending more comprehensive measurement data to the asset management and planning applications. The latter applications redeliver benefits to the business through improved planning and assessment of asset performance and replacement prioritization.

Although PowerSense is a relatively young company, the DISCOS® System has been in operation and used by the founding utility, DONG Energy, since 2004 with successful results. This has allowed the modifications that field experience had identified as necessary for reliable and useful results, thus DISCOS® is a proven technology. In addition, many pilot installations at different utilities in different countries have been made to further prove the technology in different electric power infrastructures.

PowerSense has been organized to operate in an agile fashion so we can rapidly meet the emerging requirements of present and prospective customers. The policy of using as many third-party global suppliers who have a secure reputation in their field ensures that the DISCOS® System can take advantage of global volumes and evolving technologies for the electronics and certain optical components.

PowerSense uses world-leading technology to merge existing and new power infrastructure into the existing SCADA and IT systems of the electrical utilities. The integration of the upgraded power infrastructure and IT systems instantly optimizes outage and fault management that will decrease the Customer Minutes Lost (SAIDI). At the same time, this integration will help the electrical utility to further improve its asset management – resulting in major cost savings, as well as improve its power management – resulting in high-performance outage management and high power efficiency.

**POWERSENSE**

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