



MANAGING RISK



Intelligent Data Sets



Semantic Days 2008

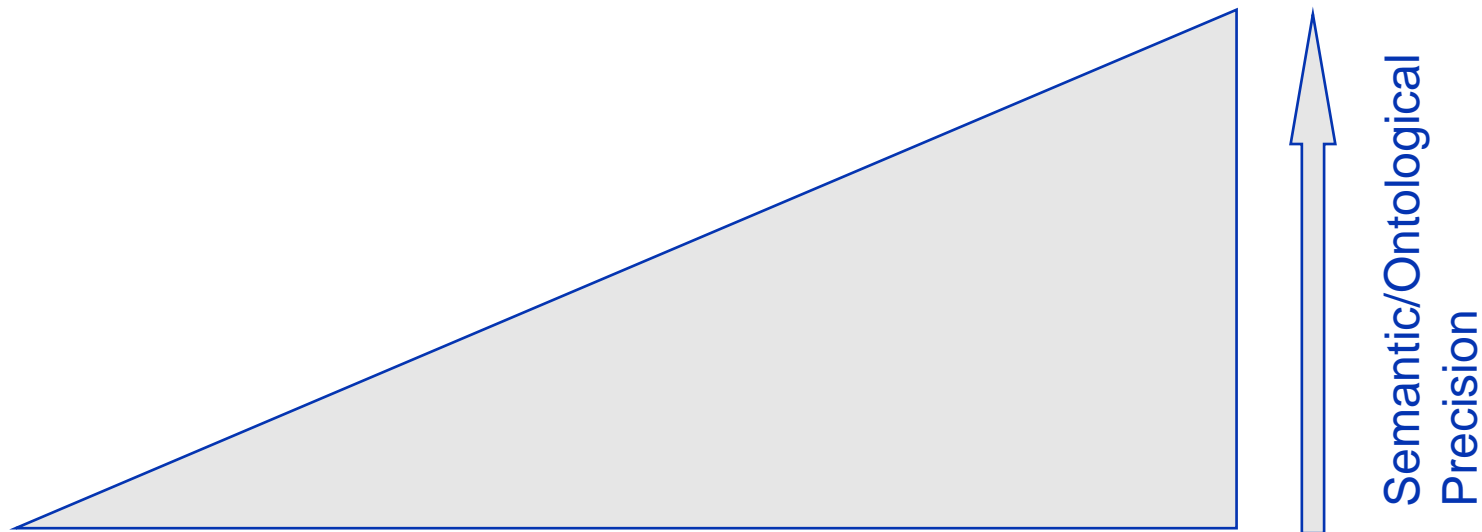
Magne Valen-Sendstad
23 April 2008

Connecting identified objects on the internet using semantic tools, but no rigorous ontology

- Useful

Relating (in a precise meaning) objects that are identified on the internet using semantic tools, rigorous semantics/ontology and reasoning. Required for

- data quality improvement
- data transfer automation
- data integration



The Problem



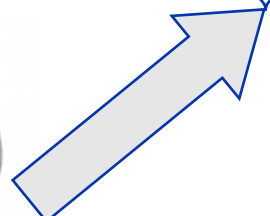
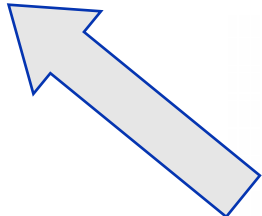
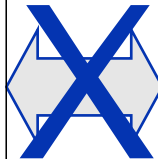
Supplier

SHAREPOINT		Database	
Transmitter, Pressure, Electric			
Document Number	28-1A-KOG-04-27500-0012	Revision	1
Plant/Platform	Test Installation 2	Process Datach. No.	N/A
Tag number	PT-42-0004	System	N/A
SerialNo	N/A	Range From	0
SetPoint Low	10 barG	Range To	110
SetPoint High	71 barG	Range Unit	barG
P.I. ID	28-1A-KOG-C79-00279-0002	Area	N/A
Line/Equipment no.	XX-42-0002	PC	N/A
Service description	SCALE INHIBITOR, PUMP OUTLET	PC	TID-M02-ME-01
Unique no.	TEK-0008177		
Manufacturer	EMERSON PROCESS MANAGEMENT		
Type	3051CC		
Manuf. Partno.	3051CC-5-A-2-A-1-K-B41-L4-M-Q4		
Class	Transmitter, Pressure, Electric		
Area		General	
Explosion protection	Ex ia	Description	Gauge
Temperature class	TC	Supply	Open, hot protocol
Approval authority	BAESEA	Mounting	305-101 CC
Compliance	SAS 3051/100X	Material	Stainless steel
ATEX group	II	Filling fluid	Stainless steel
ATEX category	1	Seal material	Glass filled TFE
ATEX ambient atmosphere	G	Process connection material	Stainless steel
Ambient temperature	-40 - 65 °C	Non process cover material	316
Dimensions and Weight		Flange bolt material	316 AUSTENITIC
Weight	4.7 kg	Diaphragm material	Stainless steel
Function		Diaphragm material low pressure	316L
Range	0 - 1200 kPa	Diaphragm material high pressure	connection
Span limit minimum, Pressure	138 kPa	Bracket material	Stainless steel
Span limit maximum, Pressure	1200 kPa	Bracket lock material	Stainless steel
Alternative Range	0 - 138 bar	Adapter lock material	316 AUSTENITIC
Alternative span limit maximum, Pressure	138 bar	Process Connection	
Alternative span limit maximum, Pressure	138 bar	Connection design	NPT
Output signal	4 - 20 mA	Size	50mm
Accuracy	±0.075%	Thread pitch	18 t/inch
Display type	LCD	Supply Connection	
Static working pressure	3400 psi	Supply connection design	Metric threaded
		Supply connection size	20 mm
		Thread pitch supply	1.5 mm/28
Comment			
Accuracy for span greater than 10:1 at LRL. Power consumption 10-30 mA. Load limitation: 50P Ohm. Static pressure value valid with transmitter temperature equal to ambient. Digital signal based on hot protocol. Customer design review, Safety and Data approval. Calibration data sheet (2 points calibration at 0%, 25%, 50%, 75%, and 100% of range).			
1	01.11.2005 14:44	Created by: SHAREPOINT	P. M.
Rev.	Date	Issue/Description	Prepared
			Checked
			Doc. Appr.
			Client Appr.
			Page 1 of 1

EPC/OO

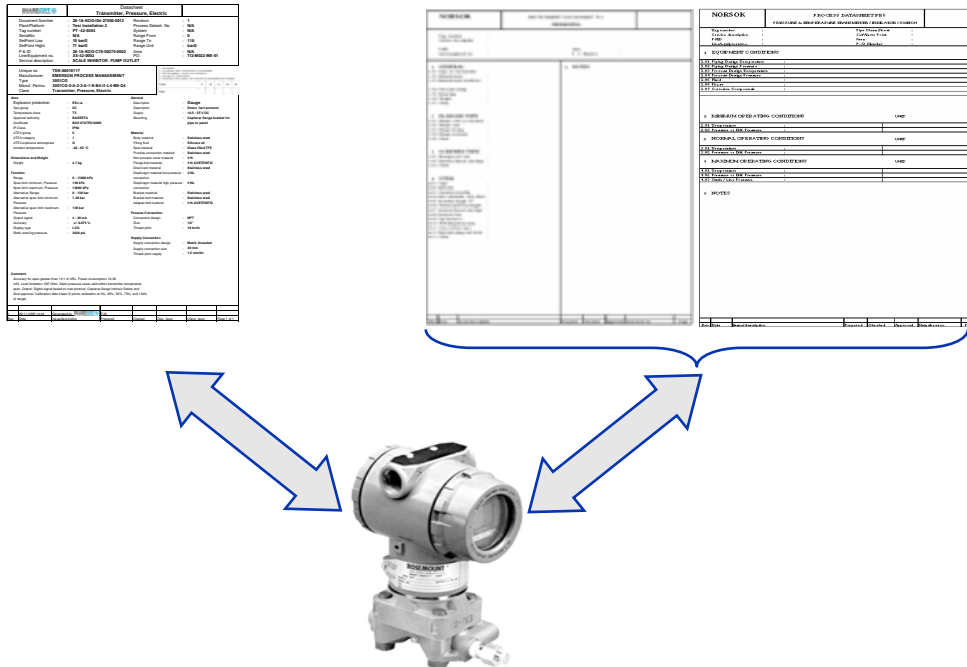
NORSOK	INSTRUMENT DATASHEET T01	
THERMOWELL		
Tag number		
Service description		
P&ID		Area
Instrumentation no.		F. O. Number
1 GENERAL		1 NOTES
1.01 Type of construction		
1.02 Mounting		
1.03 Manufacturer code/label		
1.04 Process rating		
1.05 Mounting		
1.06 Weight		
1.07 Other		
2 FLANGED TYPE		
2.01 Flange code or standard		
2.02 Flange size		
2.03 Flange rating		
2.04 Flange material		
2.05 Other		
3 SCREWED TYPE		
3.01 Threaded nut size		
3.02 Diameter thread lock type		
3.03 Other		
4 SYSTEM		
4.01 DPN		
4.02 Material		
4.03 Diaphragm rating		
4.04 No. x/0.0000000000000000		
4.05 Mounting height, °C		
4.06 Threaded hole length		
4.07 Process thread size/type		
4.08 Thread size		
4.09 TB 300 series		
4.10 Wetting by ratio		
4.11 Cover number type		
4.12 Material, plug and check		
4.13 Other		
Rev. No.	Date/Description	Prepared
		Checked
		Approved
		Sub. checked by
		Page

NORSOK	PROCESS DATASHEET P01
PRESSURE & TEMP. SENSITIVE INSTRUMENTS / SENSORS / SWITCH	
Tag number	File Class/Sheet
Service description	Instrument Name
P&ID	Area
Instrumentation no.	F. O. Number
1 EQUIPMENT CONDITIONS	
1.01 Flange Code/Equipment	
1.02 Flange Code/Process	
1.03 Flange Code/Instrumentation	
1.04 Flange Code/Process	
1.05 Flange	
1.06 Flange	
1.07 Corrosion Category	
2 MINIMUM OPERATING CONDITIONS	
2.01 Temperature	UNIT
2.02 Pressure or Max. Pressure	
3 NOMINAL OPERATING CONDITIONS	
3.01 Temperature	UNIT
3.02 Pressure or Max. Pressure	
4 MAXIMUM OPERATING CONDITIONS	
4.01 Temperature	UNIT
4.02 Pressure or Max. Pressure	
4.03 Sub/Lex. Pressure	
5 NOTES	
Rev. No.	Date/Description
	Prepared
	Checked
	Approved
	Sub. checked by
	Page



Intelligent Data Sets Project Objective

- The objective of the project is to
 - Develop a methodology for mapping existing proprietary data representations to/from an ISO 15926 representation to support data exchange and integration using “Intelligent Data Sets”
 - This provides data separated from presentations, which again allows assembly of data in new formats targeted at new work processes
 - To study how this support new collaborative work processes within and between organizations is a research topic at the UiS.



Many different, view dependant descriptions

- business
- company
- phase (lifecycle)
- application (DS/2D/3D)
- etc



One neutral, extendable description, supporting multiple views across phases and applications

Intelligent Data Sets Project

MANAGING RISK

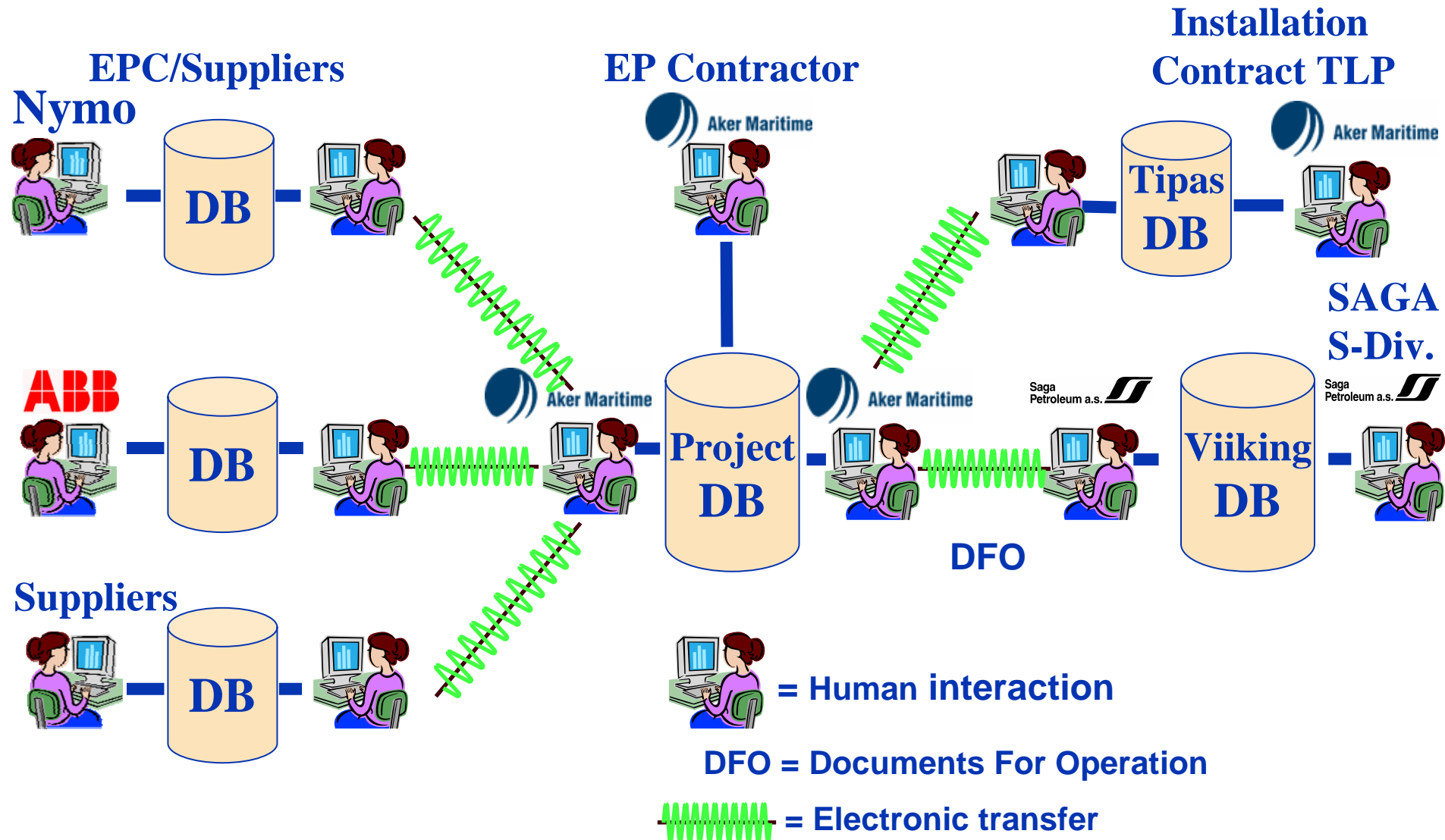


- 3 year project ending December 31 2008 with a total budget of 2.7 mill USD
 - Funded by Research Council of Norway (NRC) and participants
- Participants
 - Operator
 - Solution Providers
 - Consultants
 - Associations
- Collaborating associations and projects
 - Accelerating Deployment of ISO 15926 (ADI) and FIATECH (US initiatives)



POSC Caesar Association

Technical Information- Vigdis



8 definitions of mean time between failure

■ MEAN TIME BETWEEN FAILURE (#RDS7925234)

A period of time which is the mean period of time interval between failures.

■ MEAN TIME BETWEEN FAILURE 1 A (#RDS14647190)

The time duration between two consecutive failures of a repaired item.

International Electrotechnical Vocabulary (IEV) online database

■ MEAN TIME BETWEEN FAILURE 1 B (#RDS14647235)

The expectation of the time between failures: Note. - In English, the use of the abbreviation MTBF in this sense is now deprecated.

International Electrotechnical Vocabulary (IEV) online database

■ MEAN TIME BETWEEN FAILURE 1 C (#RDS14647280)

The expectation of the operating time between failures.

International Electrotechnical Vocabulary (IEV) online database

■ MEAN TIME BETWEEN FAILURE 1 D (#RDS14647325)

Total time duration of operating time between two consecutive failures of a repaired item

International Electrotechnical Vocabulary (IEV) online database

■ MEAN TIME BETWEEN FAILURE 2 (#RDS14647415)

Predicts the average number of hours that an item, assembly, or piece part will operate before it fails.

Jones J. V. (1987), Integrated Logistics Support Handbook, McGraw Hill Inc., USA.

■ MEAN TIME BETWEEN FAILURE 3 (#RDS14647145)

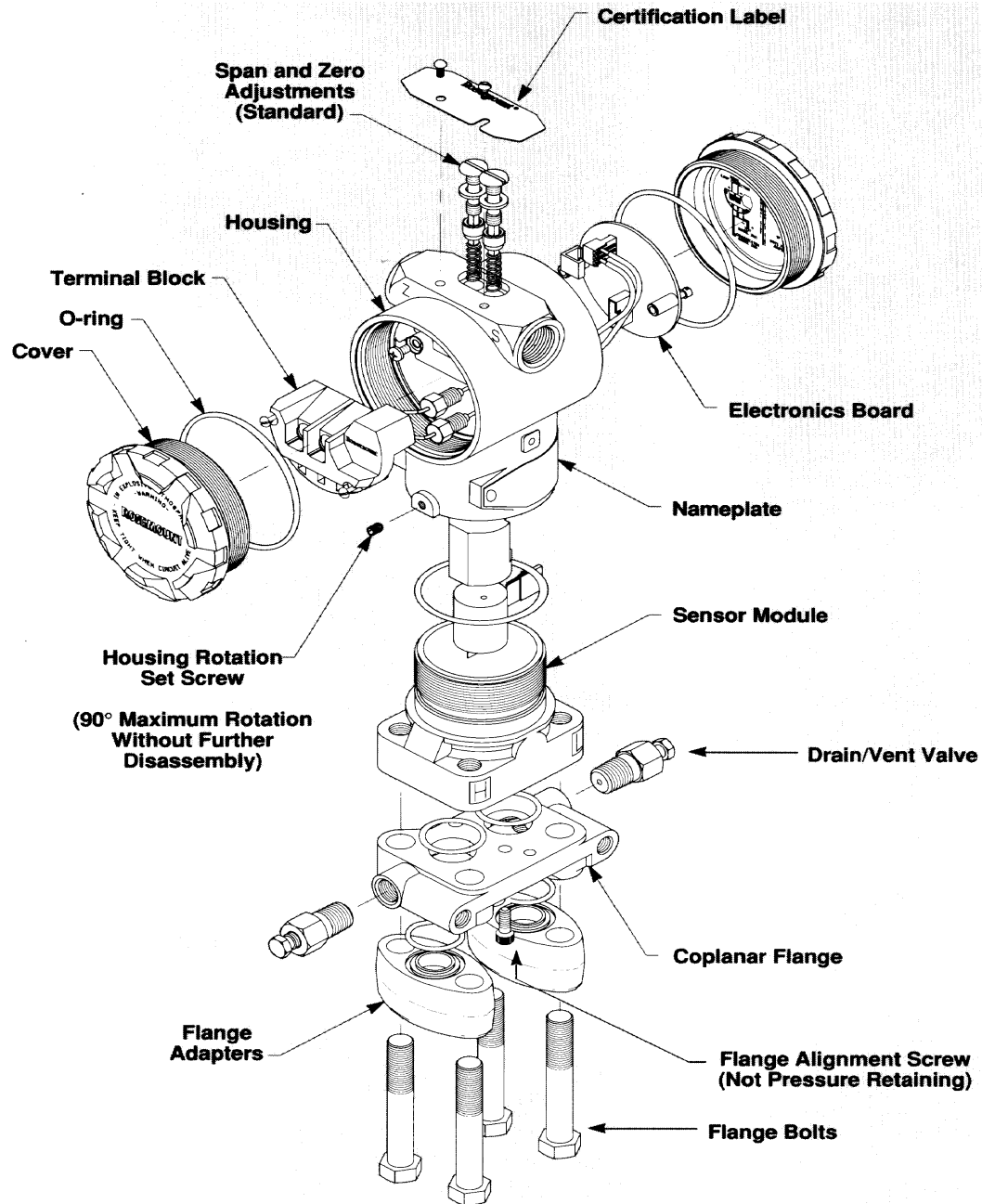
For a particular interval, the total functional life of a population of an item divided by the total number of failures within the population during the measurement interval. The definition holds for time, rounds, miles, events, or other measure of life units.

MIL-PRF-49506 (1996), Performance Specification Logistics Management Information

■ MEAN TIME BETWEEN FAILURE 4 (#RDS14646965)

The average length of time a system or component works without failure.

Test Case



Representations Of Product Data



NORSOK		INSTRUMENT DATASHEET P01		
		PRESSURE / DIFF. PRESSURE INSTRUMENT ELECTRIC		
Tag number :	Scale Range :	Service description :	Set/Alarm Point :	
P&ID :	Area :	Line/equipment no. :	P. O. Number :	
1 GENERAL		5 TRANSMITTER		
1.01 Type :	5.01 Indicator :	1.02 Manufacturer :	5.02 Output signal :	
1.03 Manufacturer model no. :	5.03 Communication :	1.04 Operating Temp. Limits :	5.04 Supply voltage :	
1.05 Mounting :	5.05 Consumption :	1.06 Weight :	5.06 Load limitation :	
1.07 Other :	5.07 Other :	6 SWITCH		
2 INSTRUMENT CHARACTERISTICS		6.01 Reset; automatic or manual :		
2.01 Calibrated input range :	6.02 Deadband or differential :	2.02 Characteristic :	6.03 Alarm at increase/decrease :	
2.03 Accuracy :	6.04 Contact configuration :	2.04 Repeatability :	6.05 Contact material :	
2.05 Lower / upper range limits :	6.06 Contact rating :	2.06 Min / max span :	6.07 Contact action on alarm :	
2.07 Zero adjustment :	6.08 Other :	2.08 Overpressure protect. to :	7 CHEMICAL SEAL	
2.09 Max static pressure :	7.01 Type :	2.10 Other :	7.02 Material, upper/lower part :	
3 ELEMENT / SENSOR		3.01 Type :	7.03 Material, bolts / nuts :	
3.02 Material, element (sensor) :	7.04 Material, diaphragm :	3.03 Material, socket (inlet port) :	7.05 Fill fluid :	
3.04 Material, sensor bolts/nuts :	7.06 Capillary length/diameter :	3.05 Process conn. size/type :	7.07 Material, capillary/armour :	
3.06 Sour service spec. :	7.08 Process conn. size/type :	3.07 Other :	7.09 Other :	
4 HOUSING		8 ACCESSORIES		
4.01 Dimension :	8.01 Mounting bracket :	4.02 Material :	8.02 Material, mounting bracket :	
4.03 Cable connection :	8.03 Overpr. protection valve :	4.04 Cable entry :	8.04 Material, overpr. prot. valve :	
4.05 Enclosure protection :	8.05 Pulsation damper :	4.06 Ex. classification :	8.06 Material, pulsation damper :	
4.07 Protective coating :	8.07 Other :	4.08 Other :	9 NOTES	

SHARECART		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 High :	71 barG	Range Unit :	barG
P & ID :	28-1A-KOG-C78-00275-0002	Area :	N/A
Line/Equipment no. :	XX-42-0002	PQ:	T12-M022-ME-01
Service description :	SCALE INHIBITOR. PUMP OUTLET		
Unique no. :	TEK-00018117	1. Accepted 2. Accepted with comments incorporated 3. Not accepted; revised and resubmit 4. Issued for information 5. Interface information as clouded is accepted and frozen	
Manufacturer :	EMERSON PROCESS MANAGEMENT	Date:	1 2 3 4 5
Type :	3051CG	Sign:	
Manuf. Partno. :	3051CG-5-A-2-2-A-1-K-B4-I1-L4-M6-Q4		
Class :	Transmitter, Pressure, Electric		
Area		General	
Explosion protection :	EEx ia	Description :	Gauge
Gas-group :	IIC	Description :	Smart, hart protocol
Temperature class :	T5	Supply :	10.5 - 55 V DC
Approval authority :	BASEEFA	Mounting :	Coplanar flange bracket for pipe or panel
Certificate :	BAS 97ATEX1089X	Material	
IP-Class :	IP66	Body material :	Stainless steel
ATEX group :	II	Filling fluid :	Silicone oil
ATEX category :	1	Seal material :	Glass filled TFE
ATEX explosive atmosphere :	G	Process connection material :	Stainless steel
Ambient temperature :	-40 - 85 °C	Non process cover material :	316
Dimensions and Weight		Flange bolt material :	316 AUSTENITIC
Weight :	4.7 kg	Drain/vent material :	Stainless steel
Function		Diaphragm material low pressure :	316L connection
Range :	0 - 13800 kPa	Diaphragm material high pressure :	316L connection
Span limit minimum, Pressure :	138 kPa	Bracket material :	Stainless steel
Span limit maximum, Pressure :	13800 kPa	Bracket bolt material :	Stainless steel
Alternative Range :	0 - 138 bar	Adapter bolt material :	316 AUSTENITIC
Alternative span limit minimum, Pressure :	1.38 bar	Process Connection	
Alternative span limit maximum, Pressure :	138 bar	Connection design :	NPT
Output signal :	4 - 20 mA	Size :	1/4"
Accuracy :	+/- 0.075 %	Thread pitch :	18 thr/in
Display type :	LCD	Supply Connection	
Static working pressure :	3626 psi	Supply connection design :	Metric threaded
		Supply connection size :	20 mm
		Thread pitch supply :	1.5 mm/thr
Comment			
Accuracy for span greater than 10:1 of URL. Power consumption 18-36 mW. Load limitation: 587 Ohm. Static pressure value valid within transmitter temperature spec. Output: Digital signal based on hart protocol. Coplanar flange Intrinsic Safety and Dust approval. Calibration data sheet (5 points calibration at 0%, 25%, 50%, 75%, and 100% of range)			
1	09.11.2006 14:44	Generated by SHARECART P.M.	
Rev.	Date	Issue/description	Prepared
Checked	Disc. Appr.	Client. Appr.	Page 1 of 1

Examples Of Inconsistent Representations

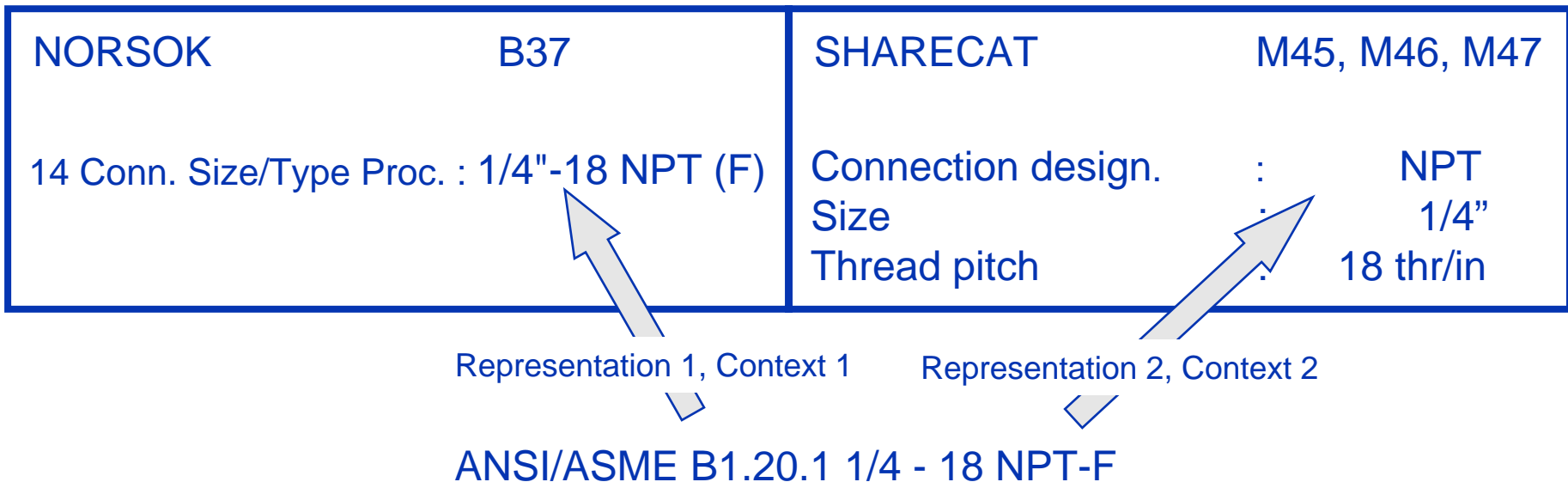


NORSOK		INSTRUMENT DATASHEET P01	
		PRESSURE / DIFF. PRESSURE INSTRUMENT ELECTRIC	
Tag number :	Scale Range :	Service description :	Set/Alarm Point :
P&ID :	Area :	Line/equipment no. :	P. O. Number :
1 GENERAL		5 TRANSMITTER	
1.01 Type :	5.01 Indicator :	1.02 Manufacturer :	5.02 Output signal :
1.03 Manufacturer model no. :	5.03 Communication :	1.04 Operating Temp. Limits :	5.04 Supply voltage :
1.05 Mounting :	5.05 Consumption :	1.06 Weight :	5.06 Load limitation :
1.07 Other :	5.07 Other :		
2 INSTRUMENT CHARACTERISTICS		6 SWITCH	
2.01 Calibrated input range :	6.01 Reset; automatic or manual :	2.02 Characteristic :	6.02 Deadband or differential :
2.03 Accuracy :	6.03 Alarm at increase/decrease :	2.04 Repeatability :	6.04 Contact configuration :
2.05 Lower / upper range limits :	6.05 Contact material :	2.06 Min / max span :	6.06 Contact rating :
2.07 Zero adjustment :	6.07 Contact action on alarm :	2.08 Overpressure protect. to :	6.08 Other :
2.09 Max static pressure :		2.10 Other :	
3 ELEMENT / SENSOR		7 CHEMICAL SEAL	
3.01 Type :	7.01 Type :	3.02 Material, element (sensor) :	7.02 Material, upper/lower part :
3.03 Material, socket (inlet port) :	7.03 Material, bolts / nuts :	3.04 Material, sensor bolts/nuts :	7.04 Material, diaphragm :
3.05 Process conn. size/type :	7.05 Fill fluid :	3.06 Sour service spec. :	7.06 Capillary length/diameter :
3.07 Other :	7.07 Material, capillary/armour :		7.08 Process conn. size/type :
	7.09 Other :		
4 HOUSING		8 ACCESSORIES	
4.01 Dimension :	8.01 Mounting bracket :	4.02 Material :	8.02 Material, mounting bracket :
4.03 Cable connection :	8.03 Overpr. protection valve :	4.04 Cable entry :	8.04 Material, overpr. prot. valve :
4.05 Enclosure protection :	8.05 Pulsation damper :	4.06 Ex. classification :	8.06 Material, pulsation damper :
4.07 Protective coating :	8.07 Other :	4.08 Other :	
		9 NOTES	

SHARECRT		Datasheet	
		Transmitter, Pressure, Electric	
Document Number :	28-1A-KOG-I54-27500-0012	Revision :	1
Plant/Platform :	Test Installation 2	Process Datasheet 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 High :	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 4 Issued for information 5 Interface information as clouded is accepted and frozen</small>	
Manufacturer :	EMERSON PROCESS MANAGEMENT	Date:	1 2 3 4 5
Type :	3051CG	Sign:	
Manuf. Partno. :	3051CG-5-A-2-2-A-1-K-B4-I1-L4-M6-Q4		
Class :	Transmitter, Pressure, Electric		
Area		General	
Explosion protection :	EEx ia	Description :	Gauge
Gas-group :	IIC	Description :	Smart, hart protocol
Temperature class :	T5	Supply :	10.5 - 55 V DC
Approval authority :	BASEEFA	Mounting :	Coplanar flange bracket for pipe or panel
Certificate :	BAS 97ATEX1089X	Material	
IP-Class :	IP66	Body material :	Stainless steel
ATEX group :	II	Filling fluid :	Silicone oil
ATEX category :	1	Seal material :	Glass filled TFE
ATEX explosive atmosphere :	G	Process connection material :	Stainless steel
Ambient temperature :	-40 - 85 °C	Non process cover material :	316
Dimensions and Weight		Flange bolt material :	316 AUSTENITIC
Weight :	4.7 kg	Drain/vent material :	Stainless steel
Function		Diaphragm material low pressure :	316L
Range :	0 - 13800 kPa	connection	
Span limit minimum, Pressure :	138 kPa	Diaphragm material high pressure :	316L
Span limit maximum, Pressure :	13800 kPa	connection	
Alternative Range :	0 - 138 bar	Bracket material :	Stainless steel
Alternative span limit minimum, Pressure :	1.38 bar	Bracket bolt material :	Stainless steel
Pressure		Adapter bolt material :	316 AUSTENITIC
Alternative span limit maximum, Pressure :	138 bar	Process Connection	
Pressure		Connection design :	NPT
Output signal :	4 - 20 mA	Size :	1/4"
Accuracy :	± 0.075 %	Thread pitch :	18 thr/in
Display type :	LCD	Supply Connection	
Static working pressure :	3626 psi	Supply connection design :	Metric threaded
		Supply connection size :	20 mm
		Thread pitch supply :	1.5 mm/thr
Comment			
Accuracy for span greater than 10:1 of URL. Power consumption 18-36 mW. Load limitation: 587 Ohm. Static pressure value valid within transmitter temperature spec. Output: Digital signal based on hart protocol. Coplanar flange Intrinsic Safety and Dust approval. Calibration data sheet (5 points calibration at 0%, 25%, 50%, 75%, and 100% of range)			
1	09.11.2006 14:44	Generated by SHARECRT	P.M.
Rev.	Date	Issue/description	Prepared
Rev.	Date	Issue/description	Prepared
			Checked
			Disc. Appr.
			Client. Appr.
			Page 1 of 1

Daily Challenges For Data Sheet Mapping

- In order to resolve this, a neutral, system independent representation that can map to any proprietary representation is required.
- Need to recognise which representation is used by which proprietary representation



Context Of Codes I



NORSOK		INSTRUMENT DATASHEET P01		
		PRESSURE / DIFF. PRESSURE INSTRUMENT ELECTRIC		
Tag number :	Scale Range :	Service description :	Set/Alarm Point :	
P&ID :	Area :	Line/equipment no. :	P. O. Number :	
1 GENERAL		5 TRANSMITTER		
1.01 Type :	5.01 Indicator :	1.02 Manufacturer :	5.02 Output signal :	
1.03 Manufacturer model no :	5.03 Communication :	1.04 Operating Temp. Limits :	5.04 Supply voltage :	
1.05 Mounting :	5.05 Consumption :	1.06 Weight :	5.06 Load limitation :	
1.07 Other :	5.07 Other :			
2 INSTRUMENT CHARACTERISTICS		6 SWITCH		
2.01 Calibrated input range :	6.01 Reset; automatic or manual :	2.02 Characteristic :	6.02 Deadband or differential :	
2.03 Accuracy :	6.03 Alarm at increase/decrease :	2.04 Repeatability :	6.04 Contact configuration :	
2.05 Lower / upper range limits :	6.05 Contact material :	2.06 Min / max span :	6.06 Contact rating :	
2.07 Zero adjustment :	6.07 Contact action on alarm :	2.08 Overpressure protect. to :	6.08 Other :	
2.09 Max static pressure :				
2.10 Other :				
3 ELEMENT / SENSOR		7 CHEMICAL SEAL		
3.01 Type :	7.01 Type :	3.02 Material, element (sensor) :	7.02 Material, upper/lower part :	
3.03 Material, socket (inlet port) :	7.03 Material, bolts / nuts :	3.04 Material, sensor bolts/nuts :	7.04 Material, diaphragm :	
3.05 Process conn. size/type :	7.05 Fill fluid :	3.06 Sour service spec. :	7.06 Capillary length/diameter :	
3.07 Other :	7.07 Material, capillary/armour :			
4 HOUSING		8 ACCESSORIES		
4.01 Dimension :	8.01 Mounting bracket :	4.02 Material :	8.02 Material, mounting bracket :	
4.03 Cable connection :	8.03 Overpr. protection valve :	4.04 Cable entry :	8.04 Material, overpr. prot. valve :	
4.05 Enclosure protection :	8.05 Pulsation damper :	4.06 Ex. classification :	8.06 Material, pulsation damper :	
4.07 Protective coating :	8.07 Other :	4.08 Other :		
		9 NOTES		

SHARECRT		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 High :	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	1 Accepted 2 Accepted with comments incorporated 3 Not accepted, revise and resubmit 4 Issued for information 5 Interface information as clouded is accepted and frozen	
Manufacturer :	EMERSON PROCESS MANAGEMENT	Date:	1 2 3 4 5
Type :	3051CG	Sign:	
Manuf. Partno. :	3051CG-5-A-2-2-A-1-K-B4-I1-L4-M6-Q4		
Class :	Transmitter, Pressure, Electric		
Area		General	
Explosion protection :	EEx ia	Description :	Gauge
Gas-group :	IIC	Description :	Smart, hart protocol
Temperature class :	T5	Supply :	10.5 - 55 V DC
Approval authority :	BASEEFA	Mounting :	Coplanar flange bracket for pipe or panel
Certificate :	BAS 97ATEX1089X	Material	
IP-Class :	IP66	Body material :	Stainless steel
ATEX group :	II	Filling fluid :	Silicone oil
ATEX category :	1	Seal material :	Glass filled TFE
ATEX explosive atmosphere :	G	Process connection material :	Stainless steel
Ambient temperature :	-40 - 85 °C	Non process cover material :	316
Dimensions and Weight		Flange bolt material :	316 AUSTENITIC
Weight :	4.7 kg	Drain/vent material :	Stainless steel
Function		Diaphragm material low pressure :	316L
Range :	0 - 13800 kPa	connection	
Span limit minimum, Pressure :	138 kPa	Diaphragm material high pressure :	316L
Span limit maximum, Pressure :	13800 kPa	connection	
Alternative Range :	0 - 138 bar	Bracket material :	Stainless steel
Alternative span limit minimum, Pressure :	1.38 bar	Bracket bolt material :	Stainless steel
Pressure		Adapter bolt material :	316 AUSTENITIC
Alternative span limit maximum, Pressure :	138 bar	Process Connection	
Output signal :	4 - 20 mA	Connection design :	NPT
Accuracy :	+/- 0.075 %	Size :	1/4"
Display type :	LCD	Thread pitch :	18 thr/in
Static working pressure :	3626 psi	Supply Connection	
		Supply connection design :	Metric threaded
		Supply connection size :	20 mm
		Thread pitch supply :	1.5 mm/thr
Comment			
Accuracy for span greater than 10:1 of URL. Power consumption 18-36 mW. Load limitation: 587 Ohm. Static pressure value valid within transmitter temperature spec. Output: Digital signal based on hart protocol. Coplanar flange Intrinsic Safety and Dust approval. Calibration data sheet (5 points calibration at 0%, 25%, 50%, 75%, and 100% of range)			
1	09.11.2006 14:44	Generated by SHARECRT	P.M.
Rev.	Date	Issue/description	Prepared
Rev.	Date	Issue/description	Prepared
			Checked
			Disc. Appr.
			Client. Appr.
			Page 1 of 1

Context Of Codes II

Area	
Explosion protection	: EEx ia
Gas-group	: IIC
Temperature class	: T5
Approval authority	: BASEEFA
Certificate	: BAS 97ATEX1089X
IP-Class	: IP66
ATEX group	: II
ATEX category	: 1
ATEX explosive atmosphere	: G
Ambient temperature	: -40 - 85 °C

← Local Name

T5: www.informativos.telecinco.es

t5.no-thobben på nett

Sony tilbakekaller Cyber-shot DSC-T5

Volvo T5

T5 here: T5 APPARATUS IEC 60079-0 ← Class Name

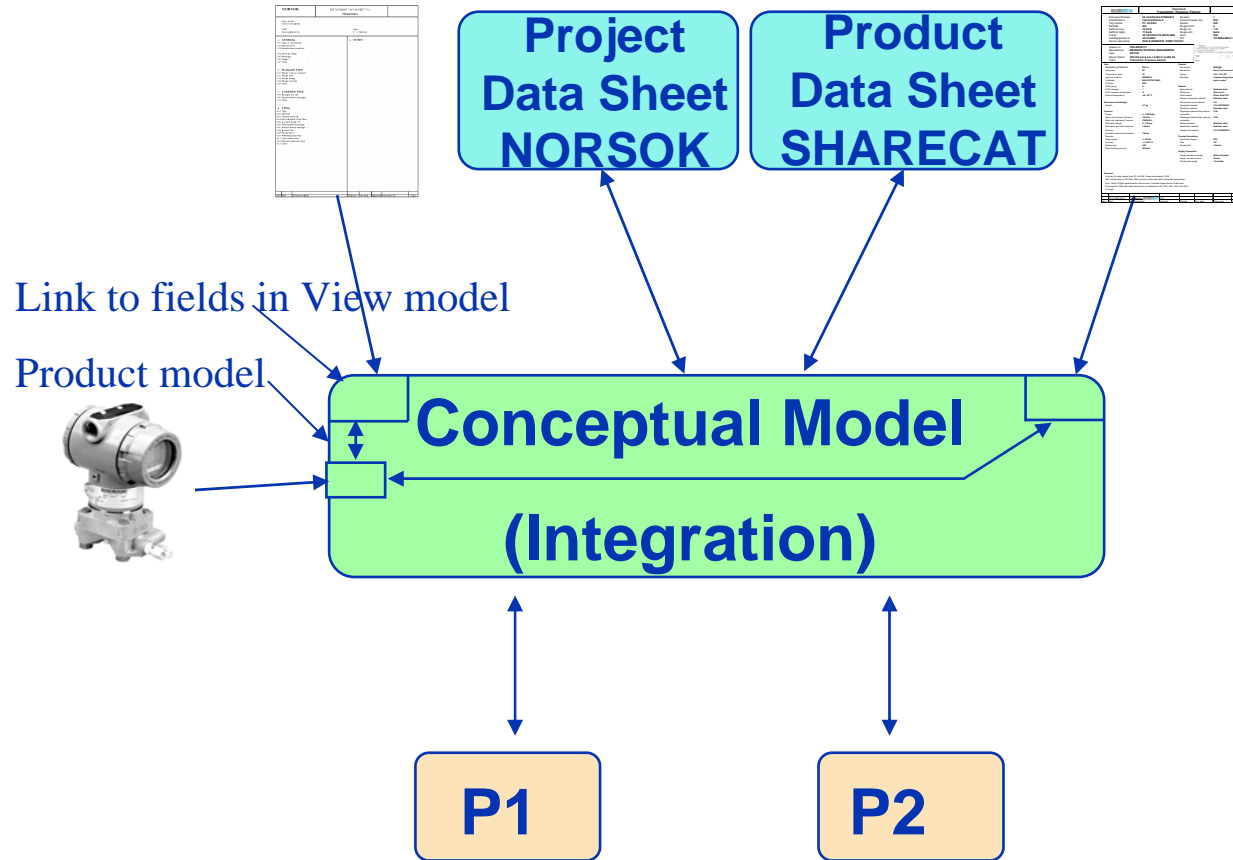
IIC: International Institute for Conservation of Historic and Artistic Works

IIC here: GROUP IIC APPARATUS IEC 60079-0

IP66: IP66 APPARATUS IEC 60529

EEx ia: EX IA APPARATUS IEC 60079-11

Integration Across Applications



Presentation

ISO 15926-2/4

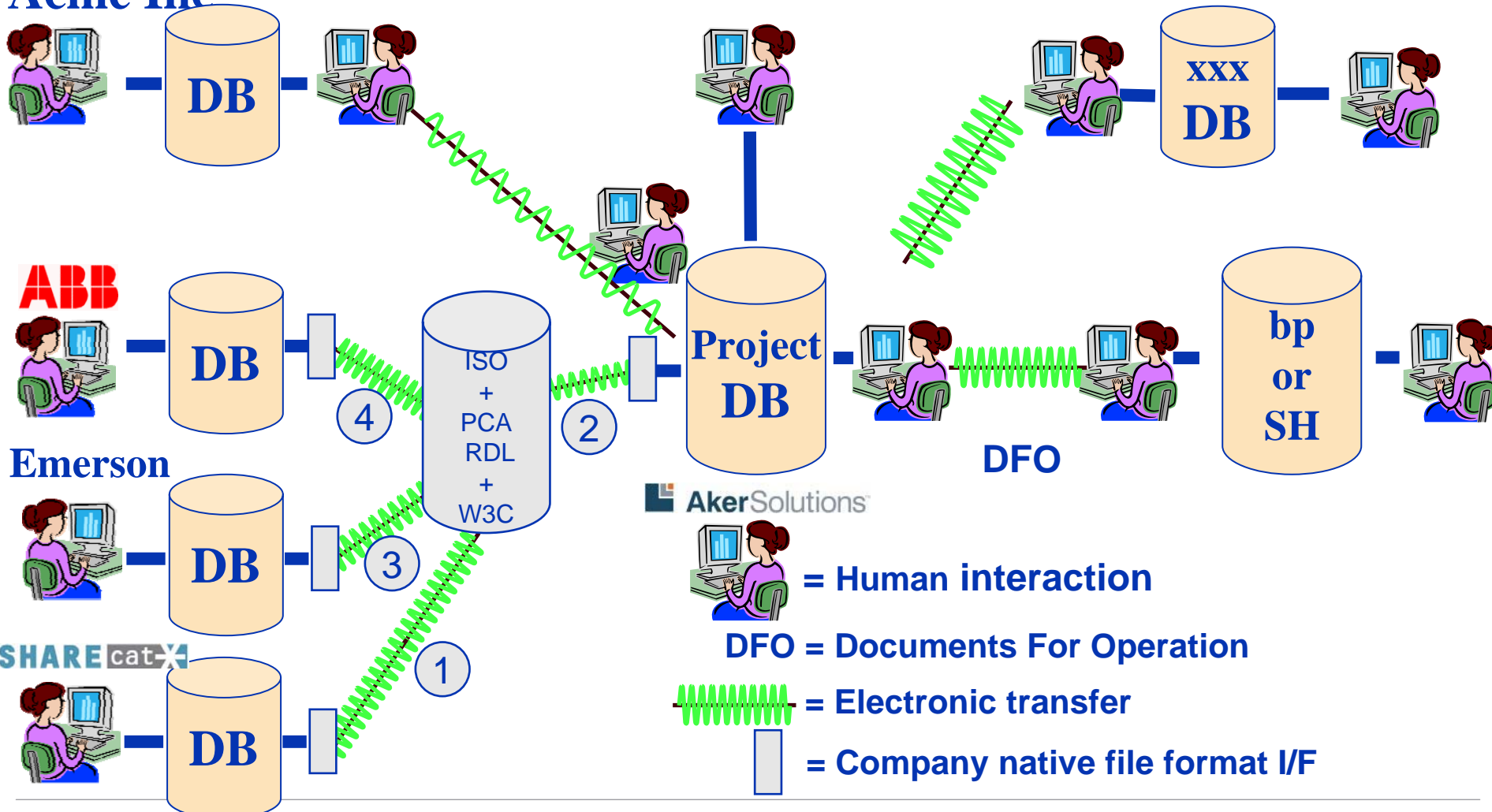
Storage

The IDS Test Case

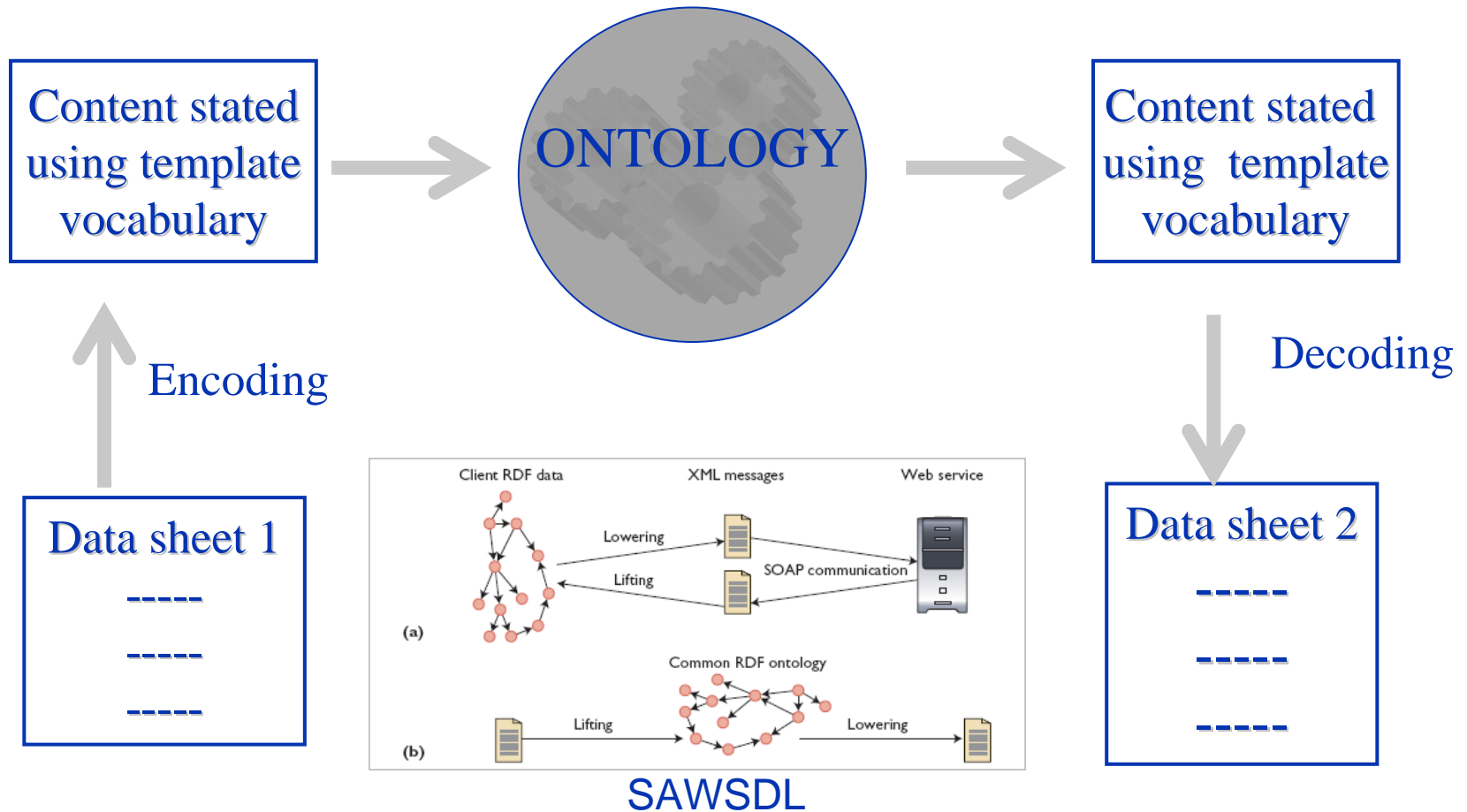
Installation Contractor

EPC/Suppliers Acme Inc

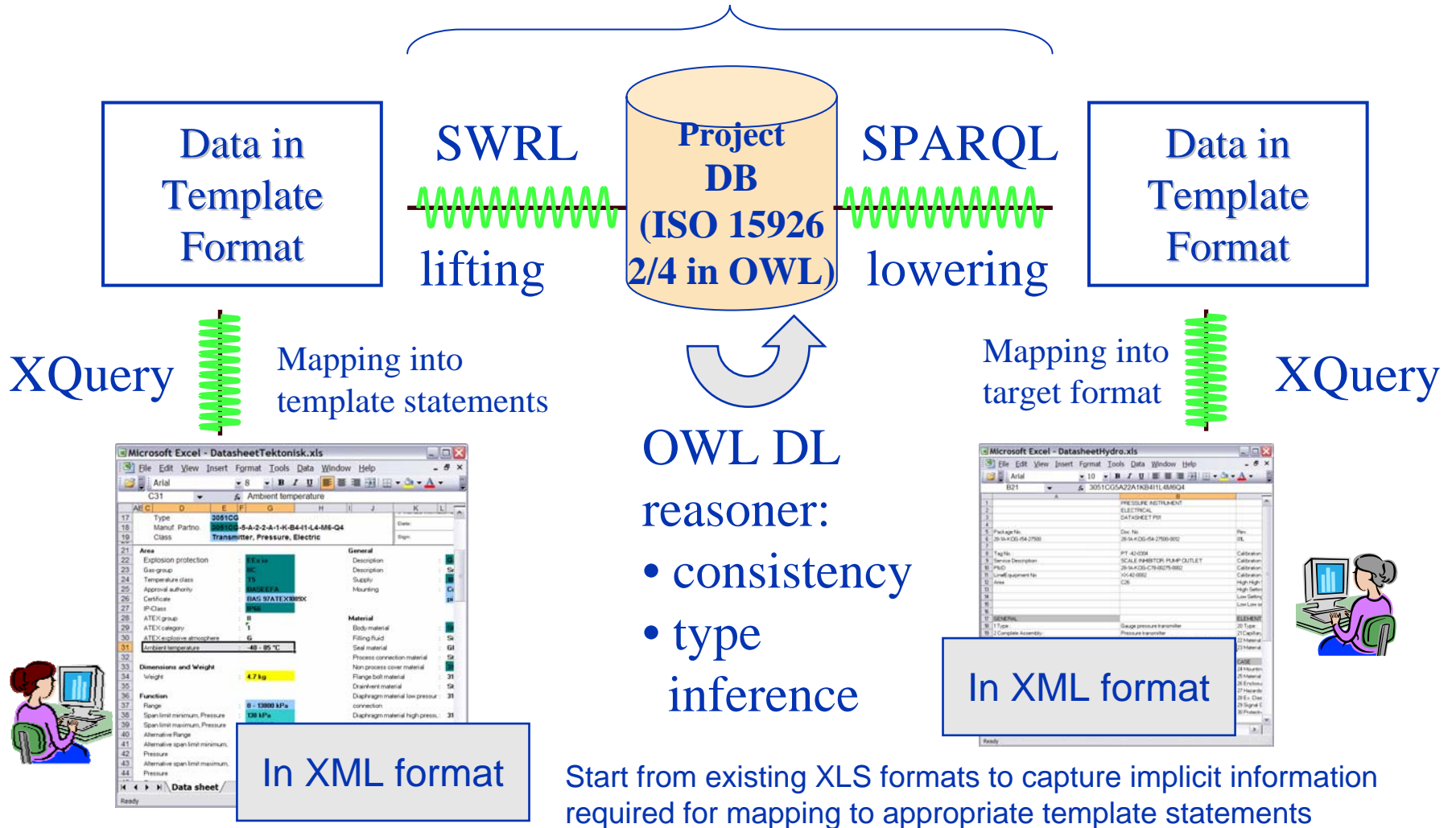
EP Contractor



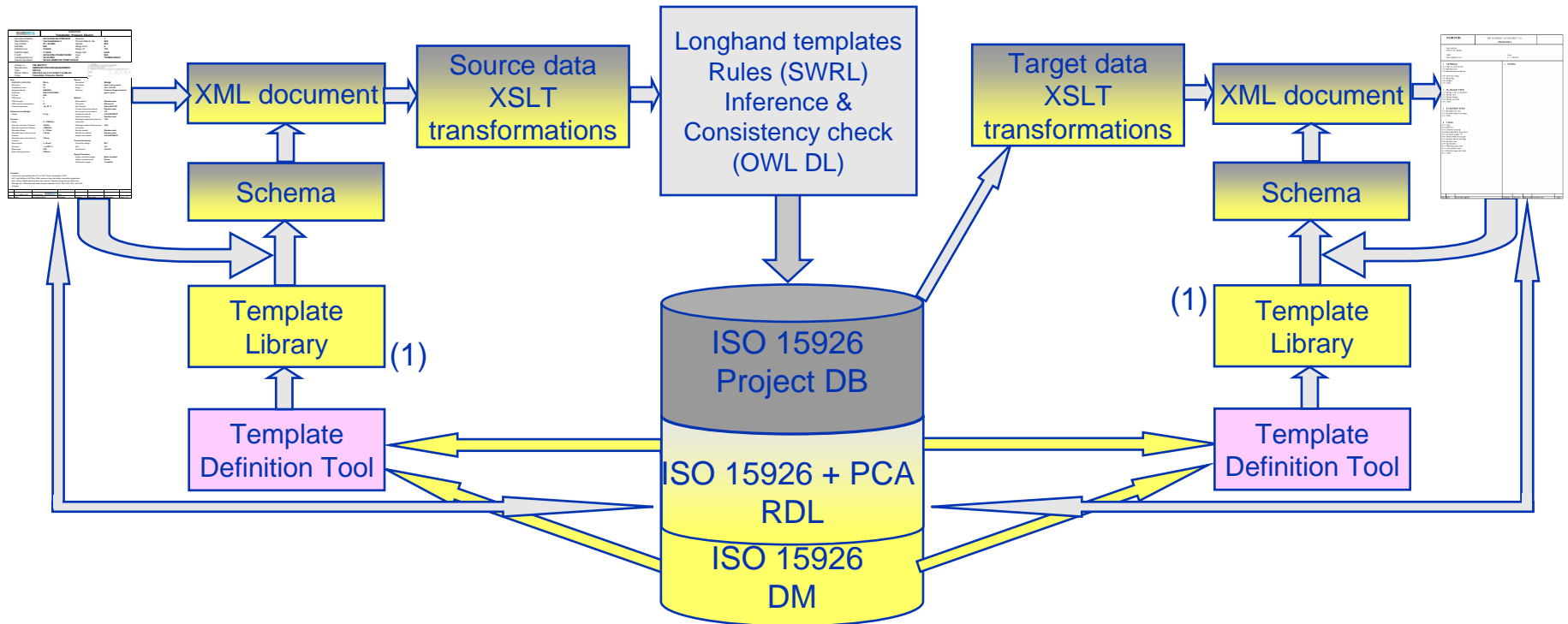
Structure of the solution



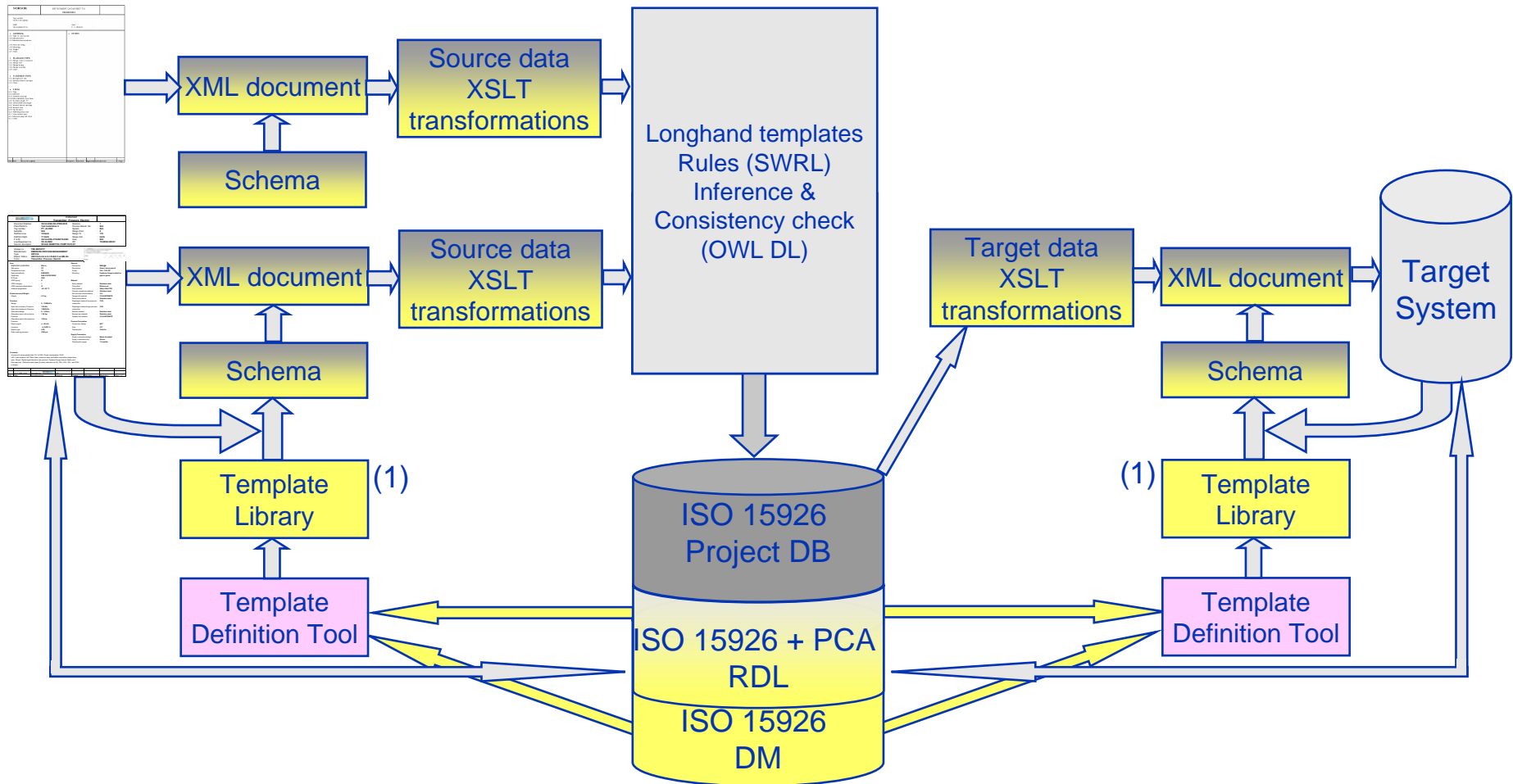
IDS converter



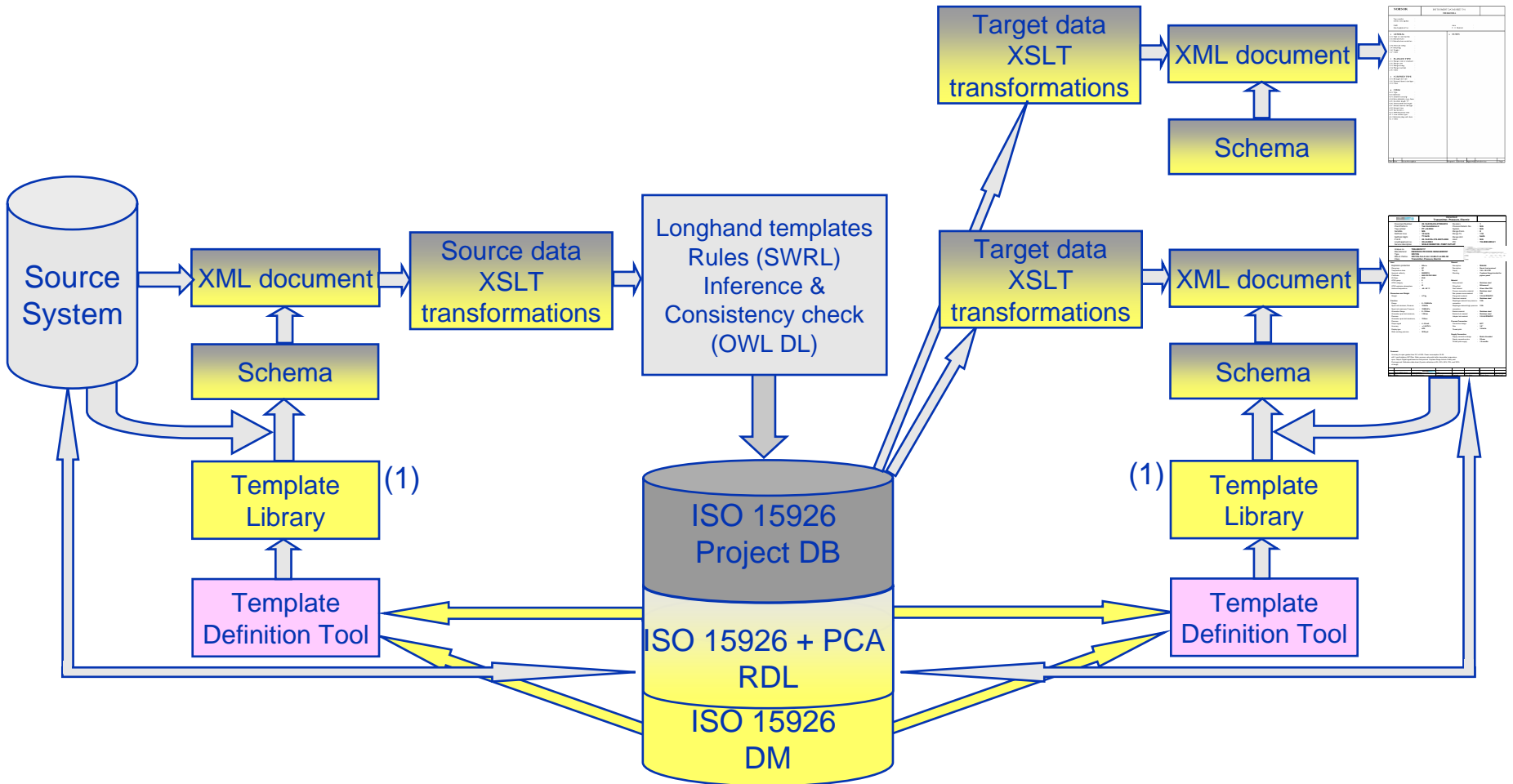
The IDS Converter Prototype



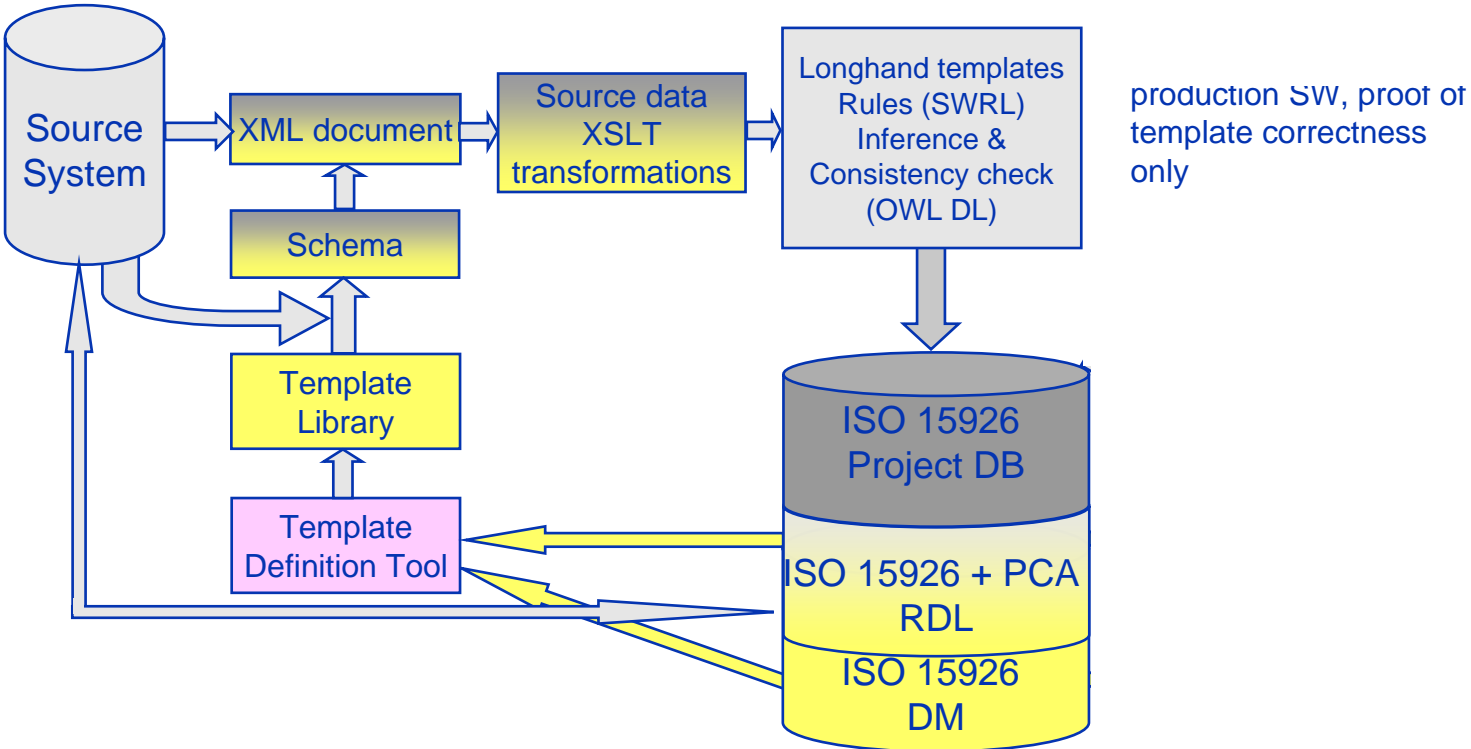
The IDS Converter, Optional Use



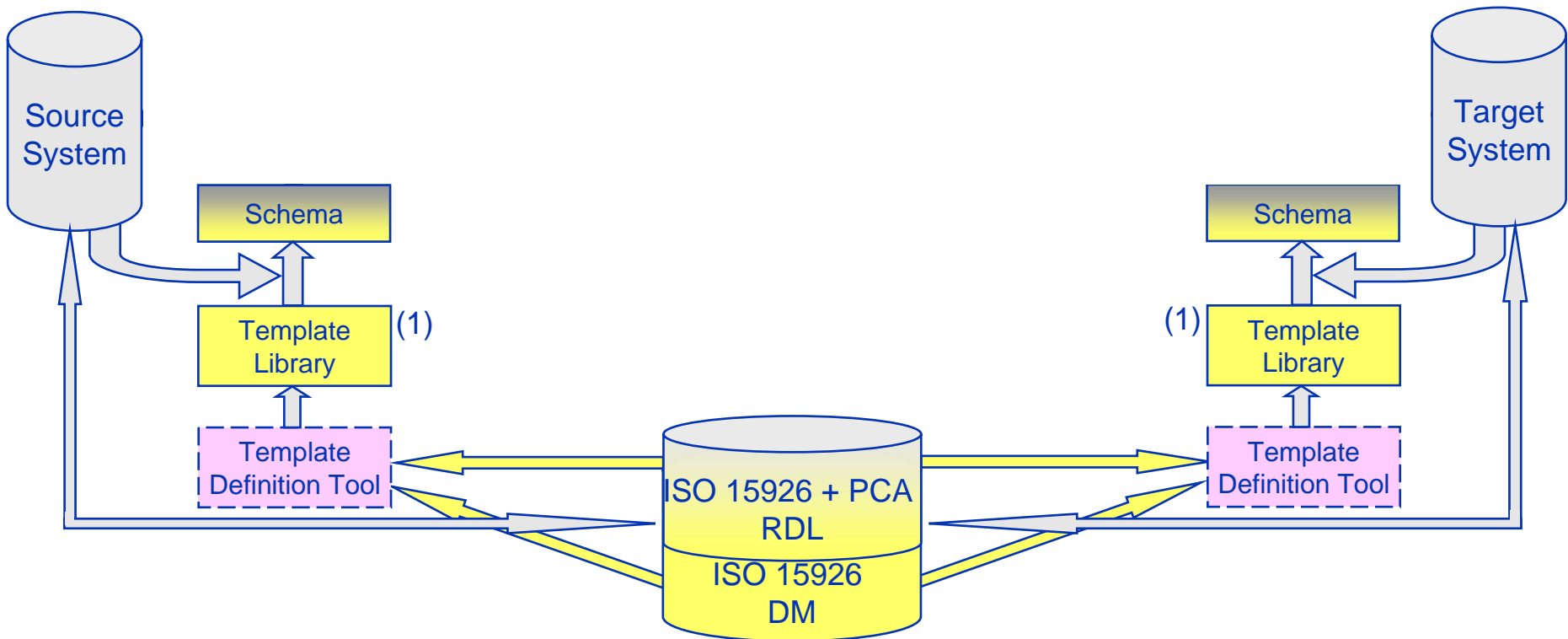
The IDS Converter, Optional Use




The IDS Converter, Optional Use



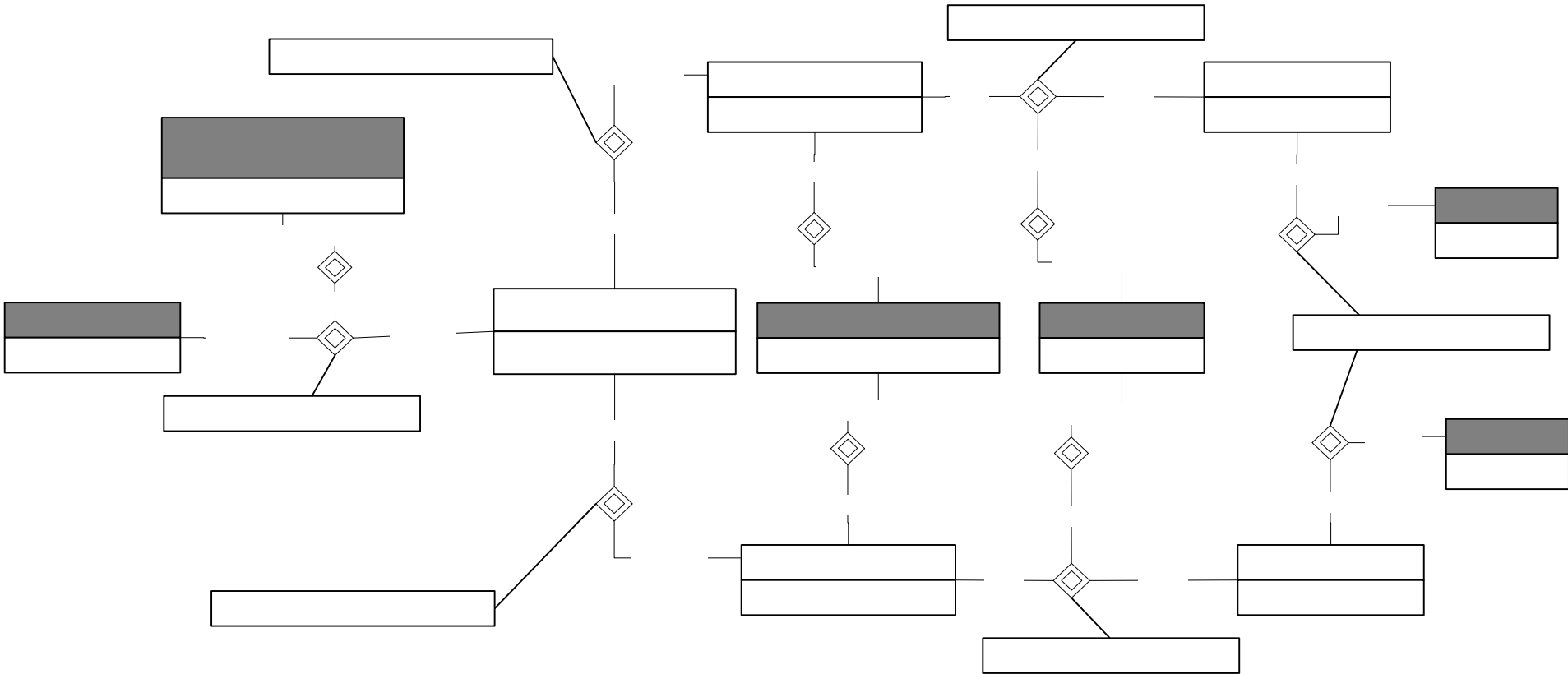
The IDS Converter, Domain Experts View



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 Datasheet 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 High	: 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	1. Accepted 2. Accepted with comments incorporated 3. Not accepted, revise and resubmit	
Manufacturer	EMERSON PROCESS MANAGEMENT		
Type	3051CG		
Manuf. Partno.	3051CG-5-A-2-2-A-1-K-B4-		
Class	Transmitter, Pressure, El		
Area		ATEX category : 1	
Explosion protection	EEx ia	ATEX explosive atmosphere : G	
Gas-group	IIC	Ambient temperature : -40 - 85 °C	
Temperature class	T5		
Approval authority	BASEEFA		
Certificate	BAS 97ATEX1089		
IP-Class	IP66		
ATEX group	II		
ATEX category	1		
ATEX explosive atmosphere	G		
Ambient temperature	-40 - 85 °C		
Dimensions and Weight		Seal material : Glass filled TFE	
Weight	4.7 kg	Process connection material : Stainless steel	
Function		Non process cover material : 316	
		Flange bolt material : 316 AUSTENITIC	
		Drain/vent material : Stainless steel	
		Diaphragm material low pressure : 316L	

Model: Ambient Temperature Range



3051CG ambient temperature: -40°C – 85°C

Upper Bound Of Pro

CIPcSQQ Template Definition

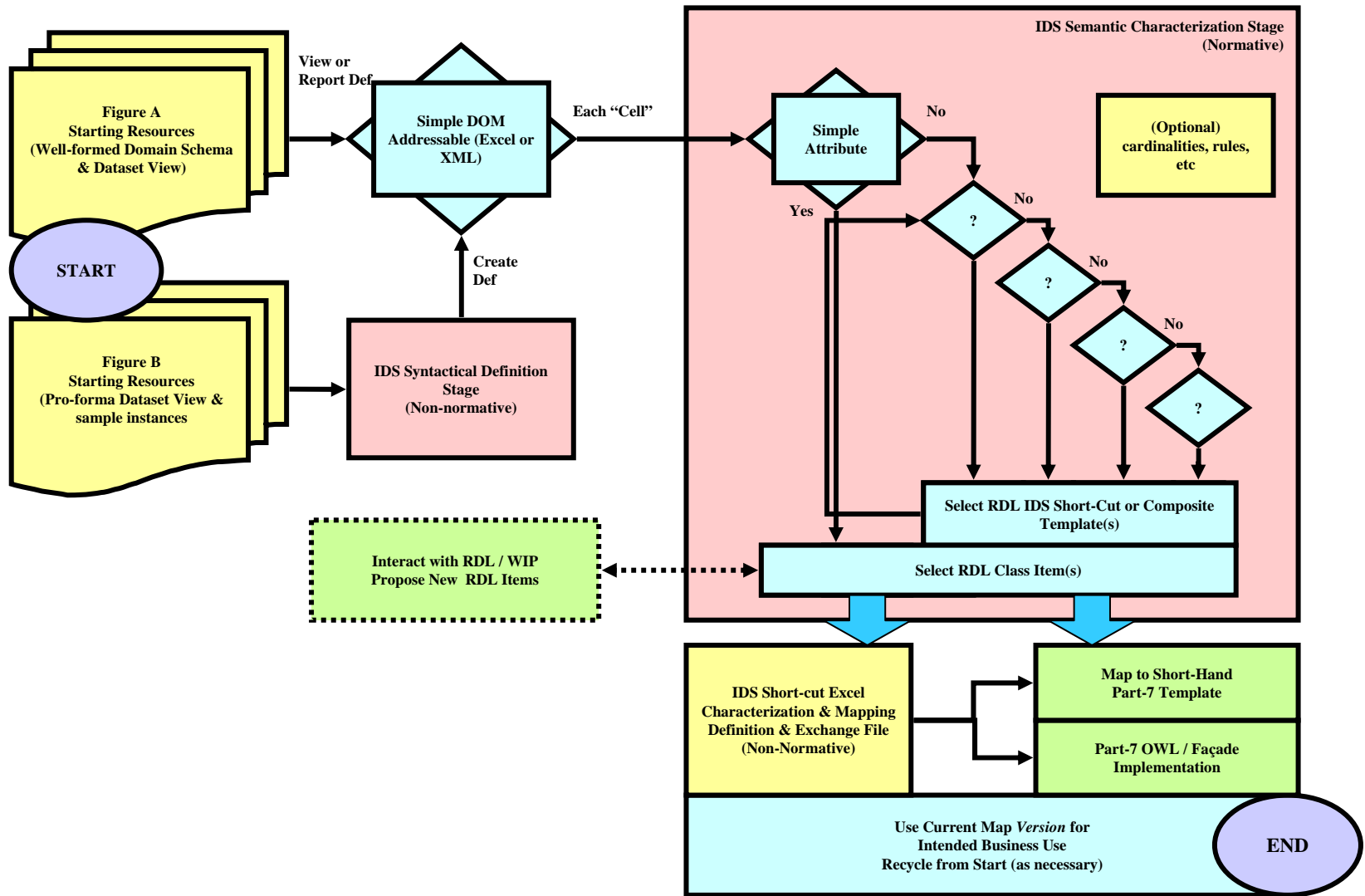
Definition: CIPcSQQ(x1:ClassOfIndividual, x2:ClassOfIndirectProperty, x3:SinglePropertyDimension, x4:Scale, x5:ExpressReal, x6:ExpressReal) states that for any x1, the magnitude of an x2 indirect property relationship to an x3 property is limited to the range [x5, x6] on the scale x4.

Position	Designation	Type	Definition	Optional
1	CIPc_PropertyRangeRestrictedClass	ClassOfIndividual	The class which is subject to a range restriction on an indirect property.	false
2	CIP_PropertyRelation	ClassOfIndirectProperty	The type of the relationship in an indirect property relationship.	false
3	IPC_PropertyType	SinglePropertyDimension	The type of the property in an indirect property relationship.	false
4	PQC_Scale	Scale	The type of the property in an indirect property relationship.	false
5	CIPcSQQ_LowerReal	ExpressReal	The number representation of the lower bound in a CIPcSQQ property range.	false
6	CIPcSQQ_UpperReal	ExpressReal	The number representation of the upper bound in a CIPcSQQ property range.	false

Current List Of Templates

- [ASc](#): Part/whole relation: Assembly
- [AScCC](#): Part/whole relation with cardinality constraint on parts: Assembly
- [AScCC-C](#): Part/whole relation with cardinality constraint on parts: Assembly, using local names
- [ASi](#): Assembly of individual
- [CIP](#): Classified assignment of indirect property
- [CIPC](#): Classified assignment of classified indirect property
- [CIPCSQ](#): Classified assignment of classified indirect property with unit of measure and value
- [CIPc](#): Property range restriction on class
- [CIPcSQQ](#): Assignment of indirect property range
- [CIPcSQQ-C](#): Assignment of indirect property range using local names
- [CL](#): Classification
- [CLc](#): Classification of class of individual
- [CLcc](#): Classification of class of class
- [CLi](#): Classification of individual
- [CPQC](#): Property quantification with property type and scale
- [Card](#): Cardinality
- [ID](#): Identification
- [IDC](#): Identification with Context
- [IDn](#): Identification by Number
- [IDs](#): Identification by Symbol
- [IDSc](#): Identification by Symbol with Context
- [IDt](#): Identification by Text
- [IDtC](#): Identification by Text with Context
- [IP](#): Assignment of indirect property
- [IPC](#): Assignment of classified indirect property
- [MatI](#): Material of individual
- [PQ](#): Property quantification
- [PQC](#): Property quantification with scale
- [RCard](#): Assignment of cardinalities to relation
- [RCard1](#): Assignment of cardinality to left role of relation
- [RCard2](#): Assignment of cardinality to right role of relation
- [RUL](#): Upper and lower bounds of property range
- [SP](#): Specialization
- [SPcc](#): Specialization of class of class
- [SPccc](#): Specialization of class of class of class
- [SPi](#): Specialization of class of individual

Mapping Process Flowchart



- Prototype methods and tools established
- Initial set of templates defined, and in operation
- Initial subset of data exchanged from source (SHARECAT) to target (Aker Solutions/Intools)
- Requirement specifications for next set of templates defined
 - Covers 90 % of data sheet content
- Implementation of additional templates is ongoing
- Uses ISO 15926-4 + POSC Caesar extensions
- Initial set of “Standard Reference Data” (Relevant IEC/ANSI standards)
 - Based on code set received from SHARECAT
 - Reusable for any class of products involving electrical apparatuses

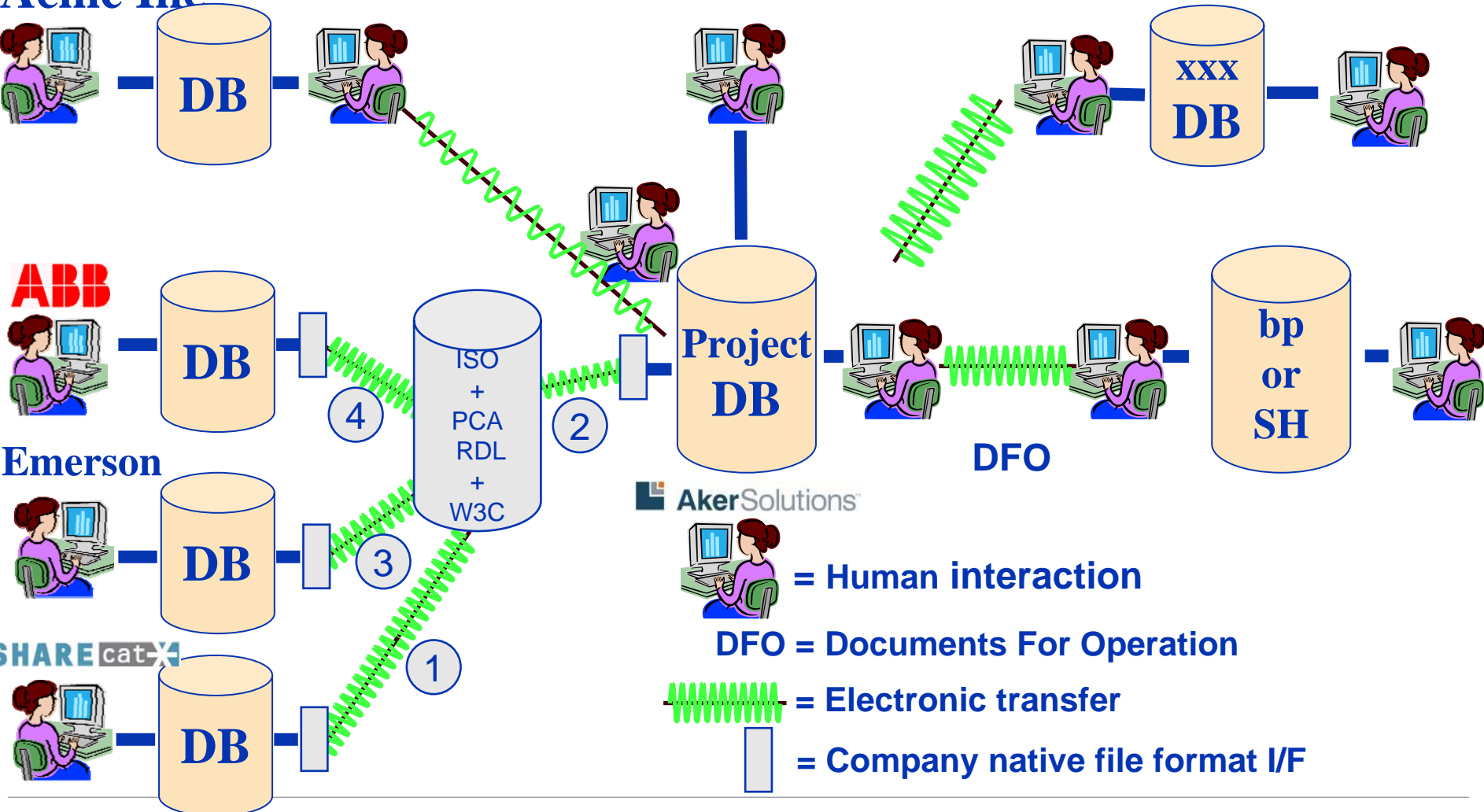
The IDS Test Case

Installation Contractor

EP Contractor

EPC/Suppliers

Acme Inc





www.dnv.com
