

SCADA DMS



For Reliable and Economical Energy
System Operation

ICSA (India) Ltd. and Dongfang Electronics Co., Ltd strategic partnership provides SCADA-DMS solutions to Indian Utilities which combines the expertise of an International Power Automation Company with ICSA's domain knowledge, local support and services..



- Headquartered in Yantai, Shandong Province, China.
 - 30 years of experience in Power Automation System.
 - Expertise covers all three power domains; Generation, Transmission and Distribution.
 - Over 2200 employees, Including over 300 PhDs and Masters in Engineering and more than 800 Engineering Graduates provide extremely qualified talent pool for the company.
 - Proven track record with over 7000 RTUs, 600 DMS systems, 2000 Substation Automation Systems in operation.
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- Certification from recognized International Accredited Authorities including KEMA IEC61850, CE Certificate & Certification by Local Authorities e.g. ERTL and Sameer in India.
 - Over USD 130 million sales revenue in 2009 and growing at more than 9% year on year.

- Headquartered in Hyderabad, India with nationwide sales and service network.
- 12 years of experience in power domain with Automation and Infrastructure projects.
- Experienced in handling large projects at multiple locations with over 70 ongoing projects.
- Turnkey project expertise in handling Substation & Transmission Lines projects in transmission and distribution sector.
- Team of specialized professionals create customized and value added software solutions.
- Strong and profitable Co with revenue exceeding Rs 1,200 Crs with profits of over Rs 130 Crs.



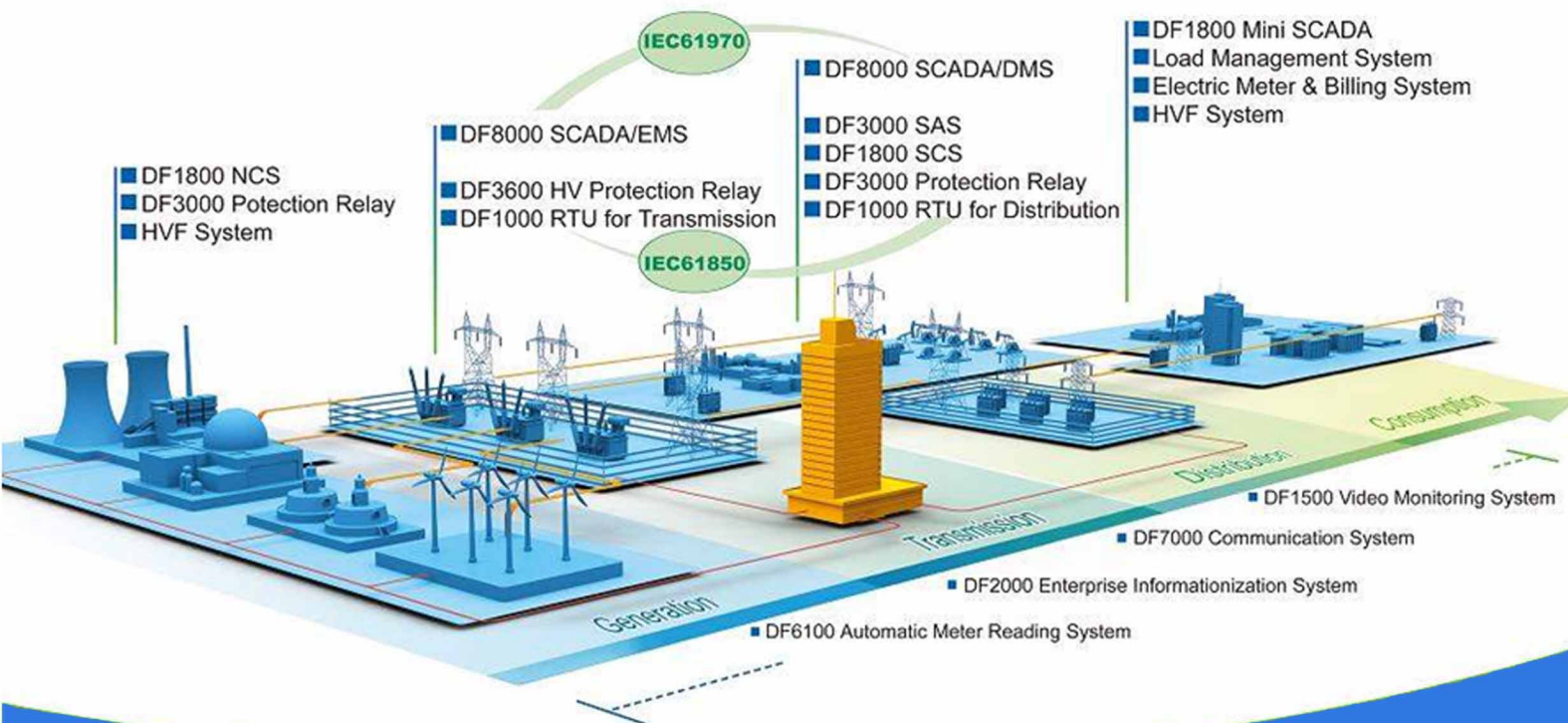
Summary

DF8000 SCADA/DMS/EMS system is a comprehensive set of integrated solution for analysis, simulation and operation of electric power generation, transmission and distribution. DF8000 provides the functions of supervisory control, network analysis, safe and economical operation instruction, dispatch information management, dispatcher training simulator, data integration platform with third party software and inter control center communication.

DF8000 is developed under an established quality assurance program and has been used as high reliability Electrical Power Automation System worldwide.

DF8000 is developed under a modular design concept and supports Client/ Server architecture. It is a Reliable, Scalable and Flexible system.

As a fully integrated solution, DF8000 is a Real-Time Intelligent Power Management System to monitor, control, simulate and optimize the operation of your energy system.



System Hierarchy

DF8000 SCADA/EMS/DMS software system is designed as five layers.

The First:

Distributed System Operation and Development Middleware Platform

It is called general OS platform layer. It is a middle-ware between DF8000 SCADA/DMS/EMS system and different operating systems. This middle-ware isolates applications from OS, at the same time, it provides uniform OS function interface and operation environment for the applications. It makes system highly portable and assures that different Operating systems like Windows, Unix and Linux can be used at the same time. This provides:

- Uniform, extensible, distributed and transparent operating system platform.
- Flexible configuration and expandability with Support for Unix, Windows series and Linux operating systems
- Standard external communication interface to integrate with other systems.
- Support for Client / Server Architecture with dual redundant network and servers.
- Support for commercial Relational Data Base such as Oracle, Sybase, SQL Server and MySQL.

The Second:

Object Oriented Real Time Database Middleware Layer Following IEC61970

It is called uniform power application platform. It adopts the object oriented power device model definition and EMSAPI established by IEC. It is a power system application oriented realtime DBMS. The special platform allows application level openness based on IEC61970 CIM/CIS, and makes the application modules "Plug & Play". With this design, DF8000 is easy to integrate with the third party software modules.

The Third:

Application Platform Layer

It provides generic application interfaces and services for SCADA, DMS, EMS and other applications.

It is composed of integrated GUI, drawing - model & data base editing tools, printing services, web services, data acquisition service and inter connection adapters for other systems.

- Secured operation via Area of Responsibility (AOR) and password verification.
- Advanced alarm and event processing functions.
- Network topology analysis and dynamic coloring.
- Control Permissive Interlocks Logic definition interface.
- Supports continuous SCADA snapshots for archiving or PDR (Post Disturbance Recording).

The Fourth:

Power Application Software Layer

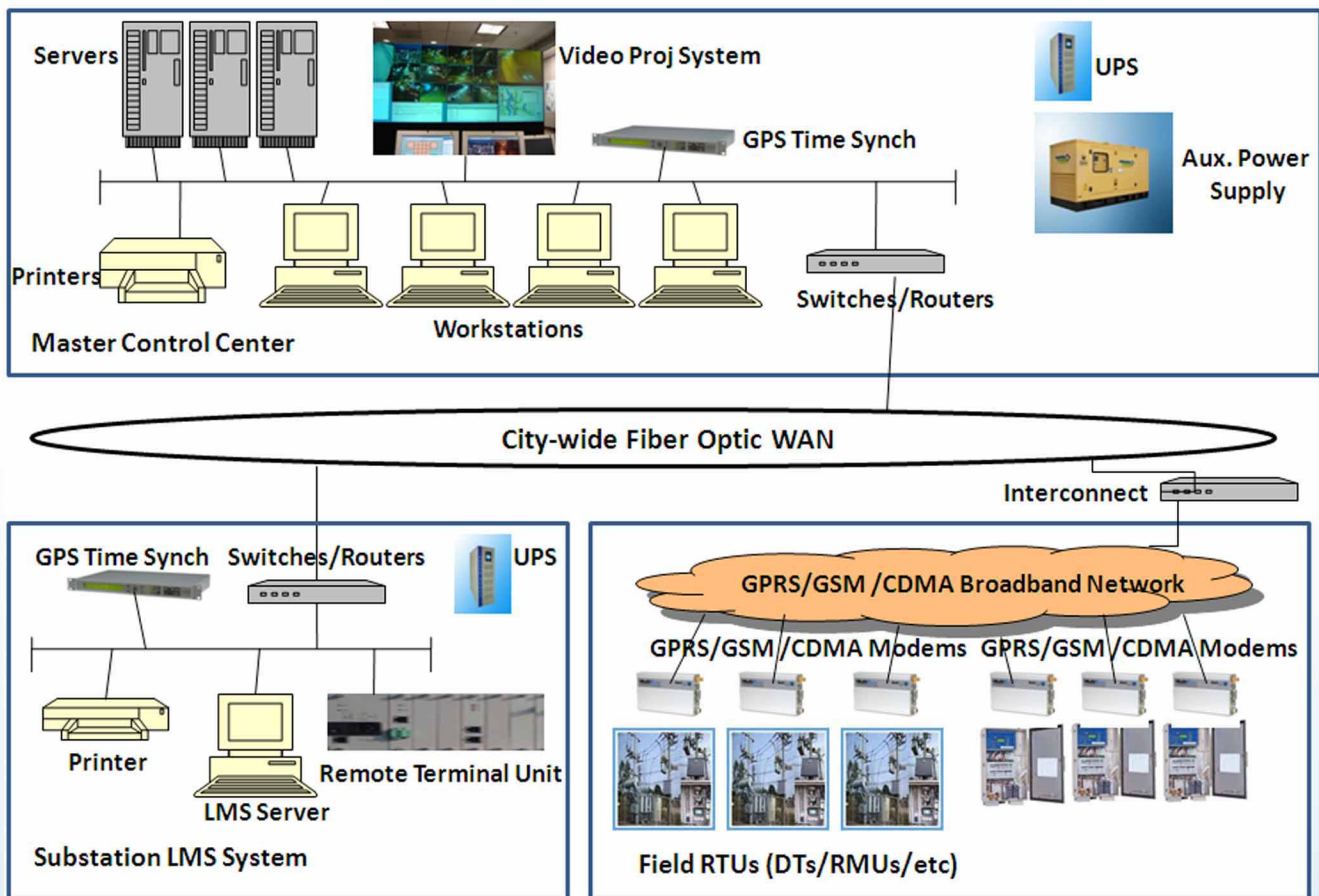
This layer includes many power system applications such as SCADA, AGC, NAS, DMS, AMR, GIS, ICCP, & Power Market supporting software..

- Built-in intelligent graphics.
- Configurable display ratings & modes.
- Graphical display of equipment impedance & grounding.
- Automatic identification of energized & de-energized elements.
- CIM based graphic primitive with integrated modeling with plot- browse- test.
- Integrated Transmission / Distribution network modeling.
- Provides unitized summaries displays.

The Fifth:

Training Simulation Layer

This layer is mirror image of SCADA/DMA/EMS. It can establish flexible one-to-one & one-to-more Trainer to Trainee associations for providing complete training simulation environment in study mode to exercise SCADA, NAS and AGC etc.tc.



SCADA/DMS Solution Diagram

Application Modules

DF 8000 SCADA Software Modules

- Human Machine Interface
- Database Editor
- Database Viewer
- Database Backup Manager
- Database Connection Monitor
- Drawing Editor
- Front End Viewer
- Front End Server
- Real Time Alarm Viewer
- Historical Event Viewer
- Report Manager
- System Manager
- Real Time Database Server
- Work Order Management
- Web Server
- Sequence Switching Management
- Application Programming Interface
- OPC Client and Server
- Inter Control Center Protocol over TASE2

DF 8000 DMS Software Modules

- Network Connectivity Analysis (NCA)
- Power Flow (DPF)
- State Estimation (SE)
- Load Flow Application (LFA)
- Voltage VAR Control (VVC)
- Load Shed Application (LSA)
- Fault Management and System Restoration (FMSR)
- Loss Minimization via Feeder Reconfiguration (LMFR)
- Load Balancing via Feeder Reconfiguration (LBFR)
- Operation Monitor (OM)
- Distribution Load Forecasting (DLF)
- Dispatcher Training Simulator (DTS)

DF 8000 DMS Software Modules

- Network Topology (NT)
- State Estimation (SE)
- Contingency Analysis (CA)
- Transmission Network power Flow (NPF)
- Integrated Volt-Var Analysis and Control (VVC)
- Economic Load Dispatch (ELD)
- Automatic Generation Control (AGC)

DFE and ICSA shall offer world-class Automation solutions by studying your systems, understanding your requirements and enable you to improve the system reliability, maximize the operational efficiency and to reduce the losses through state-of-the-art hardware, comprehensive software and reliable service.

DFE and ICSA team shall implement this total solution including design, engineering and installation and commissioning of the SCADA/DMS/EMS system. DFE and ICSA will provide lifelong support in the expansion, maintenance and upgrade of your system.

Some Major Users & Clients of ICSA

- Uttar Pradesh Rajkiya Nirman Nigam Ltd (UPRNNL)
- Andhra Pradesh Southern Power Distribution Company Ltd (APSPDCL)
- Eastern Power Distribution Company of Andhra Pradesh Ltd (APEPDCL)
- Reliance Energy Ltd
- Central Electricity Supply Utility of Orissa (CESU)
- Madhya Pradesh Paschim Kshetra Vidyut Vitran Company Ltd (MPPKVVCL)
- Maharashtra State Electricity Distribution Co. Ltd (MSEDCL)
- Southern Electricity Supply Company of Orissa Ltd (SOUTHCO)
- Northern Power Distribution Company of AP Ltd (APNPDCL)
- Chhattisgarh State Electricity Board (CSEB)
- Karnataka Power Transmission Corporation Ltd (KPTCL)
- Transmission Corporation of Andhra Pradesh (APTRANSCO)
- Bihar State Electricity Board (BSEB)
- Dakshin Haryana Bijli Vitran Nigam (DHBVN)
- Ajmer Vidyut Vitran Nigam Ltd (AVVNL)
- Uttar Haryana Bijli Vitran Nigam (UHBVN)
- Jaipur Vidyut Vitran Nigam Ltd (JVVNL)
- Oil India Ltd

Some Major Users & Clients of DFE

- Power Grid Corporation of India Ltd (PGCIL)
- Jaipur Vidyut Vitran Nigam Ltd (JVVNL)
- Bangalore Electricity Supply Company Limited (BESCOM)
- Tamilnadu Electricity Board (TNEB)
- Jharkand State Electricity Board (JSEB)
- West Bengal State Electricity Distribution Company (WBSEDCL)
- China Huadian Engineering Co., Ltd (CHEC)
- Tanaga National Berhad (Malaysian Energy Provider)
- China Power Investment Corporation
- Provincial Electricity Authority, Thailand
- State Grid Corporation of China
- China Datang Corporation, China
- Sinopec, China
- China Guodian Corporation
- Public Power Corporation of Greece
- Perusahaan Listrik Negara, Indonesia
- National Electricity Corporation, Sudan
- China Southern Power Grid Co., Ltd
- China Huaneng Group