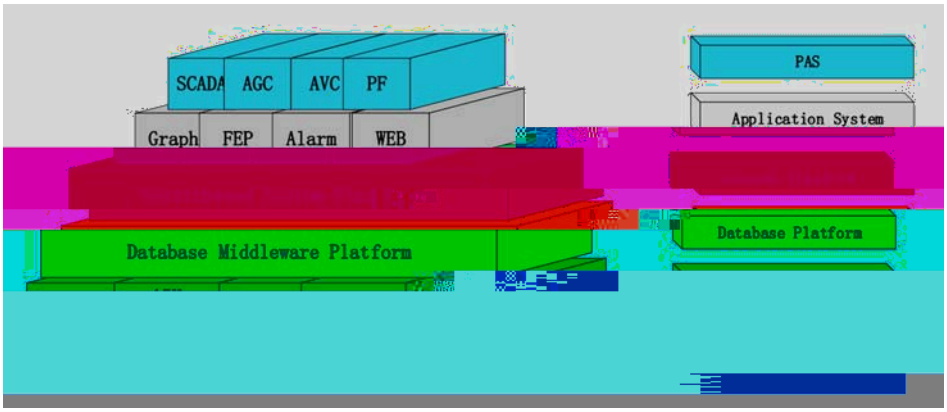




DF1800 Local Data Monitoring System is integrated solution for analysis and operation of transmission and distribution substation, photovoltaic power station and wind power station. DF1800 provides the functions of supervisory & control, network analysis, safe and economical operation instruction, dispatch information management, active power/reactive power control, voltage control, etc.

DF1800 is developed under an established quality assurance program and has been used as high reliability Electrical Power Automation Systems software worldwide.

DF1800 was developed under a modular designing concept and with Server/Client architecture. It is a Reliable, Scalable and Flexible system.



It is called general OS platform layer. It is a middleware between DF1800 LDMS system and different operating systems. This middleware isolates DF1800 applications with OS, at the same time, it provides uniformed OS function interface for DF1800 applications, and it provides operation environment for the applications. And it makes DF1800 system high portable. It assures that different operation systems like Windows, different UNIX, Linux can be used at the same time in system. For example HP-UNIX, IBM AIX, SUN Solaris, Linux, Windows Server & Windows Workstation etc. So it can provide most cost-effective solutions for power enterprises and protect the customer's investment.

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 real time database management system. The

special platform, makes SCADA, AVC, AGC have application level openness based on IEC 61970/61968 CIM/CIS, and makes the application software modules “Plug and Play” possible.

It provides general application interfaces and service for SCADA, AGC, AVC and other applications. It is composed of integrated GUI, integrated drawing-model-database editing tool, printing service, data acquisition service, web service and interconnection adapter with other systems. The establishment of application platform layer makes it easy for the system development and upgrade.

This layer includes many power system applications, such as SCADA, AGC, AVC, Photovoltaic Power Forecasting, Wind Power Forecasting, etc.

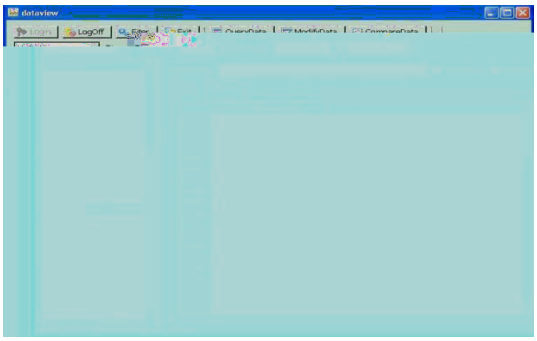
DF1800 SCADA HMI
DF1800 SCADA Database Editor
DF1800 SCADA Data Viewer
DF1800 SCADA Database Backup Manager
DF1800 SCADA Database Connection Monitor
DF1800 SCADA Drawing Editor
DF1800 SCADA Front End Viewer
DF1800 SCADA Front End Server
DF1800 SCADA Real Time Alarm Viewer
DF1800 SCADA Historical Event Viewer
DF1800 SCADA Report Manager
DF1800 SCADA System Manager
DF1800 SCADA Real Time Database Sever
DF1800 SCADA Real Time Database Viewer

DF1800 Web Server
DF1800 Application Programming Interface
DF1800 Photovoltaic/Wind Power Forecasting
DF1800 Automatic Generation Control
DF1800 Automatic Voltage Control

• Provide uniform application developing interfaces to improve the efficiency of system upgrade and customer
]

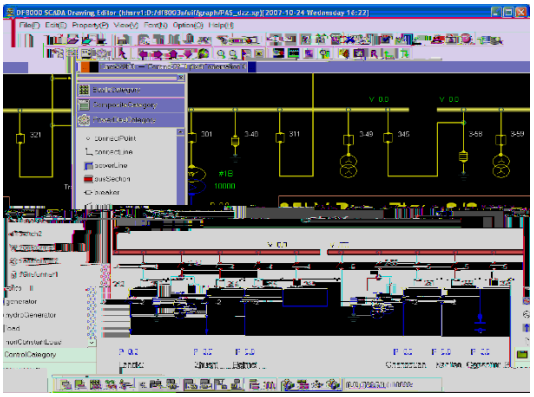
DF1800 SCADA HMI Module is distributed and fully-graphical human-machine interface developed based on network window system X-Window, industrial standard OSF/Motif or Windows and three-dimensional graphics standard OpenGL. The system fully takes into account the different requirements proposed by different applications, such as NAS, DMS, AGC, DMIS, AMR and TMS when designing, and mixes the miscellaneous requirements. All the operations can be performed on the human-machine interface, via clicking mouse to make the operation more convenient. The shortcut operations are defined too, which make the operation more simple and convenient. The single key can be defined to navigate display also to speed up the operation.

- Set an object-oriented data model referenced to CIM, to establish the foundation for the “plug-and-play” of the application software.
- Implementing the [illegible]

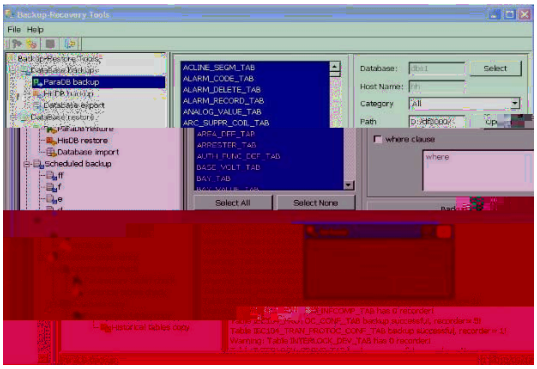


DF1800 SCADA Drawing Editor Module adopts the object-oriented technique. All devices and electric power symbol are treated as objects. The system can display three dimension images and flashes, many kinds of fonts. The system also supports Unix system X terminal and simulated X terminal on a PC.

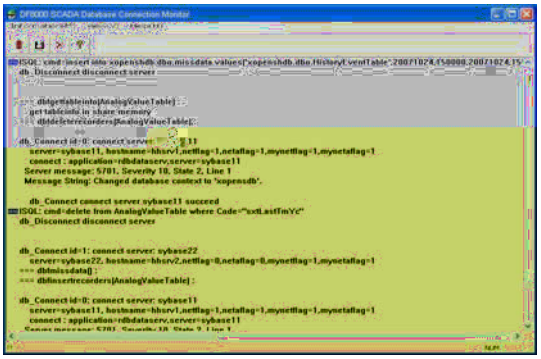
DF1800 SCADA Drawing Editor Module is able to display drawing on static or dynamic mode with multilayer structure. The system has unlimited display of layer and view and may set database information for Power Device. The system also integrates the power device symbol pre-defined function. The DF1800 SCADA Drawing Editor can synchronize the modified drawing via network after the archiving command is issued.



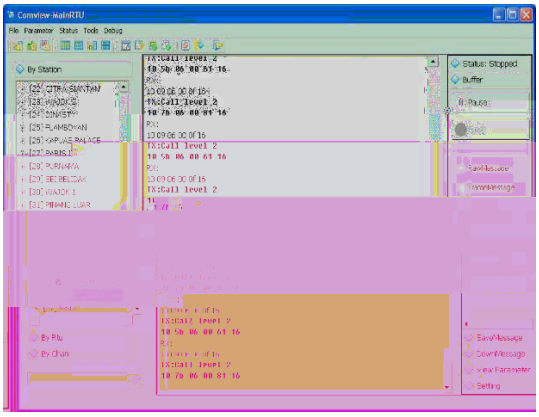
DF1800 SCADA Database Backup Manager module is for dumping, replication and transcription the Database, its menu is convenient and friendly. To display the parameter table structure is also provided.



DF1800 SCADA Database Connection Monitor Module is the interface for outputting database accessing command and the operation result. This interface helps the system administrator to diagnose the system running status.



DF1800 SCADA Front End Viewer Module displays the parameters of the FEP system, checks the channel buffer, monitors the RTU status, watches the raw real-time data, and tests the data transmission. It also acts as the protocol analyzer.

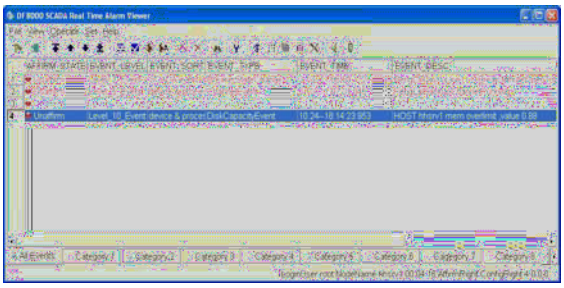


• Support synchronous/asynchronous channel
• Auto-Switch main/standby channel according to channel status
• Auto-Switch main/standby FEP according to host status
• Monitor and control the running status of channel
• Support all standard international communication protocol (such as IEC60870-5-101, IEC60870-5-103, IEC60870-5-104, IEC61850, MODBUS serial or Over IP, DNP 3.0 serial or Over IP, etc.)
• Adopt Terminal Server to allow the serial equipment to be connected to LAN and WAN directly.
• Support 4G/3G/GPRS communication

All the alarm and event have attributes like: priority, point or device name, substation name, type, time, status or value, area of responsibility, etc. And alarm style, description, sound or not are user definable.

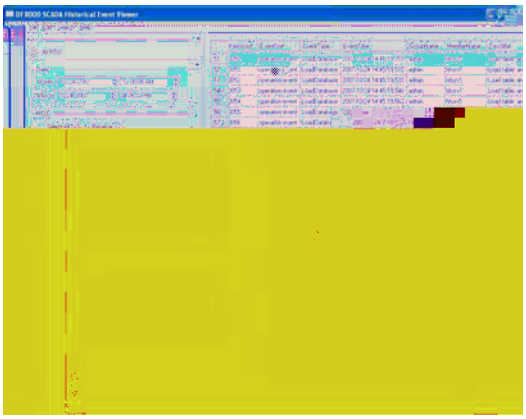
Alarms include: fault trip, no command change of switch, protection signal, fault trip times of breaker violating limit, analog value violating limits, change rate of analog point violating limit, and so on.

DF1800 SCADA Real Time Alarm Viewer provides SMS and Email Messenger. The module uses the short-message service supplied by the mobile communication service to send the classified and filtered SCADA system's information to the dedicated mobile phone. The subsystem can make the user gathering the real-time information of the power grid easily at any time and in any place via using the public SMS. It can speed up the efficiency for restoring the power grid's abnormal accident. Customer can set the information style according to their requirement. The system can improve the operation efficiency and reduce the labor intension for the operator.



DF1800 SCADA Historical Event Viewer Module is the interface to retrieve the history event. It is useful to analyze accident of the power grid. The interface provides the access to set the event searching condition.

The module provides the function of event editing, such as add an event record, delete an event record or modify an event record.



- Based on Browser/Server (B/S) architecture
- Provide graphical data browsing via IE browser

Dongfang Electronics International Engineering Co., Ltd.

Dongfang Electronics Co., Ltd.

Address: No.2 Jichang Road, Yantai, Shandong Province, P.R. China, 264000

Tel: +86-535-5520949

Fax: +86-535-5520930

Email: idf@dongfang-china.com

Website: http://www.dongfang-china.com/en