Interoperability by standardized spec sheets
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Interoperability by standardized spec sheets

Contents

- Introduction
- Driving forces
- Workflow
- Benefits
- Pilot project
- Standardization process
Interoperability by standardized spec sheets

Contents

• Introduction – user issues

• Driving forces

• Workflow

• Benefits

• Pilot project

• Standardization process
User issue: different media and forms

How shall I be able to compare?

Media?
Characteristics?
Forms?

Manufacturer A
Manufacturer B
Manufacturer C
Manufacturer D

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User issue: acceptance

I do not find anything !!!
Because of:
different structures...
different terms...
different numbering systems...
different classifications...

Introduction
- Driving forces
- Workflow
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User issue: different views

Classification according mechanical criteria

I need CAE data

I need electrical characteristics

I need commercial data

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User issue: different forms of real objects

Introduction
Driving forces
Workflow
Benefits
Pilot project
Standardization process

Spec sheets
Function charts
Electronic product catalogs

In different representations, different data are required

Real object
Loop diagrams
Simulation diagrams
P&IDs

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Some questions to the equipment users:

- Do you still enter your inquiry data for process control equipment into your purchasing system manually and send it to your suppliers by fax or email?
- Do you still receive non compatible quotations from different manufacturers?
- Do you still enter the equipment data from the manufacturer’s catalog into your CAE system laboriously by hand?
Interoperability by standardized spec sheets

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• Introduction – supplier issues

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Supplier issue: Inquiries in different media and forms

How can I reduce the complexity of my inquiry and quotation process?

Customer A

Customer B

Customer C

Customer D

Media?

Characteristics?

Forms?
Some questions to the equipment manufacturers:

- Do you still receive inquiries in paper (letter or fax) and from each customer in a different form?
- Do you still have to enter the inquiry data into your systems manually to create a quotation?
- Do you still send your quotations by fax, letter or email?
Some questions to the CAE-system vendors:

- Does your CAE-system support a standardized electronic exchange-format for device properties based on XML?
- Are your CAE-systems able to handle standardized lists of properties for process control devices?
- Does your CAE-system support interfaces to procurement, material and plant maintenance systems?
Current situation:

Customer and supplier processes are not standardized and most CAE systems are not able to fulfill the technical requirements.

To improve process quality and to save costs:

- We need standardized exchange formats based on XML!
- We need standardized interfaces between customer and supplier systems!
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Who stands for NAMUR/PROLIST today?

Companies:

- ABB
- BASF
- Bayer
- Bopp & Reuther Messtechnik GmbH
- Cooper
- degussa
- Emerson
- Endress+Hauser
- innotec
- INTERGRAPH
- KROHNE
- Moeller
- Phoenix Contact
- Phoenix Contact
- Peppel+Fuchs
- Siemens
- SIEMENS
- Turck
- Wacker
- WACKER
- RWTH Aachen
- Rheinische Fachhochschule Köln
- University of Applied Sciences
- Arc Advisory Group

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Who stands for NAMUR/PROLIST today?

Associations:

- ISA
- NAMUR
- PROLIST
- VDI/VDE-GMA
- IGR
- ZVEI
- eCl@ss

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Some fundamentals

It is our aim to help companies **saving transaction costs** by an electronic data exchange format which companies (vendors, owner/operators, EPC companies) can use for communications.

It is the aim to create an **international standard** in cooperation with IEC and ISA.

It is **not** the purpose to create a new classification system for devices neither to prefer nor to reject one.
What are the objectives of NAMUR/Prolist?

- **Creation of lists of properties** (eSpec Sheets) covering all classes of pc-devices.
- **Creation of an easy-to-use WEB server** for creating and maintaining eSpec Sheets familiar with IEC-server and for putting eSpec Sheets at companies proposal.
- **Creation of application tools** for handling files
- **Creation of an exchange format** based on XML and supported by SAP.
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Advantages when using LOC’s

Introduction

Driving forces

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Manufacturer

Inquiry:

Device spec.

Location

- ...

Device charac.

- ...

automatically or semi automatically

Technical quote:

Device description

- ...

(with CAE related data)

Customer

Inquiry:

Technical quote:

CAE system

Procurement system

Plant Management system

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NAMUR
The life cycle domain

**Owner/operator´s/EPC-company´s side**

1. Definition of the automation task
2. Definition of the requirements
3. Definition of inquiries concerning pc-devices
4. Understanding the inquiries
5. Clearing of misunderstood issues
6. Definition of a quote

**Manufacturer´s/Supplier´s side**

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The life cycle domain

**Owner/operator´s/EPC-company´s side**

7. Comparison of quotes
8. Clearing of misunderstood issues
9. Ordering devices

**Manufacturer´s/Supplier´s side**

10. Comparison of orders
11. Clearing of misunderstood issues
12. Delivering devices
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Benefits for owners/operators or EPC-company side

**Standardized electronic spec sheets:**

- **Reduce costs**
  - 30 min/tag number time savings

- **Reduce the total engineering processing time**
  - Fast device data exchange

- **Improve the engineering process quality**
  - No mistakes like by manual data input

- **Improve the comparison of quotations**
  - Based on defined properties
Benefits for suppliers

Standardized electronic spec sheets:

→ Reduce the complexity of inquiry and quotation processes
  • One standard used by different customers
  • Reduce IT costs
→ Reduce operative costs
  • 15 – 25 min/tag number time savings
→ Improve process quality
  • no mistakes like by manual data input
Benefits for suppliers

Product data management based on product properties:
→ Improvements of the data quality by maintaining only one source for different processes
Benefits for CAE-vendors

Higher acceptance by
- end users,
- solution providers,
- EPC companies

The CAE-vendors increase their competitiveness.

Less interfaces to other systems especially ERP and catalog systems
WIN WIN situation for all

Interoperability by standardized electronic spec sheets improves process quality and saves costs

→ Increasing the competitiveness of all participants
Interoperability by standardized spec sheets

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Pilot project at Bayer Technology Services

Early in 2005 Bayer Technology Services started a pilot project with the following objectives:

- to show that using the WEB server it is possible to create exchange files including XML, PDF and XLS files in an easy, user-friendly way.

- to show, that it is possible to send these files from Bayer Technology Services to certain manufacturers (inquiries) for creation of quotations.

- to show that the same business process works the other way round.

- to show that Intergraph is able to integrate the XML file into its Smart Plant Instrumentation planning tool.
Companies involved

Device suppliers involved in pilot project:

- Coriolis flowmeter/Level transmitter: Endress+Hauser
- Pressure transmitter/Positioner: Siemens
- Motor drive: ATB
- Remote IO: Pepperl+Fuchs

CAE system used:
- SmartPlan Instrumentation Intergraph

Customer in project:
- Bayer Technology Services
Pilot project at Bayer Technology Services

Example used:

Framework conditions:
- Ex plant, zone 1

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Pilot project: lessons learned

- The overall business process works properly.
- The manufacturers are lacking adapters for their inhouse catalog systems → They are now on the way to realize adapters.
- First the server was a little bit slow → Problem was solved to the greatest possible extent
- The adapter to SmartPlant Instrumentation was difficult to create, because the data models on both sides differ in detail. → Problem solved
Other pilot projects on the way within the NAMUR/Prolist context

<table>
<thead>
<tr>
<th>User</th>
<th>CAE-Vendor</th>
<th>Manufacturer</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASF 2006</td>
<td>Intergraph + Rösberg</td>
<td>different manufacturers</td>
</tr>
<tr>
<td>Degussa</td>
<td>Rösberg</td>
<td>different manufacturers</td>
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<td></td>
<td>planned for 2006</td>
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### What comes next?

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<td>Benefits</td>
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<td>Pilot project</td>
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<tr>
<td><strong>Standardization process</strong></td>
</tr>
</tbody>
</table>

- NAMUR/Prolist is working on further electronically exchangeable spec sheets
- NAMUR and ISA are matching NAMUR NE 100 and ISA – 20.00.03 – 2001
- Next version NE 100 is planned for 2006 as a harmonized recommendation with common property library
- The standardization process in IEC will be accelerated
- Adaptors will be created by the manufacturers
- Some adaptations concerning the server and the tools will be made.
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Matching NAMUR NE 100 and ISA - 20 - 1981

Common database with individual user interface

Specification Forms for Process Measurement and Control Instruments, Primary Elements, and Control Valves

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Thank for your attention