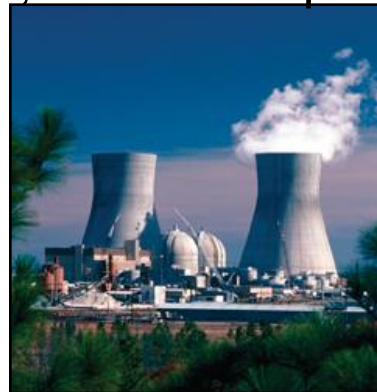


# Process, Power and Marine Division

## ISO15926 and Interoperability in Intergraph

Nils van Heijnsbergen

PCA Conference, Kuala Lumpur, October 22-2009



# Agenda

- Collaboration and ISO15926 in Context
- How SPO enables Interoperability
- The ,Camelot‘ Prototype
- Mimosa Use Case

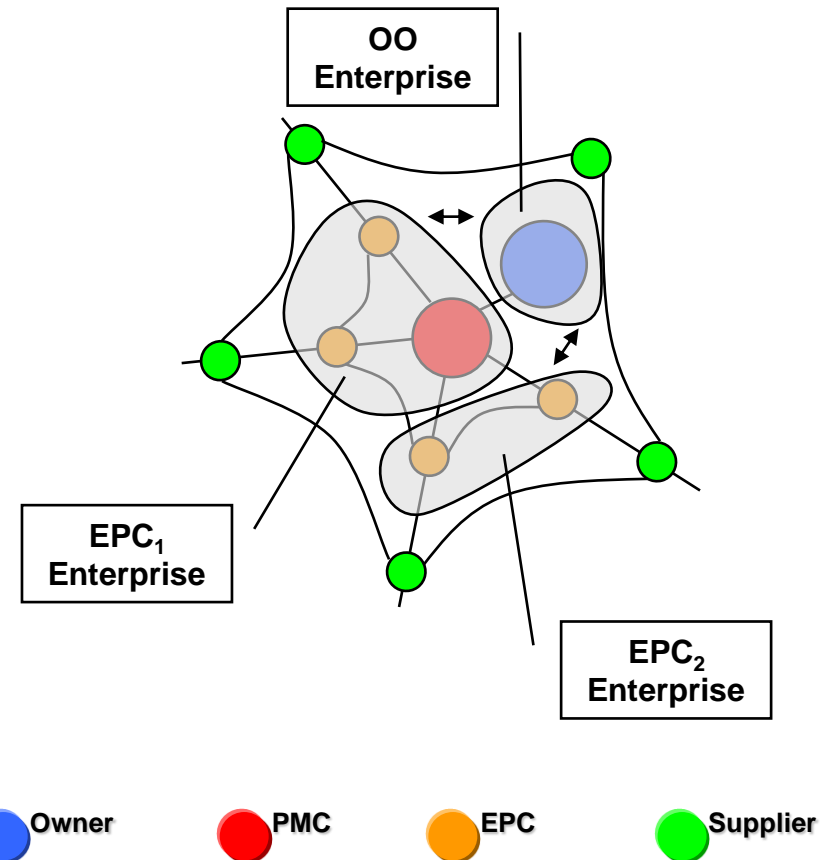
# Agenda

- **Collaboration and ISO15926 in Context**
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# Collaboration & Integration

## – Opportunities & Challenges –

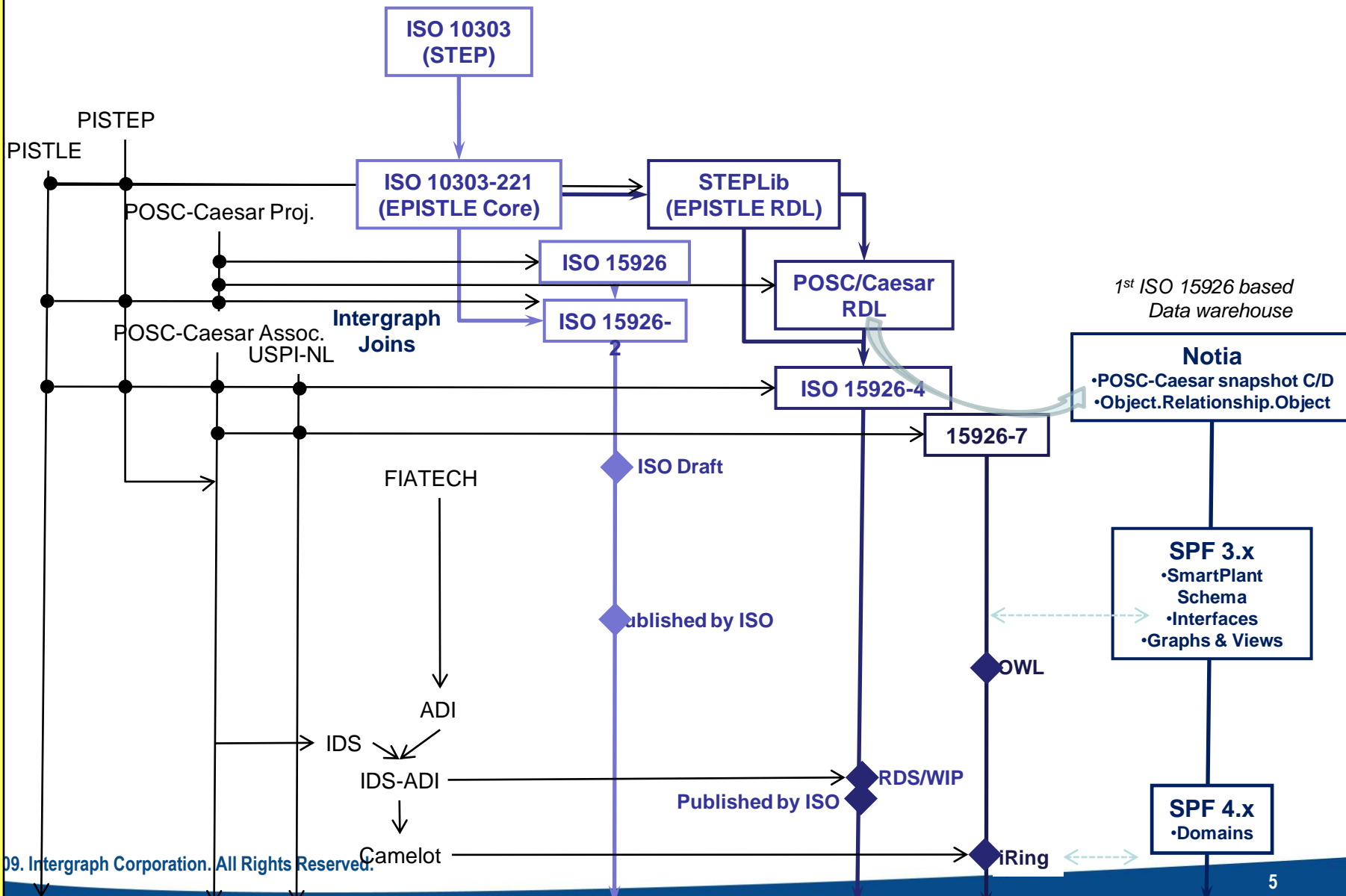
- Intra company optimization
  - Strengthen the individual companies
  - Strengthen the individual disciplines
  - Enable true inter-disciplinary collaboration
- Cross company optimization
  - Enable inter company collaboration
- Workprocess Challenges
  - Support “best practices”
  - Protect competitive differentiation and know how
  - Establish “common collaboration denominators”



# Intergraph and ISO15926



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# Agenda

- Collaboration and ISO15926 in Context
- **How SPO enables Interoperability**
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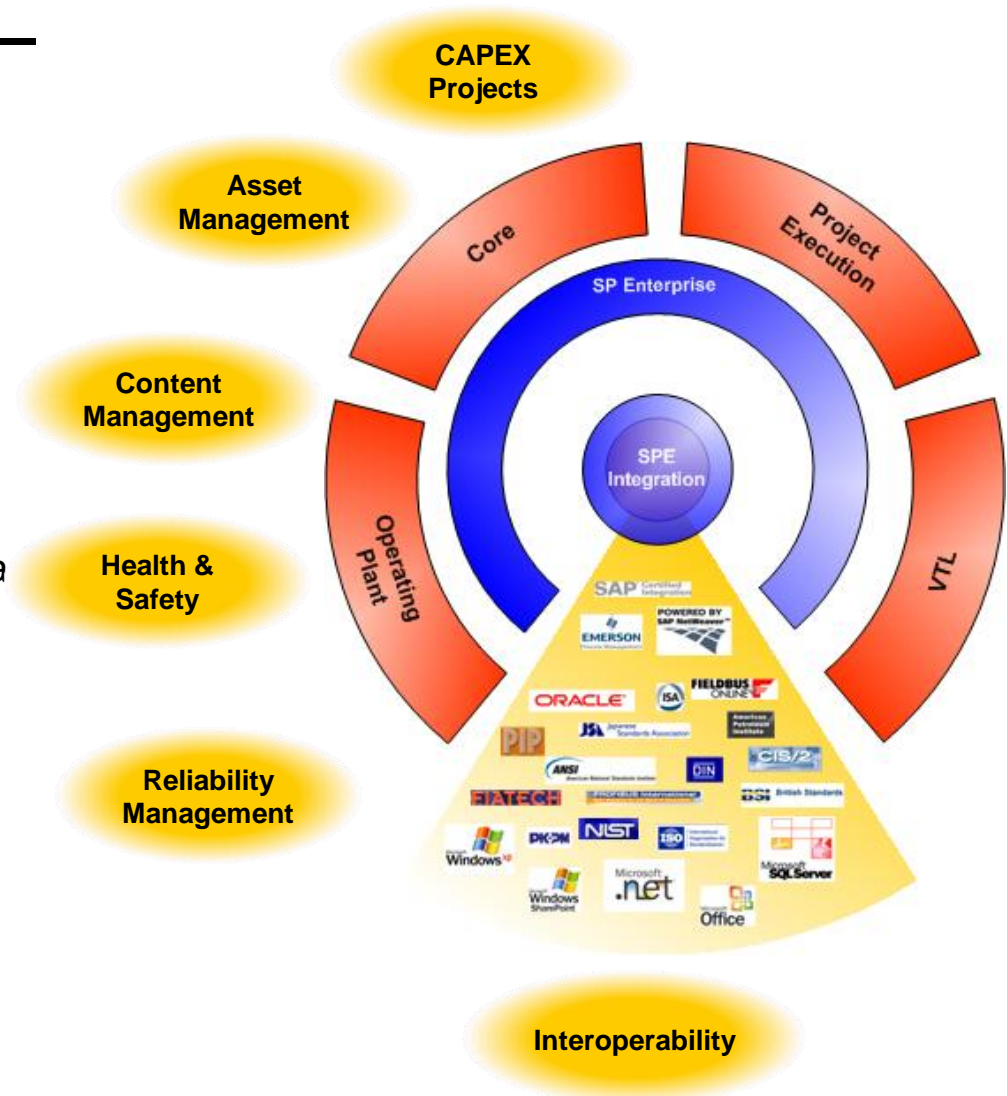
# SPO Overview

# SP Enterprise for Owner Operators



## – Solution Overview –

- SPO Core
  - Engineering Data Portal
  - Plant / Work Breakdown Structures
  - Document Management & Control
  - Transmittal management
  - Master Tag Registry
  - Piping Isometric Engineering
- SPO VTL
  - Data validation, transformation & load
- SPO Operating Plant
  - O&M Browser
  - Plant Change Management
  - CMMS Integration
- SPO Project Execution
  - Project Change Management
  - Technical / Site Queries
  - Interface Management
  - Non-conformity Management





**SPO VTL**  
**– Information Validation & Loading –**

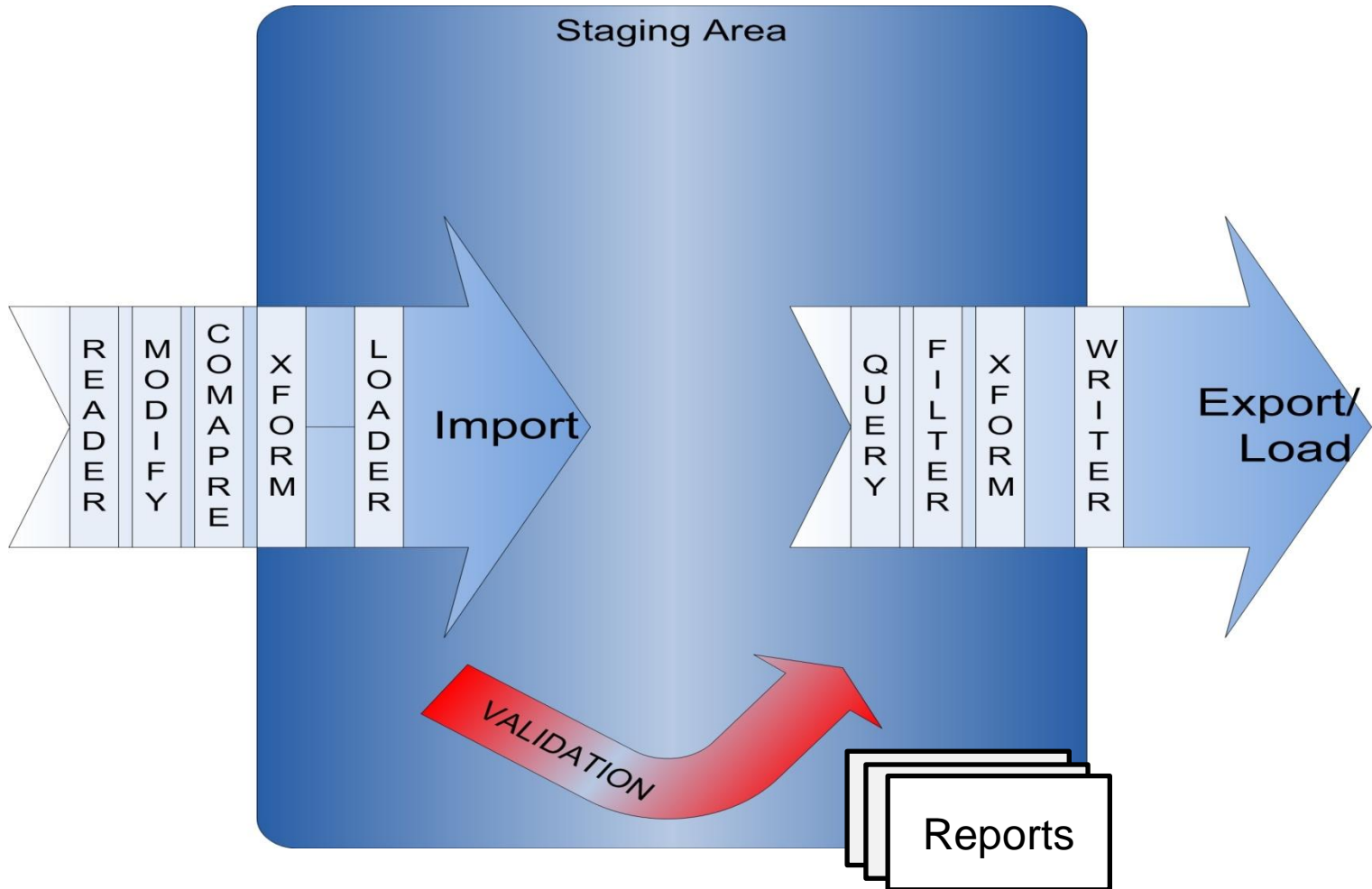
# Information Validation & Take-On – SPO Value Proposition –



- The Challenge
  - Data volumes are enormous
  - Data is usually delivered incomplete, with errors or badly formatted
  - Limited time/resources to validate data during project close-out
- Benefits
  - Accelerated and improved start-up and commissioning process
    - It can take up to one year to load operations systems
  - Reduced information management cost at handover
    - Costs involved for a \$1 billion CAPEX project are typically \$10-20 million
  - Reduced modification cost
    - Validating and correcting data for a modification can be up to 30% of the modification cost
- Enabled through
  - Rapid loading of massive data quantities
  - Rules based and automated quality insurance for very large data/information sets
  - Rules based and automated conversion



# Information Validation & Take-On – VTL Architecture Overview–



# Custom mapping to ISO 15926

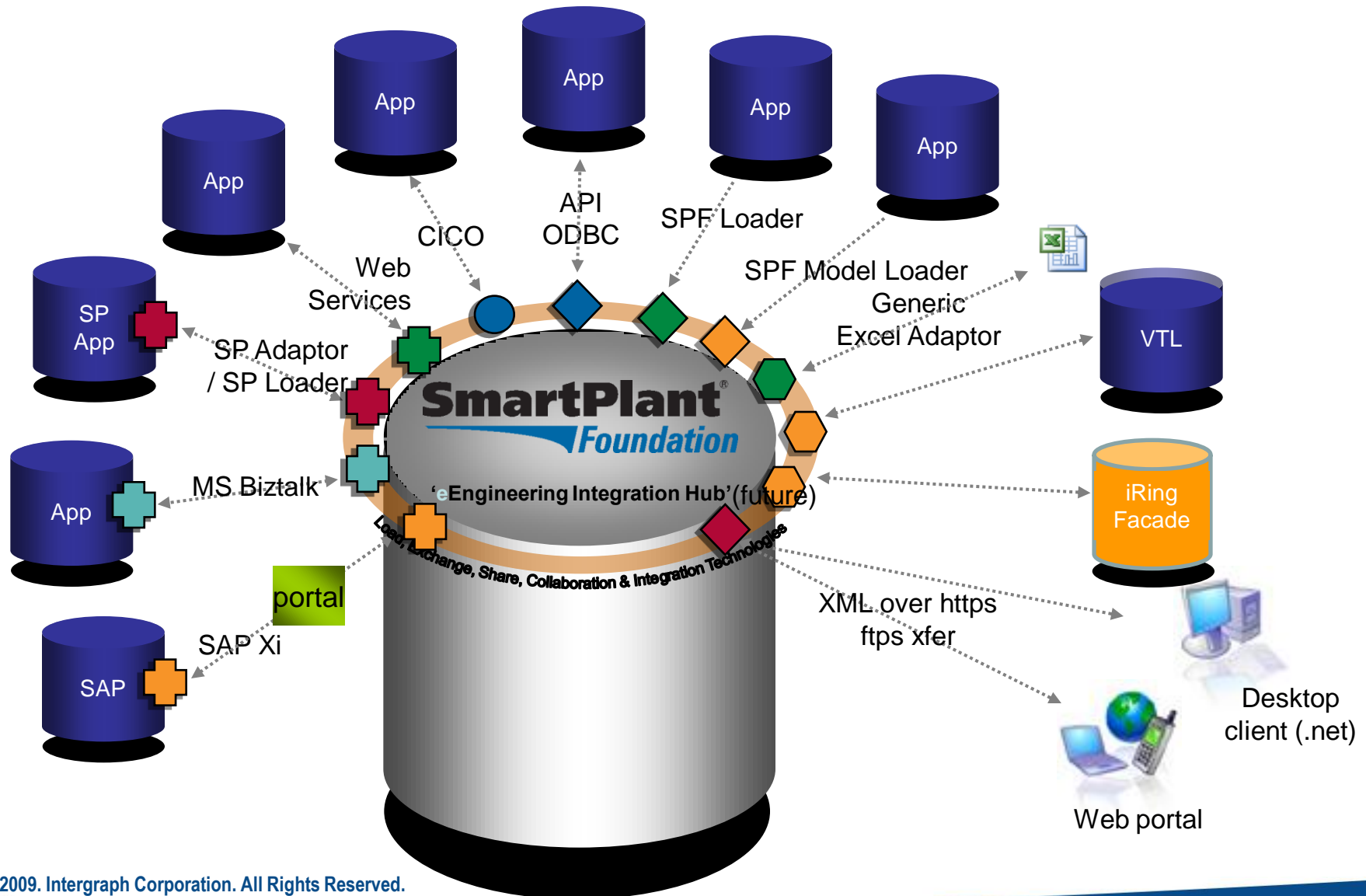
The screenshot displays the 'Mapping tool for SPF v.1.3.1' interface, which is used for custom mapping to ISO 15926. The interface is divided into several panes:

- Left Pane:** A tree view on the far left shows a project structure with folders like 'ACOUSTIC HOOD', 'ACOUSTIC HOOD', 'Hood, Noise', and 'TERMINAL'. Below it, a table lists 'Left Class' items.
- Right Pane:** A table lists 'Right Class' items, including 'ASBESTOS PLATFORM AREA', 'AUDIO VISUAL RECORDING EQUIP...', 'AUTOMATIC FLOW VALVE (PRODU...', 'AUTOMATIC FLOW VALVE (productio...', 'AUTOMATIC ISOLATION VALVE', 'AUTOMATIC PROCESS SHUT DOW...', 'AXIAL FLOW COMPRESSORS', 'BALANCING DAMPER MANUAL (HV...', 'BALL VALVES', 'BARRIER WALLS', 'BASKETS', 'BATTERY (BANK)', and 'BATTERY CHARGER'.
- Active Relations:** A table at the bottom shows the relationships between the classes. It includes columns for 'My Name', 'Relationship', 'Class', and 'Name'.

My Name	Relationship	Class	Name
BALL VALVES	ObjectClassAttributes	AttributeClass	AREA
BALL VALVES	ObjectClassAttributes	AttributeClass	CATEGORY_CODE
BALL VALVES	ObjectClassAttributes	AttributeClass	COMMENT
BALL VALVES	ObjectClassAttributes	AttributeClass	DESCRIPTION
BALL VALVES	ObjectClassAttributes	AttributeClass	FACILITY
BALL VALVES	ObjectClassAttributes	AttributeClass	FUNCTIONAL_LOCATION
BALL VALVES	ObjectClassAttributes	AttributeClass	FUNCTION_CODE
BALL VALVES	ObjectClassAttributes	AttributeClass	PARENT_TAG
BALL VALVES	ObjectClassAttributes	AttributeClass	SYSTEM

# Multiple Integration Technologies

Many Ways In and Out for Data... Now



# Agenda

- Collaboration and ISO15926 in Context
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# Camelot Objectives

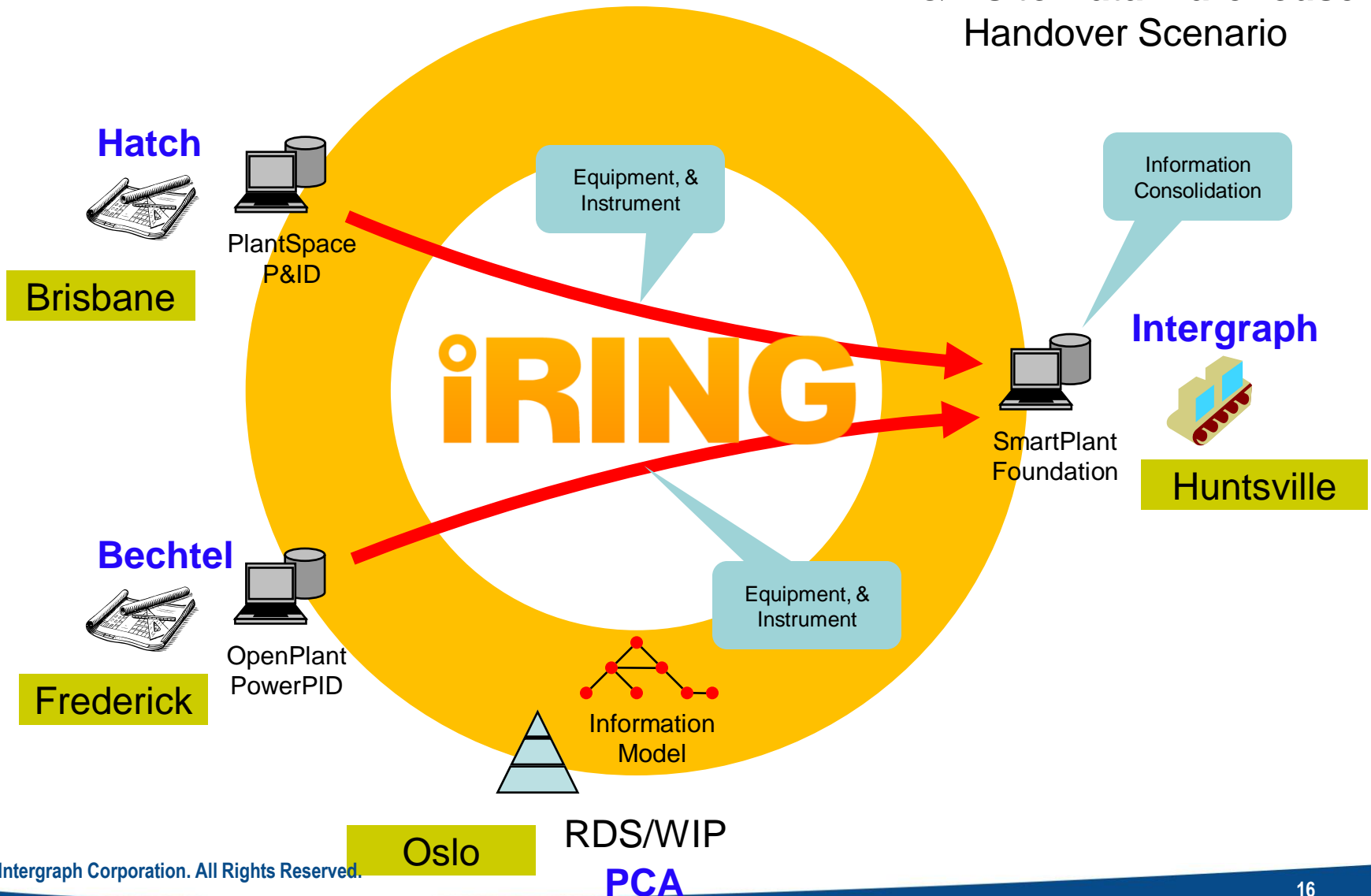


- To build and deploy an ISO 15926, open source infrastructure on the internet and to show the following capabilities:
  - The use of ISO 15926 in modeling business information
  - The setup, configuration, and use of publicly available tools to map legacy systems to ISO 15926
  - The demonstration of several data exchange scenarios between several companies using ISO 15926 over the internet
- ... and make all of the deliverables available in the public domain, ready for business use by May 29th 2009

# Demonstration Data Flow



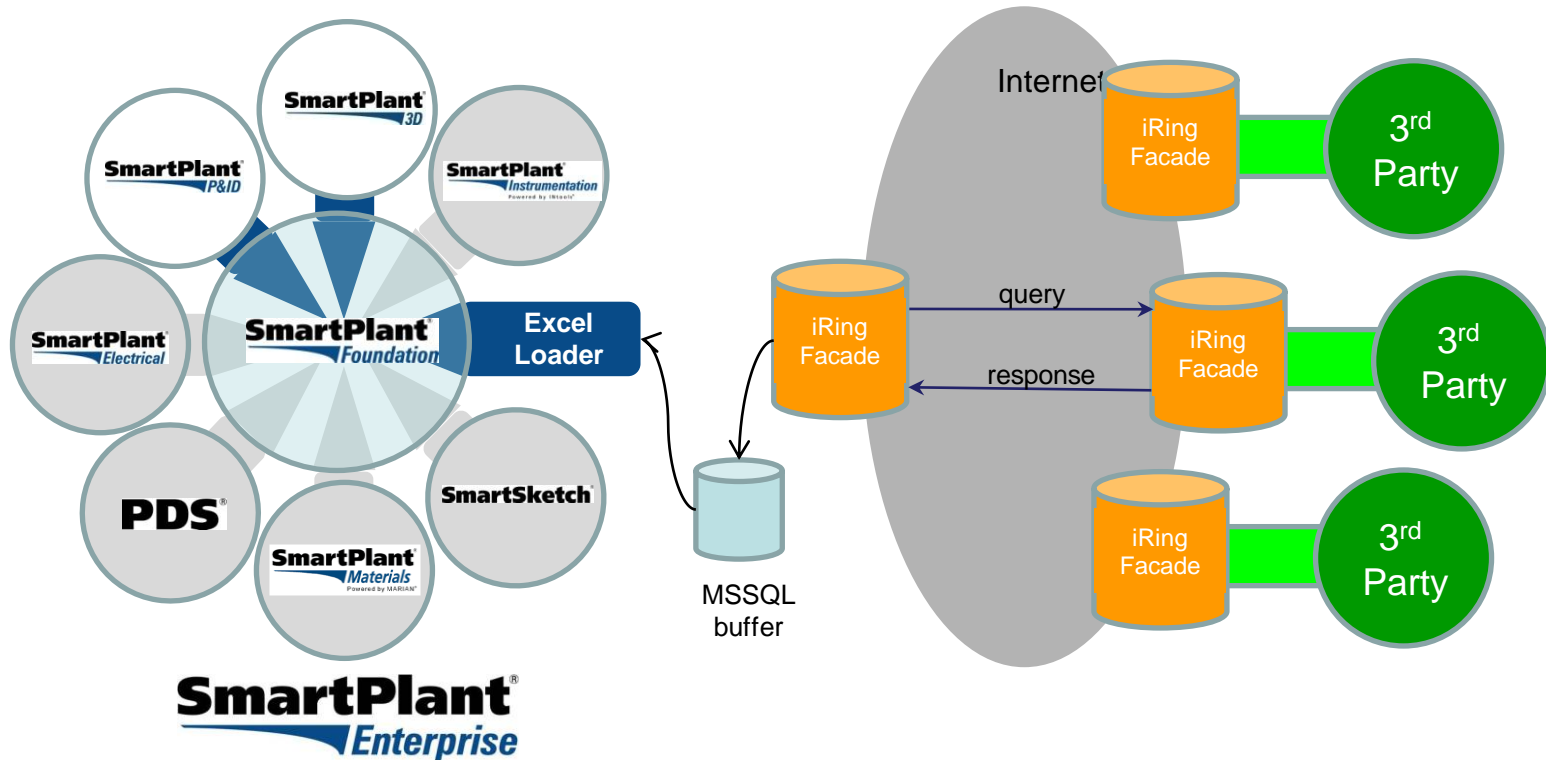
## P&IDs to Data Warehouse Handover Scenario





# SPE Integration with ISO15926

## *Proof-of-Concept*

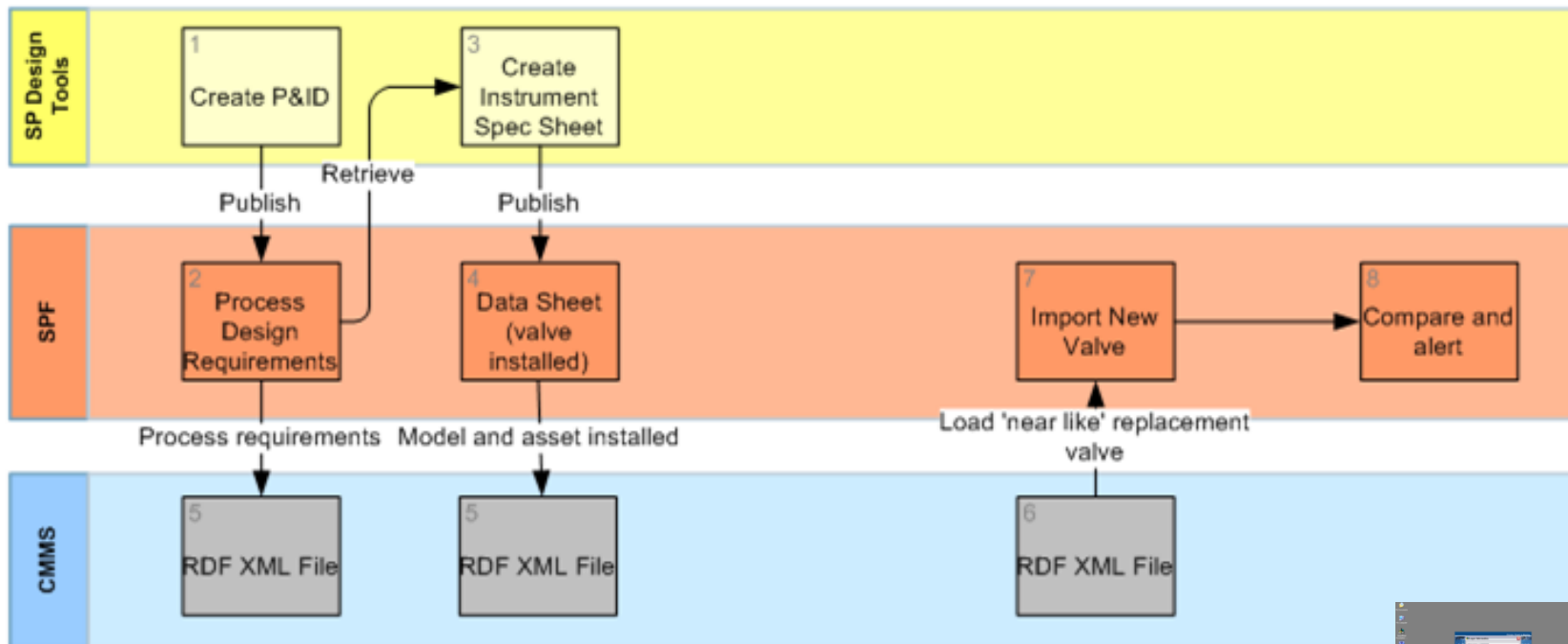


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# Mimosa Use case

## SPO – ISO 15926 Interoperability



# Integrating the Engineering Enterprise...

