



Secure and Reliable Wireless Networks for Critical Infrastructure Facilities

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Project Overview

- **Teaming**

- Sandia National Laboratories
- Honeywell International
- Funded via DHS BAA 07-09 (1 year)

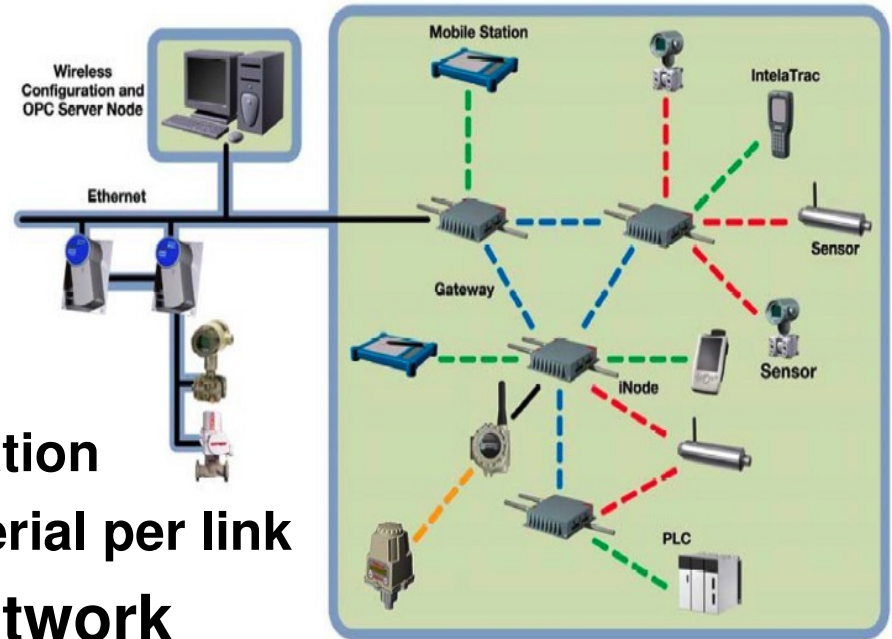


- **Wireless Mesh Network Improvements**

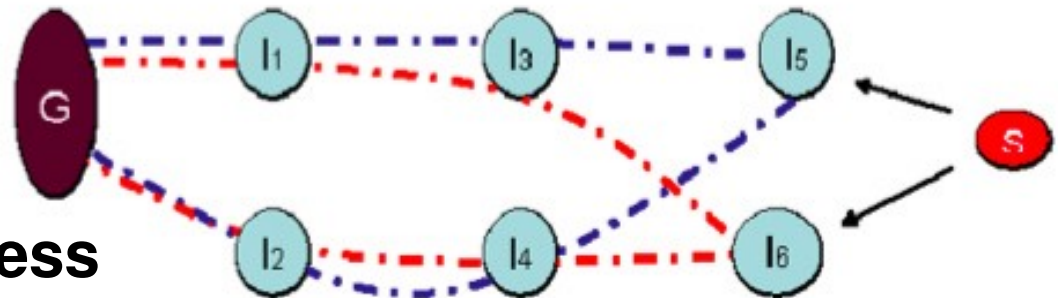
- Industrial wireless mesh networks are becoming a reality
 - Honeywell OneWireless
 - Emerson/Cisco solution
- Security and robustness improvements
- Fast, easy integration of emergency first responders
- Development
 - Commercially available OneWireless mesh network
 - COTS 802.11 wireless routers

Technical Activities

- **Enhanced Security**
 - Automatic node authentication
 - Unique cryptographic material per link
- **Multi-functional Mesh Network**
 - Fast, easy deployment of time-limited security credentials to emergency responders
- **Quality of Service (QoS)**
 - Specific QoS for emergency situations



Technical Activities



- **Enhanced Robustness**
 - Dual redundant, non-overlapping routes
- **User Interface**
 - First responder access to data from the site
 - Data condensed using predefined filters
 - Simple and easy to understand interfaces
- **Testing and Demonstration**
 - OneWireless and COTS mesh networks
 - Integration with Honeywell Experion PKS System



Milestones and Deliverables

- **Milestones**

- Use case scenario definition and requirement gathering for enhanced system demonstration
- Implementation and functional testing based on voice of customer inputs
- System integration, deployment, and testing utilizing Sandia's Honeywell Experion PKS System
- Enhanced system demonstration

- **Deliverables**

- Technical Performance Report
- Commercialization Plan
- Relevant technology will be made available to standards bodies, such as IEEE and ISA



Transition Plan

- **Commercialization**

- Enhancements developed as part of this project will be proposed to Honeywell for the next version of the OneWireless product offering

- **Standards**

- Relevant technologies will be offered to the appropriate standards bodies
 - IEEE 802.11, 802.15.4, ISA 100.11a