



PCA Introduction and Standards Update

Nils Sandsmark – General Manager PCA
Brisbane, Australia, 30-31 October 2012

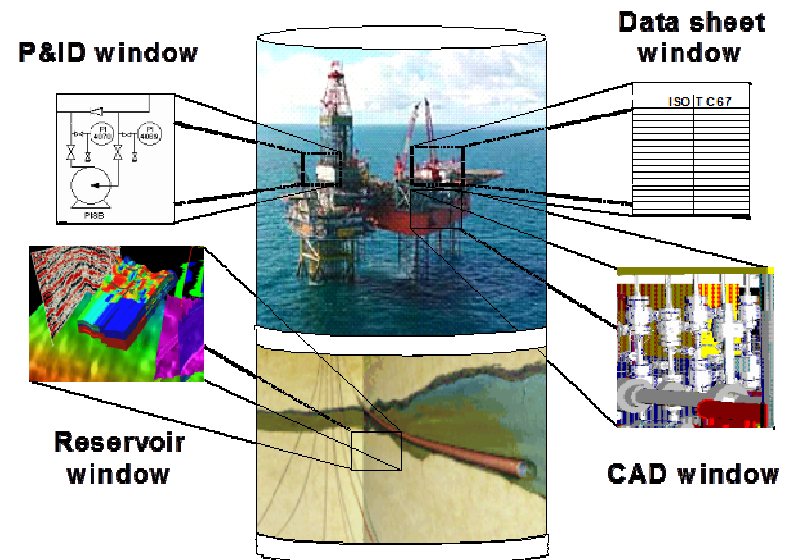
Agenda

- POSC Caesar Association
- Introduction and Update for ISO 15926
- Some Ongoing Projects
 - EqHub, ReportingHub and LogisticsHub (EPIM Project)
 - Optiqe (EU)
 - Oil and Gas Interoperability (OGI) (ISO, MIMOSA, PCA and others)
- Standards Leadership Council (SLC)
- Summary

POSC Caesar Association (PCA)

- PCA is a global, **not-for-profit**, independent **member organization** developing, enhancing, and promoting methodology, content and solutions for **data interoperability** with special focus on **ISO 15926**
- PCA has 35 members in 12 countries on 4 continents
- PCA arranges forums and member meetings every year in:
 - **Asia/Australia**
 - **Europe/Africa**
 - **America**

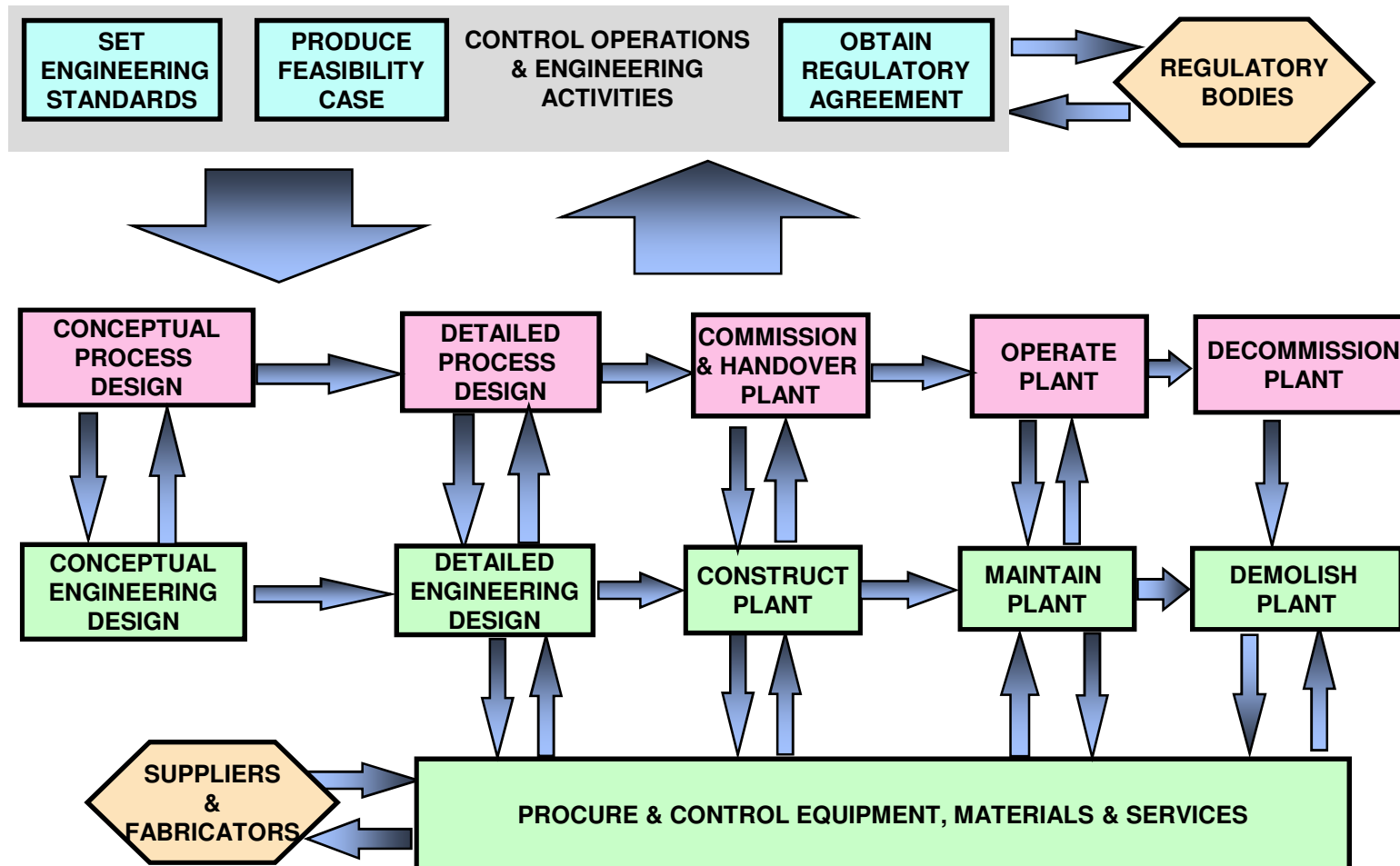
The vision of ISO 15926 data interoperability and life cycle



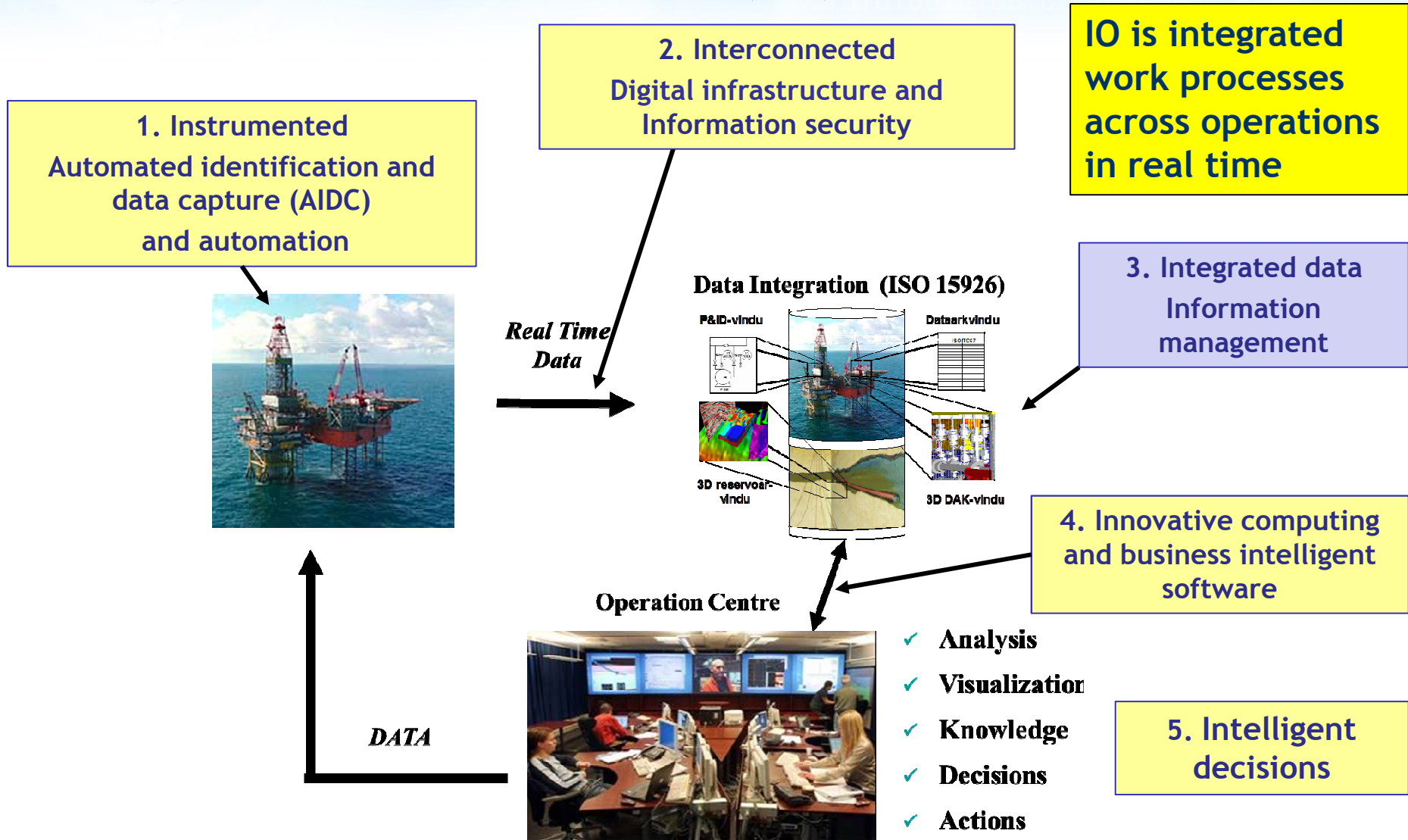
Focus areas have evolved so far:

1. Handover EPC - OO (1993+)
2. Integrated operations (2004+)
3. Operations & maintenance and integration between engineering and O & M (2008+)

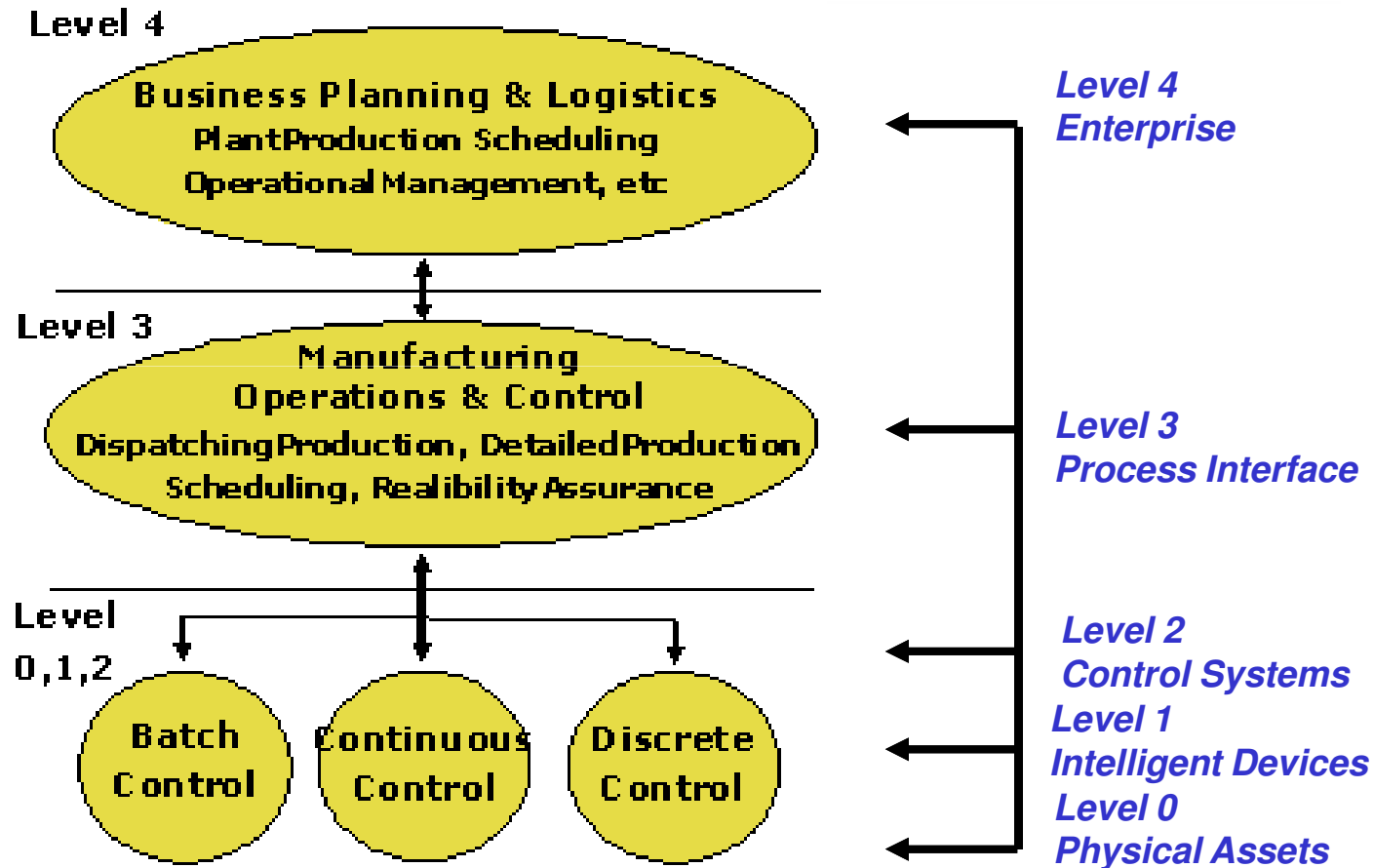
The PISTEP Model for Life Cycle Activities



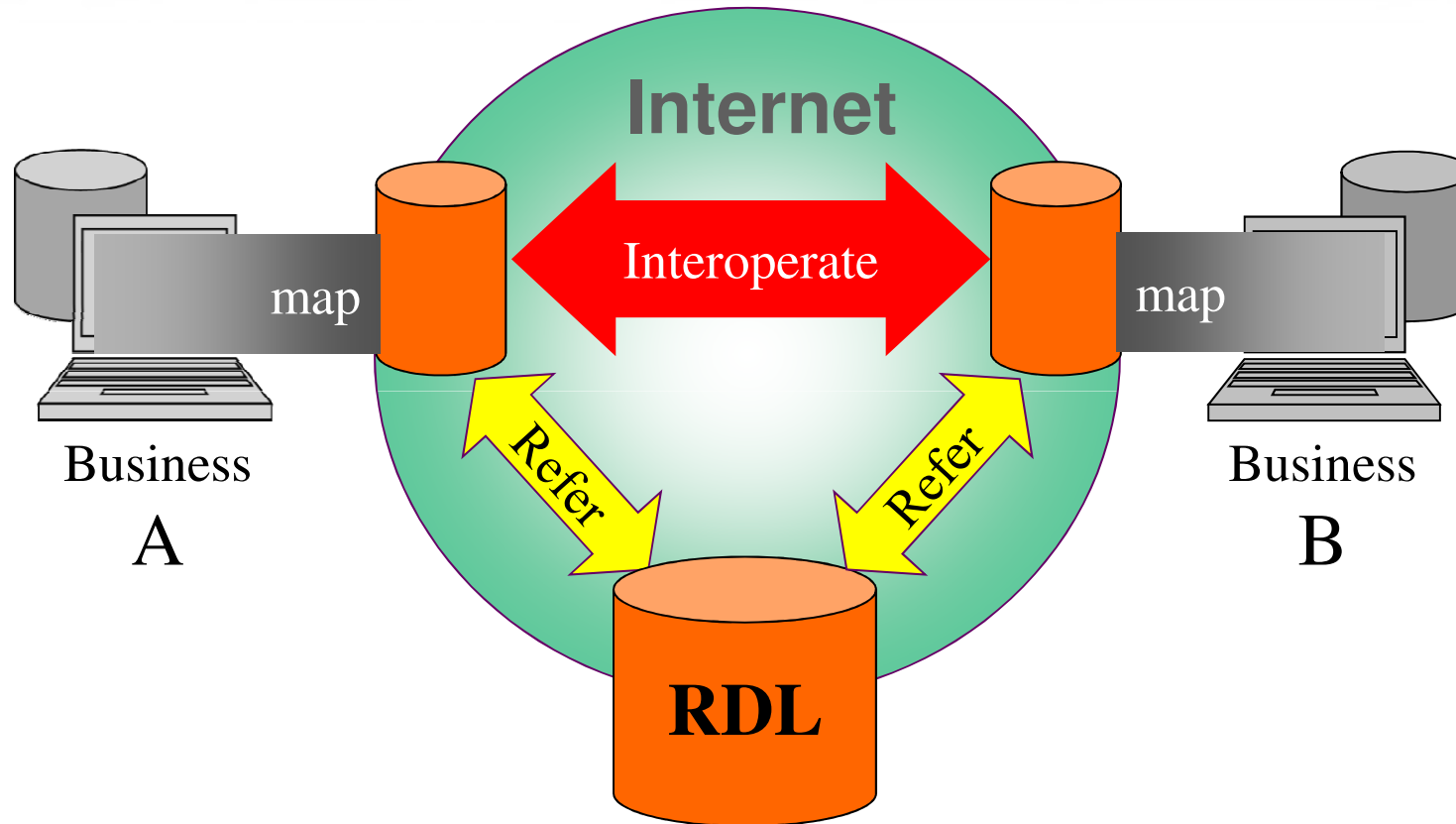
Integrated Operations (IO), ICT and the 5Is



The Purdue Reference Model



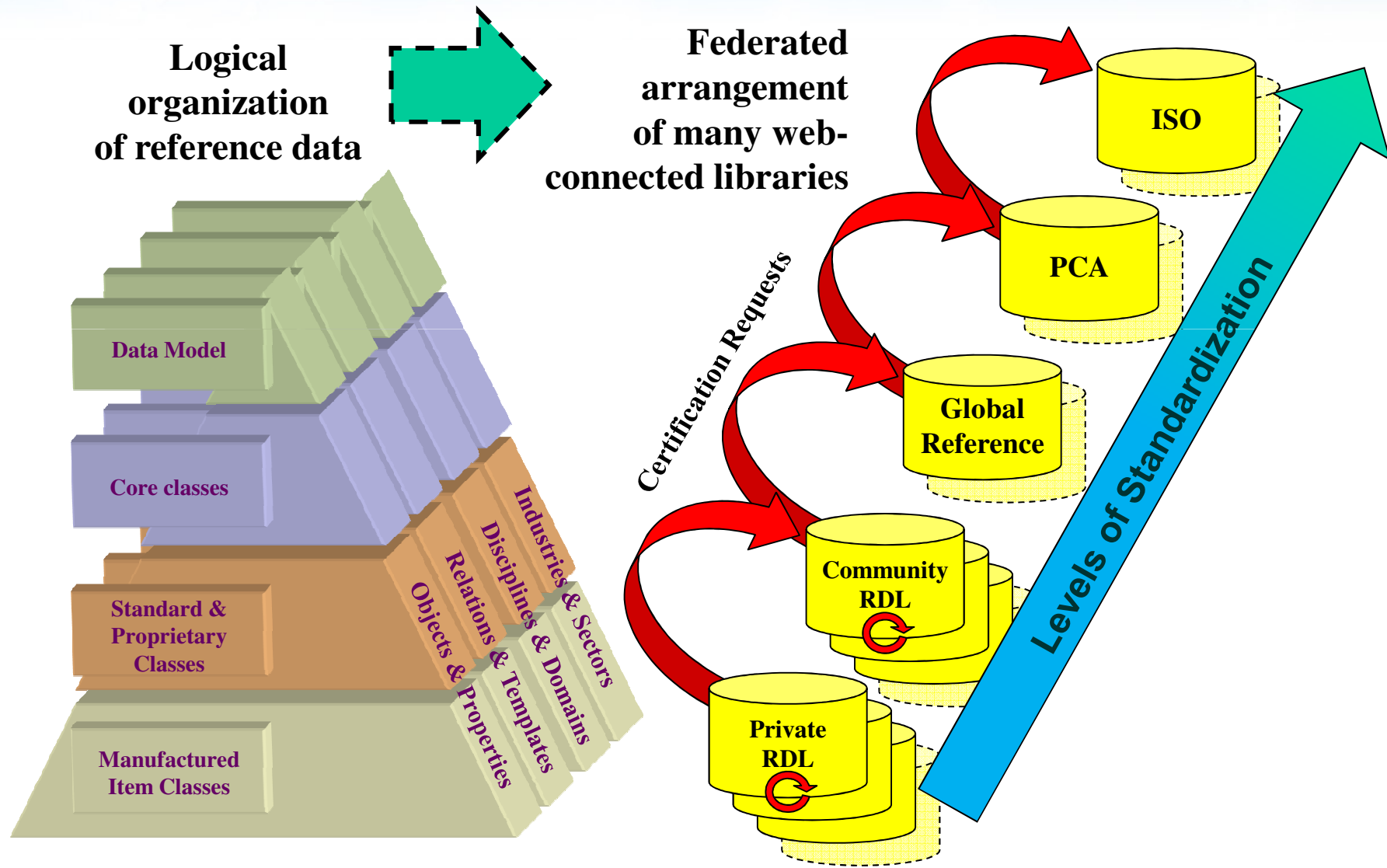
ISO15926 interoperability at its simplest



Using *standard shared references* & sharing references used,
reduces business ambiguity & reduces mapping overheads.

Makes interoperability easier and reduces risk & cost

ISO 15926 Reference data architecture



Important Results in 2012 (1)

- **Enhanced and improved the quality of the PCA ISO 15926 Reference Data Library (RDL) through:**
 - JORD
 - EPIM and Norwegian Oil & Gas (OLF) projects
 - Collaboration with OpenO&M/MIMOSA - The joint SIGs and the OGI pilots
 - Integrated Operations for the High North
 - Work of Special Interest Groups (SIGs)
 - Collaboration in ISO - Enhanced and improved reference data and templates for systems engineering

Important Results in 2012 (2)

- **Acquire a new Reference Data System and Service Procedures**
 - Developed a production version of the JORD Endpoint on a commercially supported server
- **Special Interest Groups (SIGs)**
 - Have increased PCA staff support for the Technical Advisory Board (TAB) and the SIGs
 - Re-establish the TAB

Important Results in 2012 (3)

- **ISO Standardization**
 - ISO 15926-6 TS has been sent to ISO for publication and ISO 15926-11 TS will be sent for ballot by the end of 2012
- **Added 2 new members**
 - Rio Tinto and Top Quadrant
- **One Service Level Agreements has been signed**

ISO 15926 - Integration of Life-Cycle Data for Process Plants including Oil and Gas Production Facilities

- ISO 15926 – 1: *Overview and fundamental principles*. IS ed. 1 published in June 04
- ISO 15926 – 2: *Data model*. IS ed. 1 published in December 03
- ISO 15926 – 3: *Ontology for geometry and topology*. TS ed. 1 published in April 09
- ISO 15926 – 4: *Initial reference data*. TS ed. 1 published in October 07
- ISO 15926 – 6: *Scope and methodology for developing additional reference data*
TS sent for publication September 12
- ISO 15926 – 7: *Template Methodology*. TS published October 11
- ISO 15926 – 8: *OWL Representation*. TS published October 11
- ISO 15926 – 9: *Implementation methods for the integration of distributed systems – Façade implementation*. TS planned complete 2013
- ISO 15926 – 10: *Abstract Test Methods*. TS planned complete 2014
- ISO 15926 – 11: *Simplified Industrial Usage*. Under development, based on existing industrial usage guidelines. TS planned complete 2013
- **ISO 15926 – 12: *ISO 15926 as OWL 2 implementation with named graphs***. Proposed
- ISO 15926-5 has been replaced by an **annex to ISO TC184/SC4: *Procedure for development and maintenance of reference data in database format***

Special Interest Groups (SIGs) - Mandate

The SIG shall ensure that the industry gets access to reference data of very high quality by contributing to:

- Making recommendation for further enhancement of reference data within its domain
- Quality assurance and formal approval of all changes and enhancement of the RDL within its domain according to ISO procedures, ISO 15926 Parts and PCA's rules and procedures
- Developing and maintaining ISO 15926
- Establishing good dialogue arenas with all interested parties in the industry, in research and educational institutions and the authorities, and to clearly communicate the industry's position on key issues in this field
- (A few "special" SIG's with mandates beyond this.)

Special Interest Groups (SIGs)

Active Special Interest Groups:

- Modeling, Methods, and Technology
 - In co-operation with iRING
- Drilling and Completion
 - In co-operation with EPIM Reporting Hub
- Production and Reservoir
 - In co-operation with EPIM Reporting Hub
- Operation and Maintenance
 - Joint SIG with OpenO&M / MIMOSA
- Instrument and Control (>>> & *Equipment & Valves*)
 - In co-operation with iRING (& *FIATECH*)
- Geometry (2D & 3D)
 - In co-operation with FIATECH and iRING
- IT Architecture
 - Joint SIG with OpenO&M / MIMOSA
- TAB (Technical Advisory Board) – technical coordination of SIG activities

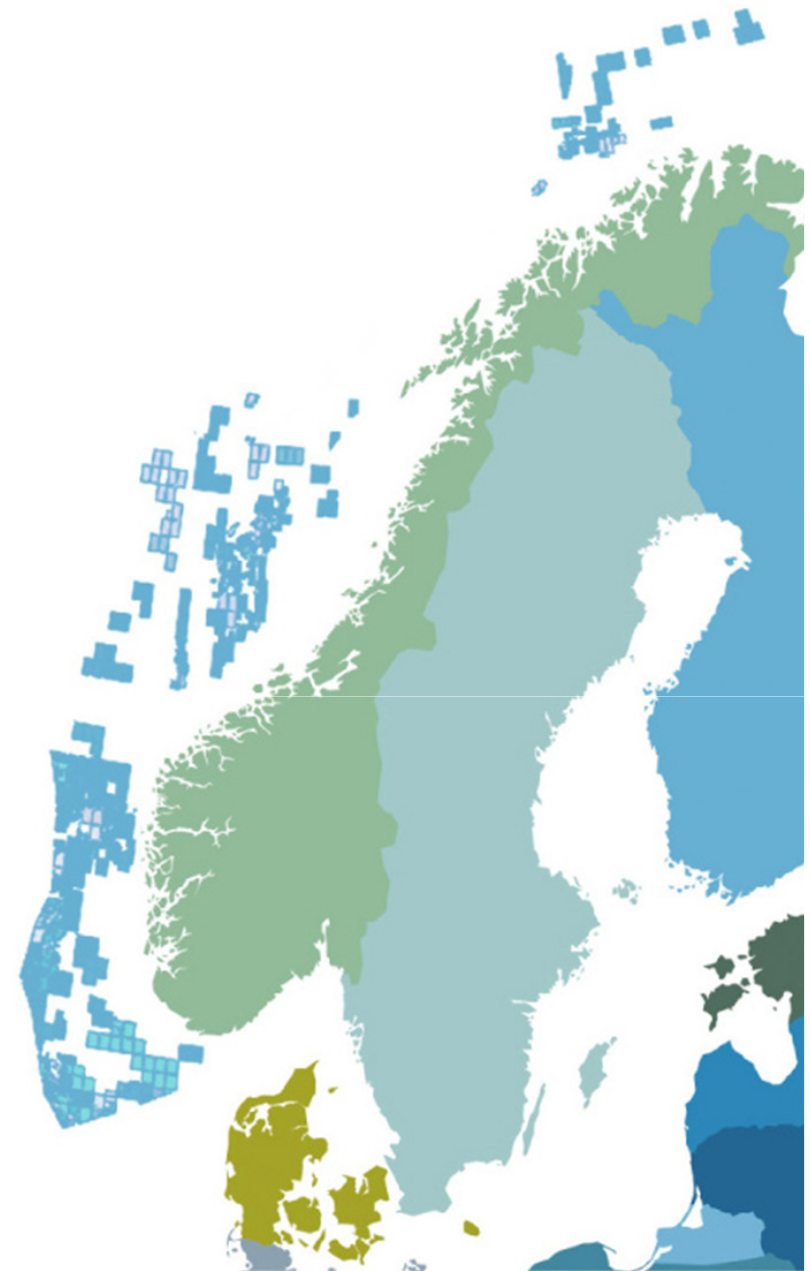
More information: <https://www.posccaesar.org/wiki/Sig>



E&P Information Management Association

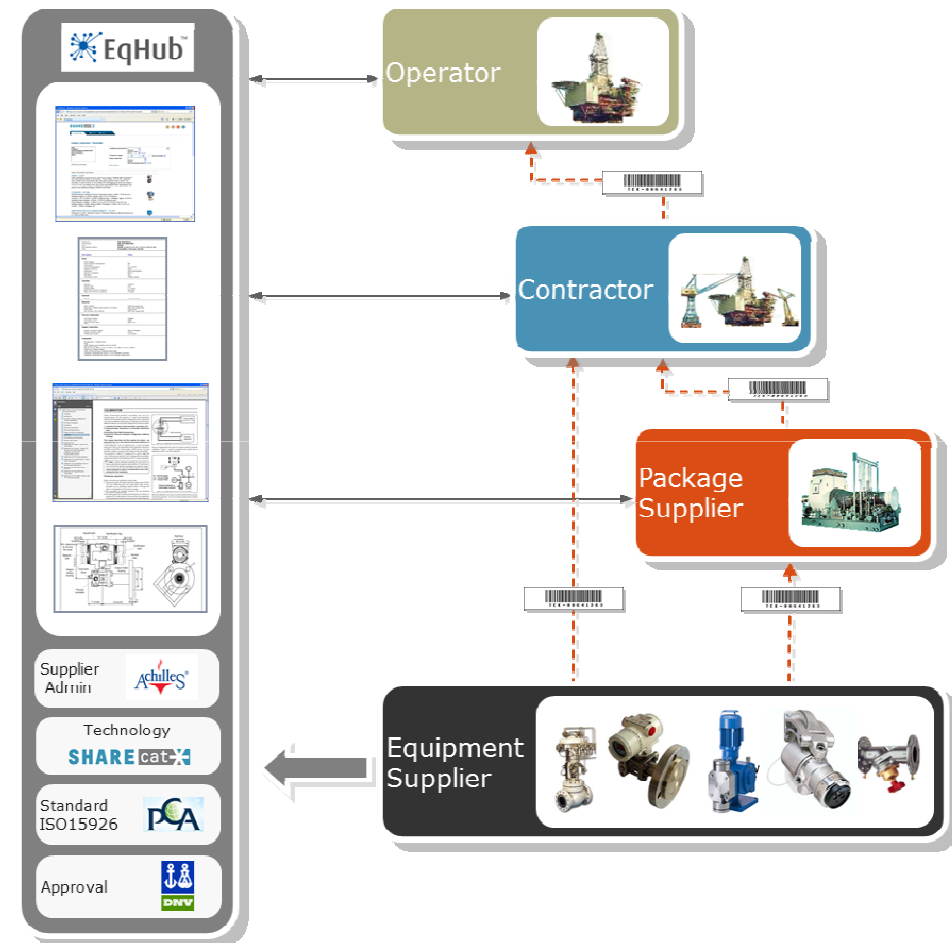
EPIM is the instrument for the operators on the Norwegian Continental Shelf to secure efficient information sharing among all relevant stakeholders by providing cost effective and user friendly common digital solutions based on international standards

- License2Share (L2S)
- EPIM EqHub
- EnvironmentWeb (EW)
- EPIM ReportingHub (ERH)
- EPIM LogisticsHub



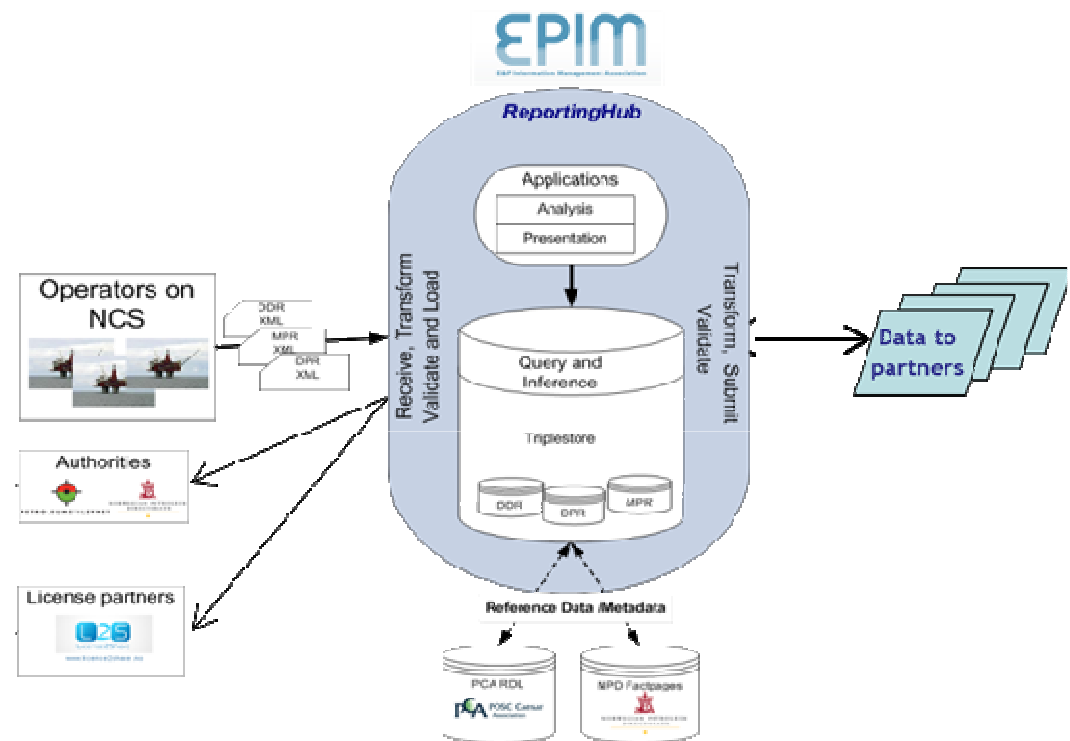
EPIM EqHub Project

- EqHub is a library of quality controlled technical information for standard equipment used in the oil & gas industry
- It is a joint industry solution to reduce cost and time spent on documentation, related to equipment procurement
- EPIM owns and operates the EqHub solution
- EqHub shall be based on PCA ISO 15926 ontology
- The EqHub solution is supported by Achilles, SHAREcat Solutions, PCA and DNV

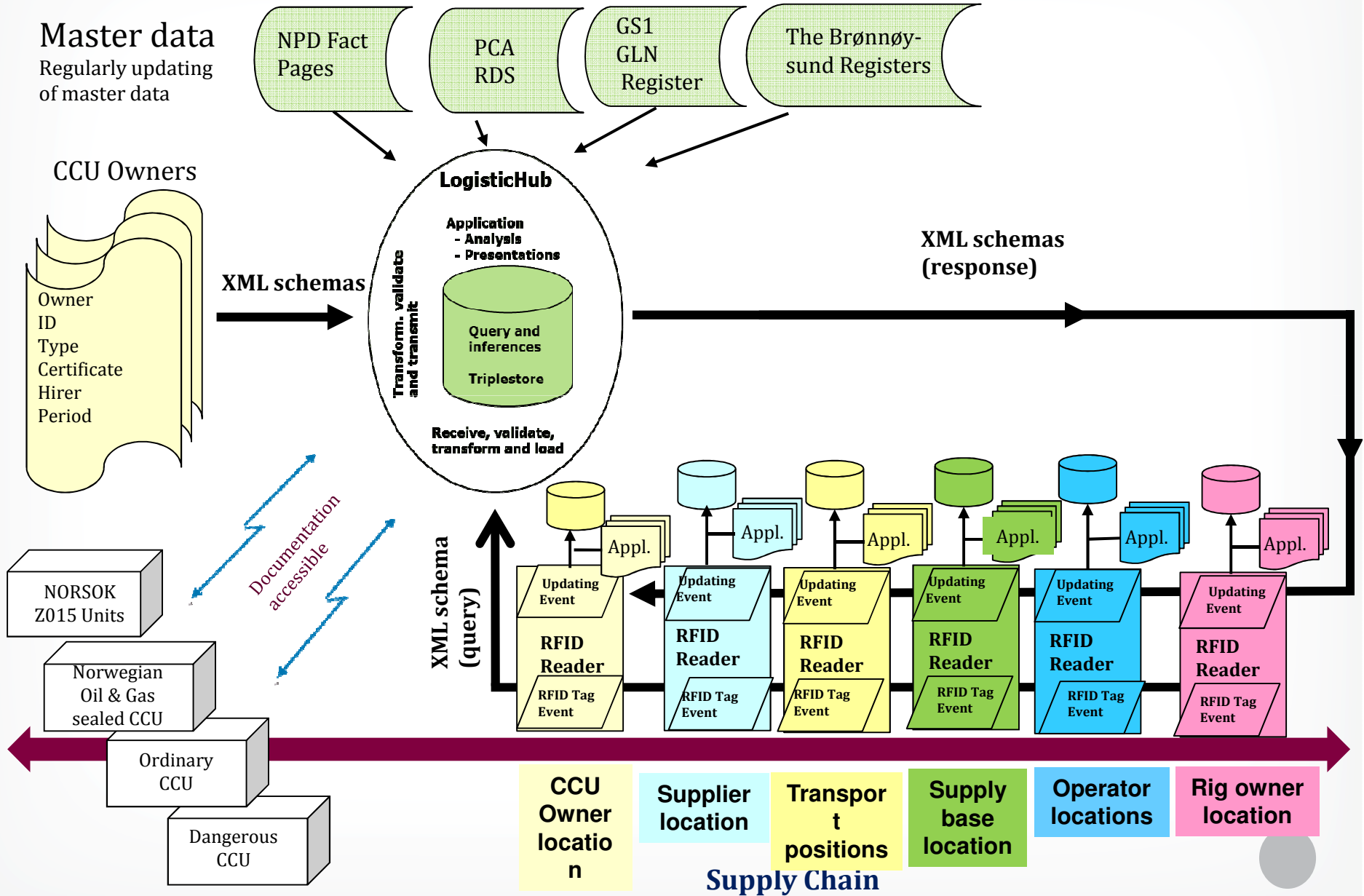


EPIM ReportingHub (ERH) - Phase 1

- Receive drilling and production reports from operators on the NCS, validate, store and send them to authorities and partners
- Provide drilling and production data to the partners on request
- Is flexible for changes in the reports and easy to extend to new types of reports
- Are based on NPD Fact Pages and PCA ISO 15926 ontology



LogisticsHub – A schematic overview



Optique™



UiO : **University of Oslo**



SAPIENZA
UNIVERSITÀ DI ROMA



FREIE UNIVERSITÄT BOZEN
LIBERA UNIVERSITÀ DI BOLZANO
FREE UNIVERSITY OF BOZEN - BOLZANO



National and Kapodistrian
UNIVERSITY OF ATHENS



SIEMENS



Facts about Optique

- ▶ Large-scale integrating project (IP) under FP7-ICT Objective 4.4 Intelligent Information Management
 - ▶ 155 proposals in total (IP+STREPS)
 - ▶ Optique ranked 2nd, 14 of max 15 points
 - ▶ 35 IP proposals, 2 funded
- ▶ Total budget: 13 800 000 €
- ▶ EU contribution: 9 760 000 €
- ▶ Duration: 4 years
- ▶ Start: November 1 2012
- ▶ Annual reviews in December
- ▶ Annual plenary meetings in May/June

Turnaround times: weeks → hours

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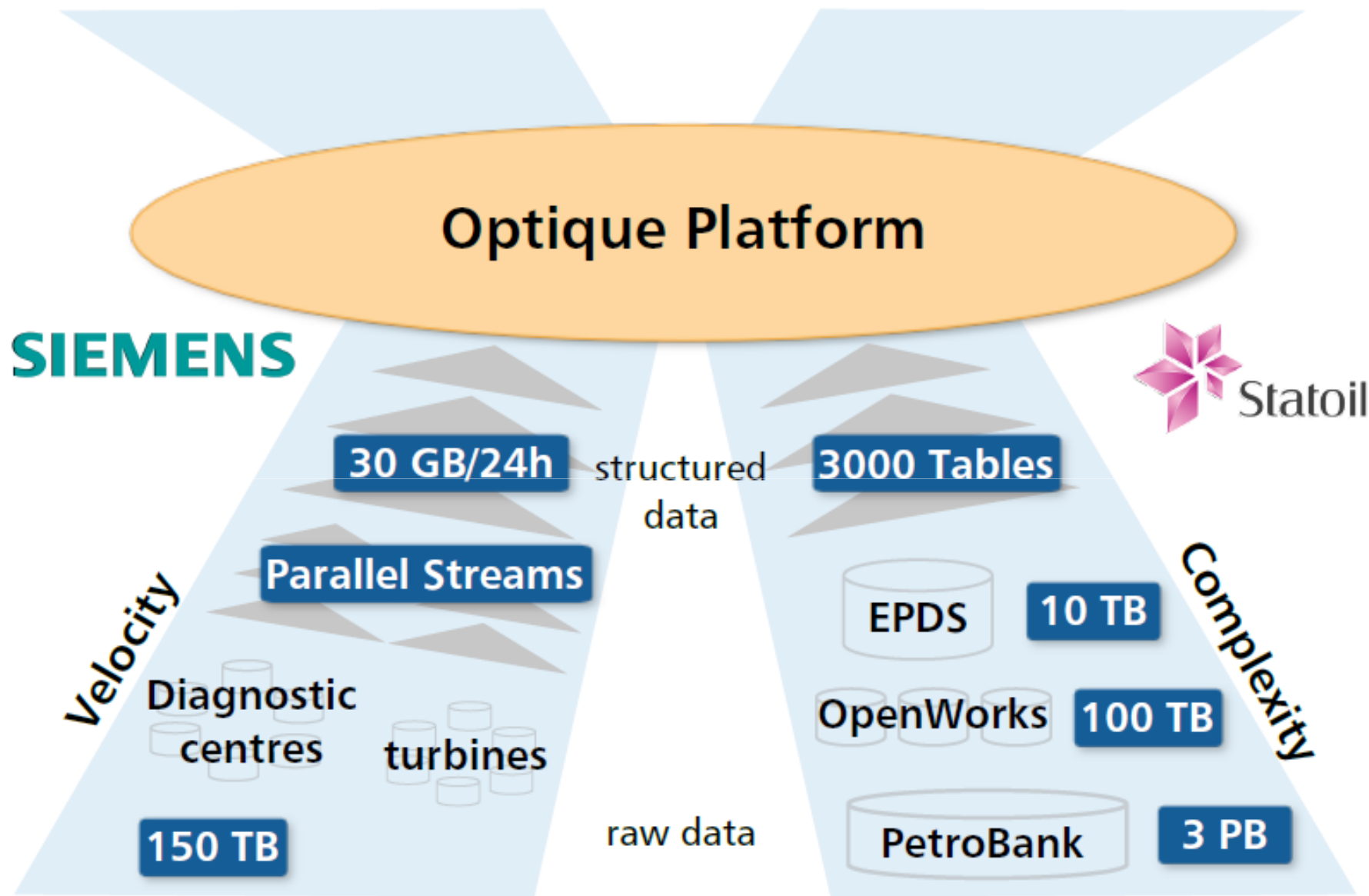


Up to 80% time
on data access

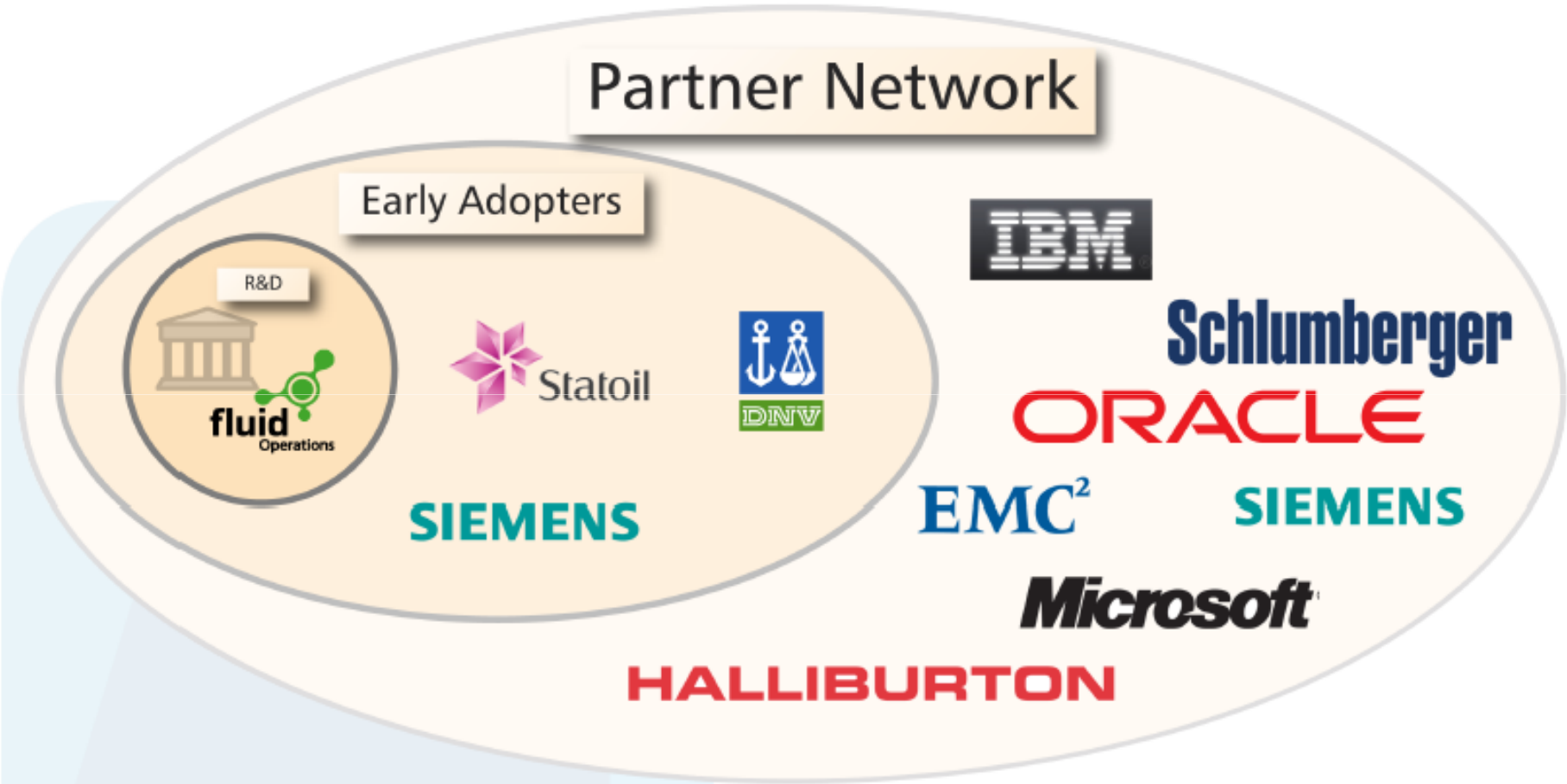


Up to 70% time
on data access

Time that should be freed for core tasks!

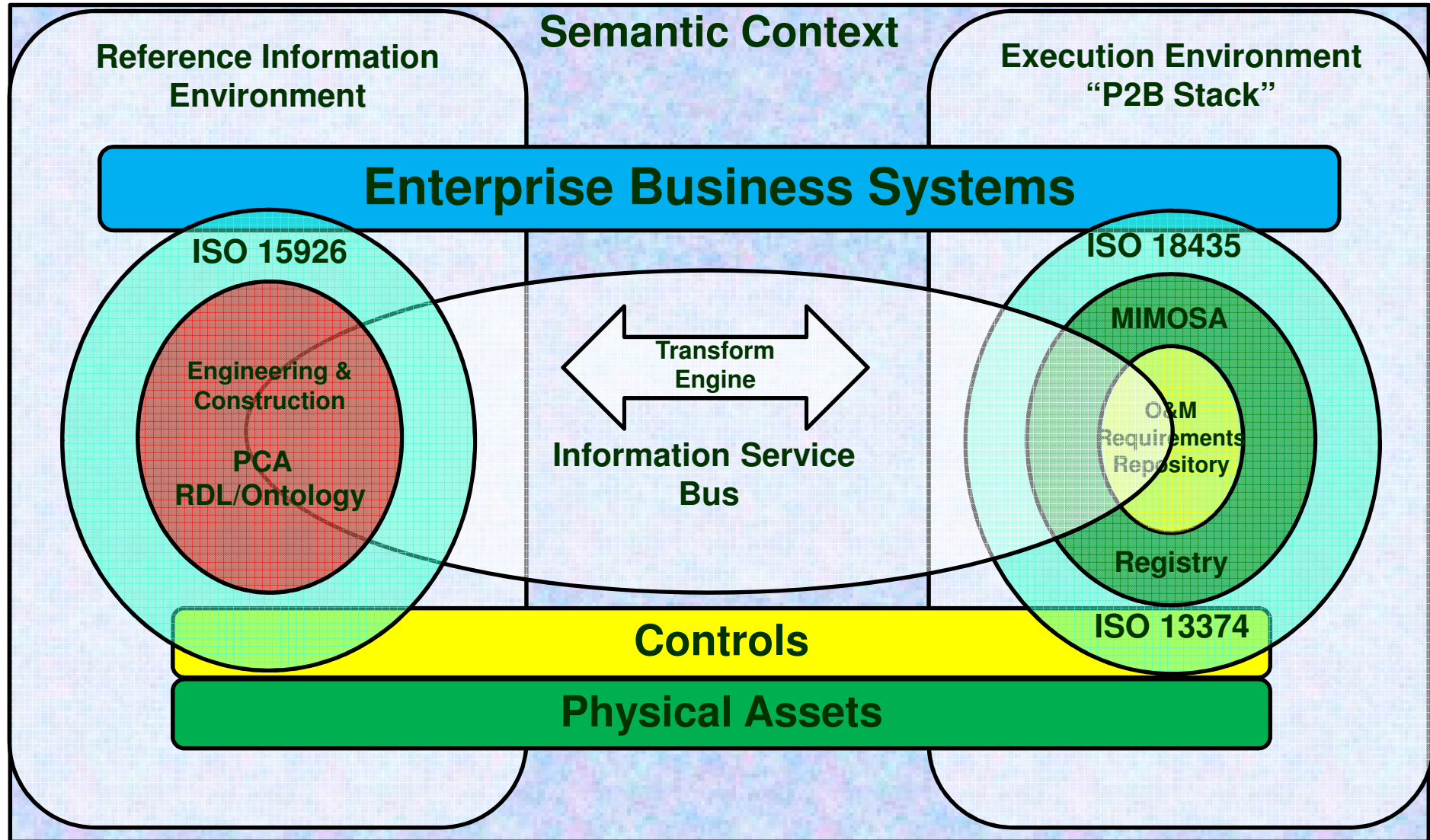


Exploitation through the Optique Ecosystem





Oil and Gas Interoperability (OGI)



Standards Leadership Council (SLC)

For the upstream Oil & Gas Industry

Members

Organization	Senior Executive	Comments
Energistics	Jerry Hubbard	
MIMOSA	Alan T. Johnston	
The Open Geospatial Consortium (OGC)	Mark Reichardt	
International Association of Oil & Gas Producers (OGP)		Observer
OPC Foundation	Thomas Burke	
PIDX International	Anthony Aiming	
The Pipeline Open Data Standard Association (PODS)	Janet Sinclair	
POSC Caesar Association	Nils Sandsmark	
Professional Petroleum Data Management Association (PPDM)	Trudy Curtis	
Troika International	Jill Lewis	
W3C	Frank Chum (Chevron)	Observer

Standards Leadership Council (SLC)

For the upstream Oil & Gas Industry

Objectives:

- Identify areas of intersection to avoid creating duplicate or conflicting standards
- Identify opportunities for synergy, so we can build on our successes together.
- Better deliver the value proposition message for standards implementation
- Ensure maximum member benefits through participation in standards organizations

Established:

- February 24, 2012 in Houston

Meetings in the SLC:

- In 2012 two meeting has been held and one is planned November 14-15 in Oslo

Conferences:

- A one day conference was held in Houston on June 28, 2012. The next conference is planned in Europe in 2013

Summary

- ISO 15926 and the PCA ISO 15926 RDL are implemented:
 - Used for information handover since 1996/1997 (ETAP, BP & Shell and Åsgard, Statoil)
 - Used in more than 100 capital projects
 - Big implementations in 2011-2012 (Bechtel and other EPCs)
 - Used for Integrated Operations since 2006 (Tyrihans, Statoil, Daily Drilling Reports, Daily and Monthly Production Reports, Norwegian Continental Shelf)
 - Used for integration between operations & maintenance and engineering since 2011 (OGI pilot)
- Enhancements and improvements are necessary
 - JORD – We need more participants
 - Continuous improvements of the RDL through project and SIGs
- Participation and co-operation is necessary in order to accelerate the work