



2009 CIP NETWORKS CONFERENCE & 13TH ANNUAL MEETING

FEBRUARY 24-26, 2009
MISSION INN RESORT & CLUB
HOWEY-IN-THE-HILLS, FLORIDA, USA

DO YOU KNOW HOW TO ADAPT TO WHAT LIES AHEAD?

HEAR from a leading authority on manufacturing regarding the global economic outlook

ARE YOU EXPANDING YOUR BUSINESS GEOGRAPHICALLY?

LEARN about manufacturing automation in China from a Vice President of a key government institute

ARE YOU ADDING NEW PRODUCT LINES?

ATTEND a seminar for vendors weighing the benefits of extending to CIP Safety

NEED THE FRESH PERSPECTIVE OF A CUSTOMER?

LISTEN to the session on CIP adoption by a major end-user

EAGER TO GET A HEAD START ON THE LATEST DEVELOPMENTS?

DISCOVER what is new in automation by attending over a dozen technical and marketing presentations, discussing wireless, process, and more

WANT TO ACCOMPLISH ALL OF THE ABOVE WHILE NETWORKING WITH INDUSTRY COLLEAGUES AND GAINING NEW CONTACTS?

JOIN over 50 of the world's leading automation companies for this special annual event!

ODVA is at the forefront of industry initiatives and technologies that are delivering the next level of productivity improvements in factory automation, and ODVA's CIP Networks Conference has become an important industry event. Held in conjunction with ODVA's Annual Meeting of Members, the CIP Networks Conference is designed to be informative, educational and fun. You will not want to miss it!

Membership in ODVA is NOT required to attend the open sessions.

Registration closes on January 30.

Attendees registering by December 15 will receive a special Early Bird reward!

Visit www.odva.org today for a full prospectus of events and to register!



CONFERENCE PROSPECTUS AND SESSION DESCRIPTIONS *as of January 22, 2009*

This is the conference prospectus and session descriptions for the 2009 CIP Networks Conference and 13th Annual Meeting of Members of ODVA.

Register today to attend the conference via the [Event Registration Form](#) currently posted on www.odva.org. Once you have registered for the Event, please reserve your seat at specific sessions through the supplementary [Session Registration Form](#).

The following schedule is subject to revision.

MONDAY, FEBRUARY 23, 2009

Session	Description	Audience	Track	Availability
EtherNet/IP Implementor Workshop #25 (8.00 am-5.00 pm)	ODVA has established its Implementor Workshop series as the premier tool to help developers get products to market quickly. Each year, a series of workshops is held to get developers up to speed on the application of CIP™ technology to EtherNet/IP™. With the guidance of a knowledgeable leader, each participant can learn from others and also help increase the knowledge base of all participants.	Developers of EtherNet/IP products	N/A	Open but requires advanced registration

TUESDAY, FEBRUARY 24, 2009

Session	Description	Audience	Track	Availability
EtherNet/IP Implementor Workshop #25 (8.00 am-12.00 pm)	ODVA has established its Implementor Workshop series as the premier tool to help developers get products to market quickly. Each year, a series of workshops is held to get developers up to speed on the application of CIP technology to EtherNet/IP. With the guidance of a knowledgeable leader, each participant can learn from others and also help increase the knowledge base of all participants.	Developers of EtherNet/IP products	N/A	Open but requires advanced registration
Special Interest Group (SIG) meetings (Time vary; see session registration form for details)	SIGs are the technical working groups that develop enhancements to the ODVA Specifications as well as guidelines and recommendations for the application of ODVA technologies. These SIG meetings are restricted to active SIG participants, at the discretion of the SIG chair. Participation Agreements for joining must be received and accepted by ODVA no later than February 13. Participation Agreements cannot be accepted onsite.	Eligible ODVA members	N/A	Closed to eligible ODVA members only

In the evening of Tuesday, February 24, ODVA will host a Meet & Greet Reception.



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WEDNESDAY, FEBRUARY 25, 2009

Session	Description	Audience	Track	Availability
Extending to CIP Safety: Information for New Vendors (8.30 am-5.00 pm)	<p>Considering moving into the development of functional safety products? CIP Safety™ stands alone as the world's only media-independent, truly open network protocol for functional safety. Explore the potential of this network in this one day seminar! Gain a greater understanding of:</p> <ul style="list-style-type: none"> • Basics of safety networks • Safety networking international standards, certification agencies, and how these impact product development • Benefits of CIP Safety • Technical implementation of CIP Safety for DeviceNet™ and EtherNet/IP • Roadmap for implementation on SERCOS™ • How one builds a device for CIP Safety 	Companies considering developing functional safety products	Training	Open
Eye on Convergence: Wireless Technology in Manufacturing Automation's Next Network Architecture (4.00 pm-5.00 pm)	This session will present an analysis of user applications and technical requirements for wireless technologies in manufacturing automation, intended to educate persons on the application of wireless in manufacturing automation. (Please note that this session will not provide ODVA's position with respect to wireless technologies or ODVA's technology roadmap plans.)	All	Marketing	Open
Technical Review Board Update (8.00 am-9.45 am)	ODVA's Technical Review Board (TRB) regulates the technical programs of the corporation and reviews the technical activities of the corporation. The TRB authorizes Special Interest Groups (SIGs) and oversees the establishment of standards and specifications. Attend this session to hear directly from TRB members about the latest updates to CIP Networks under consideration.	All	Technical	Open
Preparing for Conformance Testing (9.00 am-9.45 am)	This session will outline the rules of the conformance testing process. Attendees will learn how to avoid development mistakes that can delay timely product launch, and will leave with a solid understanding of the steps to help conformance testing run smoothly.	Developers of CIP Networks products	Technical	Open
Global Promotional Opportunities for ODVA Members (9.30 am-10.00 am)	Are you using your ODVA membership to the fullest extent? Attend this session to learn how you can promote your CIP Networks products through the global reach of ODVA.	Eligible ODVA members	Marketing	Closed to ODVA members only

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Enabling Technologies Pavilion (12.00 pm-2.30 pm)	The CIP Networks Enabling Technologies Pavilion is a forum for providers of enabling technologies to display and discuss their products with conference attendees. No registration is required to stop by this pavilion! Enabling technology providers in the pavilion include: <ul style="list-style-type: none"> • Advantech • Hilscher • Innovasic Semiconductor • HMS Industrial Networks • Molex Incorporated • ProSoft Technology • Pyramid Solutions • Rockwell Automation • Softing AG 	All	Marketing	Open
Technical Track Paper Presentations (Times vary and are listed on the session registration form; all are between 10.00 am-5.00 pm)	With the theme of "Technology & Innovations," the CIP Networks Conference Technical Track is a forum for CIP Network experts to present papers that investigate the application of CIP Networks to solve a diverse range of challenges. See below for a list of papers as described by these experts:	All	Technical	Open
Introduction to Device Level Ring	There exists a class of applications in the industrial control market where a ring/linear network based on end nodes with integrated 2-port switches is more suitable than a conventional star network. Additionally, continuous system operation is required even when a single fault occurs in the end node, its network interface or cable system. Device Level Ring (DLR) is a fault tolerant network allowing realization of control systems with such requirements. This presentation provides an introduction to a DLR network. It describes principle of operation of this network, its features, and performance. It also describes DLR protocol and presents recommendations for implementing the DLR interface.			
Plastic Optical Fiber for EtherNet/IP Networks	As EtherNet/IP moves into the machine area, environmental conditions become a concern. In some applications where EMI is high, fiber cabling can provide a higher degree of noise immunity. In the past, the total cost of ownership using fiber is considerably greater than the copper variant, but with recent breakthroughs in plastics technologies, Polymer Optical Fiber has become a viable solution for on machine cabling. Recently polymers have advanced, providing high temperature, low loss solutions for Polymer optical fiber (POF). Polymer optical fibers can be installed and terminated in the field with little to no training using standard tools. This presentation describes the components, technology and gains associated with designing and deploying EtherNet/IP networks using POF at the Physical Layer.			
New Developments on CompoNet Implementation	This paper presents new technical developments and approaches on further reducing cost, size and implementation effort for CompoNet units. This presentation examines three possibilities: downsizing pulse transformers, using 3.3-V transceivers, and incorporate CPU function in ASIC. With these improvements, CompoNet units become much compact, and can be implemented more cost-effectively with fewer implementation efforts.			

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A Common Industrial Platform for the Common Industrial Protocol	The use of Common Industrial Protocol (CIP) has made industrial communications truly independent of the underlying communication medium. A major benefit of this independence is that CIP allows system integrators to choose a network that effectively matches their particular automation application. What makes this benefit a reality is CIP's unified communication architecture. The architecture provides a model through which messages and services can be used across applications. But the architecture also provides an even more powerful benefit, a mechanism through which a common platform can be used to support the entire suite of CIP messages and services across all CIP communication media. This presentation describes various platform architectural approaches that could be used to create a common platform from which CIP messages and services are supported. We also show the trade-offs between these architectures. By looking at the CIP architecture in its entirety, a common industrial platform can be achieved to provide a robust, reliable, and deterministic network solution across all CIP communication media.			
EtherNet/IP Interoperability Recommendations	The EtherNet/IP interoperability recommendations are a result of work generated by the ongoing series of EtherNet/IP Implementor Workshops. The recommendations were created to promote EtherNet/IP device interoperability through product functionality recommendations and interoperability validation events called PlugFest. The document Recommended Functionality for EtherNet/IP Devices has been updated to include product implementation clarifications, performance metrics and new interoperability recommendations. This presentation will describe the new performance and interoperability recommendations for EtherNet/IP devices. Formal testing for the new recommendations will begin with PlugFest#11 in May, 2009. It is important for vendors who are considering participating in a PlugFest to understand the new interoperability recommendations.			
Auxiliary Power for CIP Networks	The need for high auxiliary power has become very common on communications devices. The customer base has been requesting that components be standardized including permissible noise limits. The Physical Layer SIGs have been working together to develop an Auxiliary power system for all CIP Networks. As a result a new option is being considered within ODVA with the sole purpose is to distribute power to devices. This system defines power supply requirement, cabling requirements including connector pinning and topologies. This presentation covers the technical aspects with this new power distribution system.			
FDT and CIP	The FDT technology was introduced in process automation a few years ago. The technology allows the integrated management of devices from different vendors connected to different field busses, and is promoted by an international association called FDT Group. This presentation gives an overview on the technology, the supported fieldbus networks and the usage in a CIP environment. It will explain the different types of DTMs (Device Type Manager), the usage of EDS, and the architecture of a DTM for CIP.			
Implementing and Deploying QoS for EtherNet/IP	To achieve optimal performance, industrial Ethernet applications require differentiation between traffic streams. Different types of industrial Ethernet traffic (Motion, I/O, HMI) have different requirements for latency, packet loss, and jitter, and the end user would like non-control traffic (HTTP, email, etc.) to have little or no affect on the control application. Network infrastructure (switches and routers) provide standard Quality of Service (QoS) mechanisms to give different relative priorities to different types of traffic. In order to make the best use of QoS mechanisms in the infrastructure, QoS-marking behavior has been defined for EtherNet/IP devices. This presentation is an overview of QoS mechanisms, QoS behavior and implementation in EtherNet/IP devices, and best practices for deploying QoS in user applications.			



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Use of RSTP to Cost Effectively Address Ring Recovery Applications in Industrial Networks	Many industrial applications require high availability networks. A subset of these applications requires very low fault recovery times. Protocols that are created to address the most demanding applications often require more powerful processors and produce greater network traffic to achieve lower network recovery times. Customers who do not need such recovery times can take advantage of open standard solutions using lower cost, commercially available hardware. This presentation examines how RSTP can be deployed in ring configurations in industrial networks to meet the fault recovery times required by a large number of automation applications.			
Applying Wireless to EtherNet/IP Automation Systems	The use of Ethernet for industrial networking is growing rapidly in factory automation, process control and SCADA systems, and EtherNet/IP is gaining popularity as a preferred industrial protocol. Plant engineers are recognizing the significant advantages that Ethernet-enabled devices provide such as ease of connectivity, high performance and cost savings. While EtherNet/IP has many advantages, cable installation is often expensive, and communications to remote sites or moving platforms may not be reliable or cost-effective. Wireless Ethernet technologies have emerged that can now reliably reduce network costs while improving plant production. However, applying these technologies is not a simple matter as industrial Ethernet systems vary greatly in terms of bandwidth requirements, response times and data transmission characteristics. This paper will explore applying wireless technologies to EtherNet/IP networks for industrial automation systems.			
Enhancing Determinism, Fault-Tolerance and Security in EtherNet/IP Systems	Since Industrial Automation applications have needs that are more demanding than commercial applications in terms of determinism, fault tolerance and security, it makes sense to re-evaluate the system architecture to see if these factors might be improved without compromising the use of the basic TCP/IP Ethernet protocol. In this presentation, the fundamental issues affecting determinism, fault tolerance and reliability in an industrial automation network are identified, and we show how these can be enhanced by changing the approach to node design. By taking a fresh look at how the node architecture is designed using Quality of Service and by optimizing the separation between silicon and software functionality, a more reliable and more deterministic network can be implemented.			
Using Simulation Method to Optimize CompoNet Physical Layer	Since CompoNet joined the ODVA network family in recent years, various demands have been given to it by manufacturers and users, and like all networks, CompoNet is in the process of specification enhancement and usability improvement. This presentation focuses on the simulation technology that was used to improve efficiency in enhancement of the CompoNet technology, which can also be referenced for other network physical evaluations.			
CIP Motion Implementation Considerations	This presentation provides information that would be helpful to those considering implementation of CIP Motion on their future controller or drive products. In this presentation, we will discuss elements necessary to facilitate implementation, techniques to optimize system performance, and methods that allow for the full flexibility of the CIP Motion profile from simple VFDs to servo drives. A number of potential design components have been identified ranging from 1588 assist ASICs to Wire Shark network diagnostic tools capable of decoding CIP Motion packets. These components shall be discussed in further detail in the white paper. System performance considerations will be also discussed with attention paid to performance limits imposed by the various subsystems. Finally, CIP Motion offers an extremely flexible Device Profile which allows for dynamic changing of data between the drive and the controller. Learn the implementation considerations that allow the user to take full advantage of this capability.			

In the evening of Wednesday, February 25, ODVA will host a Conference Reception & Dinner.



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THURSDAY, FEBRUARY 26, 2009

ODVA 13 th Annual Meeting of Members (8.00 am-12.00pm)	This meeting is also open to nonmembers of ODVA. Presentations to be made include, but are not limited to: <ul style="list-style-type: none"> • CIP adoption, presented by a major end-user • Manufacturing automation in China, presented by a VP of a key government institute • Global economic outlook, presented by leading authority on manufacturing • Report on the current affairs of the association and information on future plans for ODVA, presented by ODVA's Executive Director 	All	N/A	Open
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The event will conclude on Thursday, February 26 with a hosted conference lunch.