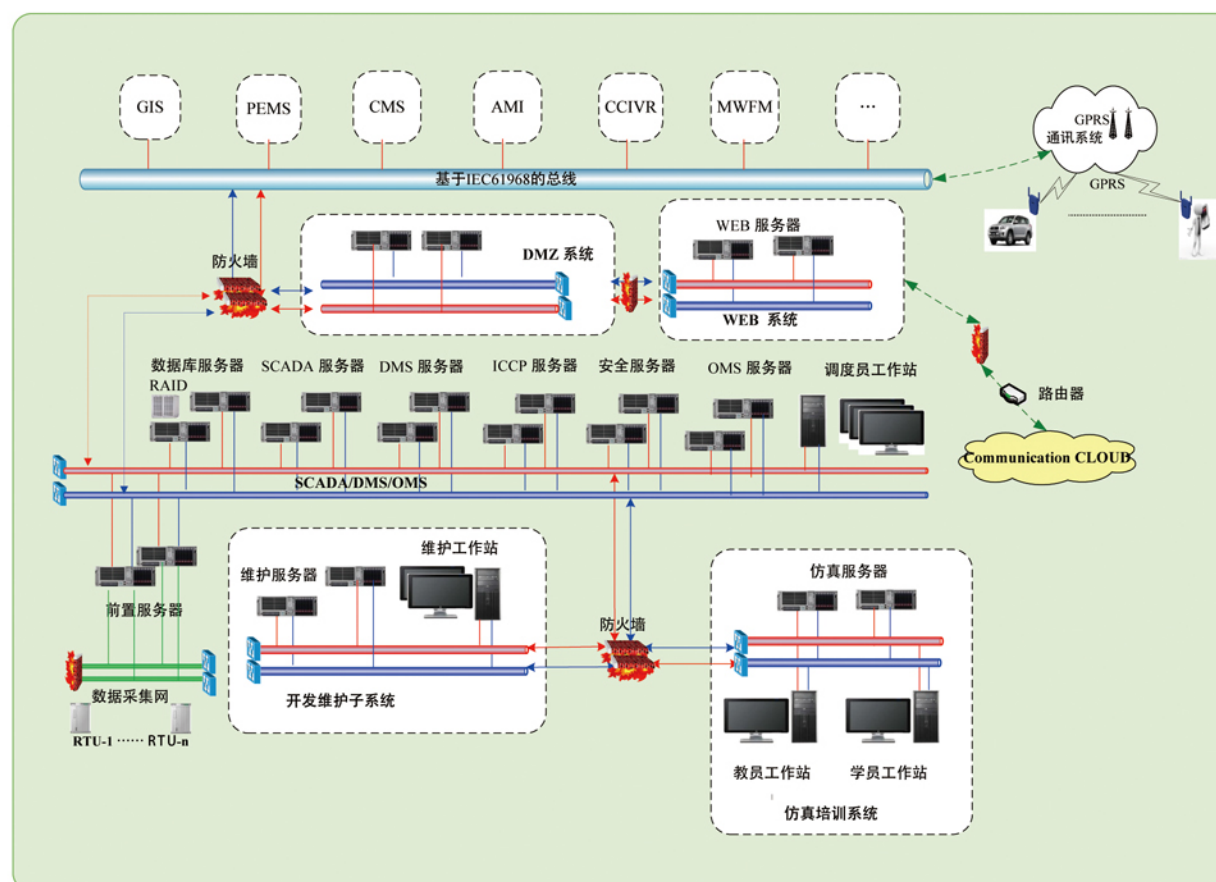# 智能配网系统解决方案

DF8000 SCADA/ADMS/OMS 高级配电管理系统

系统概述

DF8000 SCADA/DMS/OMS高级配电管理系统，面向智能电网专业设计，以实时应用为基础，以配网运行管理为中心，以配网业务流程为主线，集数据采集、实时监控、故障处理、应用分析、生产管理于一体，实现了配网监视调度、生产、运行和服务的全面自动化。通过为供电企业提供一体化的解决方案，有效提高了配电网的运行和管理水平，提高了企业的供电可靠性和客户满意度。

系统架构图

Intelligent Distribution System Solution

DF8000 SCADA/ADMS/OMS advanced distribution management system

System overview

DF8000 SCADA/DMS/OMS advanced distribution management system is designed for the smart power grid. It is based on real-time application, centered on distribution network operation and management, focusing on the business process of distribution network, integrating data acquisition, real-time monitoring, fault processing, application analysis and production management, and enabling the full automation of distribution network monitoring and dispatching, production, operation and service. With the integrated solutions for power supply enterprises, their operation and management level of power distribution network are effectively increased, and their power supply reliability and customer satisfaction are improved.

System architecture diagram
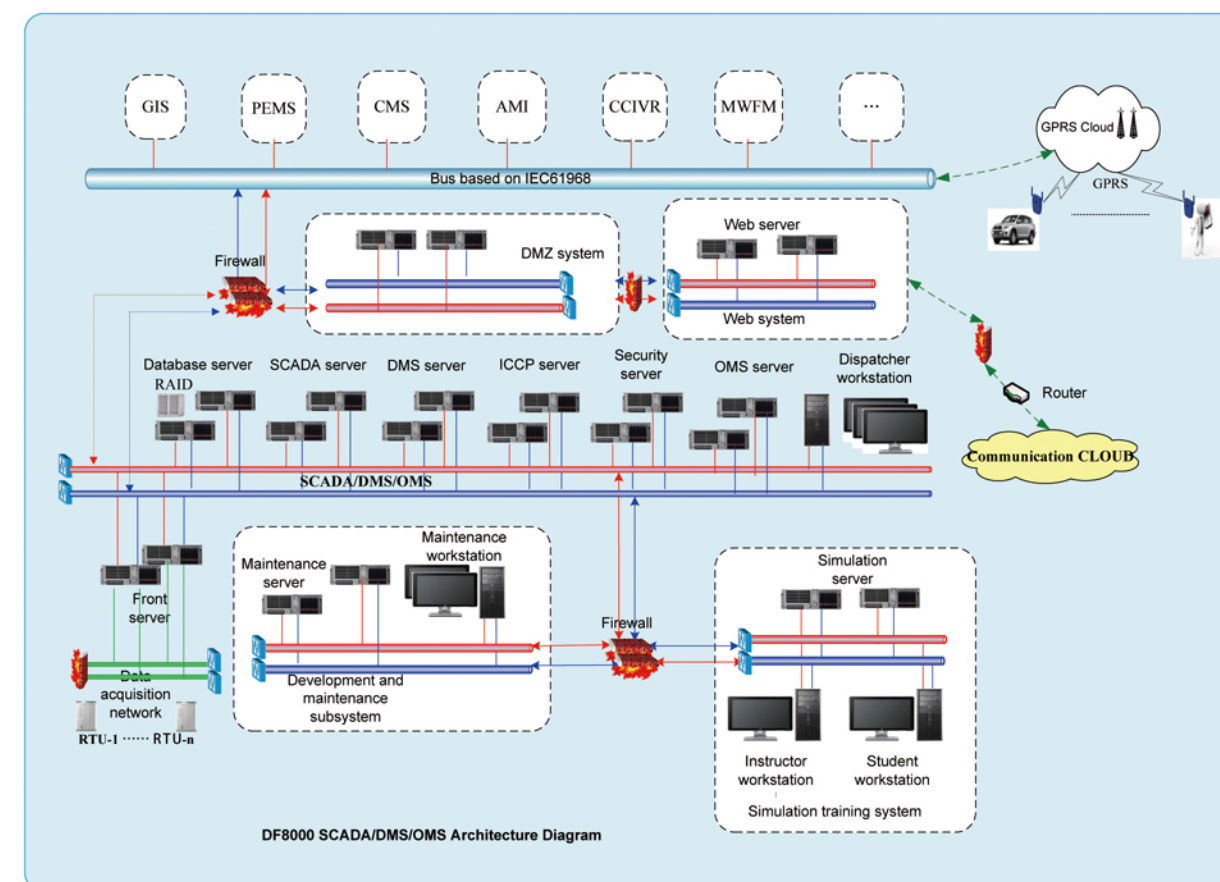
智能配网系统解决方案

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系统特点

● 基于IEC62351及NERC安全标准构建
● 基于SOA架构，遵循IEC61970/IEC61968标准，支持IEC61850智能变电站接入，支持输电网和配电网统一的图、模、库一体化建模
● 基于分布式采集和监控技术，支持RTU/FTU/DTU/FPI等多种、大量终端设备接入
● 基于ESB（企业信息总线）的集成化设计，可通过标准接口或适配器方式与任意第三方系统进行数据和流程交互
● 基于拓扑、实时信息及客户报障等信息进行故障综合研判，准确实现故障定位及故障分析

● 基于业务流程的故障处理，可实现故障定位、故障隔离、故障恢复、人员派单、工单管理等
● 支持系统硬件设备和操作系统的混搭，即确保系统安全性易用性和可扩展性，又充分保护用户投资
● 强大的规约库技术，可快速接入各种标准规约，也可快速定制开发非标准规约
● 基于分布式应用触发机制的网络平台，实现了服务的自由部署和自由迁移，可在极端条件下，实现仅仅一台服务器完成所有系统功能
● 实现与GIS系统的无缝衔接和交互
● 支持太阳能、风能等微网及新能源的接入和监视

系统主要功能模块

应用类别	应用功能
实时监控与分析	数据采集与存储 实时监控与智能告警 数据建模与数据挖掘 报表、远程维护与WEB
配网分析与优化	网络拓扑、状态估计 潮流计算、短路计算 网络重构、安全分析 灵敏度分析、自动电压无功控制 拉路操作、故障分析 倒闸操作、负荷分配与转供 线损统计与分析
停电管理	客户报障管理、智能故障研判 移动作业管理、资源管理、班组管理 操作票管理、态势监控 客户自助服务、IEEE可靠性指标分析 商业智能分析(BI)
培训仿真	基于稳态电网的培训仿真 动态仿真 调度员培训 培训结果评估

Intelligent Distribution System Solution

DF8000 SCADA/ADMS/OMS advanced power distribution management system

Features

● Based on IEC62351 and NERC cyber security standards
● Based on SOA architecture, following IEC61970/IEC61968 standards, supporting the integration with smart substations through IEC61850, and supporting unified graphic, model and database integration modeling of transmission network and distribution network
● Based on distributed acquisition and monitoring technology, supporting massive RTU/FTU/DTU/FPI and terminal devices access
● Integrated design based on the ESB (Enterprise Information Bus), enabling interacting with any third-party system in data and work flow through standard interfaces or adapters
● Based on topology, real-time information and trouble call information from customers, enabling the comprehensive fault diagnosis, fault location and fault analysis

● Fault processing based on business process and enabling fault location, fault isolation, fault restoration, personnel dispatch, work-order management, etc.
● Supporting the mixed hardware and operating systems, i.e. ensuring system security, usability and scalability while fully protecting customer investment
● Powerful protocol library technology and enabling quickly accessing to various standard protocols, and rapidly customizing and developing non-standard protocols
● The network platform is based on the distributed application trigger mechanism, enabling the free deployment and free migration of services, and, under extreme conditions, achieving all system functions with only one server
● Achieving seamless integration and interaction with GIS system
● Supporting the integration with microgrid and new energy, such as solar energy and wind energy

Main functional modules

Application	Main functions
Real-time monitoring and analysis	Data acquisition, storage and retrieve Real-time monitoring and intelligent alarm Data modeling and data mining Report, remote maintenance and WEB
Distribution network analysis and optimization	Network topology , state estimation Power flow , short circuit analysis Network reconstruction , security analysis Sensitivity analysis , AVC Load shedding , FLISR(Fault location, isolation and system restoration) Switching scheduling, load distribution and transferring Statistics and analysis of network loss
Power outage management	Customer trouble call management, intelligent fault diagnosis Mobile operation management, resource management, team management, work order management, situation monitoring Customer self-service, IEEE reliability index analysis, business intelligence analysis(BI)
Training simulation	Steady-state simulation Dynamic simulation Dispatcher training Evaluation of training results