2017 EAS User Training & Technical Showcase Event

Smart Solutions. Smarter Grid.

October 9-12, 2017

Minneapolis, MN

F·T·N

Powering Business Worldwide

Smart solutions for a **smarter grid**

October 9-12, 2017 — Minneapolis, Minnesota

Backed by 100+ years of field-proven experience, Eaton provides a wide range of smart solutions for automation and control, advanced metering and demand response applications, all designed to help utilities work smarter by optimizing efficiency, productivity and reliability. Our Smart Grid portfolio seamlessly integrates with a utility's legacy products.

We are also committed to expanding our Smart Grid portfolio and to providing educational opportunities on how to leverage these solutions to meet current needs while planning for future changes.

Showcase event overview

Eaton's 2017 EAS User Training & Technical Showcase offers attendees integration insights to maximize existing products while introducing industry trends, new technologies, regulations and system requirements. You'll join hundreds of other users for group training, collaboration and dialog.

Each 50-minute session provides a solution overview highlighting features, functions and operational benefits; a troubleshooting knowledge base or toolkit; and insight on the solution's future roadmap.

Optional supplemental training sessions

Additional, in-depth supplemental training is offered in sessions held before and after the formal forum. Details found on pages 8-11.

Professional Development Hours (PDH) offered

By attending this forum as well as our pre- and/or post-forum training sessions, you will receive a certificate recording the hours you participated in professional development.

Smart Solutions that provide a positive impact to your bottom line and deliver on your customers' expectations

Learn how Eaton's Smart Grid innovations are helping utilities:

* Optimize efficiency through system planning tools, integrated controls, data access, and energy efficient apparatus
* Improve productivity of assets and people through remote system monitoring and control
* Provide greater reliability with a system approach utilizing intelligent apparatus and self-healing grid solutions
* Prepare for the future with modular, integrated and upgradable solution architecture
* Provide higher levels of service through customer access, system reliability expertise, and smart integrated control systems
* Improve energy management to keep costs constant
* Reduce environmental impact through peak-shaping and network optimization

EAS User Training event agenda maximizes technical breakout sessions

A short general session will kick off the event, and provide you with insights into our technology roadmap and Eaton vision.

Our breakout sessions will allow you the flexibility to stay within a focused technology track or to attend topics across the various tracks.

* Demand Response (DR) solutions – one-way broadcast (paging or VHF) and two-way RF Mesh network
* Grid Automation solutions – Substation and Distribution IEDs and Software
* Advanced Metering Infrastructure (AMI) solutions – Power-line Carrier and RF Mesh network

EAS User Training event and kick-off

Eaton's 2017 EAS User Training and Technical Showcase event, October 9-12, will be held in

Fun activities and networking

We will continue the tradition of the opening night hospitality reception, and a Tuesday evening party at Sky Deck Sports Grille.

Join us for fun after dinner on Tuesday at a private party at Sky Deck Sports Grille & Lanes. We'll be enjoying unlimited games and bowling from 7:00–10:00 pm. Drink tickets will be provided.

Sky Deck Sports Grille & Lanes is located in the Mall of America which is directly connected to Radisson Blu Mall of America. For more information, please visit www.skydecklanes.com

Bloomington, Minnesota, at the Radisson Blu – Mall of America, a premier conference center with award-winning accommodations, hospitality, and catering services. EAS User Training registration includes all meals.

The Welcome Reception is Monday, October 9, 6:00-8:00 PM. The cocktails and hors d'oeuvres reception will give you an opportunity to reconnect with past attendees, meet new attendees, and have one-to-ones with Eaton's Smart Grid Solutions experts.

Eaton's User Training event officially starts Tuesday morning, October 10, with the kick-off session. Following a brief welcome and Eaton's state-of-the-business overview, the kick-off session transitions attendees to the training breakout sessions.

> "At the EAS User Training and Technical Showcase, we look forward to demonstrating how our approach to power system design and modernization can help utility customers optimize asset efficiency while reducing system operating costs, downtime and environmental impact."
>
> **Ben Wallace**
> *Director of Marketing, Eaton's Electrical Automation Solutions Division*

MONDAY, OCT 9	TUESDAY, OCT 10	WEDNESDAY, OCT 11	THURSDAY, OCT 12
Pre-event specialized training sessions *(10 offered)* *See pages 8-11 for detailed schedule*	**Conference welcome and kick-off**	**Breakout sessions**	**Post-event specialized training sessions** *(5 offered)* *See pages 8-11 for detailed schedule*
	Breakout sessions		
	Lunch	**Lunch**	
	Breakout sessions	**Breakout sessions**	
Welcome reception	**Dinner at hotel**		
	Evening event: Party at Sky Deck Sports Grille & Lanes		

User Training & Technical Showcase breakout sessions

Here is a sample of the educational/training opportunities offered through the breakout sessions at the annual User Training & Technical Showcase Event.

Sessions for Demand Response (DR) solutions

DR roadmap

In this session we'll review industry and technology trends, as well as Eaton's Demand Response product line and product roadmap. The DR roadmap items include DR hardware advancements and Yukon software DR enhancements.

Eaton distributed energy research projects

Review Eaton R&D activity in the area of distributed energy resource management. Our discussion will include smart water heater control, battery storage, and automatic solar disconnect.

Vendor panel: Techniques to expand DR enrollment

Most utilities reach a threshold where DR and EE program enrollments begin to plateau. Learn how utilities are using innovative approaches to increase enrollments in their DR & EE programs. The panel of experts work with utilities across the country to increase enrollments in programs and minimize enrollment costs.

Customer case study: Analysis of Rocky Mountain Power appliance data

Rocky Mountain Power is collecting runtime and shed time for 108k devices. They have segmented their DR customers into single family, multi-family and commercial. In addition, the program started with True Cycle I and changed to True Cycle II. This session will present the analysis of the interval data from the LCRs and compare performance between TCI and TCII.

Customer panel: G&T and Co-op shared control

This session features a panel discussion of how power suppliers are using the Eaton Demand Response systems to manage their and the distribution members' peaks.

Customer case study: Using RFN to control a mature DR program

Join the discussion with utilities on how they transitioned from control strategies on their legacy systems to control strategies with the Eaton RF Mesh system.

DR industry update

Eaton attends a number of conferences and meetings annually. In this session, we will present some of the innovative and successful utility program innovations from these meetings. We will cover program design, customer engagement, and learnings from program delivery.

Customer case study: Targeted DR for local constraints

A utility with a significant Demand Response footprint will provide an overview for why and how they plan to setup Yukon and their Demand Response system to address potential transmission constraints.

"With our Demand Response solutions we can help customers who are looking to reduce peak demand, shift load to balance generation and ease electrical system constraints. We provide solutions that often help utilities defer investments in expensive generation and distribution infrastructure."

Ryan Brager
*Product Manager,
Demand Response*

Energy management circuit breaker pilot

Eaton will share what they've learned from the EPRI circuit breaker trial and their plans for using the trial results.

Customer presentation: TOU/CPP pricing automated control

A utility with a significant thermostat deployment will share how they incorporated Yukon and deployed thermostats into a TOU with CPP program.

Vendor partner presentation: Opportunities for controlling irrigation equipment

Learn from a joint presentation with Eaton and an irrigation equipment partner. This session includes an overview of irrigation control technology and how it can be leveraged through Yukon.

Controlling mini-split systems

Eaton will share what they've learned over the past year and if it can pass a TRC test.

Sessions for Advanced Metering Infrastructure solutions

AMI – Top 10

In this session, we'll review the Top 10 most common AMI support call topics.

Customer case study: Implementing electric, water and DR over a single RF Mesh network

This customer presentation will focus on implementing electric, water and demand response over a single RF Mesh network.

Blended AMI

In this session we'll review functionality and operational differences seen within a blended network (adding RF into your PLC network).

Customer case study: Functionality and operational differences in a blended network

Functionality and operational differences seen within a blended network (adding RF into your PLC network)

PLC roundtable

Ask your PLC questions to a panel of Eaton and utility personnel. We invite you to submit questions or topics prior to the event through our forum.

RF Mesh deployment

This session highlights best practices for planning, implementing and deploying your AMI RF Mesh network.

Field troubleshooting

Learn about best practices for troubleshooting your RF AMI Mesh network from the office and the field.

Eaton AMI 101

This session will provide an overview of Eaton's AMI solution and the products currently available.

AMI Meter Ordering

This session will provide an overview of the meter ordering process and the necessary information for meter programs and configurations.

Customer case study: Implementing RF AMI

Attend this customer presentation on implementing RF AMI from a smaller municipal's perspective.

Event and alarm data

This session will provide an overview of alarms and event data that can be obtained from your AMI system.

Eaton RF Mesh 101

Join us for an introduction to Eaton's RF Mesh network and solution.

"Our utility and industrial customers need best-in-class modeling capabilities to help them build an adaptable, secure and responsive infrastructure. Our extensive industry knowledge and energy automation solutions allow us to help our customers address complex power network planning and operations challenges."

Daniel Desrosiers
*General Manager,
Eaton's CYME Business*

Customer case study: Adding DA into your AMI network

This customer presentation will focus on adding Distribution Automation functionality into your AMI network.

Engineering and operations panel

This panel discussion from utility personnel will cover topics such as outage management, voltage monitoring, and other engineering and analysis tools.

Sessions for Yukon software solutions

Yukon software platform overview

Using Yukon software for a single function? Explore the platform and see how existing modules might solve challenges facing your utility.

What's new with Yukon software?

Tired of reading release notes? Stop by to hear the highlights of recent and upcoming releases.

Helpful Hints I

A look at some of the new AMI features and updates in Yukon software from the last few years. Explore ways to use Yukon software to its full potential and maximize the benefits for your utility. Learn something new or remind yourself of the tools you always meant to use.

Helpful Hints II

A look at some of the new AMI features and updates in Yukon software from the last few years. Explore ways to use Yukon software to its full potential and maximize the benefits for your utility. Learn something new or remind yourself of the tools you always meant to use.

What's up next in Yukon software? Let's discuss!

Examine previous requests and what features you want most. Open discussion with software and technical services.
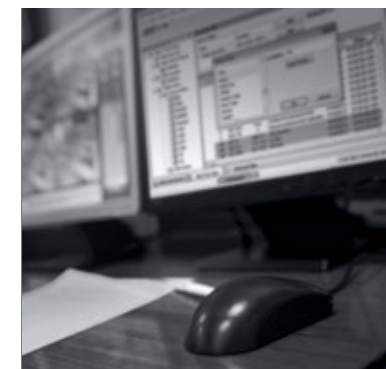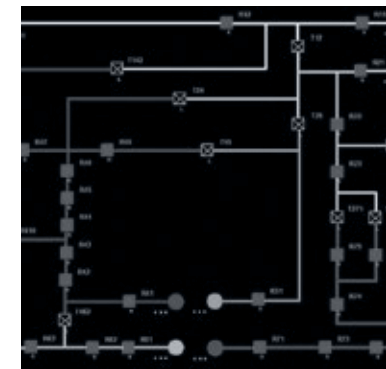
Optimize efficiency, productivity and reliability

Software integration panel

Join us for a prepaid, consumer portal. OMS, MDM integration panel discussion.

Working with outages

Learn how to use the functions in Yukon software to setup, collect, monitor and analyze the outage data available from the AMI system. Integration methods with OMS vendors will also be discussed.

Maximizing your data exports

More than just billing files! Understanding the fundamentals of data exports and how to use them to their fullest potential for valuable data analysis.

Managing device configurations

Use Yukon's device configuration tool to program PLC and RF meters. Learn best practices and tips for organizing mass system changes. Expected results using the tool and future improvements will also be covered. *NOTE: This does **not** cover programming polyphase meters using MeterCat, PCPro+, or 1132Prog.*

Enhanced mapping features

Using latitude and longitude coordinates in Yukon software for enhanced visual displays of endpoints. Functionality previously found in Network Manager is now available in Yukon; neighbors, primary routes, and parent nodes (for battery endpoints). This functionality is available for electric and water meters, RF relays, and RF gateways.

CSR panel

Panel discussion from utility personnel on Customer Service (CSR) topics.

Wireless Mesh and Yukon security

A walkthrough of Eaton's end-to-end security for Yukon software and the RF Mesh Network. This session will examine technical details of the wireless security, development best practices, and deployment options for additional back-office security.

PLC roundtable

Ask your PLC questions to a panel of Eaton and utility personnel. We invite you to submit questions or topics prior to the event at our forum.

RF roundtable

Ask your RF questions to a panel of Eaton and utility personnel. We invite you to submit questions or topics prior to the event at our forum.

"Utilities can look to our end-to-end Advanced Metering Infrastructure (AMI) architecture for the largest feature set, choice of meter manufacturers, industry-leading support providing flexible deployment options and uniform network coverage across all service territories, as well as full Demand Response and Distribution Automation support."

Ken Polarek
Global Product Director

Pre- and post-event training

Supplemental training sessions overview

Eaton will offer 15 pre- and post-event supplemental training sessions that will each run between four and eight hours long. These sessions will provide utility attendees/users with solution training and integration insights to maximize existing products and solutions. They will be offered on Monday, October 9, and Thursday, October 12.

Also at the EAS User Training event

Smart Grid solutions lab

As Eaton continues to expand our Smart Grid solutions portfolio—so goes the expansion of Smart Grid innovations showcased within the Smart Grid solutions lab. Our Smart Grid solutions lab will be displaying and demonstrating our Smart Grid offerings October 10 and 11, between 9:00 AM until 4:00 PM. We encourage you to stop and talk with any one of our Smart Grid technology experts for one-to-one solution solving or some hands-on equipment time.

Customer service table: Ask about your account status

If you have questions on your customer materials order, project schedule, or help desk/support status, or if you want to learn more about our customer return process, visit the customer service table.

EAS User Training alliance partnership plaza

Eaton continues to expand the Smart Grid alliance partnership portfolio. Our Smart Grid alliance partners will display/demonstrate their offerings October 10 and 11, between 9:00 AM until 4:00 PM. We encourage you to stop and talk with any one of our Smart Grid technology partners.

"Our newest Ethernet-based solution offers utilities a highly flexible and interoperable platform that they can grow into. Instead of having to purchase new hardware as new standards arise, users can simply update the product's existing software and leverage its multi-function capabilities to get the most out of their legacy IEDs. This not only adds convenience, but also helps keep overall cost in check."

Eric Lebeau
Marketing product manager, Eaton's Electrical Automation Solutions Division

Session 1, Monday
Do your own DR feasibility study (½ day session – morning)

• 8:00 AM to 12:00 PM

OVERVIEW

In this workshop, each participant will receive a spreadsheet model that can be filled out for yourself with your wholesale rates. From there, you can design your own DR feasibility study, including what programs to design, what loads to control, install rate, churn rates, marketing costs, peak day load curves, and number of customers.

At the end of a full course, participants will be able to:

• Understand the economic drivers for Demand Response

• Assess if there is a business case for Demand Response at their utility

• Communicate the value of Demand Response to their utility

Session 2, Monday
Introduction to big data tools and techniques (½ day session – afternoon)

• 12:30 PM to 4:30 PM

OVERVIEW

Big Data Analysis is a topic brought up in many conversations today. This ½ day seminar will introduce you to the world of Big Data Analysis. We will start out with an overview of what Big Data Analysis means and the tools that have been developed (both open source and commercial) to analyze data. We will walk through two examples of how Eaton is using big data tools to get a better understanding of customer behavior and improve system performance. We will also provide the students with hands on time and exercises using a Big Data tool.

At the end of this course, participants will:

• Understand what Big Data Analysis means and the tools available

• Understand how big data tools can be used to analyze Demand Response programs

• Demonstrate an understanding of how to use big data tools

Session 3, Monday
Yukon Feeder Automation – Basic software training (full day session)

• 8:00 AM to 12:00 PM
• Lunch break
• 1:00 PM to 4:30 PM

OVERVIEW

In this session, participants will receive an in-depth look at the Yukon Feeder Automation (YFA) software with an overview of the latest feature additions including:

• A brief overview of the installation and licensing mechanism

• Creating a diagram in Visual T&D

• Editing the topology configuration

• Editing the communications server configuration, including automation functions

• Managing data points in Visual T&D Explorer

• Automation behavior in various situations

At the end of this course, participants will:

• Know how to navigate the Yukon Feeder Automation software

• Know how YFA will react in various scenarios

• Learn what basic troubleshooting steps to perform before calling support

Session 4, Monday
CBC-8000 control configuration, installation and troubleshooting (full day session)

• 8:00 AM to 12:00 PM
• Lunch break
• 1:00 PM to 4:30 PM

OVERVIEW

We will cover the basics of the CBC-8000 control hardware including available hardware options for installation and communication, programming through the front panel and with ProView™ NXG software, and troubleshooting an installation including wiring issues and programming issues. Attendee feedback is welcome to focus the discussion. Laptop with latest version of ProView NXG software installed is required, CBC-8000 controls will be provided.

At the end of the course, participants will understand:

• The history and purpose of a capacitor in the power electric system

• How to properly size a capacitor for the application

• How placement of a capacitor affects the power electric system

• The basics of the various switching criteria available along with benefits and risks of each criterion

• How switching a capacitor on the power electric system can affect other devices

• The local control options available in the CBC-8000 and when to use them, including voltage, VAR, current, temperature, and time of day control

• How to use the abilities of a communicating CBC-8000 control which includes collecting typical scan data as well as OTA settings changes, firmware updates, and downloads of logs/configuration files

• How to program the CBC-8000 control through the front panel or via ProView NXG configuration software

• Proper programming of the CBC-8000 control for communications over serial or Ethernet, including how to reduce communications bandwidth with DNP3

Session 5, Monday
Substation automation fundamentals (full day session)

• 8:30 AM to 12:00 PM
• Lunch break
• 1:00 PM to 4:30 PM

OVERVIEW

Participants are introduced to the general architecture and elements of a substation automation solution. They will also be introduced to the technical and functional capabilities of the SMP gateway and will see how to install, configure, commission, maintain and troubleshoot SMP gateway applications. Detailed instructor-led examples, centered on relevant application problems, ensure that all participants become familiar with the complete suite of SMP tools.

At the end of each course, participants will be able to:

• Configure a gateway to poll RTUs and IEDs, using serial and Ethernet links, using different protocols

• Configure a gateway to distribute data to one or more control centers, using serial and Ethernet links, and using different protocols

• Install and update SMP gateway firmware and software

Session 6, Monday
Substation automation secure networking (full day session)

• 8:30 AM to 12:00 PM
• Lunch break
• 1:00 PM to 4:30 PM

OVERVIEW

Participants are introduced to the general concepts of networking from a substation automation and grid automation perspective. The following topics will be covered in depth:

• Network topologies: legacy, new, redundancy such as PRP/HSR, IEC 61850 architecture

• Industry protocols (DNP3, Modbus, MMS, etc.)

• Cybersecurity, encryption, security perimeter, firewall, secure protocols

• DNP3 Secure Authentification

• X.509 certificates

Attendees will participate in extensive hands-on training to maximize content retention.

At the end of this course, participants will have:

• Understanding of the threats to which the energy sector is exposed

• Most popular substation network topologies

• Understanding of the basic concepts of information security (confidentiality, integrity and availability)

• Familiarity with the applicable information security standards

• Understanding of the best practices and technologies that are being used to make systems more secure

Session 7, Monday
**Yukon software overview (½ day session – morning)**

• 8:00 AM to 12:00 PM

OVERVIEW

Participants will receive an overview of the Yukon software, including:

• Review Yukon software enhancements

• Processes and tools to create, add and change devices

• Reports available

• Creation of billing file exports

• Helpful administrator tips

At the end of this course, participants will:

• Learn how to use Yukon software to commission the system

• Learn what basic steps to perform in troubleshooting before calling support

• Learn techniques in Yukon to troubleshoot and analyze data collection challenges

Monitor, control and optimize
how you move power
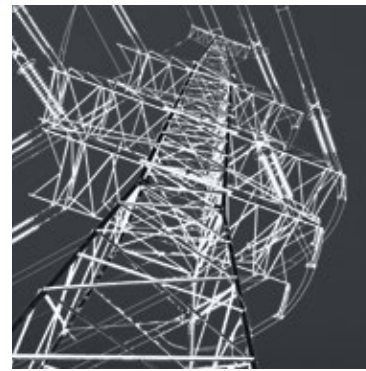
Session 8, Monday
Advanced HMI and SCADA for grid automation
(½ day session – afternoon)

• 12:30 PM to 4:30 PM

OVERVIEW
Participants are introduced to the general architecture and elements of HMIs and to configure, commission, maintain and troubleshoot SMP HMIs and Visual T&D. Detailed instructor-led examples, centered on relevant application problems.

At the end of the course, participants will be:

• Familiar with the complete suite of Visual T&D and SMP HMI tools

• Able to set up, configure and deploy a complete Visual T&D project

• Able to set up, configure and deploy a complete SMP HMI project

• Able to efficiently design distributed or centralized HMI application for Yukon Feeder Automation, smart sensor monitoring with Grid Server, substation HMI and SCADA

Session 9, Monday
Engineering overview of how the RF network works
(½ day session – morning)

• 8:00 AM to 12:00 PM

OVERVIEW
This session will provide a technical overview of the RF Mesh network and how all the network components work together to form the network. Network design guidelines and methods for optimizing your network will also be included.

At the end of the course, participants will understand:

• The building blocks required for the RF Mesh network

• Different networks (mesh vs. tower)

• How the RF Mesh network forms

• Network paths, links and hops and the impact on the network performance

• Network applications

• Design guidelines for network optimization

• Methods to assess the health of the network

Session 10, Monday
RF AMI troubleshooting techniques
(½ day session – afternoon)

• 12:30 PM to 4:30 PM

OVERVIEW
Expanded deep dive into troubleshooting your RF AMI network.

"Pair Eaton's RFN-1200 device with existing Eaton Advanced Metering Infrastructure (AMI), Demand Response (DR) and Distribution Automation (DA) networks to effectively monitor and control a utility's distribution system."

Dan Smock
Product manager, Eaton's Electrical Automation Solutions Business Unit Solutions Division

Session1, Thursday
Energy market fundamentals: What they are and how they work
(½ day session – morning)

• 8:00 AM to 12:00 PM

OVERVIEW
The ISO Energy Markets operate in over half of the US continental territory and manage over 70% of the total power system load. This year, a group of utilities across several western states have proposed merging into the Southwest Power Pool. At this point, most Municipal and Cooperative utilities operate in energy markets through their G&Ts, PMA's or Energy Suppliers. However, the way that energy markets operate is making these entities change their programs so that they better match with the ISO rules. This training class will provide attendees with the knowledge of how the markets operate and provide references to resources to help distribution utilities understand their specific market programs.

At the end of this course, participants will:

• Have knowledge of how the markets operate

• Have resources to help distribution utilities understand their specific market programs

Session 2, Thursday
Smart sensors/ GridAdvisor basics
(½ day session – morning)

• 8:00 AM to 12:00 PM

OVERVIEW
Participants will have the opportunity to learn about Eaton's smart sensor solution platform. The session will show the process to commission your GridAdvisor sensors and set up the Visual T&D custom visualizations.

At the end of each course, participants will:

• Understand the smart sensor solution offerings available from Eaton

• Understand the key programming parameters required for smart sensor communication and data gathering

• Learn the commissioning steps to implement smart sensor platform

• Learn how to use Visual T&D to set up the sensor visualizations for operator viewing.

• Learn techniques for analyzing and troubleshooting data collection challenges

Session 3, Thursday
Yukon Feeder Automation – Advanced software training
(½ day session – morning)

• 8:00 AM to 12:00 PM

OVERVIEW
In this session, participants will receive training on Yukon Feeder Automation advanced software topics. This will include:

• Advanced simulator features

• Commissioning recommendations

• Mixed simulations setup and lab environment

• YFA log troubleshooting and remote log monitoring setup

Integrated smart solutions allow us to achieve a modern, cyber-secure grid.

At the end of this course, participants will:

• Know how to navigate the Yukon Feeder Automation software

• Know how YFA will react in various scenarios

• Learn what basic troubleshooting steps to perform before calling support

Session 4, Thursday
Itron meter training
(½ day session – morning)

• 8:00 AM to 12:00 PM

OVERVIEW
Itron Sentinel and PC Pro+ training.

Session 5, Thursday
Honeywell meter training
(½ day session – afternoon)

• 12:30 PM to 4:30 PM

OVERVIEW
Honeywell meter training.

Please complete your regisration online at:
Eaton.com/EASTraining

For those attending the pre-/post-event training sessions, please indicate your choice online.

Register today:

Eaton.com/EASTraining

For Eaton product information, call 1-877-277-4636 or visit: www.eaton.com/cooperpowerseries

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