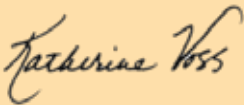


EtherNet/IP is #1

ODVA offers a unique value proposition as a truly open, multi-vendor and global organization supported by multiple leading automation suppliers and users. ODVA wishes to thank its global community of adopters who collectively have made EtherNet/IP™ the world's #1 industrial Ethernet Network¹. ODVA expects EtherNet/IP's level of adoption to increase in 2010 with the release of several key innovative product "firsts" on EtherNet/IP – such as controllers supporting the integration of Modbus® devices and servo drives with CIP Motion™. ODVA also sees innovations occurring on the user side of industrial automation, where we see increasingly creative ways of leveraging Ethernet and Internet technologies in industrial applications in combination with critical manufacturing automation platforms - all of which help to increase the productivity of industrial processes - like those achieved by Asahi Brewery as described in the application story contained herein. Spend a few minutes with ODVA's Connectivity Connection to learn more about ODVA's role in the innovation-adoption process and the resulting innovations from the ODVA community around the world.



Katherine Voss
Executive Director

¹ Source: "The World Market for Industrial Ethernet - 2009 Edition", IMS Research.

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Asahi chooses Common Industrial Protocol

Used as its standard protocol in brewery installations, based on the success of the Kanagawa Brewery, a 21st Century green manufacturing operation

Kanagawa Brewery is one of the newest breweries of the Asahi Breweries Group (Asahi). Its concept goes hand-in-hand with Asahi's goals to provide its customers with lifelong enjoyment and excitement in the domain of food and health. The brewery is designed to achieve harmony with the earth, local community, and neighboring people. Kanagawa is a 21st century "environment-creating" manufacturing site with 50% of its property preserved as a forestation area. Thanks to the various measures taken by Asahi to improve the water quality and massive planting of trees, the Kanagawa site is home to a lot of water and greenery, so much so that visitors to the site can enjoy cherry blossoms in spring and fireflies in summer.

To help further these goals, Asahi is proactively promoting network systems at all its breweries and manufacturing sites for improvement of quality management and productivity and to save energy. By adopting network systems throughout its facilities, Asahi has strived to make all processes and shop floor visible and consolidate information. The result has been enormous improvement of productivity and achieved through:

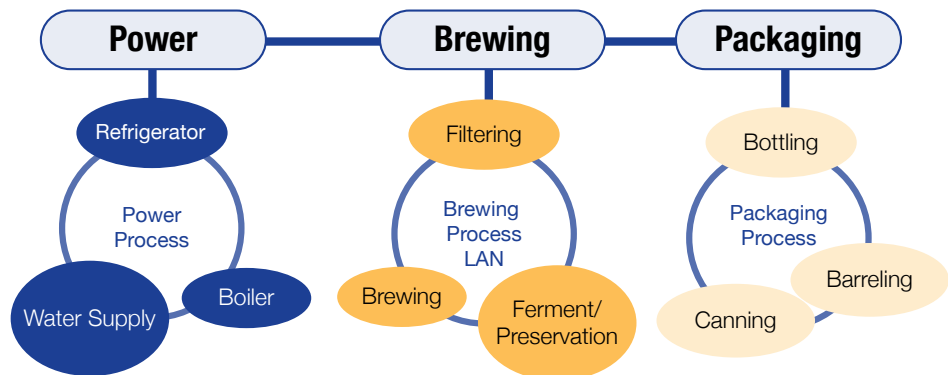
- Substantial reduction of lead time for starting up the system operation
- Drastic reduction of wiring and associated work
- Remote program change and program edit from the centralized control room
- Easier and quicker software edit for better quality management
- Earlier identification of abnormality/errors and earlier corrective action

The Common Industrial Protocol (CIP™) and the network adaptations of CIP are helping Asahi achieve these goals as first realized at its Kanagawa Brewery.

The reasons Asahi standardized on CIP™

Asahi made a thorough study of factory automation technologies – looking at issues such as scalability, utilization of existing assets, and protection for the future investment. Message transparency from the higher to the lower layers of the network and vice-versa was one of the features of CIP which led Asahi to choose CIP as the standard networking

...Continued on page 2



The Network System at Kanagawa

Welcome Members!

The following companies have joined ODVA since January 2010.

AccuSentry, Inc.
Control Concepts Inc.
COPA-DATA
Exlar Corporation
FlexLink
Hermery Opto Electronics Inc.
Kaijo Corporation
Kollmorgen
Misumi Corporation
Office FA.com Co., Ltd.
Perry Slingsby Systems Ltd.
Procon Engineering Limited
Q-Lambda
ROPEX
RS Automation Co., Ltd.
Secure Crossing
Shinbo System
Zhuzhou CSR Times Electric Co., Ltd.

Stay Connected with ODVA

Receive the latest information on ODVA technologies and events by email. Visit www.odva.org and select "Join Our Mailing List" on the lower-right corner of the home page.

protocol for their breweries. Another part of the consideration and reason that Asahi chose CIP was that the protocol is managed by ODVA, a vendor-neutral standards development organization. The openness of ODVA allows easier participation of various device suppliers and, subsequently, wide product availability throughout the world.

Network Architecture at Kanagawa Brewery

The network system at Kanagawa integrates three key aspects of the brewing process – power, brewing and packaging. In the brewing process, CIP enabled high visibility of all real time data in the process where monitoring and controlling of the data of each process such as boiling, fermenting, preserving and filtering have been separated. Thanks to this high visibility and consolidation of information, real-time monitoring and control of all processes at a centralized station were achieved. CIP also allows monitoring and real-time control of packaging processes such as bottling, barreling, and canning as well as power aspects of the brewing process.

The network architecture Kanagawa uses has CIP running on both DeviceNet™ and EtherNet/IP™ connected to the plant Ethernet LAN.

Accomplishments of the Network System at Kanagawa Brewery

Before starting up the brewery, Asahi realized:

- Drastic reduction of wiring.
- Substantial cut-down of lead time for the start-up.

After the brewery started its operation, thanks to the high visibility and real-time monitoring, Asahi realized:

- Flexible and straight forward change of production specification.
- Operation with fewer operators that helped to reduce the cost.

As a result of the success at Kanagawa, Asahi decided to standardize the network architecture deployed at Kanagawa brewery and promote that architecture at all other breweries.

Factory Automation Technologies Help Asahi Breweries Group to Leverage its Brewing and Management Expertise to Achieve Its Business Goal to Continue Increasing the Value of the "Asahi" Brand

Expectations and Requirements for ODVA and CIP

Mr. Yoshitaka Kimura, of Asahi's production headquarters, spoke about Asahi's decision to standardize on CIP and related ODVA technologies. "Asahi Beer Company is promoting CIP at its all breweries, taking advantage of the experience we have obtained at Kanagawa Brewery. Asahi is satisfied with CIP technology and the performance we have experienced so far. Asahi plans to drive usage of CIP, including EtherNet/IP, for building new network systems and expansion of existing systems as well. We expect that the number of control points at our breweries will continuously grow for further improvement of quality and sustaining it. This will definitely require a continuous grow of number of nodes at our breweries. Consequently, the network performance will become increasingly critical. To further utilize the assets and protect our investment, ODVA should continue look for way to enhance CIP technology to offer new ways to help realize the potential performance gains possible with network technologies."

For more information about this application and the Asahi Breweries Group, read the full story on www.odva.org.

Providing the Freedoms to Succeed with Open Standards

The investment in a communication protocol and network technology is significant and long lasting. Before adopting a technology, each investor – whether a device vendor supplying products to industry built on a technology, or an end user installing a technology – must analyze risk and return on investment, taking into consideration many factors. To help reduce risk and maximize return on investment, investors often will look to industry standards, which help to lower commissioning and support cost and ensure multivendor support and interoperability. In many cases, the rights to use these standards are conveyed through licenses. To analyze the risk and the return on investment, the investor needs to understand the true costs and risks of licensing each communication protocol and network technology under consideration.

Licensed “standards” take many forms. A few discrete examples include de facto “standards” of proprietary technology (e.g., Windows®, owned and sold by Microsoft® Corporation) to “open standards” (e.g., the Common Industrial Protocol, managed and licensed for modest fee by ODVA) to “open source” (e.g., Linux®, an open source operating system freely licensed under the GNU General Public License). For each of these familiar discrete examples, there are nearly infinite variations. For the investor, it becomes very difficult to discern what tradeoffs really need to be considered in an analysis. A free “open source” license may have low entry costs and reduce the probability of blocking intellectual property but may not be able to help ensure interoperability in a multivendor environment. A de facto standard based on a proprietary technology may have lower training costs but may lack multivendor support and interoperability.

ODVA manages and licenses “open standards.” In creating its programs to manage and licenses these standards, ODVA has taken steps for investors in its standards to help reduce the risk and maximize their return on investment.

Freedom to Innovate

ODVA brings together competing companies in a collaborative process to develop best-in-class network and communication standards. Currently 12 special interest groups (“SIGs”), comprised of participants from more than 100 different companies, are active within ODVA to develop new enhancements to the specifications. For potential investors in ODVA standards, it is important to know that this process is structured to provide participants with the freedom to innovate and still contribute to the betterment of ODVA’s network standards. ODVA’s Policy Regarding Intellectual Property states:

ODVA seeks to ensure that, to the greatest extent practicable, the technical specifications it develops remain vendor-neutral, open, and vibrant, while at the same time recognizing and protecting the legitimate intellectual property rights of its Members and other contributors of intellectual property to its standards.

This policy uses “procedures that incorporate the attributes of openness, balance of interests, due process, an appeals process, and consensus.”¹ The result of this long standing process is a significant body of ODVA standards, published in The CIP Networks Library, currently comprised of seven volumes. These standards continue to evolve and are published with updates two times per year, supported by a strong community of ODVA members.

Freedom to Implement

For potential investors, the freedom to implement is paramount. A shortcoming in this area can severely impact both risk and return on investment if faced with blocking intellectual property or lack of multivendor support and interoperability. The ODVA specifications are licensed under a program designed to preserve the investor’s freedom to implement. These specifications are open and available, without discrimination, for use

by anyone, providing industry with the freedom to implement the specification in any field of endeavor. Although the specifications are not free of cost, they are available on an annual subscription basis at a nominal charge, subject to a Terms of Usage Agreement which every subscription holder must execute. For vendors, this agreement provides the necessary rights to make products compliant with the specifications, including the patent sub-licenses necessary from ODVA for vendors to make and sell products compliant with the specifications. These patent licenses are granted by ODVA – not through a third party – under reasonable and non-discriminatory terms and require “zero” royalties, commonly known as “RAND-Z.” Taken in combination with ODVA’s Policy Regarding Intellectual Property, the Terms of Usage Agreement provides adopters with added assurance that the ODVA standards remain open to all without blocking intellectual property.

Freedom to Choose

For users, there are many aspects pertaining to the management and licensing of ODVA’s open standards that help to reduce risk and improve return on investment. For example, the uniform licensing of the technology contained in ODVA standards requires vendors to make products that comply with the specifications and to demonstrate compliance by obtaining Declarations of Conformity for those products. A Declaration of Conformity, attained through a product’s passing conformance testing at ODVA authorized, vendor-neutral test service provider, provides general industry with the vendor-independent assurance that products built to the ODVA specifications comply with the ODVA specifications. The result is that users are able to choose best-in-breed products from a growing population of devices available from vendors around the world.

...Continued on page 4

Freedom to Evolve

ODVA embraces all who want to join and support ODVA's values and process. ODVA owes much to all of the hundreds of members who have made ODVA what it is today. The manufacturing automation space is rapidly changing due to the ubiquitous adoption of Ethernet and internet technologies, and so too is the intensity of intellectual property activity. These technologies set new thresholds for the meaning and importance of "open" technologies for the critical network and communication arena. Changes in this space are reflected in the composition of ODVA's membership, which in recent years has expanded to include Cisco Systems and Schneider Electric alongside Omron and Rockwell Automation as principal members. ODVA's commitment to open standards and the infrastructure it has established to support this commitment stand to serve industry for many years to come as the manufacturing automation space converges with enterprise-wide systems and technologies.

ODVA's mission is to be a global and independent standards development organization that creates, maintains and promotes open standards for best-in-class, interoperable and sustainable automation networks. A key objective of this mission is to promote the adoption of the technologies contained within these standards through a robust population of competitors making products for these technologies that interoperate in systems comprised of products from multiple vendors – giving users the ability to choose from suppliers and products that provide the best performance and value for their unique application. Central to this effort is ODVA's commitment to "OPEN" through which ODVA strives to provide an ecosystem that offers all potential adopters of ODVA technologies - vendors and users - with the freedoms they need to have an equal opportunity to succeed in their implementations.

*Katherine Voss,
Executive Director, ODVA*

*1 US Standards Development Organization
Advancement Act of 2004.*

Upcoming ODVA Events

For final dates, agendas, and to register, visit www.odva.org

EtherNet/IP Introductory Seminars

May 17, 2010: Kolding, Denmark
May 19, 2010: Copenhagen, Denmark
July: Minneapolis, MN, USA
September: Detroit, MI, USA
November: Dallas, TX, USA

EtherNet/IP Quick Start for Developers Training Class

June 2010: Paris, France
September 16, 2010: Ann Arbor, MI, USA

EtherNet/IP Implementor Workshops

North American Workshop #29
June 15-16, 2010
Ann Arbor, MI, USA

European Workshop #14
October 6, 2010
Raunheim, Germany

ODVA Around the Globe

Conformance Services in China

Conformance testing for ODVA technologies is now available at TÜV Rheinland (Shanghai) which has been authorized by ODVA as one of its conformance Test Service Providers (TSP). ODVA TSPs conduct ODVA conformance tests of products for compliance with ODVA's published specifications. Currently TÜV Rheinland (Shanghai) is the only TSP authorized by ODVA in China.

ODVA conformance testing provides industry with the vendor-independent assurance that products built to the ODVA specifications comply with the ODVA specifications and interoperate in multi-vendor installations. TÜV Rheinland (Shanghai) was selected by ODVA because it is a world-class, vendor

independent testing center. The facilities at TÜV Rheinland (Shanghai) utilize ODVA's common test hardware and test suite, assuring that tests conducted at ODVA's TSP in China meet consistent global standards. The test is extensive and includes multiple parts to verify product compliance with the ODVA specification. Conformance tests for EtherNet/IP™ and DeviceNet™ are available at TÜV Rheinland (Shanghai), and TÜV Rheinland (Shanghai) test engineers have received extensive training at ODVA's Technology and Training Center located in Ann Arbor, Michigan U.S.A.

Vendors interested in learning more about ODVA conformance testing or about testing in China should visit the ODVA website at www.odva.org or directly contact ODVA. Orders for testing must be placed through

ODVA or its agent, but may not be directly accepted by TSPs. TÜV Rheinland (Shanghai) will be conducting ODVA conformance testing at its Global Technology Assessment Center in Zhabei district, Shanghai.

ODVA Specifications Published

ODVA has published new editions of the specifications for ODVA networks, enhancing the EtherNet/IP™, DeviceNet™, CompoNet™ and ControlNet™ technologies. ODVA's biannual updates of these network technologies allow end users to meet an ever increasing scope of industrial automation applications. The April 2010 publication of the specifications includes approximately 20 enhancements. To order a copy of a network specification, visit www.odva.org and select "Order."

Members Feature ODVA Networks at the Hannover Fair

Device Level Ring Protocol runs on netX 50

The netX 50 is an ARM based network controller with two Ethernet ports and integrated PHYs. The communication channels consist of special designed ALUs which can be loaded during runtime with a microcode to define the functionality of the protocol state machines. Hilscher has implemented the Ring Supervisor and the Ring Node, Beacon-based of the DLR protocol. This will be shown on a Demo Panel at the ODVA booth on the Hannover Fair. This gives a highly integrated solution for an EtherNet/IP Adapter running the DLR protocol without an external FPGA or PHYs. The protocol stack of the Adapter can be downloaded free of charge based on the netX Open Source Software License Agreement from www.industrialNETworX.com after the Hannover Fair.

Hilscher
www.hilscher.com



Rockwell Automation EtherNet/IP Sustainable Solutions

Rockwell Automation offers the most comprehensive approach to meeting your sustainability objectives in all facets of your manufacturing. Our approach is specifically designed to help you turn sustainability challenges into business advantages. From Energy Management, Safety, Power Control to Zero Cabinet, EtherNet/IP Sustainable Solutions from Rockwell Automation help to make your operations cleaner, safer, more energy efficient and more competitive.

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Molex EtherNet/IP Solutions

Molex technology solutions are the best way to integrate EtherNet/IP Scanner or Adapter functionality on various Hardware platforms and Operating Systems. Additional powerful configuration and engineering modules or CIP Safety modules are supplied for a complete functional integration. Consulting in local language and services are available to support your integration.

Molex
<http://www.woodhead.com/products/brad/bradcommunications/devkit/>



Converged Ethernet Communication Modules

Configure, control, monitor and diagnose devices running EtherNet/IP or Modbus TCP using Schneider Electric's new Converged Ethernet communication modules for Quantum, Premium and M340 PLCs. The first Ethernet modules in the market to manage Modbus TCP and EtherNet/IP communications simultaneously, on the same network.

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Modular System

Modular system with digital/analog standards, temperature/pressure measurement, safety functions, pre-processing, valve terminals (manifolds) MPA and VTSA, motion control and a broad range of connection technologies. Perfect synergies: Up to 31 electric or 8 servo-pneumatic axes plus using proportional or standard pneumatics. DeviceNet, EtherNet/IP.

Festo
www.festo.com



ODVA Connectivity Connection newsletter links you to the latest developments in industrial networking technology. If you wish to receive future issues and are not a subscriber, or if you need to update a subscriber's contact information, please visit www.odva.org and select "Join Our Mailing List."

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ODVA, founded in 1995, is an international association comprised of members from the world's leading automation companies. Collectively, ODVA and its members support network technologies based on the Common Industrial Protocol (CIP™). These currently include CompoNet™, ControlNet™, DeviceNet™, and EtherNet/IP™, along with the major extensions to CIP -- CIP Safety™ and CIP Motion™. ODVA manages the development of these open technologies, and assists manufacturers and users of CIP Networks through its activities in standards development, certification, vendor education and industry awareness. As part of its certification activities, ODVA offers conformance testing to help ensure that products built to its specifications operate in multi-vendor systems. For more information, visit its web site at www.odva.org.

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