CIP SAFETY • DEVICENET • CIP MOTION • ETHERNET/IP • COMPONET • CIP SAFETY • DEVICENET • CIP MOTION • ETHERNET/IP • COMPONET • CIP SAFETY • DE

ODVA™
Networks Built on a
Common Industrial Protocol

THE CIP ADVANTAGE™

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FROM THE EXECUTIVE DIRECTOR

Welcome to this issue of *The CIP Advantage!* At the recent SPS/IPC/Drives Exhibition in Nuremburg, Germany, The CIP Advantage was on display throughout the halls — in ODVA's own exhibit as well as those of its vendor members. Perhaps the most significant exhibit was that of SERCOS International, which announced that it will adopt CIP Safety as its protocol for functional safety for the family of SERCOS networks — demonstrating to industry CIP's adaptability to multiple networks and applications, along with its flexibility in transport and routing mechanisms. We invite you to read this issue to learn more about recent developments with CIP Networks and activities at ODVA, as well as the future-proof and proven benefits of choosing networks built on the Common Industrial Protocol.

Katherine Voss

Katherine Voss

In this issue

CIP Safety on SERCOS debuts at the SPS/IPC/Drives Exhibition in Nuremberg, Germany (shown here: Peter Lutz, Managing Director of SI, and Katherine Voss, Executive Director of ODVA, at the SI exhibit)

SERCOS International Announces Adoption of CIP Safety™ on SERCOS™

SERCOS International (SI) and ODVA have announced that SI will adopt CIP Safety™ as its functional safety protocol for SERCOS.™ ODVA will extend *The CIP Safety Specification* to include safety profiles for SERCOS devices, and SI will develop the SERCOS III network adaptation to utilize CIP Safety. Jointly, SI and ODVA will develop and establish conformance testing for devices implementing CIP Safety on SERCOS to help ensure compliance with the collective body of specifications and enable interoperability of these devices in multi-vendor systems.

CIP Safety is a network protocol for functional safety built on the Common Industrial Protocol (CIP™). It has been certified by TÜV Rheinland to comply with the IEC standard for functional safety 61508 entitled “Functional safety of electrical/electronic/programmable electronic safety-related systems,” for use in applications up to Safety Integrity Level 3 (SIL3) for both DeviceNet™ and EtherNet/IP™ adaptations. The CIP Safety protocol is media-independent and its functionality resides in the end nodes, allowing both standard and safety devices to operate on the same network. It provides the user with flexibility in design of safety network architecture to utilize safety programmable controllers or peer to peer communication between sensors and actuators. It also allows safety devices on one subnet to communicate seamlessly to safety devices on another subnet using a standard CIP Network as a backbone.

The adoption of CIP Safety on SERCOS helps industry by moving toward a single, worldwide network protocol for safety applications. Further, the joint support of CIP Safety by ODVA and SI will facilitate technical and market synergies for users and vendors of functional safety networks.

“SERCOS interface is the world-leading digital drive interface with more than 20 years history and worldwide acceptance in all servo-driven motion applications,” states Peter Lutz, managing director of SERCOS International. “Using CIP Safety as the

Continued on page 4

New CIP Networks Solutions From ODVA Members

ETHERNET/IP

RFID

The Balluff Industrial RFID systems were developed especially for industrial use. Computer-assisted manufacturing, modern warehouse systems, flexible assembly lines, plus logistics and distribution systems benefit from Balluff BIS RFID systems. Only special designed interfaces are used for the data transmission. The BIS X-6026-034-050-06-ST19 product is EtherNet/IP CONFORMANCE TESTED™.

Balluff
www.balluff.com

DEVICENET

Mass Flow Meter

Brooks Instrument's SLA7000 MFM Series is a 1-1/8" wide profile, high purity, metal sealed thermal mass flow measurement instrument for use in advanced gas handling systems. The SLA7000 MFM Series is DeviceNet CONFORMANCE TESTED™.

Brooks Instrument
www.brooksinstrument.com

ETHERNET/IP

Variable Frequency Drives

Yaskawa Electric America's CM093 EtherNet/IP option has been developed for the Yaskawa V7 High Performance AC MicroDrive. The module allows easy implementation of a 10/100Mbps Ethernet interface to V7 drives, providing increased functionality in the areas of monitoring, control and diagnostics. In addition the CM093 incorporates a webserver interface to the V7, along with connectivity support to Yaskawa's Drive Wizard software. The CM093 EtherNet/IP option for V7 MicroDrives is EtherNet/IP CONFORMANCE TESTED™.

Yaskawa Electric America
www.yaskawa.com

DEVICENET

I/O

The 24Vdc digital Armor WeldBlock combines I/O circuits, a power supply and network adapters into a single, sealed IP67 housing. Its nickel-plated, aluminum housing resists the effects of weld slag and magnetic fields created by high currents and its light weight makes it ideally suited for end-of-arm robotic applications. The 24Vdc digital Armor WeldBlock is DeviceNet CONFORMANCE TESTED™.

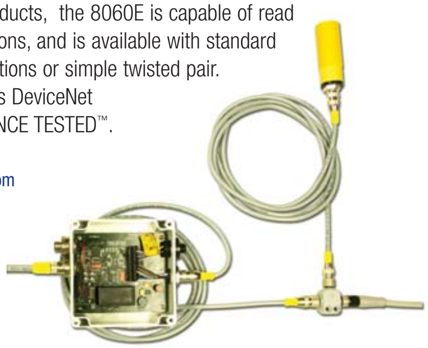
Rockwell Automation
www.ab.com/io

DEVICENET

RFID

The Model 8060E RFID DeviceNet Interface offers low overall cost structure. As a single Interface it is capable of managing 32 RFID Smart Antennas (Reader & Antenna combined). Operating with RFID Inc.'s 125 KHz products, the 8060E is capable of read write operations, and is available with standard M12 connections or simple twisted pair. The 8060E is DeviceNet CONFORMANCE TESTED™.

RFID Inc.
www.rfidinc.com



ETHERNET/IP

Bridges & Gateways

The Comtrol DeviceMaster UP family of products delivers serial to EtherNet/IP connections for up to four serial devices. The DeviceMaster UP configures in just minutes, either directly from the PLC or remotely via a web browser interface, and includes PortVision remote management and configuration software, making it a simple task to detect and manage every DeviceMaster on the network, facilitate firmware updates, troubleshoot, and remote administrate. The DeviceMaster UP 1P and 4P are EtherNet/IP CONFORMANCE TESTED™.

Comtrol Corporation
www.comtrol.com

ETHERNET/IP

Software Scanner

Phoenix Contact's VLC EtherNet/IP Scanner is the EtherNet/IP interface to Phoenix Contact's VLC software which runs on over 50 Phoenix Contact controllers as well as other compatible PCs. The scanner allows VLC to exchange explicit messages and establish multicast and point-to-point class 1 connections to devices on the network, while exposing VLC as a device to other controllers. The Phoenix Contact VLC EtherNet/IP Scanner is EtherNet/IP CONFORMANCE TESTED™.

Phoenix Contact
www.phoenixcon.com

Upcoming ODVA events

For more information or to register for these events, please visit www.odva.org.

AIMEX

ODVA Exhibit March 7-10, 2007 Seoul, Korea

CIP Safety and IEC61508 Functional Safety Training

March 20-22, 2007 Cologne, Germany

EtherNet/IP: The Proven and Complete Solution for Manufacturing Automation

Free, one-day seminar for users or vendors wishing to learn more about industrial Ethernet. Additional seminars are being scheduled for 2007 in North America, Europe, and Asia.

March 23, 2007 Milan, Italy
March 29, 2007 Stuttgart, Germany

Hannover Messe

ODVA Exhibit (Hall 11) April 16-20, 2007 Hannover, Germany

2007 CIP Networks Conference and 12th Annual Meeting

September 18-20, 2007
Englewood (Denver), Colorado, USA

The CIP Networks Conference and 12th Annual Meeting is an event designed to be of value to users and vendors of CIP Networks. It is not necessary for you to be an ODVA member to attend. If you would like to learn more about CIP Networks and ODVA, you are invited to join us for this event. Additional event details will be posted soon on www.odva.org.

CIP Networks Physical Layer and Infrastructure Solutions From ODVA Members

CABLES

DataTuff® industrial Ethernet cables from Belden are designed to withstand the rigors of harsh industrial environments including oil, sunlight, temperature extremes, crushing, abrasion or EMI/RFI. Available in Category 5e and 6 copper cables as well as fiber optic constructions, they deliver superior electrical performance in all conditions thus maximizing productivity.

Belden
www.belden.com

SWITCHES

MOXA's EDS-518A is an 18-port standalone Gigabit managed switch for forming a gigabit backbone that provides faster network communication. EDS-518A offers 2 combo Gigabit ports with built-in RJ45 or SFP ports that give the flexibility of constructing a Gigabit backbone with either copper, fiber, or long-haul fiber. EDS-518A comes with advanced management features, including QoS, IGMP Snooping, GMRP, VLAN, GVPR, LACP,SNMP V1/V2c/V3 and RMON. IEEE802.1X and https/SSL are also available to enhance network security.

Moxa Networking Technologies, Inc.
www.moxa.com/event/net/2006/EDS-518A/

CABLES AND CONNECTORS

The BradConnectivity single-end and double-ended cordsets and receptacles are now available in the familiar, proven 4 Pole, M12 form factor. The products are rated IP67 for harsh environments and category 5e compliant. The new BradConnectivity Ultra-Lock connection system has been added featuring a "push-to-lock" method used to provide a fast, simple and secure connection every time.

Woodhead Software & Electronics
www.woodhead.com

An All New Experience at www.odva.org

December 18, 2006 marked the debut of ODVA's all new web site. The site, visited daily by thousands, does not just have an updated visual design – it offers an entirely new user experience with improved navigation, secure order entry, search capability and an interactive calendar to keep you informed about all of ODVA's activities Around the Globe.

Bookmark **www.odva.org** and visit often!

ODVA Around the Globe

ODVA HEADQUARTERS MOVE TO NEW LOCATION

ODVA headquarters have moved into a larger facility at a new location in Ann Arbor, Michigan. This move has doubled the size of headquarters, with expanded ODVA lab and training facilities in order to support the association's growing testing and educational services for the family of CIP Networks. Among the various activities held by ODVA, the expanded headquarters will also help support specification development, vendor and end-user training, developers' workshops, and informational seminars. The new address is 4220 Varsity Drive, Suite A, Ann Arbor, Michigan 48108-5006 USA. The telephone and fax numbers remain the same.

FTP GROUP ANNOUNCES PUBLICATION OF DTM CONFIGURATION OPTION FOR CIP

ODVA and the FDT Group announce the publication of the Field Device Tool for CIP Networks: Annex to FDT Specification. This Annex provides the schemas required to implement the Device Type Managers (DTM) configuration option for the currently available adaptations of networks built on the Common Industrial Protocol (CIP), which include DeviceNet, EtherNet/IP and ControlNet. In addition to previous configuration options, the latest publication of the CIP Networks Library of specifications now also allows for DTM configuration for all CIP Networks. With the increasing ability to multitask network diagnostics, prognostics and configuration along with conventional control tasks, DTMs will provide user with new opportunities for further productivity improvements in their plant networks. The addition of the DTM configuration option to CIP is part of the next generation of standards development activities to include plug-and-play configuration, providing users with homogenous environment regardless of the networks in use.

NEXT EDITIONS OF CIP SAFETY, DEVICENET AND ETHERNET/IP SPECIFICATIONS PUBLISHED

In November and December 2006, ODVA published the next editions of the CIP Safety, DeviceNet and EtherNet/IP Specifications. These new editions are the second publication of updates in 2006, and they bring a range of enhancements to the specifications which further increase ease of configuration. Over 20 Specification Enhancements were integrated into these next editions, allowing more comprehensive and useful information to be contained within EDS files, adding DTM configuration options, and facilitating the deployment of these networks with increased flexibility. To order a copy of the Specifications, please visit www.odva.org.

NEW ODVA INITIATIVE FURTHER ENSURES INTEROPERABILITY

ODVA announced the launch of the CIP Conformity Club™ in recognition of ODVA members' commitment to the interoperability of CIP Networks products through the practice of conformance testing. Initiation in the CIP Conformity Club (or "C3") signifies that an ODVA member has agreed to comply with a specific set of user responsibilities outlined in the CIP Networks' Terms of Usage Agreements, the documents through which ODVA licenses vendors to make and sell products that implement the Common Industrial Protocol (CIP). ODVA is committed to providing industry with vendor-independent assurance that network products implementing CIP comply with the specifications, rules and guidelines contained in The CIP Networks Library. Understanding that customer satisfaction with CIP Networks is directly linked to the ease of interoperability of these products in multi-vendor systems, ODVA achieves this assurance through its conformance testing practice and the shared commitment of its members to comply with the responsibilities mandated in CIP Networks' Terms of Usage Agreements. Look for the C3 logo adjacent to ODVA member names listed on the ODVA web site at www.odva.org for this mark of assurance.

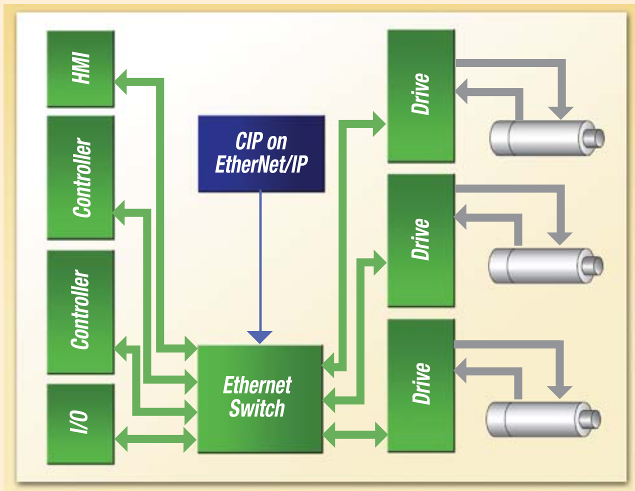
TO STAY CURRENT ABOUT ODVA AROUND THE GLOBE

Visit the ODVA web site at www.odva.org.

Continuing Developments with CIP Motion™

The first specification enhancements for the CIP Motion™ technology, including the CIP Motion Drive Profile, were published by ODVA in April 2006 in *The EtherNet/IP Specification.* Work is now continuing to develop a controller profile and peer-to-peer functionality which will expand the application coverage of CIP to include motion applications such as electronic line-shafting and camming.

The CIP Motion Drive Profile establishes the technical foundation for the implementation of multi-axis, synchronized motion control on EtherNet/IP, the world's most developed, proven and complete industrial Ethernet protocol. Supporting a range of drive types from variable frequency drives to high performance servo drives, the Drive Profile adheres to the EtherNet/IP network architecture. This network architecture, which incorporates the Common Industrial Protocol (CIP), the TCP/IP Suite and IEEE Ethernet standards, allows users to deploy a standard Ethernet switched infrastructure, and ensures their installations using EtherNet/IP will be compatible with future Ethernet and EtherNet/IP enhancements.



The CIP Motion technology represents a significant technological advancement for users of network communications in the factory floor and applications requiring deterministic, real-time, closed loop motion. CIP Motion stands alone as the single industrial Ethernet solution using standard, unmodified Ethernet that can support as many as 100 axes in as little time as one millisecond.

CIP Motion provides a single network solution that delivers both the motion performance and the flexibility in network architecture needed by heavy users of motion controls systems in industries such as packaging and automotive. As a result, users will benefit from a streamlined network architecture with lower system cost and improved system performance. Furthermore, it allows other types of devices, such as distributed I/O or HMIs, to be integrated with motion controllers and drives onto a single network. Networks, in general, allow users of motion control systems to realize benefits on many levels - system performance, reduced wiring, ease of configuration and improved reliability. As a single network solution, EtherNet/IP with CIP Motion allows users to realize all of these benefits plus eliminate the increased costs and complexity of special purpose motion networks and achieve seamless integration of motion systems with the plant and the enterprise.

ODVA expects to see vendors start offering EtherNet/IP products compliant with the CIP Motion Drive Profile in 2007.

CIP Safety™ on SERCOS™

Continued from page 1

functional safety protocol on SERCOS III, SI's new generation industrial Ethernet network, opens up completely new possibilities and leads to a greater versatility for applications with safety requirements. This provides significant benefits not only to the SERCOS users and vendors but for the worldwide safety community."

"CIP Safety stands alone as the world's only media-independent, truly open network protocol for functional safety," states Katherine Voss, executive director of ODVA. "Adoption of CIP Safety by SERCOS International will provide users of SERCOS technology with a functional safety solution that meets industry's growing requirement for seamless integration of safety networks with the overall network architecture."

The responsible technical working group within SI has already started to extend and adapt its initial "SERCOS safety" concept—published and approved by TÜV Rheinland in November 2005—to CIP Safety. SI and ODVA expect that the enhancements to their respective specifications to encompass the adaptation of SERCOS to CIP Safety will be published during 2007. They also expect that first device implementations will be released by the end of 2007.

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THE CIP ADVANTAGE

THE CIP ADVANTAGE newsletter links you to the latest developments in industrial networking technology and trends. If you wish to receive future issues and are not a current subscriber, you may subscribe online at the ODVA web site at **www.odva.org.**

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For more information about this publication or the information contained herein, please contact the publisher.

New ODVA Members

Advantech Corporation

Bernecker + Rainer Industrie-Elektronik GmbH

BTR NETCOM, a division of RIA Connect, Inc.

Northern Network Systems, LLC

Symbol Technologies, Inc.

Ten X Technology, Inc.