

# European Wind Energy Farm



This project includes 60 Siemens 2.3 MW Wind turbines producing a total of 138 Mw. This farm is monitored and controlled by a Schneider based SCADA system located in the farm substation with Ethernet TCP/IP remote I/O connected via an N-Tron 708 FX2 Ethernet Switch in each wind turbine (See diagram 1).

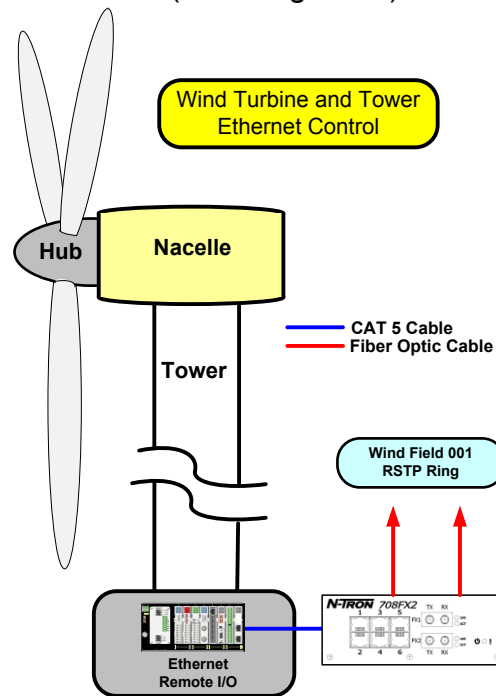


Diagram 1

The Ethernet network installation uses a six ring RSTP topology with each ring operating on a separate VLAN all connected to an N-Tron 9000 Ethernet switch with 16 Fiber optic ports located in the Substation (see Diagram 2 and 3). This configuration provides redundant fiber optic connectivity to all wind turbines in the farm.

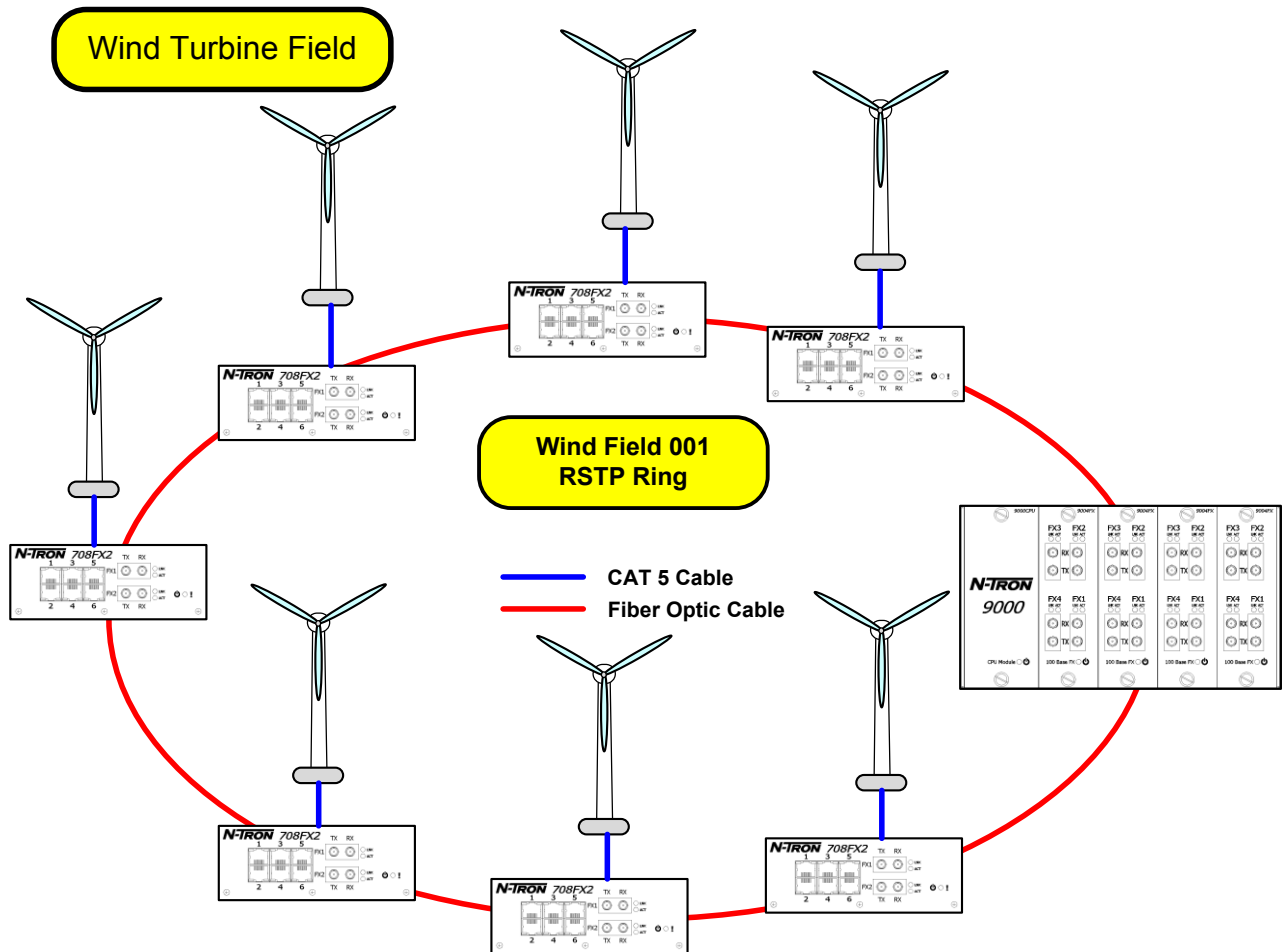
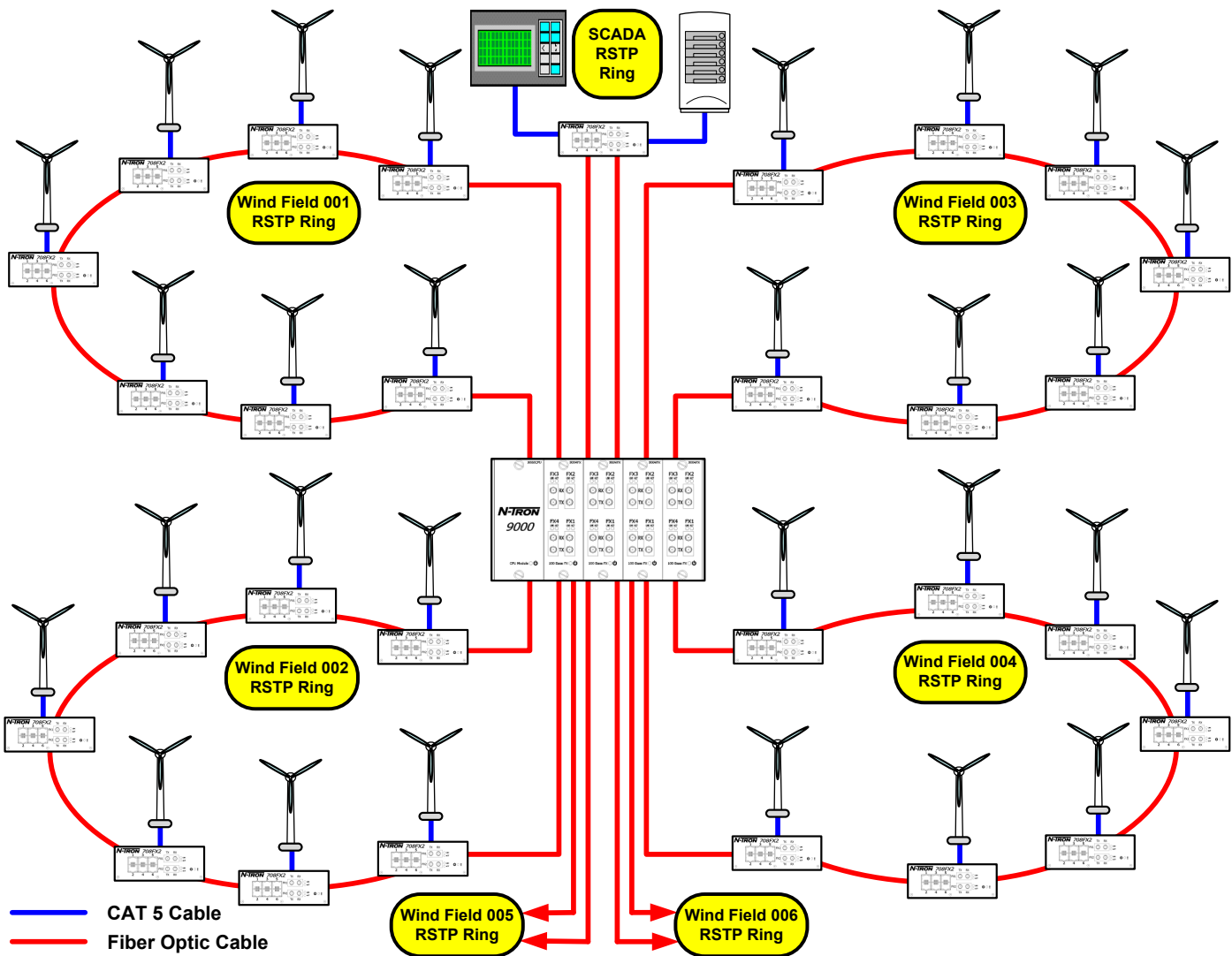


Diagram 2

The SCADA Controller, SCADA Server and an ABB Static VAR Controller are all connected to the N-Tron 9000 via an N-Tron 708FX2 redundant fiber optic ring. This connection is set up as an overlapping VLAN with access to the six wind turbine VLANs allowing the SCADA controller access to the remote I/O located at each Wind turbine.



The system integrator in charge of this installation was able to commission this system in one day due to the ease of configure of the N-Tron Switches. In previous installations using other Ethernet switch vendors the same configuration process took them 5 days due to poor support, complicated setup and out-of-the-box failures.