



## Case Study

### Wireless Analysis in a CAN Multi-Protocol Environment



## The Customer

**BOMAG GmbH is recognized as the worldwide compaction equipment leader. The company, part of the FAYAT Group, produces about 30,000 machines annually at its main plant in Boppard, Germany. These are machines for soil, asphalt and refuse compaction as well as stabilizers/recyclers. Today, a large share of its expertise resides in the electronics area.**

## The Challenge

### Logging communication on various vehicle buses from a distance

In developing electronics for modern construction machinery, much of the early development testing and simulation can be performed on test benches. In advanced development stages, however, it is preferable to conduct tests and trial runs under real conditions at construction sites or field testing sites. Previously, BOMAG electronic developers were unable to simultaneously analyze the measurement data during field tests without having to ride along in the machines themselves. They were only able to study the logged data afterwards using CANalyzer.

## The Solution

### Wireless sending and receiving of CAN messages from difficult-to-access or mobile CAN bus systems

Previously, it was absolutely necessary to establish physical contact with the bus system being analyzed when working with CANalyzer and CANoe. CANoe/CANalyzer.IP now enables contact with the device under test via a WLAN connection. The CAN messages, together with time stamps, are tunneled via a TCP/IP connection, so that the time stamps provided with the messages can serve as reference times for CANoe and CANalyzer.

## The Advantages

### Reliable network analysis via WLAN and Ethernet

The solution offers key advantages compared to the capabilities of a simple CAN/WLAN bridge:

- ▶ A WLAN-capable laptop/notebook is sufficient as the host; it maintains a connection with standard resources and WLAN.
- ▶ The “test probe” on the device under test, which is responsible for CAN-to-WLAN conversion, sends the messages in strict chronological order under consideration of the time stamps originally logged on the bus. This would not be possible via a CAN-WLAN-CAN bridge.
- ▶ During construction site operations BOMAG electronic developers are now able to measure, observe and evaluate without a cable connection to the machine.
- ▶ Multi-bus applications and simultaneous use of the higher protocols J1939 and CANopen on the same bus are possible.
- ▶ The remote CAN analysis developed for BOMAG has now become a fixed component of CANoe/CANalyzer.IP.

