



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.0016

Country: Thailand Category of location : Upstream (With obstacles)

Purpose:

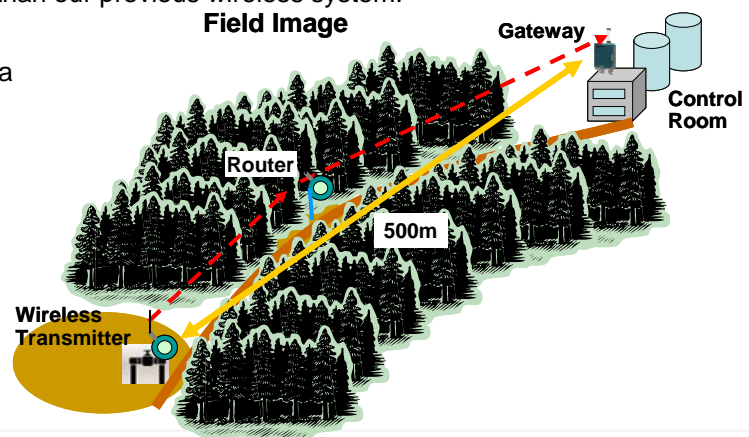
Confirm the communication capability in a wide field area.

Test Environment:

- The wells of salt water pumping were dotted in deep jungle. The trees in the jungle were higher than 12m and strong obstacles for wireless communication.
- The distance between the wireless transmitter and the gateway was approximately 500m.
- The process values were transmitted along the 2m width road laid in the jungle. The wireless transmitter and the gateway couldn't see each other.
- The customer's requirement of data update interval was 10 seconds or more.

Results

- **The ISA100.11a wireless system** could communicate successfully between the wireless transmitter and the gateway using only one router along the road, because the communication range of the ISA100.11a wireless system is wider than our previous wireless 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.



Reliable Wireless Test Report No.0017

Country: Indonesia **Category of location : Downstream (Dense obstacles)**

Purpose:

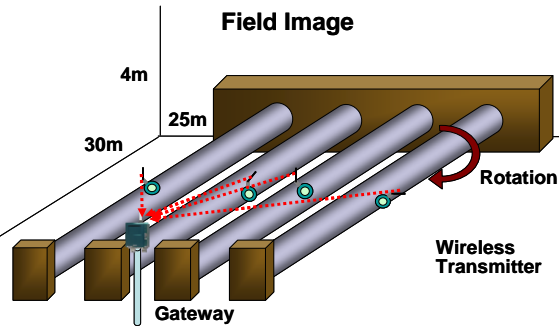
Confirm the communication capability in the condition that the wireless transmitter was continuously moving.

Test Environment:

- The wireless transmitter was installed on a rotary kiln. Four kilns which were 3m diameter and 20m long were located in a room where the floor was 30mx20m and the roof height was 4m. The diameter of kiln was 2m and the length was approx. 20m.
- The gateway was installed in the center of the room. The maximum distance between the wireless transmitter and gateway was 25m.
- The period of rotation was 160 seconds. The customer's requirement of data update interval was 5 seconds.

Results

- **The ISA100.11a wireless system** could communicate successfully. The communication was enabled by the reflection of wall, ceiling, and floor in such narrow area, because the receiver function is superior to realize very low PER (packet error rate).
- The PER of all communication path of the ISA100.11a wireless system was low (2% or less).



Reliable Wireless Test Report No.0018

Country: USA **Category of location : Upstream (Open Air)**

Purpose:

Confirm the communication capability in the wide field area.

Test Environment:

- Oil wells were located in a prairie. All the oil/gas wells were connected by underground pipeline to collect condensate oil and pump it to a plant. The inspection equipments were spread out on the pipeline to measure the pipeline stacking.
- The customer's requirement of data update rate was 10 seconds.

Results

- **The ISA100.11a wireless system** could communicate successfully using the minimum routers between the wireless transmitter and the gateway, because the communication range of the ISA100.11a wireless system is wider than our previous wireless system.
- The PER (packet error rate) of all communication path of the ISA100.11a wireless system was very low (1% or less).
- **Our previous wireless system** was estimated to need more routers between the gateway and the wireless transmitter.

