

Turning insight into action.



Tips and Tricks for Manual Data Collection for the PI System

Presented by

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Agenda

- About Eastman Chemical
- Business Case
- System and User Challenges
- Reporting
- Benefits and Futures

Highly integrated, diverse businesses deliver significant value





Coatings, Adhesives, Specialty Polymers & Inks

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Global manufacturing (18 sites)

2010 sales \$5.8 billion

1993 Malcolm Baldrige Quality Award



Performance Chemicals & Intermediates

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Business Case

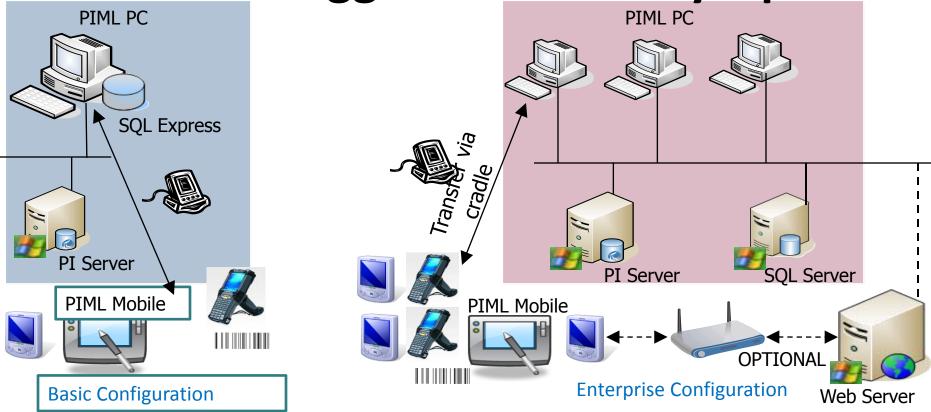
- Not all measurements wired to DCS
 - Plant inspections
 - Field gauges
 - Operator rounds
 - Title V Compliance and Environmental readings
 - Safety checks
- Past
 - Long time PI Manual Logger user (since 90s, and DOS days)
 - Windows XP, PI Manual Logger 1.x, Access DB (PAST)
- Migration project
 - New intrinsically safe devices in 2008
 - Windows 7, PI Manual Logger 2010 (2.x), SQL DB
 - PI Manual Logger Reporting



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PI Manual Logger Connectivity Options



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Migration tasks

- PI Manual Logger team handled the project startup steps
 - Installation instructions
 - Operator training
 - Migrate databases and settings to PI Manual Logger 2010

Installation/Instructions/Migration Tool

PI-ML 2.X User Documentation

Installation and User Documentation Guide

Installation (choose eit

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 - a. PI-ML2.X
 - b. PI-ML2.X
 - PI-ML2.X C.
 - d. Installing
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2.

Windows Mobile 5 (Bartec) HHT PI Manual Logger Tour Migration Tools 1. PI-ML Mobile Install: PI Manual Logger Tour OSIsoft. Installing on first/initial HHT Migration Tool User Please choose the Manual Logger 1.4 x database file \\ntmesapidev\piml\PIML 2.X\PIML 2.4.0.166\1.X Databases\TEX\ntmesa PI-ML 2.X - PI Manual Logger Use PI-ML2.X - Client Users and Grou Keep tag sequence order and disregard group order PI-ML2.X - PI-MLTour Options De Progress Status: Logger User Guide as well) Ready. PI-ML2.X - How to Create View o 2. PI Logger User Guide as well) Hŀ PI-ML2.X - Using the Device (HHT If NOT using a HHT, follow Manual Logger User Guide as wel PI-ML2.X - Installir PI-ML2.X - Using Tour Run Maint PI-ML2.X - Configu PI-ML2.X - Using the Windows M Display) PI-ML2.X - Using the Save Registr PI-ML2.X - Setting up AutoSynco

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Key Personnel: Area PI System Coordinators

- PI System Coordinators are plant technicians who perform the configuration of departmental PI Systems:
 - PI System software installation on client PC
 - PI Security Management
 - Tour creation and modification



- PI ProcessBook display and Excel spreadsheet management
- Operator Training

Operator Training

- PI System Coordinators work with four crews (12hr shifts)
- Assign lead operators to train other operators



System Challenges

- Intrinsically Safe devices
- 2 US sites
 - Texas, Pennsylvania
- 3 overseas sites
 - Malaysia, Singapore, Netherlands
- 100 + Win7 desktops and laptops
- 26 PI Manual Logger 1.x databases conversion to PI Manual Logger 2010

Solution – What we use

• Bartec MC 9090

• Intermec 730 (being retired)

• Keep extra devices



Solution – Site Development

- Each PI Manual Logger Site PI System Coordinator
 - PC and device software
 - Routes configuration and maintenance
- Smaller sites
 - 1 or 2 PI Manual Logger database
 - remote/phone support

By Physical Plant Site By Department By Control room layout

- Largest site
 - 22 separate PI Manual Logger databases
 - On-site training for PI System Coordinators

User Challenges

- Hand Held device cost
- Hand Held user interface changes
- Tag navigation
- Tag maintenance
- Collection scheduling during migration

Challenge – Handheld Purchase

- Intermec to Bartec expensive change, list price about \$8K
- Project ran for multiple years to allow for capital funds
- A total of 74 Bartec devices being used company wide & warranty of three years each

Challenge – Handheld User Interface

- Any user interface change is challenging
 - PI Manual Logger interface difference between 1.x to 2.x
 - Windows user interface changed from Intermec to Bartec



Other Challenges

- Tag navigation on the mobile device
 - OSIsoft has a PLI for this enhancement
- Collection scheduling in PI Manual Logger 2010
 - Eastman created a conversion template to convert to the new collection scheduling

PI Manual Logger Mobile

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100,000+ manual readings per day

- 26 sites (each site = one PI Manual Logger database)
 - 3 areas/site
 - 500 points/area
 - About 3 times/day

100,000+ manually collected readings per day

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6	82834	3/3/	2011	3/3/2011	45 D-516 Takeoff % TEG <	LCL)-516 Taked		Other Cause	0
7	82833	3/3/.	2011	3/3/2011	75 D-516 Overflow % DEG :	> UCL		33 C	-516 Overfl	ow % DEG	Other Cause	
8	82832	3/3/.	2011	3/3/2011	41 D-514 Takeoff % DEG <	LCL)-514 Taked		Other Cause	
9	82831	3/3/.	2011	3/3/2011	450 D-514 Reflux Ratio NOT	in Cascade		168 C	-514 Reflux	Ratio Mode Check	Other Cause	
30	82830	3/3/	2011		25 R-501 Inlet Delta Flamm	> UCL		17 F	R-501 Delta	Flamm Limit - Inlet		
31	82829	3/3/	2011		24 R-501 Jolet % C2H4 < L1				2.501A2.B	6 COH4		
••	Calculate	Alarm History Rep	oort / Citation One Pag	ger 🔬 Citation	n Criteria Report 📝 RDM Alarms F	Report 📝 Process Change					100% 🕞 🗌	

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User Likes

- PI Manual Logger 2010 automatic upload – (AutoSync)
- Easy switching between multiple SQL servers
- Easy switching between PI Servers
- Tour Scheduling
- New PI Manual Logger Mobile Interface

Tangible Benefits

 Automatic upload to the PI System via docking station (AutoSync)

Manually entered measurements combined w/DCS and other data for analysis

• Reporting - PI ProcessBook and Excel spreadsheets

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Intangible Benefits

Increasing productivity

• Plant inspections during PI Manual Logger routes promotes safety within the plant

Future Plans and Next Steps

• PI Manual Logger 2010 R2 beta testing

• Wireless and PI Manual Logger web services

Questions

- Contact Steve at csnunley@eastman.com
- Contact David at djohnstn@eastman.com



Thank you

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