

# Industrial Interoperability, the platform for digital transformation of industry

**SEIIA.SE** Swedish Industrial  
Interoperability Association



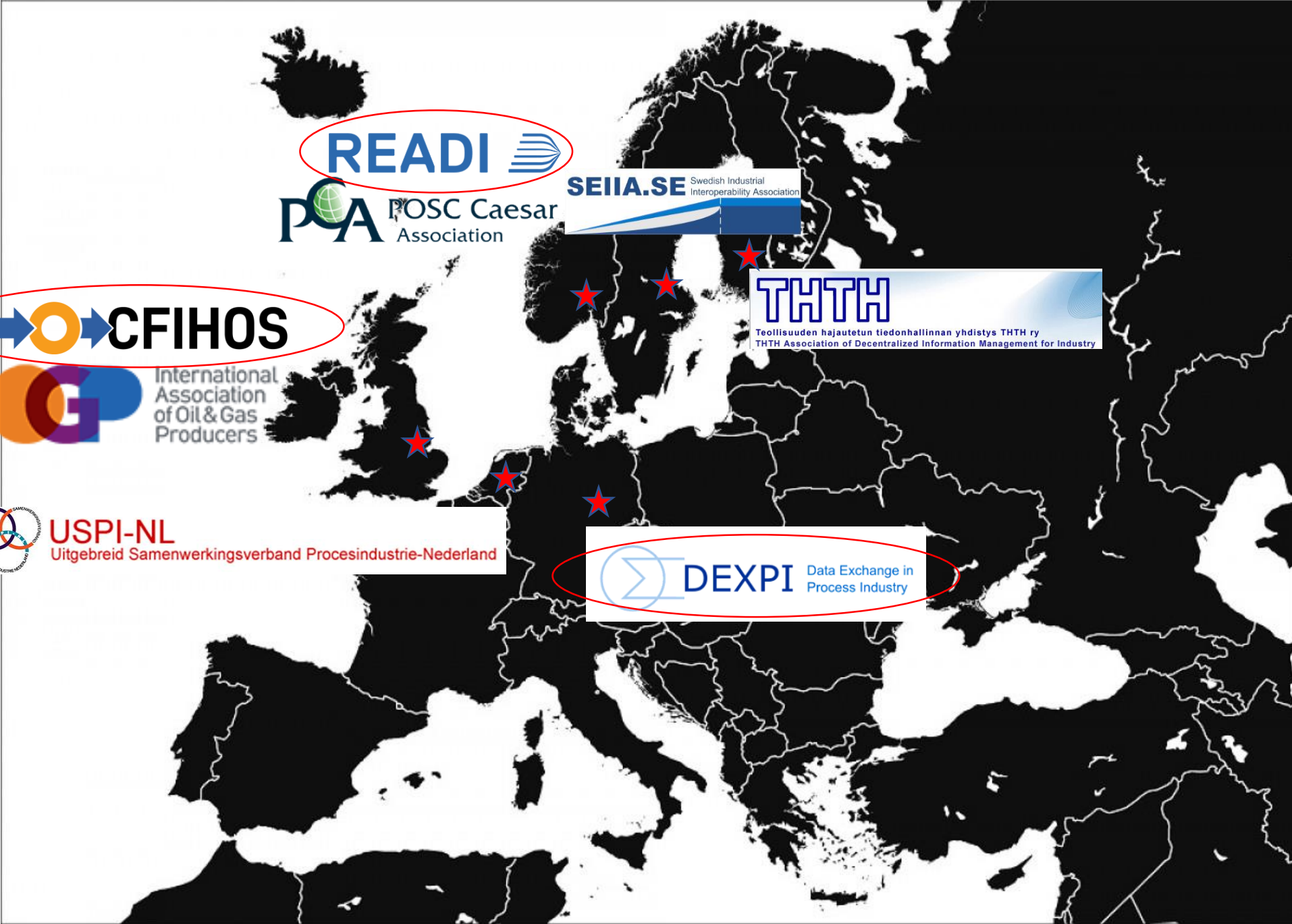
## Members

The following companies have become members



*Metsä Board  
Astra Zeneca  
Perstorp  
Stockholm Vatten  
VA-Syd  
Calejo  
ESS / Lund  
IFS  
Boliden  
Vattenfall  
Valmet  
Andritz  
Kiwa Inspecta  
BillerudKorsnäs AB  
Sweco  
WSP  
Industri Arbetsgivarna  
DynaMate  
Science Park Södertälje  
Aveva  
Cowi*

# ISO 15926



**READI**

**POSC Caesar Association**

**SEIIA.SE** Swedish Industrial Interoperability Association

**CFIHOS**

**ICGP** International Association of Oil & Gas Producers

**THTH**  
Teollisuuden hajautetun tiedonhallinnan yhdistys THTH ry  
THTH Association of Decentralized Information Management for Industry

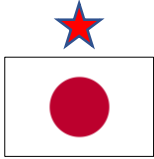
**USPI-NL**  
Uitgebreid Samenwerkingsverband Procesindustrie-Nederland

**DEXPI** Data Exchange in Process Industry



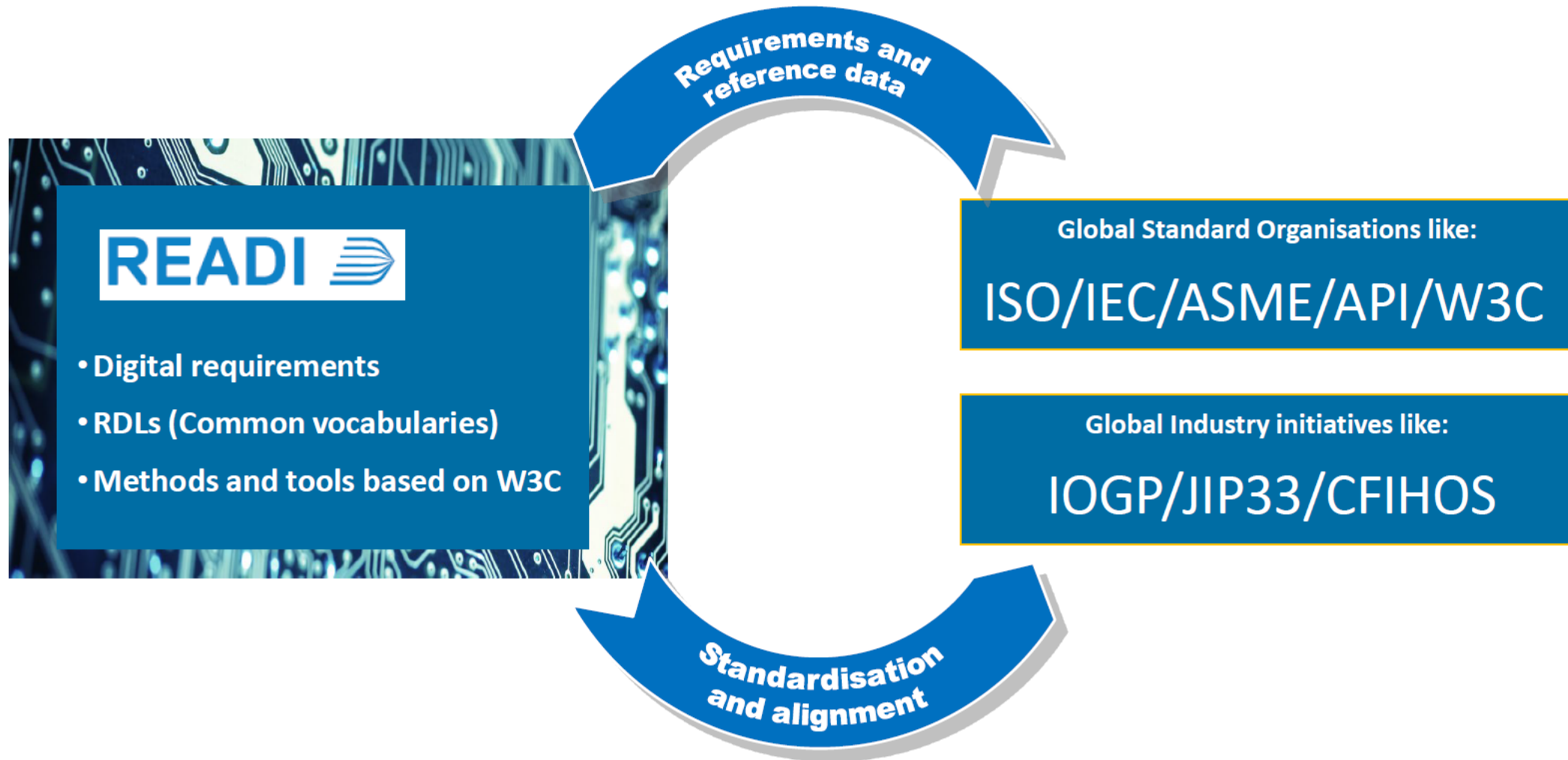
**Changing How the World Builds**

**MIMOSA**



**ENAA**

# READI has global ambitions – bringing the digital platform to the O&G community

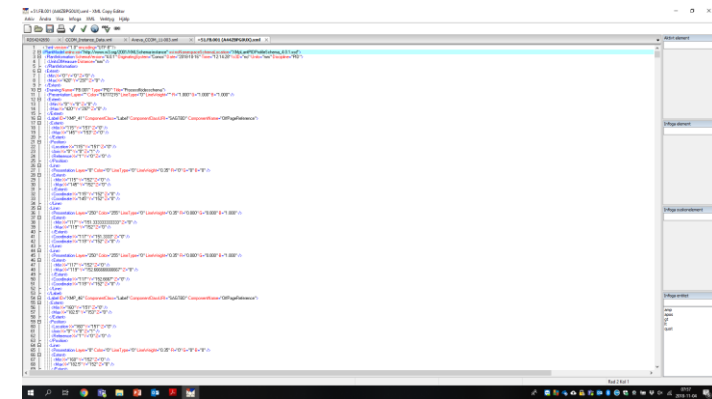
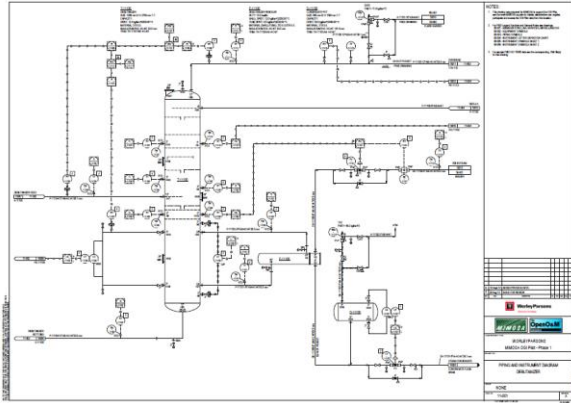


# DEXPI

NEWS MEMBERS SPECIFICATIONS TOOLS & SERVICES SOFTWARE PUBLICATIONS CALENDAR

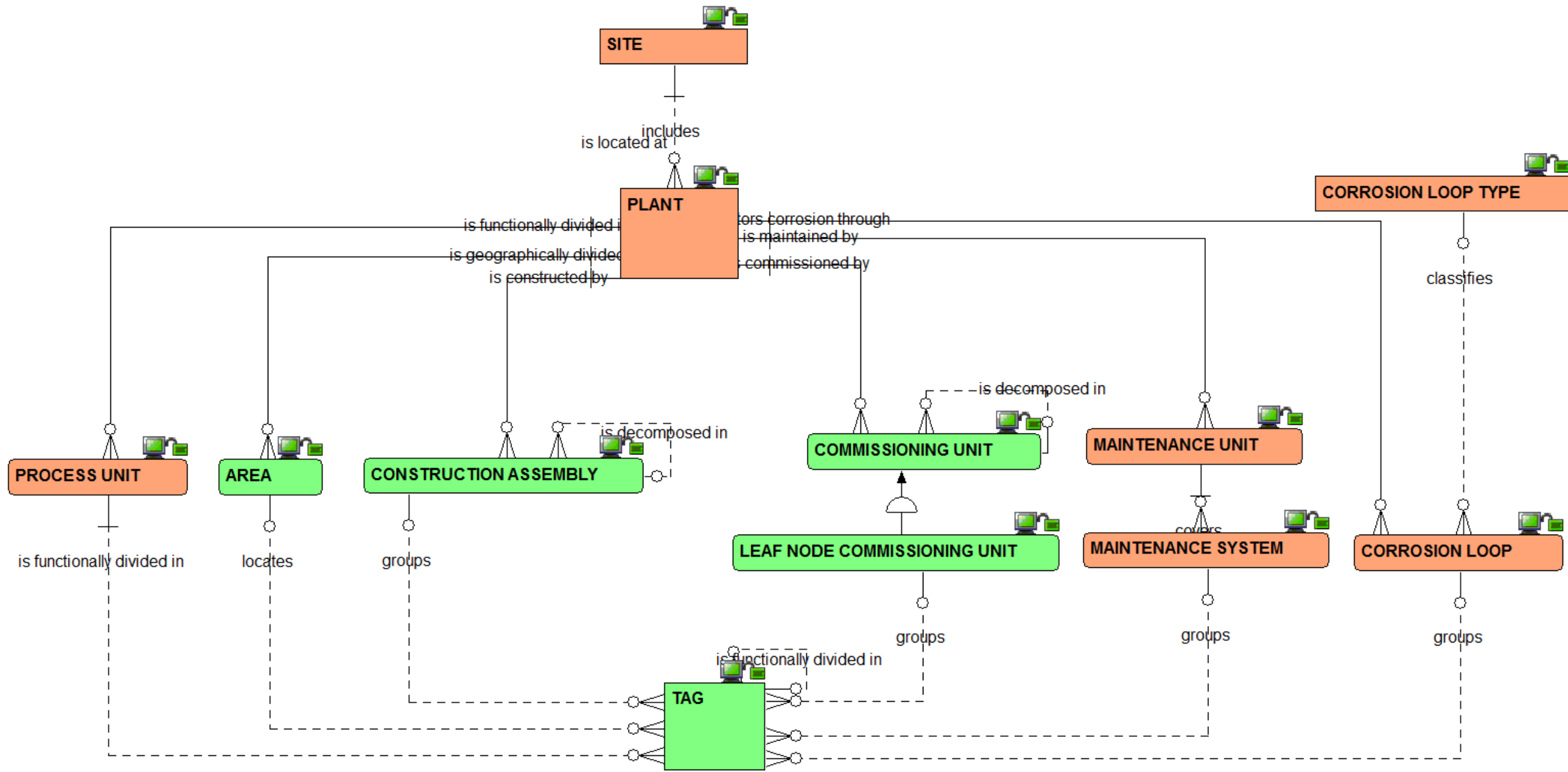
## Software

See how CAE and IIoT softwares and platforms already use DEXPI:





# Plant breakdown structure : the relationships view



# ISO 15926

ISO 13584

ISO 18101 Asset intensive industry interoperability / TC 184/WG 6

ISO 81346

ISO 10303

ISO 10628  
ISO 14617

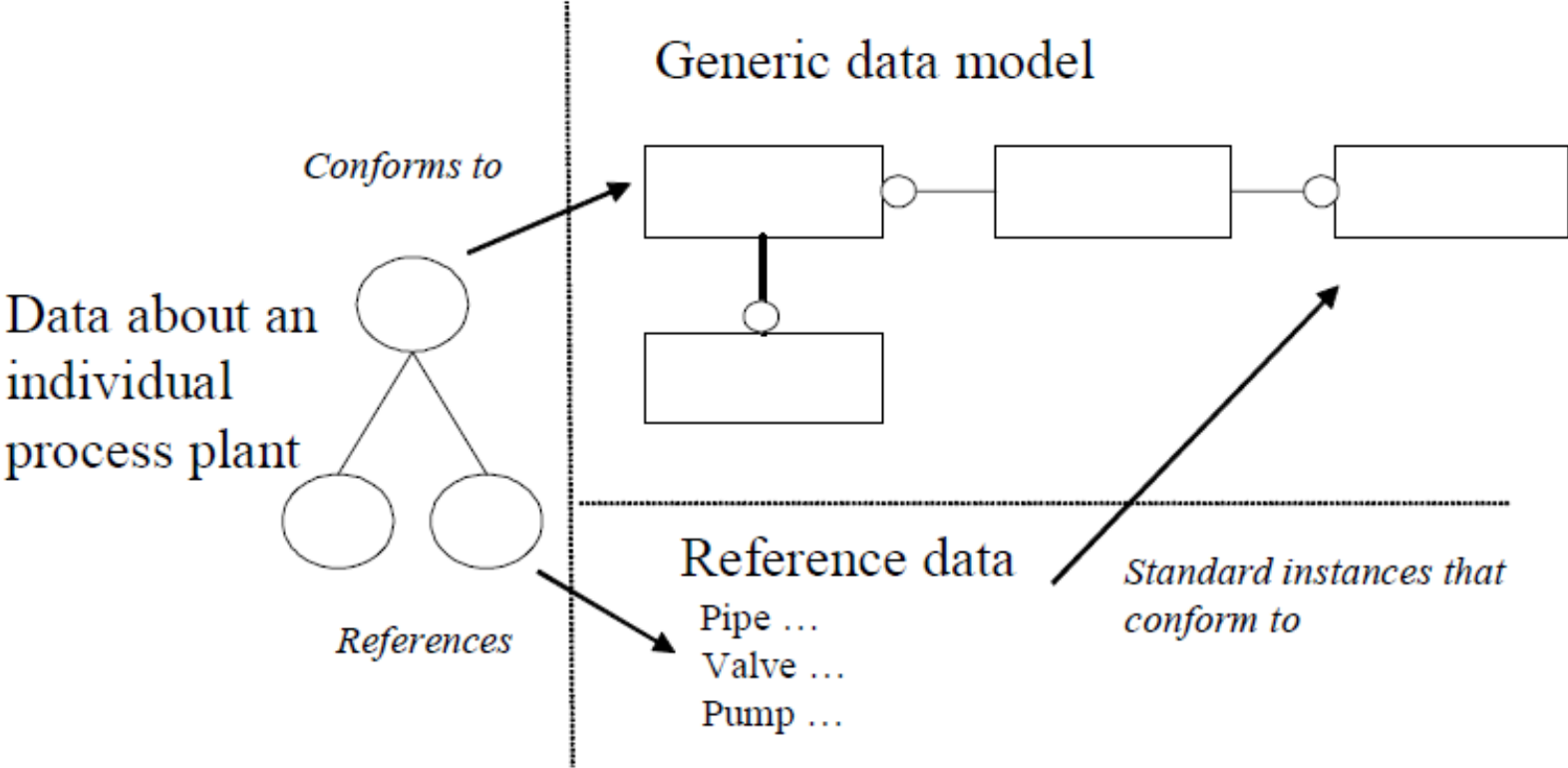


Figure 2 – Architecture



# Relevant ISO Technical Committees & Activities

## Industry Specific

Practices and Content  
(ISD versus ISDD)

## Cross-Industry Digitalization and Interoperability

Sensors Through Enterprise, Digital Twins, IT/IM Architecture  
(Machine Interpretable)

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

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

**ISO TC 108**  
Mechanical vibration, shock and condition monitoring

ISO 13374- Condition monitoring and diagnostics of machines — Data processing, communication and presentation

**ISO TC 184**  
Automation systems and integration

**WG 6**  
ISO 18101-Asset intensive industry interoperability

**SC 4**  
Industrial Data

ISO 15926-Process Data  
ISO 8000-Data Quality

**SC 5**  
Interoperability, integration, and architectures for enterprise systems and automation applications

ISO 18435-O&M Integration

**Show Websites**

**Syftet med SEIIA är att stötta svensk industri i förändringsarbetet mot högre interoperabilitet, så vi inte halkar efter mer internationellt. Så vad jobbar SEIIA med?**

- *Standardisering och det som krävs för att fortsätta det internationella arbetet för att vidareutveckla de koncept och standarder som våra kollegor runt om i världen har skapat. **Stötta den internationella standardiseringsutvecklingen och återkoppla internationella erfarenheter till svensk industri.***
- *Att vi börjar se möjligheter och inte problem med den digitala transformering som sker runt omkring oss. **Se affärsmöjligheterna.***
- ***Motverka effekten** av lokala eller regionala standardiseringsinitiativ som bygger på gamla affärsstrategier där det är mer inlåsningsseffekt man söker än **öppna plattformar som är accessbara** från många olika håll.*
- ***Stötta förändringsarbetet** med goda exempel både nationella men också internationella där nya teknik- och affärsmodeller visat goda resultat.*
- ***Globalt accessbar RDL (Reference Data Library)** som utgör kärnan i ISO 15926 bl.a. och basen i Industriell Interoperabilitet.*
- *Via vårt arbete hjälpa till med **globalt tillgängliga plattformar** för utveckling av **AI-lösningar***

# LCDM (phase 2) pilots

Stora Enso

Pilot 1



Setting up AutoCAD P&ID for flowchart drawing based on established standards and the open standard DEXPI, which is a concept with data exchange specifications in the neutral format XML based on Proteus P&ID Profile Schedule 4.0.

SCA

Pilot 2



In a rebuilding (brownfield) project of a plant part of SCA's units in northern Sweden, use the global standard ISO 15926 and the compatible concepts such as CFIHOS alt. Readit. Follow the requirements setting process based on a common reference database. (RDL)

Vakin

Pilot 3



The project is a sewage treatment plant in Umeå. The machines have reached their technical life and must be replaced. The project includes the replacement of machines, adaptation of pipe installations and the replacement of associated electricity and controls. During the procurement, the global standard ISO 15926 and the compatible concept as CFIHOS alt. Readit will be used to ensure a better exchange of information on the systems used in the plant's maintenance management.

Holmen Paper

Pilot 4

Holmen has a project where SiteBase and Aveva Everything3D will be integrated and they are trying to base this integration on ISO 15926 instead of a traditionally Point To Point solution.



# Nordic Interoperability Corporation (NIC)

## Veckovisa möten



# There is a team called MRAIL (Major RDL Action Items List) lead by POSC Caesar

The screenshot shows a web browser window with the address bar displaying 'data.15926.org/rdl'. The page content includes a search bar with 'centrifugal pump' entered. Below the search bar, the title 'CENTRIFUGAL PUMP' is displayed. A table lists various RDF properties for this class, including 'id', 'rdfs:label', 'skos:definition', 'meta:valEffectiveDate', 'rdf:type', and a list of 'rdfs:subClassOf' relationships. The 'rdfs:subClassOf' list includes 'ARTEFACT' and 'BARE PUMP', which are highlighted with a red box. Red arrows point from text annotations to these two classes. The annotations state: 'there are eventually always 2 super classes' pointing to 'ARTEFACT' and 'BARE PUMP', and 'bare pump means there is no driver' pointing to 'BARE PUMP'. The table also lists numerous other subclasses such as 'AXIAL FLOW PUMP', 'BETWEEN BEARINGS CENTRIFUGAL PUMP', etc.

id	http://data.15926.org/rdl/RDS416834
rdfs:label	CENTRIFUGAL PUMP
skos:definition	A <CENTRIFUGAL PUMP> is an <ARTEFACT> and a <BARE PUMP> utilizing impellers provided with vanes generating centrifugal force to achieve the required pressure <HEAD>.
meta:valEffectiveDate	1999-07-01Z
rdf:type	ClassOfInanimatePhysicalObject
rdfs:subClassOf	ARTEFACT
rdfs:subClassOf	BARE PUMP
Superclass for	AXIAL FLOW PUMP
Superclass for	BETWEEN BEARINGS CENTRIFUGAL PUMP
Superclass for	BOTTOM ENTRY VERTICAL INLET CENTRIFUGAL PUMP
Superclass for	CENTRELINE-MOUNTED CENTRIFUGAL PUMP
Superclass for	CENTRIFUGAL PUMP WITH AXIALLY SPLIT CASING
Superclass for	CENTRIFUGAL PUMP WITH DISCHARGE THROUGH COLUMN
Superclass for	CENTRIFUGAL PUMP WITH DOUBLE CASING
Superclass for	CENTRIFUGAL PUMP WITH RADially SPLIT CASING
Superclass for	CENTRIFUGAL PUMP WITH SEPARATE DISCHARGE
Superclass for	CENTRIFUGAL PUMP WITH SINGLE CASING
Superclass for	CENTRIFUGAL RUN-OFF PUMP
Superclass for	CENTRIFUGAL SEWAGE PUMP
Superclass for	CHANNEL IMPELLER PUMP
Superclass for	CHOPPER PUMP
Superclass for	CLOSE-COUPLED CENTRIFUGAL PUMP

# If you know what you're doing.

Virtuoso SPARQL Query Editor

Default Data Set Name (Graph IRI)

Query Text

```
select ?g ?id ?label
where { graph ?g {
?id rdfs:label ?label .
filter contains(str(?id), '15926')
filter contains(str(?label), 'pump')
}}
order by ?g ?label
LIMIT 100
```

If you know Sparql, write a query

Results Format: **Spreadsheet**

Execution timeout: seconds (values less than 1000 are ignored)

Options: Report

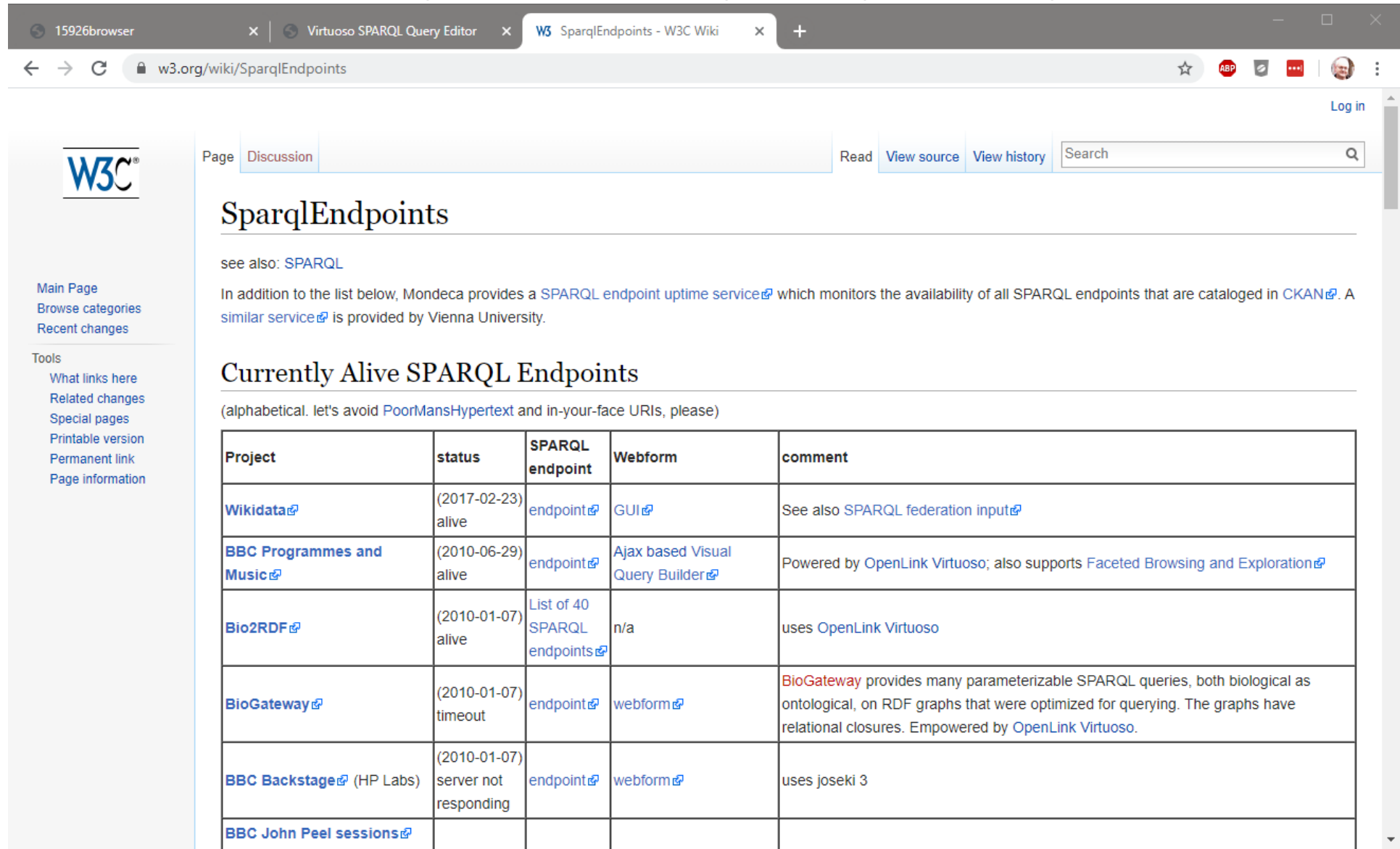
choose an output

(The result can only be sent by ...)

Run Query Reset

Copyright © 2020 OpenLink Software  
Virtuoso version 07.20.3229 on Win64 (x86\_64-generic-win-64), Single Server Edition

# There are many other Sparql endpoints



15926browser | Virtuoso SPARQL Query Editor | W3 SparqlEndpoints - W3C Wiki

w3.org/wiki/SparqlEndpoints

Log in

Page Discussion | Read View source View history | Search

## SparqlEndpoints

see also: [SPARQL](#)

In addition to the list below, Mondeca provides a [SPARQL endpoint uptime service](#) which monitors the availability of all SPARQL endpoints that are cataloged in [CKAN](#). A similar service is provided by Vienna University.

### Currently Alive SPARQL Endpoints

(alphabetical. let's avoid [PoorMansHypertext](#) and in-your-face URIs, please)

Project	status	SPARQL endpoint	Webform	comment
<a href="#">Wikidata</a>	(2017-02-23) alive	<a href="#">endpoint</a>	<a href="#">GUI</a>	See also <a href="#">SPARQL federation input</a>
<a href="#">BBC Programmes and Music</a>	(2010-06-29) alive	<a href="#">endpoint</a>	<a href="#">Ajax based Visual Query Builder</a>	Powered by <a href="#">OpenLink Virtuoso</a> ; also supports <a href="#">Faceted Browsing and Exploration</a>
<a href="#">Bio2RDF</a>	(2010-01-07) alive	<a href="#">List of 40 SPARQL endpoints</a>	n/a	uses <a href="#">OpenLink Virtuoso</a>
<a href="#">BioGateway</a>	(2010-01-07) timeout	<a href="#">endpoint</a>	<a href="#">webform</a>	<a href="#">BioGateway</a> provides many parameterizable SPARQL queries, both biological as ontological, on RDF graphs that were optimized for querying. The graphs have relational closures. Empowered by <a href="#">OpenLink Virtuoso</a> .
<a href="#">BBC Backstage</a> (HP Labs)	(2010-01-07) server not responding	<a href="#">endpoint</a>	<a href="#">webform</a>	uses <a href="#">joseki 3</a>
<a href="#">BBC John Peel sessions</a>				

# Introducing RDL\_Reporter.xlsm

Automatisch opslaan RDL\_Reporter.xlsm Zoeken Onno Paap OP

Bestand Start Invoegen Pagina-indeling Formules Gegevens Controleren Beeld Ontwikkelaars Help Team Delen Opmerkingen

Klembord Lettertype Uitlijning Getal Stijlen Cellen Bewerken

F13 Action

search

A	B	D	F	G	H	I
1	<a href="#">RDL2 browser to spreadsheet tool version 75</a>			Endpoint: <a href="http://data.15926.org/rdl/">http://data.15926.org/rdl/</a>		
2	Contact: <a href="mailto:onno.paap@gmail.com">onno.paap@gmail.com</a>		<a href="#">Action</a>	ACTIVATED SLUDGE PUMP	<a href="http://data.15926.org/rdl/RDS16765614">http://data.15926.org/rdl/RDS16765614</a>	
3			<a href="#">Action</a>	AGRICULTURAL CHEMICAL SPRAY PUMP	<a href="http://data.15926.org/rdl/RDS16765749">http://data.15926.org/rdl/RDS16765749</a>	
4	Search: <b>pump</b>		<a href="#">Action</a>	AIR DRIVEN PISTON PUMP	<a href="http://data.15926.org/rdl/RDS6015602">http://data.15926.org/rdl/RDS6015602</a>	
5			<a href="#">Action</a>	AIR-POWERED PUMP	<a href="http://data.15926.org/rdl/RDS16765434">http://data.15926.org/rdl/RDS16765434</a>	
6	Settings		<a href="#">Action</a>	ALKALINE PUMP	<a href="http://data.15926.org/rdl/RDS16765479">http://data.15926.org/rdl/RDS16765479</a>	
7	List Entities	List Subclasses	<a href="#">Action</a>	ANTI PUMPING ARTEFACT	<a href="http://data.15926.org/rdl/RDS955619">http://data.15926.org/rdl/RDS955619</a>	
8	Orphans	Doubles	<a href="#">Action</a>	API 610 CENTRIFUGAL PUMP DATA SHEET IN ENGLISH AND AS	<a href="http://data.15926.org/rdl/RDS2227041">http://data.15926.org/rdl/RDS2227041</a>	
9	Missing Super	Deprecated Super	<a href="#">Action</a>	ARCHIMEDIAN SCREW PUMP	<a href="http://data.15926.org/rdl/RDS433169">http://data.15926.org/rdl/RDS433169</a>	
10	Error in Definitions		<a href="#">Action</a>	ARMOURED PUMP	<a href="http://data.15926.org/rdl/RDS16765119">http://data.15926.org/rdl/RDS16765119</a>	
11	Compare RDL2 with views folder		<a href="#">Action</a>	ASH PUMP	<a href="http://data.15926.org/rdl/RDS394037481">http://data.15926.org/rdl/RDS394037481</a>	
12	Clear Cache (use on DB change)		<a href="#">Action</a>	AUTOMATIC TROUGH PUMP	<a href="http://data.15926.org/rdl/RDS16765299">http://data.15926.org/rdl/RDS16765299</a>	
13	Note: first set coloring on in Settings		<a href="#">Action</a>	AXIAL FLOW PUMP	<a href="http://data.15926.org/rdl/RDS16765074">http://data.15926.org/rdl/RDS16765074</a>	
14	Coloring (containing this string will give this color)		<a href="#">Action</a>	AXIAL FLOW PUMP IMPELLER	<a href="http://data.15926.org/rdl/RDS461339">http://data.15926.org/rdl/RDS461339</a>	
15	ClassOfFunctionalObject		<a href="#">Action</a>	AXIAL FLOW PUMP WITH ADJUSTABLE BLADES	<a href="http://data.15926.org/rdl/RDS16772229">http://data.15926.org/rdl/RDS16772229</a>	
16	ClassOfInanimatePhysicalObject		<a href="#">Action</a>	AXIAL FLOW PUMP WITH REVERSIBLE BLADES	<a href="http://data.15926.org/rdl/RDS16772274">http://data.15926.org/rdl/RDS16772274</a>	
17			<a href="#">Action</a>	AXIAL FLOW PUMP WITH VARIABLE PITCH BLADES	<a href="http://data.15926.org/rdl/RDS16772319">http://data.15926.org/rdl/RDS16772319</a>	
18			<a href="#">Action</a>	AXIAL PISTON PUMP	<a href="http://data.15926.org/rdl/RDS394134651">http://data.15926.org/rdl/RDS394134651</a>	
19			<a href="#">Action</a>	AXIALLY SPLIT PUMP CASING	<a href="http://data.15926.org/rdl/RDS16771959">http://data.15926.org/rdl/RDS16771959</a>	
20			<a href="#">Action</a>	BACK PULLOUT PUMP	<a href="http://data.15926.org/rdl/RDS16772004">http://data.15926.org/rdl/RDS16772004</a>	
21			<a href="#">Action</a>	BARE PUMP	<a href="http://data.15926.org/rdl/RDS2220063">http://data.15926.org/rdl/RDS2220063</a>	
22			<a href="#">Action</a>	BARREL EMPTYING PUMP	<a href="http://data.15926.org/rdl/RDS16771554">http://data.15926.org/rdl/RDS16771554</a>	
23			<a href="#">Action</a>	BARREL EMPTYING SEMI-ROTARY PUMP	<a href="http://data.15926.org/rdl/RDS16771599">http://data.15926.org/rdl/RDS16771599</a>	

RDL browser about Results1

Gereed 100%



# Asset Intensive Industry, Global Standard



# Bergen SC 4 Plenary Meeting Schedule

This is the detailed meeting agenda for the 78th Meeting of TC 184/SC 4 Industrial Data held at Bergen, Norway

	2020-05-03	2020-05-04	2020-05-05	2020-05-06	2020-05-07	2020-05-08
TIME	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
11:00 - 11:30				INDUSTRY DAY		TC 184/SC 4 Busines Meeting
11:30 - 12:00				INDUSTRY DAY		TC 184/SC 4 Busines Meeting
12:00 - 13:00	Lunch		Lunch	Lunch	Lunch	Close TC 184/SC 4 Meeting
13:00 - 13:30	PPC /Convenors Meeting		SC 4 Change Board	INDUSTRY DAY		
13:30 - 14:00	PPC /Convenors Meeting		SC 4 Change Board	INDUSTRY DAY		
14:00 - 14:30	PPC /Convenors Meeting		SC 4 Change Board	INDUSTRY DAY		
14:30 - 15:00	PPC /Convenors Meeting		SC 4 Change Board	INDUSTRY DAY		
15:00 - 15:15	Break		Break	Break	Break	
15:15 - 15:30	QC			INDUSTRY DAY	Resolutions Released to NSB HODs	
15:30 - 16:00	QC			INDUSTRY DAY		
16:00 - 16:30	QC			INDUSTRY DAY		
16:30 - 17:00	QC			INDUSTRY DAY		
17:00 - 17:30	NSB Delegations	Buffer		Buffer	Buffer	
17:30 - 18:00		Open Technical Forum	Implementation Forum	INDUSTRY DAY	NSB Deliberations	
18:00 - 19:00		Open Technical Forum	Implementation Forum		Coordinate with	
19:00 - 20:00				Dinner	Secretary for	
20:00 - 21:00				Dinner	Rooms	
21:00 - 22:00						

