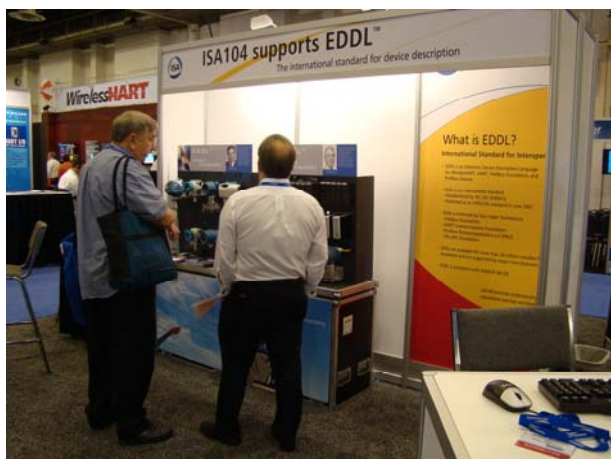




ISA Expo 2008 EDDL Demonstration

ISA Expo 2008 was held in Houston, Texas, USA 14-16 October 2008. Like in 2007, but on a much grander scale, the ISA104 group participated. The purpose was to create awareness of the enhancements made to the EDDL standard, and the new capabilities products gain as a result of these enhancements, and the results plants in turn get from these capabilities - for instance integrated diagnostics as per the NAMUR NE 91 requirements. A large tradeshow like ISA Expo is an excellent opportunity for users to see interoperability between standards compliant products from multiple vendors.



About EDDL

EDDL is the only international standard for device integration and is known as IEC 61804-3. The EDDL standard enables software and handheld communicators to display device information so that technicians can setup and commission a device, calibrate, perform diagnostics and troubleshooting, and other device management tasks. Traditional DD was introduced in 1992 but lacked graphics. It became an international standard in 2004. In 2006 the graphical enhancements were added to the standard making it possible to support sophisticated (complex) devices. The device manufacturer provides an EDDL file for their device, declaring to the system how the information shall be displayed to make the device easy to use.

Sponsors

The ISA104 booth was located in the "Bus Station" area of the exhibition hall.

Host Interoperability

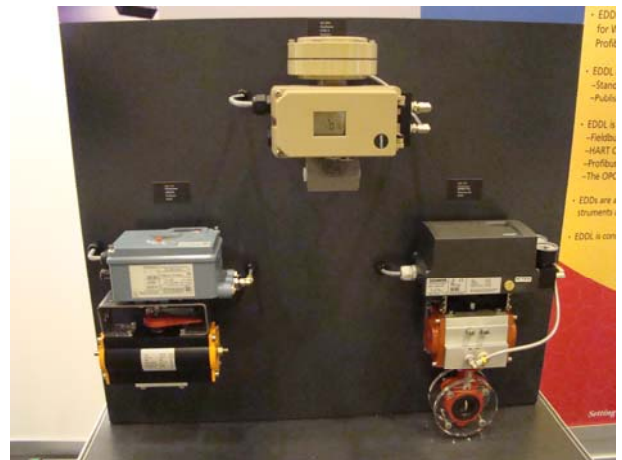
ABB, Emerson, Invensys and Siemens exhibited control systems supporting EDDL enhancements, and these are just some of the systems supporting EDDL. A handheld field communicator utilizing EDDL enhancements was shown as well. Visitors to the booth could see how system software interoperates with devices from other manufacturers, and see how each system vendor has implemented the EDDL enhancements. The EDDL standard allows a single software application or a single handheld field communicator to work with different types of devices from many manufacturers. That is, a single open tool takes the place of many proprietary tools.



A handheld field communicator is smaller, lighter, and more rugged than a laptop and thus more portable and suitable for field work such as calibration and commissioning than laptops.

Device interoperability

Devices demonstrated included a mix of products communicating using HART, FOUNDATION fieldbus, PROFIBUS, and WirelessHART protocols. Many of the systems support several of these protocols simultaneously. That is, EDDL is the standard that permits this mix of devices using different protocols to be managed from the same single software.





Simple temperature and pressure transmitters were provided by Emerson, Endress+Hauser, and Siemens. Sophisticated (complex) devices included radar level transmitters from Emerson and Siemens as well as control valves with positioners from Emerson, Foxboro, Masoneilan, Metso, and Siemens. A variable speed drive was provided by Siemens and fieldbus diagnostics module (a relatively new type of device that monitors signal and noise level of the bus infrastructure) by MTL. And these are just some of the many kinds of devices supported by EDDL. Visitors to the booth were able to see advanced setup and diagnostics for all these types of devices.

Wireless

Some HART devices were demonstrated with a WirelessHART adaptor. Since EDDL is independent of the communication path, these devices are integrated using the same EDDL file as when they communicate HART over the wire.



Development Corner

Ifak showed a software tool that device manufacturers can use to write the EDDL files for their devices - much like designing a web page.



Exhibit Live Demonstration

Visitors to the booth had an opportunity to see what EDDL-based device management software is capable of and get a notion of how their work can be simplified and be made more effective.

Graphics and Wizards

The systems showcased displays with echo curve from radar level transmitters together with the amplitude threshold curve. Another example was valve signature curve from positioner. Valve position histograms and multi-variable trend were shown. Users were given demonstrations of how wizards (aka EDDL methods) take the technician through device setup and calibration procedures step-by-step ensuring it's done correctly. Examples of wizards demonstrated include guided pressure transmitter calibration, valve stroking, and manual operation of a valve. Customers were impressed with the way in which these wizards take the technicians through these tasks step by step ensuring correct order and that steps are not missed.

Consistent Look & Feel

As visitors tested intelligent device management software to remotely interrogate the mix of live devices on display, they could see how devices from different manufacturers are displayed with a consistent look & feel. While the content & structure of the device display is defined by the device manufacturer, the appearance and location for buttons to accept or cancel changes, help, print, as well as zooming in/out, pan backwards/forward for trend charts and waveform graphs work the same way for all devices. Similarly, they could see consistent indication of parameter status: read-write, read-only, download change, database miscompare, lost communication, and failure are all indicated the same way regardless of manufacturer. No other solution provides this level of consistency and ease of use.

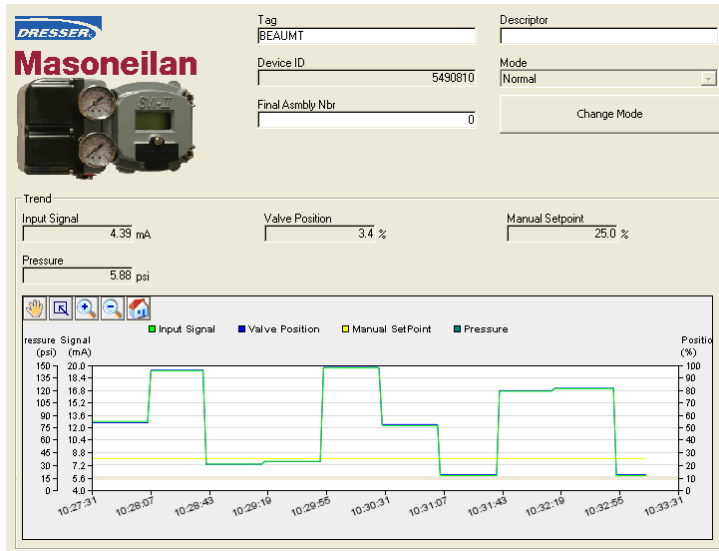
Device Manufacturer Know-how

Users were delighted to see how device manufacturers make use of images in the EDDL files to make their devices easier to use. This includes static images to illustrate wiring and configuration options, as well as conditional images that changes depending on the status of the device. Case in point: illustrating which sensor has failed. Other expert know-how in form of help text for all settings and diagnostics the device manufacturers embed in the EDDL file were demonstrated.

Easy Integration

In the systems users got to see the device libraries of traditional DD and enhanced EDDL files for hundreds of devices since many years ago, each version of the device having a separate file eliminating conflicts with other versions or types. Files for existing devices are pre-loaded when the system is bought. As new devices and types come into the plant over time, their EDDL files must be loaded. Because an EDDL file is compressed text (like HTML), not software, it is copied onto the system, not installed. This makes software using EDDL easy to keep up to date with new device types and versions.

One of the valve manufacturers were not a booth sponsor from the beginning but decided to join in the middle of the show. The positioner was hooked up and its EDDL file copied onto one of the systems. The device was communicating in a matter of minutes displaying all information with the graphical enhancements. A good demonstration of how EDDL makes commissioning faster and how introducing a totally new device in the plant is easy because EDDL is a text file (like HTML) and how the rigor of the standard and the supporting development tools ensures interoperability.



Quick commissioning of new device types and versions without software installation is a highly valued characteristic of EDDL as replacement of a faulty device is fast, minimizing downtime, and commissioning of a new plant is speedy shortening the project time.

Integrated Device Diagnostics

Visitors were shown the concept of integrated diagnostics where device status can be checked from the operator workstation without having to go to a separate maintenance station. This is important because maintenance technicians are out working in the field, not idle in front of the maintenance station. Therefore, the old way of showing critical device diagnostics only in the maintenance station may not be effective as nobody sees it - the maintenance station often fell into disuse. However, an operator is always at the console. In an integrated host where device management is integrated with the control system, an alert appears in the operator console when device self-diagnostics reports a fault, and is therefore seen. This gives the operator minutes or hours of advance notice to act before the process is affected. The operator cannot fix the device, but can radio the technician in the field to do it. That is, integrated diagnostics naturally fits into the daily work processes. Devices and alerts are prioritized preventing alarm flooding - only critical device failures are brought to the operators' attention.

DCS do not permit third-party software drivers to be installed as they may affect system robustness. However, EDDL is not restricted by this because EDDL is compressed text (like HTML), not software. Integrated device diagnostics and subsequent operations and maintenance efficiencies are only possible with EDDL.

Data Access

System vendors demonstrated how data from devices decoded using EDDL can be printed and exported to Excel, and how changes made to any of the devices are logged in the audit trail. It was shown how EDDL is used to automatically configure an OPC server to make device data accessible to other software applications.

Control Strategy

Visitors got to see how EDDL is necessary in the DCS engineering station when configuring control strategies involving FOUNDATION fieldbus devices, in order to select the function blocks, link them together, set the parameters, and schedule the communication.

Life-Cycle and Tools

That is, visitors could see the role EDDL plays in each phase of the system lifecycle and is supported in all the different tools. From configuration in DCS and commissioning with handheld communicator, to operations from device management software part of asset management solutions, and maintenance using a laptop in the workshop.

Frequently Asked Questions

EDDL experts were also on hand in the booth to provide insights into advantages of EDDL that may not be immediately apparent simply by using the software to interact with devices. This includes for instance aspects related to long-term system administration.

Windows obsolescence

All the control systems on display use workstations based on Windows. However, because an EDDL file is compressed text (like HTML), not software, it is not made incompatible by new versions of Windows such as the up coming Vista and Seven. This provides a level of investment protection not possible with other solutions.

License key

Because an EDDL file is a compressed text document (like HTML), not software, it does not have any license key.

Interoperability test

EDDL files are interoperability tested together with the device as part of the testing performed by the bus organization for the protocol used.

Others

Apart from the ISA104 booth, sponsors showed their support for EDDL by displaying the EDDL logo in their own booths. Elsewhere in the exhibition hall, the universality of EDDL enhancements was shown in stand-alone laptop software from National Instruments using FOUNDATION fieldbus interface and ProComSol using HART modem, ideal for a maintenance workshop.

MTL provided the fieldbus power conditioners and LEONI Kerpen supplied the fieldbus cable.

Theater Presentations

Two EDDL topics were presented in the theater on the exhibit floor: an overview of the EDDL standard, and the other on how EDDL makes commissioning and diagnostics of WirelessHART easier.



Committee Meeting

Tuesday morning the ISA104 committee had a face to face meeting. Topics included review of the many accomplishments the past year, updates on further enhancements to the IEC 61804-3 standard, review of draft technical report mapping EDDL characteristics to user requirements, and discussion on possible web site improvements.



Conclusion:

State-of-the-art systems and devices support EDDL enhancements in the 2006 edition of the IEC 61804-3 standard. The ISA104 EDDL demonstration at ISA Expo confirmed what the report from BIS found: EDDL is interoperable and meets the requirements of NAMUR NE 105.

Reference

For more information go to www.eddl.org