

This is a real-life case study. However the customer has chosen not to feature their brand name.

Effects:

- Wireless access and control of Rail Guided Vehicles (RGVs).
- No wiring.
- Stable operation and high reliability.

“The Anybus Wireless Bolt is pretty flexible. We can seamlessly connect with the access points through WiFi. Although the theater is a complex environment, this solution is very user-friendly, with industrial strength, meeting the requirements of safe operations. Anybus Wireless Bolt is easy to install and configure, which is convenient when it comes to deployment in the field.”

Hi-tech performing arts:

Anybus wireless technology enables stage lighting control

The performing arts have high requirements when it comes to visual effects, and artistic demands often pushes the boundaries of technology. A touring cultural show in China has set new standards for wireless technology and with the help of Anybus Wireless Bolt, the audience is presented with a visual feast.

Stage Lighting Control

Lighting is an important artistic component of any stage performance. It can simulate nature, create artistic concepts, express emotion and illustrate space and time on stage. Working together with the live performance, the artistic lighting effects is a performance of its own requiring realtime control of hundreds of moving lights.

The challenge – 468 moving lights

The touring cultural show has very high requirements for choreographed stage technology as they need to control the lighting, colors, projection direction and much more to match the live show.

They use RGVs (Rail Guided Vehicles) to realize motion control of the stage lights. Above the theater, there are 26 sky rails, and each sky rail is equipped with 18 mobile vehicles. That equals 468 stage lights controlled through the moving of the RGVs.

The customer explains: “We have a Siemens PLC in each RGV. These PLCs communicate with the main control PLC using PROFINET-RT. The communication needs to be fast and reliable, so the main control can send the real-time position of the stage lights to each RGV at any given time. Because of the complicated light movement, wiring is almost impossible. We need a wireless solution that has stable communication and meets the needs of field control.”



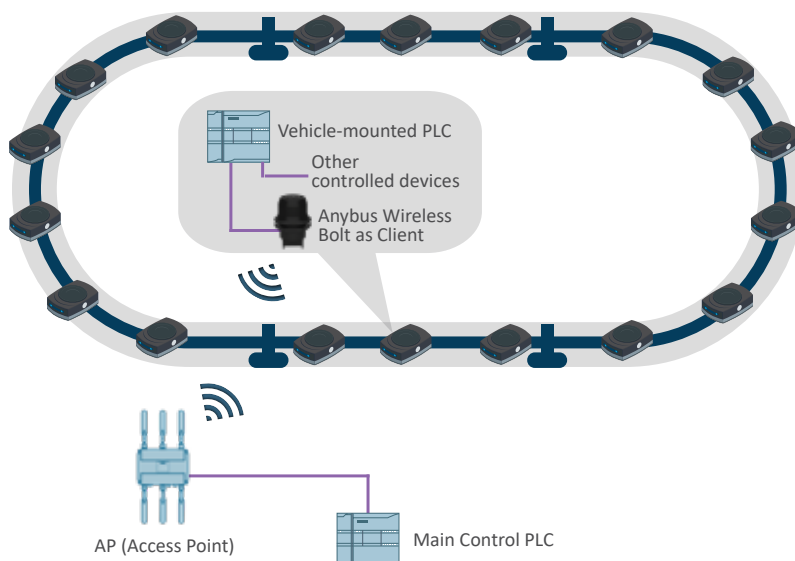
The Solution – Anybus Wireless Bolt

After comparing and testing several different solutions, the customer finally selected the Anybus Wireless product from HMS. They installed an Anybus Wireless Bolt on each RGV, together with the on-board PLC. The Anybus Wireless Bolt is connected to the PLC via an Ethernet cable and then connected to access points via WiFi. The access points communicate with the main control PLC, enabling control of the stage lights.

Field Application

As mentioned, the theater is equipped with 26 sky rails, each of which is equipped with 18 RGVs, and each RGV is equipped with an Anybus Wireless Bolt. A wireless leaky wave cable is laid below each sky rail, and each leaky wave cable is connected to an access point. The access point communicates with the 18 Anybus Wireless Bolts on the sky rail via WiFi to realize wireless data transmission.

The communication with the Siemens PLCs uses PROFINET-RT, but the Anybus Wireless Bolt supports a variety of other Ethernet protocols, such as EtherNet/IP and Modbus-TCP.



One of the 18 sky rails



On-site Testing

Why Anybus?

Anybus technology from HMS Networks has been used for more than 30 years and millions of devices are connected to fieldbus and industrial Ethernet networks via Anybus Technology. The products are proven and trusted, which is one of the reasons why customers choose HMS.

In addition, the technical services from HMS have been widely recognized by customers. With Anybus, users do not need to worry about communication problems and can focus on their core business, which is also an important factor for choosing HMS.

The Result

The Siemens engineer who assisted the project said: "The Anybus Wireless Bolt is pretty flexible. We can seamlessly connect with the access points through WiFi. Although the theater is a complex environment, this solution is very user-friendly, with industrial strength, meeting the requirements of safe operations. Anybus Wireless Bolt is easy to install and configure, which is convenient when it comes to deployment in the field."

"All in all, we have used 480 Anybus Wireless Bolts in the theater. The final production has received a lot of praise and recognition from the spectators and the Anybus wireless products from HMS has proven to be both stable and reliable."