REAL-TIME PERFORMANCE MANAGEMENT FOR THE ENTERPRISE
RtPM
SAN FRANCISCO PHILADELPHIA HOUSTON FRANKFURT
OSISOFT USER CONFERENCES 2005
REAL-TIME PERFORMANCE MANAGEMENT FOR THE ENTERPRISE
RtPM

Welcome and Overview

Mark Hughes

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High Availability

- No impact backups
- Interface nodes sending data to multiple servers
- Redundant servers

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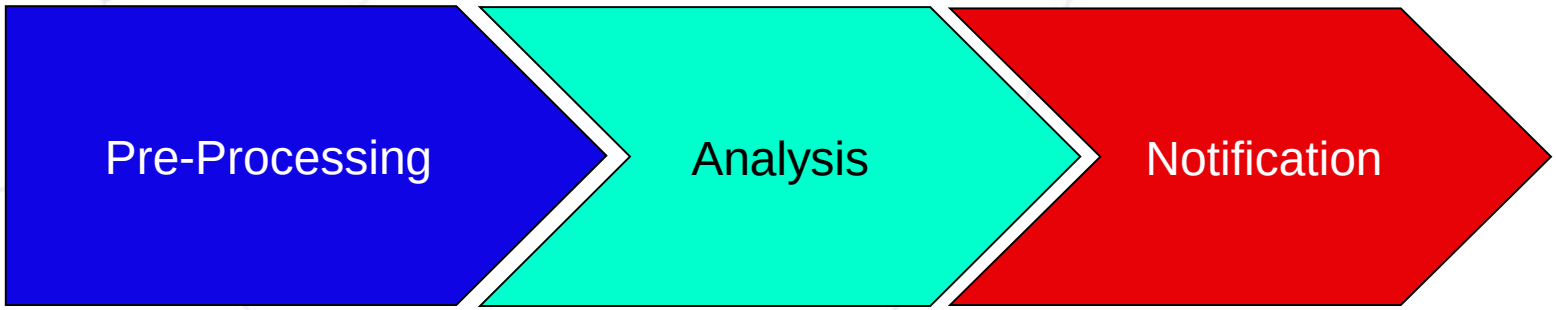
PIANO:
PI Analysis and Notification



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Analysis and Notification

- Currently part of several products: *Performance Equations, Totalizer, Alarms, AlarmView, RtAlerts, Real-Time SQC, ACE*
- Calculation Step
- Notification Step

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Examples of Analysis

- High alarm
- Statistical quality control
- Loss detection from mass balance
- Operator action recommendation from expert system

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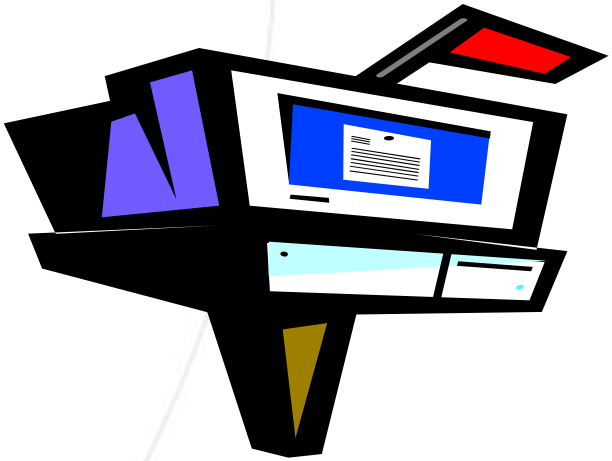
Notification

- Subscription
- Prioritization
- Escalation
- Audit trail



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How are you using RtPM?

Alarm Management
Analyzer Performance
Automated Generation Control
Automated Reports
Balanced Scorecards
Baseline Best Practices
Batch Quality Monitor
Certificate Of Analysis
Compliance Documentation
Condition Based Maintenance (CBM)
Continuous Emissions Monitor (CEM)
Control Loop Monitor
Corporate Data Warehouse
Customer Load Management
Data Reconciliation
Down-hole Systems In O&G Production
Downtime Monitoring
E-Commerce
Energy Management System
Environmental Compliance Monitor
General Ops Docn And Equipment Specs
Hazardous Waste Tracking
Hierarchical Process Data Views
Hydrogen Manufacturing And Distribution
Incident Investigations
Inventory Management
IT / Systems Monitoring
Key Performance Indicators (Kpi)
Lab Quality Data Integration
LNG Terminal Operating Assistance
LNG Terminal Operations Reports
Maintenance History Or Status
Maintenance Lockout Procedures
Manual Data Recording
Manufacturing Intelligence Data
Material Balance
Material Usage Tracking
Multi-Plant Equipment Performance Monitor
O&G Production Remote Monitoring By Non
Operating Partners And Customers
O&G Production Well Testing
Operating Envelope Data
Operations Data Warehouse
Operations Desktop
Operator Handover
Operator Training

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Anything else?

Paper Machine Felt Monitoring
Paper Machine Grade Management
Paper Machine Lost Opportunity Module
Paper Machine Performance Monitor
Pipeline Equipment Remote Monitor
Pipeline Leak Detection Support
Pipeline Operations Planning
Pipeline Pigging Schedule For Paraffin Removal
Pipeline Solar Turbine Efficiency Remote Monitor
Plant Performance Overviews
Power Delivery Capability For Gas Turbines
Power Generation Fleet Outage Management
Power Generation Supplier Scheduling
Power Turbine Trip Monitor
Process Monitoring
Process Performance Analysis
Product Compliance Reporting
Product Development Trials
Product Pricing
Product Separation In Multi-Product Pipelines
Production Analysis
Production Data Integration To ERP
Production Plan Versus Target Data
Production Plan Versus Actual Data
Pulp And Paper Mill Steam Energy Monitor
Pulp Mill Tracking
Quality Monitoring/Analysis
Reliability Centered Maintenance Support
Reservoir Control And Production Operations
Root-Cause Analysis
Shared Inventory Management Service
Shift Production Monitor
Six Sigma
SPC/SQC Production Quality Control
Steam Turbine Performance Analysis
Substation Load Monitoring
Substation Transformer Asset Management
Supply Chain Management
T&D Network System Load Forecasts
T&D Network System Load Planning
T&D Substation Equipment Monitoring
Tanker Fleet Current/Past Locations
Total Effective Equipment Productivity
Transmission Line Capacity Planning
Transmission Network Diagrams
Transmission Network Frequency Monitor
Troubleshooting Equipment Startups
Utilities Management
Virtual On-Line Analyzer In Refining
Waste Treatment Monitor
Weather Data Import

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Foundation Principles

- Move logic from visualization to services
- Enterprise wide
- Abstract data we do not store
- Share assets between applications
- Abstract assets and relationships we do not store
- Attach time series to assets

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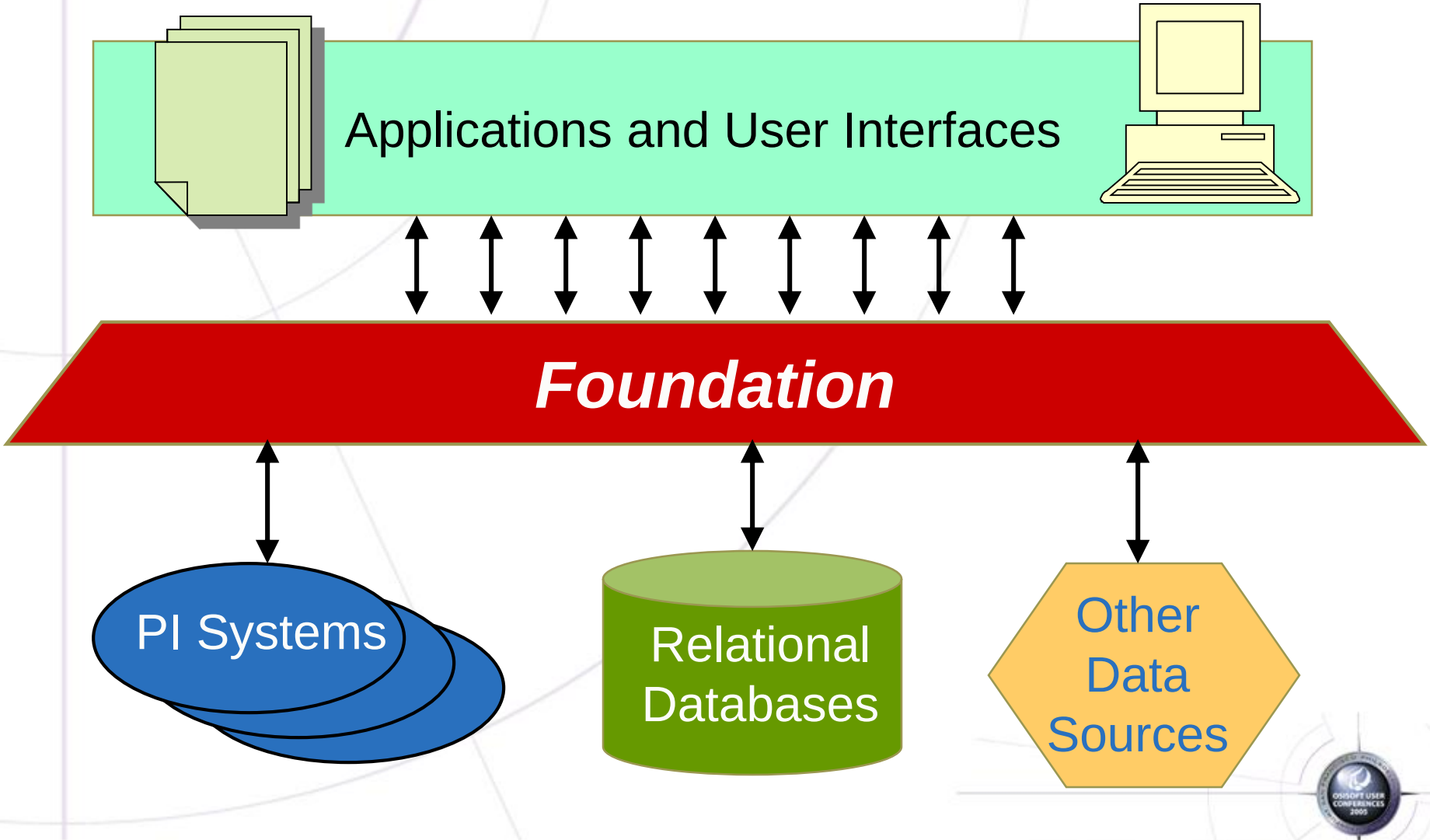
Enterprise-wide



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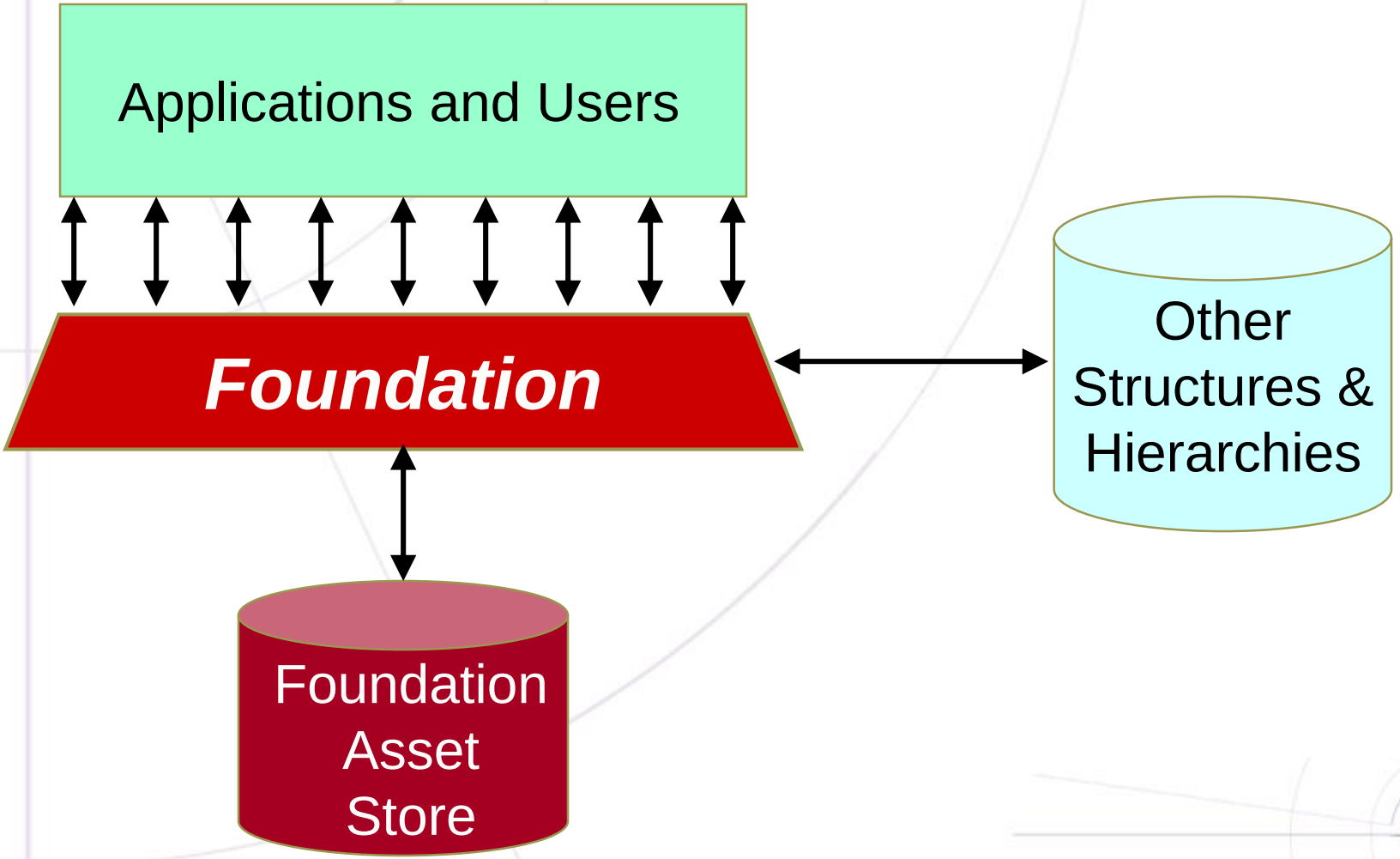
Logical organization of assets



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Today: Analysis Framework

- Analysis Framework Server
  - Templates
  - Assets
  - Models
  - Data References
- ProcessBook add-in
- DataLink add-in

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PI ProcessBook - [step4.PDI*]

File Edit View Insert Tools Draw Arrange Window Help

AF Browser

UC2005_TEST

Elements | Templates

- Elements
  - Houston
    - Line1
      - Distillation1
      - Reactor1
    - Line2

AF Property

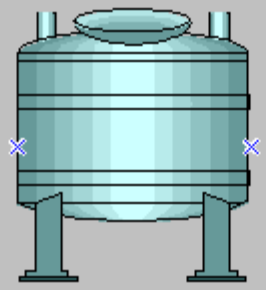
General | Elements | Attributes | Ports

Reactor1

Name	Value
MaintenanceR...	<Data Table>
Performance	0.79109130859376
SerialNum	
Temperature	159.554565429688 °F
TemperatureHi	200 °F
TemperatureLo	150 °F
TemperatureSP	170 °F

Plant Performance = 0.58286

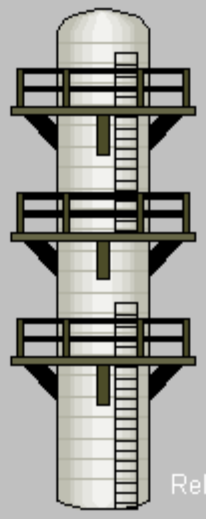
Line Performance = 0.36347



200 °F 157.487 °F 150 °F

Relative Performance Metric = 0.74974

	WorkOrder	Description	Status
	WLM-00006	inspect sens	COMPLETE



2582.68 kg/d

45 psi 26.1627 psia 30 ps

270 °F 197.127 °F 200 °F

Relative Performance Metric = 0.3

	WorkOrder	Description	Status
	WLM-00025	Change pum	COMPLETE

Ready

Server Time

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