



EMS of Guangxi Grid of China

The PCS-9000 EMS for Guangxi province Power Grid has been put into service since Jul, 2013 and kept in satisfactory continuous operation till now.

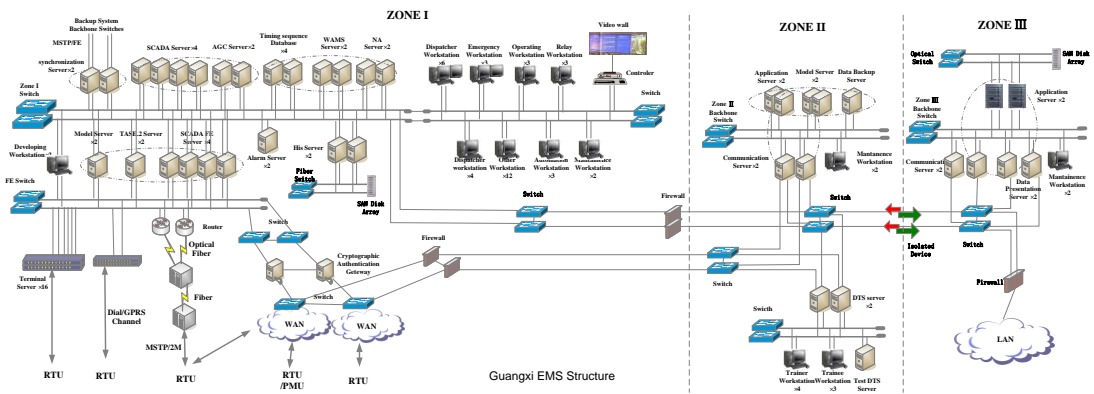
The Project Name: The Operation Control System (OCS) of Guangxi Province Power Grid.

Date of Contract Award: 03/10/2011

Date of Completion: 07/30/2013

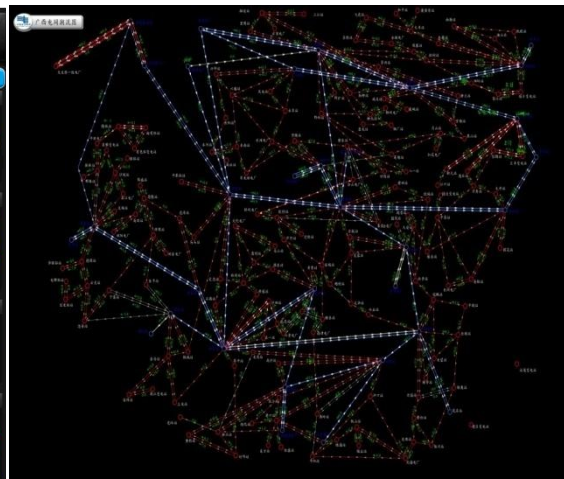
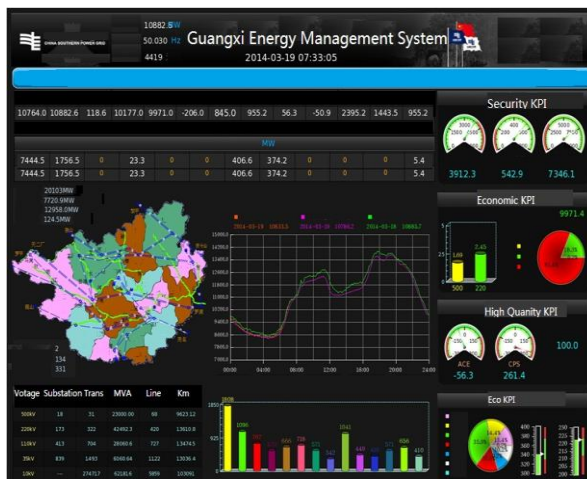
Guangxi province is located in southwest of China. It consists of 21 cities and its area is about 236,000 sq km and population is up to 51.59 million. The installed capacity of Guangxi Power Grid is 30.25GW. The voltage level of Guangxi Province Power Grid is from 35kV to 500kV. The whole grid contains 26 500kV Substations, 178 220kV substations, 41 power plants and 14 region control center.

The PCS-9000 EMS of Guangxi Province Power Grid adopts dual-redundant configuration of servers and networks. It is comprised of 43 IBM servers, 8 Lenovo servers and 27 workstations. IBM servers include 4 SCADA, 8 FE servers, 4 history database servers, 2 AGC servers, 4 PAS servers, 2 DTS server, 2 WAMS servers, 2 TMR servers, 2 APP servers, 8 Communication servers, 2 OSB servers, 2 Web servers, 2 backup servers and 1 test servers. Lenovo servers include 4 Edna Servers, 2 safety server and 2 alarm servers. Workstations include 11 workstations for dispatchers, 11 workstations for maintainers and develop engineering and 5 workstations for Dispatcher Training Simulator.



The PCS-9000 EMS for Gaungxi Power Grid is provincial dispatching system which consists of the functions of SCADA, AGC, SSSC(Steady State Supervisory Control), TSC(Transient Supervisory Control), PAS, DTS, WAMS and TMR. The PAS(Power Application Software) consists of:

- Network modeling
- Network topology
- State estimator
- Dispatcher power flow
- Contingency analysis
- Short circuit calculation
- Sensitivity analysis
- Optimized power flow
- Security constrain dispatch
- Extra short-term load forecast
- Short-term load forecast
- Bus load forecast
- Intelligent alarm and fault diagnosis
- Remote information analysis
- Online statistics and formula calculation
- and so on



The PCS-9000 EMS of Guangxi Power Grid adopts unified supporting platform which contains the database platform and the software platform. The database platform includes timing sequence database, relational database and real-time database. The software platform includes graphics service, table service, alarm service, file service, message service, event service, soft-bus service and so on. Based on the platform the PCS-9000 EMS fulfills the control and analysis functions which include Steady State Supervisory Control, Transient Supervisory Control, network analysis and Dispatcher Training Simulator. The main feature of the PCS-9000 EMS of Guangxi province dispatching center is that it combines hydropower dispatching with thermal power dispatching to make the power system operating in the economical way. The robust structure of the PCS-9000 ensures the system operating without any interruption.