



BIG DATA DOCUMENT SOLUTIONS

INSTANT INSIGHTS IN YOUR TECHNICAL DOCUMENTATION

LEGACY DOCUMENTS PROBLEM

DOCUMENT CONTROL MAZE

Keeping track and control on sometimes decades of historic documents of complex assets and within huge organizations is extremely difficult and time consuming.

- Lots of documents scattered around in different databases
- Information is often distributed over multiple documents, which are not linked (actively)
- Many different types of documents (printed/digital, text, technical drawings, etc.)
- Version control is difficult, but essential for quality control and certification
- Most document management SW uses only common (folder) index to organize its content



BIG DATA IN DOCUMENT MANAGEMENT

MAKE YOUR DOCUMENTS RELATIONAL AND CLICKABLE

Big data analytics enable you to create a smart dynamic technical documentation index, within your unstructured mountain of (historic) data.

- Combining drawings and manuals via intelligent shape & text recognition
- Fully searchable due to (clickable) cross-references between documents and their content
- Self-learning by using machine-learning to be adaptive to document structure changes
- Detecting and alerting incorrect and missing relevant documents
- Companies like Total & NAM selected our solution for their assets documentation monitoring

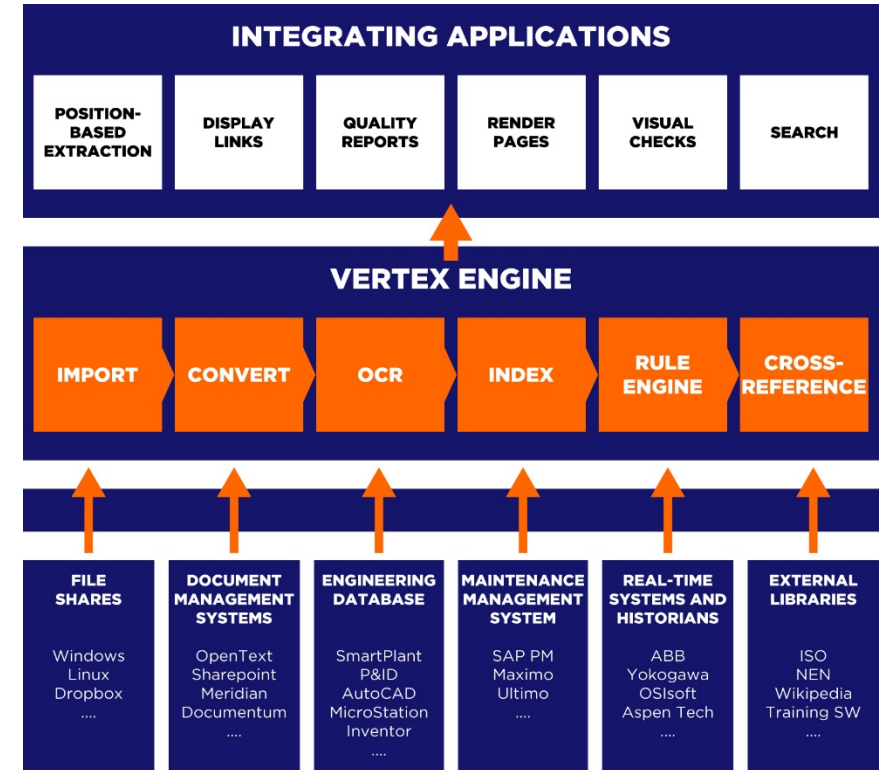


MACHINE LEARNING SAVES COST

SMART INDEXING WITH VERTEX ENGINE

Our solution deploys a whole set of dedicated algorithms to automatically index your oil & gas domain specific documents. Where people need weeks to years to do in themselves, our solution does it near instantly.

- Verification check during import
- HTML5 conversion
- OCR on text and object symbols (e.g. P&ID, well schematics, etc.)
- Dynamic indexing based on document information
- Automatic meta data creation via semantic machine learning
- Full dynamic searchable by generating cross-reference links
- Updating master cross-reference tables



FUNCTIONALITY

DYNAMIC CROSS-REFERENCING IN DOCUMENT MANAGEMENT

- Digitization of complete document structure in HTML5
- Create cross-references between documents, drawings and data
- Fast searchable content at macro level
- Control of missing or incorrect content
- Self-learning during growing and evolving document database
- Classification of documents, drawings and their relevant content
- Organizing information at different levels (e.g. per asset, total organization, etc.)
- Real-time data integration

4 CHARACTERISTIC USER CASES

SINGLE ASSET VIEW

- All information in one view with links between all relevant documents and data
- Manuals, instructions, technical drawings and operational data integrated

QUALITY CONTROL

- Incorrect or missing information automatically identified
- Latest version always shown regardless of where documents or data are changed

DOCUMENT-DATA INTEGRATION

- Existing documents automatically classified for analytics and integration
- Technical drawings, manuals and real-time data combined into a single view

NEW BUILDS

- Overview of entire engineering project, accessible for all stakeholders
- Notification of document or data changes made in asset information systems

SCREENSHOTS APPLICATION

Homepage R4D

Files

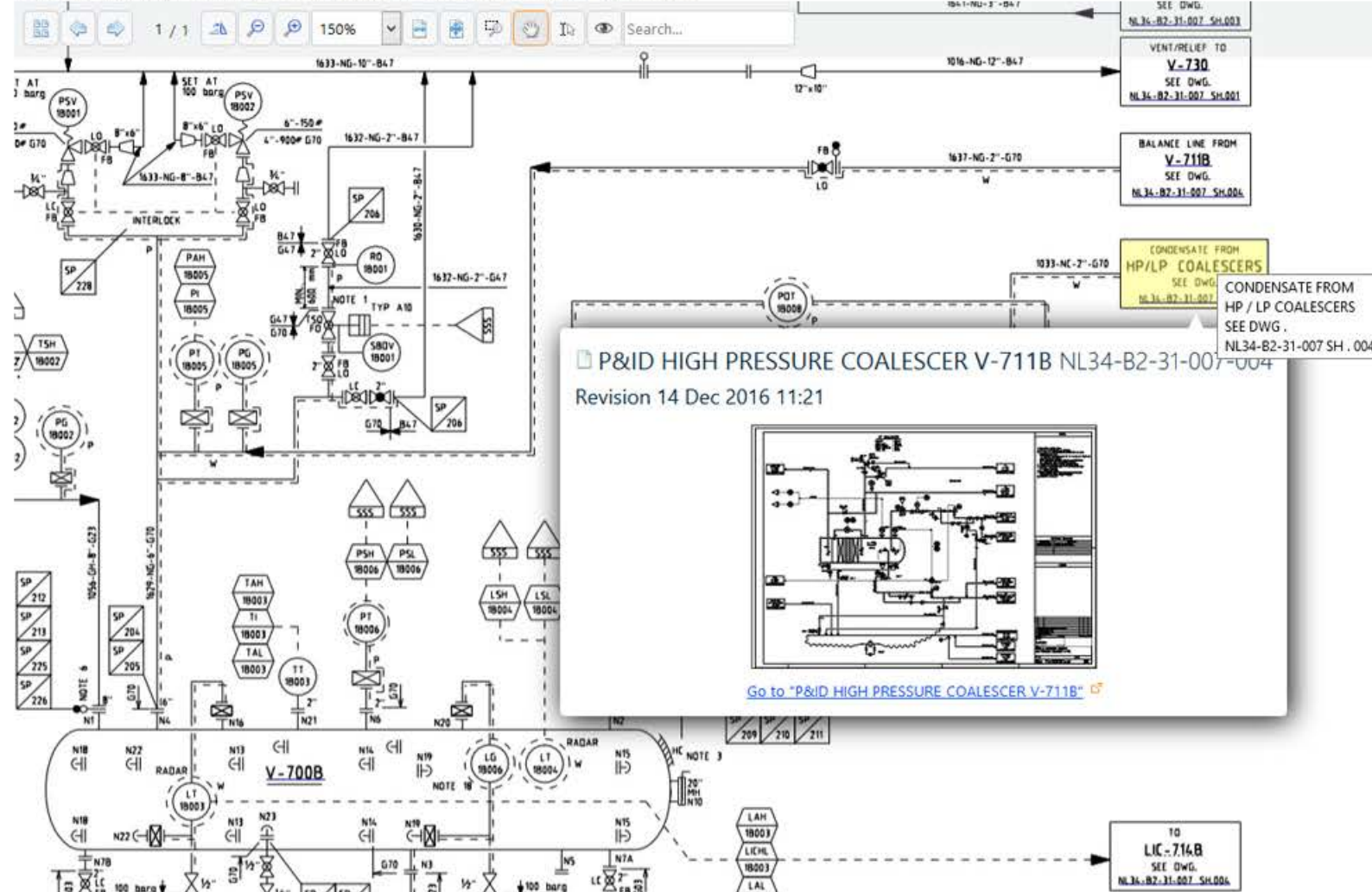
- HSE
- Operating Manual
- Procedures
- Drawings
 - P&IDs
 - P&ID HIGH PRESS...
 - P&ID HIGH PRES...
 - P&ID LOW PRESS...
 - P&ID LOW PRESS...
 - P&ID WELL-2
 - P&ID WELL-3
 - P&ID WELL-4
 - P&ID WELL-5
 - P&ID WELL-6
 - Red-Blue Markups
 - Scanned from a X...
- Lists
- Reports
- Pictures
- Vendor
- Well data
- Screenshots

Tag Numbers

- A-E
- F-H
- I-L
- P-Q
- R-S
- T-W
- X-Z

P&ID HIGH PRESSURE SEPARATION V-700B NL34-B2-31-007-002

In folder R4D / Drawings / P&IDs, last updated 14 Dec 2016 11:21 in FileSystem [PDF] show more



Rev. 14 Dec 2016 11:21

References (126)

Health, Safety & Enviro... (0)

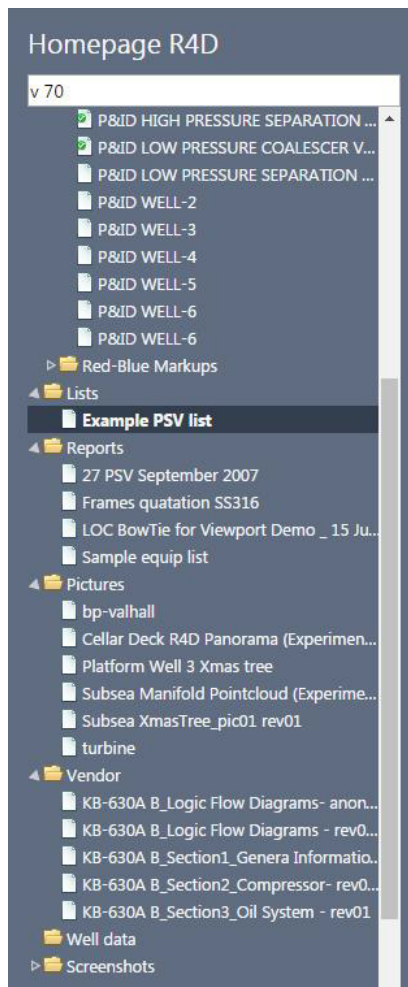
- Operating Manual (1)
 - Volume F HP Separation
- Procedures (0)
- Drawings (3)
- Lists (0)
- Reports (0)
- Pictures (0)
- Vendor (0)
- Well data (0)
- Screenshots (0)
- Tag Numbers (122)
 - Air Cooler
 - Closed Drain Tank
 - Corrosion Monitor
 - Emergency Shutdown Valve
 - Flow Alarm Low
 - Flow Sensor
 - Flow Transmitter
 - Fuel Quantity Indicator
 - High Pressure Coalescer
 - Hydraulic Control
 - Hydraulic Control
 - Hydraulic Switch
 - Level Alarm High
 - Level Alarm Low
 - Level Gauge
 - Level Indicator Controller High Low
 - Level Switch High
 - Level Switch Low
 - Level Transmitter
 - Level Transmitter

Possible references (12)

REFERENCE LINKS PER TAG NUMBER

AUTO-GENERATED LINKS

- Tag numbers are automatically identified
- Additional associated information is shown
- Reference links to related documents



Example PSV list PSV-LIST

In folder R4D / Lists , last changed 29 Oct 2015 10:22 in FileSystem show more

	none	PRS-1022	-
	none	PRS-1023	-
	none	PRS-1024	-
	Stoomwezen	V-780	9.8
	Stoomwezen	V-750	9.8
	none	PRS-1029	164.6
	None	WATERCHIL.UNIT	3
	none	COLDSTOR.VESSEL	3
	Stoomwezen	spare	164.6
	Stoomwezen	spare/V-700-b	164.6
	Stoomwezen	COMP-VENT	100
	Stoomwezen	COMP-VENT	100
	None	P-710-A	375
	none	P-710-B	375
	none	P-730	44
	none	p-730	44
	none	P-740	44
	none	P-740	44
	Stoomwezen	DS-751	18

DS-751

Differential Switch

Manufacturer serial number	8.36186E+12	Saptimo
Inventory number	000000031000126890	Saptimo
Abc indicator	A	Saptimo
Certificate date	1-6-2016	Saptimo
Supplier	Valtek	Saptimo
Model	P 76 TS	Saptimo
Manufacturer	HYMO	Saptimo
Description	Differential Switch	Saptimo
Tag	DS-751	Saptimo

02 References (58)

Health, Safety & Environ... (0)

Operating Manual (0)

Procedures (0)

Drawings (0)

Lists (0)

Reports (0)

Pictures (0)

Vendor (0)

Well data (0)

Screenshots (0)

Tag Numbers (58)

- DS-751 Go to
- IF-751-A
- IF-751-B
- P-710-A
- P-710-B
- P-730
- P-740
- P-770-A
- P-770-B
- P-772
- P-777
- PSV-1001-A
- PSV-1001-B

Possible references (7)

Revisions (2)

REFERENCE LINKS PER OBJECT

LINKING OBJECTS

- Also objects in technical drawings are identified and referenced to other information and documents
- Review labelled information
- Link to related documents and drawings

The screenshot displays a software interface for managing technical drawings. On the left, a sidebar titled 'Homepage R4D' shows a file tree with categories like 'Files', 'Drawings', and 'P&IDs'. The main area shows a technical drawing of a High Pressure Coalescer (V-711-B) with various annotations and notes. A pop-up window provides detailed information about the object, including its manufacturer, inventory number, and description. On the right, a 'References' sidebar lists related documents and drawings, with a 'Tag Numbers' section listing specific tags like ARE-1500, FQI-7148, TK-777, V-700-B, and V-711-B. The interface also includes a search bar at the top and a 'Possible references' section at the bottom right.

Homepage R4D

v 70

Files

- ▲ HSE
 - Links to HSE intranet pages
- Operating Manual
- ▲ Procedures
 - MSDS Ammonia-Anhydrous - CF
 - MSDS Ammonia-Anhydrous - TERRA
 - MSDS Ammonia-Anhydrous - Dyno No...
 - PSV
 - R4D Power Supply Switching Job Instru...
 - R4D Start-up after ESD1 rev01
 - R4E Start-up after ESD1 rev01
- ▲ Drawings
 - ▲ P&IDs
 - P&ID HIGH PRESSURE COALESCER V...
 - P&ID HIGH PRESSURE SEPARATION
 - P&ID LOW PRESSURE COALESCER V...
 - P&ID LOW PRESSURE SEPARATION
 - P&ID WELL-2
 - P&ID WELL-3
 - P&ID WELL-4
 - P&ID WELL-5
 - P&ID WELL-6
 - P&ID WELL-6
 - Red-Blue Markups
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Scanned from a Xerox Device

29 Oct 2015 10:22

References (5)

Health, Safety & Environm... (0)

Operating Manual (0)

Procedures (0)

Drawings (0)

Lists (0)

Reports (0)

Pictures (0)

Vendor (0)

Well data (0)

Screenshots (0)

▲ Tag Numbers (5)

- ARE-1500
- FQI-7148
- TK-777
- V-700-B
- V-711-B [Go to](#)

Possible references (12)

V-711-B

High Pressure Coalescer

Manufacturer serial number	192298	Saptimo
Inventory number	000000031001046474	Saptimo
Gross weight	0	Saptimo
Func.loc	R4 /R4D /OIL/SEP /V-711B	Saptimo
Abc indicator	A	Saptimo
Type	COHP	Saptimo
Iso group	19	Saptimo
Certificate date	7-6-2017	Saptimo
Supplier	DELAVAL	Saptimo
Model	RZD-XN-8"x600#	Saptimo
Manufacturer	ELECTRO CONTROLS	Saptimo
Description	High Pressure Coalescer	Saptimo
Tag	V-711-B	Saptimo

[Go to "V-711-B"](#)

PREVIEW MODE

PREVENT USELESS CLICKS

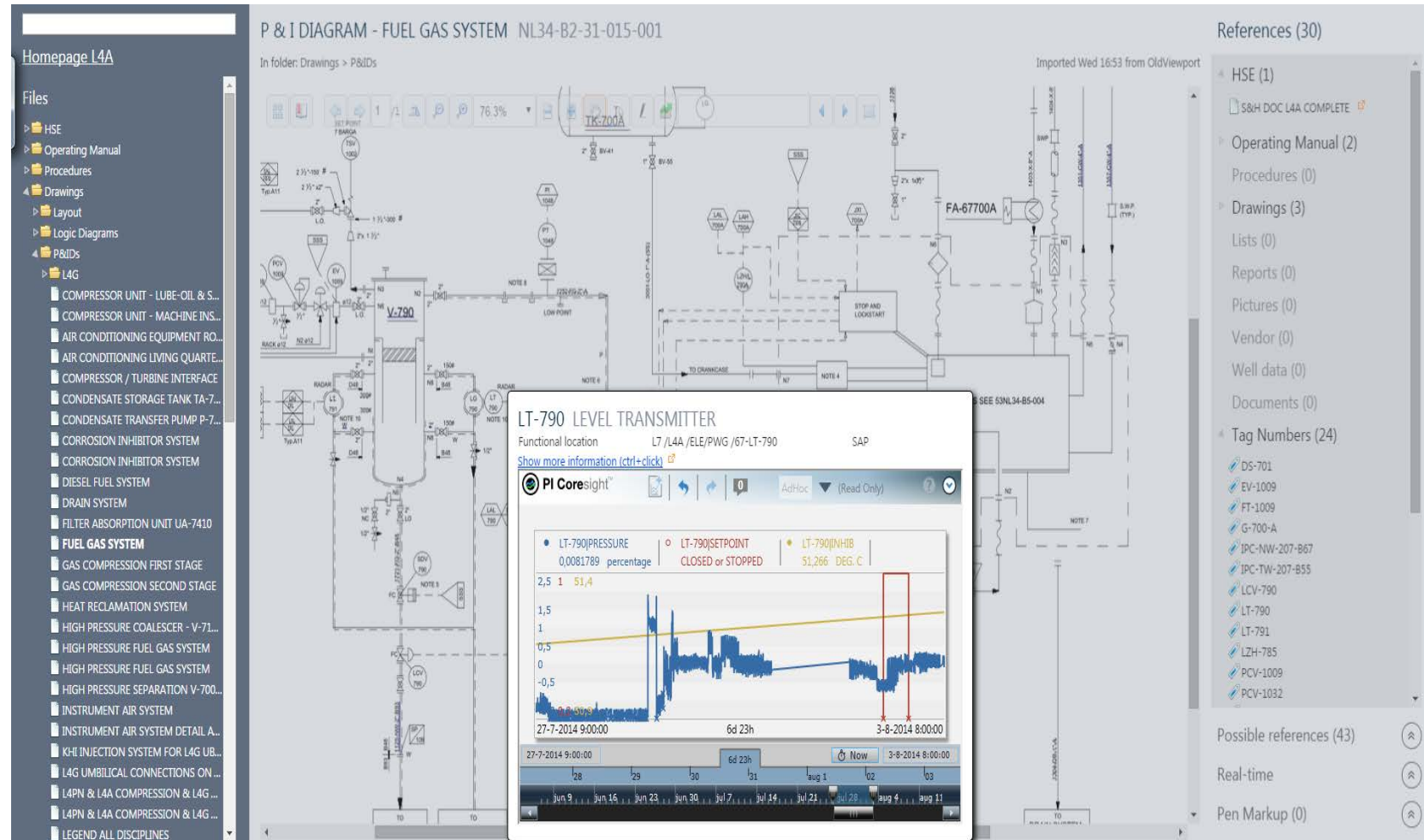
- When clicking on a link, it is shown first in preview mode
- The preview allows you to continue to the underlying document

The screenshot displays the R4D software interface. On the left is a sidebar with a file tree under 'Homepage R4D'. The tree includes folders for 'Files', 'HSE', 'Operating Manual', 'Procedures', 'Drawings', 'P&IDs', 'Red-Blue Markups', 'Lists', 'Reports', 'Pictures', 'Vendor', 'Well data', and 'Screenshots'. Under 'P&IDs', a list of documents is shown, including 'P&ID HIGH PRESS...', 'P&ID LOW PRESSU...', 'P&ID WELL-2', 'P&ID WELL-3', 'P&ID WELL-4', 'P&ID WELL-5', 'P&ID WELL-6', and 'P&ID WELL-6'. The main area shows a P&ID drawing titled 'P&ID HIGH PRESSURE COALESCER V-711B NL34-B2-31-007... 29 Oct 2015 10:22'. The drawing includes various process symbols like tanks, valves, and pipes, with labels such as 'RADAR', 'RADAR INTERFACE', 'SDV 711-B', 'PT 711-B', 'LV 711-B', '1033-NC-2'-G70', 'CONDENSATE TO EXPORT GAS LINE', 'SEE G.W.G. NL34-B2-31-007-Sub-002', '2064-OR-2'-G03', and 'FB'. A preview window is overlaid on the drawing, showing a thumbnail of the 'P&ID HIGH PRESSURE SEPARATION V-700B NL34-B2-31-007-002' document with revision '635817073422245845'. The preview window has a 'Go to "P&ID HIGH PRESSURE SEPARATION V-700B"' link. On the right, a 'References (21)' panel lists 'Health, Safety & Environ... (0)', 'Operating Manual (1)', 'Volume F HP Separation', 'Procedures (0)', 'Drawings (3)', and 'P&ID HIGH PRESSURE SE... Go to'. Below this is a 'Possible references (14)' section with links to 'LV-714-B-2', 'PG-711-B', 'PSV-711-B', and 'SDV-711-B'.

REAL-TIME DATA INTEGRATION

RELATED DOCUMENTS TO 'LIVE' DATA

- Real-time data feeds can be integrated into you documents and drawings
- Available for OSIsoft PI Server, OSIsoft PI AF and Wonderware Historian



SEARCH & FIND

QUICK FILTERING

- When starting typing, initial results are shown instantly
- Select the right item to continue to all relevant information

Homepage R4D

v 70

V-700-A

V-700-B

P&ID LOW PRESSURE SEPARATION V-700A

NL34-B2-31-007-001 (has keyword = P-ID-LOW-PRESSURE-SEPARATION-V-700-A)

P&ID HIGH PRESSURE SEPARATION V-700B

NL34-B2-31-007-002 (has keyword = P-ID-HIGH-PRESSURE-SEPARATION-V-700-B)

P&ID HIGH PRESSU...

P&ID LOW PRESSU...

P&ID LOW PRESSU...

P&ID WELL-2

P&ID WELL-3

P&ID WELL-4

P&ID WELL-5

P&ID WELL-6

P&ID WELL-6

Red-Blue Markups

Lists

Reports

Pictures

Vendor

Well data

Screenshots

Tag Numbers

A-E

F-H

I-L

P-Q

R-S

T-W

P&ID HIGH PRESSURE COALESCER V-711B NL34-B2-31-007... 29 Oct 2015 10:22

In folder R4D / Drawings / P&IDs , last changed 29 Oct 2015 10:22 in FileSystem show more

100%

Search...


References (21)

Possible references (14)

Tag Numbers (10)

Files (4)

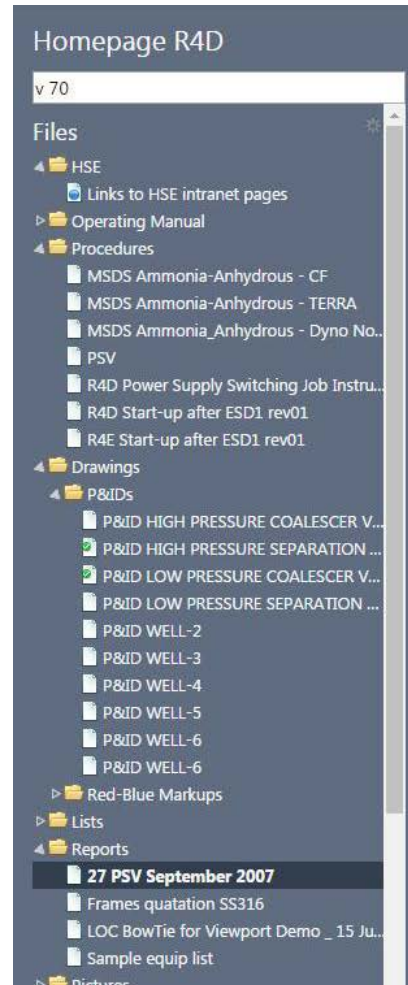
12

 ROLLOOS

SCANNED DOCUMENTS ARE INCLUDED

MAKING DOCUMENTS RELEVANT AGAIN

- Besides digital documents, obviously also scanned (paper) document and drawings can be included
- Old tag numbers will be related to your new document structure



27 PSV September 2007

29 Oct 2015 10:22

References (1)

In folder R4D / Reports, last changed 29 Oct 2015 10:22 in FileSystem show more

General		Report no.: 23609	
Project nr.: 071199		Client PO nr.: Ticket 413	
Client:		Platform:	
Location:		Client PO nr.: Ticket 413	
Tag nr.: PSV-1171-		Body: Carbon Steel	
Make: Anderson & Greenwood		Disc: Stainless Steel	
Serial nr.: 793275		Nozzle: SOFT	
Model: 81ps 68 8		Spring: Spring Steel	
Inlet flange: 3/4"npt f		Belows: N.A.	
Outlet flange: 1"npt f		Smallest inlet diam.: 12	
Pretest pressure: 17.2 Bar		Nozzle surface diam.: 14	
Pretest leak: Yes		Length (mm): 62	
Leaking time: <20SEC		Thickness (mm): 4	
Closing after pressure: Yes Pollution: Nihil		Outside diam (mm): 21,8	
Height old (mm): 16,2		Coil dim (mm): 6	
Height new (mm): 16,2		Soft good kit no.:	
Test Equipment: Multimech Testbench		Pilot kit no.:	
Calibr.manometers:			
Adjustment pressure: 17.2 Bar			
Testmedium: Air			
Test pressure *): 16,684 - 17,716 Bar			

*) ± 3% tolerance

Remarks:

- ☒ Equipment is cleaned
- ☒ Equipment is visual acceptable
- ☒ Equipment is re-adjusted at requested adjustment pressure

- Health, Safety & Environm... (0)
- Operating Manual (0)
- Procedures (0)
- Drawings (0)
- Lists (0)
- Reports (0)
- Pictures (0)
- Vendor (0)
- Well data (0)
- Screenshots (0)
- Tag Numbers (1)
 - PSV-1071

Possible references (5)



INSIGHT
INFORMATION

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