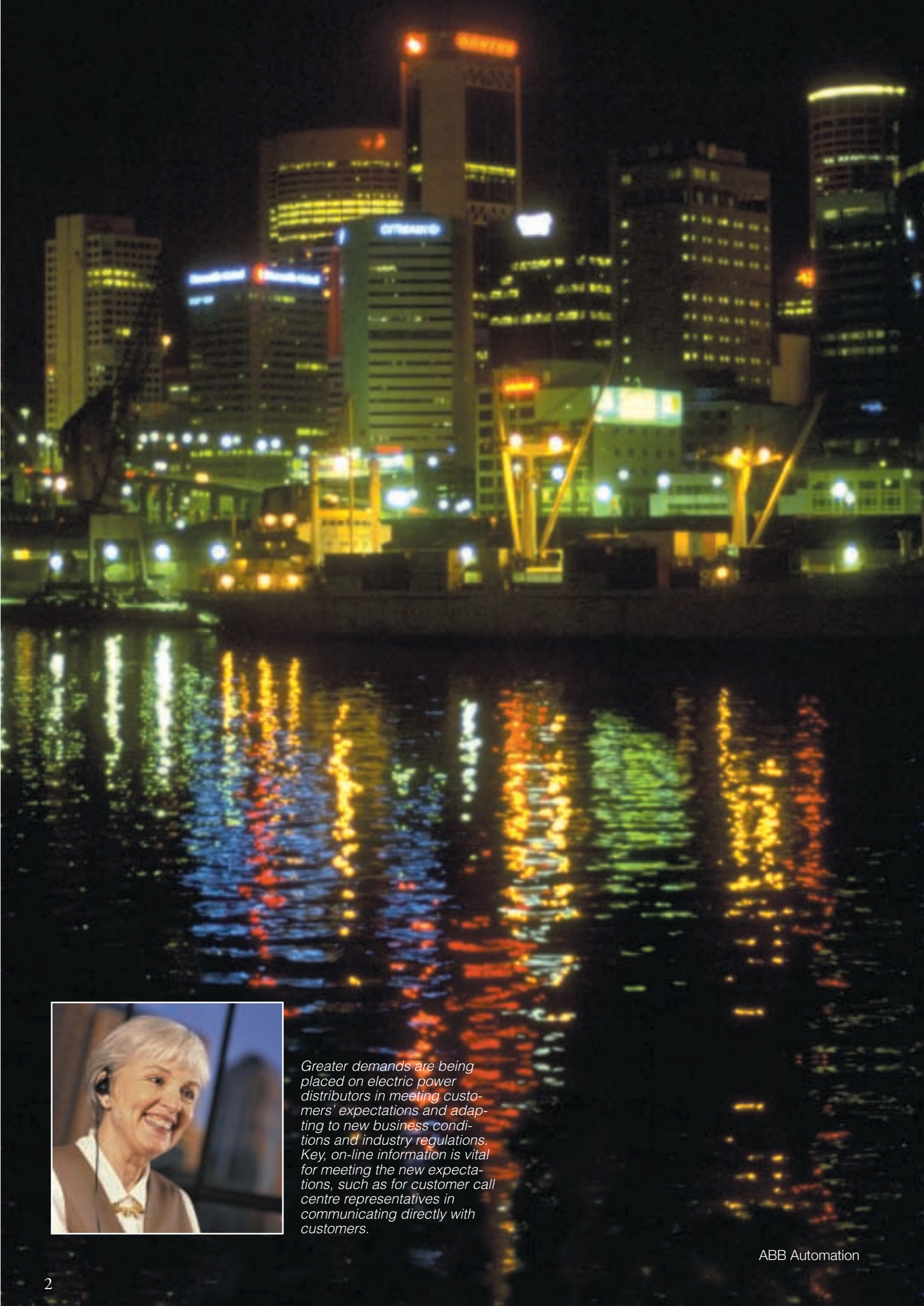# S.P.I.D.E.R. DMS

S.P.I.D.E.R. DMS is the distribution management system that adapts and grows with the changing needs of distribution network operators.

ABB Automation

Greater demands are being placed on electric power distributors in meeting customers' expectations and adapting to new business conditions and industry regulations. Key, on-line information is vital for meeting the new expectations, such as for customer call centre representatives in communicating directly with customers.

ABB Automation

Enhancing your distribution business

S.P.I.D.E.R. DMS is a real-time information system for all operational activities. It improves the information made available to the distribution operators, field crew dispatchers, customer service representatives, management and, ultimately, to the utility's customers.

In the new world of power distribution you must compete aggressively for each customer. Daily, every distribution enterprise meets new challenges and has to improve productivity and reduce operating and maintenance costs whilst providing customers with a reliable supply and a broad range of services. To achieve rapid success the effective use of Information Technology is essential.

S.P.I.D.E.R. DMS is the ABB Distribution Management solution. Our range of software and hardware solutions is called Industrial IT. Industrial IT makes a seamless link between DMS and your enterprise information systems. Thus S.P.I.D.E.R. DMS enables your operations management and control room staff to manage efficiently the operation of dispersed distribution assets. At the same time it assists you to cope with the changing world of power distribution.

Improved workflow processes

S.P.I.D.E.R. DMS offers an integrated solution for optimum distribution management, including SCADA-functions, work management, outage management and a wide range of functions to ensure efficient network utilisation. It is based on an architecture that fulfils distribution requirements whilst adapting to the individual utility's business structure. S.P.I.D.E.R. DMS provides access to critical system data and functions to a large number of users, facilitating improved workflow. It interfaces with Facilities Management, Customer Information and other enterprise systems.
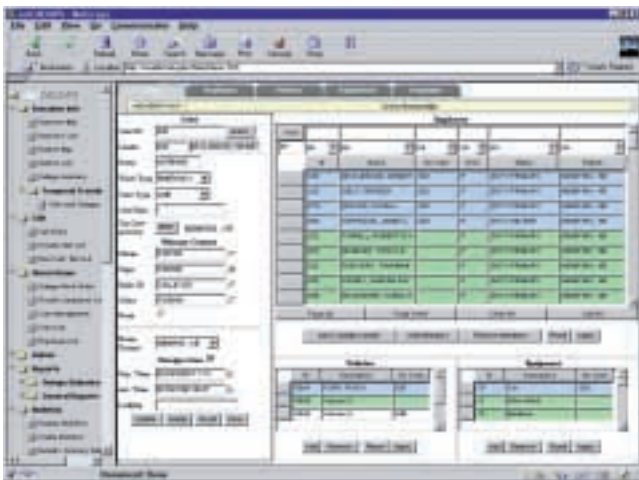
Quick and easy access to information

S.P.I.D.E.R. DMS improves customer service by providing access to information whenever operational or management staff need it. The system reduces operating and maintenance costs by sharing, and making more effective use of, information among the utility's operations, maintenance, construction and management groups. It substantially improves operational efficiency, such as in the need for control centres and in needed manpower.
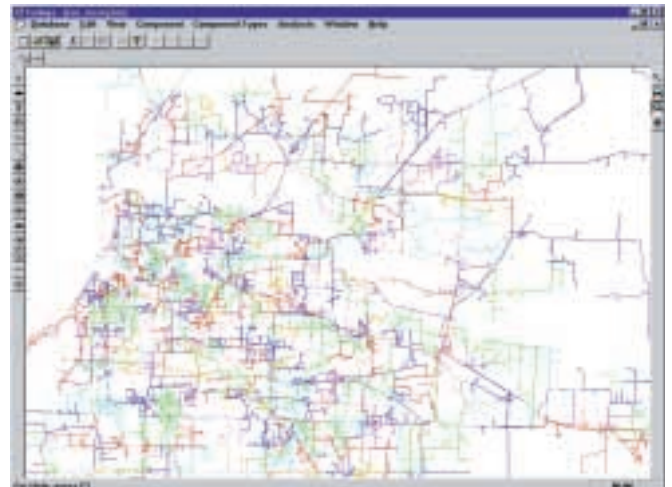
Uniform presentation

S.P.I.D.E.R. DMS integrates application modules of S.P.I.D.E.R. SCADA and CADOPS. S.P.I.D.E.R. SCADA offers real-time integration of distribution information along with a superset of SCADA applications. CADOPS is ABB's solution for advanced distribution management. The inter-process communication and middleware provide efficient communication with applications throughout a diverse and extended enterprise communication network, using a uniform presentation format.
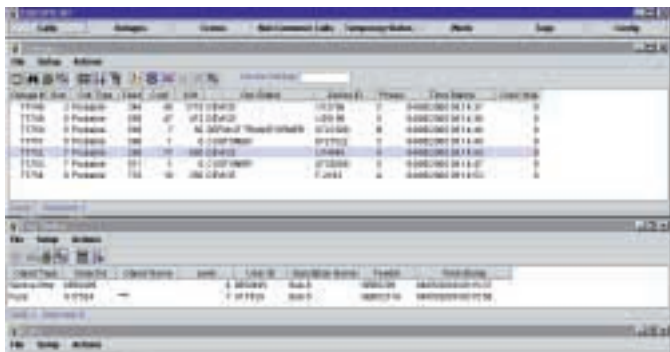
Access of information over the Internet

S.P.I.D.E.R. DMS allows users across the enterprise to view and query outage and operational information using thin client PC hardware. Users access the S.P.I.D.E.R. DMS via company Intranet resources or from authorised external Internet accounts. Access to on-line operational data offers benefits in improved decision support, more efficient manpower utilisation and operations e.g. trouble call entries. The information collected is up to date, accurate and relevant and is critical in providing feedback to customers when problems arise.

Access of S.P.I.D.E.R. DMS over the Internet.

S.P.I.D.E.R. DMS provides overview presentation of critical system data.

ABB Automation

With a tool which provides accurate, on-line information distribution operators and field crew dispatchers can give a fast and efficient response to trouble calls.

S.P.I.D.E.R. DMS appeals to all categories of operator since it reduces the number of systems they have to interact with.

ABB Automation

Optimum network operation

S.P.I.D.E.R. DMS provides access to corporate-wide systems, advanced applications and decision support systems that ensure safe and reliable distribution networks. It provides a user-friendly distribution management environment using advanced applications to reach optimum operation.

S.P.I.D.E.R. DMS provides all needed functionality to enhance the management of medium and low voltage distribution networks. Powerful operation, planning and engineering features facilitate safe and efficient day-to-day operation as well as improving long-term flexibility and profitability. For seamless integration with high voltage network operations, ABB offers S.P.I.D.E.R. EMS, Energy Management System.

In addition to full SCADA functionality, S.P.I.D.E.R. DMS provides functions to achieve optimum network utilisation at all times. The outage management functions

are designed to analyse trouble reports and to support the supply restoration process. Real time monitoring and control functions provide access to vital network topology information, whereas crew and resource management details are vital to maintain optimum customer service and maximum safety for field crew personnel. The electrical network data model is designed to adapt to various preferences selected by the utility or constraints dictated by the quality of data available. For already existing network databases ABB provides a standard data import interface.

Real time monitoring and control

Geographic World Maps
Schematic Diagrams
Temporary Network Changes
Network and Device Tagging
Rules for Safety Interlocks
Full SCADA Functionality
- Data Acquisition
- Device and Sequence Control
- Events Management

Outage management

Trouble Call Entry and Management
Manual or Automated Call Service
Feed Back to Customers
Fault Localisation/Inference Engines
Fault Isolation Logic
Supply Restoration Logic
Restoration Prioritisation and Follow-up
Outage Reporting
- Outage Statistics and Indices
- Outage Causes and Equipment Faults
- Customer Outage History

Work management

Operation Step Planning
Validation Simulation
Scheduling
Distribution of Work Orders
Execution and Follow-up

Crew and resource management

Scheduling (time and capabilities)
Crew Tracking (GPS tracking)
Dispatching and Assignment Verification
Optimal Route Planning
Follow-up and Reports
Two-way Mobile Crew Data Communication

Optimal network utilisation

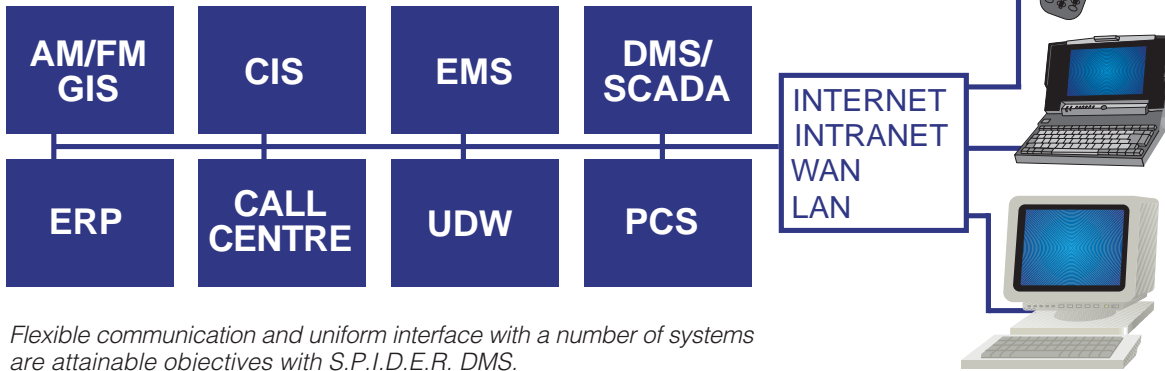Network State Estimation (real time load flow)
Load Flow Studies
Optimal Feeder Reconfiguration
Loss Minimisation (MVAr control)
Load Management
- Feeder Voltage Control
- Load Switching

Network modelling

Seamless HV, MV and LV Modelling
Per Phase Connectivity Tracing and Analysis
View and Analyse Network Conditions
- "As-built"
- "As-operated"

Data warehousing

Data Archiving
- Operational Data
- Work Orders
Data Mining
Reporting

Overview of functions, S.P.I.D.E.R. DMS.

AM/FM GIS	CIS	EMS	DMS/ SCADA
ERP	CALL CENTRE	UDW	PCS

INTERNET
INTRANET
WAN
LAN

Flexible communication and uniform interface with a number of systems are attainable objectives with S.P.I.D.E.R. DMS.

Easy implementation and integration

S.P.I.D.E.R. DMS includes tools for unified data management and integration, also with other information systems. These tools allow for single source of data and information; they also ensure easy implementation and the best long-term return on investments.

When implementing a distribution management system significant time is saved if large portions of existing data can be reused. When S.P.I.D.E.R. DMS is implemented it requires only facility data, customer data and trouble reports interfaces. It is designed to minimise the duplication of data entries. ABB engineers have all the skills necessary to achieve an integrated system that can communicate with objects of different brands, models and ages, such as handling several different types of communication interfaces.

Wide application interface capabilities

S.P.I.D.E.R. DMS interfaces easily with associated systems, such as:
- UDW   Utility Data Warehouse
- PCS   Process Communication System
- EMS   Energy Management System
- CC   Call Centre
- CIS   Customer Information System
- GIS   Geographic Information System
- AM/FM Automatic Mapping,
         Facilities Management systems
- ERP   Enterprise Resource Planning system

To interface with these systems S.P.I.D.E.R. DMS adopts standard application programming interfaces (APIs), developed and refined to meet numerous sets of system requirements.

Meeting new requirements

S.P.I.D.E.R. DMS offers a suite of standard applications that perform all functions necessary for improved management of a distribution network. They are continually enhanced with new features based on market and customer needs. ABB offers annual program updates to keep the software current in terms of new requirements and technology. Updates of S.P.I.D.E.R. DMS can also be made independently at any time from updates of other IT-systems.

ABB project management

Close communication throughout a DMS project is vital for the utility as well as for ABB. ABB project managers are deeply committed and knowledgeable in their fields of application as well as being highly skilled in project management.

Access to the wide knowledge and experience of ABB

ABB is in the forefront of electrical engineering. Our Industrial IT solutions include the best of hardware and software technologies and apply available international standards. ABB is a provider of solutions for the challenges of today's distribution engineering and operations management. Experience from electrical engineering projects around the world benefits the utility, which is aiming for a streamline and optimum operation as well as an integrated approach.

Let us put our talents to work for you.

ABB project managers are experienced in handling all aspects of a complex project - from achieving the customer objectives to dealing with time planning and economic matters. ABB project managers focus on quality and the fulfilment of the project as well as the customer's overall goals.

For more information please visit
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