

Industrial Ethernet Infrastructure Design Seminar



**Be certain.
Belden.**

**June 8–11, 2015
Conrad Hilton at Cihannüma Mah.,
Saray Cad No:5, Istanbul, Turkey**

BELDEN

 **HIRSCHMANN**
A BELDEN BRAND

 **lumbergautomation**
A BELDEN BRAND

2015 Industrial Ethernet Infrastructure Design Seminar



A Unique Opportunity to Gain Insight into Mission Critical Ethernet Networking

Belden® presents the 2015 Industrial Ethernet Infrastructure Design Seminar taking place June 8–11, 2015 at the Conrad Hilton in Istanbul, Turkey.

About the Design Seminar

This seminar brings together people involved with designing and maintaining industrial Ethernet networks with Belden's experts from around the world. Through a combination of lecture topics and hands-on labs you will learn the information and skills you need to excel with mission critical networks.

Sessions cover both introductory and advanced topics related to key areas of network design, isolation, redundancy, security and more. No matter your level of technical knowledge you will benefit from both the presentations and the "learning by doing" labs. Special tracks are available for Ethernet Networking, Cyber Security, Wireless and PT&D, Oil & Gas and Transportation.

Belden's presenters have many years of experience working with industrial facilities around the world and will share current technology trends, best practices and practical field knowledge. Some of the industries addressed in the sessions include automotive, petrochemical plants, power generation and substation facilities, wind farms and transportation.

Valuable information will also be provided by recognized industry experts who will speak during the lunch break each day. These speakers will share their experience, help us all understand the future of industrial Ethernet and make recommendations for dealing with the evolution of manufacturing and production networks.

Who Should Attend?

This seminar is designed for anyone that is responsible for designing or maintaining mission critical Ethernet networks, such as network design engineers, machine builders, system integrators, plant engineers, maintenance technicians, IT professionals, and professional engineering firms. The seminar will allow you the opportunity to learn about reducing costs and installation time while effectively implementing a highly resilient and reliable network.

In short, this seminar is ideal for anyone involved with the design, implementation and maintenance of mission critical Ethernet networks.

Cost

The seminar price is Euro 1195.

However if you decide to register before March 15th 2015 we can offer you a special Early Bird rate of 995 Euro.

This cost includes all overnight stay, all meals and events, classes, hands-on labs, all technical presentations in electronic format, as well as several special events. Payment is either by credit card or invoice.

Registration

To register for classes visit our website at www.beldensolutions.com/designseminar

NOTE: Classroom sizes are limited, so seating is being offered on a first-come, first-served basis.



Hotel Information

Conrad Hilton at Cihannüma Mah.,
Saray Cad No:5, Istanbul, Turkey. A
single room will be booked in your name
from Monday June 8 until Thursday 11.
www.conradhotels.com/istanbul

Event Overview

You should plan to arrive on the afternoon
or evening of Monday, June 8th from
18:00 – 19:30 for packet pick-up. Join us for
a welcome reception from 19:30. Breakfast
will be available on Tuesday, Wednesday and
Thursday mornings beginning at 7:00 with
the seminar starting promptly at 8:00.

There will be general sessions to begin
each day, as well as another general session
during lunch. There will be a group dinner
and evening event on Tuesday night. This
event will give you an opportunity to
relax and "network" (in the social sense)
with other attendees as well as the staff
and management teams from Belden®,
Hirschmann™ and Lumberg Automation™.
The seminar will conclude at 15:00 on
Thursday, June 11th.

Technical Sessions

- Cool Things Your Switch Can Do
that You Don't Know About
- Extending Ethernet Beyond the Panel
- Implementing Network Security
- Industrial Ethernet Infrastructures
Design Principles
- Live Demo: Total Network Setup
& Integration
- Mainstream Industrial Wireless
Design Overview
- Network design III: managing
Multicast Traffic
- Network Isolation/Segmentation
- Network Management
- Network Redundancy



- Network Security – Securing your Infrastructure Equipment
- Selecting Copper & Fiber Cables plus Connectors
- Selecting the Right Industrial Ethernet Products
- Top 10 Tech Tips to Avoid Tech Support
- New cyber security threats impacting Oil & Gas applications **NEW!**
(and what you can do to protect yourself!)
- How to accelerate Modal Shift to Rail in the transportation market **NEW!**
- Real Challenges of Implementing IEC61850 for
Substation Automation and Future Trends **NEW!**
- Securing Wireless – Using Integrated Security to its Fullest **NEW!**

Hands-On Labs

- Applying Redundant Communications
- Applying VLAN's to Segment Networks
- Intro Wireless Ethernet with Hirschmann™ OpenBAT
- Network Management with IHV
- Network Security
- Routing with a Hirschmann™ layer 3 switch
- HiFusion **NEW!**
- Advanced Wireless Experience with Your Choice of
Hidden Features you might not have known about **NEW!**
- Network Security – Deep Packet Inspection with the EAGLE Tofino™ **NEW!**

Contact Information

For questions, please contact **Berry Medendorp**
E-mail: berry.medendorp@belden.com

Schedule at a Glance

Day 1		Monday, June 8, 2015	
18:00 – 19:30	Registration/Information Desk Open		
19:30 – 21:30	WELCOME, RECEPTION, COCKTAILS AND HORS D'OEUVRES		
Day 2		Tuesday, June 9, 2015	
7:30 – 8:00	Registration/Information Desk Open		
8:00 – 8:45	Opening and Key Note		
Session 1			
8:45 – 10:15	D1 IEI Design Principles		
10:15 – 10:30	BREAK		
Session 2			
10:30 – 12:00	S1 Implementing Network Security	N9 Managing Multicast Traffic	N7 Lab Applying VLAN to Segment Networks
			N5 Lab Applying Redundant Communications
12:00 – 12:45	LUNCH		
Session 3			
12:45 – 14:15	N4 Network Redundancy	N10 Network Management	W1 Mainstream Industrial Wireless Design
			S2 Lab Network Security
14:15 – 14:30	BREAK		
Session 4			
14:30 – 16:00	V1 Vertical PT & D	V2 Vertical Transport	V3 Vertical Oil & Gas
			N8 Lab Routing with Layer 3 Switch
16:00 – 17:30	Key Note Speaker		
18:30 – 21:30	DINNER & ENTERTAINMENT NIGHT		



Day 3				
Wednesday, June 10, 2015				
8:00 – 8:30				
Opening and Key Note				
Session 1				
8:30 – 10:00	N3 Live Demo; Setting up a Network	N6 Network Isolation Segmentation	N11 Lab Network Management with IHV	S4 Lab Deep Packet Inspection with EAGLE Tofino
10:00 – 10:15				
BREAK				
Session 2				
10:15 – 11:45	S1 Implementing Network Security	D2 Selecting the Right IE Products	N7 Lab Applying VLAN to Segment Networks	W2 Lab Intro Wireless Ethernet
11:45 – 12:30				
LUNCH				
Session 3				
12:30 – 13:45				
Key Note Speaker				
13:45 – 15:15	S3 Securing Your Infrastructure Equipment	N10 Network Management	N8 Lab Routing with Layer 3 Switch	W3 Lab Advanced Wireless Experience with Your Choice of Hidden Features You Might not Have Known About
15:15 – 15:30				
BREAK				
Session 4				
15:30 – 17:00	D3 Selecting Copper and Fiber Cables	N4 Network Redundancy	N11 Lab Network Management with IHV	S2 Lab Network Security
17:00 – 18:30	W4 Securing Wireless – Using Integrated Security to its Fullest	D4 Top Ten Tips to Avoid Tech Support	N12 Lab HiFusion	N5 Lab Applying Redundant Communications
18:30 – 18:45				
Closing				
19:30 – 22:30				
TEAM DINNER				

Day 4				
Thursday, June 11, 2015				
8:00 – 9:30				
Opening and Key Note				
Session 1				
9:30 – 11:00	S3 Securing Your Infrastructure Equipment	N1 Extending Ethernet Beyond the Panel	N3 Live Demo; Setting up a Network	W2 Lab Intro Wireless Ethernet
11:00 – 11:15				
BREAK				
11:15 – 12:00				
KeyNote Speaker				
12:00 – 13:00				
LUNCH				
Session 2				
13:00 – 14:30	N2 Cool Things Your Switch Can Do	N6 Network Isolation Segmentation	S4 Lab Deep Packet Inspection with EAGLE Tofino	W3 Lab Advanced Wireless Experience with Your Choice of Hidden Features You Might not Have Known About
14:30 – 14:45				
Closing				

Legend: Color Scheme				
D = Design	N = Networking Industrial Ethernet, Connectivity and Cable	S = Security	V = Verticals	W = Wireless

Session Descriptions

Session ID	Session Title	Session Description	Proposed Frequency
D1	IEI Design Principles	You'll compare your own design practices to 11 high-level best practices for designing industrial network infrastructures, including segmentation, security, redundancy, physical media and other critical network attributes. This is where you should start – these activities lead to other more advanced topics.	1
D2	Selecting the Right IE Products	Given a network design, it's up to you to choose the right industrial-grade products. Learn to select the right products for your application from Belden's broad industrial portfolio of routers, switches, security devices, cables & connectors.	1
D3	Selecting Copper and Fiber Cables	While the Ethernet switches and routers get a lot of attention, you need to get the cables & connectors right to get the very best, trouble-free performance from your networks. In this session, learn to properly specify fiber & copper cables, cordsets and connectors. Discover installation bestpractices to ensure your industrial application performs flawlessly.	1
D4	Top Ten Tips to Avoid Tech Support	Take it from our world-class tech support experts with over 200 combined years of experience and too many certifications to count. They hand out tips, over and over, to help you stay out of their queues (with any luck, they'll share 15 – multicast/querier/IGMP for EtherNet/IP, the jumper, etc.)! Learn key Hirschmann™ and Belden® product tips and even stuff that's not our doing.	1
N1	Extending Ethernet Beyond the Panel	Ethernet (in various flavors) is a very popular fieldbus network. This session introduces you to Lumberg Automation's™ offering of IP67 (enclosureless) EtherNet/IP and ProfiNet connectivity and I/O offering. Discover the time and cost savings that this technology brings to fieldbus applications.	1
N2	Cool Things Your Switch Can Do	There are many features inside Hirschmann™ switches that provide valuable, time-saving benefits, but most people don't know they are there. We introduce you to our favorites and show you how to take advantage of them.	1
N3	Live Demo; Setting up a Network	A highly effective session where you will witness an Industrial Ethernet Network being built from the ground up, including configurations for redundancy, security, wireless, network isolation, and network management. This session will give you an unparalleled experience in witnessing the rapid deployment of the different concepts and sessions that you have learnt from this entire seminar in a 'real' scenario.	2
N4	Network Redundancy	New redundancy protocols give you even more options than ever before. Learn the design & application details of each so you can make the best choice for your network. We'll also demonstrate a 0 packet loss redundancy method.	2
N5	Lab Applying Redundant Communications	Gain hands on experience applying several network redundancy methods using Hirschmann™ products.	2
N6	Network Isolation Segmentation	A network's performance, security and ease of maintenance can be dramatically improved by isolating traffic. This session will look at the reasons why you would want to isolate network segments, and various ways to deliver this isolation including the use of VLANs, routers/Layer 3 switches and firewalls.	2



Session ID	Session Title	Session Description	Proposed Frequency
N7	Lab Applying VLAN to Segment Networks	In this lab you use a layer 2 Hirschmann™ switch to set up separate logical networks (VLANs).	2
N8	Lab Routing with Layer 3 Switch	Layer 3 switches are an excellent way to segment your network. Learn how easy they are to configure and implement in this hands on lab.	2
N9	Managing Multicast Traffic	EtherNet/IP is a very popular industrial protocol that takes advantage of multicasting. Other applications such as IP CCTV security and surveillance also use multicasting for more efficient traffic flow and distribution. However, incorrect implementation and configuration of multicast control, can lead to a network behaving poorly. This session will provide you with an understanding of how multicasting works, so that you can manage it properly on your network and maximize the performance of each end device.	1
N10	Network Management	SNMP, OPC, Web Browser, Hyperterminal are all methods to interface with your network devices, and each has its place, but what combination of these is right for your application? As your network grows and becomes increasingly important, a solid network management strategy is a must. Discover how to select & apply the best network management approaches for your own network plan.	2
N11	Lab Network Management with IHV	In this hands on lab, learn how easy it is to implement a network management system, and also discover how powerful a tool this can be.	2
N12	N12 Lab HiFusion	in this lab you'll learn, how to create own PSMs for Industrial HiVision in four different levels from basic to professional.	1
S1	Implementing Network Security	Need to add security, but not sure about what you should do? Consistent with government & standards organizations' recommendations, this session will help you take practical steps including a risk assessment and plan for layered security. In addition, we'll share high-level guidelines for designing and selecting components for network security, including perimeter, zone, and remote access.	2
S2	Lab Network Security	You'll gain hands-on experience applying and testing some of the most popular security products & features.	2
S3	Securing Your Infrastructure Equipment	You may not know it, but your previously installed Hirschmann™ managed switches and routers have many security features that can be a significant part of your security plan. In this session, we help you learn what, when and how to apply them.	2
S4	Lab Deep Packet Inspection with EAGLE Tofino	This lab will give you an introduction how to protect to your Industrial Application and how to keep your PLCs and other automation devices safe from others who want to control them. In the hands on part you'll learn how Deep Packet Inspection provides easy & effective control over who can do what to your automation equipment.	1

Session Descriptions *(continued)*

Session ID	Session Title	Session Description	Proposed Frequency
V1	PT & D: Real Challenges of Implementing IEC 61850 for Substation Automation and Future Trends	There is a lot of literature about IEC 61850 and its theoretical benefits. In this session we will explore via real projects the challenges faced during the design and the execution phase, and the best practices for the maintenance of these systems. We will have the presence of Belden customers explaining their experiences and we will have the opportunity to make an open discussion about the future trends in the industry.	1
V2	Transportation: How to Accelerate Modal Shift to Rail	We have all heard about the environmental benefits of modal shift to rail, but what is needed to get the car drivers onto rail transport? This session will explore some initiatives, such as Shift2Rail from UNIFE and then look at the applications that help enable the modal shift. We will be using real world project examples with the help of a Belden customer sharing their experiences with one of the applications. There will also be the opportunity for an open discussion about future technology trends (such as LTE) in these applications.	1
V3	Oil & Gas: New Cyber Security Threats Impacting Oil & Gas Applications (and What You can do to Protect Yourself!)	We have all heard that the oil & gas industry continues to be a target for cyber crimes. But often times, the threat to your network may not be from the outside it may come from the inside. And it's not just intentional malicious attacks even accidental human error can bring down your network and operations. What's a network designer to do? This session will provide real world examples of how Belden security solutions were designed & deployed in oil & gas applications. You'll learn how to take these examples and apply them to your oil & gas applications to make them more secure.	1
W1	Mainstream Industrial Wireless Design	The newest Industrial Wireless standards and products provide significantly more reliable, robust, and secure wireless communication, and are a lot easier to deploy, enabling wireless LAN use to go mainstream for a wide variety of industrial applications. You'll learn the high-level steps to design, select & deploy today's newest industrial wireless systems, along with our best guidelines for success.	1
W2	Lab Intro Wireless Ethernet	It's been said that the best way to learn wireless is to do wireless – here's your chance to do just that! Hands on experience with our new Hirschmann OpenBAT wireless devices.	2
W3	Lab Advanced Wireless Experience with Your Choice of Hidden Features You Might not Have Known About	Comfortable with basic Access Point configuration? Take your knowledge and hands-on experience one step further in this lab. Select from your choice of more advanced hands on exercises including: Band Filtering and Band Analysis, Wireless Network Management Integration with HiVision, and wireless planning with BAT-Planner.	2
W4	Securing Wireless – Using Integrated Security to its Fullest	Some say wireless is more secure than a wired network. Do you feel that way? Build your confidence with this class. Here you will learn about the abundance of security options integrated into the WLAN Solution set. Whether your concern is protecting the air, protecting the network, blocking unwanted access or blocking unauthorized configuration – there is more you can do!	1

Legend: Color Scheme

D = Design	N = Networking Industrial Ethernet, Connectivity and Cable	S = Security	V = Verticals	W = Wireless
------------	--	--------------	---------------	--------------



Registration Form

Regular price: **1195 Euro**

Register before March 15th 2015 and we can offer you a special **Early Bird rate of 995 Euro**.

1. Please complete this registration form and mail to berry.medendorp@belden.com. For questions: Contact Berry Medendorp, E-mail: berry.medendorp@belden.com. You may also register online at: www.beldensolutions.com/designseminar

2. Please provide us with your contact information and invoicing details:

Company Name: _____ **Street Address:** _____ **E-mail Address:** _____

Title: _____ **City:** _____ **Phone:** _____

First Name: _____ **Zip Code:** _____ **VAT Number:** _____

Last Name: _____ **Country:** _____ **Other:** _____

3. Please indicate [X] your class preference below. Only choose one class per session.

Session	Track 1	Track 2	Track 3	Track 4
1	<input type="checkbox"/> S1 Implementing Network Security	<input type="checkbox"/> N9 Managing Multicast Traffic	<input type="checkbox"/> N7 Lab Applying VLAN to Segment Networks	<input type="checkbox"/> N5 Lab Applying Redundant Communications
2	<input type="checkbox"/> N4 Network Redundancy	<input type="checkbox"/> N10 Network Management	<input type="checkbox"/> W1 Mainstream Industrial Wireless Design	<input type="checkbox"/> S2 Lab Network Security
3	<input type="checkbox"/> V1 Vertical PT&D	<input type="checkbox"/> V2 Vertical Transport	<input type="checkbox"/> V3 Vertical Oil & Gas	<input type="checkbox"/> N8 Lab Routing with Layer 3 Switch
4	<input type="checkbox"/> N3 Live Demo; Setting up a Network	<input type="checkbox"/> N6 Network Isolation Segmentation	<input type="checkbox"/> N11 Lab Network Management with IHV	<input type="checkbox"/> S4 Lab Deep Packet Inspection with EAGLE Tofino
5	<input type="checkbox"/> S1 Implementing Network Security	<input type="checkbox"/> D2 Selecting the Right IE Products	<input type="checkbox"/> N7 Lab applying VLAN to Segment Networks	<input type="checkbox"/> W2 Lab Intro Wireless Ethernet
6	<input type="checkbox"/> S3 Securing Your Infrastructure Equipment	<input type="checkbox"/> N10 Network Management	<input type="checkbox"/> N8 Lab Routing with Layer 3 Switch	<input type="checkbox"/> W3 Lab Advanced Wireless Experience with Your Choice of Hidden Features You Might not Have Known About
7	<input type="checkbox"/> D3 Selecting Copper and Fiber Cables	<input type="checkbox"/> N4 Network Redundancy	<input type="checkbox"/> N11 Lab Network Management with IHV	<input type="checkbox"/> S2 Lab Network Security
8	<input type="checkbox"/> W4 Securing Wireless – Using Integrated Security to its Fullest	<input type="checkbox"/> D4 Top Ten Tips to Avoid Tech Support	<input type="checkbox"/> N12 Lab HiFusion	<input type="checkbox"/> N5 Lab Applying Redundant Communications
9	<input type="checkbox"/> S3 Securing Your Infrastructure Equipment	<input type="checkbox"/> N1 Extending Ethernet Beyond the Panel	<input type="checkbox"/> N3 Live Demo; Setting up a Network	<input type="checkbox"/> W2 Lab Intro Wireless Ethernet
10	<input type="checkbox"/> N2 Cool Things Your Switch Can Do	<input type="checkbox"/> N6 Network Isolation Segmentation	<input type="checkbox"/> S4 Lab Deep Packet Inspection with EAGLE Tofino	<input type="checkbox"/> W3 Lab Advanced Wireless Experience with Your Choice of Hidden Features You Might not Have Known About

4. Method of Payment: **Invoice** – we will send you an invoice to the above mentioned invoicing details.

5. Throughout the seminar we will be using a special App (both Apple and Android). This will enable you to interact and ask questions – and will give you access to all presentations in digital format.

Please indicate if you have a tablet. **Yes** **No** Will you bring it to the seminar? **Yes** **No**

(We will forward the download links for the apps a few weeks prior to the seminar)

NOTE: Classroom sizes are limited, so seating is being offered on a first-come, first served basis.

BELDEN
SENDING ALL THE RIGHT SIGNALS



Be certain.

2015 Industrial Ethernet Infrastructure Design Seminar

June 8–11, 2015, Conrad Hilton at Cihannüma Mah., Saray Cad No:5, Istanbul, Turkey