Metro Station Environment Monitoring

The InHand ISM2008D managed switches form a reliable ring network in the metro station that connects all the PLCs and I/O nodes to conduct comprehensive monitoring of the station?s environment and ensuring security.

Background

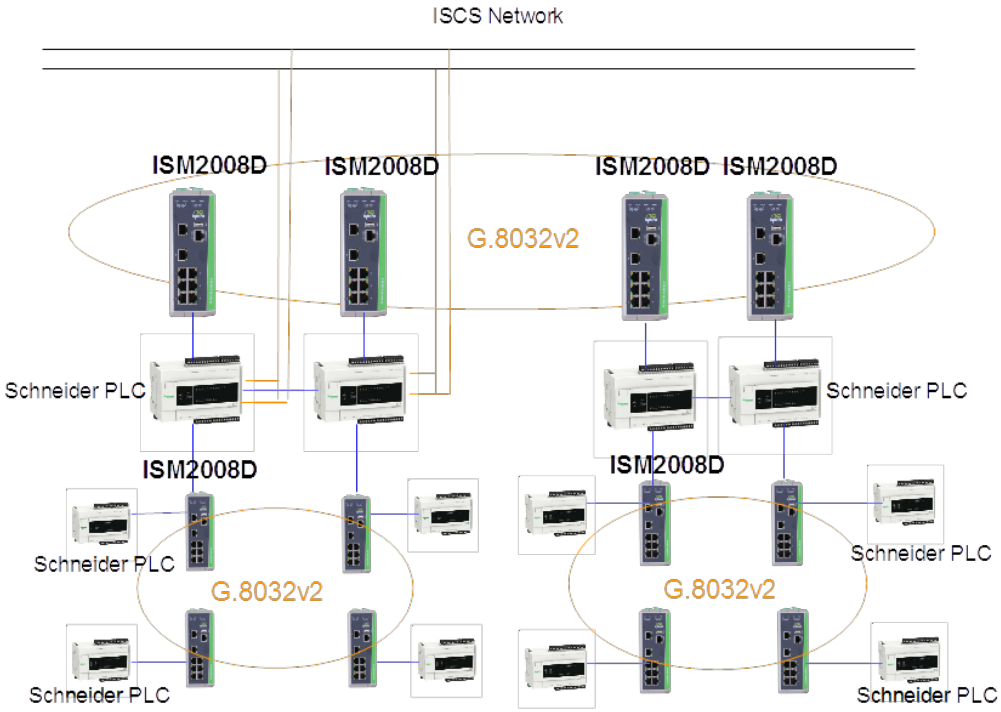
Metro systems, the veins of modern metropolises, have changed the way of urban transit. The construction and operation of metro systems brought about good business opportunities.But accidents happen, casualties in metro accidents have increased significantly in recent years. Metro construction and operation companies need up-to-date safety management means and technologies to prevent accidents and to minimize casualties when they happen. A comprehensive metro station environment monitoring solution is developed by Schneider Electric to provide real-time monitoring of the environment of metro stations, pre-alert to accidents and emergencies, and safety protection of the metro system. InHand Networks is honored to contribute a part in this solution.

System Requirements

- Support multiple ring protocols, including RSTP, G.8032 and iRing
- Instant ring response is within 50ms
- VLAN partitioning and data isolation
- Support DRSTP
- Operate reliably under extreme temperatures, e.g. down to -45°C or up to

+85°C
- EMC reaches class 4

Network Topology



How It Works

The InHand ISM2008D managed switches form a reliable ring network in the metro station that connects all the Schneider PLCs and I/O nodes to conduct comprehensive monitoring
of the environment of the metro station and related controlling:

- Air monitoring
- Temperature and humidity collection
- Switch (lights, elevators, platform screen doors) controlling
- Air vent controlling
- Self-recovery of ring is less than 50ms
- Joined with alarm system

Advantages

- Using highly-reliable and stable ISM2008D series switches
- Support RSTP/STP for fast ring recovery, self-recovery of ring is less than 50ms
- May build ring mixing with products of other brands (that support RSTP/STP), meeting the compatibility requirement for networking
- ISM2008D is highly-reliable and can maintain long hours of stable operation under harsh operating conditions, featuring operating temperature of -40°C~+85°C, IP40 protection,
  seamless metal housing, PCB protective coating (optional), input voltage tolerance of 18~36VDC, and power terminal block with reverse connection and over-current protection.
  The product passed EMC testing and safety certification of China Electric Power Research Institute.