POSC Caesar Association + ISO15926 + Fiatech = iRING

JORD

Joint Operational Reference Data Project
enhancing the
PCA Reference Data Service (RDS) Operation
***in partnership with* FIATECH**

Delivering the *authoritative core* of iRING.

Ian Glendinning – *GlencoIS* for PCA

Joint PCA/Mimosa Meeting @ Fiatech

San Antonio - 25th March 2013

Agenda

- PCA, Fiatech, iRING, JORD Context
- ISO-15926 / iRING / RDS Basics
- JORD Objectives and Project Scoping / Phasing
- Specific focus on “Compliance” related deliverables
  - Mapping Methodology – How to use 15926 compliantly
  - Compliance Specification – What it means to be compliant
- Successful deliveries achieved in Phase 1 (2011/12)
- Current project status and Phase 2 Plans (2013/14)
  - Specific focus on “interim” RDS capabilities in progress
- Conclusions & Engagement with JORD & PCA RDS

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POSC Caesar Association

Primary focus on ISO15926 & Reference Data since 1996

Developing PCA RDL (*Library*) and

Operating PCA RDS (*System*) throughout this period, with

Operational PCA RDS (*System & Services*) since 2008

Involving many collaborations ….

ISO EPIM MIMOSA OpenO&M Fiatech iRING User Group Tools energistics

POSC Caesar Association + ISO15926 + Fiatech = iRING

POSC Caesar Association Fiatech™

PCA & Fiatech Element 9 & Members Collaboration on ISO15926

2006 / "Wilmington" / 2007 / 2008 / 2009 …

ADI, IDS-ADI, Matrix Projects, Camelot, *Avalon*, Proteus, iRINGTools

Created major challenge to PCA RDS (*and* PCA's own projects), which *JORD* was created to address:

- **All Reference Data supported as resolvable / queryable web references (EndPoint).**
- **Quality manageable and scalable content and services. (inc. reduced dependence on scarce expert resources.)**
- **Clarity on compliance and validation of usage.**
- **Sustainable value-adding services business model**

POSC Caesar Association + ISO15926 + Fiatech = iRING

JORD Joint Operational Reference Data *Project* (since May 2011)

enhancing the PCA Reference Data Service (RDS) Operation

in partnership with Fiatech

delivering scalable, sustainable, authoritative, core, operational ISO15926 Reference Data and Compliance needs.

Further agreed (October 2012 press release)

All PCA & Fiatech ISO15926 industry interoperability activities

Endorse the common iRING branding : iRING

And the common communication channel : **iRINGToday.com**

POSC Caesar Association + ISO15926 + Fiatech™ = iRING

iRING

The jointly agreed branding for all PCA & FIATECH ISO15926-based interoperability initiatives.

The brand is now associated with the whole technology-neutral interoperability solution architecture defined by use of ISO15926 Reference Data, (*not limited* to iRINGTools or *any* specific implementation technologies).

iRINGToday.com

Is the agreed market communications channel associated with iRING industrial interoperability generally.
And being *non-exclusive*, welcomes association with the ISO15926 initiatives of any other collaborating organizations and ISO workgroups.

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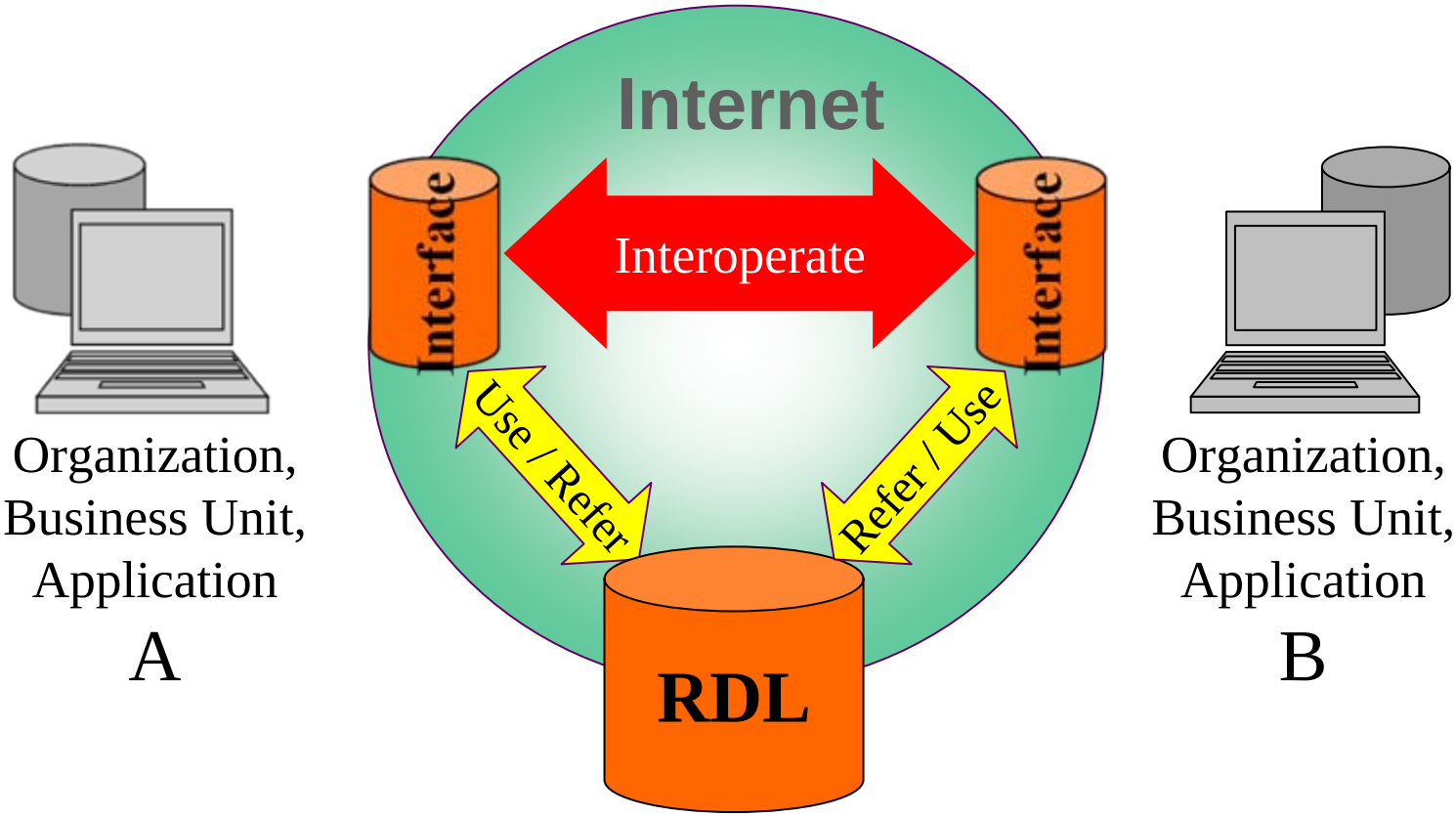
ISO15926 *at its simplest* …



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

Makes interoperability easier and reduces risk & cost

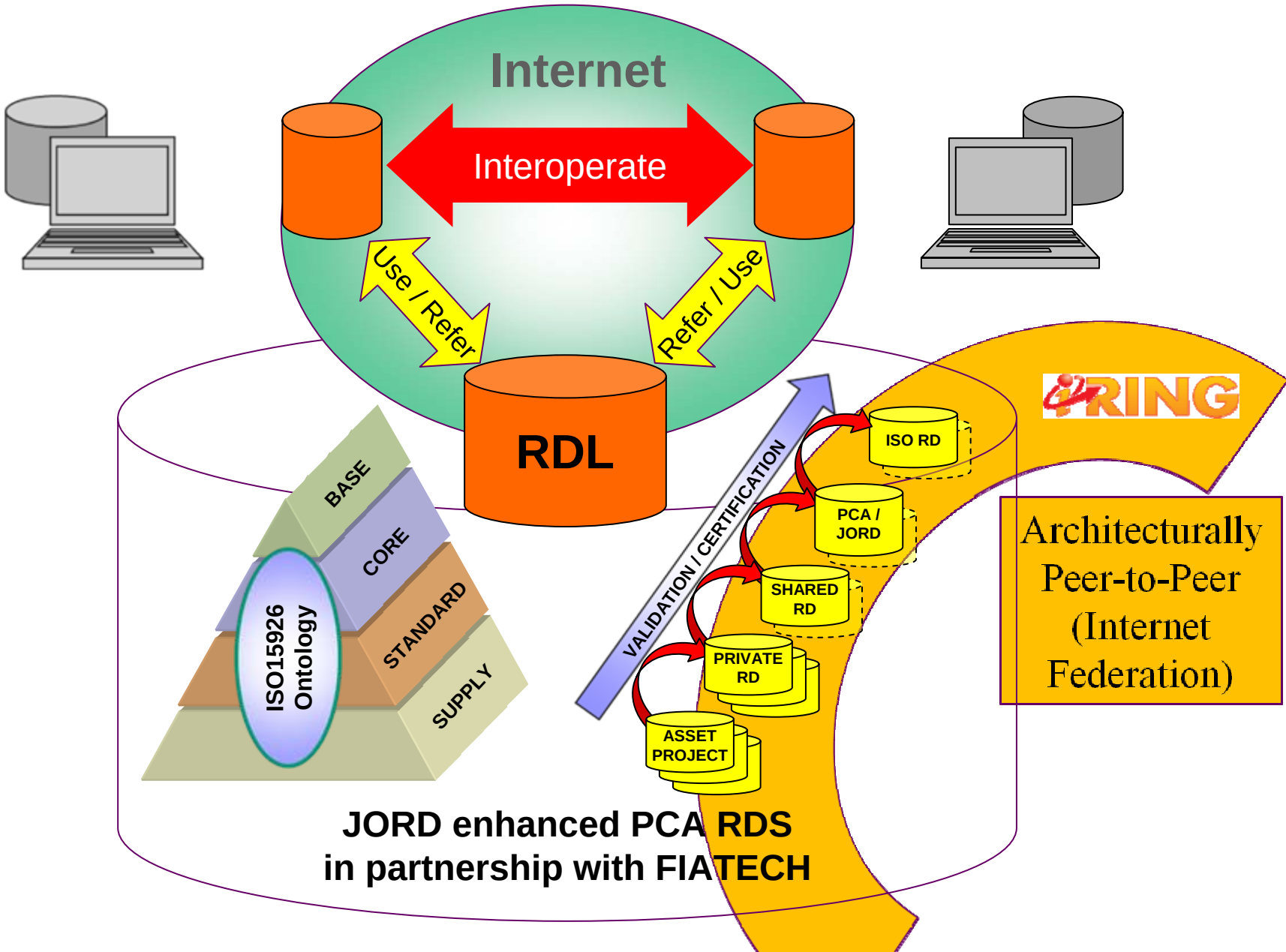
POSC Caesar Association + ISO15926 + Fiatech = iRING

Reducing ambiguity and reducing mapping overheads … Makes interoperability easier and reduces risk & cost

- **Direct-cost-and-time-savings** in reducing effort in transferring & mapping data across business interfaces and in simply finding & accessing information necessary to do your business.
- **Risk-and-cost-reductions** in the quality and ambiguity of information which otherwise lead to sub-optimal business operations, failure to satisfy regulators or, in the worst case, loss of health, safety & environmental integrity.
- **Freedom & flexibility** to take advantage of platform-independent, technology-neutral, collaborative business processes, flexible business partnering, and different subcontracting arrangements across your geographically distributed, even remote & inhospitable, evolving business operations and supply-chains.

Know your own *specific* business case & scope priorities

POSC Caesar Association + ISO15926 + Fiatech = iRING



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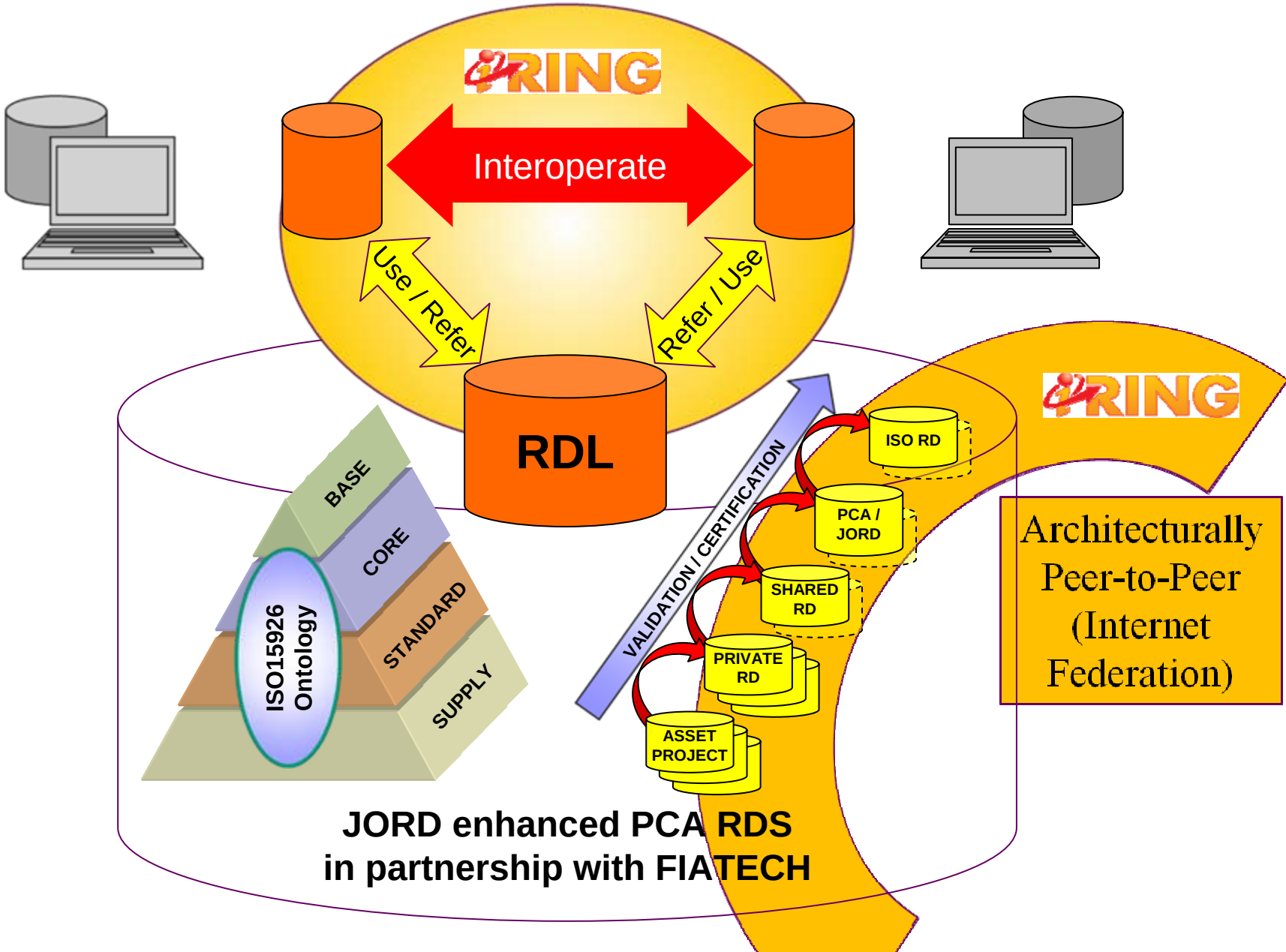

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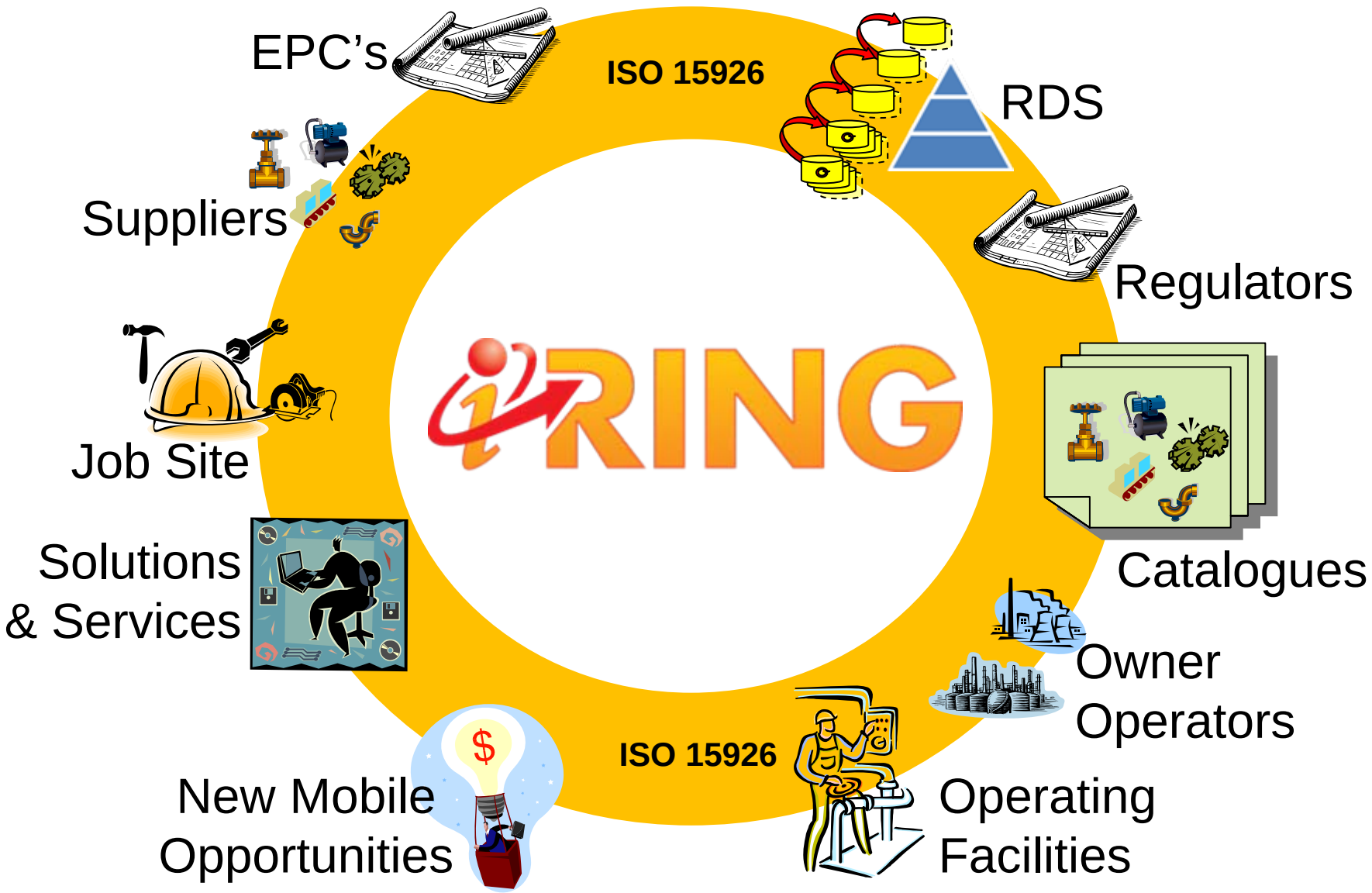

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JORD Project Scoping

A - Compliance, Validation & Methodology
B - Services Platform & Publishing Tools
C - Training Resources
D - Services Organization & Business Resources
(O – Contribution to Operational Support)
(P – Project Admin)

JORD Project Phasing

Phase 1 Technical Enhancements & ***Fixes*** (*May 2011 to July 2012*)
(*Fixes - known issues, known solutions, known resources*)
Phase 2 ***Scalable*** Platform & Organization (*Up to June 2014*)
Phase 3 ***Sustainable*** Business Services Operation (*Thereafter*)

Ultimate Deliverable - Scalable & Sustainable Business Operation

Really about credibility and dependability:

Not being megalomaniac - focussing on the *authoritative core of the federated whole*, not attempting management control of all reference data for every industrial use. (Think "elephant")

Having a business model and funding for self-sustaining operation.
Infrastructure for 24x7x365 operation & growing, federated content,
Organization & governance model for long-term viability,
Critical paths not dependent on a few specialists, etc.

Professional business arrangements
on which industrial users can rely for value-adding services:

POSC Caesar Association + ISO15926 + Fiatech = iRING

JORD *Core* Services		
Read / Export Content	Free to anyone.	Primary Service. All references resolvable to immutably-unique content, all readable, exportable. Supported formats include Browser UI, MDB, SQL, Excel, HTML, XML and RDF/OWL/SPARQL. Copyright & IPR licensing apply.
Core Content Mgmt & Validation	Available to *charter* Project Subscribers & Sponsors & to Fee-paying service users.	Maintenance and fixes of core content only and testing of proposed changes, etc. (for ***new*** 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 ***new*** content processing, see below.)
Create / Read / Export new ID's	Available to *charter* Project Subscribers & Sponsors & to Fee-paying service users. (who are also Certified)	Registered users to the management services are free to generate new lifecycle-immutable Global ID's for content in locally or remotely managed WIP Libraries / Sandboxes, etc.
Content Write		Certified users will be able to write content directly (with appropriate meta-data controls on provenance & quality) Partitions of federated WIP /Sandbox content become effectively hosted and publicly accessible.
New Content & Standardization	Available as fee-paying value-adding services. (Per project / per scope.)	Estimated cost per value-added scope - Price list / rates intended. Will arise from both Commercial Projects and Collaborative "SIG's".
Certification of Users, Org's, Tools & Interfaces		Estimated cost per value-added scope - Price list / rates intended. Organized around Compliance Checklist with scopes per BIDG or other transaction sets. (*Economic self-certifying* components, as well as services.)
Training & Related Consulting		Estimated cost per scope - Price list / rates development possible. (*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.*)

Plus, operational services, business, marketing and back-office functions supporting *core* services.
(Other than core 15926 technical & coordination functions –
– infrastructure and substrate technologies & specialist services are competitively outsourced.)

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Service Band	Services	Support
Free & Open Services	Basic Read & Query	Service Support Only
Subscription Services	Extended Read & Query	General service, technical help & content usage Q&A support.
Fee-based Value-adding Services	All other update, content management, compliance validation, standardization, training & consultancy services	Specific SLA's per priced service.

Training & Related Consulting		Estimated cost per scope - Price list / rates development possible. (*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.*)

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JORD "Compliance" Scope

JORD Mapping Methodology
HOW **to make your data ISO15926** ***compliant***

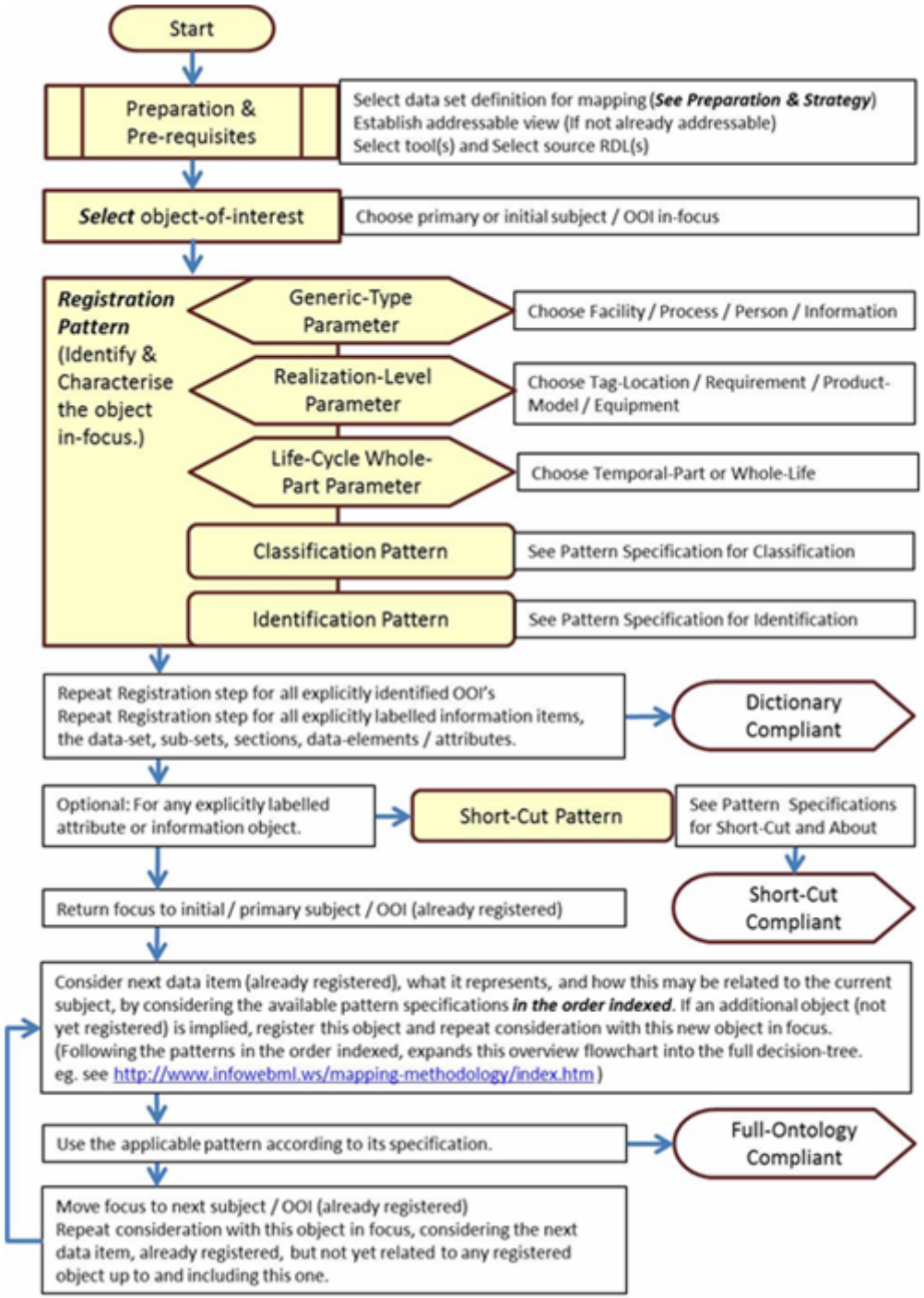
JORD Compliance Specification
WHAT **it means to be ISO15926** ***compliant at business interfaces***

JORD Compliance Validation Procedures
HOW **we assess, validate, verify, test, certify** ***compliance*****.**

Note**:**
This is primarily about being compliant,
Not **about whether the information / application is actually useful.**
And it's about the information being unambiguous,
Not **about whether your information is actually correct.**

Procedure / Process View
Taken from Methodology

Note:
•Targeted at business domain (SME) experts (*Pipe-stressing analogy – designer / expert / guru division of labour*.)
•Objective is to achieve defined levels of compliant mapping by selection & population of TSP's (Template Signature Patterns).
•Expansion of the decision-tree (*20 Questions analogy*) & repeating the loop.



The Index of Template Pattern Signatures (TSP's)

Taken from Mapping Methodology

	Group	Pattern Name
Tranche 1 Registration	Registration	Registration
		Identification
		Designation (Human Name)
		Classification
		Specialization
Tranche 2 Properties, Composition & Information Short-Cuts	Attributes	
		PhysicalProperty
		MaterialOfConstruction
		NominalProperty
		Shape / Size as Design Pattern
		Shape / Size as Geometry & Dimensions
	Composition	Assembly
		Collection
	Short-Cut General	Short-Cut
		Relation
	Short-Cuts (*CoRwS*)	Manufacturer
		Supplier
	Information	About
		Meta-About
		Description
		Definition
Tranche 3 The Rest of P2 and P7 Ontologies	Connection	Direct
		Indirect
	Location	Location by Position in Context
		Location by Coordinates
	Containment	Containment
		(More)
	Business Meta-Data	(More)
	Processes & Activities	Functions & Roles
		Involvement (non-specific)
		Fulfilment (of specific roles)
		Events / Starts / Ends
	(More)	

Compliance Maturity Levels Checklist (v8) for Product Interface / Version _____/_____

Compliance Categories		Compliance Levels per Compliance Specification	*MATURITY LEVEL CHECKLIST SUMMARY (For full efinitions, the referenced paragraphs in the Compliance Specification govern.)*	*User Required*	***Provider Claimed*** (Check or summary only - provide supporting documentation as necessary)	*JORD / PCA Validated*
Technical	***Semantic Modeling***	2.1 (i)	**Dictionary & Typing Level** - Identification, Specialization & Classification template signatures only.			
		2.1 (ii)	**Short-Cut Relations Level** - As Dictionary Level plus *CoRwS* or other (eg *Gellish*) "Short-Cut" template signatures.			
		2.1 (iii)	**Full Ontology Level** - Any / all valid template signatures supported.			
	Referencing Technology	2.2 (i)	**Local Naming Level** - RD URI's resolved and naming self-contained in schema representation.			
		2.2 (ii)	**URI Reference Level** - Dependency on RD URI's being resolvable.			
	Representation Technology	2.3 (i)	**No Explicit XML Schema Level** - Implicit / document / formatted / tabular / non-XML schema.			
		2.3 (ii)	**Explicit XML Schema Level** - registered XML Schema			
		2.3 (iii)	**RDF/OWL Schema Level** - eg Part 8			
	Interface Technology	2.4 (i)	**File Exchange Level**			
		2.4 (ii)	**API or Query Level** - other than Part 9 / SPARQL			
		2.4 (iii)	**SPARQLQuery Level** - eg Part 9 Façade			
Business	***Industrial Standardization***	2.5 (i)	**Local Sandbox Level** - Community or individual organization with no externally certified RDL management.			
		2.5 (II)	**Global Industrial Level** - externally certified RDL			
		2.5 (III)	**PCA/JORD Level**			
		2.6 (iv)	**ISO Level**			
	Payload Content	2.6 (i)	**Generic Level** - Tool capability independent of payload.			
		2.6 (ii)	**Explicit Scope Level** - Scope per BIDG or otherwise defined			
	Change-Management Meta-Data	2.7 (i)	**Identity Only Level** - all data elements & sets identfiable / explicitly addressable			
		2.7 (ii)	**Version Level** - identification of succeeding / superceding			

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2011/12 Success Summary

A - Compliance, Validation & Methodology:

- A1 - Compliance Specification – Issued – (*and* customers already using checklist to assess their own compliance, performing gap-analyses, requesting PCA assessment of their compliance, etc. *Validation Procedures are in Phase 2*)
- A2 - Mapping Methodology – Issued – (*and* good MMT SIG agreement, attention now shifts to *implementing actual TSP's*)

B - Services Platform & Publishing Tools:

- B1.1.2 - Triple-Store EndPoint – V2 Live, being used & supported.
- On commercial ISP's/Hosts/Cloud ***with full PCA control***. (Following the Avalon architectural principles)
- B1.2 - ID Specification – Issued (*and* subject to much refinement.)
- B1.3 - Sandbox Hosting Capability – Live, being used & supported

(Business Model Development: – ***iRING*** branding agreement, using iRINGToday channel for market & business-case resources.)

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Current / Ongoing Activities

Exploiting Independent EndPoint & Sandbox Capabilities:

- Supporting the V2 EndPoint in production (http://posccaesar.org/endpoint/)
- Hosting Customer Sandboxes.
- Establishing “Interim” platform and tool enhancements using PCA Development & Staging Sandboxes and LinkedData forms. .
- Establishing practical implementation consequences of ID Spec & Conventions and actual OWL / RDF / Triple Representations. (eg with MMT SIG and P8 Workgroup.)

Scheduling & Resourcing Remaining Phase 2 Scope:

- Separate sub-project leads for A, B, C & D Scopes (>>>)
- Using Phase 1 deliverable specifications to define Phase 2 detail
- Detailed deliverable scheduling in progress (awaiting Steering Group review and agreement on both scope and delivery priorities, still with June 2014 end-date in funding commitments.).

2013/14 Scope to Complete #A

Scope A - Compliance, Validation & Methodology

A3 - Indexing and Documenting the TSP's – Deliverable: Agreed Index of Patterns, each with Documentation defined by the Methodology. Three tranches planned per existing index.

A4 - Content Fixes & Enhancements – Deliverable: Quality assured enhancements in the published library. Same three tranches planned. (*Core & directly dependent enhancements only*.)

A5 - Compliance Validation Procedures.

- A5.1 - Validation Procedures for RDL Content.
  Deliverable: Agreed enhancements to existing procedure(s).
- A5.2 - Planned - Validation Procedure(s) for Business Interface Compliance.
  Deliverable: Agreed new procedure(s)
- [A1(part) *BIDG Information Content Scope Definition by other initiatives*.]

2013/14 Scope to Complete #B

Scope B - Services Platform & Publishing Tools

B1 – Platform infrastructure and substrate

Production implementation of platform and storage (RFI covering full infrastructure, substrate and tools scope, followed by RFP decisions.)

B2 – RDL Expert Manager Tool

B2.1 - Interim Production Enhancements
(Interim functional capabilities deployed.) (>>> *Tore / Lillian on A&B work*)

B2.2 Fully Functional and Supportable Capability
(Implemented, Accepted & Deployed.)

B3 – RDL User Domain Expert Tool

(Requirements Gathering / Tool Prototype / Production Tool)

B4 – Other Tools

(RDL Content Validation / Business Interface Compliance Validation / Business Substrate Applications)

Break-out ….

Scope A - Compliance, Validation & Methodology

Project Lead – Tore Christiansen

Scope B – Services Platform & Publishing Tools

Project Lead – Lillian Hella

Focussing on Interim PCA RDS Management Capabilities >>>

(*Then come back to finish JORD Scoping definition* ….

Scope C – Training Resources, &

Scope D – Services Organization & Business Resources

…. *and round-off / conclusions / engagement suggestions*.)

2013/14 Scope to Complete #C

Scope C – Training Resources

C1 - General iRING Approach to Achieving Interoperability
(Taking existing "Primer" scope and inventory of existing materials, and aligning with JORD-enhanced terminology, methods, procedures and PCA RDS capabilities.)

C2 – How to develop iRING Interoperability Business Cases

C3 – Technical Training in Specific Aspects of ISO15926
(Including Part 2 Model, Part 4 Reference Data, Part 7 Templates, Parts 8&9 RDF/OWL and SPARQL technologies, etc.)

C4 – User Training in use of Specific PCA RDS Operations Tools, Methods & Procedures (Including Mapping Methodology, RDL Domain Expert User Tool(s), Interface Compliance Validation Procedures, RDL Expert Manager Tool(s), Content Validation Procedures, etc.)

2013/14 Scope to Complete #D

Scope D - Services Organization & Business Resources

D1 – Marketing and securing JORD Project Funding
(Scheduling being based on current committed funding and priorities but full scope estimates still indicate only ~60% funded)

D2 – Business Strategy incl. Marketing Strategy & Business Plans
(Taking pre-project outlines and developing definitive strategy and plans)

D3 – Service Descriptions, Pricing Plan, SLA's and T's&C's

D4 – PCA RDS Operations Marketing Materials & Campaigns
(The iRINGToday.com channel, and specific business use-cases, business case for increasing compliance, etc.)

D5 – Staff Resourcing & Subcontracting Plan

(Both human and procedural / organizational resources.)

D6 – Service Sales & Delivery Resources

(Maximising use of business substrate element of Avalon architecture.)

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You need the JORD Project …

- **You need the benefits of *iRING* - ISO15926 Reference-Data-Based Interoperability.**
  You need the *core* JORD deliverables and service enhancements.
  We all need the *authoritative & coordinated* clarity on the status of all other *iRING* (ISO15926) resources.

… so the JORD Project also needs you

- **JORD still requires additional funding and resources to deliver the remaining Phase 2 scope (*including* operational support).**
  - With thanks and acknowledgements to Charter Members: Sponsors
    - EPIM, RosEnergoAtom, Black&Veatch, CCC, Hatch & VNIIAES;
    - Supplementary Subscribers Woodside, Dow, Bechtel & Emerson

  More information - https://www.posccaesar.org/wiki/FiatechJord

  - Ian Glendinning / Project Manager - ian@glencois.com
    Nils Sandsmark / PCA nils.sandsmark@posccaesar.org
    Ray Topping / FIATECH topping@fiatech.com

Engagement suggestions / assumptions :

- **Customer capital / business projects / existing product suppliers : intending to use iRING for interoperability:**
  - **Learn / train / understand the overall "interface" approach first.**
  - **Focus on using Mapping Methodology and Compliance Checklist at relevant business interfaces to engage with PCA RDS Services.**
  - **First use of this process will invariably lead to improvement in *your own* information models at those interfaces.**
- **Initiatives and developers of new iRING capabilities:**
  - **Focus on Defining Information Scope and Content at relevant business interfaces, and use to map to existing RDL or define new RDL content, and align with a content SIG engaged in that domain (or create one).**
  - **If you find yourself developing information models or developing a new stack of software capability – engage directly with JORD or an existing iRING initiative or technical SIG.**
- **Collaborate – don't re-invent the wheel … (*the wheel is in fact a very large elephant) … so FOCUS on your distinct aspect***