

ISO15926 Reference Data & the JORD Project (Joint Operational Reference Data)



Joint Meeting - Houston 22nd to 24th February 2011

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Representing :  POSC Caesar Association - **FIATECH** Member

Realizing Open Information Interoperability – ROI²

ISO15926 Reference Data & JORD - Agenda

Some essential background

- Understanding the scope of Reference Data
- History of the PCA RDS and Sponsorship
- Collaboration with FIATECH & increasing demand for RDS

The JORD Project

(Joint Operational Reference Data

where joint = PCA & FIATECH ... & ? ...)

- Aims & Status
- Scope & (some) Technical
- Business Model



Synopsis:

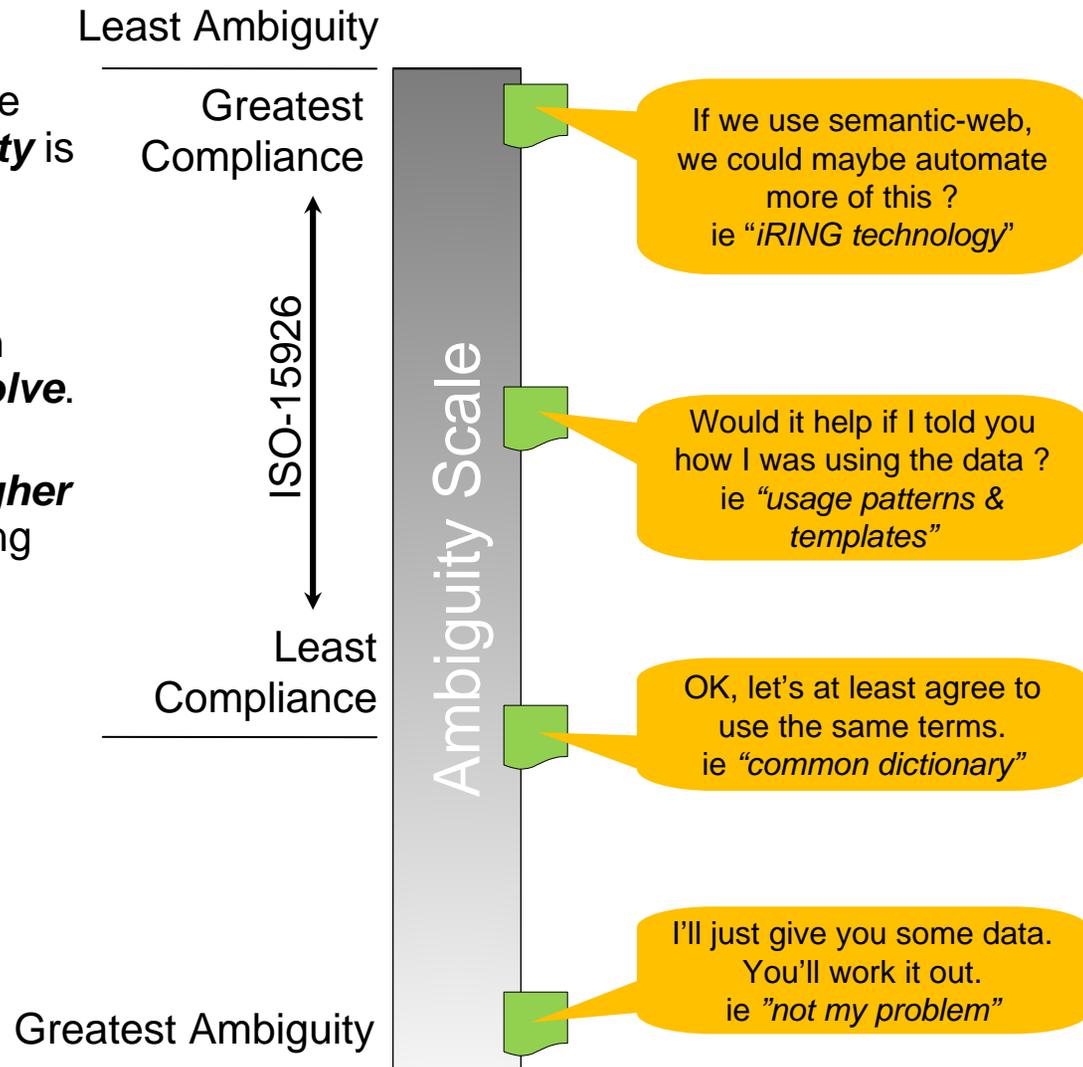
Use of ISO15926 to achieve integration and interoperation between organizations, systems and applications depends entirely on shared reference data defining both terminology and business usage. POSC Caesar (PCA) has been developing and managing Reference Data System and Services (RDS) continuously since it created ISO15926 almost 15 years ago. In the last 5 years, largely driven by collaboration with FIATECH and initiatives such as ADI, IDS, Avalon, Proteus and iRING, demand for ISO15926 and reference data has grown immensely. This goes beyond the original Oil & Gas and Norwegian industry focus of PCA. Nevertheless, funding of RDS to date has been by a few key Norwegian sponsors over and above PCA Membership subscriptions (primarily Norwegian Oil Industry Association, Det Norsk Veritas, Norwegian Defence, and Norwegian Research Organization). The Joint Operational Reference Data (JORD) Project aims to deliver enhanced RDS with a globally sustainable and scalable business model, with development funding shared across a wider range of industrial sponsors and the operation sustained by subscription services offered to all industrial users.



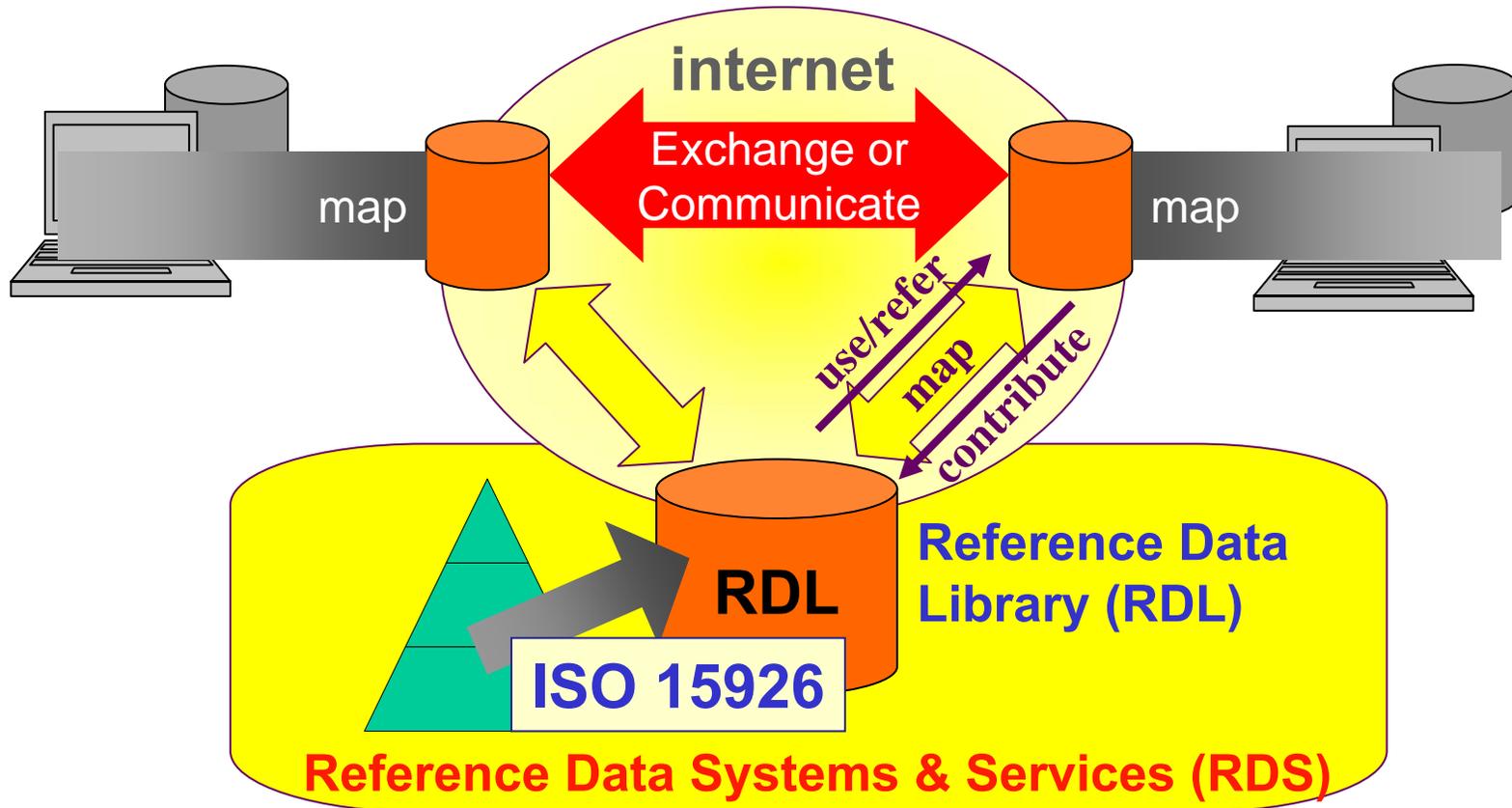
ISO15926 Reference Data

Reducing 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**



ISO15926 interoperability at its simplest

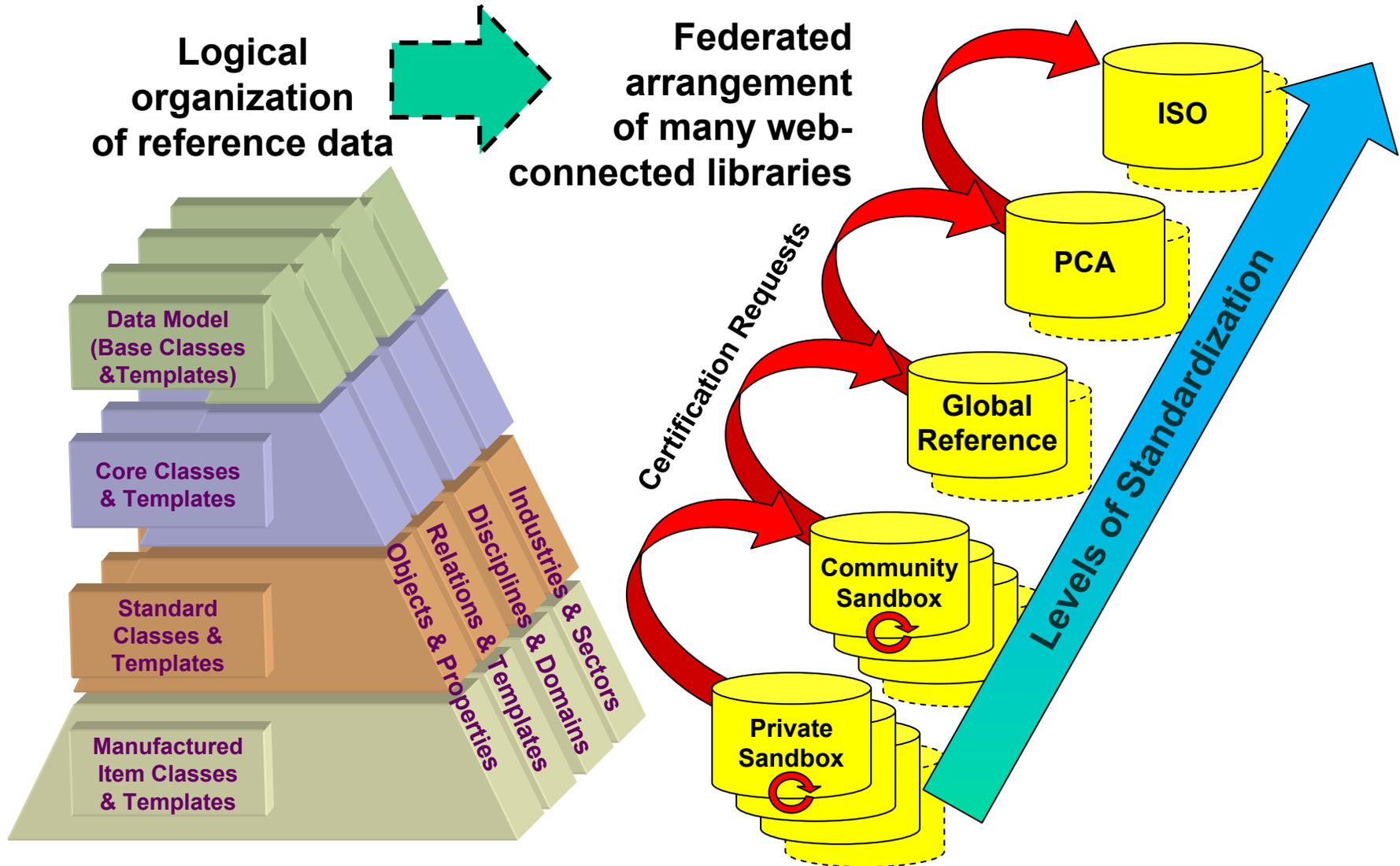


Using shared references & sharing references used, reduces business ambiguity & reduces mapping overheads. Makes interoperability easier *and* reduces risk & cost.

ISO 15926 Integration of life-cycle data for process plants *including* oil and gas production facilities.

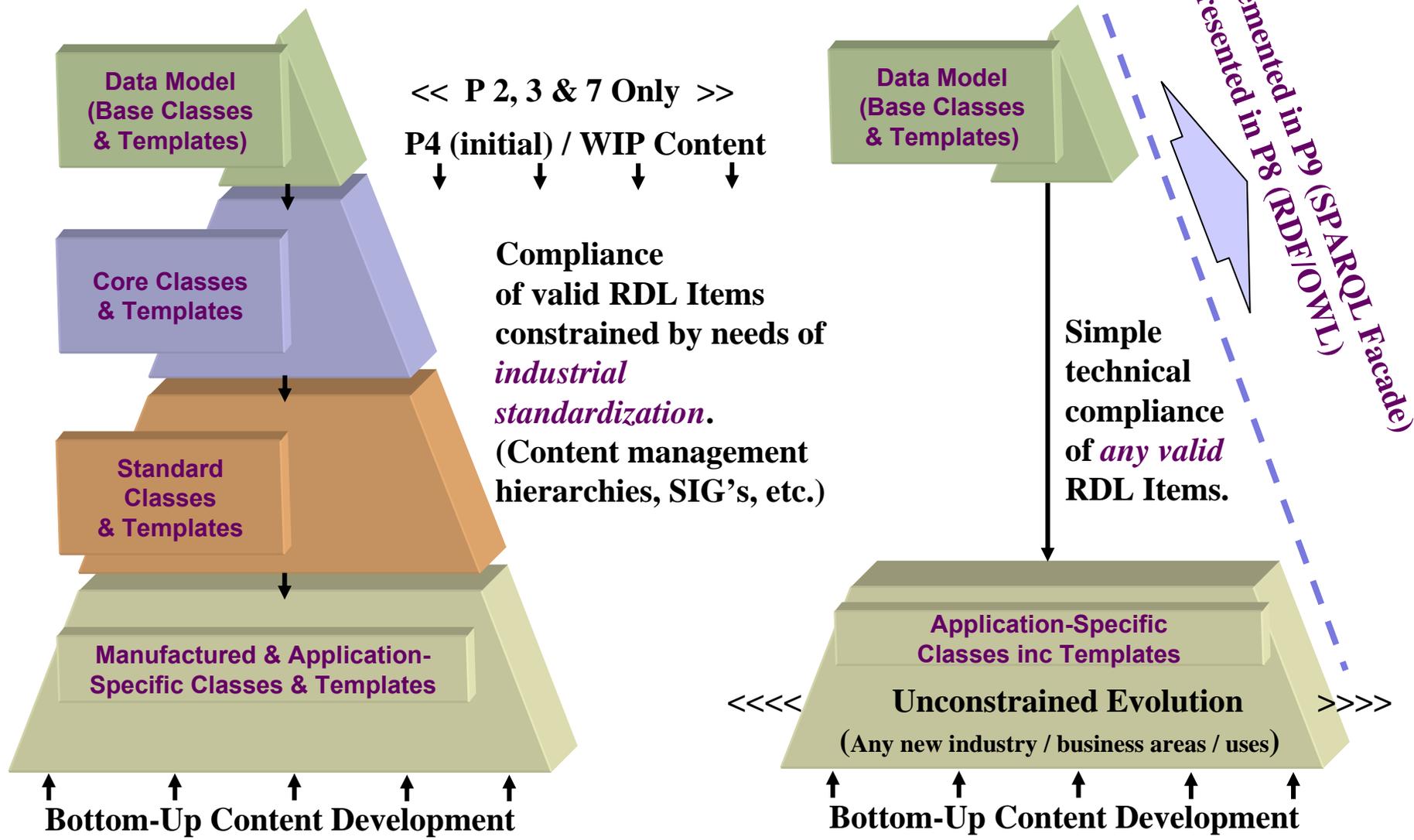
- **ISO 15926 – 1: *Overview and fundamental principles.*** IS ed. 1 published in June 04
- **ISO 15926 – 2: *Data model.*** IS ed. 1 published in December 03
- **ISO 15926 – 3: *Ontology for geometry and topology.*** TS ed. 1 published in April 09
- **ISO 15926 – 4: *Initial reference data.*** TS ed. 1 published in October 07
- **ISO 15926 – 6: *Scope and methodology for developing additional reference data***
CD/TS proposal ready for ballot in 2011.
- **ISO 15926 – 7: *Template Methodology.*** Final TS sent to ISO for publication in 2010
- **ISO 15926 – 8: *OWL Representation.*** Final TS sent to ISO for publication in 2010
- **ISO 15926 – 9: *Implementation methods for the integration of distributed systems – Façade implementation.*** TS balloting planned in 2011
- **ISO 15926 – 10: *Abstract Test Methods.*** TS balloting planned in 2011
- **ISO 15926 – 11: *Simplified Industrial Usage.*** Under development, based on existing draft industrial usage best practices
- **ISO 15926-5** has been replaced by an **annex to ISO TC184/SC4: *Procedure for development and maintenance of reference data in database format***

Federated RDL across many domains



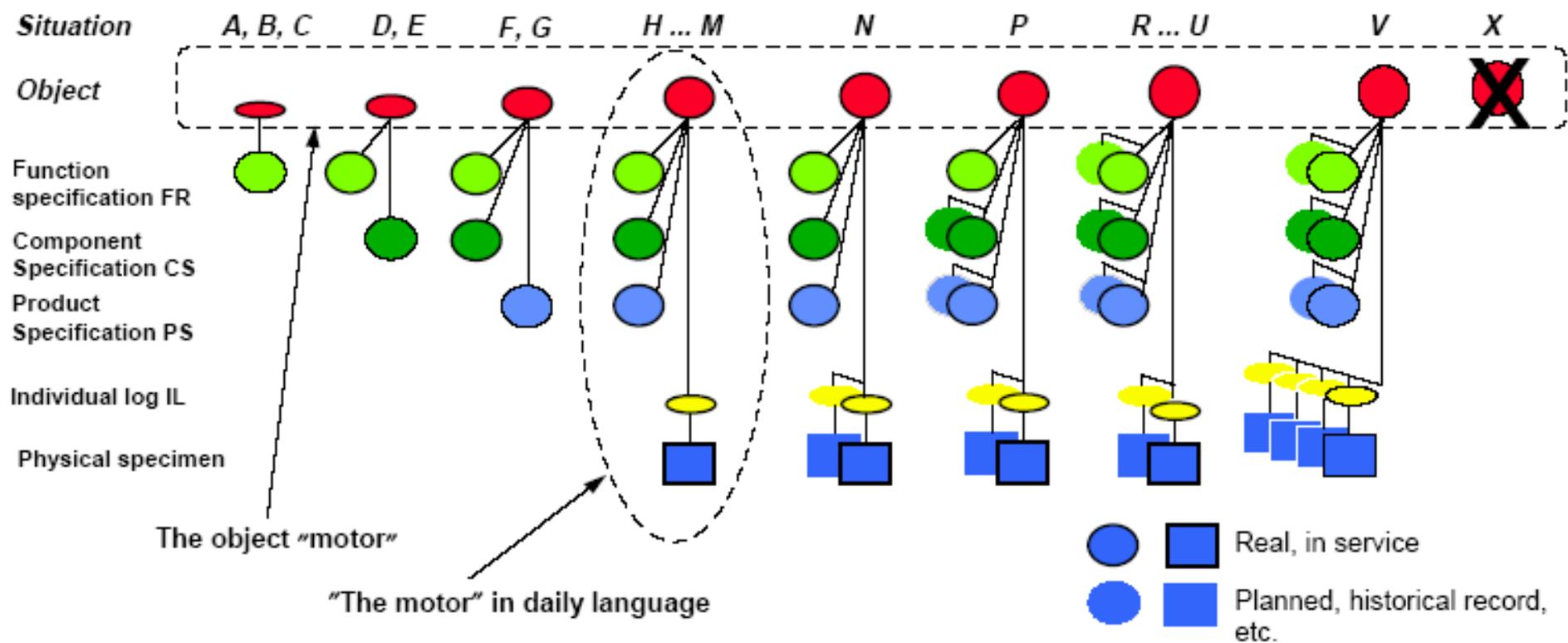


ISO15926 in Reference Data



Example - not reinventing proven standards

The Life Cycle According to IEC 61346-4 (KKS)



Language varies:

FLOC – Functional Location “Tag”

SPEC – Functional & Business Requirements

MODEL – Available Product Specification

ASSET – Realized, Serialized Individual

History of PCA RDS & Sponsorship & History of PCA / FIATECH Collaboration

PCA and ISO15926 Reference Data

POSC-Caesar

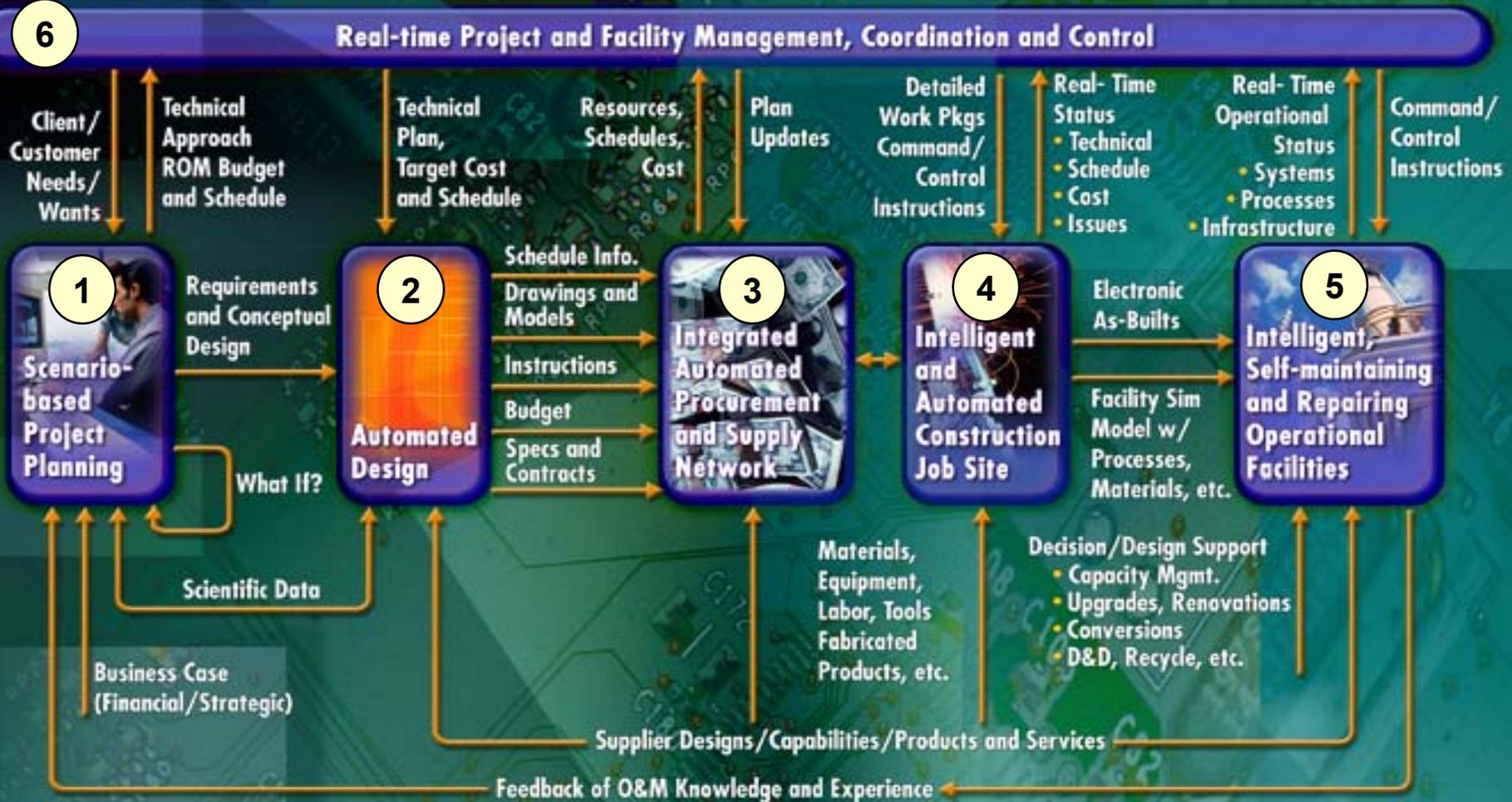
- 1993 to 1995 began as the Caesar project of POSC in 1993 and became PCA, a member association, in 1995 collaborating with PISTEP, USPI, EPISTLE & STEP (ISO10303) AP221 and STEPLib.
- 1996 to 1997 initiated ISO15926 (Integration of life-cycle data for process plants including oil & gas facilities.)
- 1998 to 2009 established and continuously developed and operated the existing PCA RDL (Library) RDS (System) primarily **sponsored** by Norwegian Research Council, Norwegian Defense, Norwegian Oil Industry Association, and Det Norsk Veritas (as well as content created by member projects).
- Q1 2009 declared live with RDS (System **and** Services) providing support for RDL users with defined SLA (Service Level Agreements).

PCA is open for collaboration & has several collaborations with



..... Specifically focussing on FIATECH collaboration here >>

FIATECH Capital Projects Technology Roadmap Vision



7 New Materials, Methods, Products and Equipment

8 Technology- and Knowledge-enabled Workforce

9 Lifecycle Data Management and Information Integration

Technology & Application Independent Foundation for Interoperability >>> ISO15926



PCA and FIATECH Collaboration

FIATECH

- 2000 - Arose out of US CII in 2000 - an industry consortium that provides global leadership in identifying and accelerating the development, demonstration and deployment of fully ***integrated and automated technologies*** to deliver the highest business value throughout the life cycle of ***all types of capital projects***
- 2000 - Had an interest in ISO15926 from the start, with the focus (above) on deployment and exploitation, rather than ISO standardization.
- 2005 - Member (DuPont) “Wilmington” meeting fixed FIATECH intentions to adopt ISO15926 as primary component of Element 9.
- 2006 - Initiated the ADI (Accelerating Deployment of ISO15926) project.
- 2006 – ADI participants start to collaborate with members of PCA’s IDS (Intelligent Data Sets) project (*naturally, no formal PCA / FIATECH oversight.*)
- 2007 – Multiple (17) IDS-ADI joint “Matrix” projects arise from joint workshop.

IDS-ADI “Matrix” Projects (2007)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	ACA	AA	
1				EXPRESSIONS OF INTEREST																											
2				Software Suppliers												Owner-Operators / EPC / AEC															
3	Champion		PROPOSED PROJECTS																												
4	M. Halloran (AVEVA)	1	P&ID information exchange between vendors	AS	AA																										
5	A. Laud (Noumenon)	2	3D model information exchange between vendors																												
6	A. McBrien (Fluor/Bentech)	3	P&ID / 3D exchange (and more common data flows / interfaces per BIDG)	AS	AV	BE	COA		INN	IGR	MET	NO					B&R	C2			DOW						HA	INT			
7	O. Paap (Fluor)	4	Consolidate existing / new / waiting WIP / OIM content ? Individual vendor content contribution (eg Bentley)	AS	AV	BE							NO		OR						CHV										
8	E. Botterill (INGR)	5	Collaboration on Datasheets content (for purchase) including e.g. API & AEX, COBIE, IFC's			AV	BE			INN	IGR	MET	NO	NRX			B&R	BT	C2	CHV	DOW				FT			INT	ZA		
9	J. Bonnell (NRX)	6	Business-facing Materials 15926 Primer, "home" web-pages, incremental cost-benefit of compliance levels, why templates ?	AD					DS		IGR			NRX	OR		BT										FT		HA	INT	ZA
10	J. Bourne (NRX)	7	Implementer-facing Materials how-to's, train the trainers, training materials, lessons learned.																												
11	O. Paap (Fluor)	8	Each vendor makes their own ISO 15926 Part 7 interface.	AD																											
12	(per project)	9	Inter Vendor business projects (eg Design to Materials) built according to the ADI / IDS way, contributing to WIP.																												
13	I. Glendinning (INGR)	10	Re-cast Compliance as Business Exchange Capability				BE						IGR			NRX															
14		11	Planning testing & certification schemes																												
15	K. Adamson (Bentley)	12	Cats & Specs exchange of this data, contributing to WIP	AS	AV	BE	COA	DS	INN		MET	NO									C2						FT				
16	Richardson (Zachry)	13	Getting equipment & systems suppliers involved - explore existing associations (ARC, HTRI, etc.)																				CP	DP			GM		INT	ZA	
17		14	Minimum set of info for procurement (PO; Std set of mat'ls)																												
18	A. Brown (CH2HILL)	15	Interface to 3D review tools - platform neutral to bring any 3D graphic into view																												
19		16	Gen'l schematics interfaces (e.g. InTools, elect.)																												
20	Y. Crane (Hatch)	17	Document management data exchange																												
21																															

“Matrix123” (P&ID & 3D Exchange)

“Matrix8” (Interface Implementation)

PCA and FIATECH Collaboration

- 2007 to Present – Matrix 123 continues as *Proteus* initiative - Multiple SW vendors collaborating to create standard XML schema interfaces for P&ID and 3D Model exchanges, using Reference Data with increasing 15926 compliance. Most participants also now part of *Geometry SIG*.
- 2007 to Present – Matrix 8 becomes the Camelot project, which is followed by the Avalon project, which spins-off the *iRING* initiative, aiming to achieving full part 7, 8 & 9 compliant use of ISO15926 and Reference Data. iRING continues and a new vendor *iRING Interfaces Project* (IIP) is underway in 2011.
- 2007 to Present – Great *increase in numbers* of companies and projects actively using and attempting to use ISO15926 and Reference Data. Great *widening in the global range of industries* actively participating – Oil & Gas, Upstream & Downstream, Chemical process, Food & Beverage, Power, Generation including Nuclear Power, Utility distribution, General buildings and infrastructure
Exponential growth in demand ... and expectations.
- Q1 2009 – Avalon (iRING) issues a *challenge* to PCA concerning the capability of the existing PCA RDS to support current and future demands.
- Q2 2009 – PCA Board initiates an RDS enhancement initiative
- Q3 2009 – FIATECH Element 9 initiates an RDS enhancement initiative
- Q4 2009 – PCA & FIATECH Boards agree to develop a joint project



PCA & FIATECH JORD Project (Joint Operational Reference Data)

JORD Objectives

- **Scalable:**

- Technical infrastructure for 24x7x365 operation, ever-increasing content
- Critical path no longer dependent on a few specialists

- **Robust & Sustainable:**

- Business model and funding for self-sustaining operation
- RDS Publishing technology fixes / enhancements.
- Governance model for long-term viability

- **Validated:**

- Content validated as consistent
- Implementations validated and certified as compliant

- **Adoption:**

- An organization to enable broad uptake of ISO 15926

JORD - Status

- Existing PCA & FIATECH *Memorandum of Understanding (MoU)*.
- 2006 to 2009 joint IDS-ADI, Matrix, Proteus, Camelot, Avalon projects, *continuing in iRING and SIG's*
 - Greater demand for ISO15926 and reference data use in more industries
 - Greater demand for reference data quality
 - Greater demand for operational services supporting reference data
 - Greater demand for coordination of reference data processes
(to leverage lifecycle value of many individual project investments)
(to clarify compliance and usage)
- 2009 ***commitment*** to create enhanced operational Reference Data Services
 - Sustainable and scalable enhancements to the existing PCA RDS
- Q1 2010 – PCA and FIATECH ***announce*** the JORD Project
- Mar – Aug 2010 – JORD Front End phase creates the ***definition*** of operational RD services and scalable and sustainable business model, and definition of the project to deliver it. Agreed by Steering Group.
- Sep – Oct 2010 – Plan agreed with both PCA & FIATECH Boards for circulation to members. Prospectus created to attract JORD funding. (Invitation to provide funding closes end Feb 2011)

JORD - Project Deliverables

Content development
(outside project scope)

- Instrument SIG
- Geometry SIG
- EELCAT
- Proteus
- EqHub
-

Phase F

- Business model
- Governance model
- Detailed plan
- Prospectus

Phase 1

- Core Content Fixes
- Compliance & Methodology Clarity
- Legacy Technology Fixes
- Detailed Upgrade RFPs

Phase 2

- New technical infrastructure
- Migrate content

By end of 2012

JORD Status - Needing commitment to Phase 1

PHASE	Phasing Overview from original joint high-level plan (Feb 2010)				
	Software (Systems, Tools & Services)	Business (Procedures & Processes)	Core Content (Classes & Templates)	New Content (Classes & Templates)	Ongoing RDL/RDS Operation (OPEX)
Phase E (Existing 2009 & Pre-Agreement)	Existing PCA RDS / mdb / xls / xml / html & Existing IDS-ADI / iRING / p2/7/8/9 triple stores	Existing PCA & FIATECH membership & project activities. Outline planning agreement.	Existing PCA RDL 15926 p3/p4 content & PCA extensions & Existing <i>proposed</i> user content.	Existing PCA RDL	Existing PCA RDS Operational Support SLA
Phase F (Front-End Establishment) <i>July 2010</i>	Nil	Establishing PM. Planning Ph1/Ph2. Funding model. Business-case(s). Creating EL9/15926 "road-map" context.	Nil (<i>Only as funded by existing projects</i>)	Ongoing as existing	Ongoing as existing
Phase 1 (Enhancement & RFP)	Minimum maintenance development of existing mixed systems & tools.	Agree compliance methodology. Synchronization of mixed systems. Create specification for third-party RFP.	Extend Core RDL to Template Signatures <i>Initial set</i> consistent with methodology	New Content Projects & SIG's out of JORD Scope (AEX, EELCAT & Proteus schems <i>budgetted and planned FIATECH projects, but not part of JORD scope</i>)	Enhanced PCA SLA to support Ph1 systems, business & content.
Phase 2 (New Development)	Develop and migrate content to new third-party supported systems & services.	Place contracts for new third-party systems & services.	Nil (<i>Separate funded projects</i>)		New SLA's based on third-party RFP.

JORD Deliverable – Defined Core Services

Read / Export Content	Free to anyone.	Primary Service. All references resolvable to unique content, all readable, exportable (Supported formats include Browser UI, MDB, Excel, HTML, XML and RDF/OWL.) Copyright & licensing apply.
Core Content Mgmt & Validation	Available to initial Subscribers & Sponsors & to Fee-paying service users.	Maintenance and fixes of core content only and testing of proposed changes, etc. (for <i>new</i> domain content, see below).
Support for Users, Projects & SIG's		Maintenance of core procedures and support requests concerning use of core content and processes (For <i>new</i> content processing, see below.)
Create / Read / Export new ID's	Available to initial Subscribers & Sponsors & to Fee-paying service users. (who are also Certified)	Registered subscribers to the management services are free to generate new Global ID's for content in their locally managed Libraries / Sandboxes, etc.
Content Write		Once subscribers achieve a level of certification, they will be able to write content directly (with appropriate meta-data controls on provenance & quality)
New Content & Standardization	Available as fee-paying value-adding services. (Per project / per scope.)	Estimated cost per scope - Price list / rates development possible. Will arise from both Commercial Projects and Collaborative "SIG's".
Certification of Users, Org's, Tools & Interfaces		Estimated cost per scope - Price list / rates development possible. Organized around Compliance Checklist with scopes per BIDG or other transaction sets. (Free & self-certifying components)
Training & Related Consulting		Estimated cost per scope - Price list / rates development possible. <i>(Note that these are services related only to providing and using the core RDS Operations content and procedures. Additional services are supported by commercial consultants in content creation, interoperation and integration solution planning and implementation.)</i>

Plus, operational support services, business and back-office functions.
 Other than core 15926 technical & coordination functions – all infrastructure and substrate technologies & services competitively outsourced.

Market of customers with differing interoperation / exchange / integration / interoperability needs with multiple tools and mixed levels of maturity.

JORD supports the whole, **PROVIDED** mixed maturity levels are truly recognized and validated.

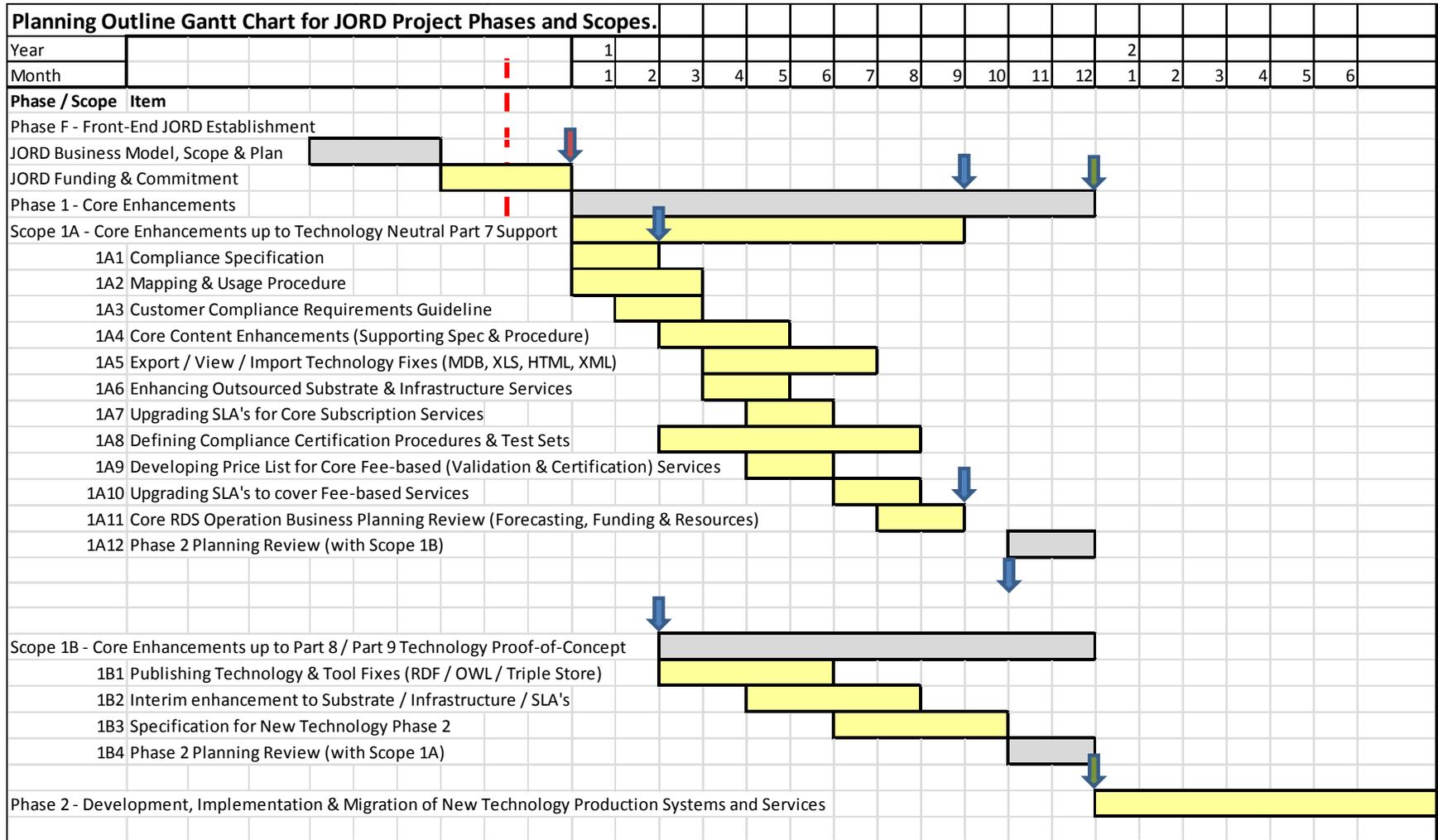
Minimum Core “JORD” Services
On which others are dependent
Free-read access, not-for-profit.
Sustainable, scalable. Core
reference content management.
Core validation & certification, etc.
Funded by fee-based services.

Core
RDS Ops
Coordination
(Shared Body of
Knowledge)

Value-adding, for
-profit services.
Consulting
Solution creation.
Content creation.
Implementation.
Handover, IM, KM
services etc.

Note interoperation via shared
& federated references is **NOT**
exclusive to ISO15926

JORD - Planning Schedule from Phase F



Note - Phase 1 has two scopes 1A (technology-neutral) and 1B (Part 8/9 technology-specific) **in parallel**, for distinct resource and funding priorities.

JORD - Key *Technical* Scoping Items

- **Technical – Consolidate core compliance and usage methodology.**
 - (Based on existing PCA & FIATECH – IDS/ADI – guideline documents.)
 - (Consolidate, clarify & formalize authority on compliance.)
 - (Technical, but implementation-technology-neutral.)
- **Technical – Consolidate core content (supporting the methodology)**
 - (Core Templates consistent with methodology & compliance rules.)
 - (Technical, but implementation-technology-neutral.)
- **Technical – Fix and support mixed content publishing systems.**
 - (Specific tools and technologies.)
 - (Plus develop specification and ITB / RFP for *future* upgrade needs.)

(Additional technical detail in the project definition.)

COMPLIANCE - Technical Aspects

ORGANIZATION OF LEVELS IN PROPOSED CHECKLIST FOR PCA/JORD COMPLIANCE SPECIFICATION		EXISTING IDS-ADI COMPLIANCE GUIDELINE Axes (para 4.1 to be updated)	MATURITY CHECKLIST OPTIONS (Brief designation only. Refer to relevant guideline paragraphs.)
Technical	Modelling & Mapping - PART 7 Semantic Precision	4.1.1 (ie according to IDS-ADI Industrial Usage Procedure, and now ISO NWI-Part11)	DICTIONARY&TYPING LEVEL - Identification, Specialization & Classification template signatures only.
			SHORT-CUT RELATIONS LEVEL - As Dictionary Level plus CoRwS or other (eg <i>Gellish</i>) "Short-Cut" template signatures .
			FULL ONTOLOGY LEVEL - Any / all valid template signatures supported.
		AND	
	Implementation- Representation Technology	4.1.2	Implicit / document / formatted / tabular / spreadsheet / non-XML schema.
			Explicit Proprietary XML Schema
			RDL Registered XML Schema
			PART 8 RDF/OWL Representation
		AND	
	Implementation - Referencing Technology	4.1.1 / 4.1.2	RD URI's resolved and self-contained in schema representation.
			Dependency on RD URI's being resolvable
		AND	
Implementation - Interface Technology	4.1.2	File Exchange only	
		Specific API or Query other than Part 9 / SPARQL	
		Part 9 SPARQL Façade	
	AND		

COMPLIANCE - Business Capability

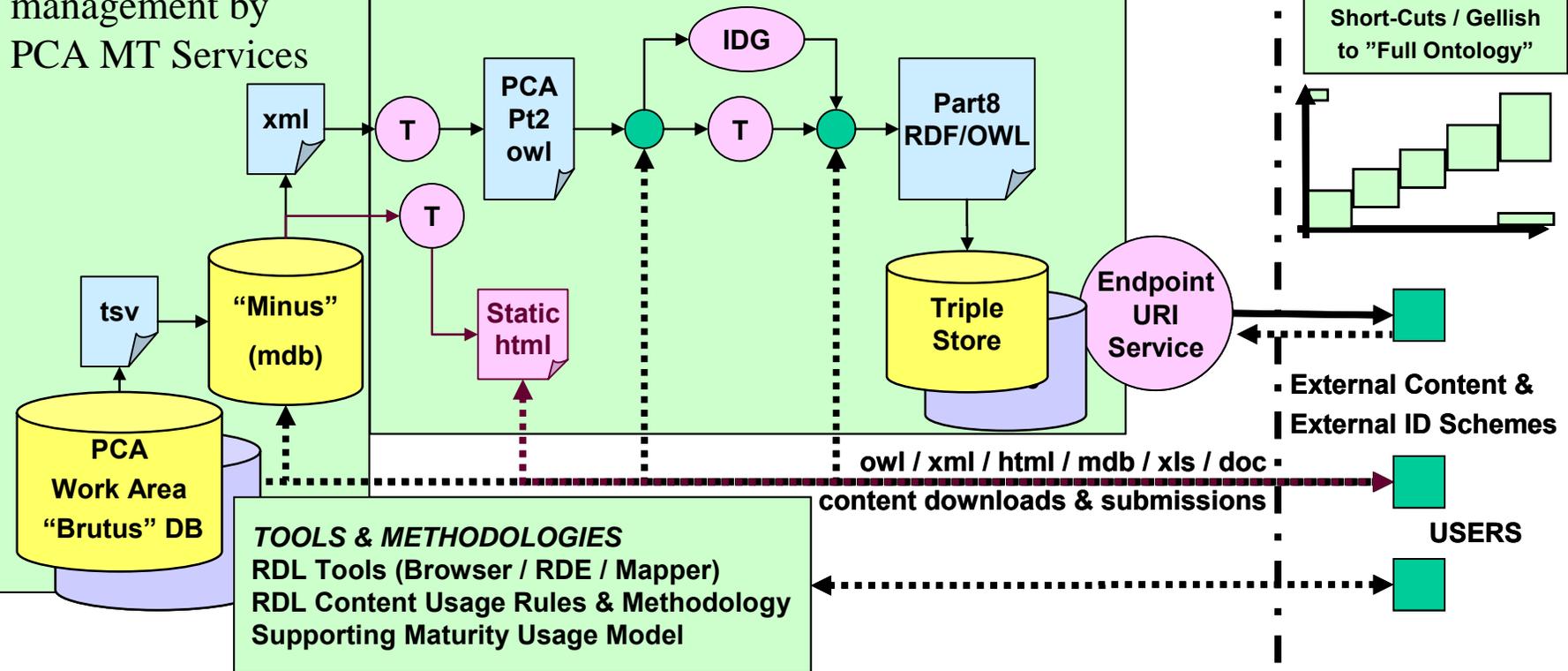
Business	Industrial Standardization Level	4.1.4	Sandbox Level (Community or individual organization with no externally certified management.)
			Industry Level (Global certifying authority other than PCA/JORD)
			PCA/JORD Level
			ISO Level
		AND	
	Domain / Payload Subject-Matter Scope	BIDG	Explicit Scope (Per BIDG or otherwise declared use case.)
		AND	
	Change Management Meta-Data Scope	4.1.3	Identity - all data elements & sets identifiable / explicitly addressable
			Version - identification of succeeding / superceding versions of data elements & sets explicit
			Status - business status explicitly attributed / associated with each identified & versioned data element & set.
		AND	
	Change Management Functional Capability	4.1.3	Export - Component interface publishes or permits read / query of internal content
Import - Component interface accepts write to internal content, or reads external content.			
Seed - Component populates empty instance with imported content losslessly			
Consolidate - Component populates existing instance with new imported content losslessly, correctly handling versions and consolidating duplicates.			
Reconcile - Component maintains reconciliation of external identifiers when updating existing instance internally.			

JORD - Publishing Technology Legacy

Phase 1 – Fix & manage legacy / hybrid situation.
 Phase 2 – Migrate to Avalon / iRING architecture and retire legacy.

Synchronization, exceptions & change management by PCA MT Services

Enhanced per PoC / Tools & Technologies
 IDS-ADI / iRING / Avalon / DNV/ IOHN...



ID's & Triples / Relationships & Mappings

- ID's (URI's) are fundamental to the Reference Data architecture and
- Fundamentally all mappings and all relationships are *Triples*.

ID#1 (URI)	Relationship ID (URI)	ID#2 (URI)
<MyObject> (URI) "MyPump101"	<is a> (<i>Classification</i> relationship URI)	<RDL Class> (RDL Class URI) Centrifugal Pump
<My String or Symbol> (URI) " Центробежный насос" (?)	<is a name for> (<i>Identification</i> relationship URI)	<RDL Class> (RDL Class URI) Centrifugal Pump
<MyClass> (URI) "MyCatalogueXYZPumpType"	<is a subClass of> (<i>Specialization</i> relationship URI)	<RDL Class> (RDL Class URI) Centrifugal Pump

These are indicative only. In practice these are "proto-templates" in Part 7 terms (one for each Part 2 relationship entity). Everything else is built from these.

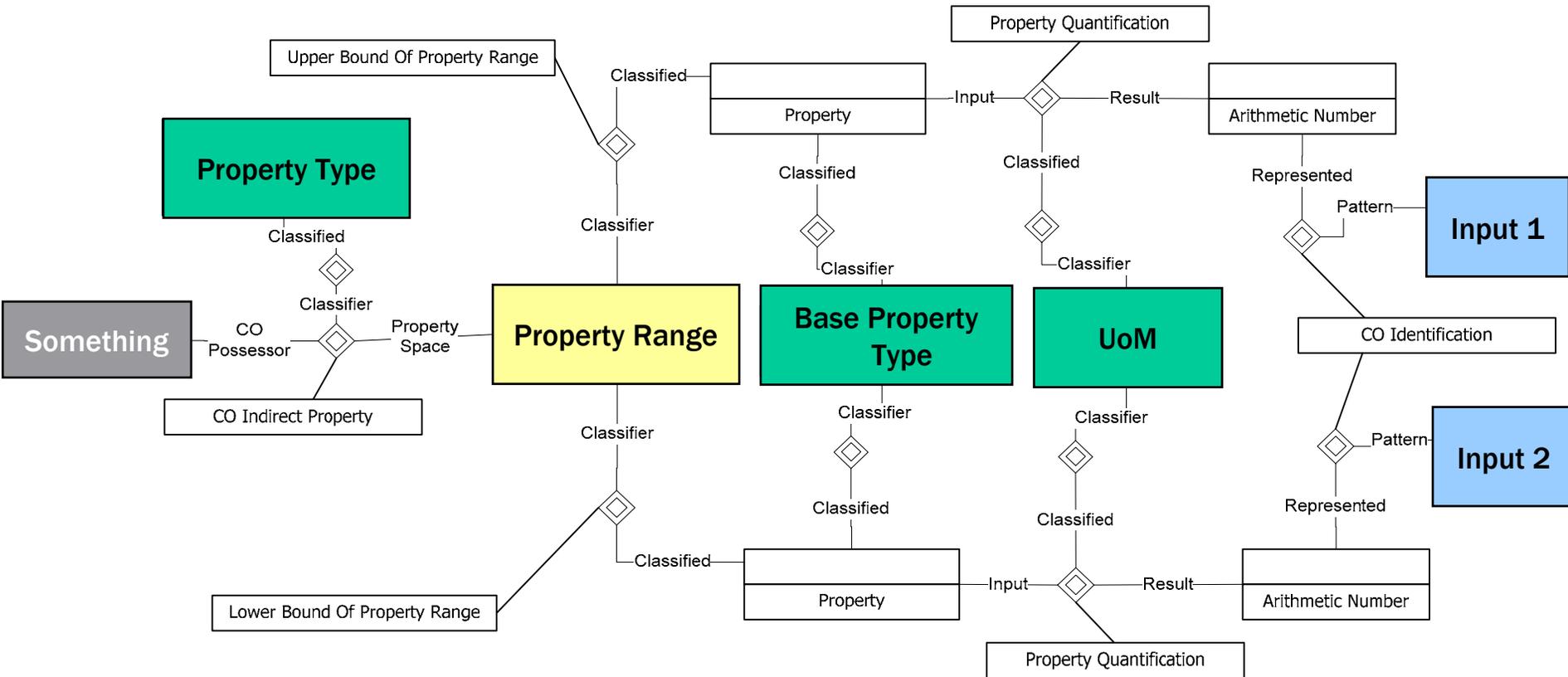
A range on the data sheet

SHARECAT		Datasheet	
		Transmitter, Pressure, Electric	
Document Number	: 28-1A-KOG-I54-27500-0012	Revision	: 1
Plant/Platform	: Test Installation 2	Process Datash. No.	: N/A
Tag number	: PT -42-0304	System	: N/A
SerialNo	: N/A	Range From	: 0
SetPoint Low	: 10 barG	Range To	: 110
SetPoint Hight	: 71 barG	Range Unit	: barG
P & ID	: 28-1A-KOG-C78-00275-0002	Area	: N/A
Line/Equipment no.	: XX-42-0002	PO:	: T12-M022-ME-01
Service description	: SCALE INHIBITOR. PUMP OUTLET		
Unique no.	TEK-00018117	<small>1. Accepted 2. Accepted with comments incorporated 3. Not accepted, revise and resubmit</small>	
Manufacturer	EMERSON PROCESS MANUFACTURING		
Type	3051CG		
Manuf. Partno.	3051CG-5-A-2-2-A-1-K-B41		
Class	Transmitter, Pressure, Electric		
Area			
Explosion protection	: EEx ia		
Gas-group	: IIC		
Temperature class	: T5		
Approval authority	: BASEEFA		
Certificate	: BAS 97ATEX1088 X		
IP-Class	: IP66		
ATEX group	: II		
ATEX category	: 1		
ATEX explosive atmosphere	: G		
Ambient temperature	: -40 - 85 °C		
Dimensions and Weight			
Weight	: 4.7 kg		
Function			
		Seal material	: Glass filled TFE
		Process connection material	: Stainless steel
		Non process cover material	: 316
		Flange bolt material	: 316 AUSTENITIC
		Drain/vent material	: Stainless steel
		Diaphragm material low pressure	: 316L

ATEX category	: 1
ATEX explosive atmosphere	: G
Ambient temperature	: -40 - 85 °C

Dimensions and Weight

ISO 15926 Property Range Template



'Something' has 'Property Type' with 'Property Range' of 'Base Property Type' defined by 'Input 1' and 'Input 2' with 'UoM'

Template Signature Mapping Interface / Wizard

Select (RDL Class or) Project Data

Select from standard / customised list of RDL Instance

Template Class

Select from standard / customised list of RDL Instance

Select from standard / customised list of RDL Instance

Temp. Inst. #		Property Type	Property Range	Base Property Type	UoM	Input 1	Input 2
#nnn	3051CG	Ambient Temperature	(Created by the system)	Temperature	C	-40	85

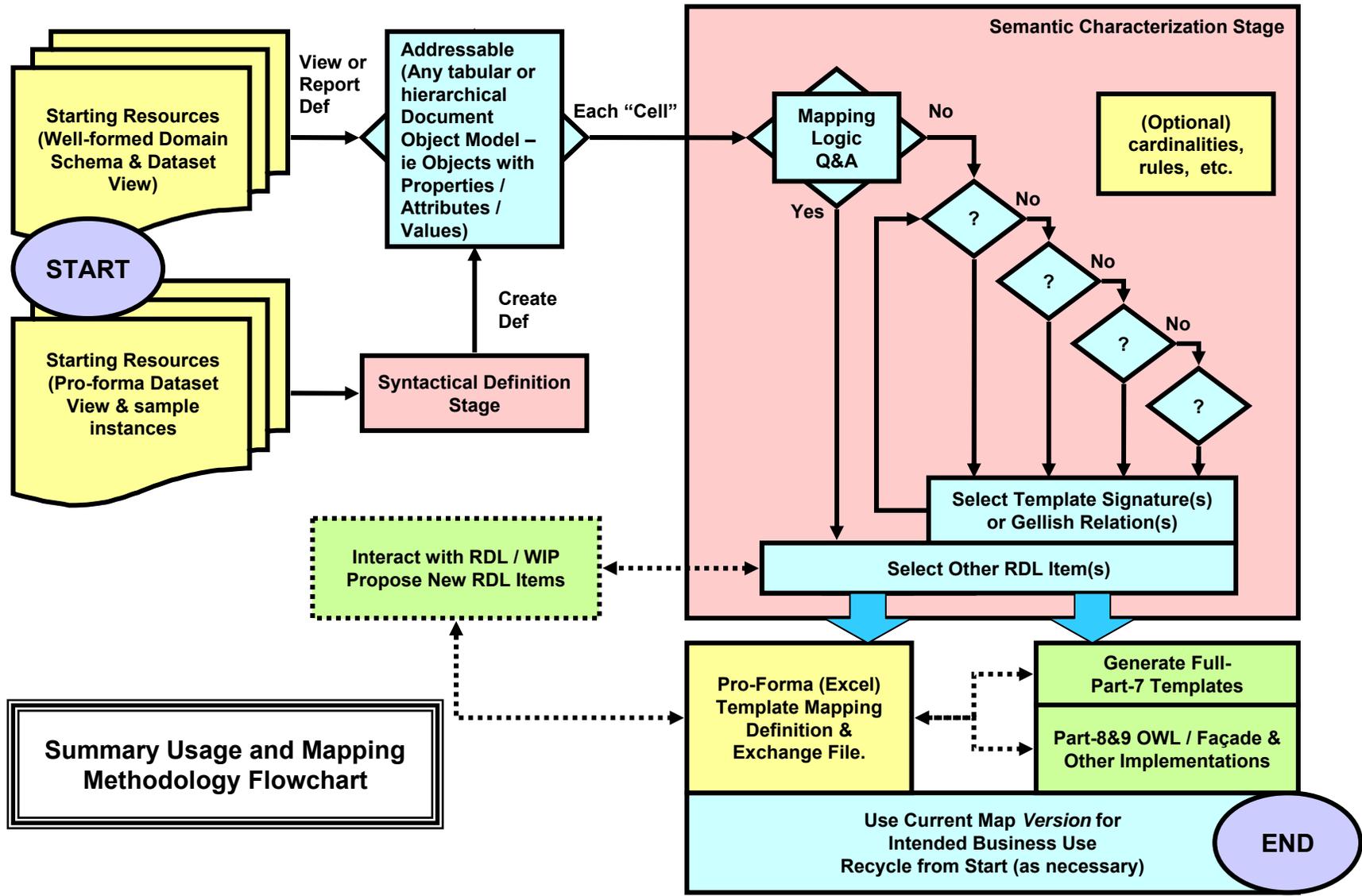
A “Mapping Guide” already exists, to select templates and populate their signature ... Without ever seeing Part 2 (or even Part 7). This is being upgraded to support an initial set of Templates in the RDL.

And note that the method can apply to any data representation.

JORD - Core Methodology

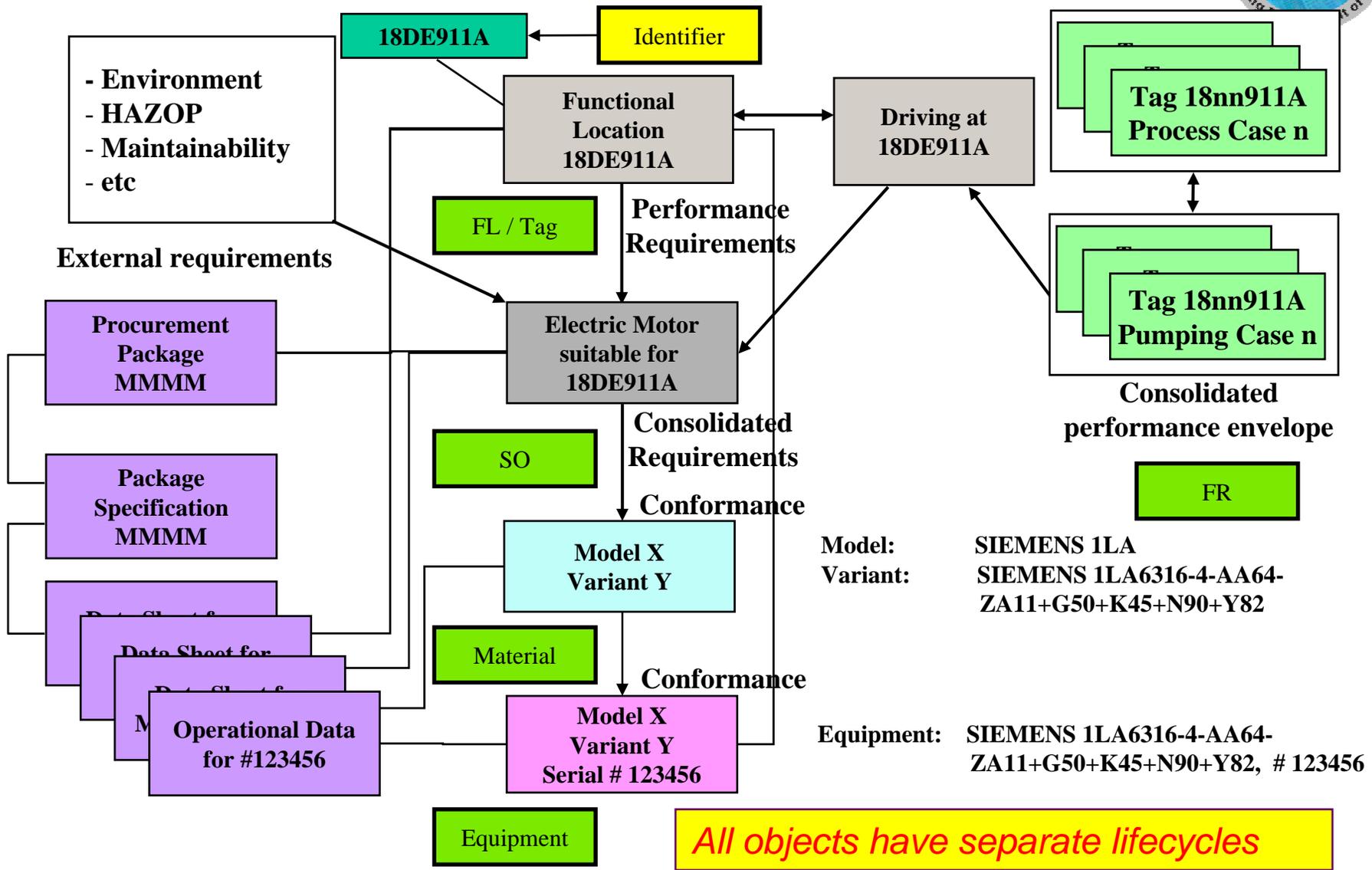
- Compliance Checklist v7 (.XLS) applies. Read with these notes ...
- This checklist is derived from *existing* IDS-ADI Compliance Guideline, created in 2006 and updated during 2007, 2008 & 2009.
- The first axis “Part 7 Semantic Precision” is derived from *existing* IDS-ADI Usage and Mapping (Characterisation) Methodology, which is itself consolidated from 2006 PCA IDS Methodology and earlier EPISTLE / PCA / PISTEP / USPI best-practices, with updates as recent as 2010 EqHub project experience.
(For this procedure as a *Workflow* see over)
- This is just “Two Pages” – the devil is in the detail – the document behind this will be updated and consolidated as Phase 1
- NOTE “Maturity” aspect. The overall technology-neutral process is solid, satisfying a wide range of needs. The focus is *the business domain user*. Collecting FAQ’s would be useful in establishing explanatory updates needed in the formal documents.

JORD - Methodology as Workflow



JORD - Usage and Mapping *Q&A Logic*

- Key items to note Bearing in mind we are establishing the intended ***technology-neutral*** semantics of the business user ... these need to be understood by anyone commenting on the validity of the procedure (*but ignored by anyone actually using it*). (Implementors have separate, independent choices to make – on orthogonal axes in the compliance guideline.)
- Class-of-Class, Class and Individual (Generic Modeling) structures ... and the IEC61346 (Engineering) guidelines ... the so-called “4-level architecture”. Refer to separate presentation / tutorial sessions on the usage and mapping methodology.
- Note in the methodology workflow process, the interaction with the RDL is two-way Using RDL Items which exist in the library (as Template Signatures and Role Fillers), but also proposing new related RDL Items, whether in local RDL’s or in the public library. The core methodology is fundamentally dependent on core content existing in the RDL – hence the second core technical scope item ***Core Content***.





JORD - Initial Project Funding ~ \$1.5m

SERVICE BAND	COSTS (US Dollars)	SERVICES / BENEFITS			
		Content Read Access	Basic Core Support Services	Additional Support or Fee-Based Core Services	Operational Management Committee Representation.
General Public	None	Free / Unlimited	None	None	None
Base Subscriber (Annual)	OO Org = 25K / year Large Org = 10K / year Small Org = 5K / year <i>Reducing after 3rd year – possibly minimal registration or zero in sustainable case</i>	Free / Unlimited	40 hours included per year in first 3 years. (Normal support to fee-based value-adding services thereafter.)	None. (Fee-based value-adding services.)	None. (Membership voting rights only.)
Supplementary Initial Subscriber (Annual)	OO Org = 50K / year Other Org = 25K / year <i>Discontinued after 3rd year.</i>	Free / Unlimited	40 hours included per year in first 3 years. (Normal support to fee-based value-adding services thereafter.)	Additional 40 hours included per year in first 3 years. (Fee-based value-adding services beyond this.)	Representation per subscription year.
Full JORD Sponsor (Contract)	OO Org = 250K USD lump sum (or 100K annually for 3 years) Other Org = 100K USD lump sum (or 40K annually for 3 years)	Free / Unlimited	40 hours included per year for 3 years sponsorship contract plus 2 further years. (Normal support to fee-based value-adding services thereafter.)	Additional 80 hours included per year for 3 years sponsorship contract plus 2 further years. (Fee-based value-adding services beyond this.)	Representation for 3 years sponsorship contract plus 2 further years.

Why Participate?

- If you plan to use ISO 15926, you need a scalable and sustainable Reference Data Service
- You could wait for others to fund it and build it
.... or you could help have it built now, the way you need it.
- Once the Reference Data Service is in place, each of us gets 100% of the benefit ...
... but none of us will have paid more than a fraction of the cost.
- The broader we share the cost, the faster we each start to see benefits
- Let's capitalize on the momentum that has built

Conclusions

- Significance of ISO15926 Reference Data

Any ISO15926 use is *dependent* on shared Reference Data

- Joint Operational Reference Data (JORD) Project

Growing demand for Reference Data ...

... demands enhanced global, scalable, sustainable RDS

... JORD is the project to deliver this

... JORD project requires initial funding

More information

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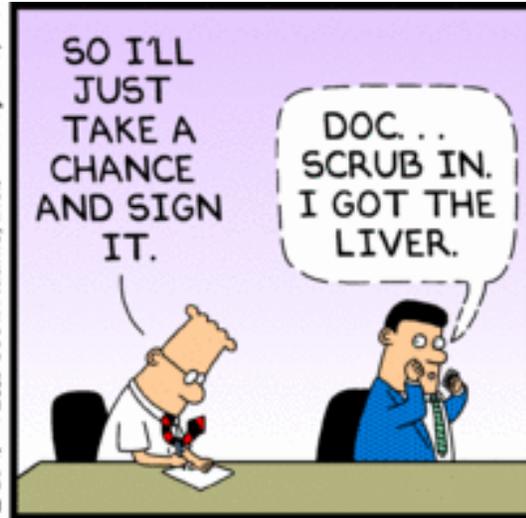
See PCA at www.posccaesar.org & FIATECH at www.fiatech.org



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