

Guazhou Wind Power



Project Introduction

Guazhou wind power project, which involves multiple wind farms with a total installed capacity of 3.8 million kilowatts, is regarded as the “Onshore Three Gorges” in China. The wind turbine networking system needs to continuously report production and operation data, along with monitoring the operation status of the wind turbine generator, blade adjusting, braking and other pertinent systems. The control center can accurately monitor the operation status of the wind farms by the network platform in a timely manner. The entire wind turbine networking system is equipped with 389 Kyland SICOM3000 Din Rail industrial Ethernet switches and 2 Kyland SICOM6424SM layer 3 industrial

System Requirements

- Redundant network with fast fault recovery time
- Real time transmission of main control data
- Safe isolation of different data packets
- Centralized management platform for overall monitoring
- Withstand critical industrial environments, including wide temperature range, strong EMI, humidity, etc.

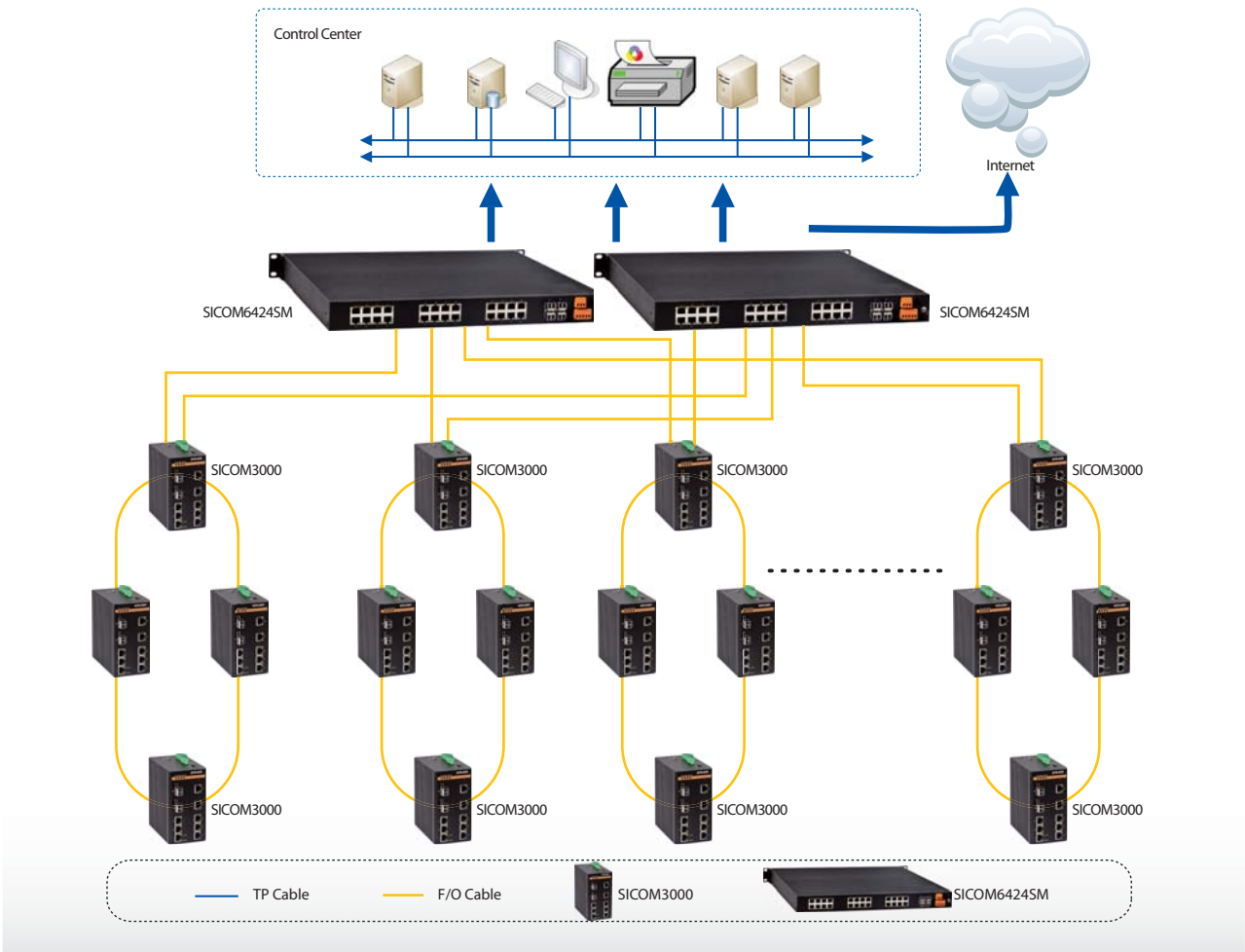
Kyland Solution

The communication network formed by Kyland switches covers all of the wind turbines and control center. One SICOM3000 layer 2 industrial Ethernet switch is installed into the cabinet at the bottom of each wind turbine to collect all the data and relay it through one fiber port. They connect to each other and form seven fiber ring networks in the entire wind power project, supported by Kyland DT-Ring fast recovery ring topology.

The control center is equipped with two SICOM6424SM layer 3 industrial Ethernet switches. Each redundant ring formed by SICOM3000 connects with both SICOM6424SM to realize link and equipment redundancy, which highly enhances the network reliability. Through the industrial ring topologies, all monitoring data is transmitted to the control center, including the direction of the wind turbine, the angle of the turbine blade, the vibration of the turbine tower, and the power of the energy. The network operator can easily monitor and manage the network by CLI, TELNET, WEB and SNMP-based network management software, highly improving the production safety and efficiency.

SICOM6424SM and SICOM3000 switches are specially designed to reliably work in harsh industrial environment with the operating temperature between the range of -40 to 85°C (-40 to 185°F), IP40 protection class, aluminum fanless housing for high efficient heat dissipation and dustproof, industrial level 4 EMC design and redundant power design, which highly enhance the robustness of the network in the wind farms.

System Diagram



Why Kyland?

- DT-Ring ring fast recovery redundant ring protocol
- IEEE802.1P QoS guarantees real time transmission of important packets
- VLAN function realizes data isolation, increasing network security
- Kyvision 3.0 network management software
- Wide operating temperature: -40 to 85°C (-40 to 185°F)
- EMC design reached industrial level 4



SICOM6424SM

- Internal modular design with flexible port combinations
- 4 Gigabit fiber/RJ45 optional ports, 24 Fast Ethernet fiber/RJ45 optional ports
- RIP, OSPF, BGP layer 3 routing protocols
- DT-Ring protocols, MSTP and VRRP
- Kyvision network management software, network topology
- auto-generation



SICOM3000

- 2 Gigabit SFP slots, 6 10/100Base-TX ports and 2 Fast Ethernet fiber/RJ45 optional ports
- Supports DT-Ring protocols and MSTP
- Supports GMRP, DHCP, SNMP, QoS
- Supports SNMPv3, HTTPS, SSH, DT-Psec enhance
- network security

▶ Please refer to www.kyland.com for more details