



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.0013

Country: ASEAN country **Category of location :** Upstream (With obstacles)

Purpose:

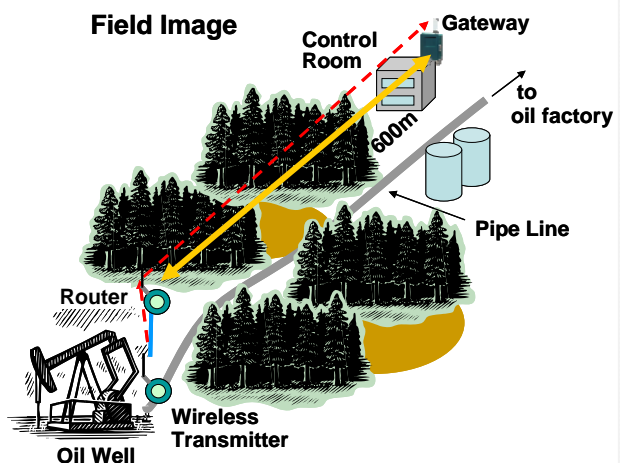
Confirm the communication capability in a wide field area.

Test Environment:

- The field is an oil field in deep jungle. There are many dangerous animals in this area such as tigers, cobras, and so on. The trees in the jungle were strong obstacles for wireless communication.
- The process values were transmitted to the control room across the deep jungle. The distance between the well and the control room was approximately 600m.
- The customer's requirement of data update interval was 10 seconds or more.

Results

- **The ISA100.11a wireless system** could communicate successfully over the jungle using only one router (where the router was installed at 6m height on the border of the jungle) between the wireless transmitter and the gateway, because the communication range of the ISA100.11a wireless system is wider than our former system.
- The PER (packet error rate) of all communication path of the ISA100.11a wireless system was very low (nearly equal 0%).
- **Our previous wireless** system was estimated to need two routers (repeaters) between the wireless transmitter and the gateway. Routers had to be installed in the dangerous jungle.



Reliable Wireless Test Report No.0014

Country: Japan Category of location : --- (Ideal Open Air)

Purpose:

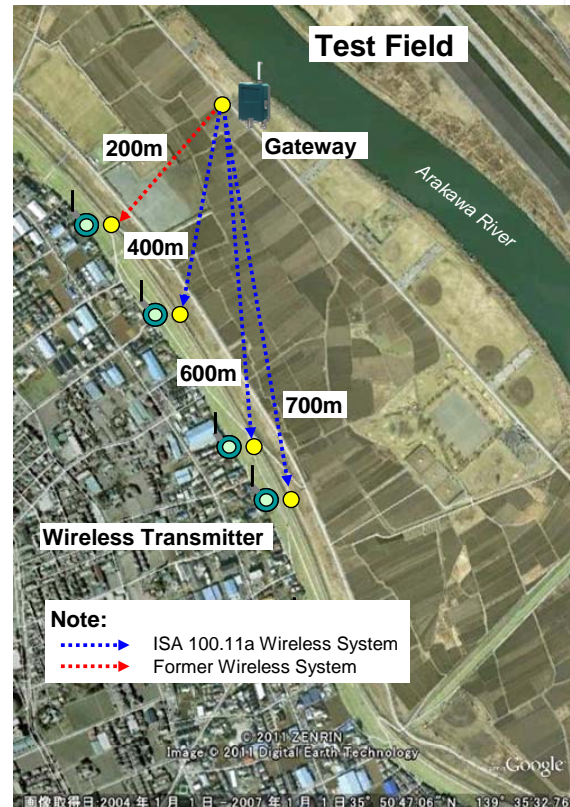
Confirm the communication range limit in the wide ideal open air area.

Test Environment:

- The test executed on the riverbed and banks of Arakawa River.
- There were no noise source and no obstacles for the wireless communication..

Results

- **Our previous wireless system** showed a rather high PER (packet error rate) of approx. 10%, even if the distance between the gateway and the wireless transmitter was 200m.
- **The ISA100.11a wireless system** showed very low PER (nearly equal 0%) till the distance between the gateway and the wireless transmitter became 600m. when the distance was 700m, the PER went up rapidly to approx. 25%.
- Therefore, the maximum communication range is estimated 500m in actual sites.



Reliable Wireless Test Report No.0015

Country: Japan Category of location : Downstream (With obstacles)

Purpose:

Confirm the communication capability in the wide field area with obstacles.

Test Environment:

- Wireless equipments were installed in an area surrounded by piping.
- The distance between the gateway and the wireless transmitter was approximately 200m.

Results

- **The ISA100.11a wireless system** could communicate successfully without any router, because the communication range of the ISA100.11a wireless system is wide.
- And the PER (packet error rate) of all communication paths was very low (Nearly equal 0%).
- **Our previous wireless system** was estimated to need routers (repeaters) between the gateway and the wireless transmitter.

Field Image

