



## Yokogawa performed Field Wireless System site tests compliant with ISA 100.11a, a standard with superior capabilities

### Key Features of the Field Wireless System

- Long Range Communication
- Stable in Pipe Jungle
- Robustness in Wi-Fi Co-existence

### Test Report

#### Reliable Wireless Test Report No.0019

Country: Brazil Category of location : Upstream (Open Air)

#### Purpose:

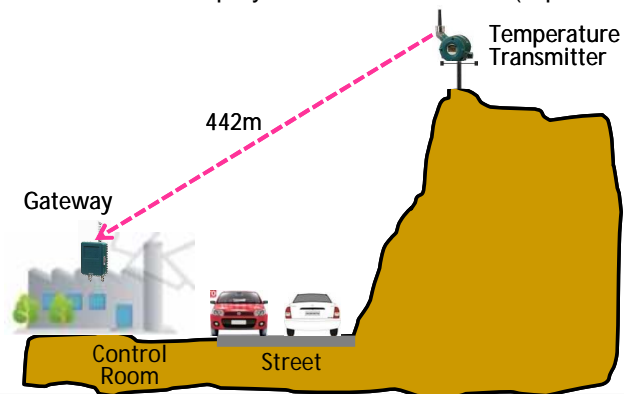
Confirm the communication capability in the wide field area concerning communication range.

#### Test Environment:

- A public area extended between the gateway and the wireless transmitter. The difference of elevation between the wireless devices was approximately 50m and the distance was 442m.
- Many obstacles such as high-tension cables, transformers, wireless antennas, and cellular antennas existed between them.
- The customer's requirement of data update interval for the test was 1 second.

#### Results

- **ISA100.11a field wireless system** could communicate stably, because the communication range of ISA100.11a field wireless is wide enough.
- And the PER (packet error rate) path was very low (1% or less), even though there were many obstacles between the gateway and the temperature transmitter.
- **Our previous wireless system** was estimated to need to deploy one or more routers (repeaters) in the public area.



**Reliable Wireless Test Report No.0020**

**Country:** Japan **Category of location :** Upstream (Obstacles area)

**Purpose:**

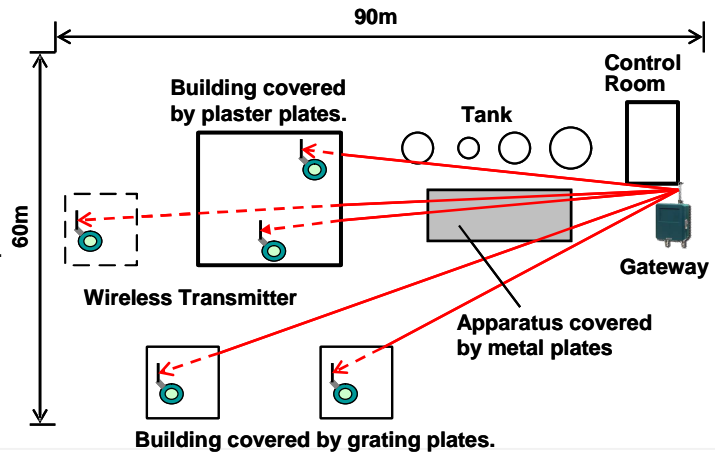
Confirm the communication capability in an area of many obstacles.

**Test Environment:**

- There were many obstacles between the gateway and wireless transmitters in this small area of 90m x 60m.
- All five transmitters could not see the gateway directly due to obstacles such as plaster plates and grating plates. (No line of sight) The tanks and apparatus covered by metal plates were estimated to become the cause of unstable wireless communication.
- The customer's requirement of the data update interval was 1 second. Therefore, the direct wireless connection between the gateway and transmitters was mandatory.

**Results**

- **ISA100.11a** wireless transmitters could communicate directly with the gateway, because the receiving performance is good enough.
- The PER (packet error rate) of all communication path of ISA100.11a wireless system was very low (1% or less).
- The process data publication at every second was performed stably.



**Reliable Wireless Test Report No.0021**

**Country:** Brazil **Category of location :** Downstream (Open Air)

**Purpose:**

Confirm the communication capability in a wide field area concerning communication range.

**Test Environment:**

- The distance between the gateway and transmitters was approximately 420m over the river.
- Most of the communication path was on the water without any obstacles.
- The customer's requirement of data update rate was 10 seconds or more.

**Results**

- **ISA100.11a wireless system**, the wireless devices could communicate directly with the gateway, because the communication range of ISA100.11a wireless system is wide enough.
- The PER (packet error rate) of communication path was very low (Nearly equal 0%).
- **Our former wireless system** was estimated to need to deploy two or more routers (repeaters) on the water to establish the wireless communication.

