Industrial Data Xchange
The Industrial Data Communications Experts

CASE STUDY:
Creating industrial grade wireless connectivity using the Anybus Wireless Bridge II

Solution: Anybus Wireless Bridge enables a wireless Bluetooth communication with PROFINET I/O between a substation and a remote I/O panel.

Industry: Mining

Benefits:
- ✓ Central automatic visualisation and control achieved
- ✓ Simple low-cost installation and maintenance

Technology used:
- ✓ Anybus Wireless Bridge II

Features:
- ✓ Flexible data communications system
- ✓ Secure, reliable and interference-free communication
- ✓ Low power consumption
- ✓ Allows for internet access
- ✓ Data rates of 2.4Gbps can be used in real-time applications
- ✓ Rapid and automatic completion of signal modulation and pseudo-random channel switching

Enable fast and reliable wireless connectivity for your equipment and buildings with Anybus Wireless Solutions

Industrial Data Xchange (IDX) provides cost effective industrial IT, IIoT solutions, related services and training to the primary and manufacturing industries. A recent example has been how IDX assisted a chromium smelter in South Africa establish a reliable data connection via Bluetooth for up to 400 meters direct line of site.

Within industrial environments, remote I/O is a common requirement when operating several segregated plants from one central location.

Three operational situations arise:

1. The remote I/O stays disconnected and is independently operated. Manual override, monitoring and reporting requires personnel to physically go to the location (involving time wastage, travel danger, and other in-efficiencies).
2. Fixed cables for power and data communications are run, and integrated control is then possible. Expensive to both install and maintain but ensures reliable integration and operational efficiency.
3. Where running cables is difficult or expensive to both install and maintain - wireless data communications may be the best option.

This case study focuses on the **third** scenario.

A chromium smelter in Rustenburg, South Africa utilises PROFINET as its standard field communication protocol. They have remote I/O stations distributed around the site; some are connected via hardwiring, whilst there are some that do not permit for wiring and cable implementation.

A remote pump house is located a few hundred meters direct line of site from the nearest PLC control room, but a 1km walking distance around a holding dam. Cabling would have been used however there is no direct route to run any cables. Daily, plant personnel must walk around the slurry holding dam to the reach the remote pump house in order to run start and stop sequences on the transfer pumps.

Why was the IDX solution selected?

Industrial Data Xchange (IDX) provided a wireless solution using the Anybus Wireless Bridge II. The Wireless Bridge establishes a reliable data connection via Bluetooth or Wireless LAN for up to 400 meters direct line of site.

The Anybus Wireless Bridge II comes with an integrated omni-directional internal antenna. However, should you wish to install the bridge within a substation or RIO panel, there is an external antenna option.

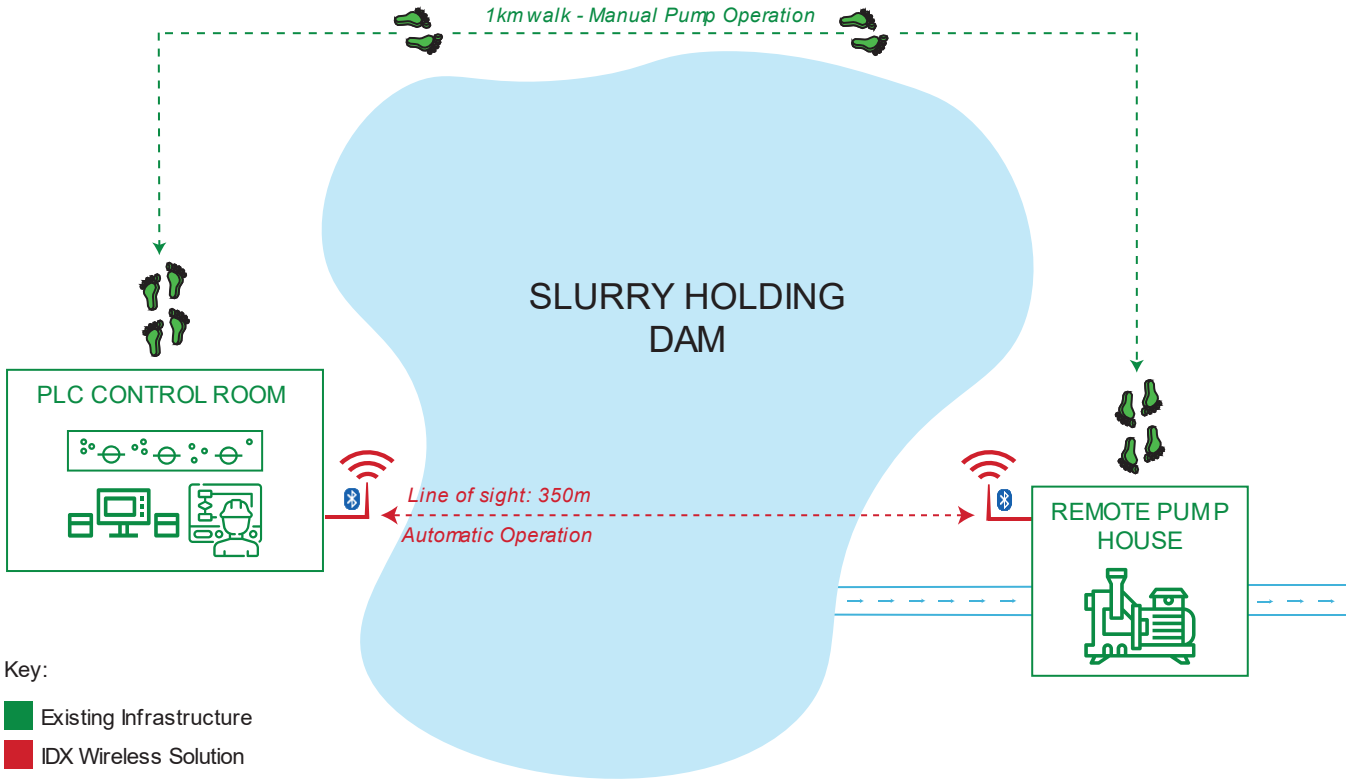
In this solution, we utilised the external antenna option, installing the bridge within the PLC control room with the antenna exposed at a higher level.

The Anybus Wireless Bridge II is both water and dust resistant with an IP67 rating, this was useful at the remote pump house where the Wireless Bridge was installed on the outside of the building structure and exposed to the somewhat harsh industrial site elements. M12 connectors are used to connect the power and data lines.

Anybus Wireless Bridge II

We utilised Bluetooth to establish a wireless connection between the wireless bridge units. The PLC control room unit was configured as a Bluetooth Access Point and the pump station unit as a client. You can connect several clients to a single Access Point, which will be useful for future expansion!

Solution Overview



Anybus Wireless Bridge II Solution Overview

About Industrial Data Xchange:

Industrial Data Xchange (IDX) provides industrial IT & IIoT solutions and related services to primary and manufacturing industries. Our services include building automation, custom development, custom & legacy integration, data migration, and industrial IT consulting. IDX also provides services to help keep your control networks, especially PROFIBUS & PROFINET, running in tip-top shape. Our industrial network audits will proactively assess the health of your control networks and our industrial network emergency callouts to get you up and running when a breakdown occurs. Our IDX Academy offers internationally certified PROFIBUS & PROFINET training as well as ASi, CANbus, Modbus protocol training, and more.

Contact us for all of your connectivity challenges:

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