



### **Automation is in the Air - BBB (Borrow)**

*Wireless Networks for Industrial Automation* by Dick Caro

Reviewed by Nick Sands

Wireless is one of the hottest topics in the automation industry. Dick Caro is just the person to write a guide for this leading edge technology. Caro is an ISA fellow, former chairman of the ISA SP50.2 (Fieldbus) committee, former consultant at Arthur D Little and ARC, and current CEO of his own company, CMC Associates. Caro is knowledgeable and skilled in explaining technology.

Caro first explains the requirements for wireless automation networks. There is the challenge of overcoming noise and multi-path distortion. There is the desire for low power battery driven transmitters that can operate for years without maintenance. There is the choice of network architecture; between stars, trees, and the highly reliable mesh networks. There is also some description of antenna technology.

Caro also covers the different wireless technologies. There is the ubiquitous Wi-Fi, the wireless A, B, and G technologies used at home and perhaps at work. There is Bluetooth, the short-range technology used for cell phone headsets. There is the low power ZigBee technology where transmitters may sleep 97% of the time. There is also the possibility of using the 3G cell phone technology for transmitters.

The final chapters cover the bleeding edge of technology, RFID, and the authors own suggestions for this technology. The bleeding edge includes WiMAX and Ultra Wide Band technologies. There are also several interesting possibilities for field powering transmitters. RFID (Radio Frequency Identification) uses a range of technologies as well, from low power passive tags to high power data tags that hold the history of the entity.

Caro provides a view of the wireless landscape, from user needs to available technologies to politics. This book is only available in electronic PDF format because of the rate of change of this technology. The second edition is still worth reading (BBB) at ISA for \$43 (member price).