



CONTINUAL PROGRESSION

# ISO 15926 and Interoperability in AVEVA

*PCA Forum 2009 and Members Meeting*

*20 – 21 October 2009, Kuala Lumpur, Malaysia*

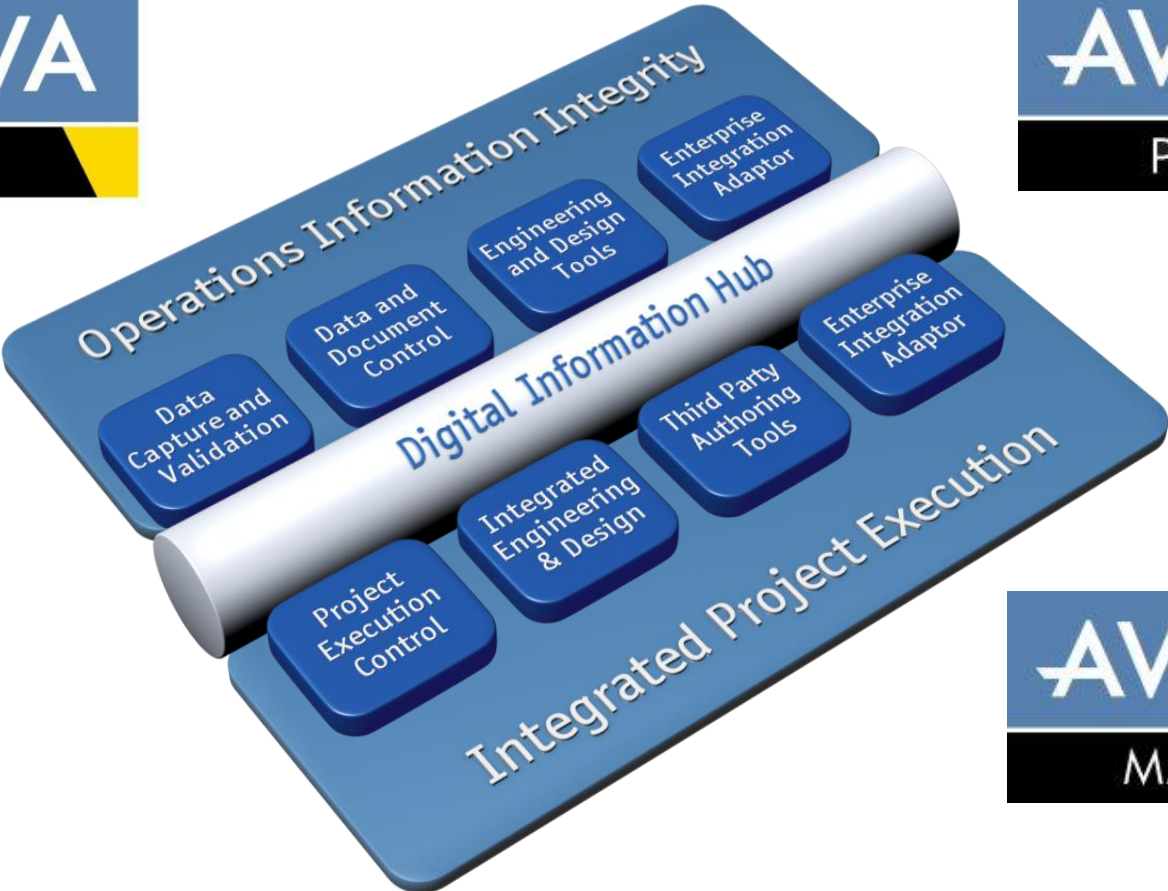
**Neil McPhater**

Product Marketing Manager - Interoperability

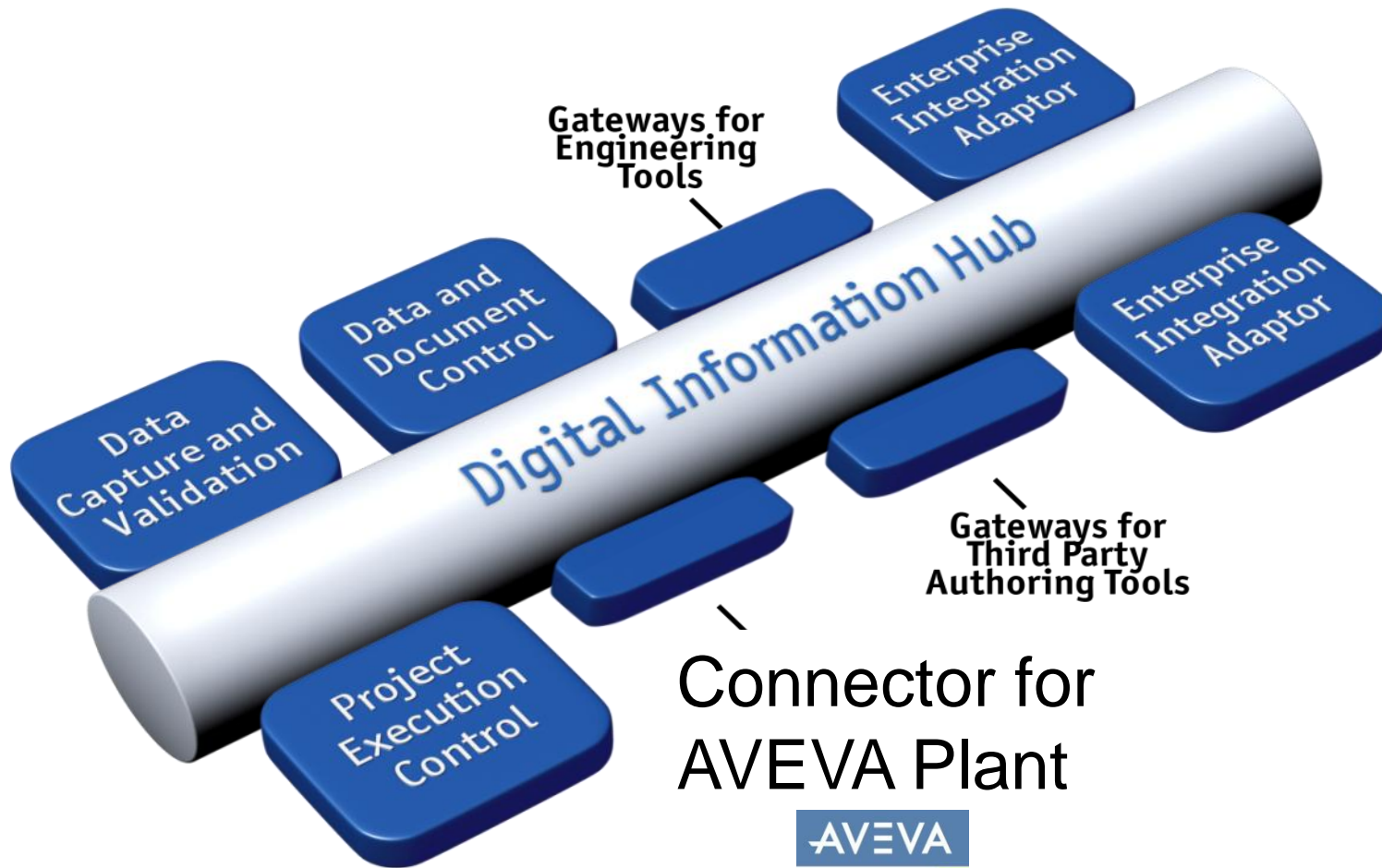


[www.aveva.com](http://www.aveva.com)

# Introduction to AVEVA Solutions



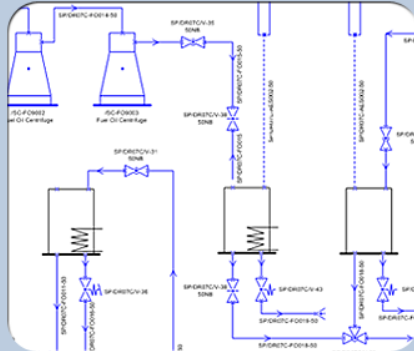
# Introduction to AVEVA NET



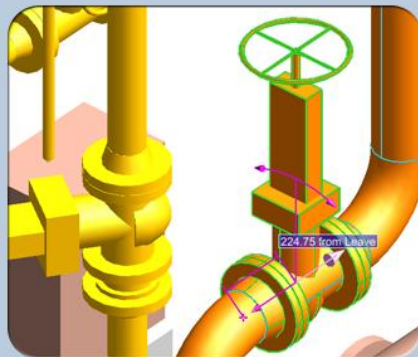
# Introduction to AVEVA Plant

AVEVA

PLANT



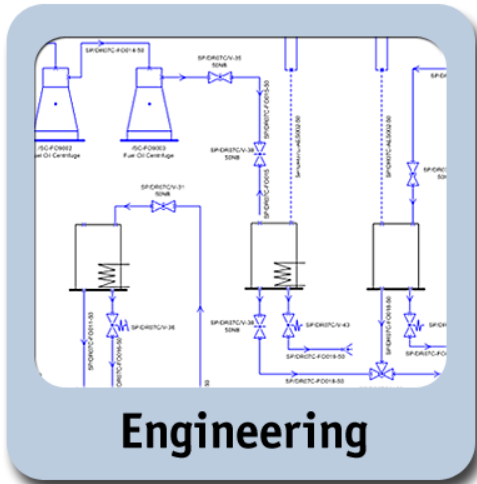
Engineering



Design

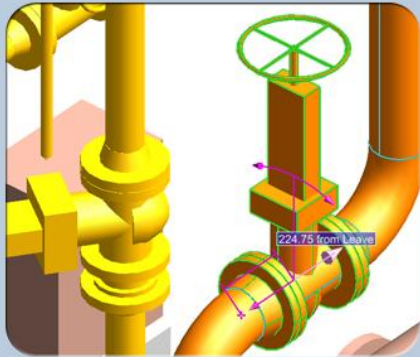


Design Management



- AVEVA P&ID
- AVEVA Diagrams
- AVEVA Instrumentation **NEW**
- AVEVA P&ID Manager
- AVEVA Schematic 3D Integrator
- AVEVA VPE Workbench





Design

- **AVEVA PDMS**
- **AVEVA Multi-Discipline Supports**
- **AVEVA Cable Design**
- **AVEVA Laser Model Interface**
- **AVEVA Mechanical Equipment Interface** *NEW*
- **AVEVA Pipe Stress Interface**
- **AVEVA Nuclear Concrete Design**
- **AVEVA Nuclear Room Manager**
- **AVEVA ISOMET**



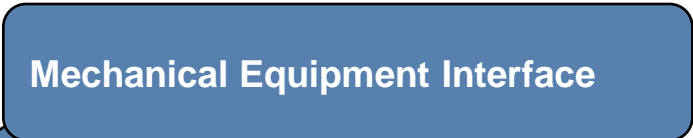
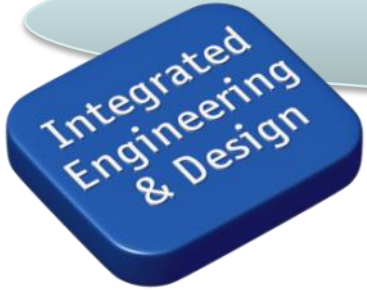
Design Management

- AVEVA Global
- AVEVA Review
- AVEVA ReviewShare
- AVEVA Clash Manager
- AVEVA Model Management

# Interoperability Strategy – Interfaces

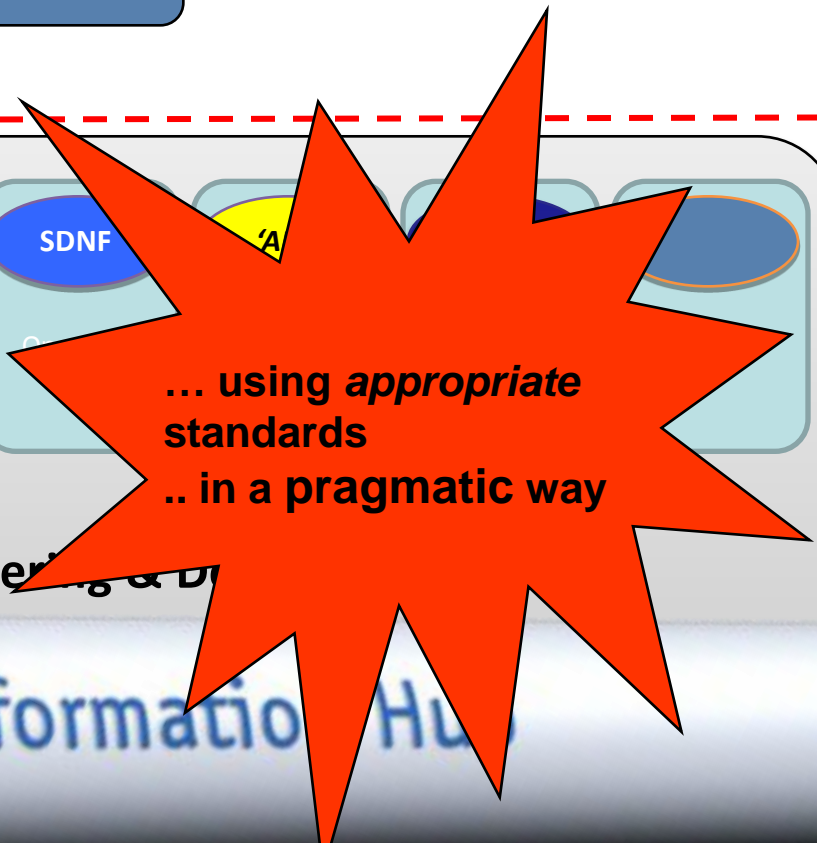
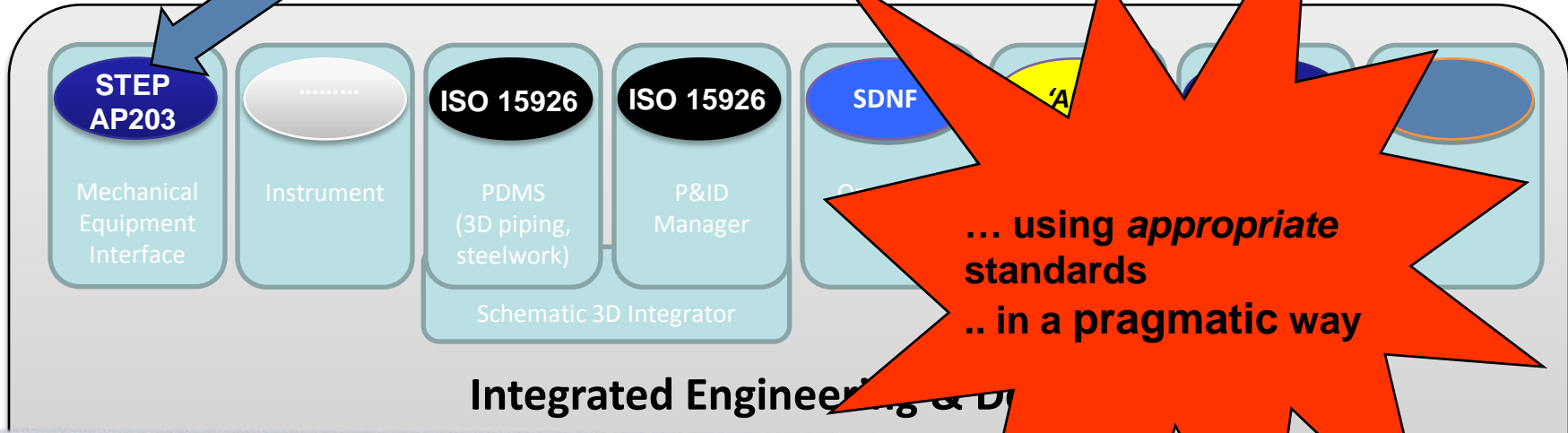


non-AVEVA products



'line in the sand'

AVEVA products



Digital Information Hub



# NEW in AVEVA Plant - Mechanical Equipment Interface

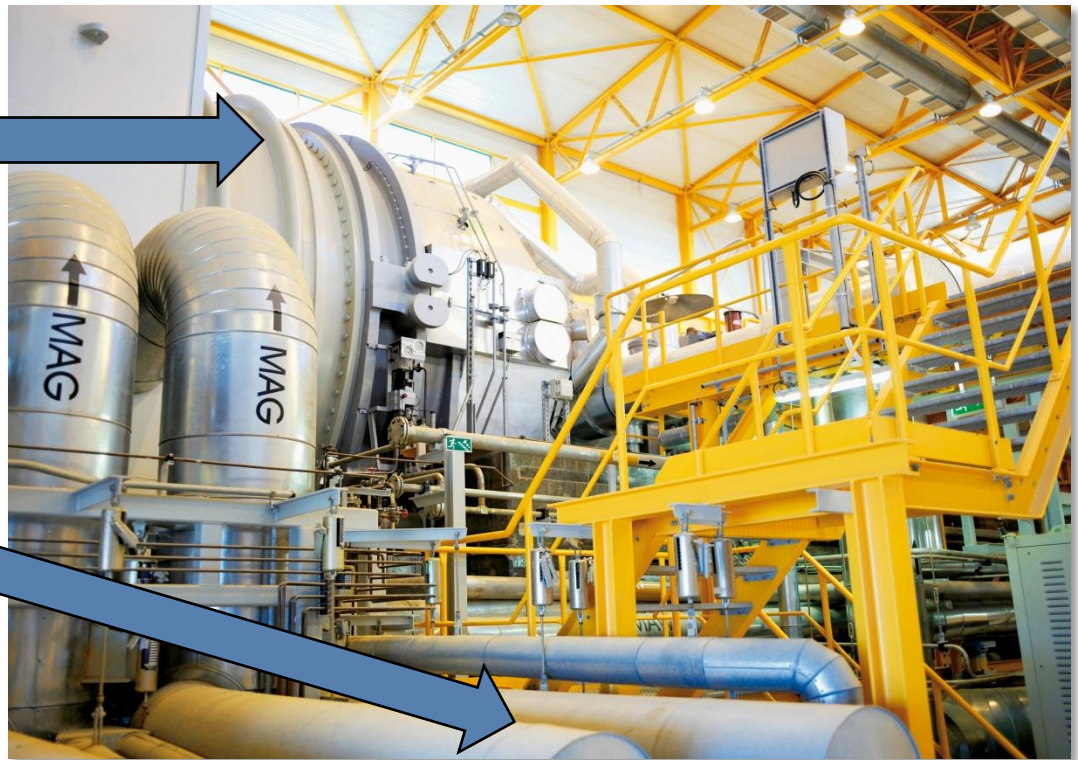
AVEVA

PLANT

- Do you design plants like this ?

Major equipment  
designed in Mechanical  
CAD Systems

Pipework & Structural  
design in PDMS



# NEW in AVEVA Plant - Mechanical Equipment Interface

AVEVA

PLANT

- Or like this?

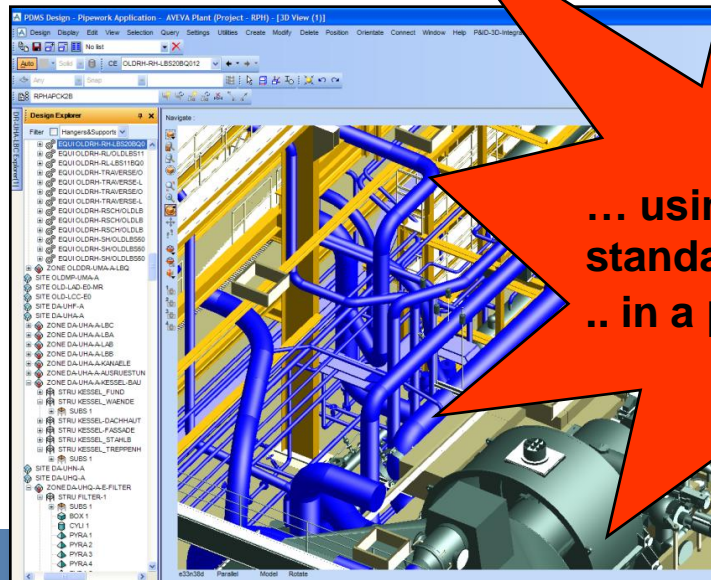
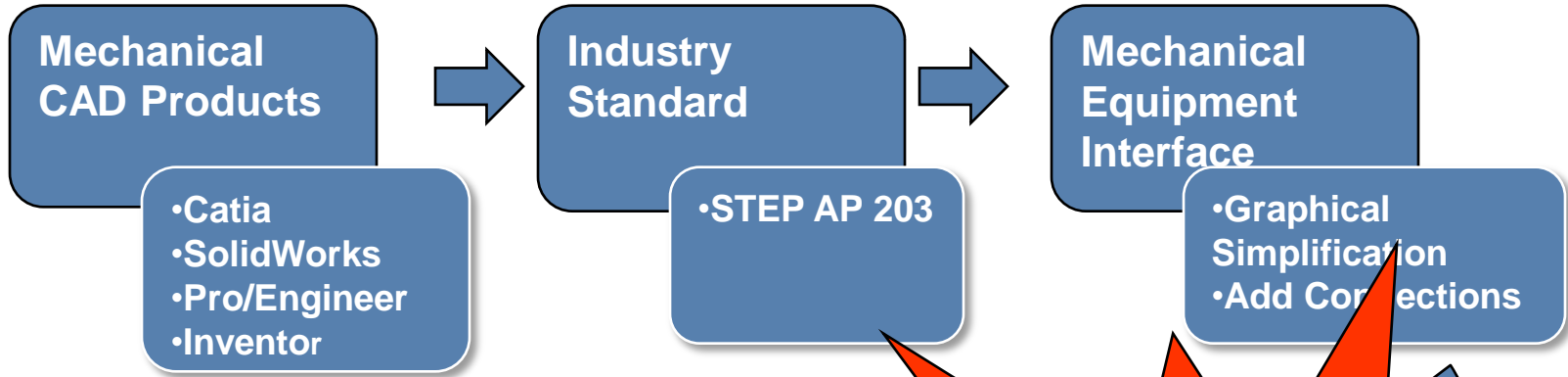
Major equipment  
designed in Mechanical  
CAD Systems

Pipework & Structural  
design in PDMS



- Could you save money by bringing Mechanical Equipment Models **directly into PDMS**?

# AVEVA Mechanical Equipment Interface



**... using appropriate standards  
.. in a pragmatic way**

# Interoperability Strategy - Interfaces



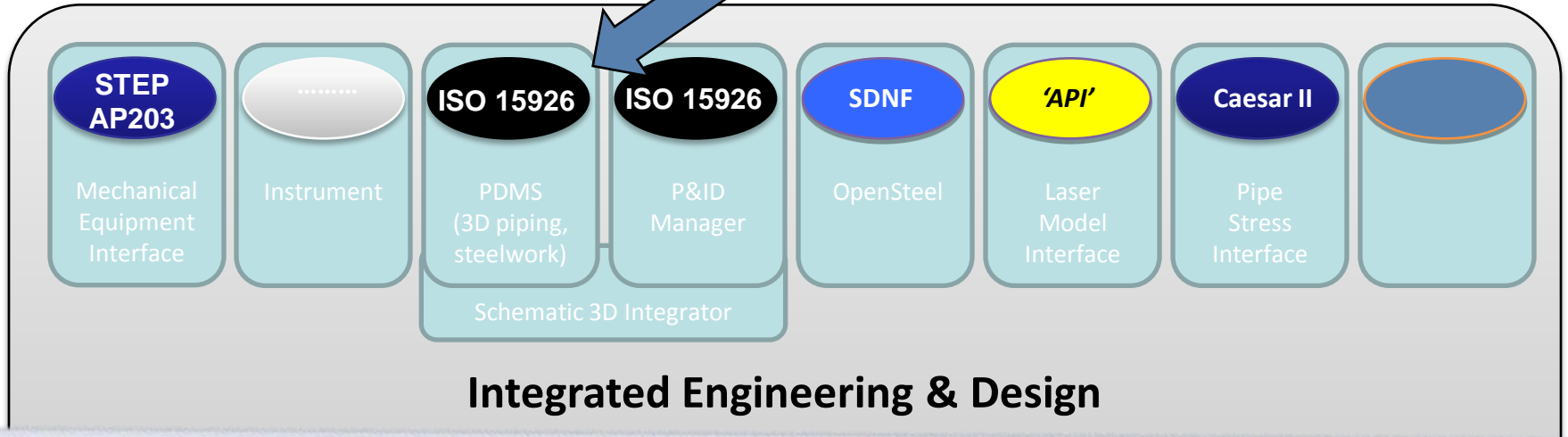
non-AVEVA products



“Proteus” ISO 15926 Plant Demonstrator

‘line in the sand’

AVEVA products



Integrated Engineering & Design

Digital Information Hub

# “Proteus” ISO 15926 Plant Demonstrator

## FIATECH

### Information Integration & Interoperability Software Providers Meeting the Challenge

FOR IMMEDIATE RELEASE

Austin, TX, October 15, 2009--Software providers demonstrated successful exchange of intelligent engineering data between their systems using ISO 15926 dictionary compliant XML exchange files.

#### Background

Ric Jackson, the Director of FIATECH summarized, “the Proteus project has achieved what no other standards-based project has ever done for process plant information exchange. The commitment by the software providers to collaborate and deliver information exchange between their competing systems has moved us a significant step toward our ultimate goal of enterprise wide integration. What is notable about this project is that it was conducted in direct response to the needs of the end users, and they all came together under FIATECH.”

3D models between competing software providers using ISO 15926.

At the April 2009 FIATECH Technology Conference:

- Software providers demonstrated production-quality ISO 15926 interfaces
- P&IDs were exchanged between the various proprietary intelligent P&ID systems, comprising equipment, nozzles, piping connectivity and topology, and all data about the equipment and pipes that is typically represented in a production-quality P&ID, together with the graphical layout of the P&ID
- 3D models were also exchanged between various proprietary intelligent 3D systems, comprising equipment, piping and structural data and 3D geometry.

Jehu Burton, Project Engineering Manager of DuPont Engineering commented, "DuPont is very pleased with the progress that has been made implementing ISO 15926 data integration technologies. We are fast approaching a neutral data integration environment that will promote broad-based interoperability of engineering systems and tools."

The data sets exchanged comprised P&IDs and 3D models typical of engineering practice and complexity, and were unmodified from originals developed as part of live engineering projects.

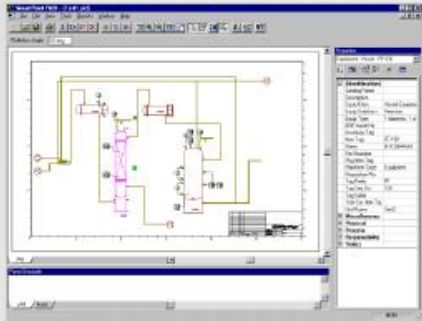




[ids-adi.org](http://ids-adi.org)

# ISO 15926 “Proteus” Demonstrator

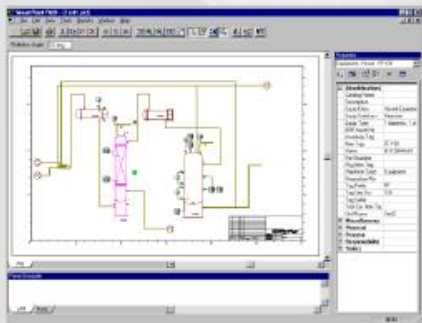
# “Proteus” Demonstrator



P&ID to 3D: Matrix 3



P&ID to P&ID:  
Matrix 1



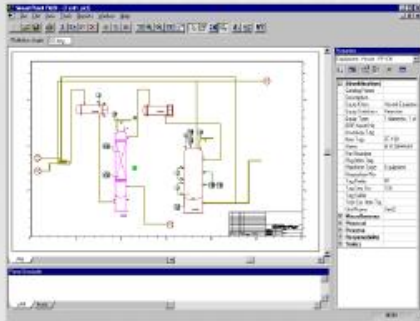
Substantial commonality:  
Executing as one project



3D to 3D:  
Matrix 2



# “Proteus” Demonstrator Results



P&ID to 3D: Matrix 3

✓ Achieved



P&ID to P&ID:  
Matrix 1



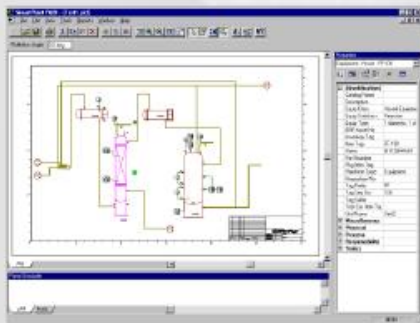
✓ Achieved



3D to 3D:  
Matrix 2



✓ Achieved



- On specification
- On time
- On (the vendors' own) budget







# “Proteus” ISO 15926 Plant Demonstrator

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- Scope
  - Exchanging information in intelligent P&ID’s and 3D Models
    - Tag numbers, equipment numbers, line numbers etc.
    - Connectivity
    - Schematic information (symbolology, diagrams)
    - 3D geometry (equipment models and pipe routes)
- Advancing ISO 15926
  - Reference Data Library
    - Piping, instrumentation etc. class names added
  - “Dictionary level compliance” defined
    - Vendor agreement on communal data XML schema
      - ISO 15926 v 3.3 based on Noumenon’s XMpLant
  - Business Interface Definition Guide
    - Owner/Operators were Subject-matter-experts



# “Proteus” ISO 15926 Plant Demonstrator

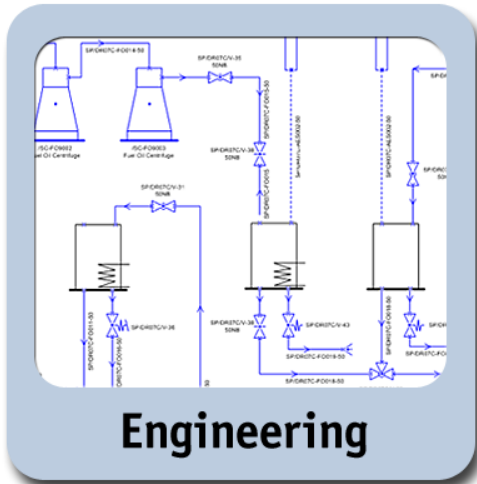
## ■ Contributors

- Aspen Technology
- AVEVA
- Bentley
- COMOS Industry Solutions
- Dassault Systemes
- Dow Chemical
- DuPont
- Intergraph
- Noumenon
- Octaga

**Competing CAD vendors have delivered ... together**

**CAD vendors will deliver commercial supported implementations now with:**

- ISO 15926-compliant data exchange
- project-ready data exchange



- AVEVA P&ID
- AVEVA Diagrams
- AVEVA Instrumentation
- **AVEVA P&ID Manager**
- **AVEVA Schematic 3D Integrator**
- **AVEVA PDMS**
- AVEVA VPE Workbench

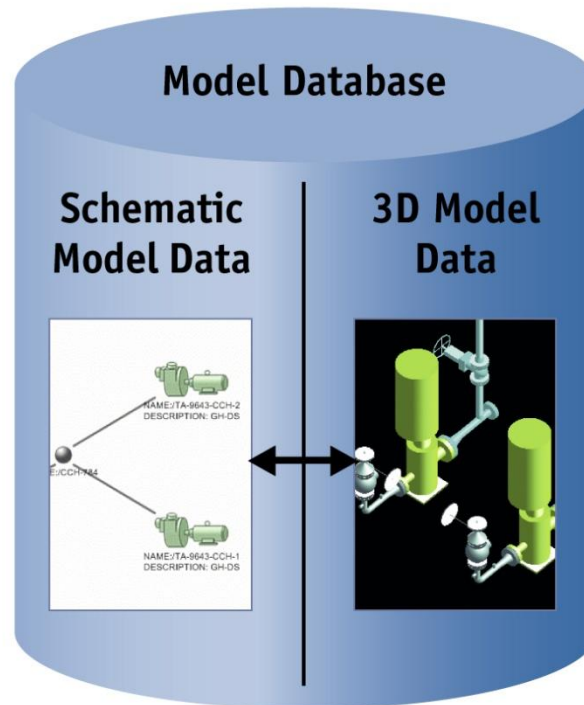
**v12.0 SP5**  
**Dec 2009**

***ISO 15926 compliant***

# 2D/3D Interoperability Solutions



- **Integrated Schematic and 3D Model**
  - **application interoperability**
- proven AVEVA PDMS 3D Model Data
- extended to include Schematic Model Data
  
- consistent Object Management
  - consistent AVEVA database
  - **ISO 15926 dictionary compliance**

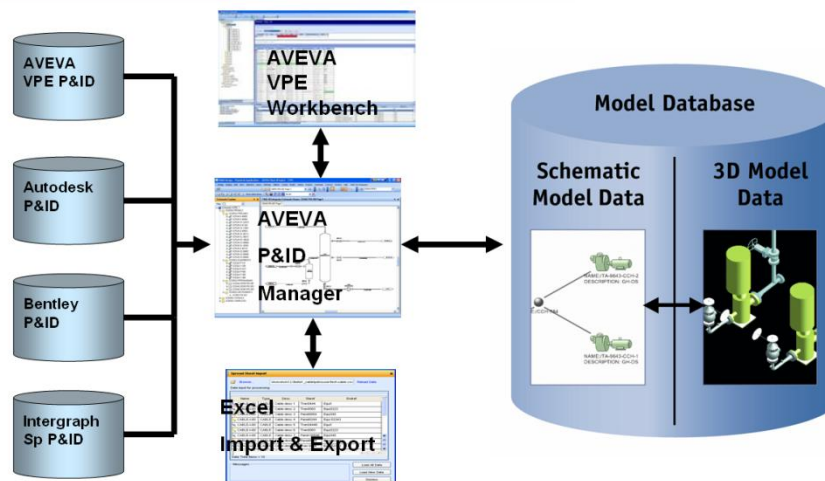


# 2D/3D Interoperability Solutions



- **Integrated Schematic and 3D Model**
  - application interoperability
- AVEVA P&ID Approach
  - federated strategy via ISO 15926
    - P&IDs originating in any schematic application can be consolidated and integrated into AVEVA environment
      - consistent Object Management

## AVEVA P&ID Approach

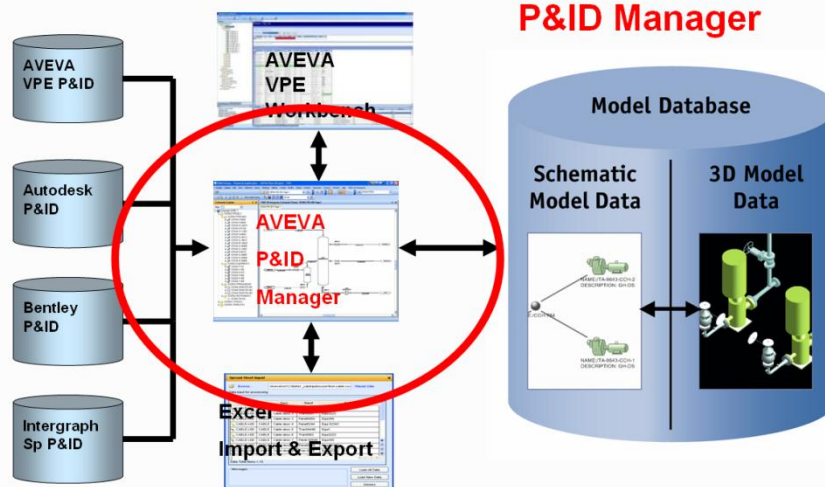


# 2D/3D Interoperability Solutions



- **Integrated Schematic and 3D Model**
  - application interoperability
- **AVEVA P&ID Manager**
  - import P&ID sheets in ISO 15926 format
  - consolidate sheets
  - manage schematic model data for whole project

## AVEVA P&ID Manager



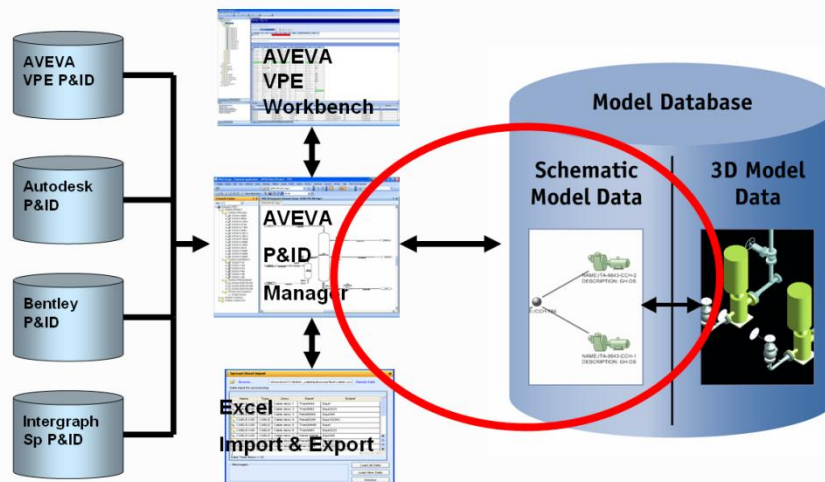


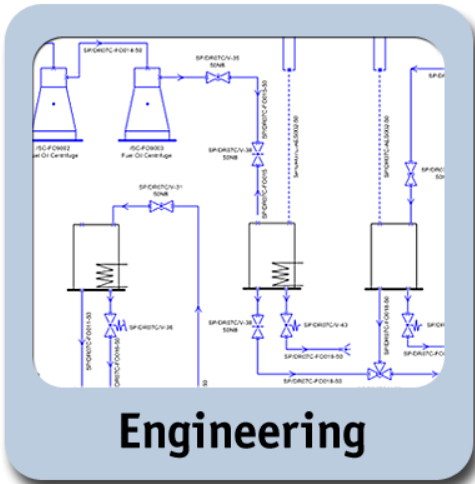
# 2D/3D Interoperability Solutions



- **Integrated Schematic and 3D Model**
  - application interoperability
- **AVEVA Schematic 3D Integrator**
  - interrelate Schematic Model Data with 3D Model Data
  - P&ID/3D comparison

## AVEVA P&ID 3D Integrator





- AVEVA P&ID
- AVEVA Diagrams
- AVEVA Instrumentation
- **AVEVA P&ID Manager**
- **AVEVA Schematic 3D Integrator**
- **AVEVA PDMS**
- AVEVA VPE Workbench

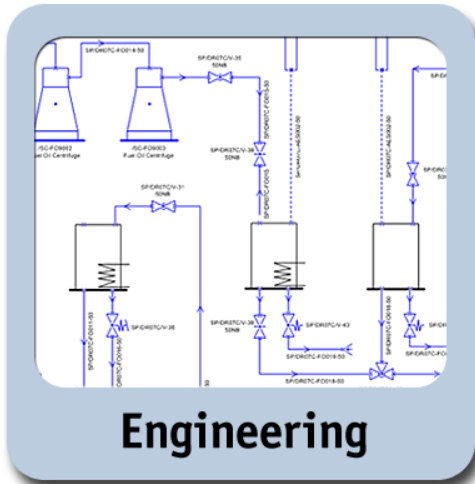
**v12.0 SP5**  
**Dec 2009**

***ISO 15926 compliant***

# Engineering: **Demonstration**

AVEVA

PLANT

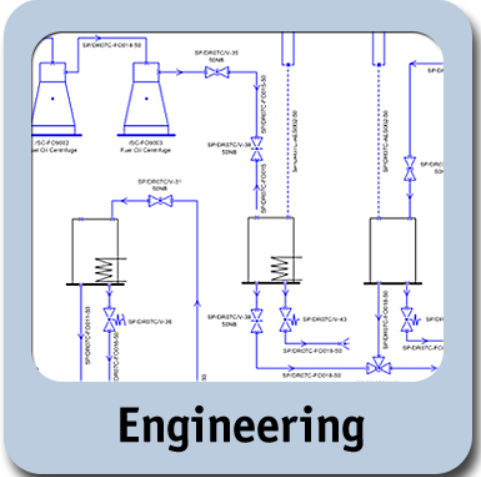


- AVEVA P&ID
- AVEVA Diagrams
- AVEVA Instrumentation
- **AVEVA P&ID Manager**
- **AVEVA Schematic 3D Integrator**
- **AVEVA PDMS**
- AVEVA VPE Workbench
- **AVEVA NET**

**v12.0 SP5**  
**Dec 2009**

***ISO 15926 compliant***

# Demonstration: ISO 15926 Implementation



Engineering

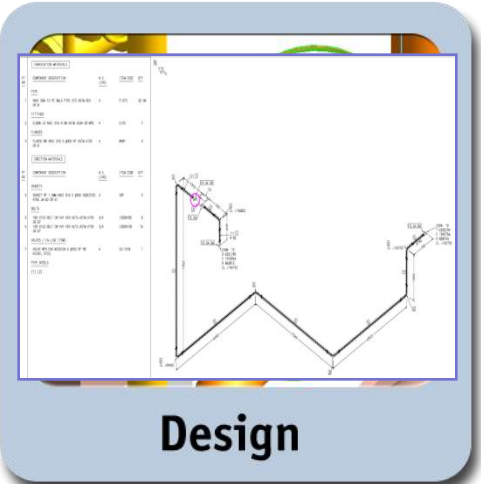
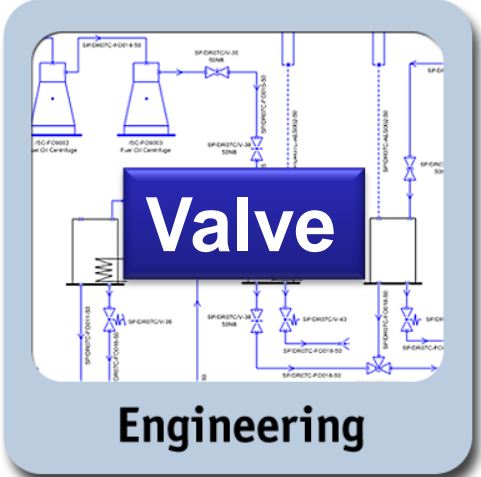
- AVEVA P&ID**
- AVEVA VPE Workbench
- AVEVA Diagrams
- AVEVA Instrumentation
- AVEVA P&ID Manager**
- AVEVA Schematic 3D Integrator**



Design

- AVEVA PDMS**
- AVEVA Multi-Discipline Supports
- AVEVA Cable Design
- AVEVA Laser Model Interface
- AVEVA Pipe Stress Interface
- AVEVA Final Designer

# Demonstration: ISO 15926 Implementation



**Gateway**





# AVEVA

**CONTINUAL PROGRESSION**



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