



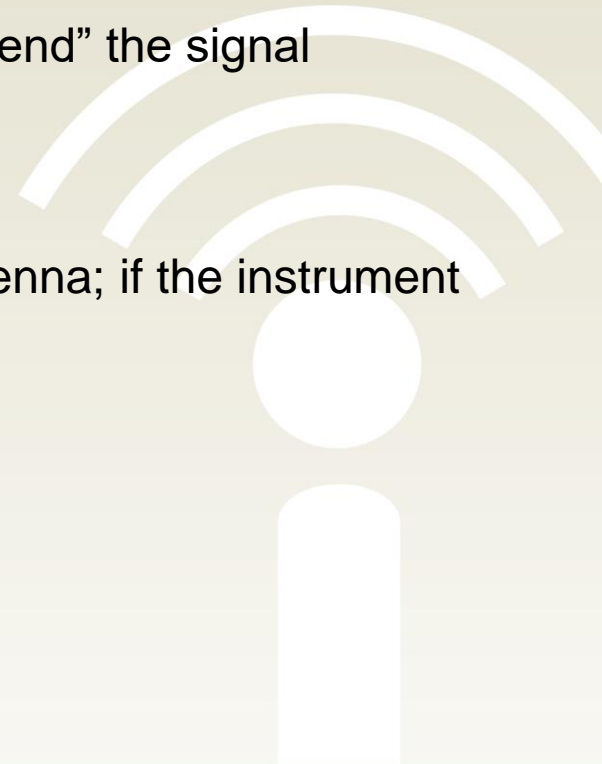
ISA100 Wireless Training: Galveston, Texas Field Instrument Deployment Guidelines

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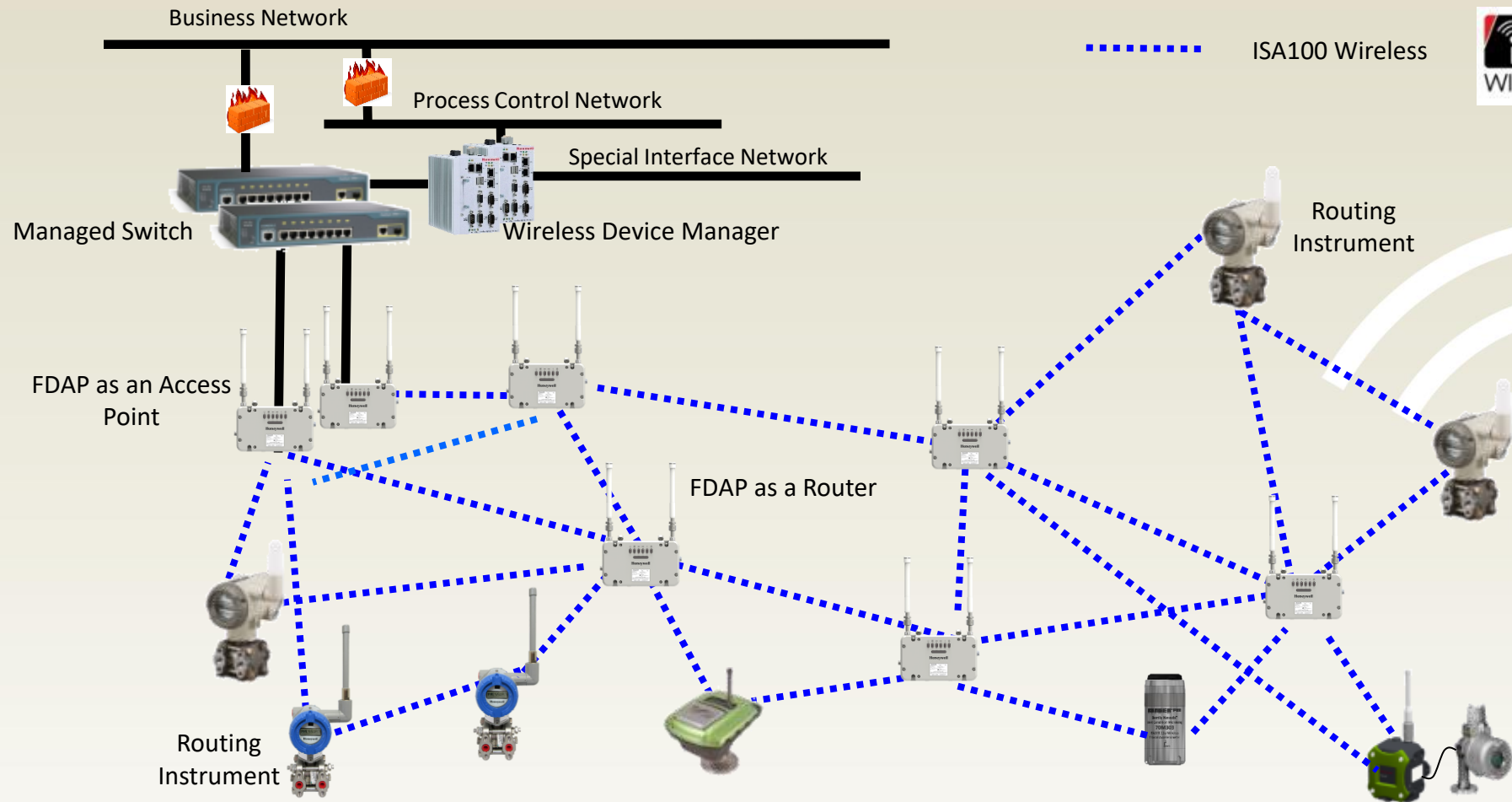
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Environmental Considerations

- Area Classifications (C1D1, C1D2)
- Electrical Interference
 - Most industrial wireless is designed to mitigate some level of interference, but it should be considered during system design
- Physical Obstructions
 - Depending on the type of obstruction, routing devices may be required to “bend” the signal around an obstruction, if additional access points cannot be deployed
- Proximity to electrical power, if not using battery powered instruments
- Instrument location compared to where the process needs to be tapped
 - Depending on the type of measurement, this may mean using a remote antenna; if the instrument needs to be right at the process, such as a pressure measurement
- Instrument location compared to a routing device or access point
 - Depending on the situation, remote or high gain antennas may be required



Typical Wireless Instrumentation Architecture



Assessing the Site

- Physical walkdown considering the points stated in Environmental Considerations
- There is no ISA100, or IEEE 802.15.4, wireless survey software package
 - Packages, such as AirMagnet, designed for IEEE 802.11 network planning can be used to simulate an 802.15.4 network operating at 2.4.GHz
 - This would usually only be required for large, complex, instrument networks
- Assuming an instrumentation network is already in place, simply taking a battery powered instrument out into the field and checking the metrics on the System Manager can provide all the information necessary to determine if an instrument will function in that location or additional infrastructure is required

Conclusion

ISA100 networks are robust and built for industry. They typically are not complex, physically or logically to set up, if basic RF principles are applied during the design and implementation phase.