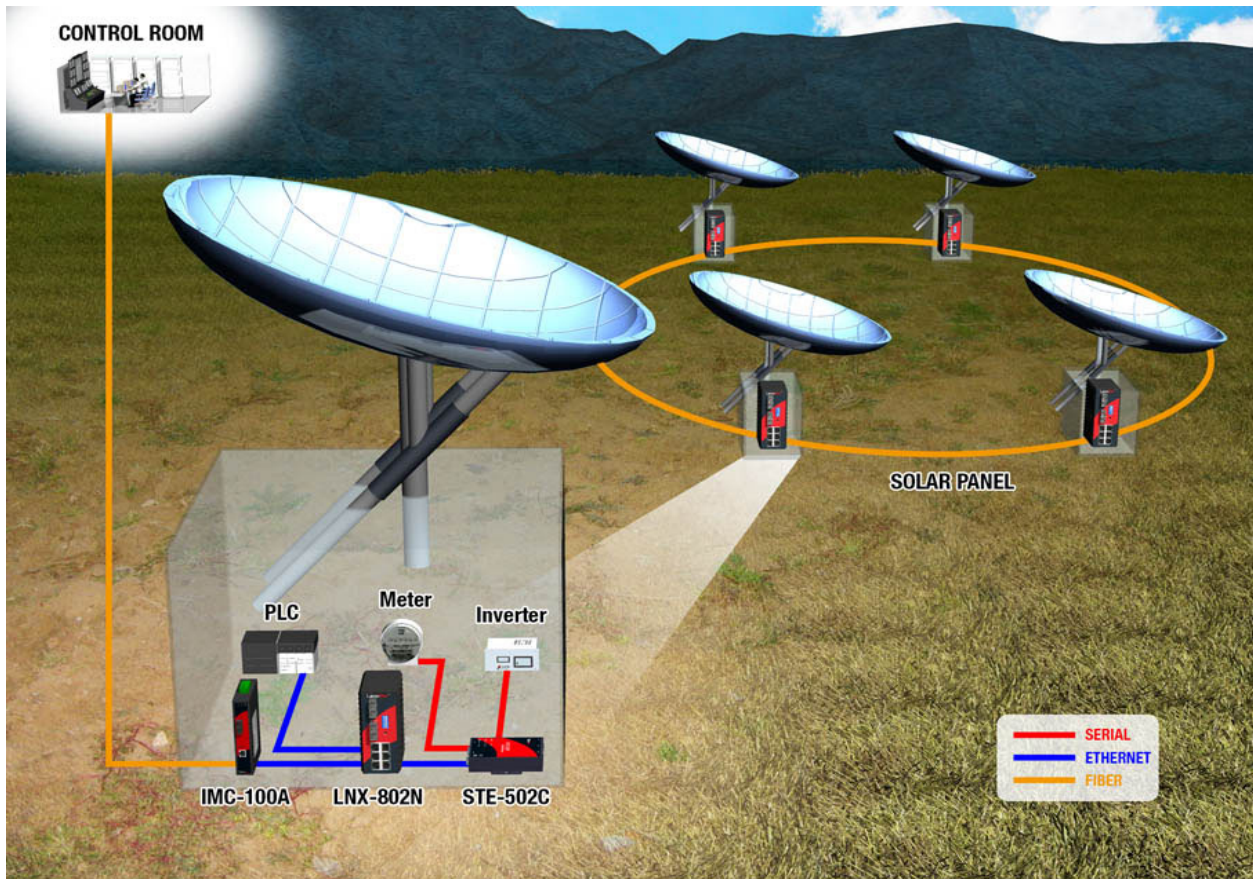


Solar Power Renewable Energy



Application

Energy from the sun can be converted multiple ways into useable energy. In solar applications, electrolytic solar panels capture the sun's rays and convert it directly into electric energy. Large fields of these solar panels are required to collect enough energy to help support electrical needs of small cities and towns. As the sun rises and sets the power derived from these arrays is always changing, and the networking systems that control the panels must always be ready.

A complex network of systems communicates back to a central control room reporting the status of each panel in the array. Commands are sent from the central control room to optimize the panels for maximum efficiency or downtime for repair and cleaning. All of the controls are done through a backbone of industrial networking switches often interconnected by fiber optic cables. The fiber network allows the inverters, meter and PLCs to function in unison across the array of panels. The industrial Ethernet switches used in this type of application must be able to withstand wide temperature ranges as well as the vibration that may occur as the arrays shift their panels to always be pointing at the sun.

Application Requirements

1. Provide stable and no data loss transmissions over long distances
2. Improve operational management
3. Provide real-time data access in order to closely monitor uptime and power output from remote locations

Solution

1. **LNX-802N-T:** Industrial managed Ethernet switch with a wide temperature range that provides a self-healing network redundancy ring infrastructure within a solar farm for each solar panel system to help with real-time data transmission.
2. **STE-502C:** Provides serial connectivity for all solar power invertors and meters to the network.
3. **IMC-100A:** Expands fiber optic connectivity for a solar farm network and provides a long-distance fiber uplink back to the control room.