

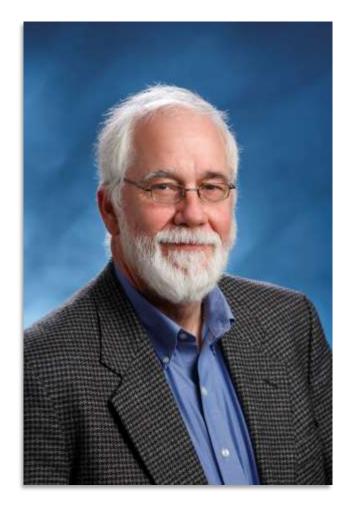


# Energy saving with RtEMIS -A quick and simple EMIS solution built in top of the PI System

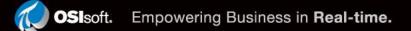
Presented by Stephane Rioux, OSIsoft Pablo Asiron, RtTech Pat Burke, Flakeboard



# Mission



#### "Our mission is to maximize the Value our customers get from our product and services"



# **OSIsoft<sup>®</sup> Partner Solution Showcase**

 Find software solutions from OSIsoft partners with specific industry and domain expertise.

Refine 5

\* Implem Days (S

Discouting.

Vivela ( Dodanti Filegion Socializa

- http://partners.osisoft.com/solutions



#### pss@osisoft.com

iearch - Circo at Fitico 🗖	Cheanite CD CD Press Let 1 (C) (C)	Set by Nost Report
Q	The second second second second second second	
nentation Tuse	Waterfall for the OSIsoft P1 System	
ś.	Waterfull for the OSIsoft® PI System® replicates in real time, a PI Server**	WATERFALL
0.	which is located in the secure industrial network to a replica PI Server located in the corporate network. Hardware-based unifirectional gateway	and the second second
(1)	preserves industrial network segregation and protects critical assets by	
I)	eliminating any threats of cyber-attack originating from external networks.	
iy .	By Watchet Security Stationer USD April 12, 2012 首合合合合(10)	
6		
m Arna	Process Plogins	
	Proma Phones and formulations are designed to reside antirely in PI Asaet applications, and formulations are designed to reside antirely in PI Asaet Promework <sup>24</sup> (PI AP). Users can view, modify, or enhance formulations. Must formulae are designed to be calculated directly in PI AF. The Process Plugins library includes additional functions that are handled by the Process Plugins Windows service, using PI SDK <sup>®</sup>	Pla hoom Regin
	By Pennes Denvelope Dec April, 57, 2013 (0) (0) (0) (0) (0)	
	RtDuet	
	REDuct automatically detects downtime and slowdown events in industrial plants. These events are either auto-classified or presented to the operators for classification and validation using the client's Time Usage Model and Reason Time. The classified events are used to calculate key Performance Indicators like Availability, Utikaation and CEE.	<u>RtDuet</u>
	By RCTach Software Dro. March, 27, 2012 **** (4)	
	ProcessTemplates	
	Looress conference	

#### Process Templates drives repeatable events through measurement profiling of tritical event attributes. It improves batch to batch consistency.

By 10912 Information Systems, Inc. Hands, 31, 2012 (11) (11) (11)



Philipping Templands

### Presenters

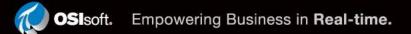
- Pat Burke, Flakeboard 506-465-2836 pburke@flakeboard.com
- Pablo Asiron, President RtTech Software 506-232-3791 pablo@rttechsoftware.com
- Stephane Rioux, Partner Principal OSIsoft 514-493-8325 srioux@osisoft.com





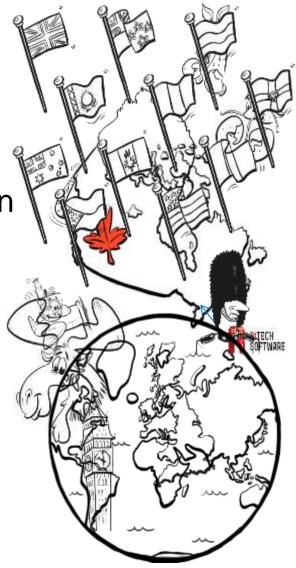


# Energy saving with RtEMIS



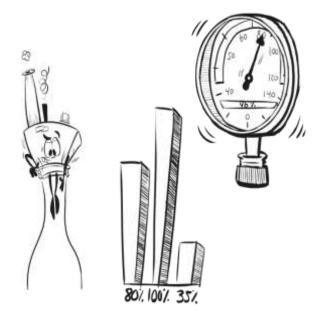
# **RtTech Software**

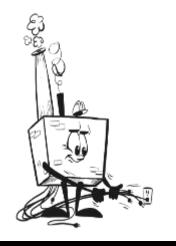
- Creates Solutions to:
  - Improve Asset Effectiveness
  - Reduce Overall Energy Consumption
- Based in NB, Canada
- Sales Offices in Australia and UK
- Customers in 13 countries

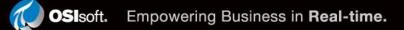


# **RtTech Software**

- Developers of:
  - RtDuet: Downtime Monitoring and Maintenance & Reliability KPI calculator
  - RtEMIS: Industrial Energy Management Information System







### Why Monitor Energy usage

- Energy is typically one of the largest costs for any industrial site
- The first step to any Energy improvement is to measure and monitor Energy consumption.
- Convert Energy from a given expense to a controllable item.
- Reduce overall Energy usage:
  - Cost savings
  - Environmental reasons

#### What is RtEMIS

- An Industrial Energy Management Information System that provides data infrastructure and software tools for:
  - ✓ Data Acquisition independent of Control platform
  - Data Analysis Performs calculations like target energy consumption and conversion of Energy usage to dollars
  - Reporting Has a set of reports focused on Energy Accounting, Cost Break-down and Deviation of Energy Consumption from target.
    Extremely customizable to fit any reporting needs
  - Monitoring Real-time monitoring of Energy Consumption by the type of Energy
  - Decision Support Information customized for each user profile helps identify opportunities for Energy Reduction
- It turns metering data into actionable information to reduce Energy waste

### **RtEMIS Main Functionality**

- Identify areas where there is an overconsumption of Energy and alert the operator/managers
- 2. Automatically check the data integrity from the sensors before it is being used to calculate the target or total consumption.
- 3. Log the overconsumption events for analysis and correction.
- 4. Break Energy cost including Demand Electricity cost between the different areas accurately.
- 5. Extensive list of **reports** to turn Metering Data into Information.

#### **Overconsumption of Energy**

RtEMIS calculates the Target Energy Consumption for each EAC's Energy type in real time.

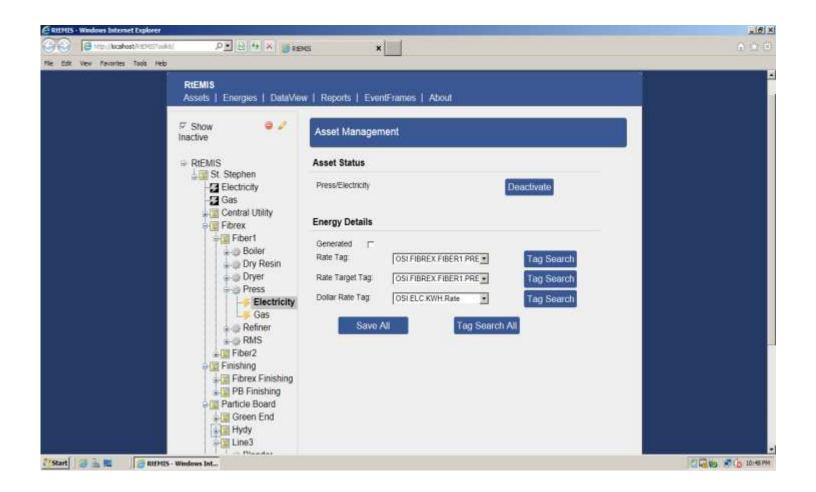
The target equation(s) can come from:

- RtEMIS Target Calculator
- First Principles
- Another system as long as the equation can be entered into PI Analytics or the results of the Target equation can be accessed by the PI System

#### **RtEMIS Target Calculator**

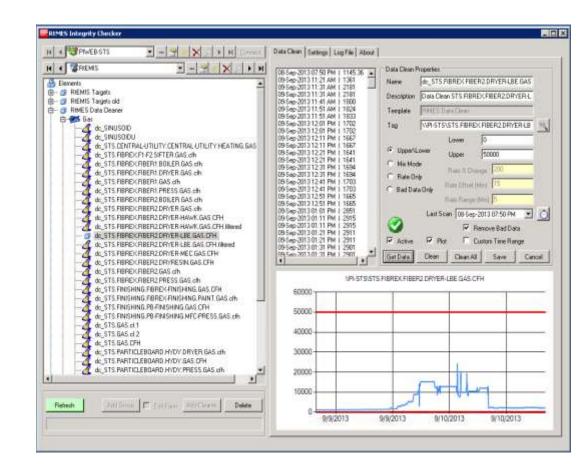


#### **RtEMIS Target Calculator**



## **Data Integrity Checker**

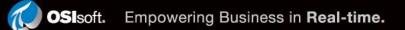
RtEMIS has a module that monitors the sensor data and removes spikes due to instrument error.



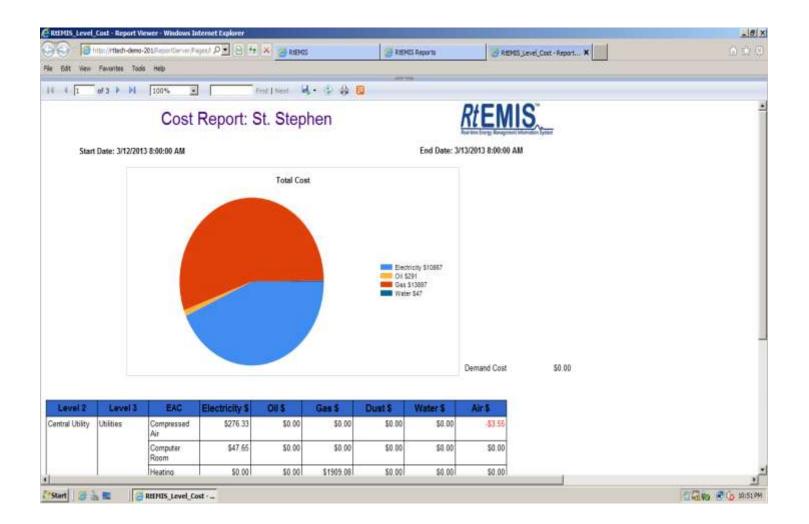
#### **Overconsumption events logging**

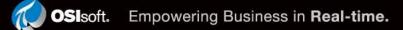
#### RtEMIS has a module based on RtDuet to log any Energy overconsumption event

ents	Reports	Options						
2013-	03-15 12:18	2013-03-15 17 18	Show Chart				In	n Updated 18-Mar-2013 12-1
				Energy Moni	toring Module			
		13.00	14:00	15.00	1600	1700		- De oi Tark
	ОК _							- ORFA
	-				1			Pump 16 Pump 20
	-							- Skin Tank
	Not OK -							
_	-					1		
ant.	Edit Sele	cled Pasta Soler	red Via	Life Sellected	Indete Selected	Select Depelect All	Hole Left Page	Shim Left Page
	and the second second	ATT CARLOSS		and the second second second			the second second	Sector Sec.
					Page 1	of 1		
			Start Time	End Time	Machine	Duration Comment	Reason	
		E 2 3 4 X 0 154	4ar-2013 14:49:34	18-Mar-2013 08:51.44	ORFE	3962.2		
		£ 2 3 4 × 9 154	4ar-2013 14:43:04	15-Mar-2013 14:49:34	ORF A	6.5		
		2 / 3 4 × 0 15-1	4er-2013 14:23:04	15-Mar-2013 14:43:04	Pump 20	20.0		
		2 J 3 4 X 0 15-1	lar-2011 14:15:34	15-Mar-2013 14:23:04	ICF	7.5		
		2 / 3 4 × 8 154	lar-2013 14:10:34	15-Mar-2013 14 15 34	Skim Tark	5.0		
		2 / 3 4 × 9 15-1	4ar-2013 14:01:04	15-Mar-2013 14 10 34	Pump 16	9.5		
		2/34 × 0154	4ac-2013 13 29:34	15-Mar-2013 13:50:34	ORF 8	21.0		
		2/34 × 0 15-1	4ar-2013 13 22 34	15-Mer-2013 13:29:34	ORF.A	7.0		
		2/34×0154	48-2013 13:02:04	15-Mar-2013 13:22:34	Pump 20	20.5		
	0 3	P / 3 4 × 9 15-1	46-2013 12 55:04	15-Mar-2013 13:02:04	ICF	7.0		
	0	E / @ 4 × @ 154	4ar-2013 12 50:04	15-Mar-2013 12:55:04	Skim Tank	5.0		
		2 2 3 4 X 0 15-1	lar-2013 12:40:34	15-Mar-2013 12:50:04	Pump 16	9.5		
	Sec. 11.1							



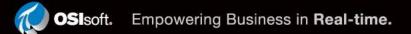
#### **Break Energy cost**



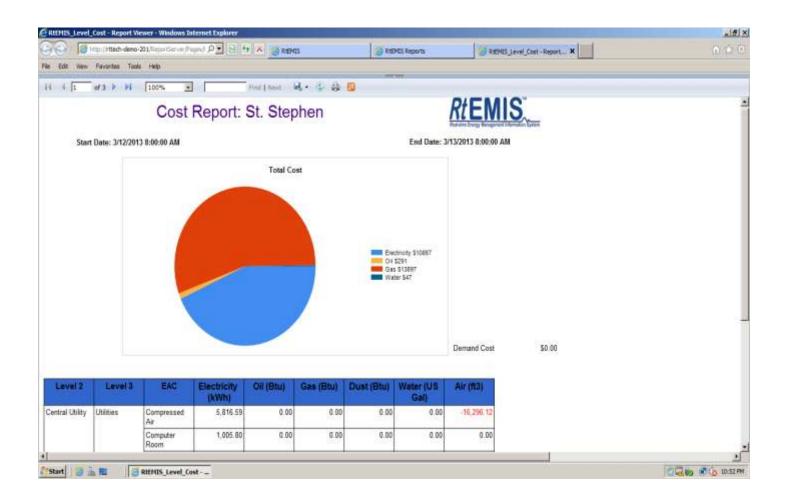


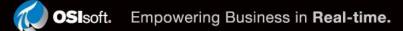
#### **Break Energy cost**

CRIEMIS_Leve								_18 ×
99 19	http://rtied-dee	o-201/Propiets	ierver/Priges/F	P* B ** )	RIEMIS	🧭 RIENES Reports	REMELLEVEL Cost Report X	A 27 0
Nie Edit View	Fevorites To	dia ( )tela)						
Start Date	3/12/2013 8:0	00:00 AM	- 33	End Date	3/13/2013 8:00:00 AM			View Report
Units	Dollers	1		Electricity Unit	kwh			
Oil Units	Energy Units Octors			Gas Units	824			
Dust Units	Btu			Water units	US Gal 🔹			
Air Units	(As	-		Sigges Links	L .			
Biomass Units	L	H		ERS Units	libs 🔹			
Steam Unita	Kga	1						
Sta	rt Date: 3/12/2/	213 8:00:00	АМ			End Date: 3/13/	2013 8:00:00 AM	
Sta	rt Date: 3/12/2/	113 8:00:00	AM			End Date: 3/13/	2013 8:00:00 AM	
					Total Cost			
						Electricity \$10867		
						Gas \$13097 Wate: \$47		
					1			
•1			A					
	5 R 🛛	BIEHIS_L	evel_Cast ·	8				



#### **Break Energy cost**

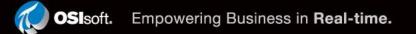




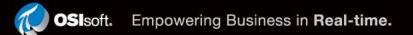
#### Reports

Extensive list of reports based on NRC EMIS guide or "blue book".

Pat Burke will show some of the reports in his demo



# RtEmis use case



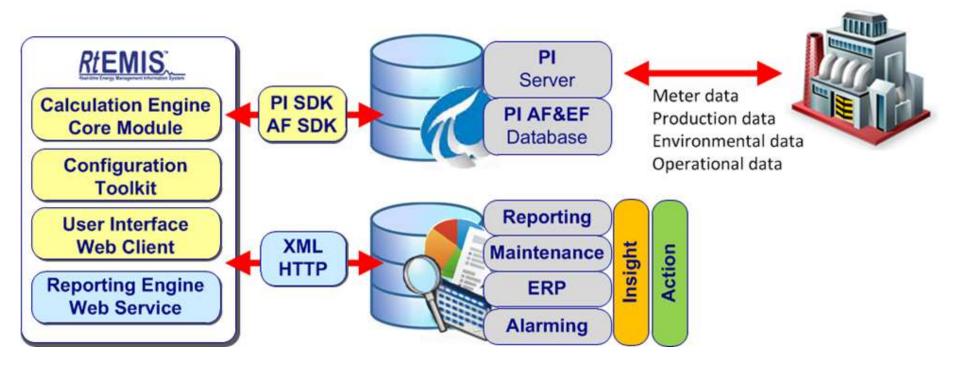
## Flakeboard Profile

- Incorporated in 1960, Flakeboard is an industry leader in the production of quality composite wood panels with 8 facilities in Canada and the US
- The St. Stephen facility employs continuous panel production technology on three particleboard lines, two thin MDF (Medium Density Fibreboard) lines providing Flakeboard with a product range second to none.
- Over 80% of the products shipped from this facility are further upgraded with valueadded finishes such as melamine, decorative paper, direct print or paint, in hundreds of different colors and patterns.





# Solution



Sol		uti		O	r	ן										-	13 12.8 12.6 12.4 Q 12.2 12 12 11.8	5 - 5 -		/ /			emai	nd	MV	V				_	
Project	Im	plementation	No		On	nortunitu	Imal	ementation	Dec Smi		One	ortunitu	Imai	ementation	YTD Savings		Opportunity	Im	plementation		Savings otal (net)							$\checkmark$			
Gimwood Sander Bag House Fan		pienientation		Tracks in				ementation		2,739.80		33.39		ementation	\$ 31,456.40	1	1,709.74		prementation -		31,456.40										
Make-up Air System	1.1		11.	- Secondaria		-	Ś			22,779.14	-		Ś	-	\$ 102,061.21		-	Ś			102,061.21										
Splits of Offline Sander		-	\$	2,220.22	\$		\$	19	Ś	2,078.83	\$	3	\$	-21	\$ 25,871.09	\$	194	\$	74	1	25,871.09	5	6		7	8	9	10	11	12	
York Chiller	\$	-	\$	456.48	\$	247.48	\$		\$	633.18	\$	272.59	\$	-	\$ 6,009.27	\$	3,660.03	\$		\$	6,009.27	120	80 1187	9 1	1925		-			11631	
Berg Chiller			\$	4.87	\$	67.38	\$	194	\$	10 <b>-</b>	\$	184.34	\$		\$ 37.03	\$	781.45	\$	36.55	\$	0.48	126	31 1243	3 1	2673	12703	12648	12533	12643	12560	
Mende Konus	\$	2	\$	2,766.34	\$	572.65	\$		\$	4,387,38	\$	:3:	\$		\$ 45,494.84	\$	2,449.18	\$	17	\$	45,494.84										
Lighting	\$	1,883.00	\$	4,838.00	\$		\$	5,525.00	\$	5,225.94	\$	æ	\$	2,886.00	\$ 28,542.10	\$	29	\$	24,239.21	\$	4,302.89	_									
Diefenbacher Heating	\$	5	\$	318.94	\$	275.41	\$		\$	486.07	\$	305.05	\$		\$ 3,998.63	\$	2,953.62	\$	-	\$	3,998.63										
Wemboner Heating	\$	÷	\$	89.84	\$	698.64	\$	19	\$	709.02	\$	359.34	\$		\$ 4,341.82	\$	5,327.46	\$	1 <del>4</del>	\$	4,341.82										
Line III Dryer Oil	<u>.</u>		\$	10,098.00					\$	6,800.00					\$ 137,036.00	\$	2)	\$	17	\$ :	137,036.00										
Demand Savings	5		\$	10,245.56					\$	12,558.24					\$ 113,052.92	\$	1,382.44	\$	7×	\$ 1	13,062.92										
Total	\$	1,883.00	\$	38,431.95	\$	2,158.29	\$	5,525.00	\$	58,397.59	\$	1,154.70	\$	2,886.00	\$ 497,911.32	\$	18,263.92	\$	24,275.76	\$	473,635.56										
Demand Budget	ł			12,664.00						12,664.00																					

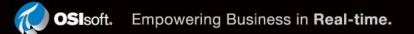
- Flakeboard significantly lowered total energy consumption by changing practices and behaviours.
- Industry standard is 3 10% savings for an EMIS System
- Our Initial EMIS Audit suggested 3.2% savings, Flakeboard actually achieved a 6.6% reduction overall energy reduction in 2012, well exceeding expectations and we have removed approximately 1.5MW of electrical demand

# Demonstration



© Copyright 2013 OSIsoft, LLC.

# Questions



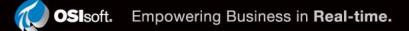
# **Webinar Recordings**

You can watch previously recorded Partner Solution Showcase Webinars at <u>http://partners.osisoft.com/solutions</u>

#### **Partner Solution Showcase Webinar Series**

Date	Title
November 6, 2013	The MEGLA Performance Equations Analyser

#### For the complete list of OSIsoft upcoming events: http://www.osisoft.com/events





# Thank you

© Copyright 2013 OSIsoft, LLC. 777 Davis St., San Leandro, CA 94577