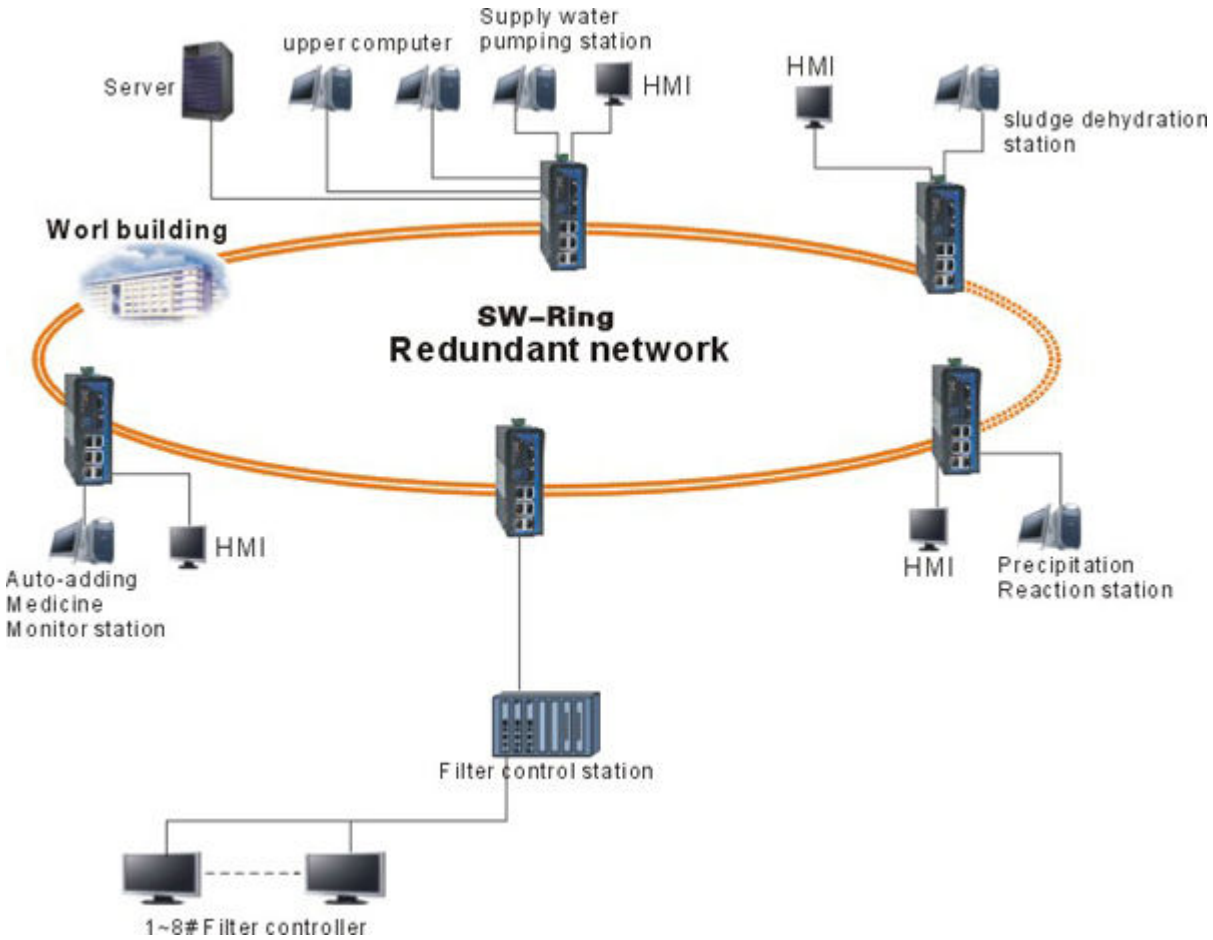
3onedata – Endüstriyel Switch Uygulamaları
Self recovering Ring Yapı

1. Industrial Automation

1.1. Water Treatment System : Salt Tide Emergency Water Supply System

Due to the variation of weather conditions in recent years, increasingly serious impact of salt tide, frequent back flow of salt tide, serious contamination to water resources as well as delayed contamination control and construction of water supply infrastructures has incurred the seasonal, water quality induced and engineering water shortage in some regions. Such phenomena is constituting serious threats to the safety of drinking water, regional economy, urban development and residents' daily life, which are attracting increasingly attentions from relevant national and local departments.

To ensure people's life, regional economic and social development, it is necessary to establish a set of stable and reliable salt tide emergency water supply system which is convenient for management.



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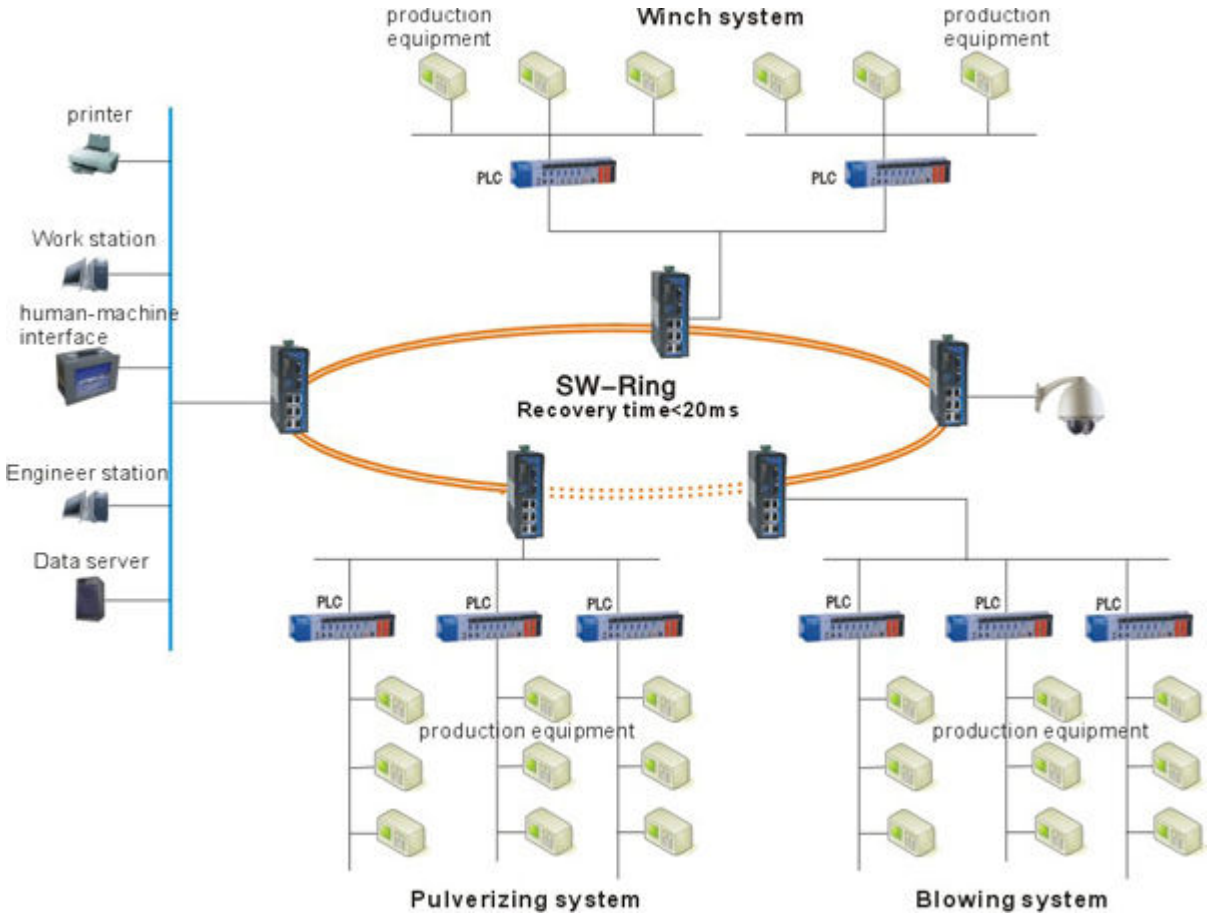
1.2. Plant Automation:Plant Manufacturing Process Automation System

Continuous manufacturing automation is also known as process automation, which mainly refers to the automation of continuous manufacturing process in such industrial departments as represented by petroleum, chemistry, metallurgy and power supply. In other words, it aims to use such automatic technical tools as various testing instruments, regulating instruments, control devices and electronic computers to perform the automatic test, supervision and control of the whole manufacturing process for the purpose of fulfilling such objectives as realization of various optimal technical and economic indicators, improvement of economic benefit and working efficiency, energy saving, improvement of working conditions and protection for ecological environment.

Most of modern plant automation system use TECP/IP network communication as the main approach for equipment communication. As a result of it, application of industrial Ethernet technologies in the system is becoming more and more extensive. Blast furnace automatic control system: it aims to form redundant ring network via the SW-Ring connection so as to use it as the communication platform for the control system. This system mainly aims to control the whole control technical flow of the blast furnace, which is mainly composed of milling, blowing and winch systems.



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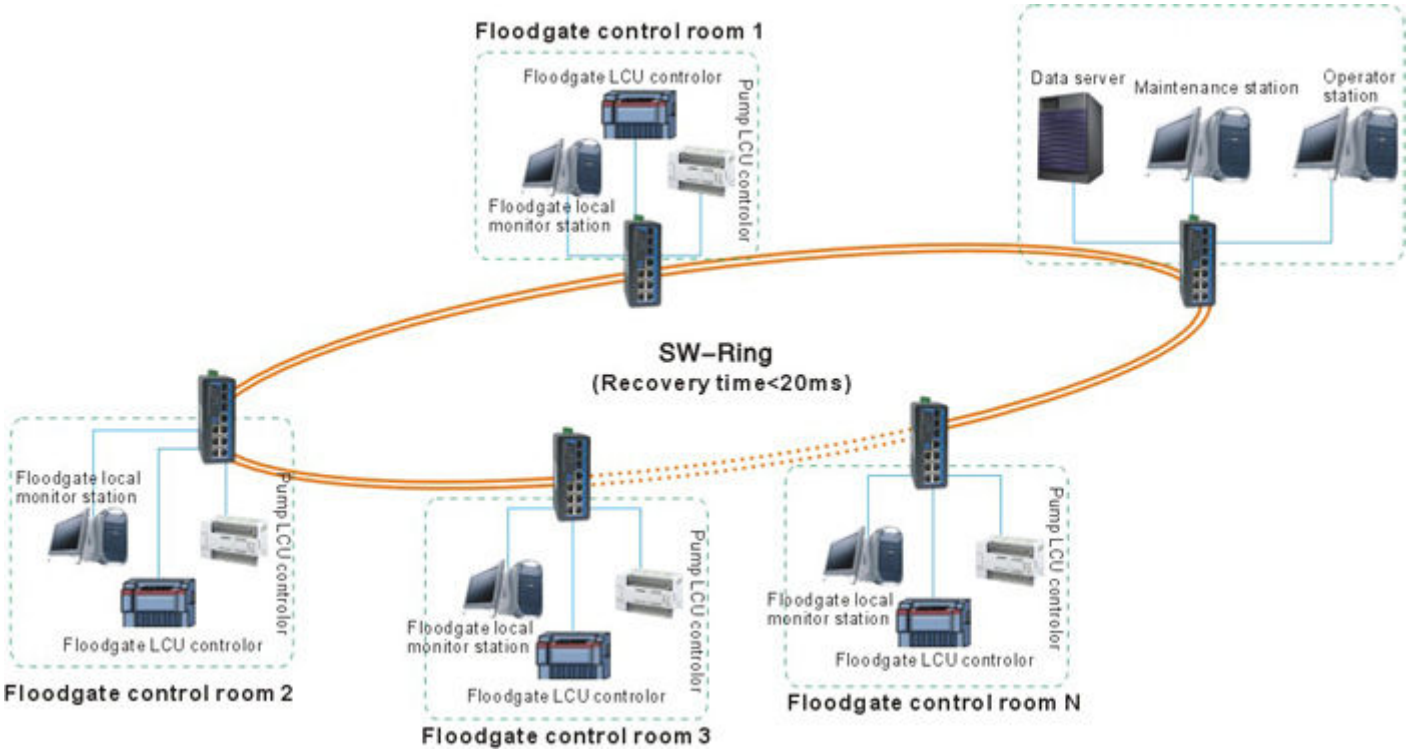
1.3. Petroleum and Natural Gas:Petroleum and Natural Gas Conveying Pipe Monitoring System

The demand for petroleum and natural gas is so high at present, which is followed by the approaches for ensuring the safety of conveying pipe. The way to enable monitoring staff to conduct the real-time observation and maintenance of conveying system is especially important. Petroleum and natural gas conveying pipe monitoring system aims to test parameters of pressure and flow in the petroleum pipe for the purpose of ensuring the safe and reliable conveying of petroleum and gases. It is mainly composed of three parts, namely site test, pump station converge and central control parts.

In view of the larger span of conveying pipe and monitoring devices, application of network system based on the industrial Ethernet technologies is in accommodation with features for safe conveying of petroleum and gases: wide working temperature range, perfect IP protection level, and protection from interference to the system by the dust. It can play a reliable protective role in the working environment of high humidity, field operation or in the simple machine room vulnerable to lightning strike.



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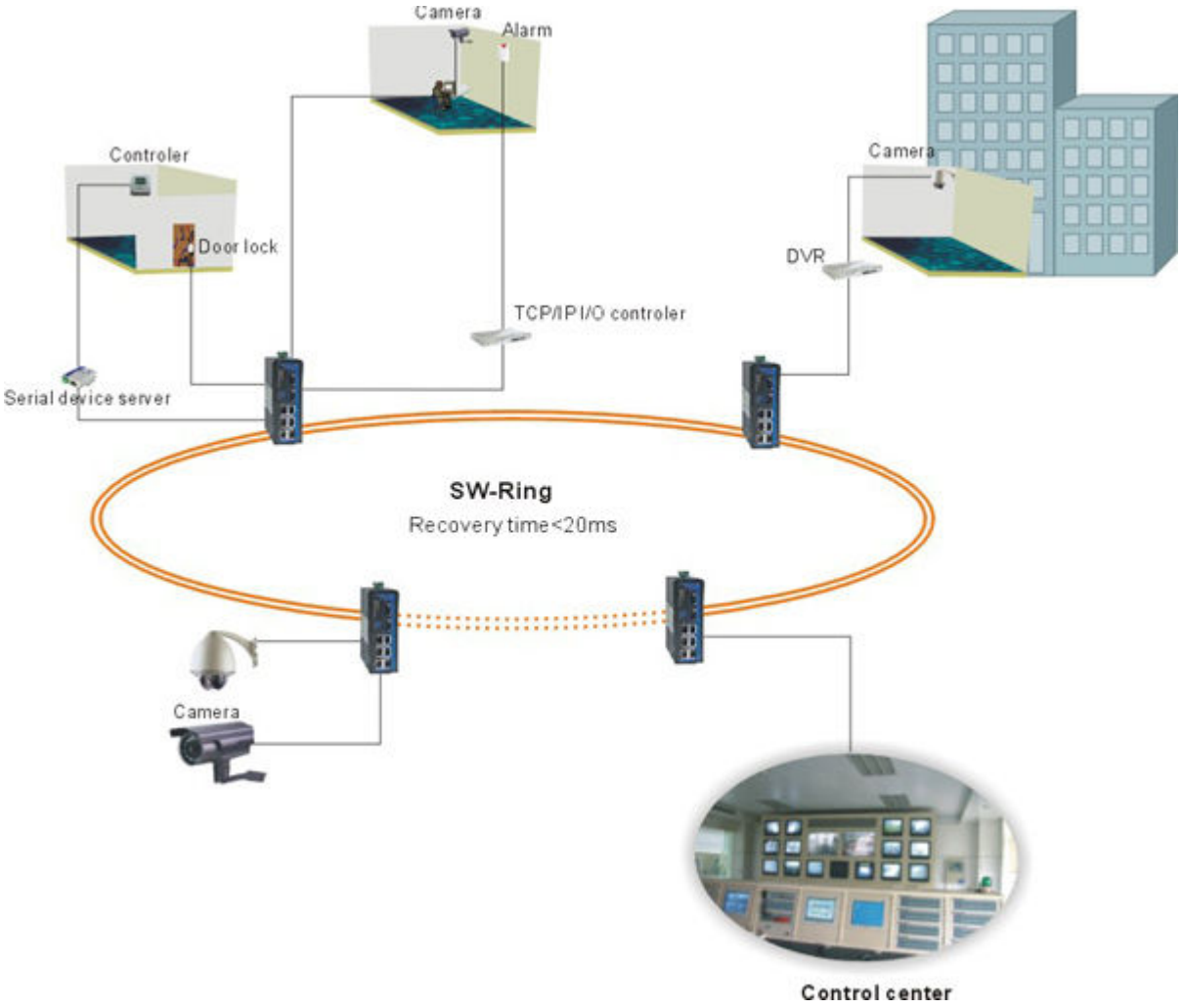
2. Automation and Security

2.1. Building Automation

With maturation and development of network technologies in recent years, the conception of networking and intelligent building has gradually become an important factor for people to select office locations and judge whether a residential environment is convenient or not. In addition to exchange of information data, people can also control the lighting and regulate the air conditioning system via the network system. Meanwhile, we can also make use of this intelligent network platform to construct network based video frequency monitoring system for security personnel to monitor the site conditions in the building via the computer at any time.

Industrial Ethernet technologies can perfectly incorporate the safety system, equipment monitoring system, DDC and CCTV systems into one system to realize reliable and safe regional communication.



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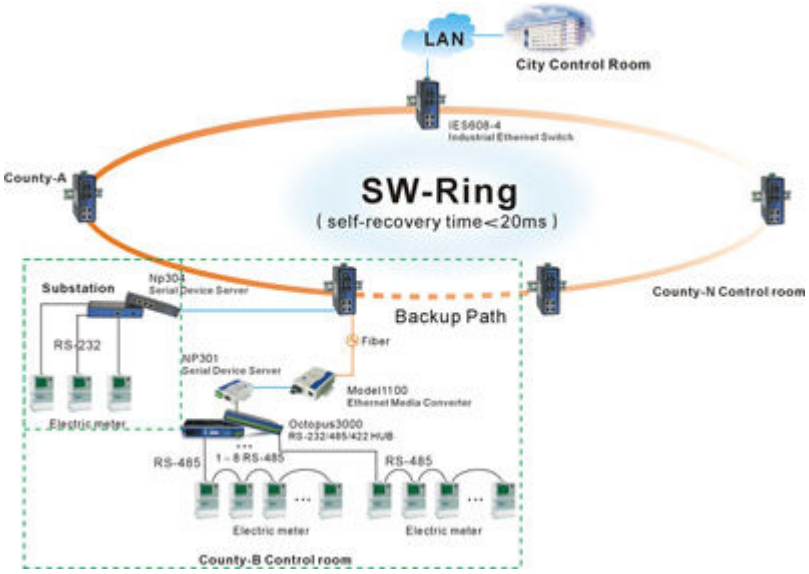
3. Telecommunication and IT

3.1. Tele-meter Reading

Automated Remote meter reading. (Sayaçların uzaktan okunması)



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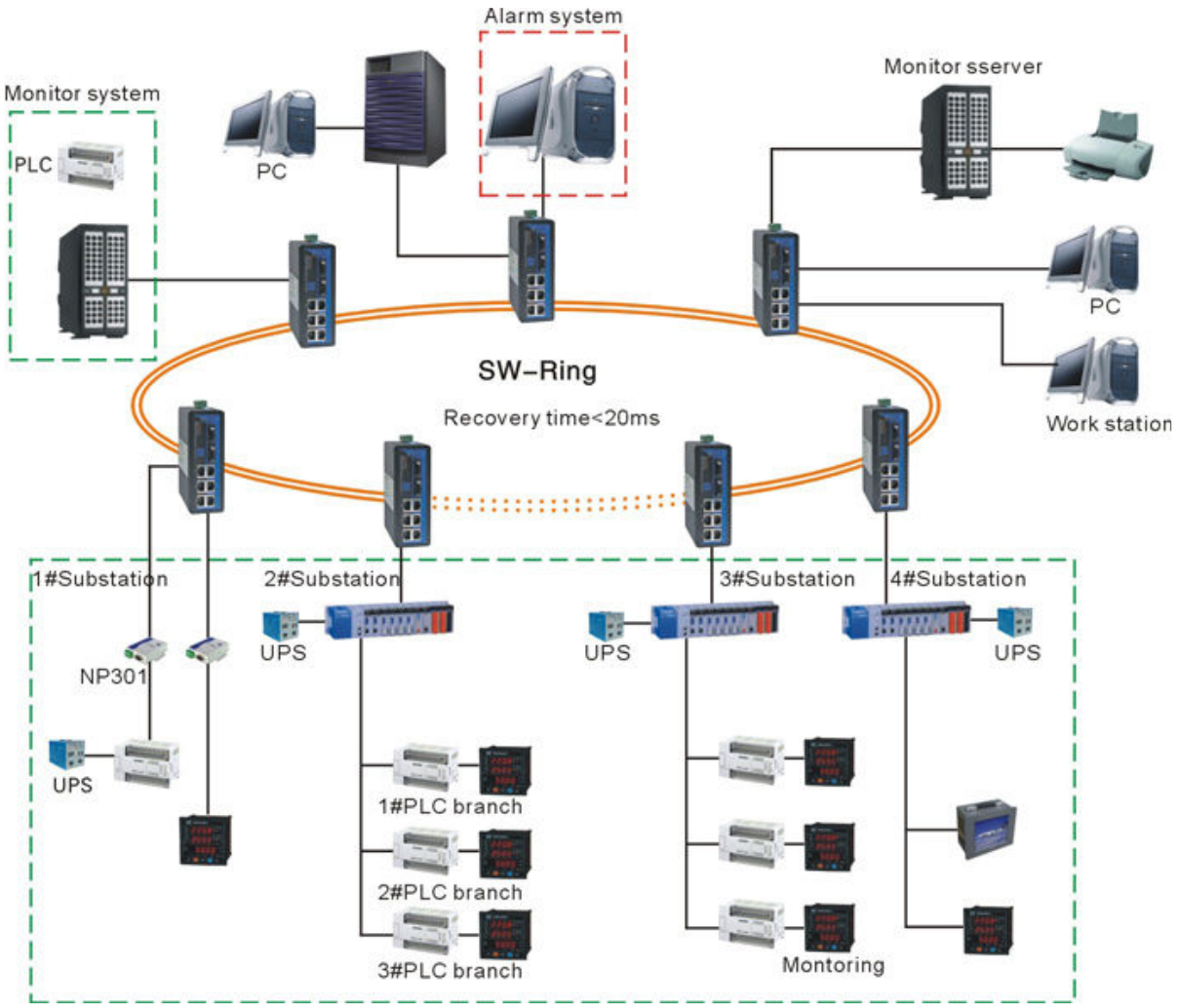
4. Power and Utilities

4.1. Electric Automation : The Communication System of Transformer Substation

The core duty for electric power application lies in the provision of uninterrupted and reliable power supply regardless of the harsh environment of transformer substation. To ensure the communication among different intelligent electrical equipments, it is a must to use IEC 61850-3 of international standard for automatic system of the transformer substation. This standard adopts the communication structure based on the Ethernet technologies.

Furthermore, Ethernet standard is characterized by its perfect inter-operation. This means that the system has such features as low construction cost and high flexibility, which is available for seamless integration with existing systems. The optical fiber Ethernet has such advantages as high capacity, resistance to electromagnetic disturbance, long-distance conveying and low cost. Owing to industrial Ethernet products characterized by integrated optical port, electric port, wide temperature range and DC power supply, industrial Ethernet can be applied to the transformer substation to provide further assurance for stable power supply.



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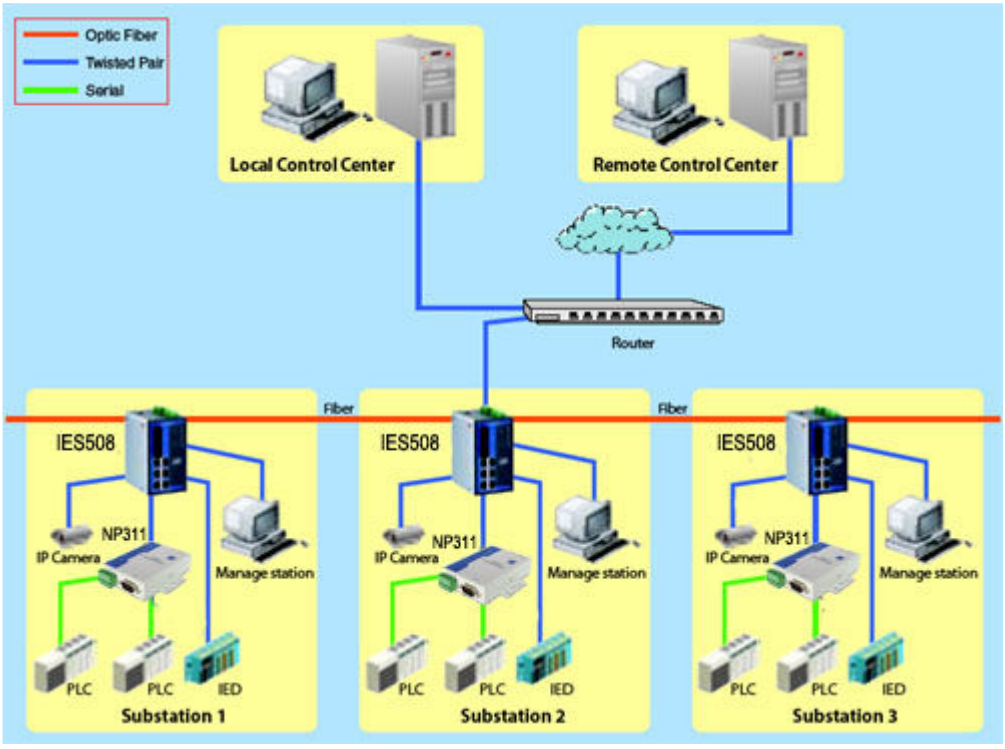
4.2. Using Ethernet to create secure transmission networks for substations

The key criterion for power utility is to offer un-interrupted and reliable electric power to the public in hostile environment. Power utilities are increasingly turning to industrial Ethernet solutions, since Ethernet guarantees interoperability between a variety of Intelligent Electronic Devices (IEDs) used in substations, and for utility control and protection systems. Ethernet with fiber cabling benefits power utility substations by offering EMI immunity, remote connection, and cost advantages when upgrading the path to higher bandwidths. The combination of fiber/copper ports, wide operating temperature, and DC power supply allows industrial Ethernet to be used in substations alongside control devices to maintain high availability of electric power to the public.

Overall Benefits

- 3onedata Turbo Ring (recovery time < 20 ms)
- Fiber cabling for EMI/EMC Immunity
- SSL features for secure data configuration among substations and IT networks
- Intelligent network management features, such as RSTP, IGMP Snooping, VLAN/GVRP, QoS
- E-mail or relay warning by user-configured event



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4.3. Wind Power Generator Monitoring System

Overview

Clean energy, also known as green power, has become a new trend, and many wind power generator has been built, replacing the old-fashion power source such as coal. Wind power generator has been used for decades in Europe, and this technology has been imported to many countries in response to energy crisis and environmental pollutions. IES608-2 has the flexibility to be mounted to wind power generator stations to forward data control signal to workstation, as well as the capability to operate in hazardous environment.

Key Product

IES608-2 is an 6 port 10/100TX plus 2 port 100Base-FX fiber Industrial Managed Fast Ethernet Switch with SNMP, Web management interface and superb software features for various networking applications. Especially the SNMP can be compatible with OPC server (Kepware) and provides most popular management function in automation; it has remote management ability through standard SNMP tools.
One of the main topics for industrial automation application is to ensure the system running with nonstop transmission. For this requirement, IES608-2 provides Super Ring mechanism which is within 20ms recovery time and faster than RSTP.
Besides, IES608-2 can merge RSTP and Super Ring function with core switch by Dual Homing function to deliver more reliable networking architecture for the system redundancy.

IES608-2 has built in relay output for port and power event. The relay output function will form a short circuit to trigger external one to inform your I.T. engineer when power or port link down event occurred. The port link down alarm is enabled by DIP-switch.
To survive in a harsh operating environment, IES608-2 equipped dual power input with redundancy and rigid aluminum case with excellent heat radiation for -45~75°C operating temperature.

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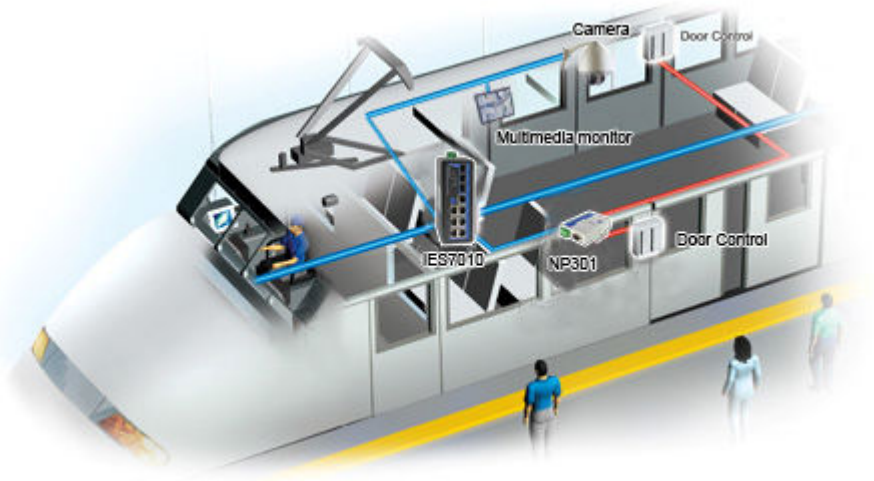
5. Transportation

5.1. Railway Monitoring & Multimedia Systems

Electronic public transportation system focusing on the high safety serves as a necessary condition for urban internationalization. Modernization of public transportation system has become one of important symbols for urban construction and land development. IP monitoring systems are established at such places as metro station to provide camera monitoring services, including monitoring and recording of passenger images captured by IP camera provided in each carriage. Furthermore, passengers can also enjoy their preferred TV, videos and advertisements in the journey.

TCP/IP network communication serves as the major mode for equipment communication, which makes use of redundant ring network topological structure based on the industrial Ethernet technologies to ensure the uninterrupted operation of the system.



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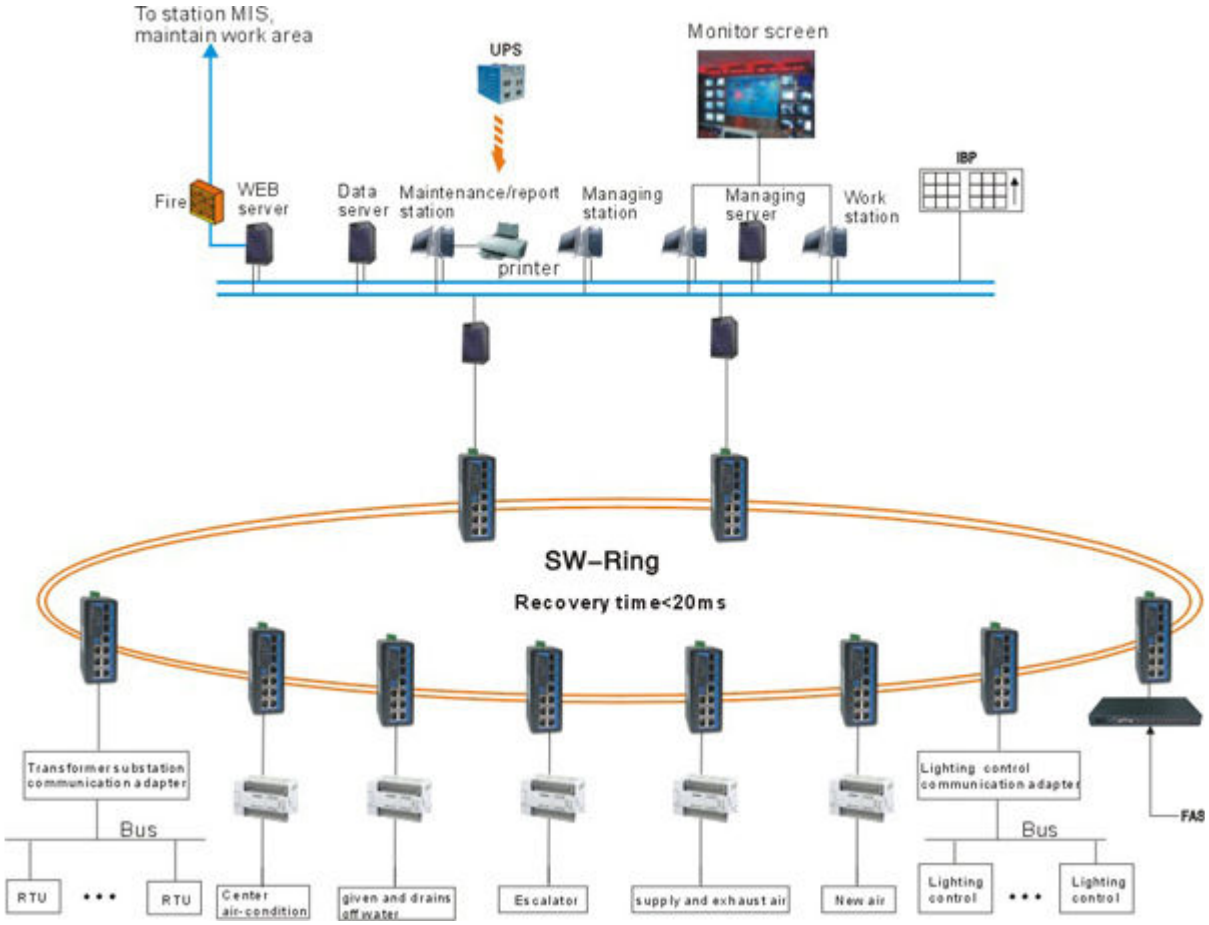
5.2. Railway Automation:Railway Electromechanical Equipment Monitoring System

With rapid development of railway transportation system and continuous improvement of people's living standard, both working personnel and passengers are beginning to put forward higher requirements for traffic, travel, work, rest and safety. To satisfy people's demands, improve the safe production and modern management levels of the railway enterprises and fulfill the objective of energy conservation and consumption reduction, critical buildings along the railway such as station, long tunnel, bridge, motor train sector and office building as well as various electromechanical equipments such as electric and illuminating equipments, water supply and drainage system, air conditioner, escalator and EPS must adopt advanced computer, control and communication technologies to realize the automatic monitoring and control management for the purpose of saving energies and manpower and improving the safety and management level.

Monitoring range of railway electromechanical monitoring system is stated as follows:

(1)Central Air Conditioning System (2)Water Supply and Drainage Monitoring System
(3)Air Processing System (4)Power Supply and Distribution Monitoring System
(5)Fresh Air Vent System (6) Illumination Control System
(7) Air Feeding and Ventilation System (8) Escalator Monitoring System



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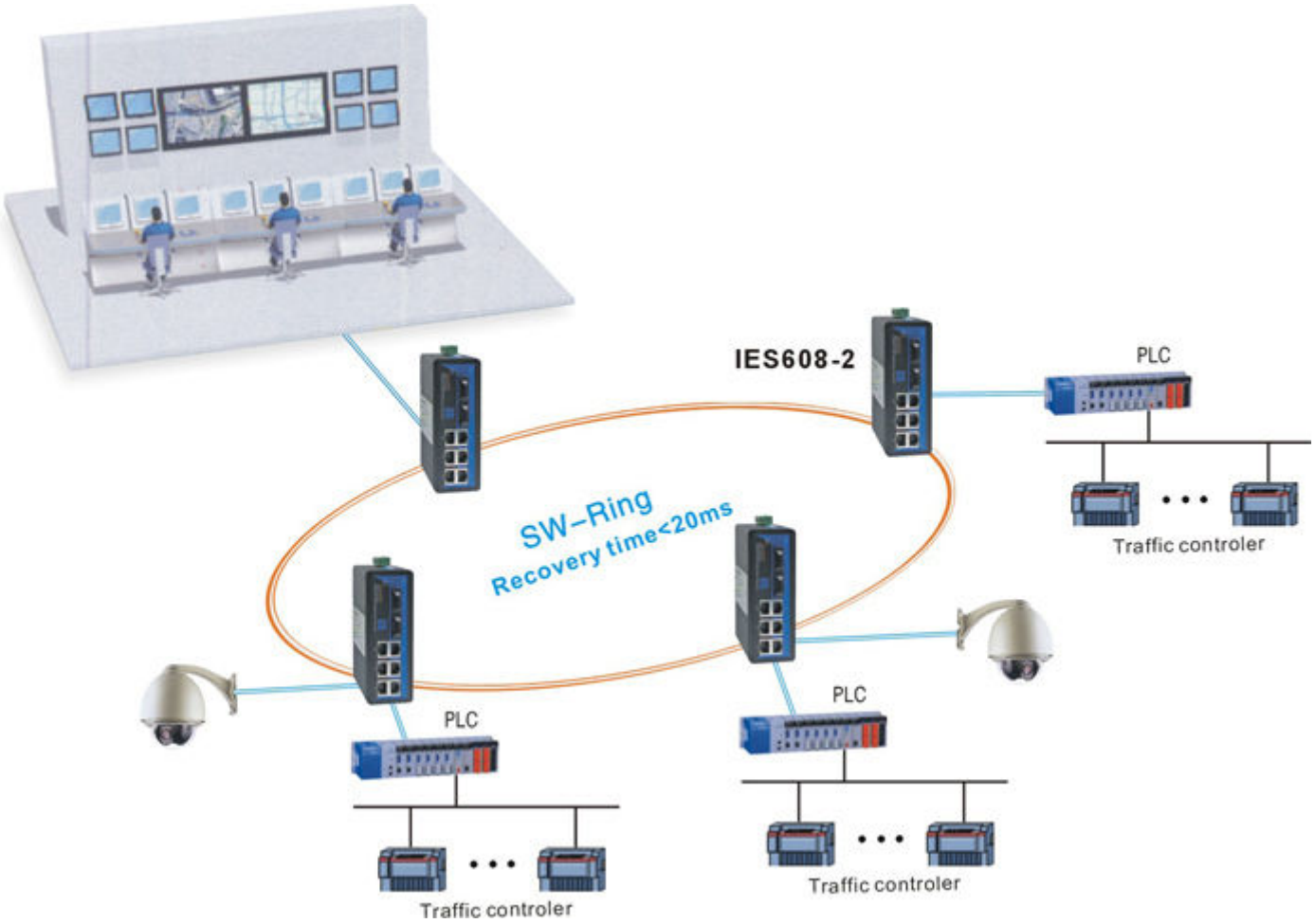
5.3. Intelligent Traffic:Express Way Monitoring System

Modern traffic management systems requires the integration of such facilities as traffic signal control system, information release system, video frequency monitoring system as well as communication network and traffic management center to realize ordered, safe, quick, comfortable and sustainable development. Realization of real-time traffic management and environment control require more facilities such as PLC, traffic controller, LED display screen, IP telephone and video frequency camera. Most of modern intelligent traffic systems use the TCP/IP network communication as the main approach for equipment communication, of which, the advantage lies in the low installation cost and high degree of system integration. The redundant ring Ethernet topological structure aims to ensure the uninterrupted operation of the system.



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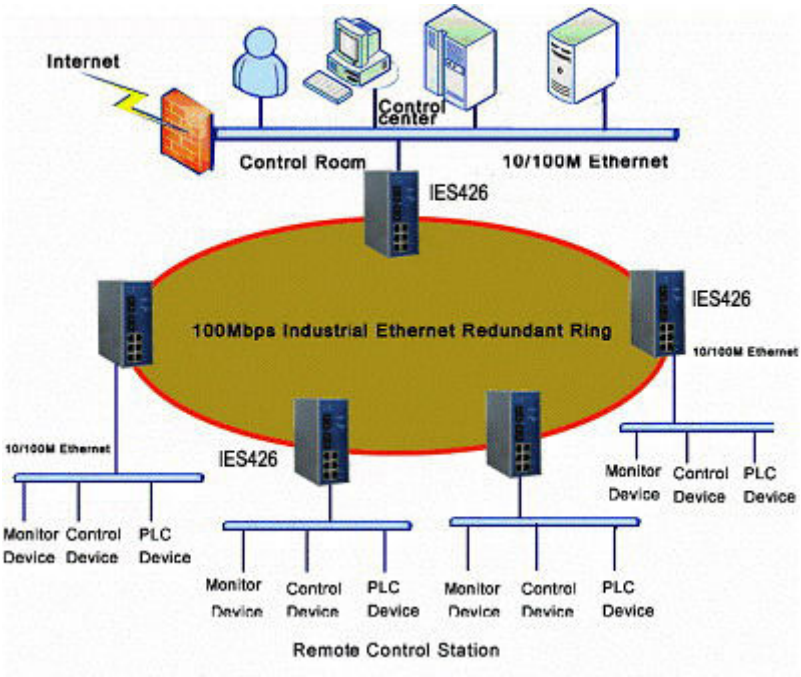
5.4. IES426 in Highway Electronic Power Control Project



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