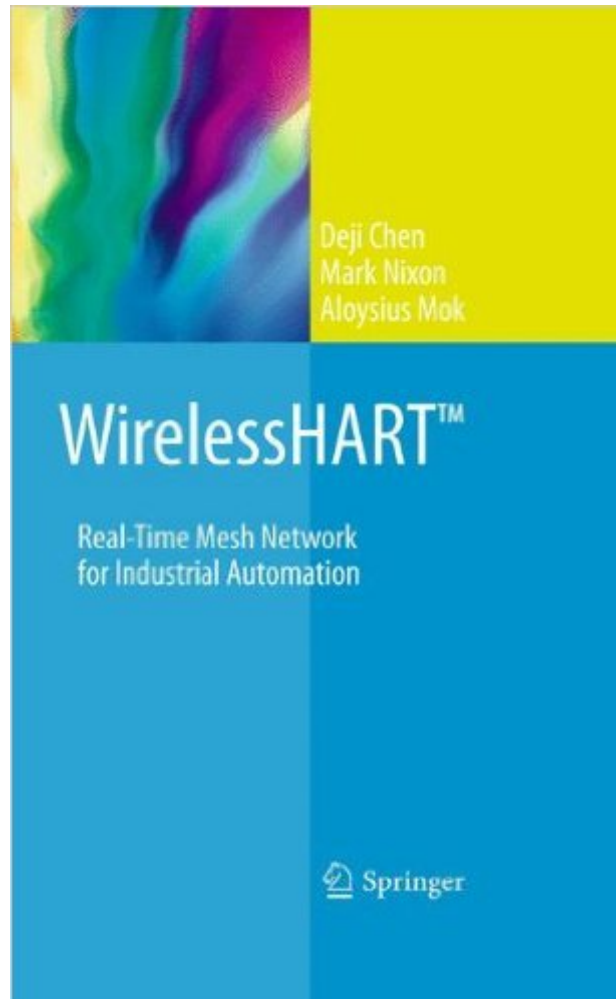


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# WirelessHART™: Real-Time Mesh Network For Industrial Automation



## Synopsis

The process control industry has seen generations of technology advancement, from pneumatic communication to electrical communication to electronic communication, from centralized control to distributed control. At the center of today's distributed control systems are operator workstations. These operator workstations provide the connection between those overseeing and running plant operations to the process itself. With each new generation of products the operator workstation has become increasingly more intelligent. Newer applications provide advanced alarming, control, and diagnostics. Behind all of these applications are smarter devices. These smart devices provide greater process insight, reduce engineering costs, and contribute to improving the overall operational performance of the plant. Smart devices include advanced diagnostics that can report the health of the device and in many cases, the health of the process that the device is connected to. It is not uncommon for smart devices to include diagnostics that can detect plugged lines, burner flame instability, agitator loss, wet gas, orifice wear, leaks, and cavitations. These devices tell the user how well they are operating and when they need maintenance. Improvements in sensor technology and diagnostics have led to a large variety of smart devices. So how do users connect the capabilities of these smart devices to their existing control system infrastructures? The answer is wireless. Wireless technology has matured to the point that it now can be safely applied in industrial control, monitor, and asset management applications.

## Book Information

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## Customer Reviews

This is probably one of the worst written and least useful book I've ever encounter. Badly edited (look at the TOC, chapters of 30 pages mix with single-page "chapters"), really badly written and disorganized in general. In addition, the pages look terrible, figures are low-quality and non-informative, and you get pages of useless tables taken from the standard. I have hoped to extract useful information in order to be able to get an overview on the physical and MAC layers within WirelessHART. Not having the standards texts themselves, I had to resort to this book. The physical layer is treated in two pages (!), then "in-depth" some "discourses" (i.e., random, non-organized stuff the authors have copied there) are given in further 4 pages (!), in a horribly written text full of incorrect formulations, see e.g. 8.1.2. Then two chapters later again some random "discourse" on the physical layer, which rather looks like some basic text taken from a communications systems textbook. So you get essentially 0 information, scattered over three chapters. You get absolutely no idea how the overall system or parts of it work. Overall, the book resembles to a low-quality standard text (which is really bad for a textbook), with randomly shuffled chapters. Not recommended unless you don't have any other option (at least from a networking perspective).

This was a great source for understanding the WirelessHART protocol. All my questions were answered, and then some.

Wireless Links has existed in the industrial environment for many years, however Wireless Sensing Networks enabled by WirelessHART are a complete new technology that enables a whole new range of applications for the process controls space. WirelessHART leverages the capabilities of the IEEE802.15.4 wireless sensing standard in a way that creates the most reliable and secure network for industrial applications. This book fills a gap on the technical literature as it covers in depth the underpinning of the WirelessHART Industrial Wireless Sensing Technology. Deji Chen and Mark Nixon did an outstanding job in presenting in a systematic way the details of the IEC62591 Standard (also known as WirelessHART).

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