

OpenO&M™ and ISO 15926 Collaborative Deployment

June 3, 2010

POSC Caesar Association Meeting

Statoil

Stavanger, Norway

Alan Johnston – MIMOSA President, OpenO&M Chair

Safe collaboration is the key to achieving needed levels of innovation, interoperability and productivity

- Enables an use case driven “best practices” solutions model
- Key industry standards bodies have organized to collaborate.
 - ✓ OpenO&M (ISA, MIMOSA, OAGiS, OPC, WBF)
 - ✓ POSC Caesar Association
 - ✓ FIATECH
 - ✓ CIEAM
 - ✓ Energistics
- Key IT suppliers have agreed to directly support this combination of key standards.
- This creates a safe IT environment for adoption by other suppliers
- This combination creates the **Safe Technology Roadmap™**
- Owner/operators need to work together with each other to support the effort
 - ✓ Governance
 - ✓ Prioritize projects
 - ✓ Invest in prioritized projects



ISO TC184

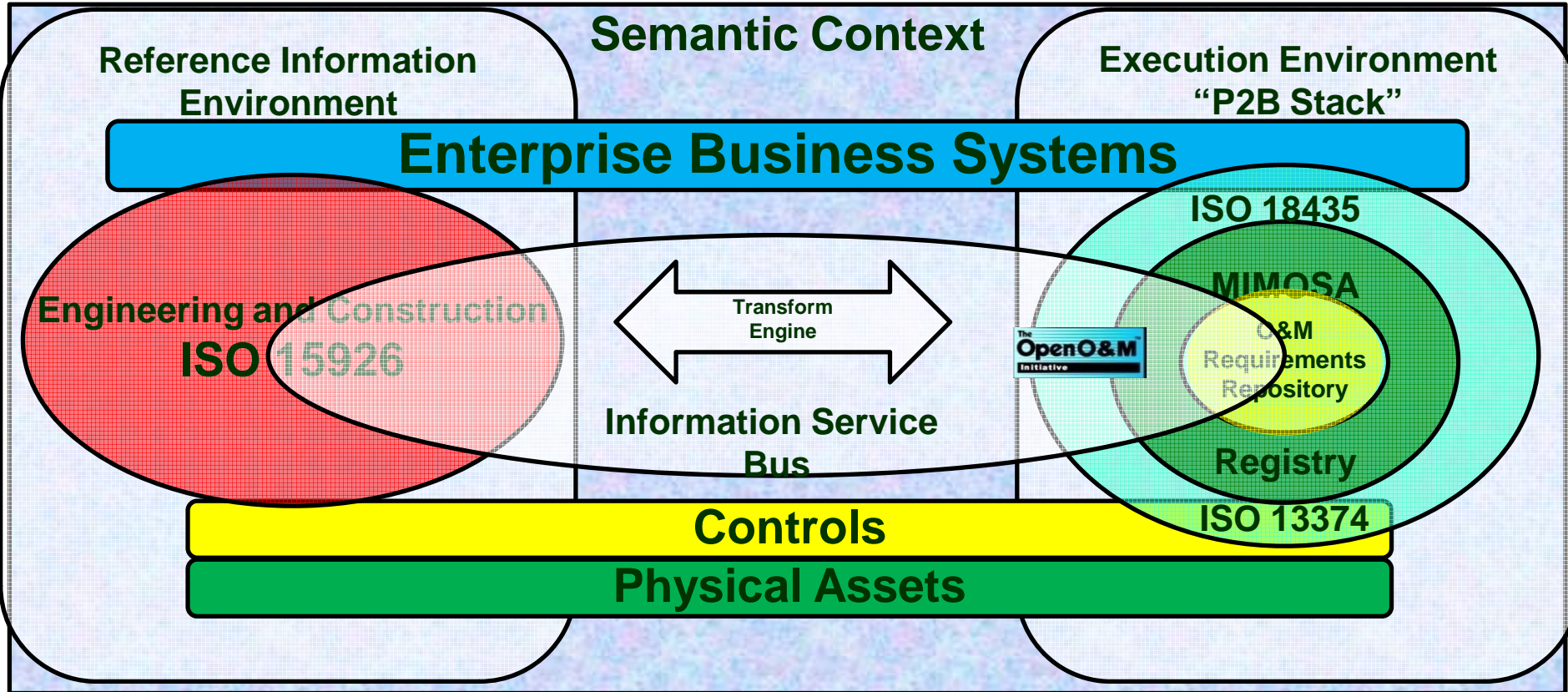
Oil and Gas asset management operations and maintenance Interoperability (OGI) Technical Specification Proposal

Nils Sandsmark and Alan T. Johnston
Co-Chairs

ISO TC 184 Plenary
May 4, 2010
Rosslyn, VA
ISO TC184



Context for Collaboration





Some Relevant ISO Related Activities

ISO TC 67
Materials, equipment
and offshore structures
for petroleum,
petrochemical and
natural gas industries

ISO TC 108
Mechanical vibration
and shock

ISO TC 184
Industrial automation systems and integration

SC5
Condition monitoring and
diagnostics of machines

SC4
Industrial Data

SC5
Architecture, communications
and integration frameworks

ISO 14224
Petroleum, petrochemical and
natural gas industries --
Collection and exchange of
reliability and maintenance
data for equipment

ISO 13374
MIMOSA OSA-CBM
WG6
Formats and methods for
communicating, presenting and
displaying relevant information
and data

**15926- Data for Process
Industries**
**10303-Product data
representation and exchange**
STEP/PLCS
OASIS
*Collaborating on the deployment of an
international standard for product
data exchange (ISO 10303)*

ISO 18435
MIMOSA OSA-EAI
WG7
Diagnostic and maintenance
applications integration



ISO 15926 - Reference Data Architecture

Standardised in ISO 15926-2
 Standardised in ISO 15926-3 & 4
 Standardised by e.g. ISO /IEC/ ANSI/ BS/DIN,
 Represented using ISO 15926 Product Catalogues
 represented using ISO 15926

Data Model

Common Terminology

Core Classes

Standard & Proprietary Classes

This is 99% about Reference Data

Manufactured or Application-Specific Item Classes
 My thing

ISO TC184

Physical Object Classes
 Activity Property Classes
 Geof. Class / Property Classes
 Grouping / Relationship / Facade (Part 9)

Implemented using SPARQL / Facade (Part 9)
 Implemented using RDF / OWL (Part 8)

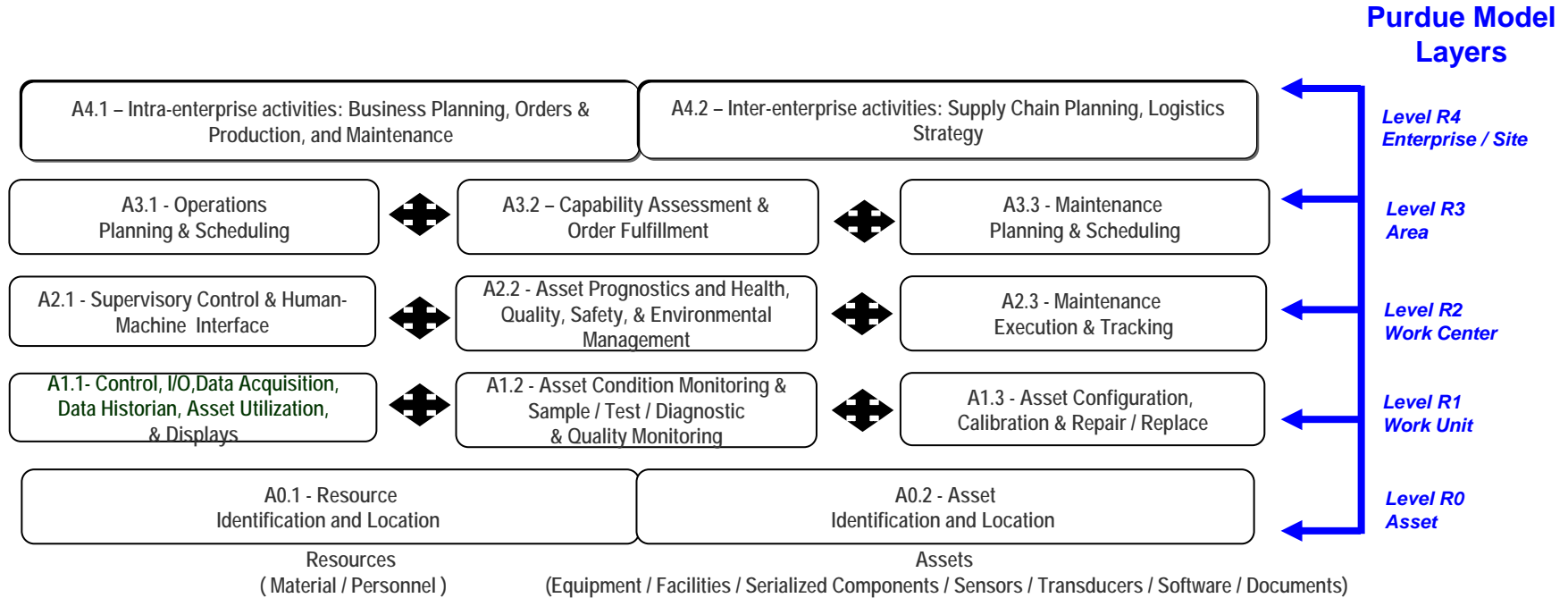
Technologies

R D L

ISO 18435



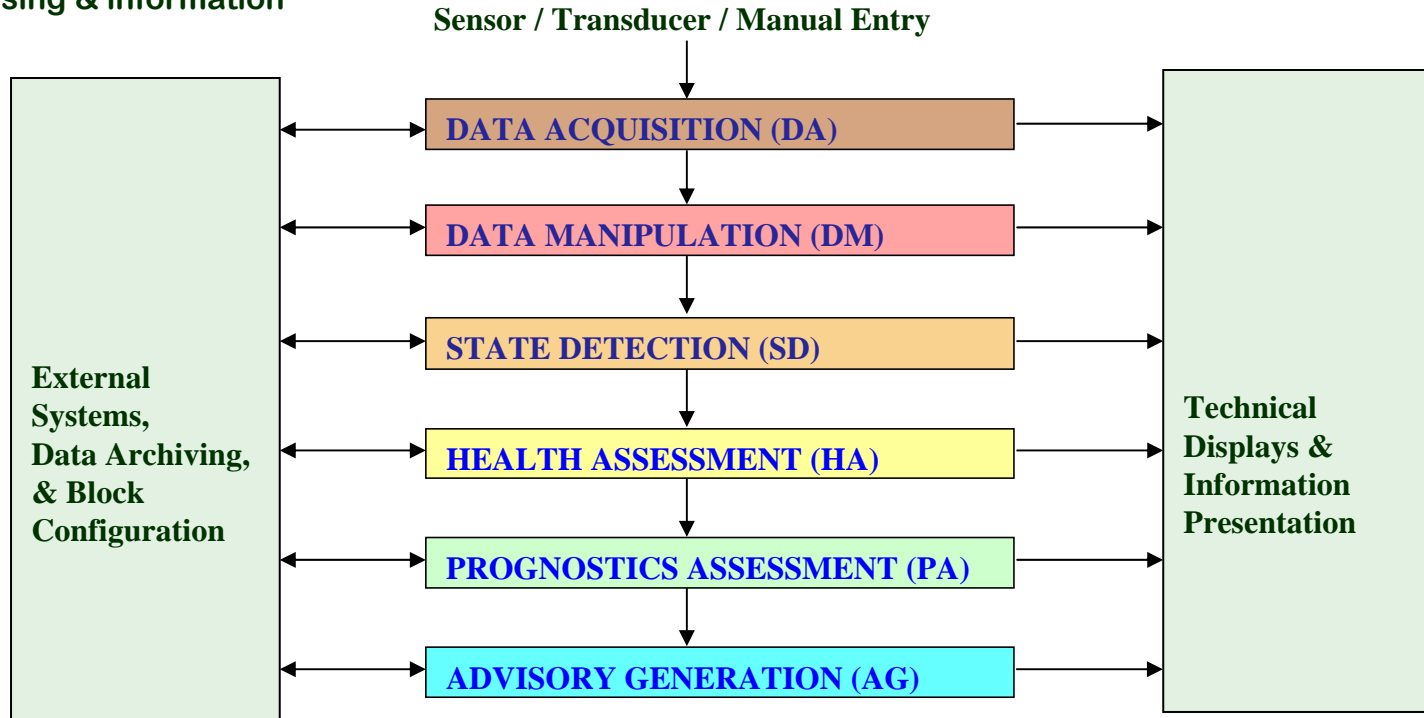
Application Domain Integration Diagram



ISO 13374 Standard



Machine condition assessment
data processing & information
flow blocks.



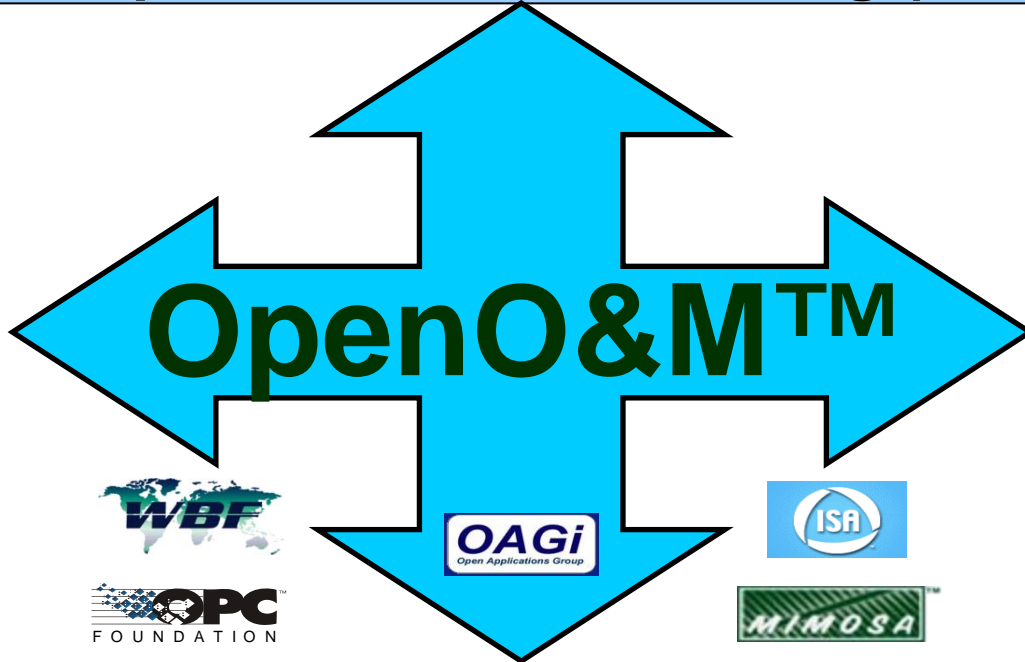
The OpenO&M™ Initiative – Execution Environment

Brings People Processes and Technology Together

Enterprise Business Systems
Enterprise Resource Planning (ERP)

Operations

Maintenance



Physical Asset Control
Real-time Systems

modern approaches:



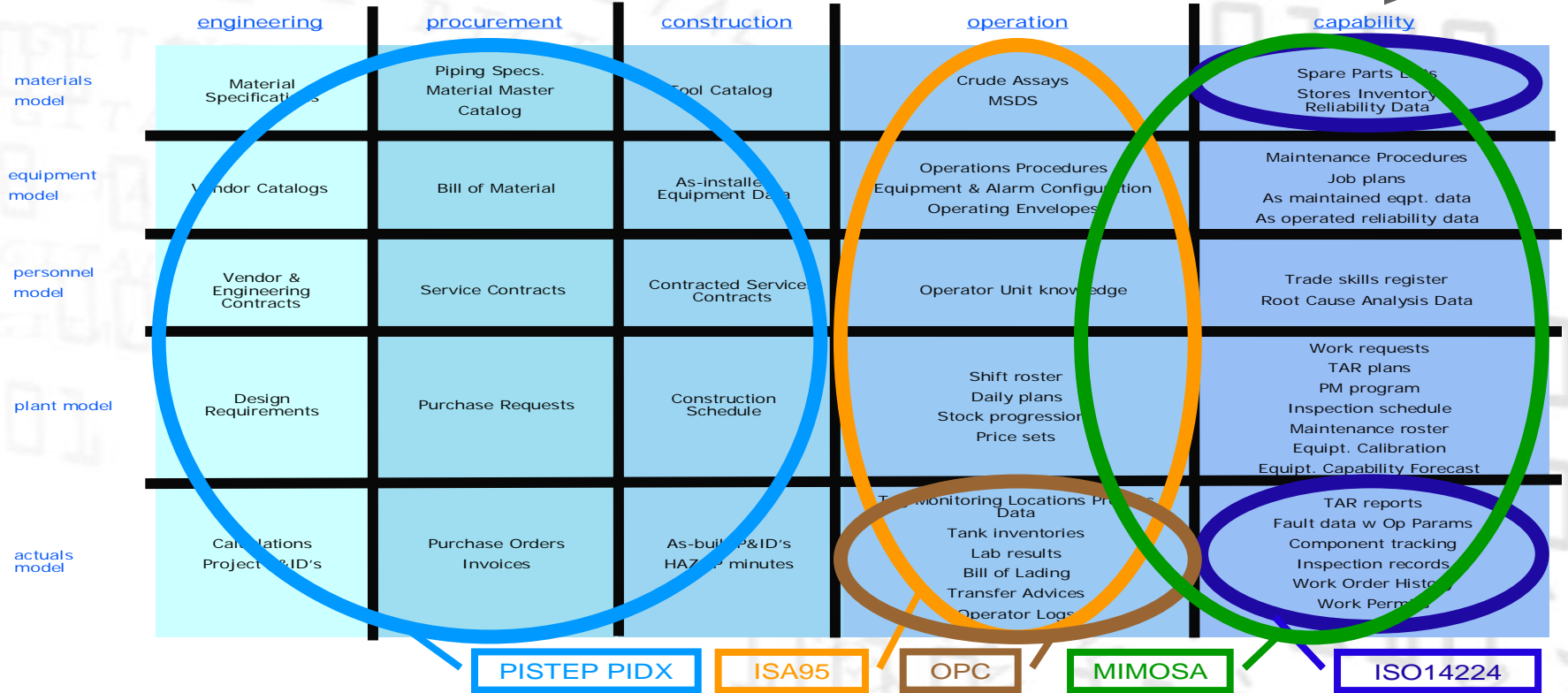
information technology evolution: data to applications, to services-based work process

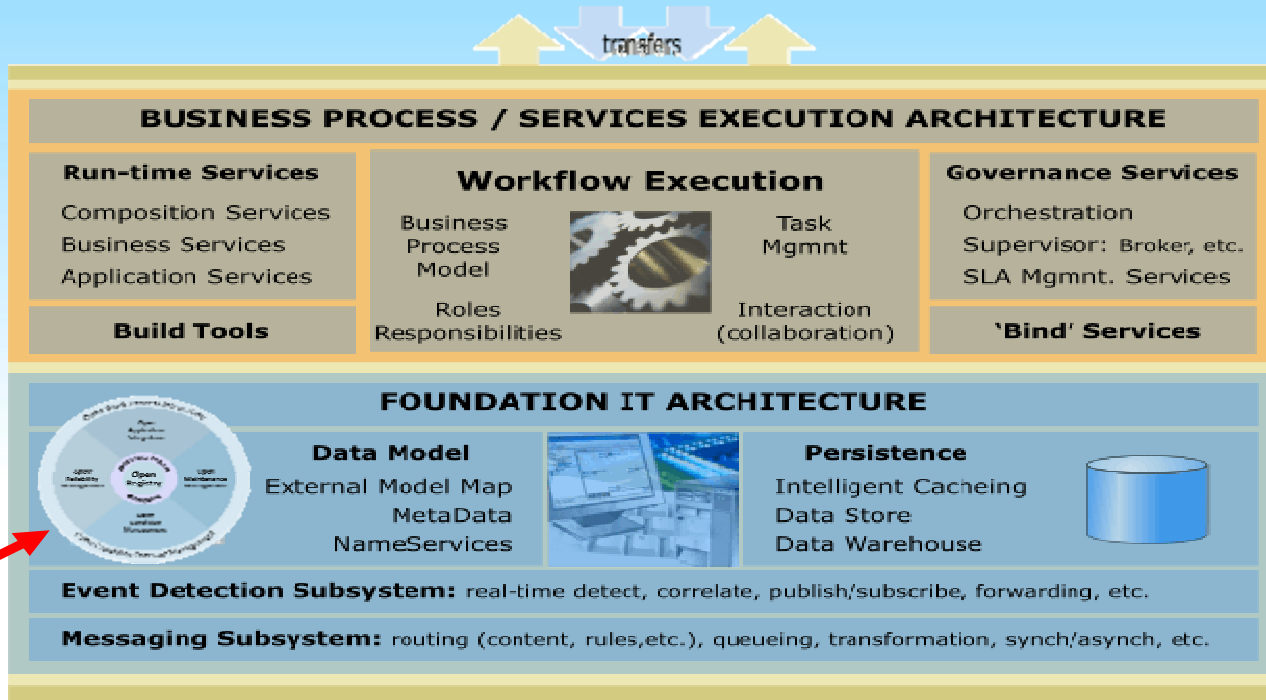


Mike Brooks
Chevron, Global Refining

bp data model map

plant lifecycle



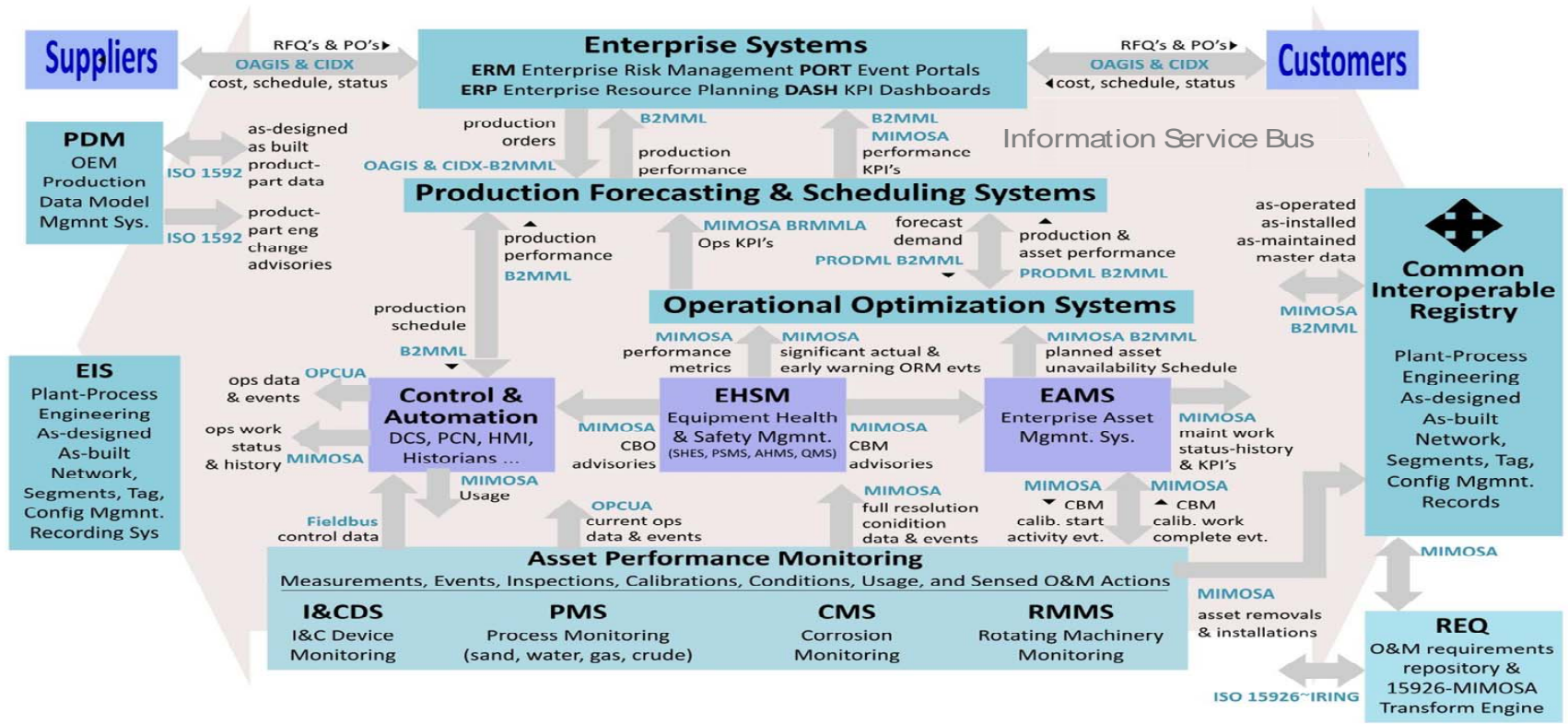


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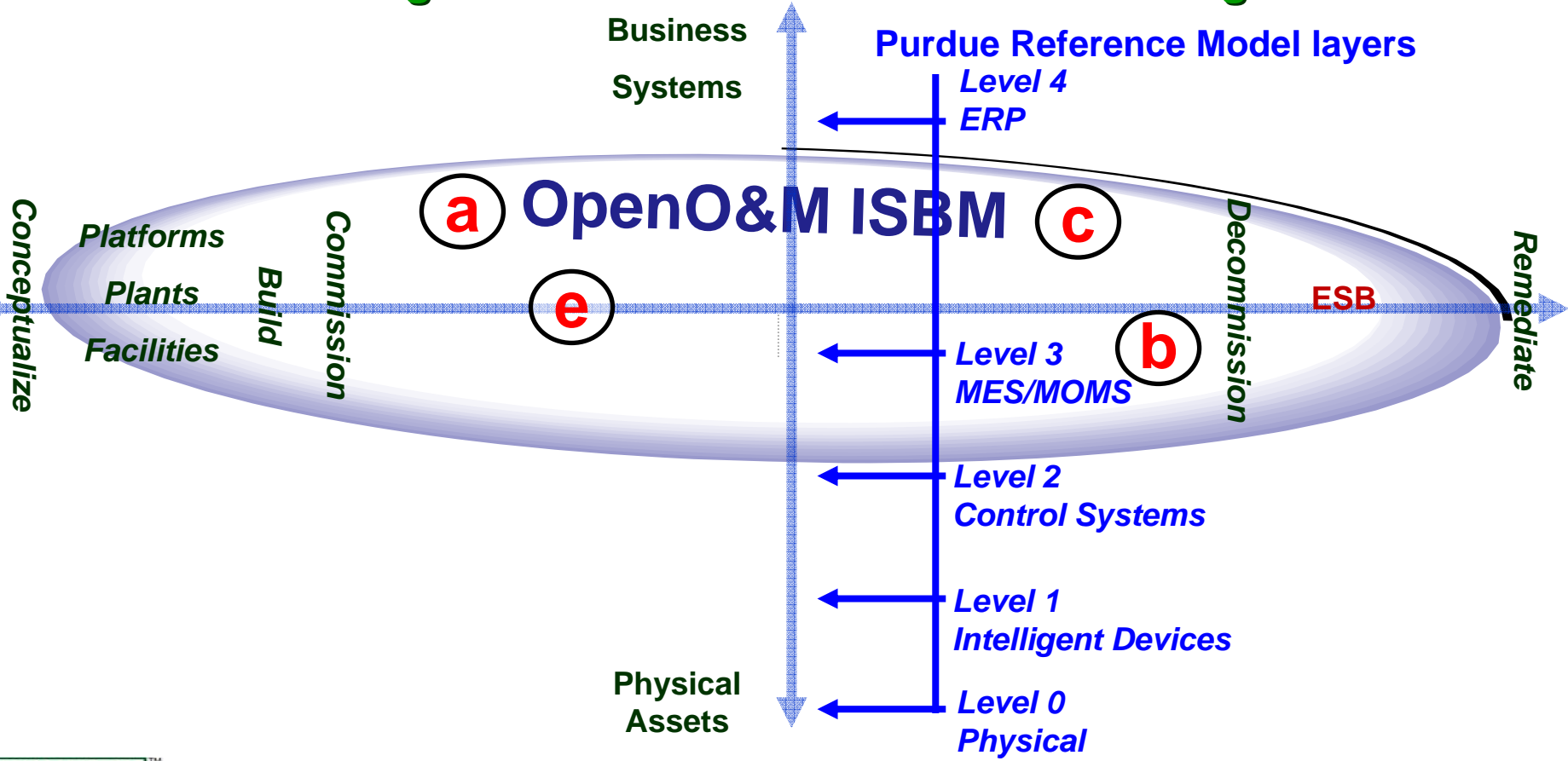
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OpenO&M

Energy Production Use Cases



The need for an open Information Service Bus (ESB Neutral) enabling safe and secure information exchanges



Key joint MIMOSA / POSC Caesar projects

- **Asset Globally Unique ID, Registry and RFID Tagging and Tracing**
 - ✓ Norwegian Continental Shelf
 - ✓ Americas
 - ✓ Global
- **Key Physical Asset Parameters**
 - ✓ Global project
 - ✓ Critical Infrastructure Management
 - ✓ Initial focus on common rotating equipment and valves
- **OpenO&M Information Service Bus aka “Intergalactic Systems Bus”**
 - ✓ IBM, Microsoft and SAP
 - ✓ Use case driven
 - ✓ Specification for Open On-Ramps and Off-Ramps
- **OpenO&M and ISO 15926 Topology Mapping**
 - ✓ Practical bootstrapping for current projects
 - ✓ Basis for reverse engineering into ISO 15926

Context for Collaboration

Bringing Enterprise Business Systems Together with Engineering and O&M Systems (Working Draft)

Semantic Context

Enterprise Business Systems
(Strategy, HSE, Finance)

Engineering
ISO 15926
ISO 10303

Operations &
Maintenance
ISO 18435
ISO 13374

The
OpenO&M
Initiative

Automation and Controls

Physical Assets (Facilities, Systems and Equipment)

Oil and Gas Reservoir

Reservoir and Geophysics – RESQML, SEG

Drilling - WITSML

Production - PRODML

OpenO&M Initiative and POSC Caesar

2010 Q1 and Q2 key collaboration events

- **ARC Forum**
 - ✓ February 8-11 - Orlando, FL
 - ✓ OpenO&M Information Security Model Meeting
- **Digital Plant Conference 2010**
 - ✓ March 1-3 - Houston, TX
 - ✓ OpenO&M and iRing Interoperability Demo
- **POSC Caesar Meeting**
 - ✓ March 4-5 – Houston, TX
- **ISO TC184 SC5 Plenary**
 - ✓ March 25 - Tokyo, Japan
 - ✓ ISO TC184/SC5/WG7 (ISO 18435) – March 29-31 - Tokyo, Japan
- **ISO TC184 Plenary – May 4-5 - Rosslyn, VA**
- **Semantic Days/PCA Meetings – May 31-June 4 - Stavanger, NO**
- **ISO TC184 SC4 Plenary – June 6-10 - Bethlehem, PA**
- **MIMOSA and OpenO&M Meetings – June 22-24 - Dallas, Texas (IBM)**