

WIRELESS AUTOMATION: AN OVERVIEW

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The use of wireless sensor networks (WSN) in industrial automation has recently gained increasing attention. Admittedly, WSN are technically challenging systems, requiring expertise from several different disciplines. Therefore, the information about important design criteria is often scattered. Additionally, characteristics for the industrial automation applications are often stricter than the other domains, since the failure of the communication system may lead to loss of production or even lives. The importance of gaining experience of applying wireless sensor networks to process automation environments has been addressed in the literature. The experience is important, as it can be used to show, as well as to get rid of, the problems in the current technology, and to enable larger variety of applications.

This presentation attempts to give an overview about the emerging and already employed wireless technologies in process automation, excluding proprietary solutions provided by different manufacturers. Some standards and regulations, which may be relevant for wireless applications in the industrial automation, are briefly introduced.

The presentation initially provides an overall technology review then WSN are introduced. Next, industrial applications of WSN and categories of wireless communication are discussed. Finally, some important design criteria in the context of industrial automation applications are presented.