



OSIsoft®

UC2010

Real Time Information — Currency of the New Decade

Hilton San Francisco Union Square | San Francisco, CA

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Enterprise Integration and PI Data Access

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Sustainability & Efficiency through Advanced Data Integration

Delivering Real Time Performance with Microsoft Business Intelligence

Nalco's Software + Services Partnership with OSIsoft and Microsoft: Enabling Business Values in Real-Time

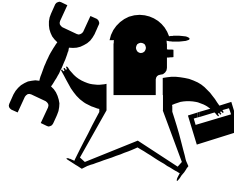
Maintenance Management Scorecard using SAP BW & R3, Microsoft, SharePoint & OSIsoft's PI

Talks from yesterday...

Enterprise (aka LOB line-of-business) Systems

Production Maintenance Quality

Compliance Reporting Lab Calibration



ORACLE

INFOR



MINCOM

Ventyx



ERP and Asset Management Systems

PI Data Access

PI Web Services 2010



PI OLEDB Enterprise 2010



PI JDBC 2010



PI OPC



PI Notification - Delivery Channels



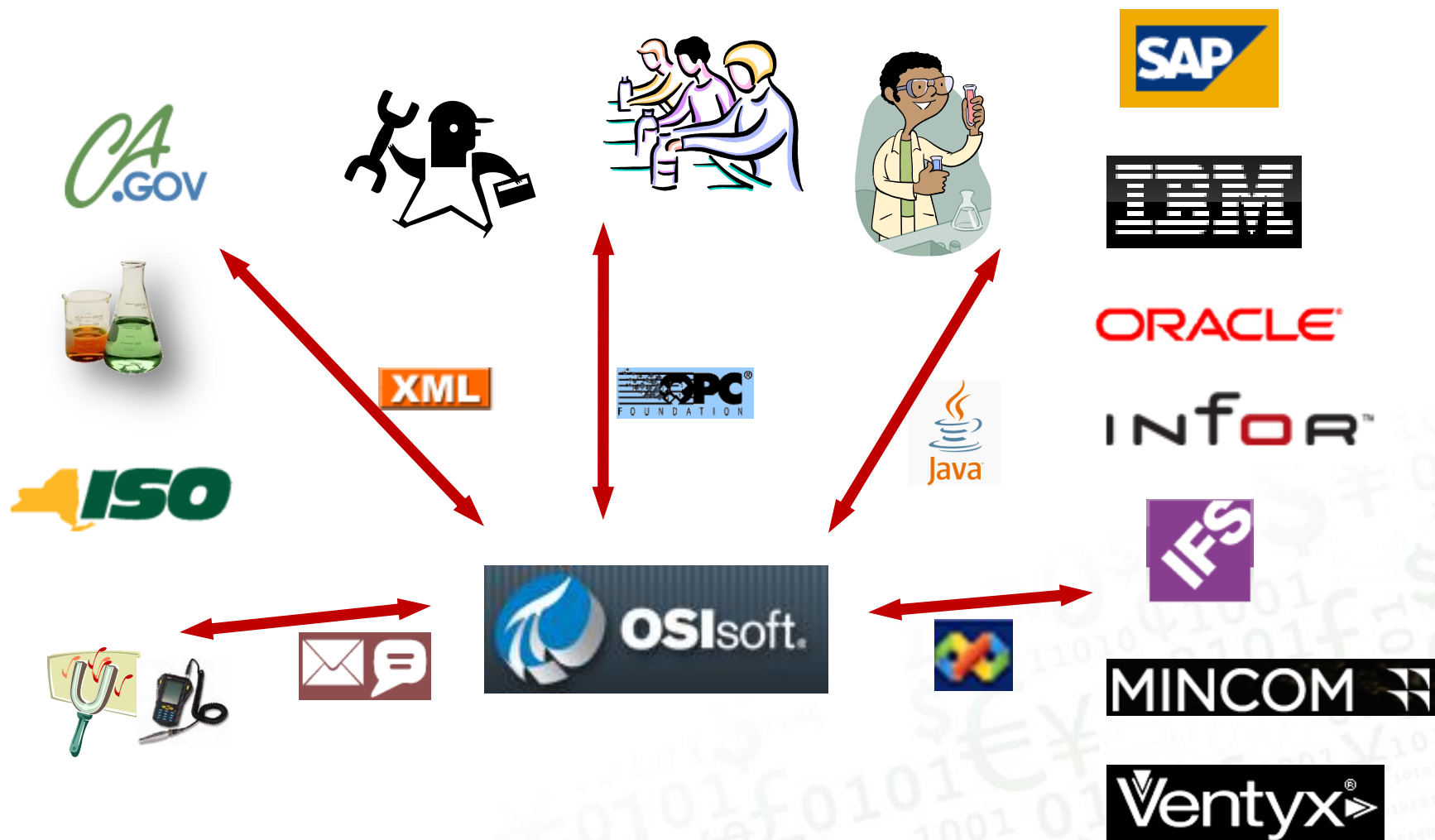
PI SDK, AF SDK, AN SDK



End User : PI System Access (PSA)

Developer: vCampus

Enterprise Integration and PI Data Access



Enterprise Business Integration

Data



Events



Visualization



Agenda



- Use Cases w/ demos

- PI data/events

- Push



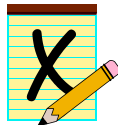
vs.

Pull



- Middleware - Messaging/Orchestration between systems

- None



- Microsoft BizTalk
 - SAP MII (and PCo)
 - IBM Websphere ESB
 - Oracle Fusion
 - TIBCO
 -



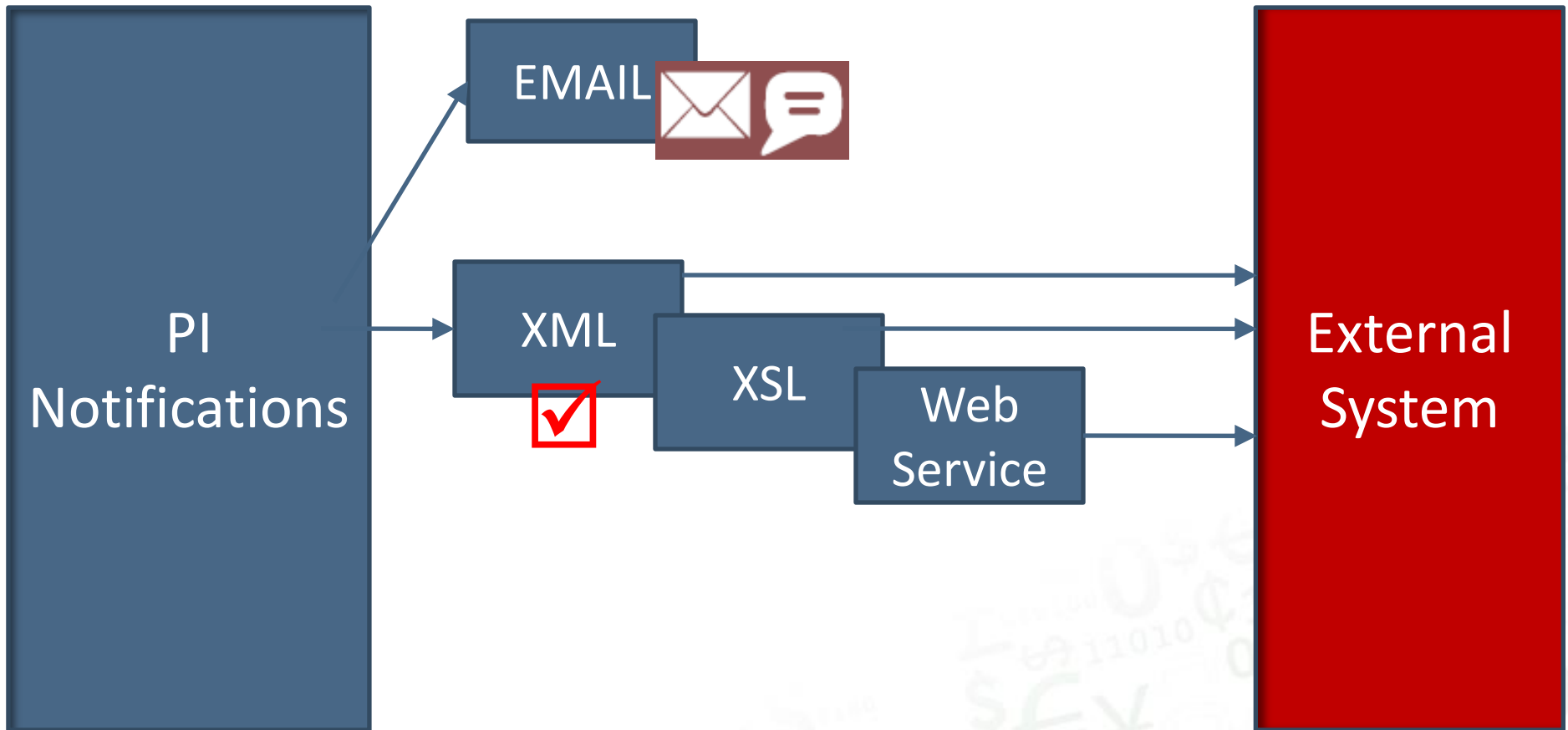
Use Case : ISO Reporting

- NY ISO Wind Turbine Reporting
 - Availability
 - WindSpeed
 - WindDirection
 - Humidity
 - DewPoint
 - ...
 - ...
- Implementation
 - PI Notification
 - XML Delivery Channel

XML



XML Data Flow



XML Delivery Channel (PI Notif. toolkit – vCampus)

Elements

A6083_ODOM-M

A6084_ODOM-M

A6085_ODOM-M

A6086_ODOM-M

A6087_ODOM-M

A6088_ODOM-M

A6089_ODOM-M

A6090_ODOM-M

A6091_ODOM-M

A6092_ODOM-M

A6093_ODOM-M

MAXIMO_WO

MIMOSA

ORACLE Assets

ORACLE Work Request

PIMLTours

PITagPutVal

PUMP2

A_TRIGGERS

WindTurbine01

Elements

Event Frames

WindTurbine01

General

Child Elements

Attributes

Ports

Version

Group by: ☒ Category

Search

Name

Value

Descrip

<None>

AmbientTemperature

80

BarometricPressure

29

BeginTimeStamp

DewPoint

60

EndTimeStamp

GenPTID

10000001

Humidity

85

MetID

1001

TurbineAvailability

Yes

WindDirection

East

WindSpeed

12

Wind Turbine Element instance for NY ISO reporting

Real Time Information — Currency of the New Decade

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OSIsoft UC2010

Notifications

New

- MotorAlert (Motor2)
- New Notification21 (23972 : Motor- 10hp/1)
- New Notification28
- New Notification31
- PIPutVal (PITagPutVal)
- Tivoli4 (TRIGGERS)
- Trigger11PM_Meter1 (11430_RUNHOURS)
- WindingTisHigh (Motor1)
- WindingTisHigh2 (Motor2)
- New Notification33 (11470_RUNHOURS)
- HMibration (1)
- MaximoMeter (4)
 - MaximoMeter2 (11430_O-PRESSUR)
 - MaximoMeter7 (11430_RUNHOURS)
 - MaximoMeter8 (11430_RUNHOURS)
 - MaximoMeter9 (11450_O-PRESSUR)
- NY_ISO_Wind_30sec (1)
 - NY_ISO_Wind_30sec (WindTurbine01)

Elements

Event Frames

Library

Unit of Measure

MyPI

Notifications

Contacts

NY_ISO_Wind_30sec

Overview Trigger Content Subscriptions History

Target: \\GDELL610\AF\WindTurbine01

Select A Target...

Conditions

New Condition

Rule	Configuration	Time True	Result	Priority
PerformanceEqu...	True			

Periodic Time Rule Configuration

Interval

☒ Periodic

☐ Daily

☐ Monthly

Begin at: 00

Frequency: 30 Second(s)

Duration: 30 Second(s)

OK

Cancel

Time Rule: Periodic

Options

☐ Notify only on change in status

Resend Interval: 0 Seconds

Non Repetition Interval: 0 Seconds

Notification – Periodic – every 30 seconds

AF - PI System Explorer

File View Go Tools Help

Database Query Date Back Check In

Notifications

New X [Icons]

- MotorAlert (Motor2)
- New Notification21 (23972 : Motor- 10hp/11)
- New Notification28
- New Notification31
- PIPutVal (PI TagPutVal)
- Tivoli4 (TRIGGERS)
- Trigger11PM_Meter1 (11430_RUNHOURS)
- WindingTisHigh (Motor1)
- WindingTisHigh2 (Motor2)
- New Notification33 (11470_RUNHOURS)
- HVibration (1)
- MaximoMeter (4)
 - MaximoMeter2 (11430_O-PRESSUR)
 - MaximoMeter7 (11430_RUNHOURS)
 - MaximoMeter8 (11430_RUNHOURS)
 - MaximoMeter9 (11450_O-PRESSUR)
- NY_ISO_Wind_30sec (1)
 - NY_ISO_Wind_30sec (WindTurbine01)

NY_ISO_Wind_30sec

Overview Trigger Content Subscriptions History

Subscriptions (0 Required acknowledgments)

Gopal Gopalkrishnan - XML_Meter

☐ Include Trigger Input

Attribute	Value
<input checked="" type="checkbox"/>	\\GDELL610\AF\WindTurbine01\GenPTID
<input checked="" type="checkbox"/>	\\GDELL610\AF\WindTurbine01\MetID
<input checked="" type="checkbox"/>	\\GDELL610\AF\WindTurbine01\WindSpeed
<input checked="" type="checkbox"/>	\\GDELL610\AF\WindTurbine01\WindDirection
<input checked="" type="checkbox"/>	\\GDELL610\AF\WindTurbine01\BarometricPressure
<input checked="" type="checkbox"/>	\\GDELL610\AF\WindTurbine01\AmbientTemperature
<input checked="" type="checkbox"/>	\\GDELL610\AF\WindTurbine01\DewPoint
<input checked="" type="checkbox"/>	\\GDELL610\AF\WindTurbine01\Humidity
<input checked="" type="checkbox"/>	\\GDELL610\AF\WindTurbine01\BeginTimeStamp
<input checked="" type="checkbox"/>	\\GDELL610\AF\WindTurbine01\EndTimeStamp

Elements

Event Frames

Library

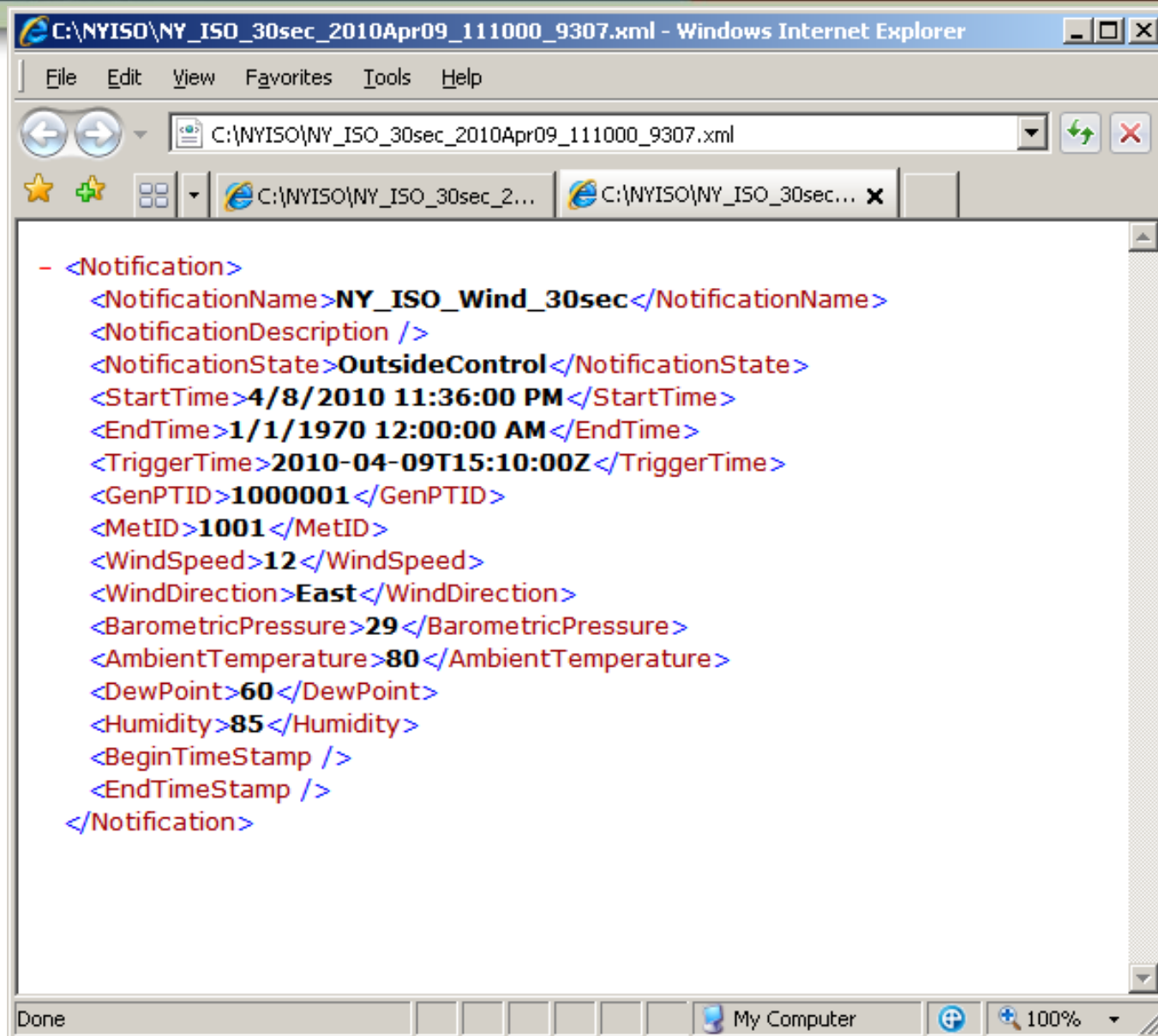
Unit of Measure

MyPI

Notifications

Contacts

Notification – Content includes XML requirements



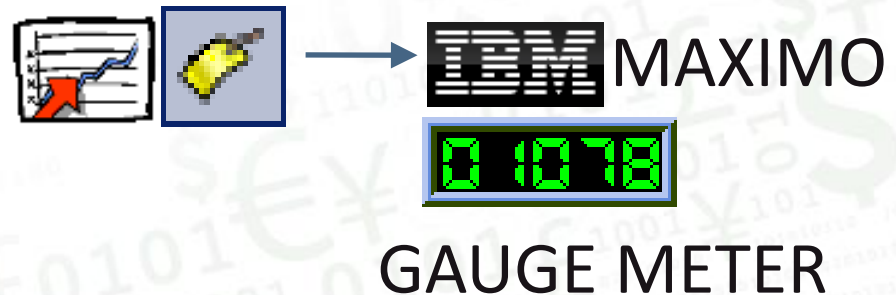
Notification –XML file

Hyperlink launches the demo only during a live session

Enterprise Integration PI Notification NYISO Reporting Demo

Use Case : Maintenance

- Maintenance
 - Equipment condition based instead of calendar
- Implementation
 - Condition assessment in PI
 - Filter DeltaP DailyMax to Maintenance



Filter DeltaP DailyMax to Maximo

- AF for mapping (transaction)



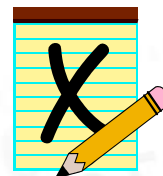
- PI Notifications (XML Delivery)



- Push data from PI

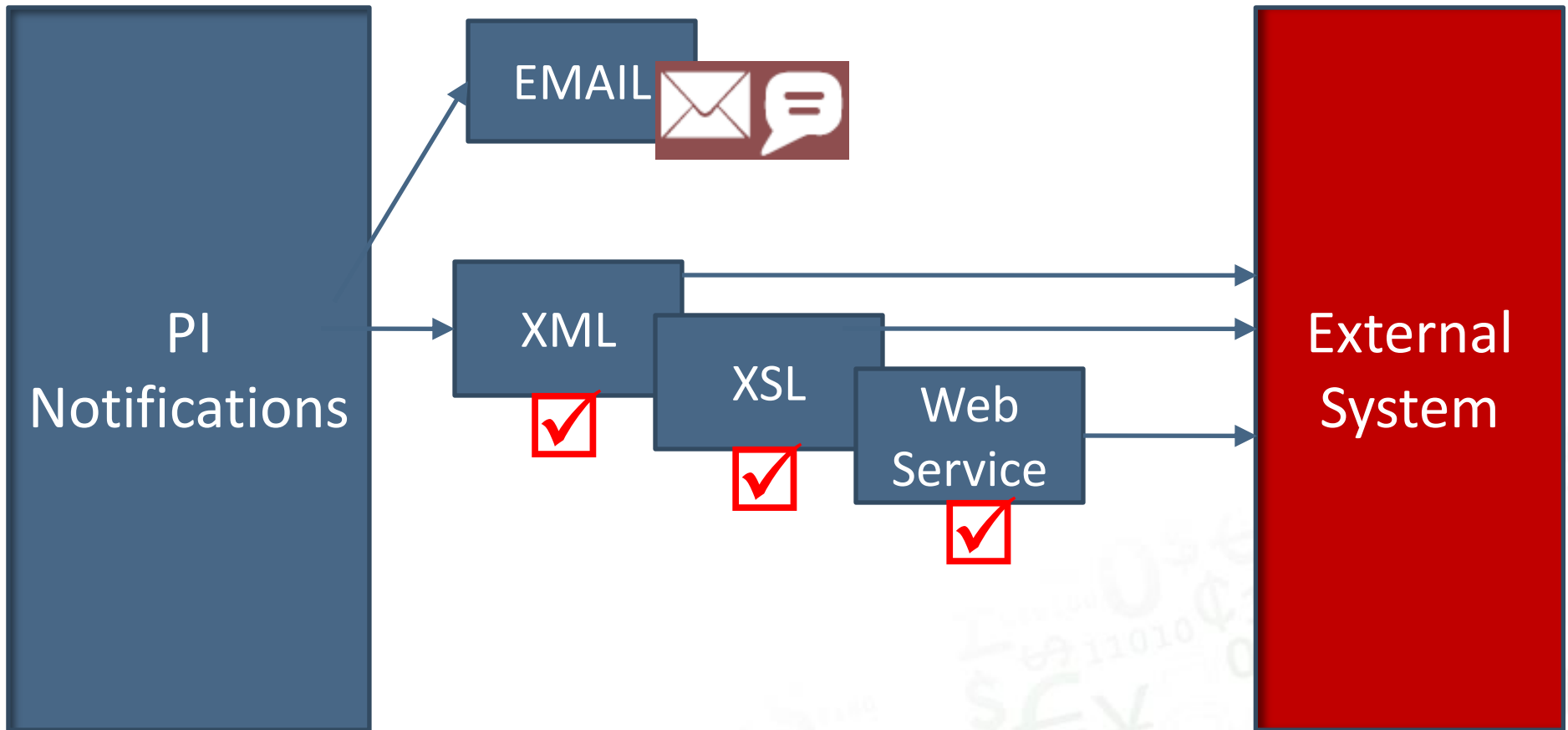


- No middleware



- use only PI tools

XML Data Flow



XML Delivery Channel (PI Notif. toolkit – vCampus)

Assets Go To Reports Start Center Profile Sign Out Help

Find: Select Action

List **Asset** Spare Parts Safety Meters Specifications

Asset 11450 Centrifugal Pump 100GPM/60FTHD Site BEDFORD Attachments
Status OPERATING Type Moved? ☐

Enter Meter Readings

Meters Filter 1 - 2 of 2 Download

Meter	New Reading	New Reading Date	Rollover?	Inspector	Meter Type	Previous Reading	Previous Reading Date
RUNHOURS	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	CONTINUOUS	4,276.55	4/3/10 2:05 AM
O-PRESSUR	<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="text"/>	GAUGE	6.200	4/5/10 12:12 PM

Details

Meter O-PRESSUR Filter Delta Pressure

Delta? ☐

New Reading*

New Reading Date*

Rollover? ☐

Inspector*

Remarks

Meter Type GAUGE

Previous Reading 6.200

Previous Reading Date 4/5/10 12:12 PM

Since Last Overhaul 0.00

Since Last Inspection 0.00

Since Last Repair 0.00

Since Install 0.00

Life to Date for Asset 0.00

Average Units/Day

OK Cancel

Maximo UI – Meter screen

MAXIMO_METER

General Attribute Templates Ports

Group by: ☒ Category

Search



	i Name	Description	Default Value	Settings
[-]	<None>			
	Active	YES/NO	NO	
	Trigger	ON/OFF	OFF	\\%Server%\%Element%\%Attr...
[-]	MAX_METER_METERINFO_ToMaximo			
	Assetnum	Required (optional if Location is spe...		
	Location	Required (optional if Assetnum is sp...		
	Metername	Required		
	SiteID	Required, Maximo site, example BE...		
[-]	MAX_METER_READINGINFO_ToMaximo			
	Inspector	Optional - Person who took the rea...		
	NewReading	Required - PI Point with Reading V...		\\%Server%\%Element%\%Attr...
	ReadingType	Default=ACTUAL; can be DELTA ...	ACTUAL	

AF – Maximo Meter template (XML Content)

Elements

- MAXIMO_METER
 - 11430_O-PRESSUR
 - 11430_RUNHOURS
 - 11450_O-PRESSUR
 - 11450_RUNHOURS
 - 11470_O-PRESSUR
 - 11470_RUNHOURS
 - 11480_RUNHOURS
 - 12500_FUEL-G
 - 12500_RUNHOURS
 - A6001_ODOM-M
 - A6002_ODOM-M
 - A6003_ODOM-M
 - A6005_ODOM-M

11450_O-PRESSUR

General
Child Elements
Attributes
Ports
Version

Group by: ☒ Category

Search

	Name	Value	Description	Settings
<None>				
<input checked="" type="checkbox"/>	Active	NO	YES/NO	
<input checked="" type="checkbox"/>	Trigger	OFF	ON/OFF	\\gdell610\TriggerO...
MAX_METER_METERINFO_ToMaximo				
<input checked="" type="checkbox"/>	Assetnum	11450	Required (optional if L...	
<input checked="" type="checkbox"/>	Location	BR450	Required (optional if A...	
<input checked="" type="checkbox"/>	Metername	O-PRESSUR	Required	
<input checked="" type="checkbox"/>	SiteID	BEDFORD	Required, Maximo site...	
MAX_METER_READINGINFO_ToMaximo				
<input checked="" type="checkbox"/>	Inspector	OSIsoft PI	Optional - Person who...	
<input checked="" type="checkbox"/>	NewReading	6.2	Required - PI Point wit...	\\gdell610\BR450_P...
<input checked="" type="checkbox"/>	ReadingType	ACTUAL	Default=ACTUAL; ca...	

Elements

Event Frames

Library

Unit of Measure

MyPI

Notifications

Contacts

AF – Meter instance : 11450 O-PRESSUR

11450_O-PRESSUR

General | Child Elements | Attributes | Data | Version

Search

PI Point Data Reference

PI Server:

Tag name: Attribute:

Unit of Measure
UOM:

Value retrieval methods

By Time: Relative Time:

By Time Range: Calculation basis: Min percent good:

By Case:

☐ Read only

OK Cancel

Group by: ☒ Category

Name:

Description:

Configuration Item: ☐

Categories:

UOM:

Value Type:

Value:

Data Reference:

Settings...

\\gdell610\BR450_Pressure;TimeMethod=TimeRange;Relative Time=-24h;TimeRangeMethod=Maximum;ReadOnly=False

AF – Point Data Reference - Calculation

Formula Configuration:(Attribute1) [X]

Parameters

A=|NewReading
B=|MAXIMO_METER\11470_O-PRESSUR|NewReadin
C=|MAXIMO_METER\11430_O-PRESSUR|NewReadin

☒ Default Values Allowed

Equations

max(A,B,C)

Result

Unit of Measure: <None> Minimum: Maximum:

Evaluate

OK Cancel

AF – Formula Reference - Calculation

Library

- MI_Chiller
- MI_Tag
- Motor
- Motor_MIM
- Oracle_WorkRequ
- PIMLEqpt
- PIMLTag
- PropInfo
- Pumps
- ZipcodeT
- Event Frame Templates
- Model Templates
- Notification Templates
 - HiMotorWindingT
 - HVibration
 - MaximoMeter
- Transfer Templates
- Enumeration Sets
- Reference Types

Elements

Event Frames

Library

Unit of Measure

MyPI

Notifications

Contacts

MaximoMeter

Overview Trigger Content Subscriptions

Add ✎ ✕

Standard Content

- Name
- Description
- Target
- Start Time
- End Time
- Trigger Time
- State
- Escalation Level
- Priority

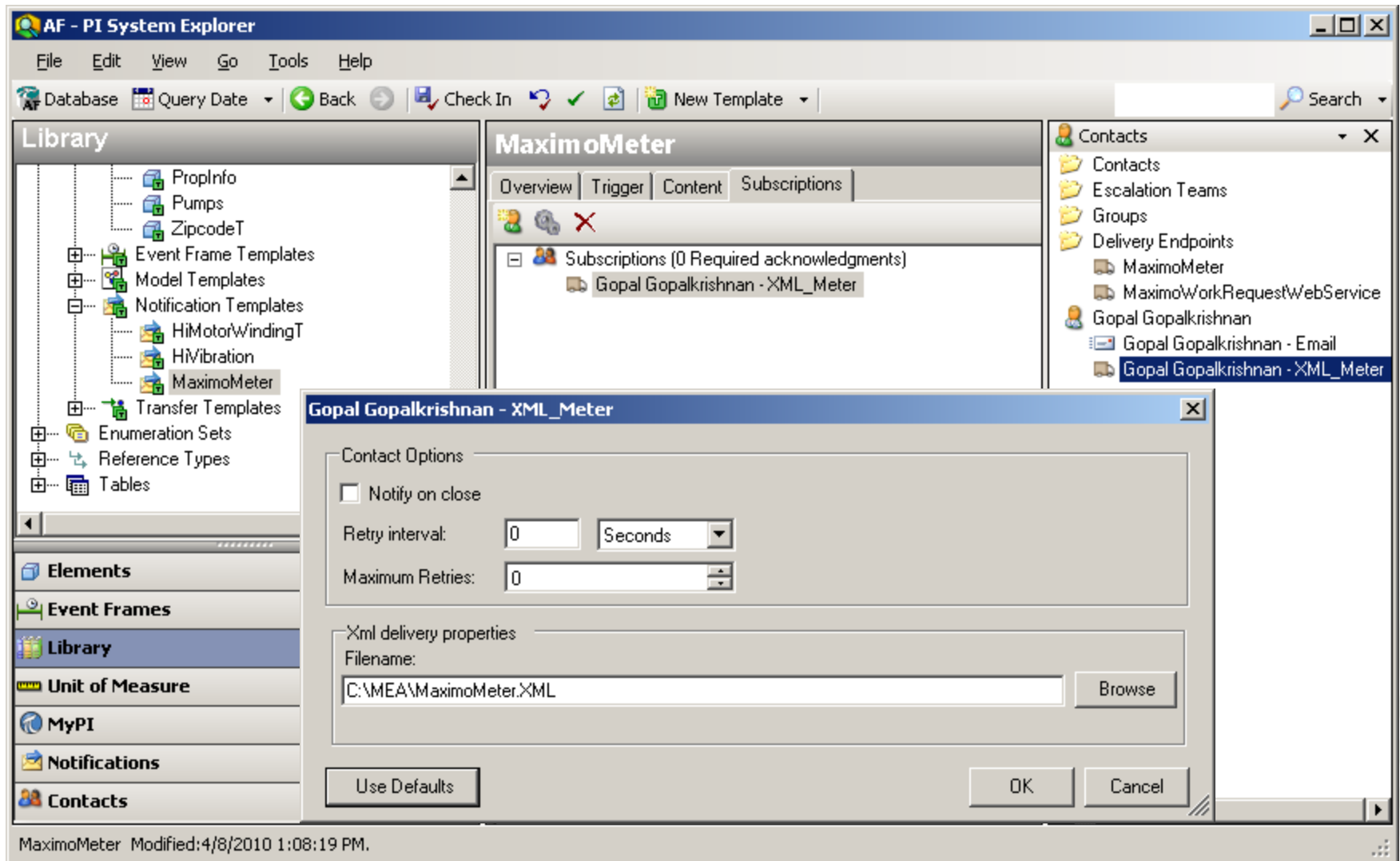
Trigger Input

- \\GDELL610\AF\ElementTemplates[MAXIMO_METER]Active
- \\GDELL610\AF\ElementTemplates[MAXIMO_METER]Trigger

Attribute Value

- \\GDELL610\AF\ElementTemplates[MAXIMO_METER]Assetnum
- \\GDELL610\AF\ElementTemplates[MAXIMO_METER]Location
- \\GDELL610\AF\ElementTemplates[MAXIMO_METER]Metername
- \\GDELL610\AF\ElementTemplates[MAXIMO_METER]SiteID
- \\GDELL610\AF\ElementTemplates[MAXIMO_METER]Inspector
- \\GDELL610\AF\ElementTemplates[MAXIMO_METER]ReadingType
- \\GDELL610\AF\ElementTemplates[MAXIMO_METER]NewReading

Notification Content includes the XML requirements



Notification Subscription - XML Delivery Channel

Library

- Motor_MIM
- NY_ISO_Wind_30sec_Report
- Oracle_WorkRequest
- PIMLEqpt
- PIMLTag
- PropInfo
- Pumps
- ZipcodeT
- Event Frame Templates
- Model Templates
- Notification Templates
 - HiMotorWindingT
 - HVibration
 - MaximoMeter
 - NY_ISO_Wind_30sec
- Transfer Templates
- Enumeration Sets
- Reference Types
- Tables

Elements

Event Frames

Library

Unit of Measure

MyPI

Notifications

Contacts

MaximoMeter

Overview Trigger Content Subscriptions

Target: MAXIMO_METER

Select A Target...

Conditions

New Condition X [Edit] [Up] [Down]

Periodic Time Rule Configuration

Interval

☐ Periodic

☒ Daily

☐ Monthly

Begin at: 23:00:00

on

☒ Monday

☒ Friday

☒ Tuesday

☐ Saturday

☒ Wednesday

☐ Sunday

☒ Thursday

OK

Cancel

Time Rule: Periodic

Options

☒ Notify only on change in status

Resend Interval:

0

Seconds

Notification – Daily 11 PM delivery

Name: MaximoMeter9

Description: <http://mxesserver:7001/meaweb/services/DEVMETERInterface>

Server: GDELL610

Database: AF

Start Time: 4/8/2010 2:30:59 PM Eastern Daylight Time (GMT-04:00:00)

Trigger Time: 4/8/2010 2:30:59 PM Eastern Daylight Time (GMT-04:00:00)

Target: GDELL610\AF\MAXIMO_METER\11450_O-PRESSUR

State: OutsideControl

Priority: Normal

Attribute Value:

[\\GDELL610\AF\MAXIMO_METER\11450_O-PRESSUR\Assetnum](#): 11450

[\\GDELL610\AF\MAXIMO_METER\11450_O-PRESSUR\Location](#): BR450

[\\GDELL610\AF\MAXIMO_METER\11450_O-PRESSUR\Metername](#): O-PRESSUR

[\\GDELL610\AF\MAXIMO_METER\11450_O-PRESSUR\SiteID](#): BEDFORD

[\\GDELL610\AF\MAXIMO_METER\11450_O-PRESSUR\Inspector](#): OSIsoft PI

[\\GDELL610\AF\MAXIMO_METER\11450_O-PRESSUR\NewReading](#): 7.3

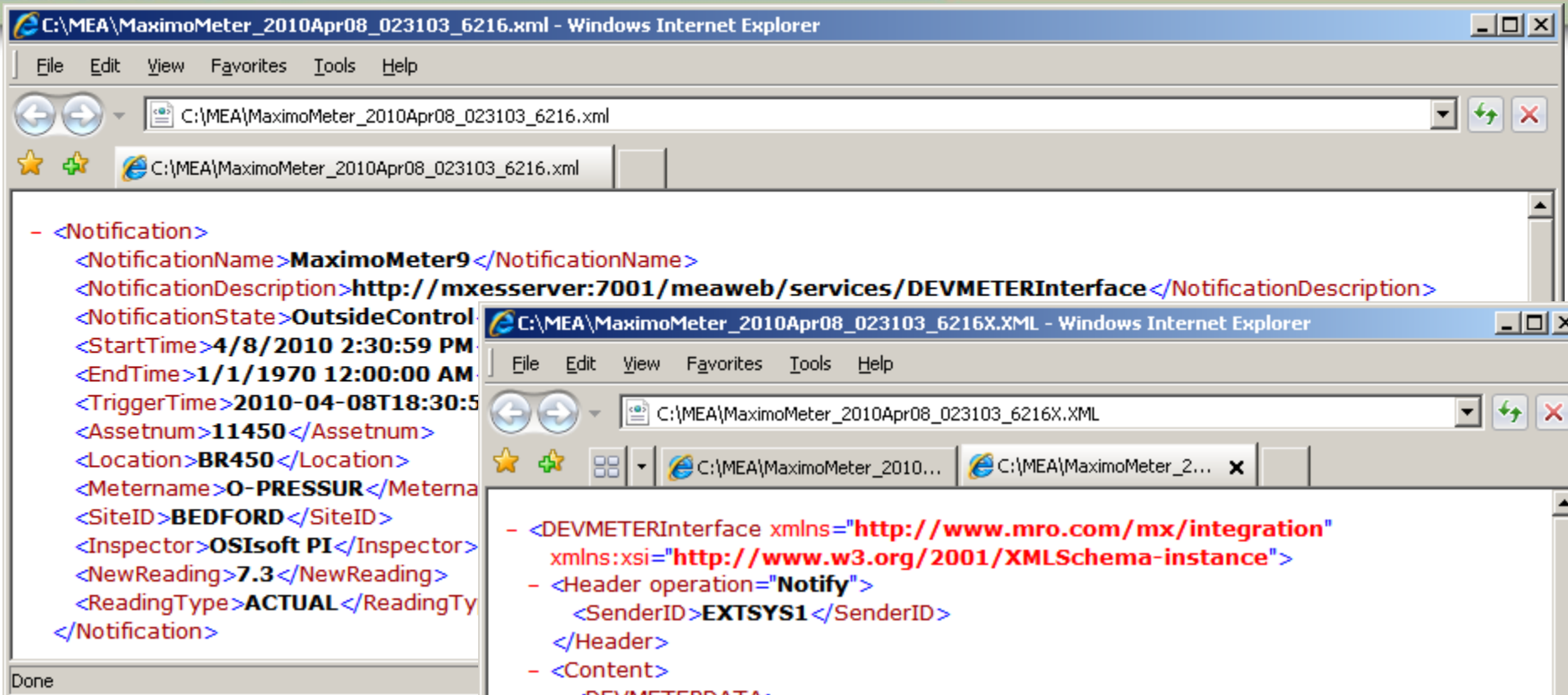
[\\GDELL610\AF\MAXIMO_METER\11450_O-PRESSUR\ReadingType](#): ACTUAL

Actions:

[Acknowledge](#)

[Acknowledge with comment](#)

Notification Email content w/XML requirements



TOP: XML content similar to Email

BOTTOM: After XSL transform

AF - PI System Explorer

File View Go Tools Help

Database Query Date Back Check In

Notifications

New X [Icons]

- <None> (9)
 - ForTivoli2 (TRIGGERS)
 - MotorAlert (Motor2)
 - New Notification21 (23972 : Motor- 10hp/175)
 - New Notification28
 - PIPutVal (PITagPutVal)
 - Tivoli4 (TRIGGERS)
 - Trigger11PM_Meter1 (11430_RUNHOURS)
 - WindingTisHigh (Motor1)
 - WindingTisHigh2 (Motor2)
- HiVibration (1)
- MaximoMeter (2)
 - MaximoMeter2 (11430_O-PRESSUR)
 - MaximoMeter7 (11430_RUNHOURS)

MaximoMeter7

Overview Trigger Content Subscriptions History

Name: MaximoMeter7

Description: <http://mxesserver:7001/meaweb/services/DEVMETERInterface>

Status: Running

Template: MaximoMeter

Categories:

Trigger

[Target: 11430_RUNHOURS](#)
[Condition: true](#)

Content

[7 item\(s\) of custom content available to subscribers](#)

Subscriptions

[1 subscription\(s\) to this notification](#)

Elements

Event Frames

Library

Unit of Measure

MyPI

Notifications

Contacts

URL specified for delivery to Maximo Meter web services

Assets Go To Reports Start Center Profile Sign Out Help

Find: Select Action

List Asset Spare Parts Safety **Meters** Specifications

Asset Site

Meter Group

Meters Filter 1 - 2 of 2 Download

Meter	Description	Meter Type	Unit of Measure	Active?
RUNHOURS	Run Hours	CONTINUOUS	HOURS	<input checked="" type="checkbox"/>
O-PRESSUR	Filter Delta Pressure	GAUGE	PSI	<input checked="" type="checkbox"/>

Meter Details


Meter


Meter Type

Unit of Measure

Active? ☒

Point

Last Reading 

Last Reading Date 

Last Reading Inspector

Remarks

Continuous Meter Details

Average Calculation Method

Sliding Window Size

Average Units/Day

Life to Date for Asset

Rollover

Reading Type

Accept Rolldown From

Maximo UI - Meter reading updated

Hyperlink launches the demo only during a live session

[Enterprise Integration PI Notifications XML XSL
WebServices Demo](#)

Use Case : Maintenance

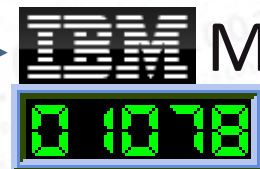
- Maintenance

- Usage based instead of calendar



- Implementation

- Machine run-hours (PI Totalizer Tag)
- Asset move/change needs to be considered
- Totalizer Tag value sent to CONTINUOUS METER



PI Totalizer reading to Maximo

- Functional Location Mapping in Tag descriptor



- PI web services



- Pull data from PI



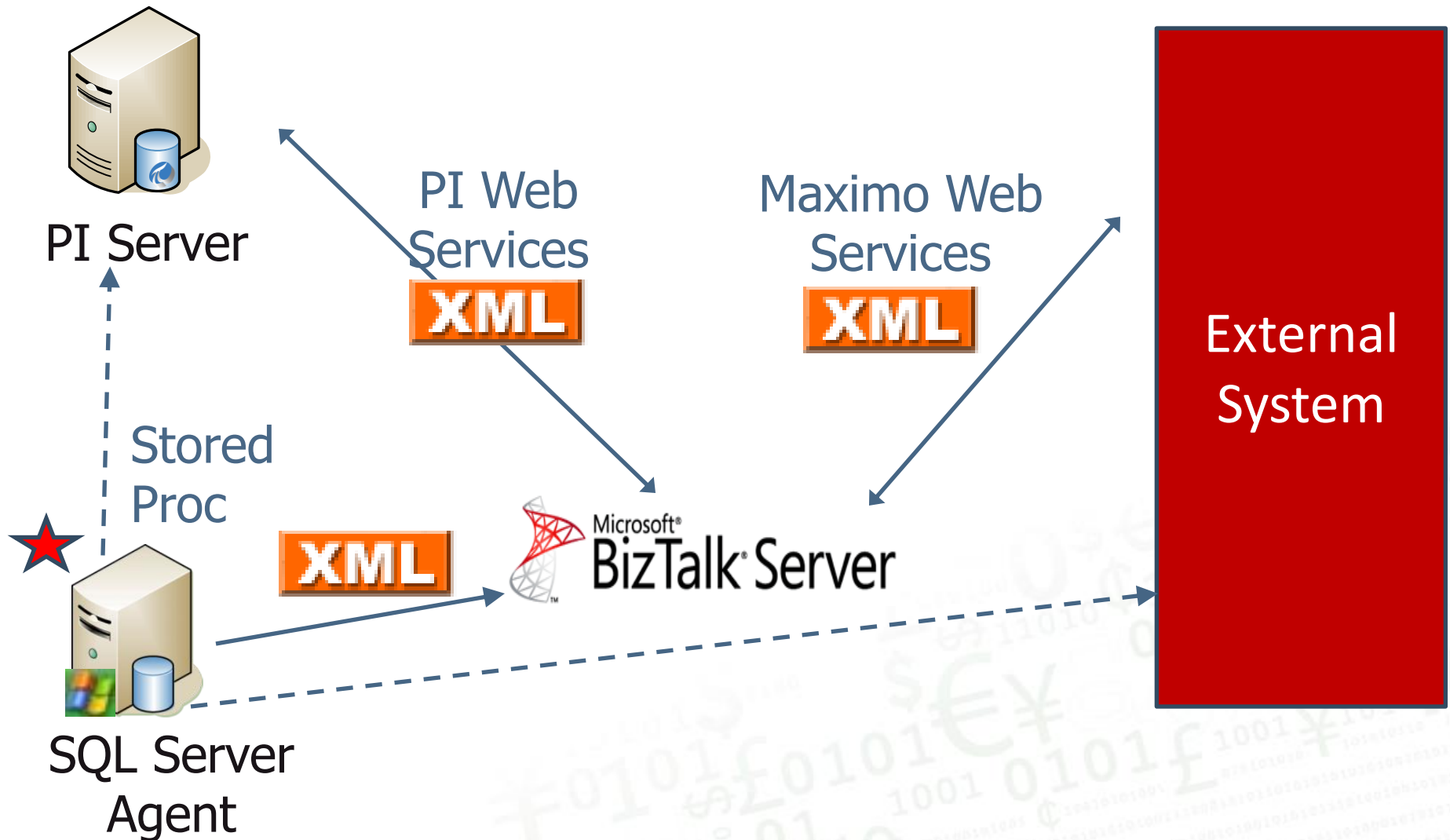
on demand

- Middleware BizTalk



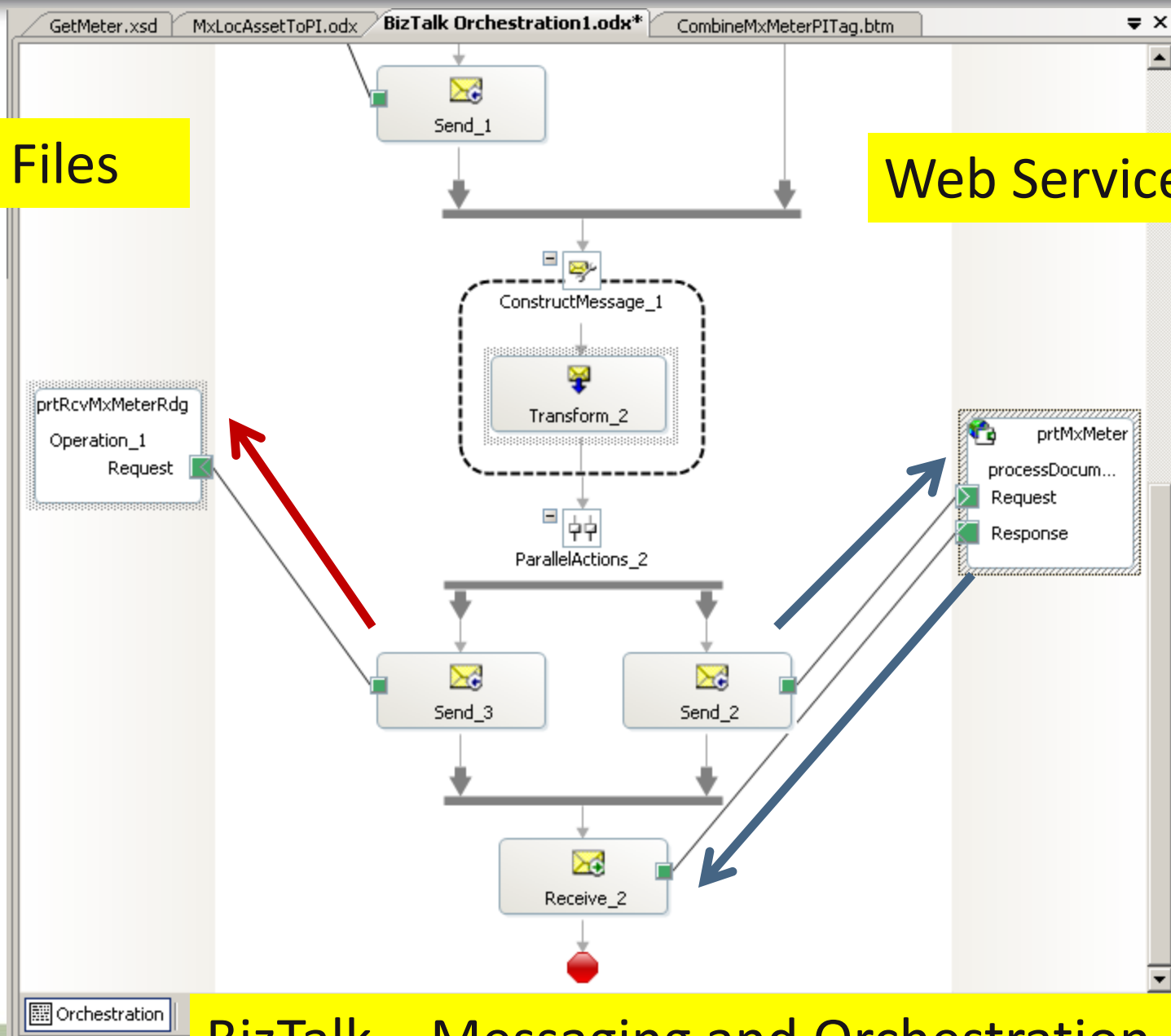
Microsoft®
BizTalk® Server

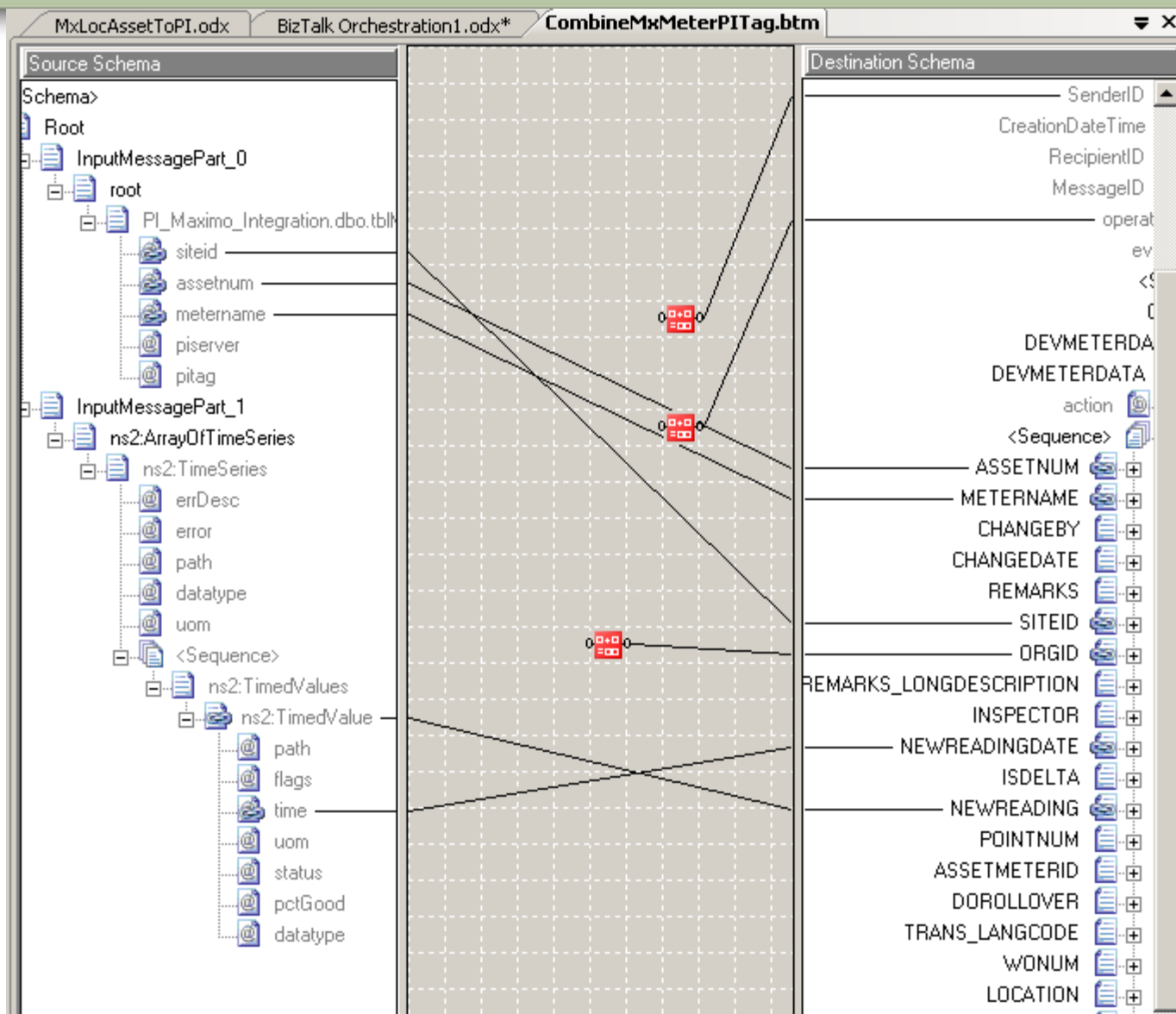
PI to BizTalk to Maximo



Files

Web Services





BizTalk – XML message stitching and mapping

Hyperlink launches the demo only during a live session

[Enterprise Integration PI BizTalk Demo](#)

Measurement Doc to SAP

- PI Notification - XML



- Microsoft SAP adapter (WCF LOB)



- BizTalk *



* PI Notif. can also directly call a SAP web service

AF - PI System Explorer

File Edit View Go Tools Help

Database Query Date Back Check In New Element New Attribute Search

Elements

- A6088_ODOM-M
- A6089_ODOM-M
- A6090_ODOM-M
- A6091_ODOM-M
- A6092_ODOM-M
- A6093_ODOM-M
- MAXIMO_WO
- MIMOSA
- ORACLE Assets
- ORACLE Work Request
- PIMLTours
- PITagPutVal
- PUMP2
- SAP_MeasPoint1**
- SuperElement
- VENTYX_UsageReading
- WindTurbine01
- SAP_GoodsMvmt

SAP_MeasPoint1

General Child Elements Attributes Ports Version

Group by: ☒ Category

Search

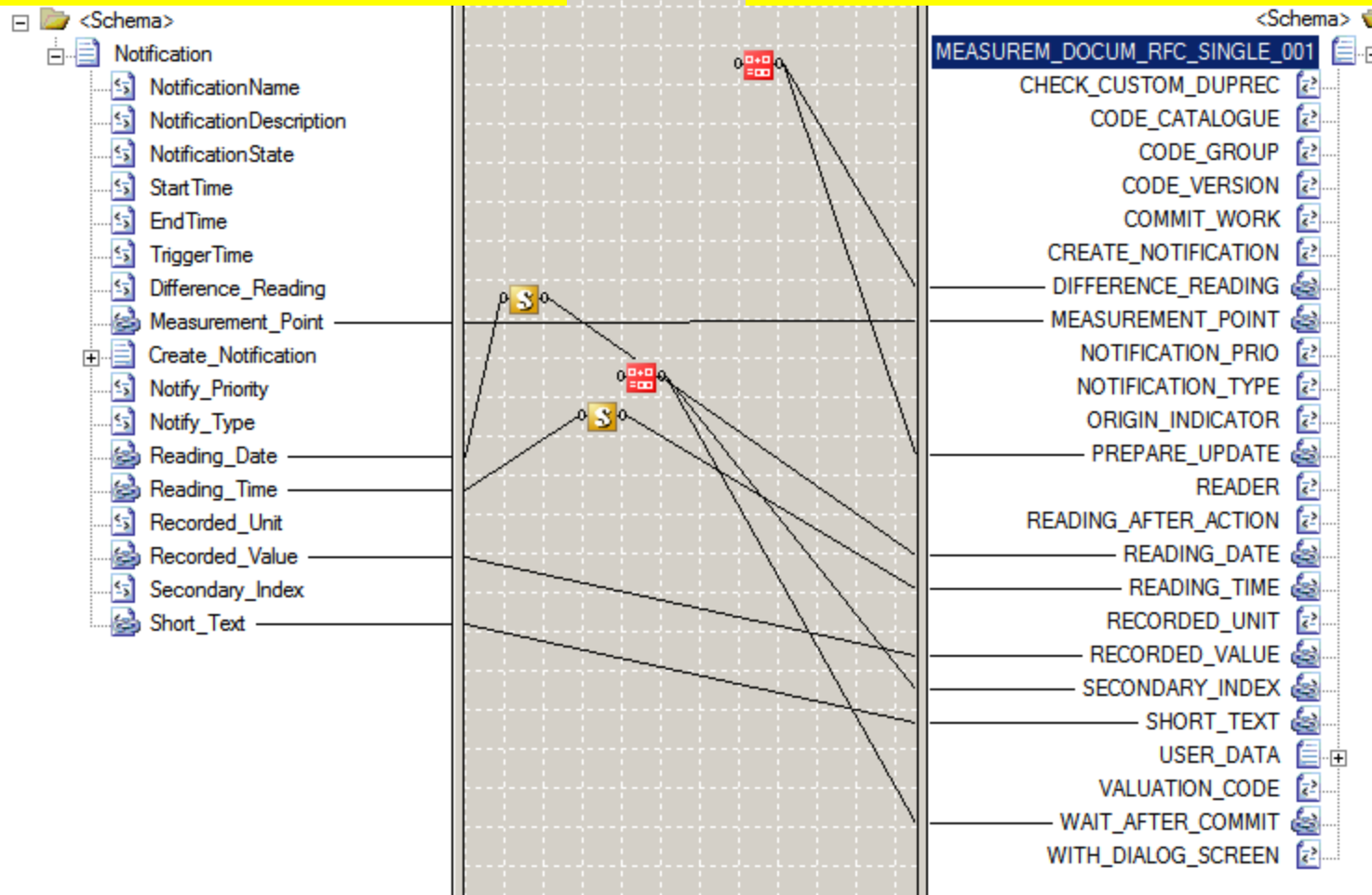
Name	Value	Description
<None>		
Active	YES	YES/NO
Trigger	ON	ON/OFF
SAP_MEASPOINT_Info_To_SAP		
Create_Notification		X = Create PM notification
Difference_Reading	X	X or Blank
Measurement_Point	11459	Measuring point (Primary key)
Notify_Priority		Notification priority importance
Notify_Type	M2	Default=M2 (M1, M2, M3)
Reading_Date	4/21/2010 2:40:43 PM	Date of the measurement
Reading_Time	4/21/2010 2:40:43 PM	Time of the measurement
Recorded_Unit		Unit of measurement for
Recorded_Value	17	Measurement reading in unit
Secondary_Index		Secondary index: Item No. of Me
Short_Text		text for measurement

Recorded_Value

AF – SAP Measurement Point 11459




PI Notification XML

Microsoft SAP Adapter XML



RFC call Measurem_Docum_RFC_Single_001

Display Measuring Points: Overview

Functional location	3000-LRP-FL-01
---------------------	----------------

Description

☞ Last Measurement Document for Key Date 31.12...

Measuring points

MeasPoint

Description of

11459

Film Length

11460

Thickness of f

11461

Thickness of f

11479

Speed

11498

Length

MeasDocument 1026135

Measuring point 11459

MeasPosition LRP-PT-01




Document data

MeasurementTime	20.04.2010	/	21:18:29
-----------------	------------	---	----------

Counter reading	489.000
-----------------	---------

Difference	6.000
------------	-------

TotalCtrReading	489.000
-----------------	---------

LRP-PT-05

M	M PI LENGTH
---	-------------

Unit

ounter

mm

m/s

m

Materials-Produced-Actual to SAP

- PI data after a daily production run
- Middleware SAP MII (and PCo)
 - MII internally can use
 - PI OPC DA/HDA
 - PI OLE DB 2010
 - PI SDK etc.
- Materials-Produced-Actual-Quantity
(BAPI_PROCORDCONF_CREATE_TT)



File Edit Tools Global Transaction Sequence Action Source Control Help

Catalog Web Meta-Inf

GH0

- BAPLEQUI_GETLISTTesting
- CallDataUploadAsWebservice
- CallDataUploadAsWebserviceSimple
- GetMeasurementPointsByEquipment
- GH0AverageQuery
- JRATesting
- LookingforRFCNames
- MEASUREM_DOCUM_RFC_SINGLE_001Testing
- MEASUREM_DOCUM_RFC_SINGLE_001Testing2
- MEASUREM_DOCUM_RFC_SINGLE_001Testing3
- MeasurementPointDataUpload
- OSP_TIMEZONETesting
- RetrieveMeasPtByEquipList
- TagQueryLinkTest
- TagQueryLinkTest2
- TempTWA_MP23058
- TIMEZONE_RFCTesting
- UpdateQueue

Actions Transaction Properties

- CAMS-INT Actions
- Charts
- Data Queries
- Dynamic Graphics
- E-Mail
- ERP System Interface
- File I/O
- File Manipulation
- JMS
- Line Performance Manager
- Logging
- Logic
- Manufacturing Dashboards
- Message Services
- Misc. Functions
- PDF Actions
- Quality
- Queueing
- Reference Documents
- SAP JCo Interface
- SAP JRA Interface
- SAP MII XML Output
- SAP NW JTA
- SA
- Se
- W

MEASUREM_DOCUM_RFC_SINGLE_001Testing

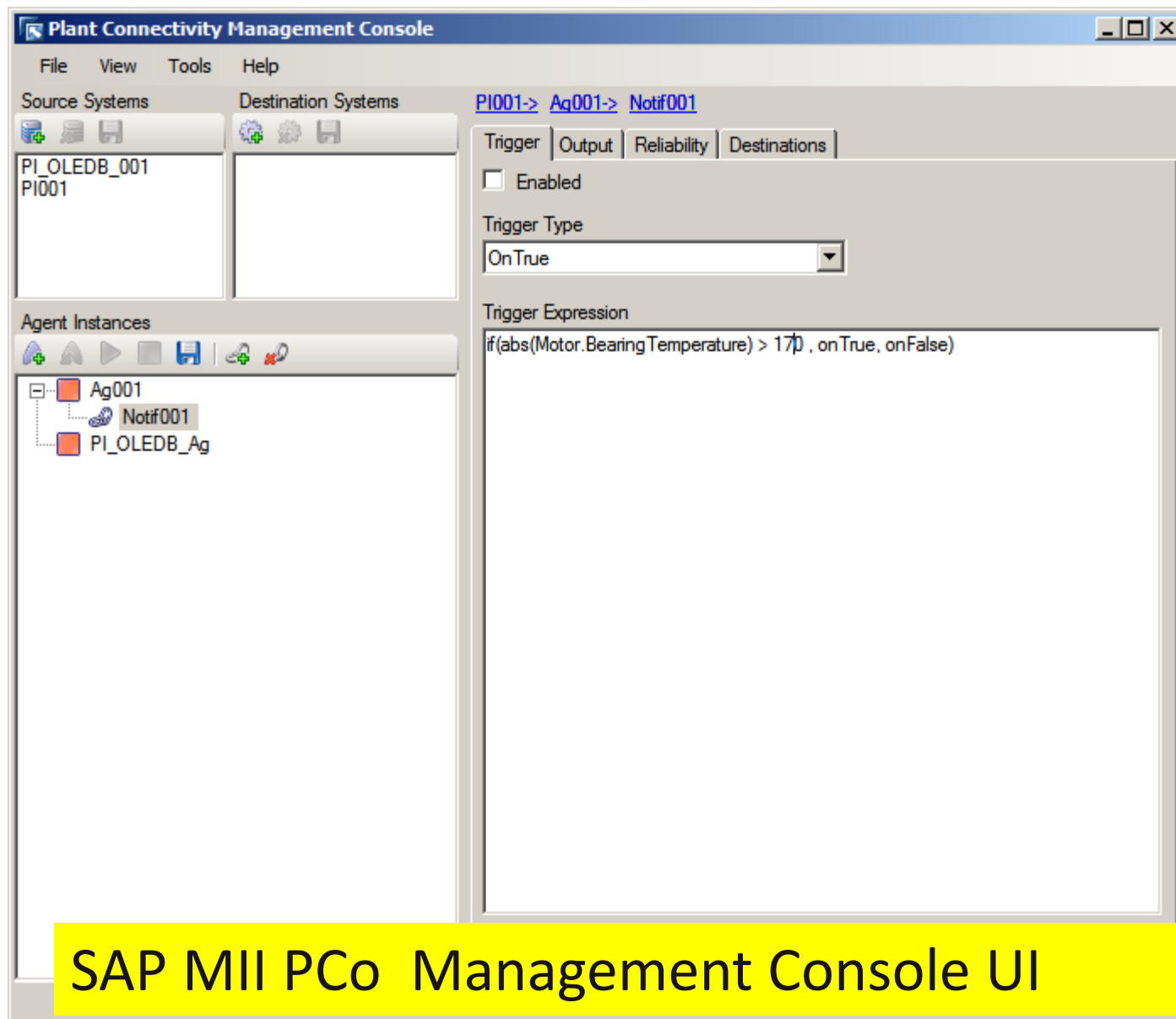
SAP MII

```

sequenceDiagram
    sequence_3_1[Sequence_3  
Reporter_0] --> sequence_3_2[Sequence_3  
GH0AverageQuery_0]
    sequence_3_2 --> sequence_1[Sequence_1  
Tracer_2]
    sequence_1 --> sequence[Sequence  
SAP JCo Interface_0]
    sequence --> sequence_4[Sequence_4  
Tracer_3, Tracer_4, Tracer_5]
    sequence_4 --> sequence_5[Sequence_5  
XML_Saver_0]
  
```

Open completed, 2372 milliseconds

SAP MII workbench UI



MII PCO

SAP MII PCo Management Console UI

B2MML...

Tree View XSL Output	
ProductionPerformance	
ID	70000122
Description	PI_PROD
Location	
PublishedDate	2007-05-11T00:00:00
ProductionResponse	
ID	1
ProductionRequestID	70000722
ProductProductionRuleID	Not Used
StartTime	Not Used
EndTime	Not Used
SegmentResponse	
ID	1000000000000000934
SegmentState	00005
ProductSegmentID	Not Used
MaterialProducedActual	
MaterialDefinitionID	Y-300
Description	Yellow Paint in Cans
MaterialLotID	CS1001
MaterialSubLotID	Not Used
Location	
Quantity	
QuantityString	10.000
DataType	Float
UnitOfMeasure	KG

B2MML Production Performance > ProductionResponse>
MaterialProducedActual > Quantity

Use Case : CIM Asset Model



- Oracle to AF Asset



- Middleware - IBM WebSphere ESB



- AF SDK and PI SDK



- OSI partner SISCO UIB Adapter for PI

CIM Model in PI AF Transformer

ExcelSmartGridVisualization - PI System Explorer

File Edit View Go Tools Help

Database Query Date Back Check In New Element New Attribute Search

Elements

- Service Company
 - Substation A
 - Substation B
 - Substation C
 - Sub C
 - TransformerBank
 - CircuitBreaker
 - Feeder
 - ACLineSegment
 - ACLineSegment
 - ACLineSegment
 - Dist Transformer
 - Meter A
 - Dist Transformer
 - ACLineSegment
 - ACLineSegment
 - ACLineSegment
 - ACLineSegment
 - ACLineSegment
 - ACLineSegment
 - ACLineSegment
 - ACLineSegment
 - ACLineSegment

TransformerBank1

General Child Elements Attributes Ports Version

TransformerBank1

Group by: Category

Search

Name	Value
AgingAccelerationFactor,FAA	0
AmbientTemp	0 °C
AmbientTempMeasurement	0 °C
CalculatedTopOil	0 °C
Capacity	26 MVA
DashboardSVG	SubstationDashboard.svg
DCBatteryVoltage	134.100006103516 V
HSWName	Winding3 High-side
HSWPhaseACurrent	93 A
HSWPhaseADemandCurrent	93 A
HSWPhaseAMax24hrCurrent	94 A
HSWPhaseBCurrent	94 A
HSWPhaseBDemandCurrent	93 A
HSWPhaseBMax24hrCurrent	95 A
HSWPhaseCCurrent	92 A
HSWPhaseCDemandCurrent	92 A
HSWPhaseCMax24hrCurrent	93 A
InServiceCoolingStage	1
Load(perUnit)	0
Location.Latitude	39.97653
Location.Longitude	-105.26752
LSW1Name	Winding1 Low-side
LSW1PhaseACurrent	788 A
LSW1PhaseADemandCurrent	791 A

Element Templates

Search

- ACLineSegment
- Breaker
- DistTransformer
- Feeder
- Fuse
- PowerTransformer
- ProtectionEquipment
- Recloser
- ServiceCompany
- ServiceDeliveryPoint
- Substation
- Switch
- TransArea

TransformerBank1 Modified:8/11/200

CIM model in AF

Use Case : PI JDBC to IBM DB2

- Data Center - Branch Circuit Monitoring - Hardware Planner use case



- PI JDBC and Java App

- Common naming convention
 - IBM DB2 (Asset registry)
 - Siemens OPC
 - PI Tags



CadPLUS Panel Schedule - 02FS / SUB-E

Save Exit Preview 3 Pole 2 Pole Single Multi SP IU IP RP NA Show Details List Select Assign Connect Settings Help

PANEL SUB-E
MFR LIEBERT
BLDG 27689
FLOOR 02

AMPS V-L 208
AMPS V-L-N 120
PHASE 3
WIRE 0
BRKR AMPS 225

AIC RATING 0

PDU 02FS
UPS1 2HE-DPC-4
DIST PNL1 4
UPS2 UDFCA-11
DIST PNL2 10

SUB E

ST	DESCRIPTION	RECPT	TRIP	RES	A	B	C	A B C	A	B	C	RES	TRIP	RECPT	DESCRIPTION	ST	
IU	H2SY,E2SY,X2SY 2064-104	460R...	60	0	1	35			15			22	0	30	L6-30R	CRAMS12M STOREDGE-72	IU
IU	STRAPPED TO 1			0	2		35			15		23	0			STRAPPED TO 22	IU
IU	STRAPPED TO 1			0	3			35			12	24	0	30	L6-30R	CRAMS10M STOREDGE-72	RP
IP	X1SY,Y1SY 2064-108	460R...	60	0	4	25			12			25	0			STRAPPED TO 24	RP
IP	STRAPPED TO 4			0	5		25			13		26	20	5-20R	MULTIPLE	IU	
IP	STRAPPED TO 4			0	6			25			8	27	20	5-20R	MULTIPLE	IU	
IP	H1SY,Q2SY,Y1SY 2064-113	460R...	60	0	7	18			0			28	20	5-50R	CRSTNM7D MONITOR	IU	
IP	STRAPPED TO 7			0	8		18			0		29	20	L6-20R	CRSTN57D A1897A	IU	
IP	STRAPPED TO 7			0	9			18			0	30			STRAPPED TO 29	IU	
IU	E1SY,J3SY,Q1SY 2064-108	460R...	60	0	10				0			31	0	20	5-20R	CHRLUN46 7500	IU
IU	STRAPPED TO 10			0	11					0		32	20	5-20R	MULTIPLE	IU	
IU	STRAPPED TO 10			0	12						6	33	7	30	L6-30R	CREGFP1P STOREDGE-72	IU
IU	MULTIPLE	L6-30R	30		13				6			34	7			STRAPPED TO 33	IU
IU	STRAPPED TO 13				14							35	20	5-20R	CRCBS13P V880	IU	
IU	CONVERTERS DATAPHON	5-20R	20		15							36	20	5-20R	CRCBS16P V880	IU	
IU	CHRLUN46 7500	5-20R	20	0	16							37	20	5-20R	CRCBS14P V880	IU	
SP	SPARE				17							38	20	5-20R	CRCBS15P V880	IU	
SP	SPARE				18							39	30	L6-30R	MULTIPLE	IU	
IP	MULTIPLE	(2)	20		19							40			STRAPPED TO 39	IU	
SP	SPARE				20							41			SPARE	NA	
SP	SPARE				21							42			SPARE	SP	

Load Readings

MAX	A	B	C	N	G	DATE READ
PNL	50	0	0	0	0	1/1/1980
PDU	50	194	138	151	90	11/17/2004

REMARKS

AMPSREAD	A	B	C
Total	111	106	104
Load Balance	104%	99%	97%

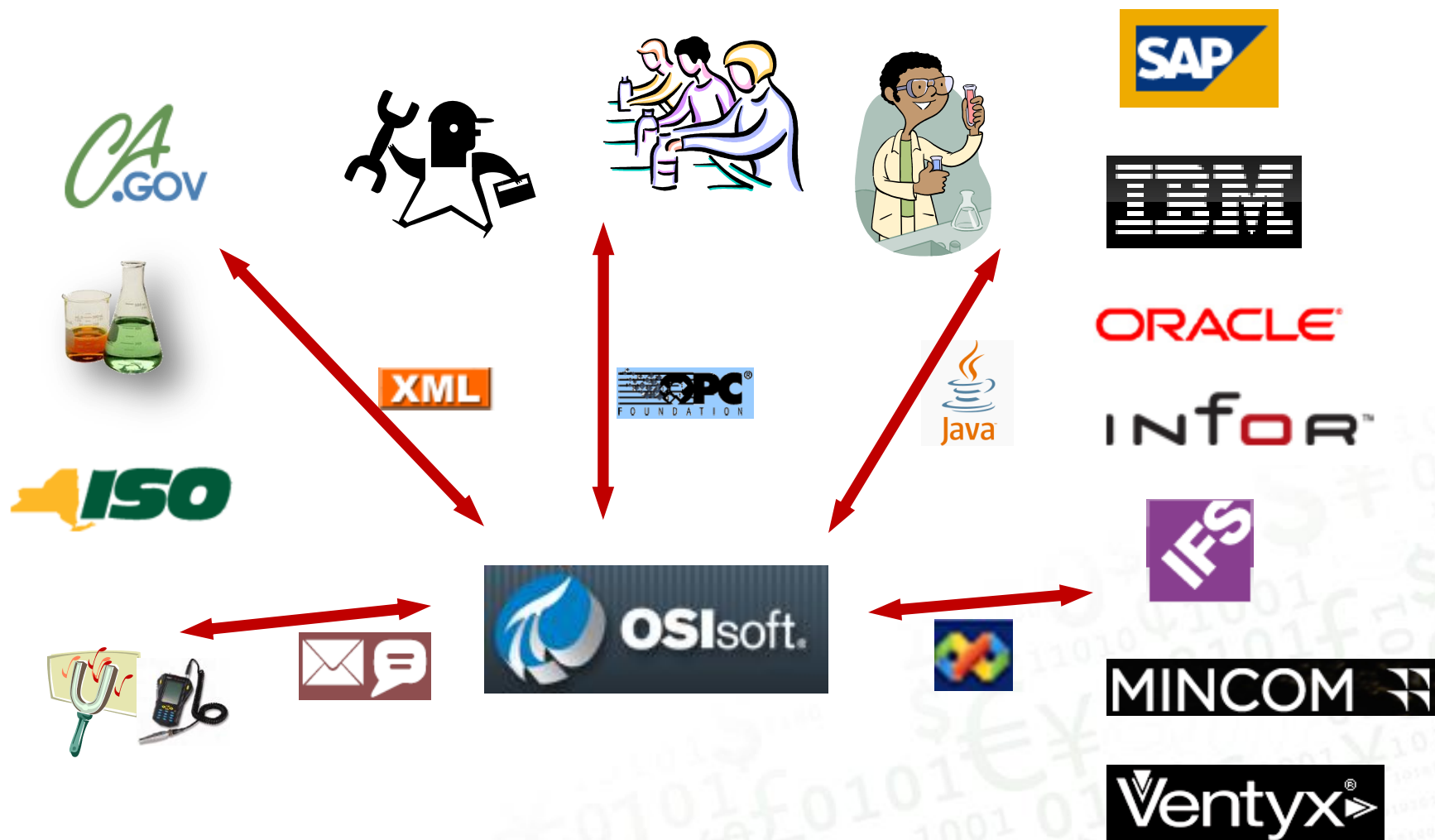
OK - Amps less than max % allowed
OVER - Amps over max % allowed
ALL - Amps greater than assigned breaker

AMPS + RES	A	B	C
Amps + Res Amps	118	106	111
Load Balance	106%	95%	98%

Add Res to Circ
Circuit Limit %
80
Panel Limit %
0

PanelsPlus hardware planner GUI

Enterprise Integration and PI Data Access



Enterprise Integration and PI Data Access

Use Case	Push vs. Pull	Middleware	DataAccess
Reporting - ISO	Push	None	PI Notif.(XML)
Maintenance - Condition	Push	None	PI Notif.(XML)
Maintenance - Usage	Push	None	PI WS
SAP - RFC -MesuremDoc	Push	BizTalk	PI Notif. + PI WS
SAP - BAPI - Goods Mvmt	Pull	SAP MII	PI SDK
Oracle to AF	Pull	IBM Websphere	PI SDK, AF SDK
IBM DB2	Pull	None	PI JDBC
Email Listener	Pull	BizTalk	PI WS

Take Away

Enterprise Business Integration:

- ✓ Data Access methods - you choose
- ✓ Push vs. Pull from PI - you choose
- ✓ Middleware vs. No Middleware - you choose
- ✓ Out-of-the-box vs. Add-on/extensions - ???



Current RLINK Users

- ❑ RLINK is in “maintenance” mode
- ❑ Your existing RLINK installs will continue to be supported
- ❑ Consider using newer technologies on both PI and ERP/EAM side
- ❑ May need one-on-one discussions to explore your specifics and alternatives

Other Related Talks

What is new in PI Data Access... Wed AM

Building Great Dashboards... Wed AM

Configuring Integrated Visualizations with
PI WebParts Wed AM

Introducing Multi-dimensional Data.... Tue PM

Visualizing Data with PI DataLink 2010.... Tue PM



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Thank you

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