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# Driving Standards in Boeing Factory Wireless Environments

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# Boeing Factory Wireless Phases

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**Connectivity, availability – mobility as productivity tool**

**RF Contention/Sharing, Understanding Wireless Delivery Sys.  
(security, protocols, end pt. behavior, appl. dependencies)**

**Wireless Technology Integration, Technical Innovation**

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## Using Wireless on Larger Scale

**Spectrum Availability/Governance**

**Ubiquitous Coverage**

**High Availability/Reliability/Performance**

**Network Management Visibility/Reporting**

**Highly Secure**

**Component Integration (Wireless is an End to End Delivery System)**

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## Helping Drive Higher Wireless Utilization

**Spectrum Availability – RF is precious commodity**

**Specific Spectrum Issues – 2.4 very crowded RF band**

**802.11 protocols**

**802.15.4 (Zigbee)**

**Bluetooth**

**Legacy 2.4 Frequency Hopping Systems**

**Network Location Services – Active RFID solutions, TCG IF-MAP**

**Proliferation of Control Systems, Monitoring Capabilities**

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## Helping Drive Higher Wireless Utilization

**Spectrum Availability – RF is precious commodity**

**900MHz and 433MHz RF bands**

**Low Power and longer distance - ideal RF band for factory applications**

**RFID 900 MHz ?**

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## Standardization Drivers

**Integration of Manufacturing Wireless Systems Controls with Enterprise (IT)**

**Collaboration of Applications in Same RF bands**

**Application Consideration in Wireless Environment**

*i.e. CIP protocol (Mfg) tunable TCP timers*

**Network Management Visibility – Spectrum Mgmt Tools**