

Wireless Networks for Industrial Automation

(Abstract of the book of the same title)

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Wireless networks are now being used in industrial automation applications, but mostly for Ethernet extension to areas that are too difficult or expensive to wire. Wireless communications with mobile devices such as automated guided vehicles and forklift trucks are also being used. There are also two commercial suppliers of wireless process control instrumentation using proprietary 900 MHz frequency hopping spread spectrum for connection of vibration, pressure, temperature, flow, and level measurements in areas that were previously uneconomical to wire. From these modest beginnings, use of wireless communications in industrial automation is expected to grow very rapidly over the next few years for two reasons: reducing installation cost of smart devices, and to connect devices in areas that previously were impractical to wire.

Where Ethernet protocol is appropriate, it is highly likely that secure versions of Wi-Fi will be used. ZigBee is also a growing pending standard that will gain a large user base in industrial automation. However, These technologies do not meet all of the needs for industrial automation. It is expected that other technologies, such as the 900 MHz frequency hopping spread spectrum or 3G CDMA may find its way into this demanding domain.