

# 智能输电系统解决方案

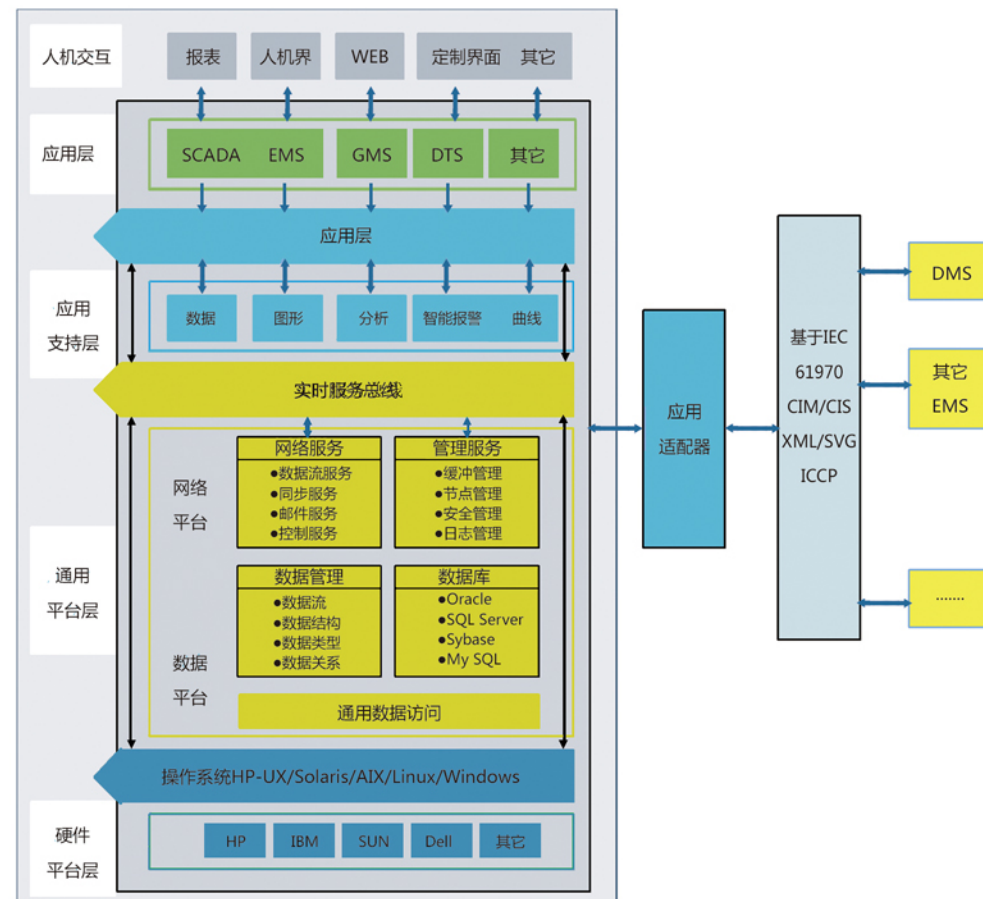
## DF8000 SCADA/EMS 智能输电调度系统

### 系统概述

DF8000 SCADA/EMS基于CORBA规范，符合SOA架构，遵循IEC61970标准，采用当今最新的计算机通信技术、数据库技术、面向对象技术、组件技术及Internet技术开发的新一代输电系统解决方案。

DF8000 SCADA/EMS基于统一平台和模块设计，涵盖了发电控制类应用，电网监控类应用，电网运行分析及优化类应用，智能分析与辅助决策类应用及电网仿真类应用等。即可解决用户在发电、输电侧的监视、控制及优化问题，又能通过模块化的构件技术来充分保护用户投资。

### 软件架构



# Intelligent Transmission System Solution

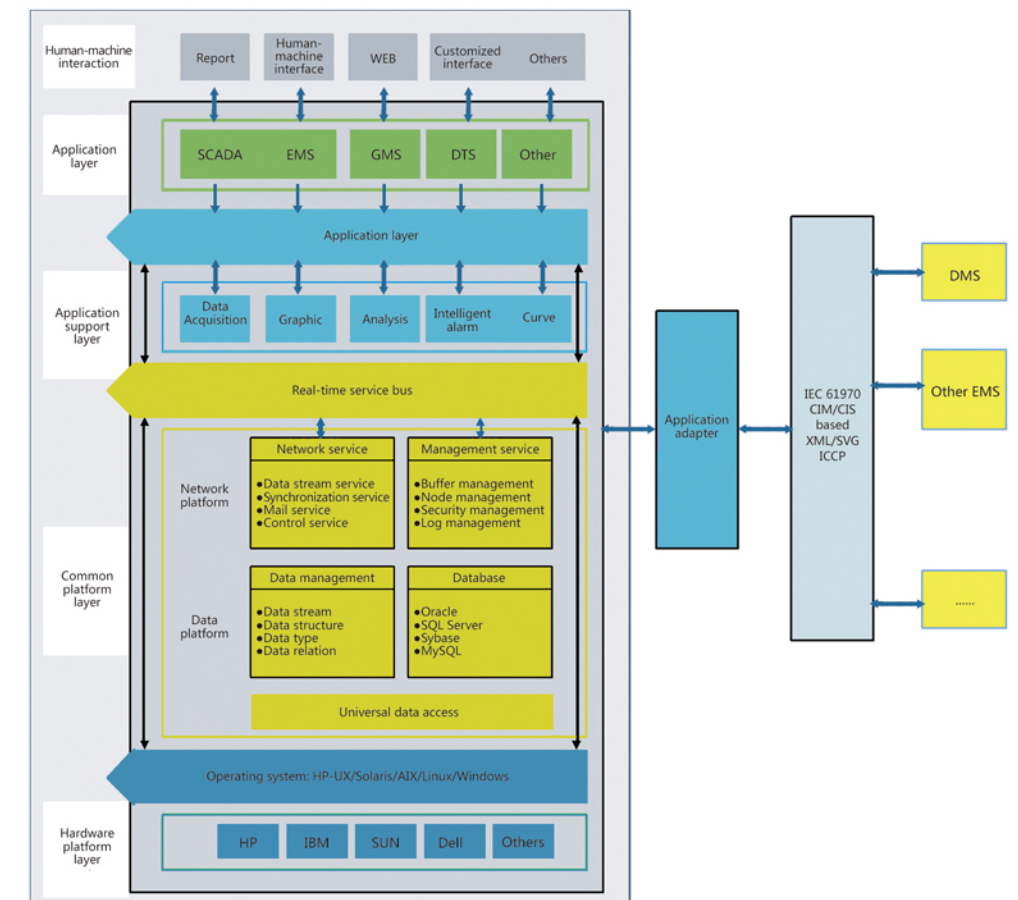
## DF8000 SCADA/EMS intelligent transmission dispatching system

### System overview

DF8000 SCADA/EMS system, based on CORBA specifications, conforms to SOA architecture and IEC61970 standards, incorporating the latest computer communication technology, database technology, object-oriented technology, component technology and Internet technology, so as to develop a new-generation transmission system.

DF8000 SCADA/EMS system is developed under the unified platform and modularized design, covering the generation applications, monitoring and control applications, operation analysis and optimization applications, intelligent analysis & auxiliary decision-making applications and simulation applications. It enables not only solving the monitoring, control and optimization problems on the power generation and transmission sides, but also fully protecting the investment of customers through the modular component technology.

### Software architecture





# 智能输电系统解决方案

## DF8000 SCADA/EMS 智能输电调度系统

### 系统特点

- 基于IEC62351及NERC安全标准构建
- 遵循IEC61970标准，支持IEC61850智能变电站接入
- 基于分布式采集和监控技术，支持大量RTU接入
- 基于SOA架构，实现系统的横向集成与纵向贯通
- 全面的智能调度辅助决策功能，实现电网调度由分析型上升为智能型
- 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。
- 实现主备系统同构双活模式

### 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
网络分析与优化	网络拓扑、状态估计 潮流计算、短路计算 安全分析、静态电压稳定 暂态稳定、灵敏度分析 最优潮流、自动电压无功控制
发电控制与调度	负荷预测、自动发电控制、备用监视 经济调度、发电计划、交换计划 检修计划、发电费用分析 机组组合
智能辅助决策	停电范围分析、停电负荷转供、过载负荷转供、 智能操作票、拉闸限电辅助决策、合环风险分析、 供电风险分析及电网风险评估、 单相接地拉路辅助决策、综合故障分析功能
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 测试态

# Intelligent Transmission System Solution

## DF8000 SCADA/EMS intelligent transmission dispatching system

### Features

- Based on IEC62351 and NERC cyber security standards
- Following IEC61970 standards and supporting the integration with smart substations through IEC61850
- Based on distributed acquisition and monitoring technology, supporting massive RTUs access.
- Based on SOA architecture, enabling horizontal integration and vertical penetration of the system
- Comprehensive intelligent dispatching aid decision-making function, enabling the development from the analytical dispatching to the intelligent dispatching
- Supporting the mixed hardware and operating systems, 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.
- Support dual-activity mode of main and standby systems

### 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
Network analysis and optimization	Network topology, state estimation Powerflow, short circuit analysis Contingency analysis, static voltage stability Transient stability, sensitivity analysis Optimal power flow, AVC
Power generation control and dispatching	Load forecasting, AGC, Reserve monitor Economic dispatch, generation scheduling, Interchange transaction scheduling Maintenance scheduling, production cost analysis Unit commitment
Intelligent aid decision making	Power outage range analysis, power outage load transferring, overload transferring, intelligent switching order, aid decision making for load shedding, risk analysis of looping power supply risk analysis and power grid risk assessment, aid decision making of fault line selection for single-phase to ground and comprehensive analysis
Training simulation	Steady-state simulation Dynamic-state simulation Dispatcher training Evaluation of training results Test mode