Remote Monitoring Solution for Wind Farms

With industrial-grade design, ring networks and easy-to-use features, the ISM5012D managed Ethernet switch and the ISE5010D unmanaged Ethernet switch help build a remote monitoring solution for distributed wind turbines.

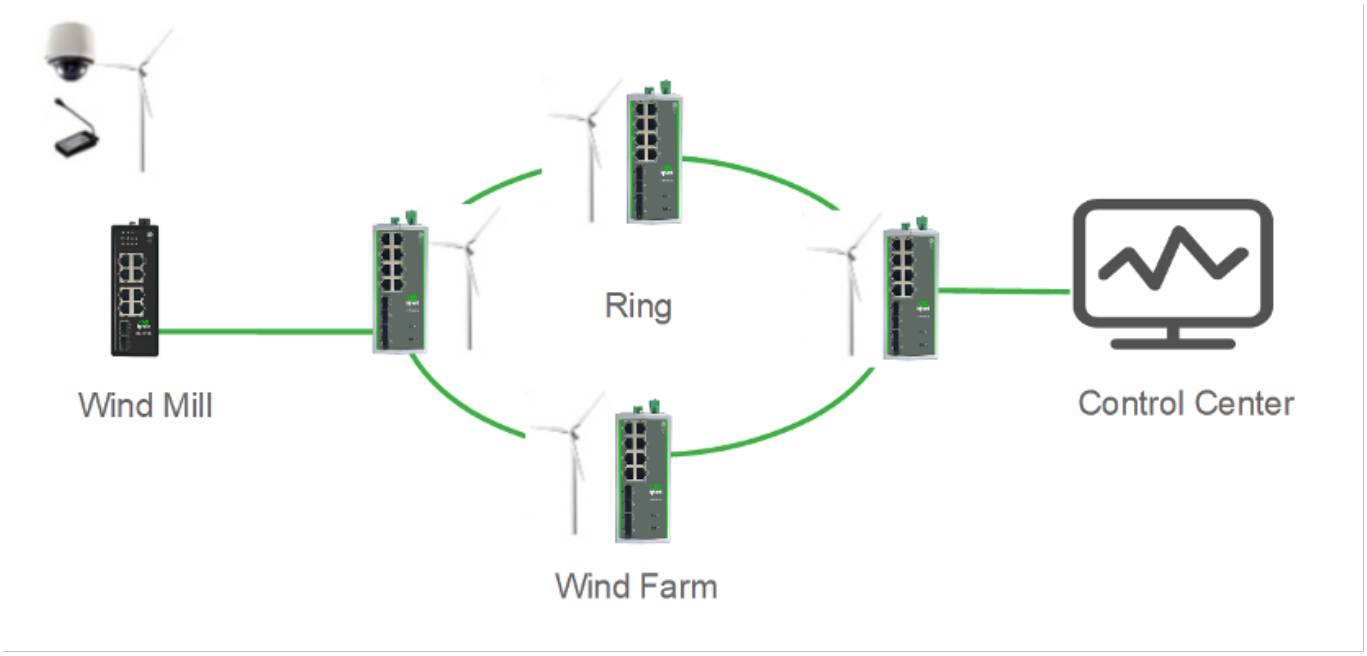
Background

Wind turbines generally work in unattended places featuring humidity, corrosion, dust, electromagnetic interference, extreme cold and heat, etc. It is thus necessary to ensure reliable and real time control of wind turbines, especially in large wind farms with scores or hundreds of machines, where a reliable, fast and real-time network system is required.

The solution is expected to monitor and manage the wind farms. Wind turbines are connected through industrial Ethernet ports, so that the working status of each site can be viewed from the dispatch center.

InHand Networks offers a remote monitoring solution for wind farms featuring its ISM5012D managed Ethernet switch and ISE5010D unmanaged Ethernet switch.

InHand´s Remote Monitoring Solution of Wind Farms



1. Wind Turbine Tower
   One ISM5012D managed switch needs to be installed at the bottom of each tower, which creates a LAN for onsite HD network cameras and intercoms through Ethernet ports. Two of the fiber ports are used to set up the redundant fiber ring network, while the other fiber port is used to connect with the non-managed switch ISE5010D in the nacelle of the tower.

2. Wind Turbine Nacelle
   One ISM5012D unmanaged switch needs to be installed in each nacelle, where the fiber port is used to connect with the switch at the bottom of the tower. The network port is used to connect to other devices such as HD network cameras and network intercoms inside the nacelle.

3. Central Monitoring Room
   Connected to the fiber port of the central switch ISM5012D through the fiber, the central monitoring master station can access the internal industrial Ethernet of the entire wind turbine, so as to know the operation status of each site of the entire fan.

Advantages:

- Fully industrial-grade design, both the ISM5012D and the ISE5010D are resilient for high temperature and high pressure, anti-electromagnetic interference, anti-electromagnetic interference, ideal for unattended harsh environments.
- Ring networks greatly improve network resilience. As each ring network is independent from each other, single failure point has no impact on the current network.

- The ring network switch can self recover from faults, ensuring continuous data transmission of the remote maintenance system.
- Plug and play, the InSwitch series featuring automatic networking, making it easy for non-IT staff to install and use on site.