

ISO15926- Overview and Progress

PCA FORUM 2009 AND MEMBERS MEETING

20-21 October 2009, Hotel Nikko Kuala Lumpur

Nils Sandsmark

Content

- History of ISO 15926 and PCA
- Background and requirements
- ISO 15926 Parts
- Co-operation with other organizations
- Example projects
- New project proposals and summary

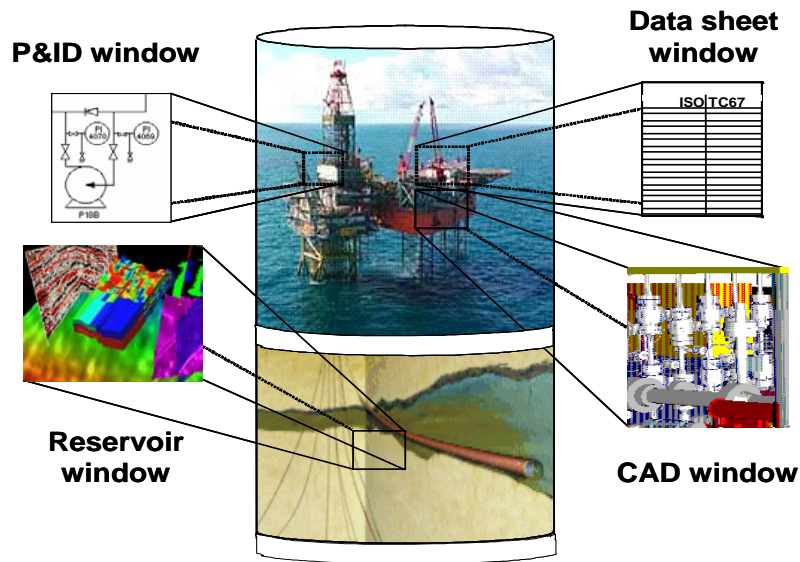
History of ISO 15926

- Based the EPISTLE information model from the early 1990ies
- The first large scale implementations were ETAP in 1996 and Aasgard in 1997
- The principals and the technology have since been implemented by a number of software vendor and have been use by many operators and EPCs
- The development of the ISO 15926 standard started in August 1997
- Two Parts have been published by ISO as International Standards (Dec. 2003 and Jun. 2004) and two Parts have been published as Technical Specifications (Oct. 2007 and Apr. 2009)
- Phase 1 will be finalized in 2010

History of POSC Caesar Association (PCA)

- PCA started as a national Norwegian R&D project in 1993 to develop specification and standards mainly for data handover from engineering contractor to owner/operator in the Oil and Gas industry
- Continued as an international R&D project in 1994-1997 with an increased scope
- The **POSC Caesar Association (PCA)** was established in November 1997 to develop open specifications and standards for enabling the integration and interoperability of data, software and related matters
- PCA has 33 members in 7 countries

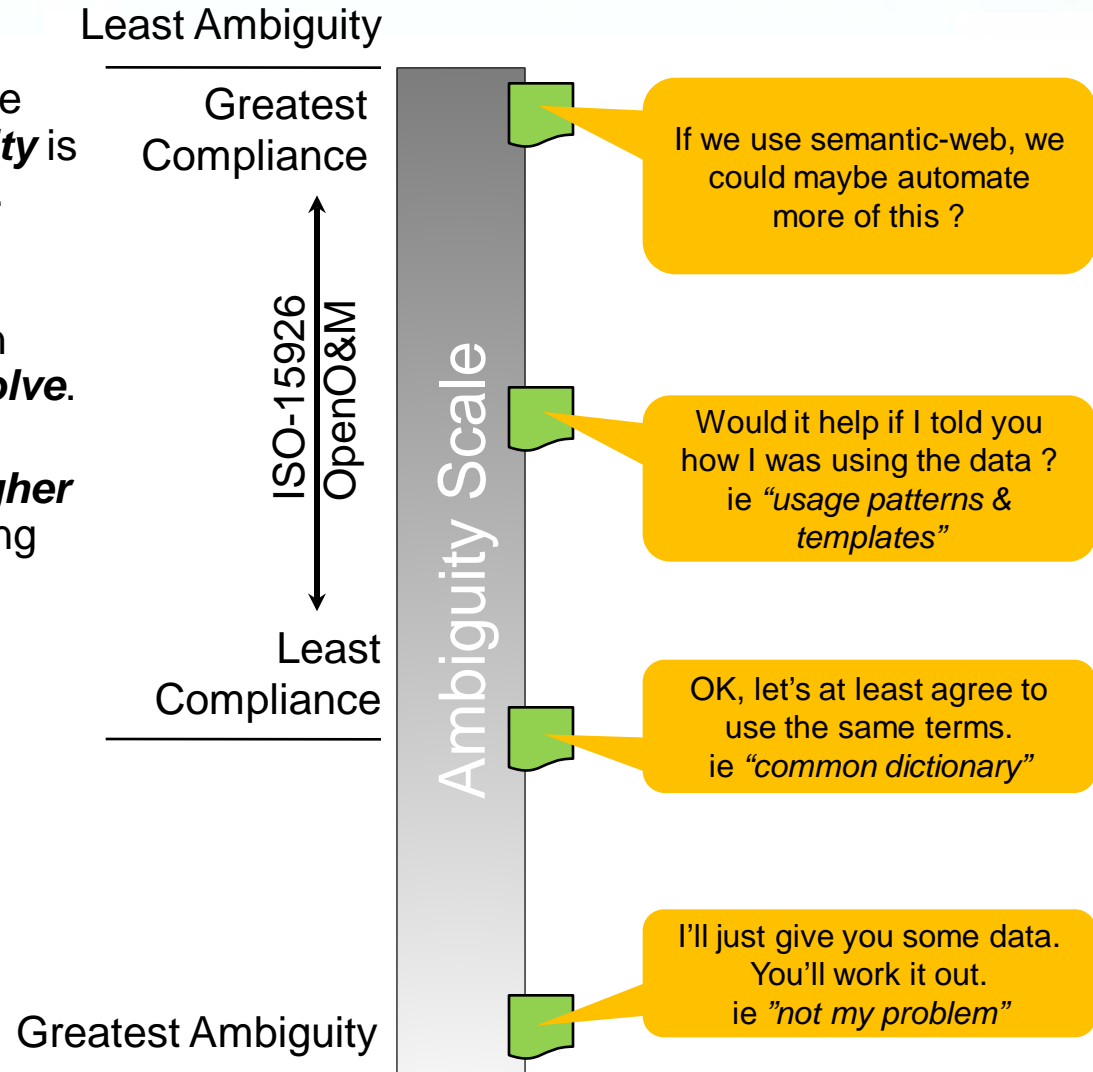
Vision of ISO 15926 Integration and Life Cycle Aspects



- Started with standards for information handover between EPCs and Owners/Operators
- The last 5-6 years ontologies for Integrated Operations have been a focus area
- The last 2-3 years Operation & Maintenance and integration between Engineering and Operation & Maintenance has become important

Information Ambiguity ?

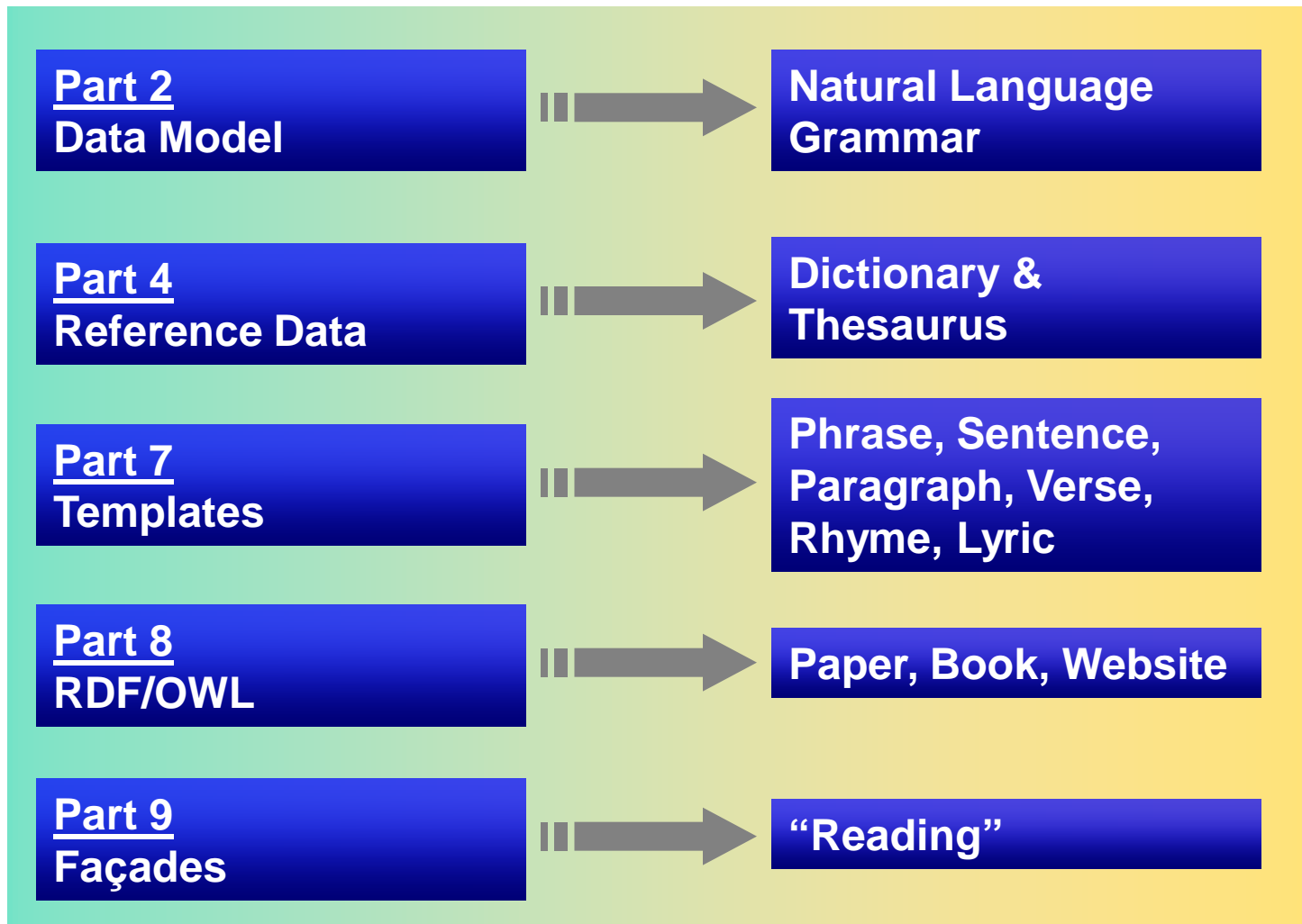
- Data access & exchanges operate most successfully when **ambiguity** is eliminated at business interfaces.
- Ambiguity between exchanging partners represents **risk**, and can require **significant effort to resolve**.
- The higher the ambiguity, **the higher the risk, and cost** in implementing effective & efficient exchanges.
- Each time new business or technology interfaces arise, new ambiguities may arise, and the **costs & risks may be repeated**.
- **Ambiguity = (Repeat) Cost &/or Risk**



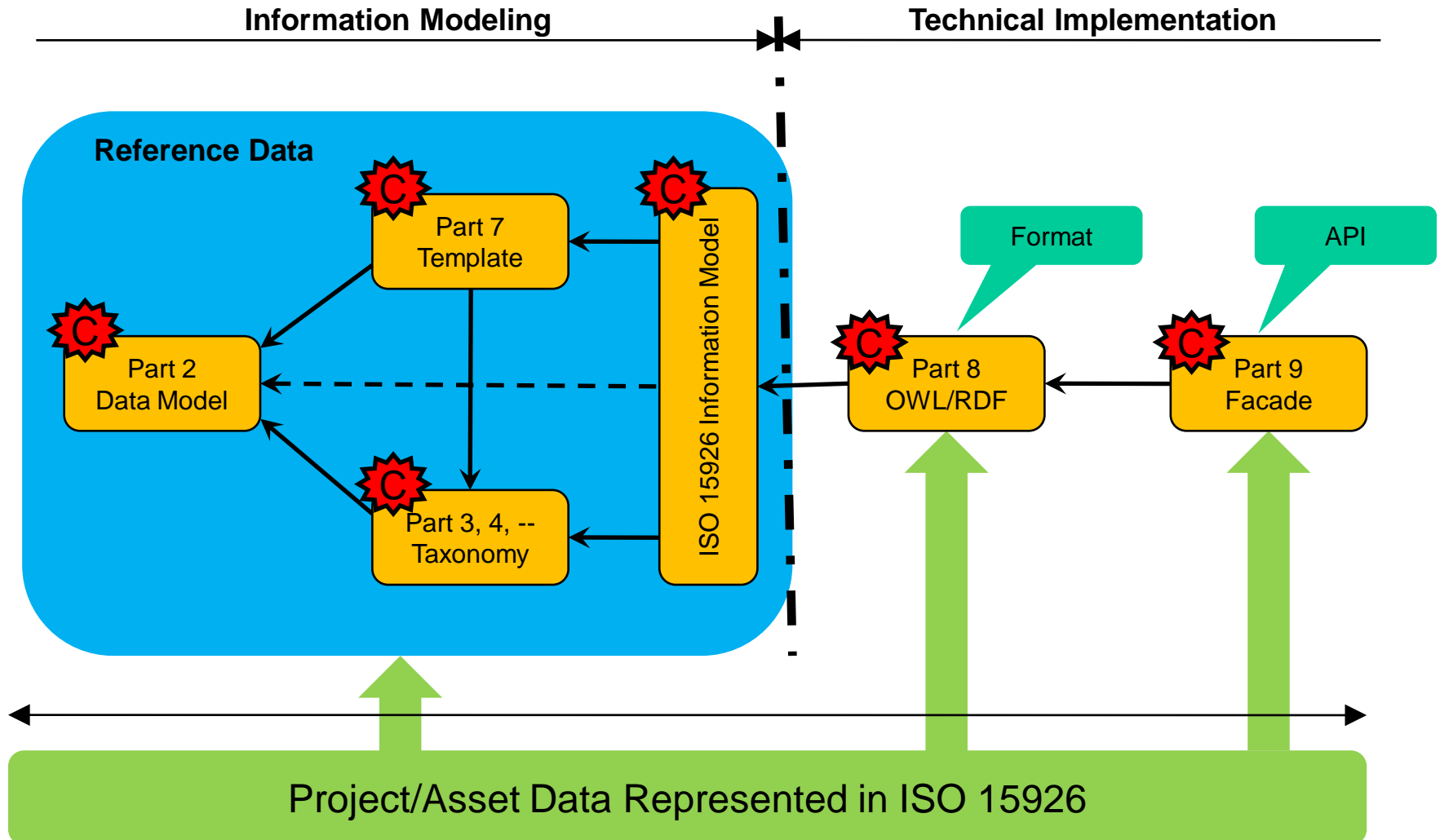
Where does ISO15926 take us ?

- **It delivers *interoperability***
 - Between businesses & systems and *their information*
- **Over *long lifecycles***
 - technologies & business opportunities come & go
- **By *minimizing ambiguity***
 - in how information is modeled, identified and represented

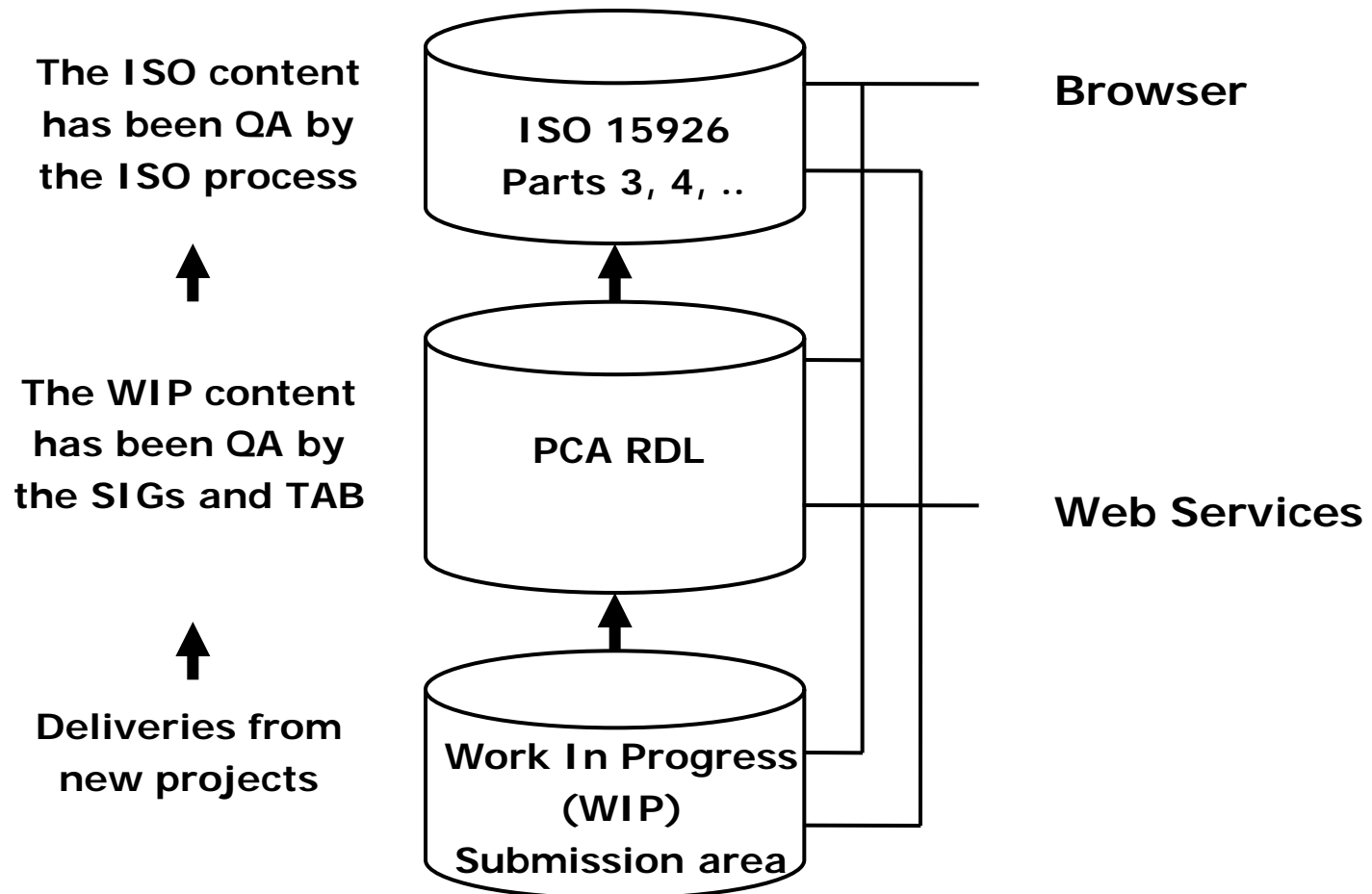
ISO 15926 “Parts” Analogy



ISO 15926 in IT Language

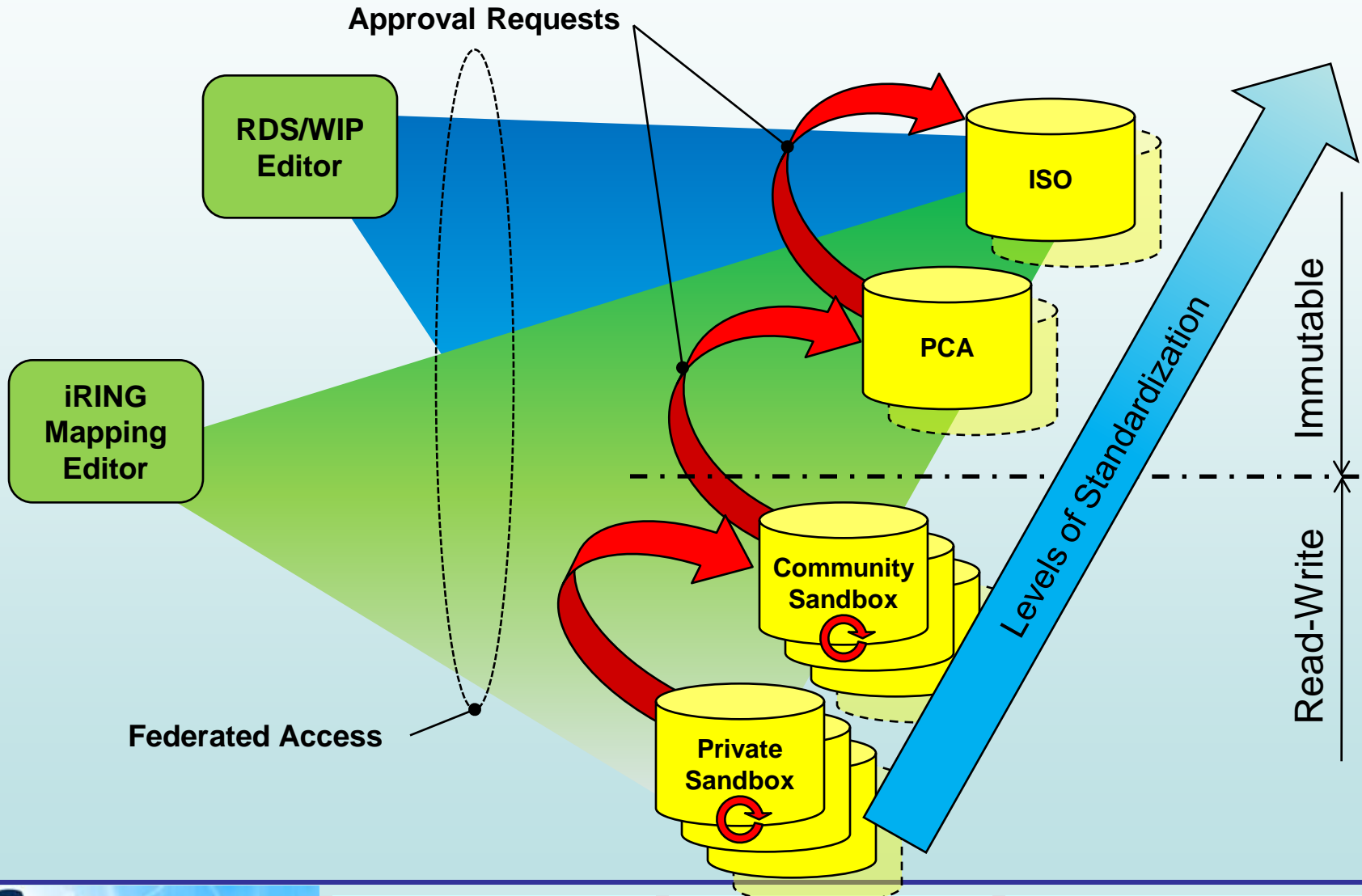


Maintenance and Enhancement of the RDL

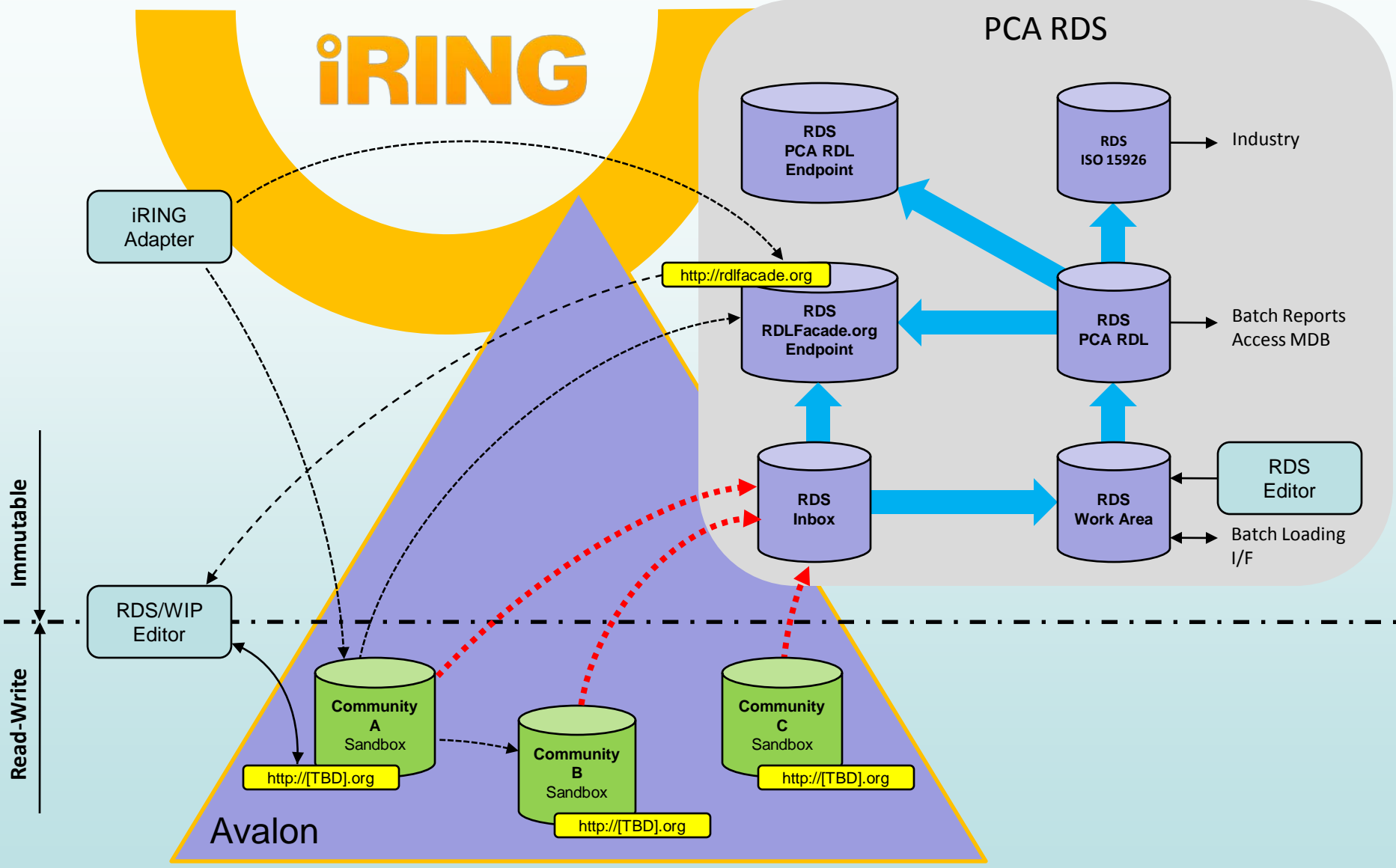


Context for Collaboration

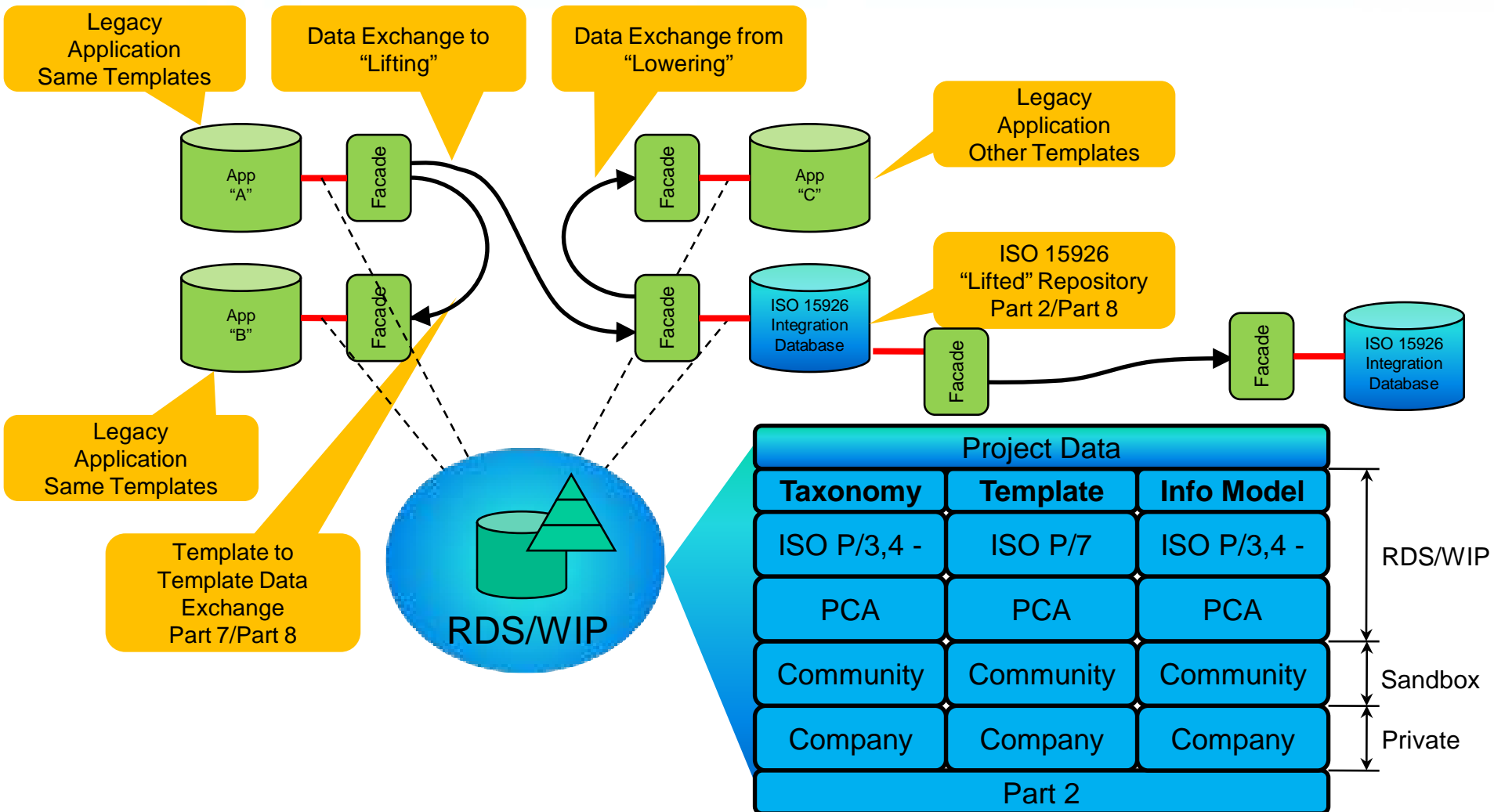
Reference Data Federation



Reference Data Service – Logical Map (Current)



Data Exchange Scenarios



Context for Collaboration

Bringing Enterprise Business Systems Together with Engineering and O&M Systems – Oil and Gas Industry Model

Semantic Context

Enterprise Business Systems

Engineering &
Construction
ISO 15926

FIATECH

The OpenO&M Initiative

POA POSC Caesar Association

Operations &
Maintenance
ISO 18435
ISO 13374
IEC/ISO 62264

The OpenO&M Initiative

Controls

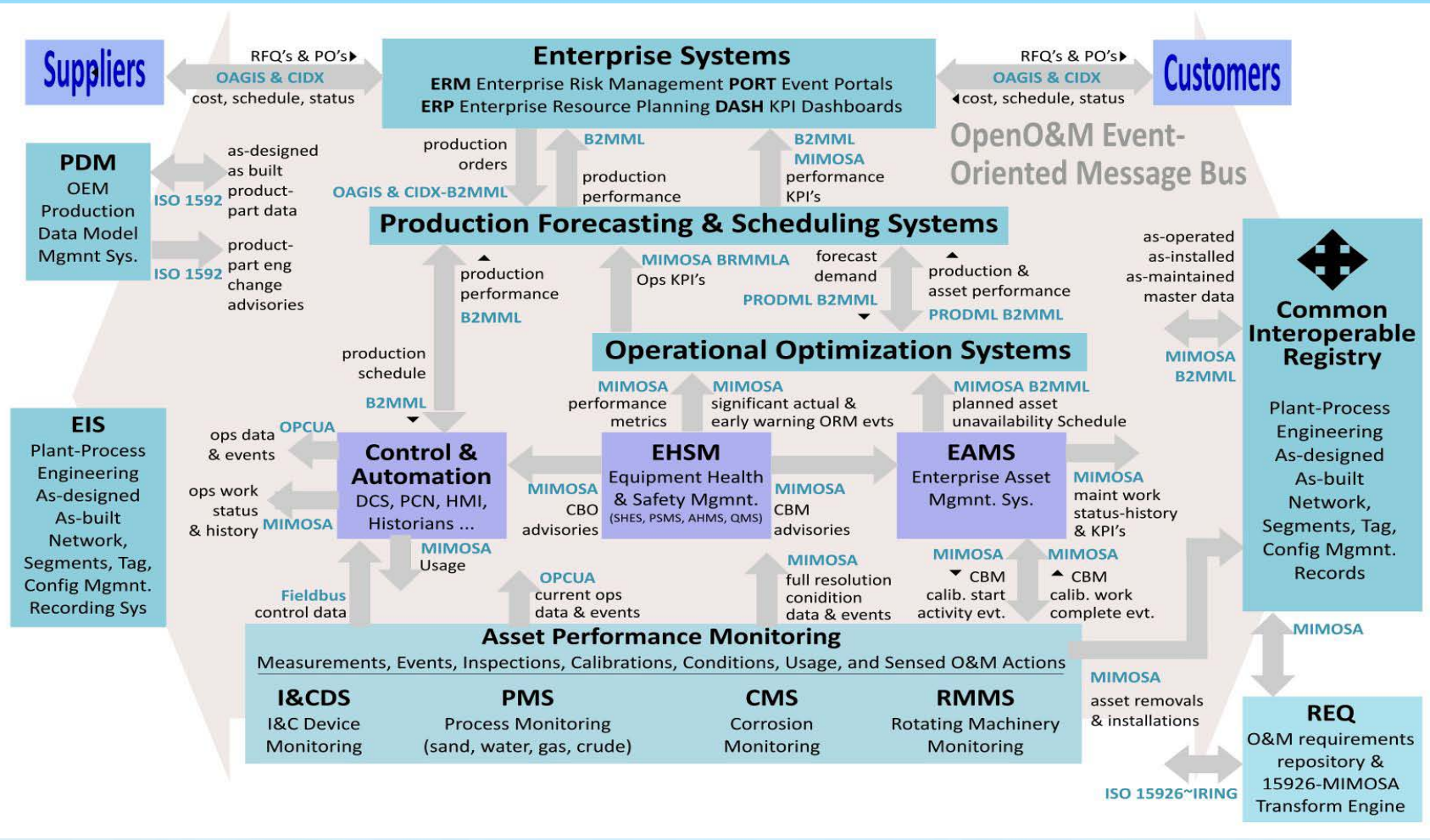
Physical Assets

The OpenO&M Initiative

An Ontology with First Order Logic, Basis for Gaining Semantic Alignment; Focus on Class Level Information Management, Can store Unlimited Detail, Comprehensive Reference Data

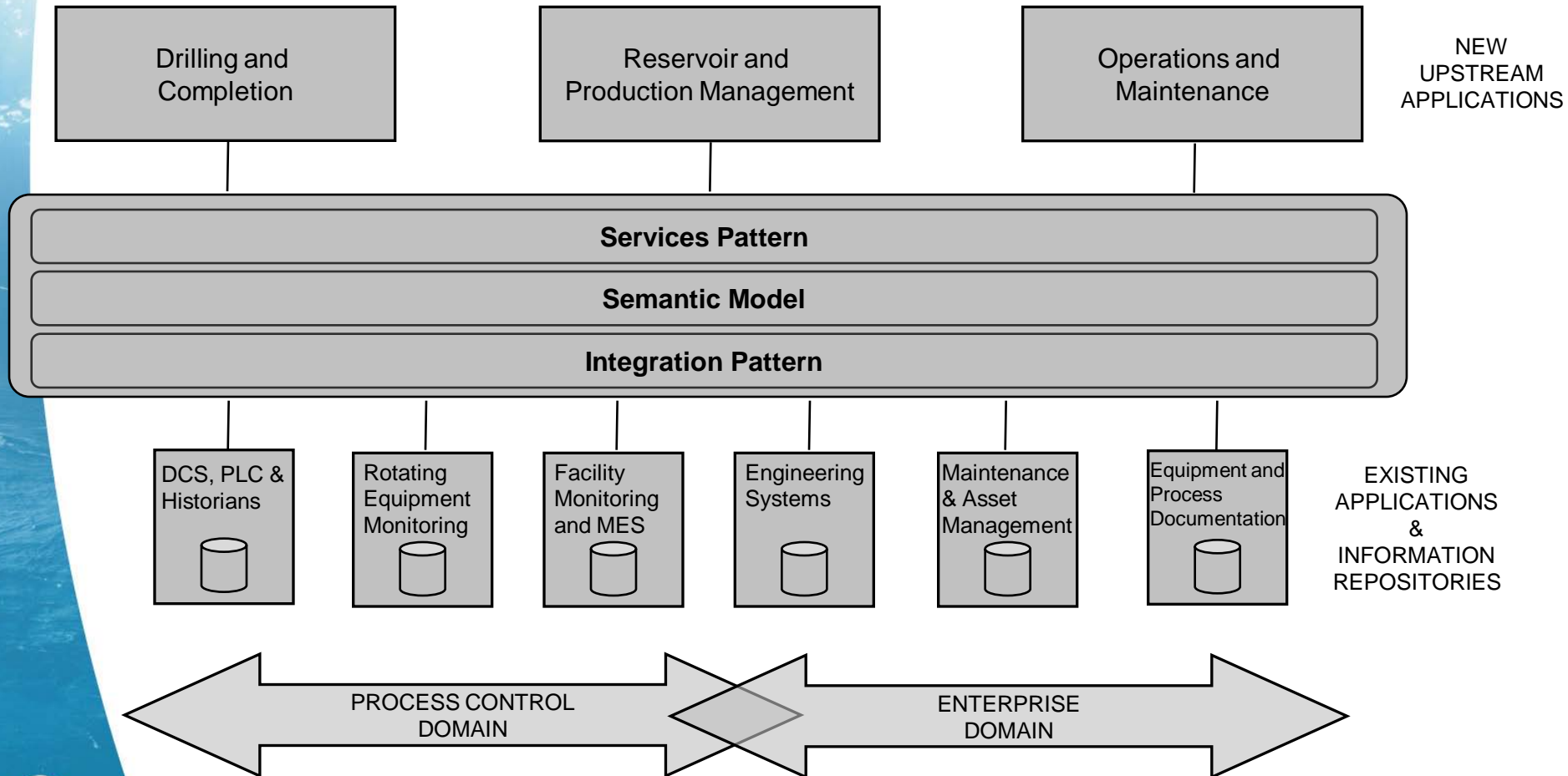
O&M Execution Environment: Registry, Schema and Services Centric; Focus on Instance and Event Data,; Basic Models for People, Processes, Systems, Unique Assets and Relationships along with Associated Event Data and History

Oil & Gas Use Cases



June 17, 2008

IT Architecture Overview from OLF Study

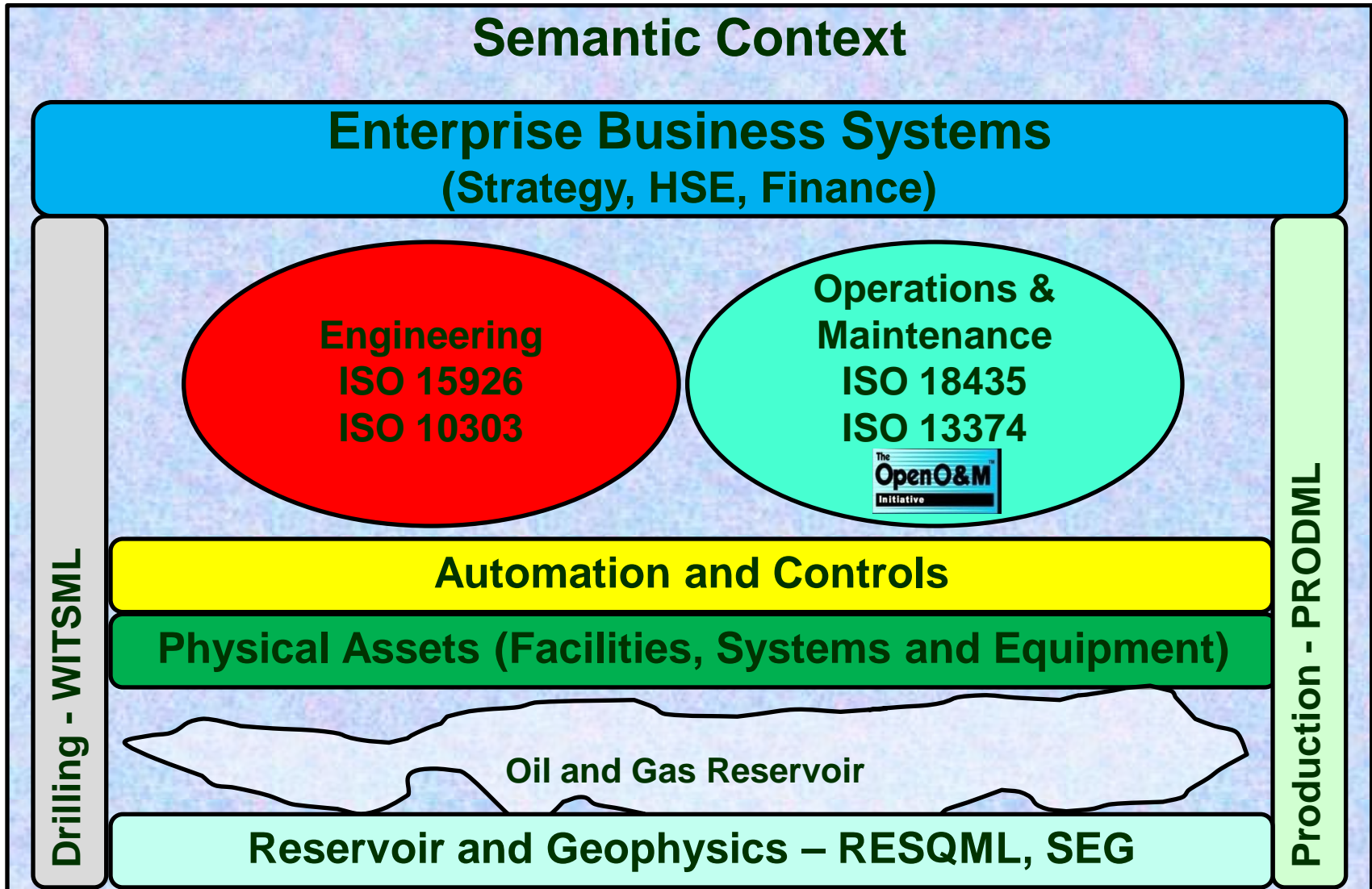


Examples

- Bechtel
 - ***Interoperability Architecture***
- iRING
 - ***Interoperability Network Grid***
- IOHN
 - ***Integrated Operations in the High North***
- NorHub
 - **Common Equipment Catalogue**

Context for Collaboration

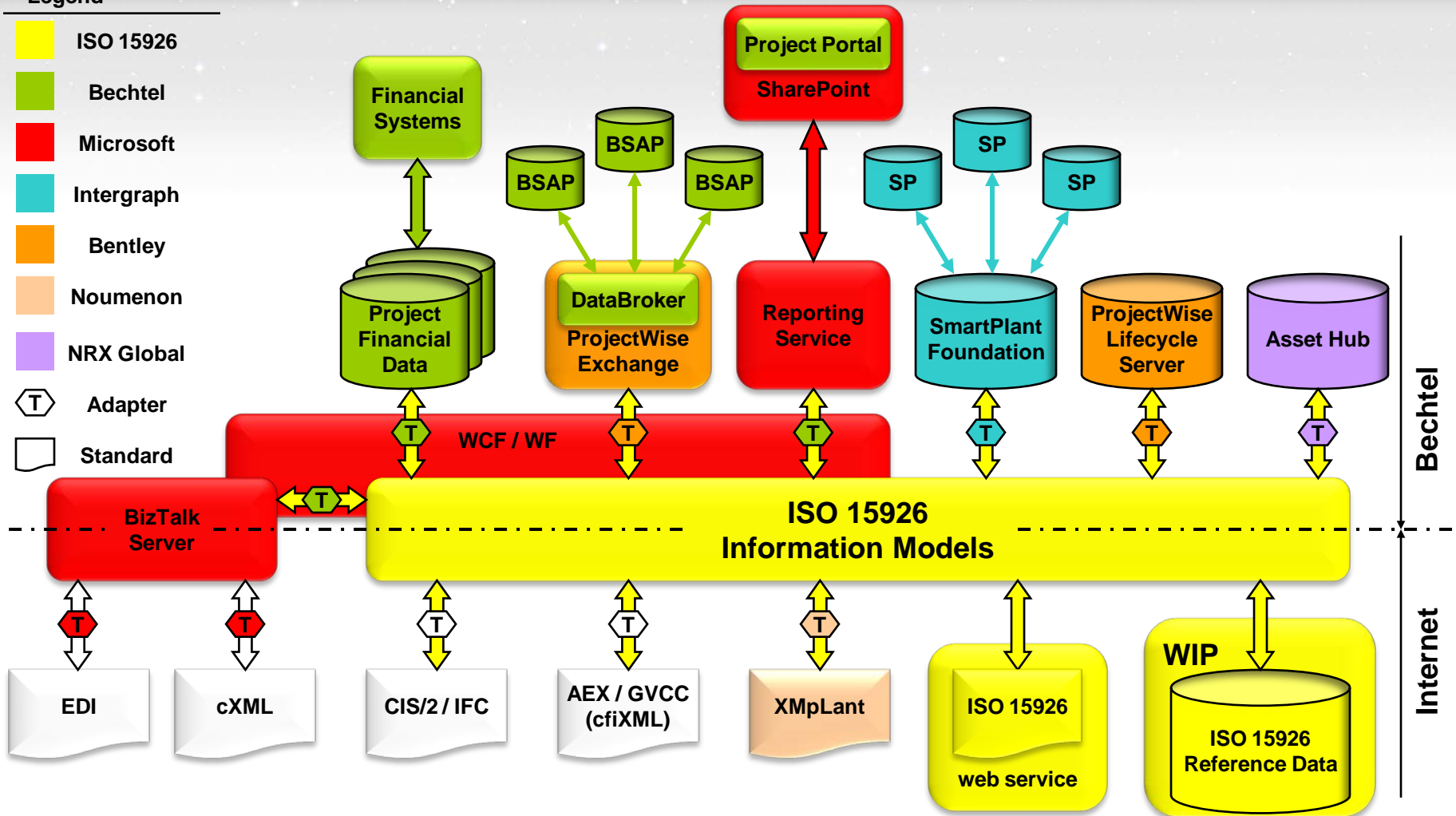
Bringing Enterprise Business Systems Together with Engineering and O&M Systems (Working Draft)



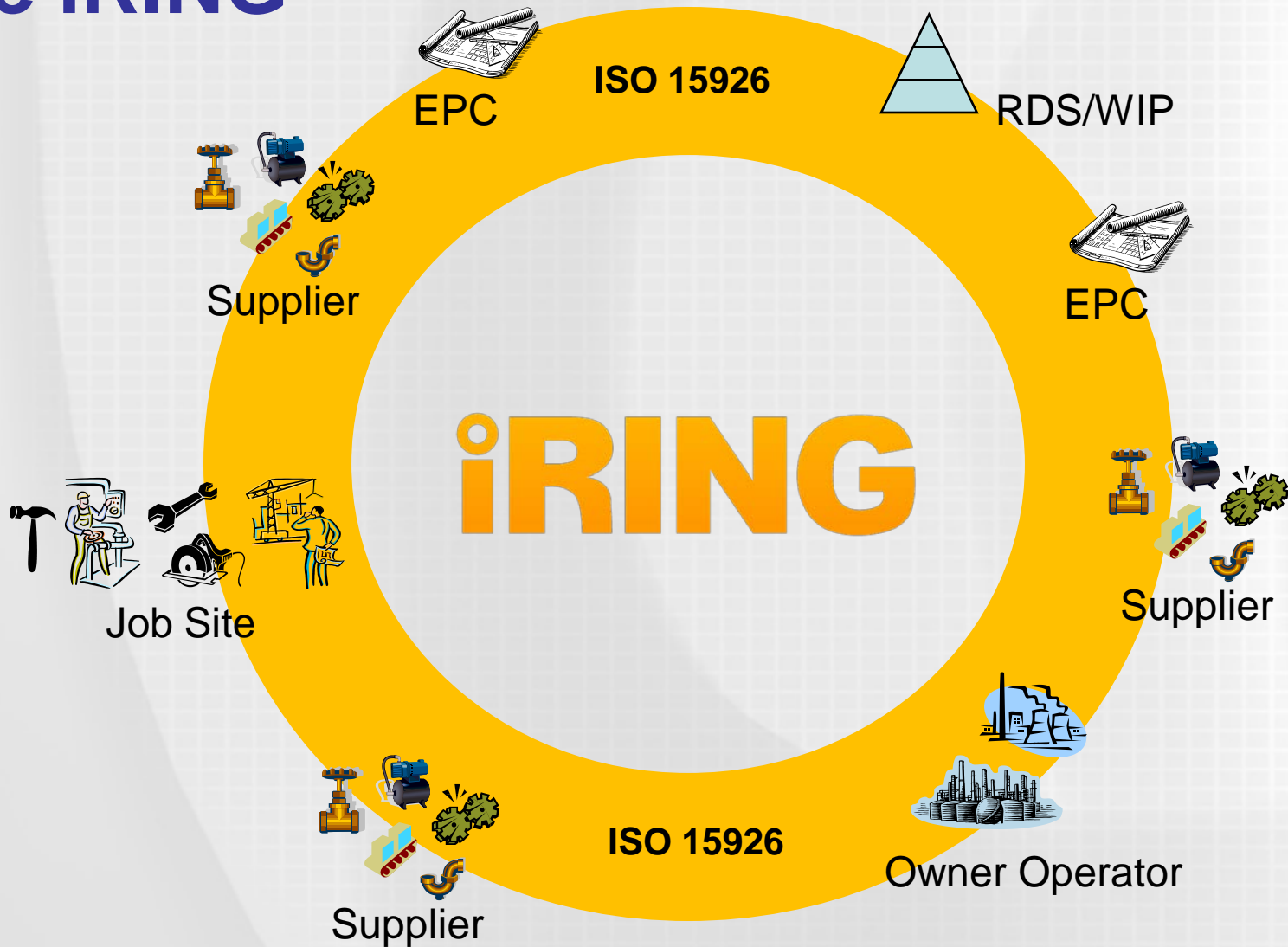
Interoperability Architecture

Legend

- ISO 15926
- Bechtel
- Microsoft
- Intergraph
- Bentley
- Noumenon
- NRX Global
- T Adapter
- Standard



The iRING

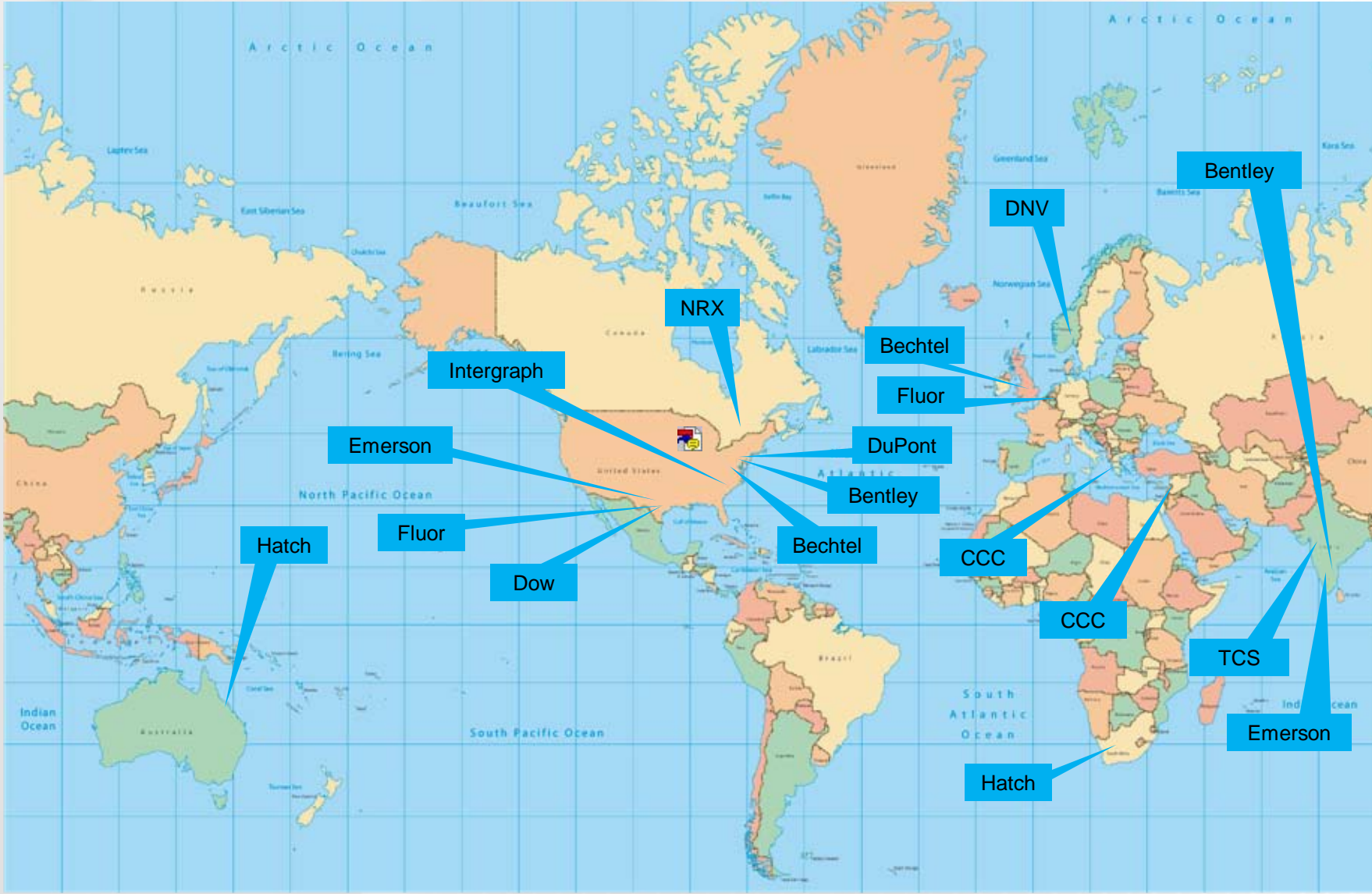


ISO 15926 Realtime Interoperability Network Grid

Realizing Open Information Interoperability



Camelot – A “Round the Clock” Project!



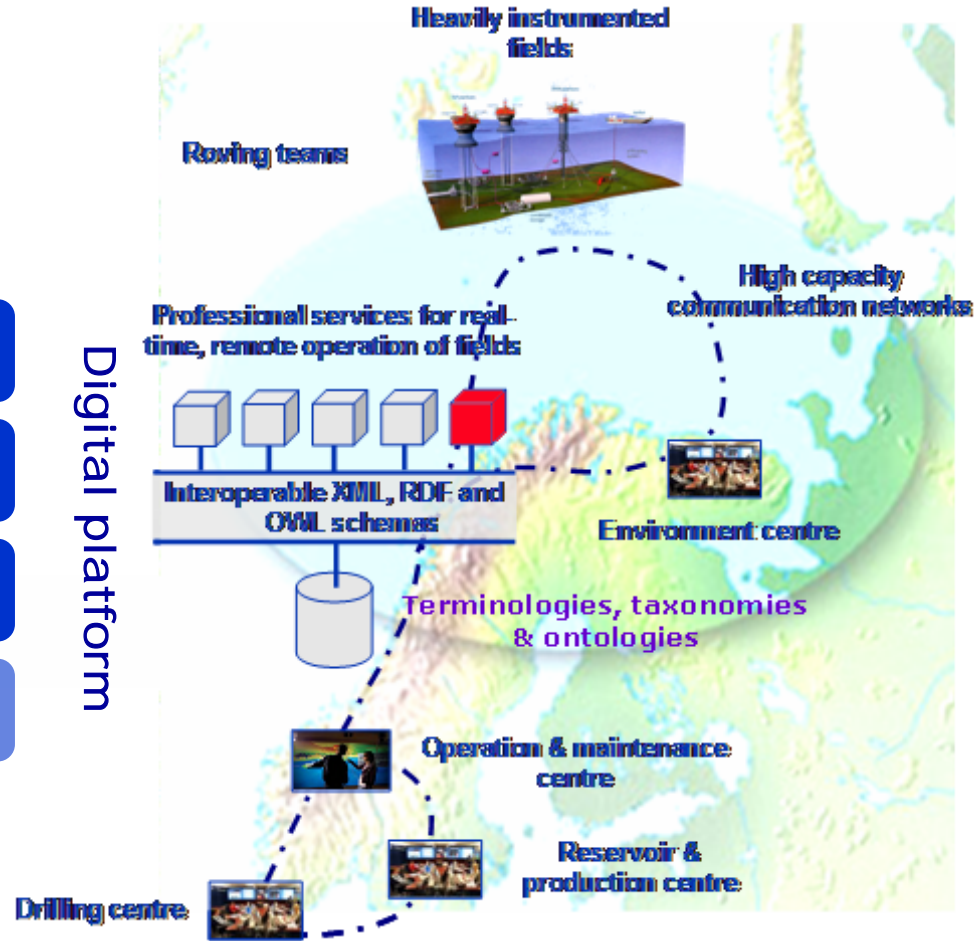
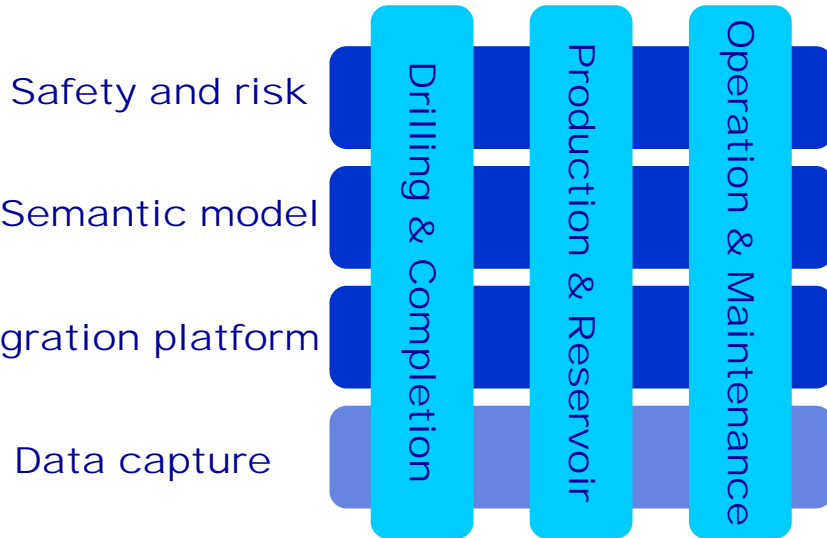
Integrated Operations in the High North (IOHN)

Demonstrating a reliable digital platform for IO G2 in the High North

Integrated Operations in the High North – Joint Industry Project

IOHN

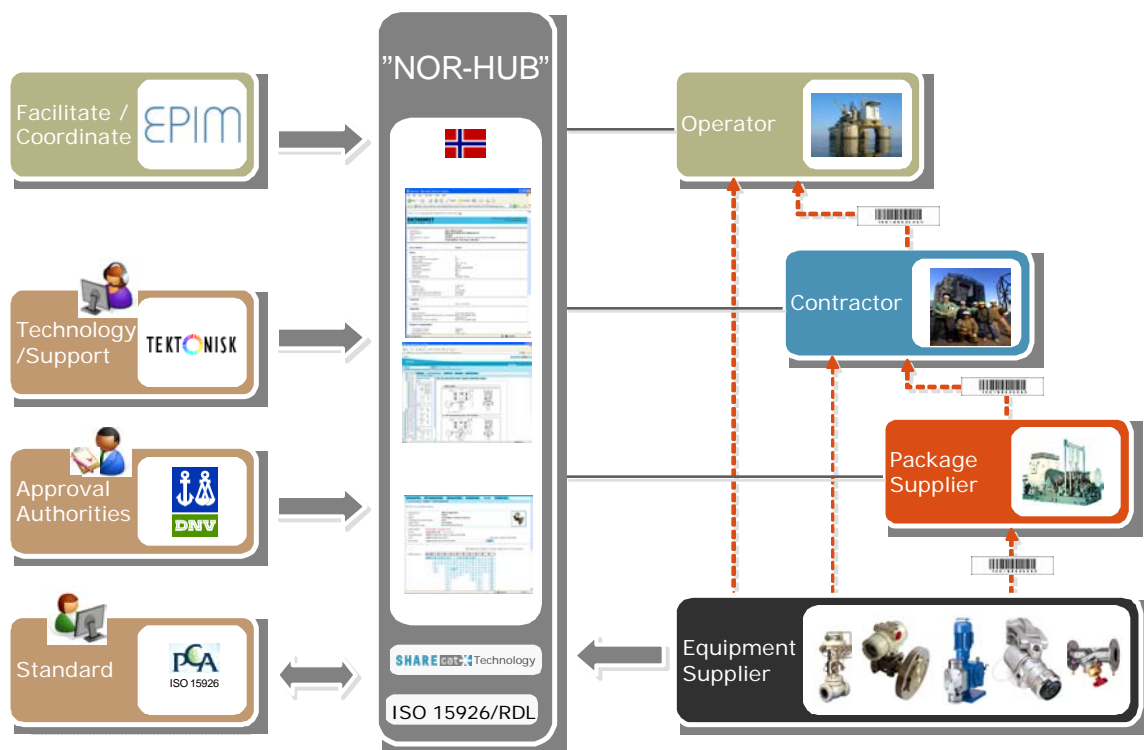
Business processes



NorHub - A common database for equipment

- ✓ NorHub will be covering at least 80% of the equipment in use on the NCS
- Initiated by OLF together with PCA, DNV, Achilles and Tektonisk/ShareCat
- Potential of reducing the costs with more than NOK 1 billion per year on the Norwegian Continental Shelf

Equipment database according to ISO 15926



New Project Proposals

- New iRING projects
- Global Asset Life-cycle Tracking and Asset GUID
- MIMOSA/ISO 15926 Asset Characteristic Classes
- Open Event Oriented Message Bus – “Intergalactic Systems Bus”
- MIMOSA/ISO 15926 Topology Mapping Project
- Permanent Prototype/Demo/Test Environment

Summary

- The ISO 15926 principals and the technology have over the last 10 years been implemented by a number of software vendor and have been use by many Owners/Operators and EPCs
- Growing interest in IBM, MS and SAP in 2008 and 2008
- A better understanding of the data integration and quality challenge has increased the interest for dictionaries, taxonomies and ontologies including ISO 15926
- Users of reference data libraries are interested in feeding own extensions and improvements back into the standard. This includes ISO Technical Committees
- Phase 1 of ISO 15926 will be completed in 2010
- Interest for ISO 15926 is growing
 - Owner/Operators, EPCs, Control system companies, other vendors
- Scope of ISO 15926 is growing
 - Handover, Integrated Operations, Engineering and O&M, - - -
- Co-operation is necessary in order to accelerate the work