



# Wireless Communication Network for Cranes & Ground in Metallurgical Plant

*Ensuring Stable Communication for Video Surveillance and Real-Time PLC Control*

In a large steel plant's hot rolling workshop, cranes, as key material handling equipment, operate frequently and carry heavy tasks. To improve production safety and operational flexibility, the client proposed remote control of the crane from the ground, along with real-time access to high-definition video footage and PLC control data from the crane.

## GPSENKE Recommend



Industrial Access Point



Wireless Client

### Core Objective:

- Precise Ground Control of Crane Movement
- Real-time Transmission of Camera Feed and PLC Operational Status
- Establish a Highly Reliable, Low-Latency, High-Bandwidth Industrial Wireless Communication System.

### Technical Challenges:

- **High Temperature & Interference:** Metal components cause signal disruption.
- **Real-Time Control:** PLC delays impact crane safety.
- **Dual Stream Transmission:** Control signals and HD video transmission challenge bandwidth.
- **Unstable Mobile Link:** Seamless switching during crane movement.
- **PN Protocol & Prioritization:** Ensure PLC signal priority.

**GPSENEK Recommend**



**Industrial Unmanaged SW**

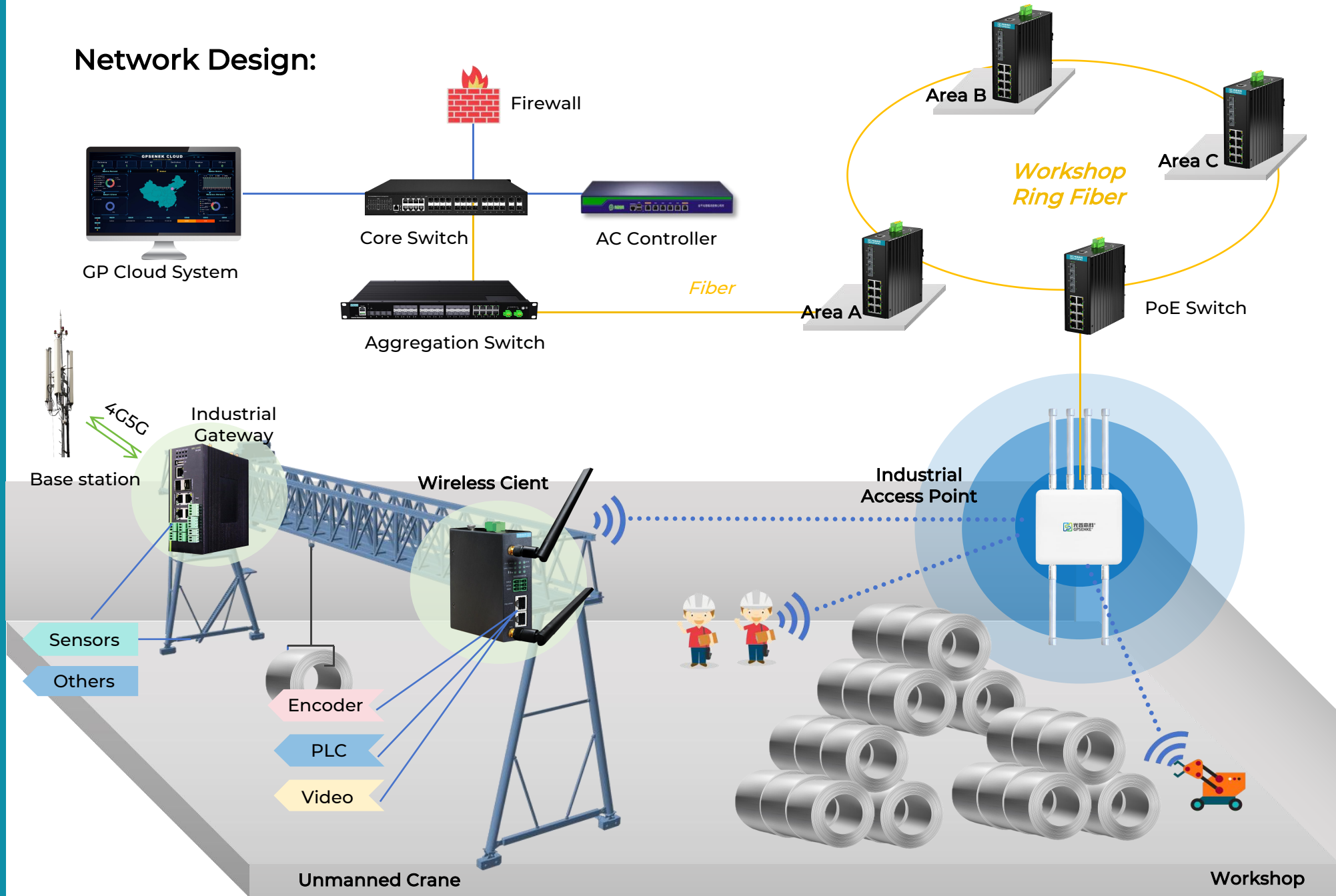


**Industrial Managed SW**



**GPSENEK Cloud System**

## Network Design:







## Key Project

- Shougang Jingtang Unmanned Warehouse & Intelligent Logistics Renovation
- Shougang Cold Rolling Lighthouse Plant Intelligent Upgrade
- Shougang Jinxi Sintering Yard Project
- Zhaogang Cold Rolling Finished Goods Warehouse Renovation
- Xinyu Steel Cold Rolling Intermediate Warehouse Unmanned Crane & Intelligent Management
- Baotou Steel CSP Hot Rolling Finished Goods Warehouse Unmanned Crane & Intelligent Management





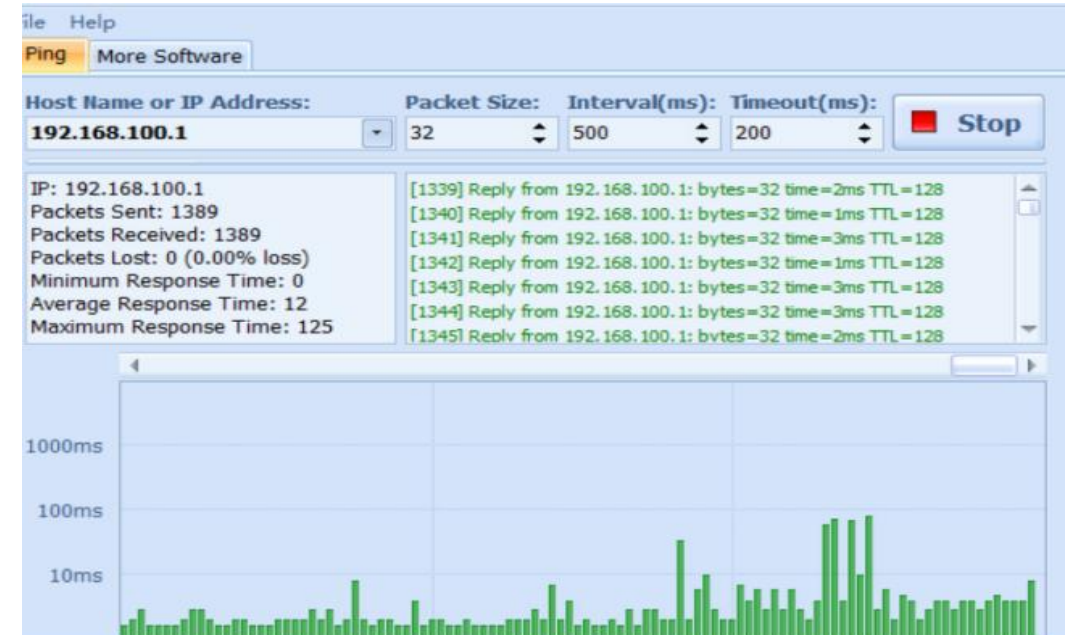
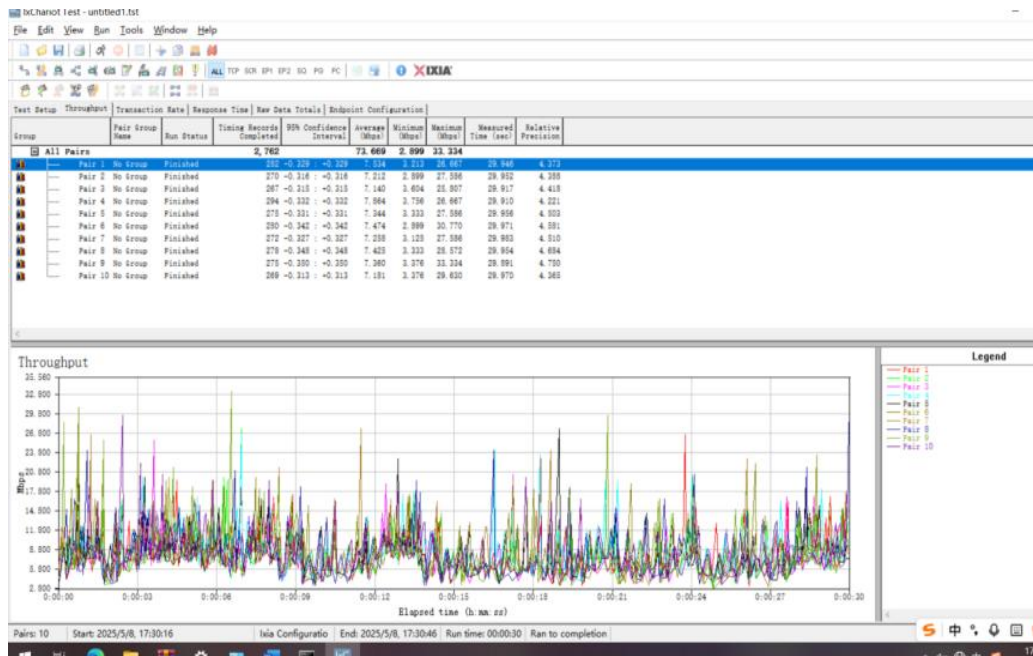


## Actual project results and customer feedback

- ☑ Smooth real-time video transmission, no lag or frame loss, key node delay < 30ms.
- ☑ Stable PLC control response, remote ground control of crane start/stop, positioning, and grabbing with <1cm error, enabling unmanned operation.
- ☑ 90% reduction in system maintenance workload, no need for frequent on-site troubleshooting.

**Client Feedback:** Since system launch, it has run stably without any failures. The client highly recognizes the communication quality and project implementation capabilities!

### ☑ Actual on-site PING packet delay operation status



### ☑ Actual On-Site Bandwidth Operating Status