

# INDUSTRIAL WIRELESS & ETHERNET CONFERENCE 2009

**1st – 3rd  
December 2009**  
De Vere Daresbury Park  
Cheshire England

## PRE-CONFERENCE WORKSHOP:

Ethernet and Industrial-Strength Wireless – The Logical Intersection

Presented by Dr. Peter L. Fuhr and Wayne W. Manges

## BENEFITS OF ATTENDING:

- Understand current wireless networking offerings on the market
- Apply today's wireless technology to industrial automation
- Receive advice on successful implementation of your own wireless LAN and interface it to Ethernet
- Implement effective security on your wireless and Ethernet networks
- Learn the strengths and weaknesses of the different wireless technologies
- Find out the operation of standards such as IEEE 802.11
- Learn how to conduct a site survey in preparation for a wireless implementation
- Understand the basic terminology and jargon used in this area
- Network with your peers

## WHO SHOULD ATTEND:

Engineers and Technicians involved with:

- Control and Instrumentation
- Industrial Automation
- Consulting
- IT Personnel
- Process Control
- SCADA and Telemetry Systems
- Design
- Electrical Installations
- Process Development
- Control Systems
- Maintenance Supervisors
- Project Management
- Equipment Manufacturing
- Regulatory and Legal Issues
- **Anyone involved in the installation, design and support of communications systems**

**EARLY BIRD OFFER!**  
REGISTER  
**2 DELEGATES**  
FOR THE  
**PRICE OF 1!**  
**SAVE UP TO £950**  
SEE OVER FOR DETAILS

Featuring:

### Keynote Speakers

#### WAYNE W. MANGES

PE. UNITED STATES OF AMERICA  
Program Manager, Industrial Wireless Technologies at Oak Ridge National Laboratory  
Co-chair, ISA100, Standard for Wireless Industrial Automation  
Board Member; Wireless Industrial Networking Alliance

#### PETER L. FUHR

PH.D. UNITED STATES OF AMERICA  
Chairperson, Wireless Industrial Networking Alliance  
Co-Chair, ISA100 WG5, Wireless Coexistence and Interoperability  
Congressional Panel on Nanotechnology

### REGISTER NOW

Fax: **+44 (020) 8335 4120**

E-mail: **unitedkingdom@idc-online.com**

On-line: **www.idc-online.com**

Presented by:



Technology Training that Works

AUSTRALIA • CANADA • INDIA • IRELAND • MALAYSIA  
NEW ZEALAND • POLAND • SINGAPORE • SOUTH AFRICA  
UNITED KINGDOM • UNITED STATES • VIETNAM

Proudly Sponsored by:



# INTRODUCTION TO INDUSTRIAL WIRELESS & ETHERNET

The use of wireless, mesh networks and Ethernet in industrial and plant floor environments has grown dramatically in the past few years. Industrial users face a wide range of options when designing and implementing plant level wireless and Ethernet networks. Great success is being achieved using wireless, provided certain ground rules are applied such as ensuring a robust physical link, correct integration with the wired communications system and defence-in-depth data security.

Arguably, the most important objectives of wireless communication networks must be to achieve similar capacities, bandwidths, responsiveness, integrity, reliability and responsiveness to that of structured wired based communications with an emphasis on the unique needs and challenges faced by industrial networks.

Attention will also be focused on the integration of communications protocols, standards, and SCADA systems into your everyday business processes. Now more than ever before, industry

## CONFERENCE DAY 1 - Wednesday 2nd December 2009

8.00am	<b>Registration</b>		
8.30am	<b>Opening Address</b> Dr. Peter Fuhr - Chair, Consulting Associates for Wireless, Security and Sensors		
8.45am Session 1	<b>ISA100 - THE Standard for Wireless Industrial Automation</b> Wayne W. Manges - Program Manager, Industrial Wireless Technologies, Oak Ridge National Laboratory  ISA100 represents a family of standards being developed under the consensus driven collaborative process established by the American National Standards Institute (ANSI). The International Society of Automation (ISA) was asked by its membership to begin the process in 2005 and is releasing the first of the family in August 2009. The release of ISA100.11a, focuses primarily on wireless automation of process systems, establishes the basis for security and technical robustness. Delegates will learn how to apply ISA100, ISA100.11a and subsequent standards emerging from the ISA100 committee. The presentation will describe the technological underpinnings of the family and its intended application domains.	<b>CASE STUDY</b>	overwhelming success there is apprehension from certain market segments, such as electric power, towards leveraging this technology for mission critical applications in harsh environments. This paper addresses the main concerns and objections of deploying 802.11 in the electrical substation, including concerns about security, jamming, interference, and performance in the presence of electrical noise. Through examination of case studies and practical examples delegates will gain an appreciation whether WiFi can provide a solution for mission critical applications such as those found in sub-station environments.
<b>KEY NOTE</b>			
9.45am Session 2	<b>Ethernet Transmission Over Legacy Cables Using SHDSL Technology</b> Tony Samm - Sales Development Manager, Westermo Data Communications Ltd  This presentation will cover how Ethernet can be deployed in legacy environments without the need to install new cabling. Where nothing more than a twisted pair of wires between nodes is available, delegates will learn how SHDSL is a technology to solve this issue. Modern communications technologies are now required in areas of industrial communications to enable greater flexibility and functionality. Delegates will learn how this is achievable with the latest in industrial communication equipment. Delegates will leave with an understanding of a path available to enable them to take advantage of the latest generation of IP based equipment without the need of installing new and expensive network cabling.	2.00pm	<b>Industrial Wireless Ethernet Systems: Implications &amp; Applications for the Smart Grid</b> Dr. Peter Fuhr - Chair, Consulting Associates for Wireless, Security and Sensors Electrical systems worldwide are being upgraded and/or expanded by the introduction of demand-response systems, alternative energy sources (wind, solar, etc), and home metering. The net result is a wide cross-section of technologies that are intertwined into what is being called the Smart Grid. Potential applications for industrial wireless Ethernet systems in this arena abound. Delegates will hear how industrial wireless Ethernet systems can (and will) be used in the Smart Grid effort. System implications that the electricity generation facilities are facing as a result of the Smart Grid push will be discussed. Delegates will learn how industrial wireless Ethernet systems can be secured for Smart Grid rollout.
10.30am	<b>Morning Tea</b>	2.45pm	<b>Afternoon Tea</b>
11.00am Session 3	<b>Wirelessly Reading Manual Dial Gauges &amp; Monitoring Steam Traps</b> Harry Sim - CEO, Cypress Envirosystems  For sites with older equipment requiring manual monitoring data is not easy to gather, trend or alarm and cannot easily be integrated into energy monitoring, predictive condition based maintenance, or process improvement efforts. Automation of these readings would be ideal, but the cost and disruption to install transducers are prohibitive. Wireless based instrumentation such as Gauge Readers and Steam Trap Monitor are non-invasive devices which clamp-on existing gauges and steam traps in minutes, and cost 80% less than conventional retrofits. A case study will show how Genetech were able to improve their asset management strategy, find energy savings and improve uptime. This session will also have an interactive demonstration of Wireless Gauge reading. Delegates will hear how to apply wireless, battery operated solutions to older instrumentation not otherwise included within site SCADA, DSC, Control system or BMS. They will learn how to solve costly integration of legacy instrumentation and will hear new ways to increase battery life of wireless based instrumentation and save energy in steam trap applications.	3.15pm	<b>Go Wireless! Why and How Industrial Wireless Works for Industrial Automation Engineers?</b> Bruno Forgue - Marketing Manager - Europe / Middle East / Africa, ProSoft Technology Installation time, cost reduction, flexibility... new options for connecting remote or moving devices... operation costs reduction... improvement of machine performances... This presentation will explore several wireless case studies and testimonies from the factory automation, oil & gas, steel, food and beverage, cranes and material handling, and water/wastewater industries. It will highlight the various benefits of industrial wireless within various networking strategies. Four applications will be reviewed in detail focusing on the wireless project approach methodology and benefits experienced by users: Metal press application at Gestamp Automoción, wastewater treatment plant in Lapuan (Finland), bottling rotating carousel at Procter & Gamble, and a hoist crane on the production floor at Capral Aluminum. Delegates will gain a valuable tool box of solutions and applications to apply to each situation, and will be able to understand the benefits from user's point of view.
<b>CASE STUDY</b>		4.00pm	<b>Your Requirements Fulfilled with Wireless Based Solutions</b> Philippe Goutaudier - Program Manager, Schneider Electric Wireless based solutions can meet many requirements of the industrial automation market today. These requirements are driven by the desire to increase mobility and flexibility, improve accessibility to remote or hard-to-reach locations and to reduce cost by reducing or eliminating cable installations. In recent years the explosion of wireless based products, as well as the arrival of new generation decision makers familiar and comfortable with these high-tech products, has resulted in a growing acceptance. Delegates will learn which wireless based solutions are best used, in order to improve mobility, connectivity and to reduce cabling, for various requirements and cases.
11.45am Session 4	<b>10 Commandments of Wireless Communications</b> Paul O'Shaughnessy - Business Development Manager, B&B Electronics Manufacturing Company  The wireless communications age is upon us. Old technologies have evolved and improved. New technologies have eclipsed their predecessors in speed, power and reliability. Prices have declined to the point where wireless solutions are always less expensive than pulling new wire. Automation applications should be adopting wireless at a staggering pace, but they're not. One of the biggest hurdles to wireless adoption has been because wireless doesn't work. Delegates will leave with a toolbox of knowledge, the Ten Commandments of Wireless Communications, enabling them to address the crucial issues; path loss, fade margin, antenna installation, frequency selection, receive sensitivity, cable loss, and other topics that must be considered when specifying and installing a successful wireless automation system.	4.45pm	<b>Efficient Hazardous Area Maintenance Using Wireless Mobile Computing and RFID</b> Kevin Boyd - General Manager, Arnlea Systems Limited Budgets are being cut and profit margins squeezed. Yet, plant and maintenance management must continue to ensure that equipment is regularly inspected to maintain safety, integrity and reliability. But, the old ways of working are generally inefficient and ineffective - a new way of working is required. Delegates will hear case studies that describe how a new way of working has been introduced to improve the integrity of electrical and mechanical equipment located in hazardous areas, and the benefits achieved. Delegates will gain an understanding how today's technologies are being applied, which in turn has the potential to deliver significant operational performance improvements and reduce the risk to the plant.
12.30pm	<b>Lunch</b>	5.30pm	<b>Close</b>
1.15pm Session 5	<b>Can WiFi Deliver a Secure &amp; Reliable Solution for the Electric Power Industry?</b> Lee Lipes - Product Manager, Radio Products, RuggedCom Inc 802.11 or WiFi technology has delivered on the application promise of extending LAN services across residential and enterprise networks of varying sizes. Despite		



**Ethernet and Industrial-Strength Wireless – The Logical Intersection**

Part 1 8.30am – 12.30pm: An Overview of the Applicable Technologies  
 Part 2 1.30pm – 5.30pm: A Focused Discussion on Industrial Wireless Technology with an Emphasis on Industrial Ethernet

**SUMMARY:**

Face it, Ethernet is everywhere. As the core transmission underpinning for the internet it has become a basic requirement that wireless networks deployed in industrial settings offer the user some flavor of Ethernet connectivity. Certain industrial wireless sensor systems rely on standards and/or proprietary schemes for transmission of data via many types of topologies (star, mesh, hybrid) with radios optimised for those applications (e.g., 802.15.1, 802.15.4) – with a gateway device that “speaks” the sensor network language/protocol on one side and Ethernet on the other side. Other schemes rely on a modified version of IPv6 for addressing and an associated network protocol and companion radio transceiver for communication with the wireless sensors comprising the network.

Another approach is to have Ethernet over wireless (802.11) right on the wireless sensor itself thereby eliminating the intermediate steps used in the aforementioned scheme. Debates over this latter approach have throughout the industry with the negative comments reminiscent of those raised last decade regarding the use of Ethernet on the plant floor.

This two-part workshop is aimed at providing delegates with the focused information that is needed to understand the topic. This will involve an overview of wireless technologies (in general), the roles that network topologies play in real-world industrial wireless deployments, a comparison of industrial wireless systems that major automation companies provide, and an examination of architectures used in (truly) integrated wireless deployments where a wide variety of wireless technologies – with overlapping RF footprints – are co-resident.

**ABOUT THE SPEAKERS:**

**Wayne Manges** and **Peter Fuhr** have each been involved in the industrial wireless world for 20 years. They have a vast network of associates and real-world experience with applications spanning a broad range. They will bring this knowledge set to the attendees in a lively presentation and discussion. Wayne and Peter are ISA course instructors and developers for technical areas including SCADA System Security, Industrial Wireless, Wireless Sensor Networks, Fiber Optic and Advanced Nanotech Sensors, RFID+RTLS Systems and Control Systems Security.

Combined, they have over 1000 technical papers and presentations within the topic area of the workshop.

**GENERAL INFORMATION**

**Confirmation Details**

A confirmation & information letter will be sent to all delegates approximately 10 days prior to the conference. Please ensure that you provide both your mailing address and email address on the booking form.

**Cancellation Policy**

Full reimbursement will be accepted if written notification of cancellation is received by IDC Technologies on or before 2nd November 2009. A fee of 20% will apply to any cancellations received between 3rd and 23rd November 2009. No cancellation requests can be accepted after 24th November 2009 however from this date substitute delegates are welcome.

**Venue**

Daresbury Park Hotel  
 Chester Road, Warrington, WA4 4BB  
 Ph: 01925 267331

**Accommodation**

The conference venue has accommodation available. Contact directly on 0870 6063606 & select option 3 then quote DE00737720 or email reservations.daresbury@devere-hotels.com to make a booking. For alternative local accommodation, contact IDC.

**Food and Beverages**

All lunches, morning and afternoon refreshments are included on the conference days.

**Unable to Attend**

If you are unable to attend the full conference program, contact us for details to attend individual sessions or to purchase the Conference Resource Kit.

**Enquiries**

+44 (020) 8335 4014

**REGISTRATION FORM:**

**Industrial Wireless & Ethernet Conference 2009**

Simply complete this registration form and return by fax or mail.

**CONTACT DETAILS**

CONTACT NAME: \_\_\_\_\_

COMPANY NAME: \_\_\_\_\_

COMPANY ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ COUNTY: \_\_\_\_\_ POST CODE: \_\_\_\_\_

PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_

E-MAIL: \_\_\_\_\_

**EARLY BIRD OFFER: Register before Monday 9th November 2009 and register a 2ND DELEGATE FOR FREE, SAVING UP TO £950!**

Free delegate registration must be of equal or lesser value to the paying delegate seat.

**REGISTRATION & DELEGATE DETAILS**

**DELEGATE 1**

MR / MS / DR FIRST NAME: \_\_\_\_\_ SURNAME: \_\_\_\_\_

JOB TITLE: \_\_\_\_\_ DIRECT PHONE: \_\_\_\_\_

E-MAIL: \_\_\_\_\_ FAX: \_\_\_\_\_

PLEASE SELECT:  Workshop: £300  2-Day Conference: £750  Full 3 Day: £950 (SAVE £100)  EARLY BIRD OFFER

**DELEGATE 2**

MR / MS / DR FIRST NAME: \_\_\_\_\_ SURNAME: \_\_\_\_\_

JOB TITLE: \_\_\_\_\_ DIRECT PHONE: \_\_\_\_\_

E-MAIL: \_\_\_\_\_ FAX: \_\_\_\_\_

PLEASE SELECT:  Workshop: £300  2-Day Conference: £750  Full 3 Day: £950 (SAVE £100)  EARLY BIRD OFFER

**DELEGATE 3**

MR / MS / DR FIRST NAME: \_\_\_\_\_ SURNAME: \_\_\_\_\_

JOB TITLE: \_\_\_\_\_ DIRECT PHONE: \_\_\_\_\_

E-MAIL: \_\_\_\_\_ FAX: \_\_\_\_\_

PLEASE SELECT:  Workshop: £300  2-Day Conference: £750  Full 3 Day: £950 (SAVE £100)  EARLY BIRD OFFER

**Discounts for larger groups available, please contact us for more information.**

**PAYMENT DETAILS**

**PLEASE NOTE: Full payment is required prior to the commencement of the conference.**

**I wish to pay by:**

Cheque  Company Purchase Order Number: \_\_\_\_\_

Credit Card - Please charge my:

MASTERCARD  VISA

CARD NUMBER: \_\_\_\_\_

CARDHOLDER'S NAME: \_\_\_\_\_

CARDHOLDER'S SIGNATURE: \_\_\_\_\_

EXPIRY DATE: \_\_\_\_\_ / \_\_\_\_\_

On the reverse of your card, above the signature, is a 7 digit security number. In order to authorise your card transaction, we require the last 3 digits: \_\_\_\_\_

If the Cardholder's address is not the same as shown above please tick this box:

**BOOKING CODE: A B C D E F G H I J K L M N O P Q R S T U V W X Y Z**

SUB TOTAL: £ \_\_\_\_\_

PLUS 15% VAT: £ \_\_\_\_\_

**TOTAL:** £ \_\_\_\_\_

**REGISTRATIONS**

 **By Fax:**  
 +44 (020) 8335 4120

 **By Mail:**  
 Suite 18, Fitzroy House,  
 Lynwood Drive, Worcester Park,  
 Surrey, KT4 7AT

 **By E-mail:**  
 unitedkingdom@idc-online.com

 **On our Web Site:**  
 www.idc-online.com