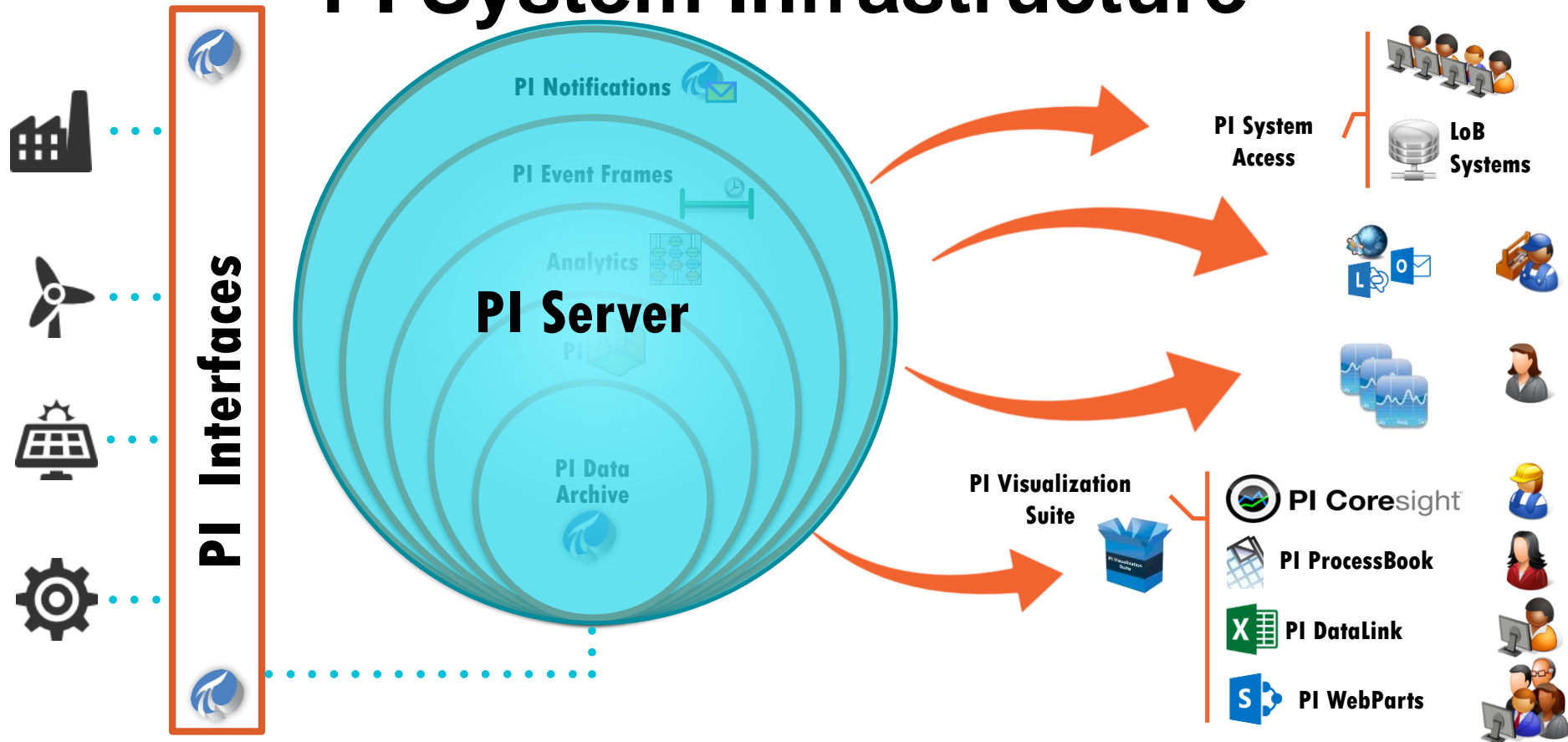


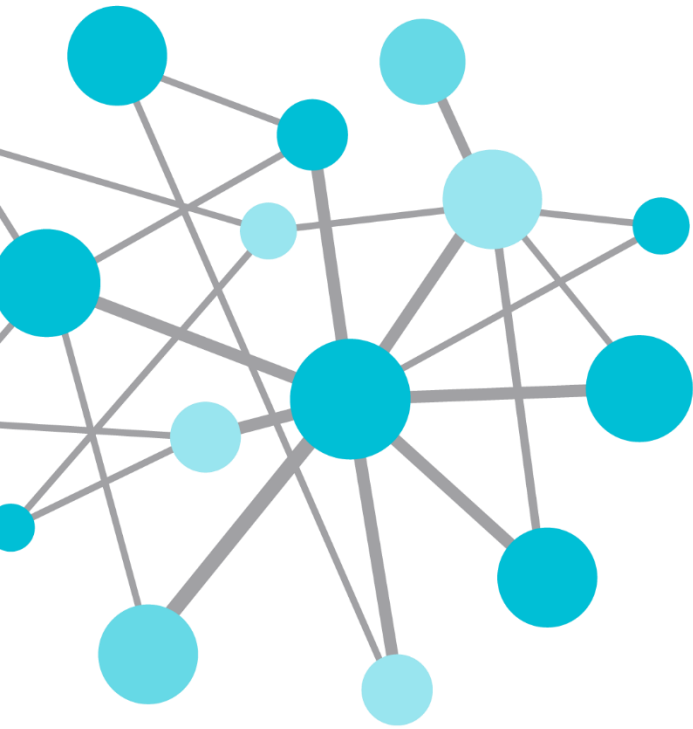
Asset centric real-time situational awareness

Presented by **Frank Batke**

Hans Otto Weinhold

PI System Infrastructure



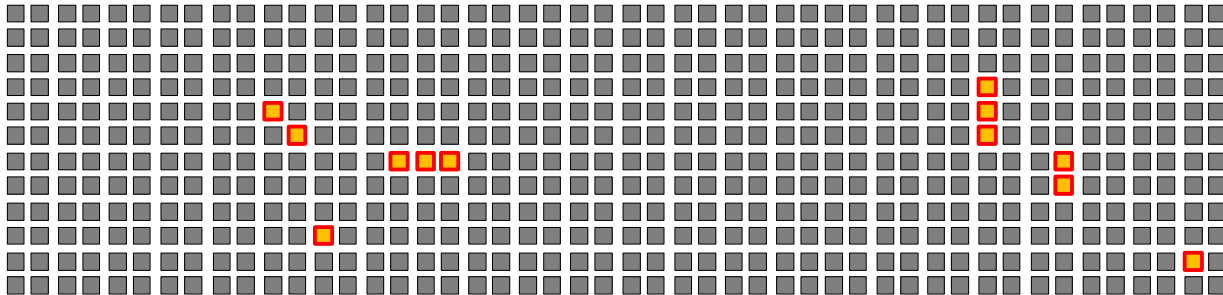


Think Assets instead of PI Points!

(Slides from Accenture)

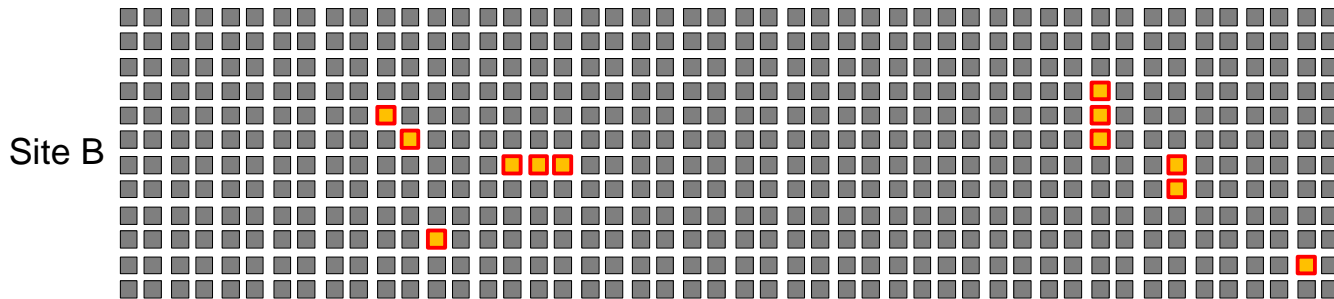
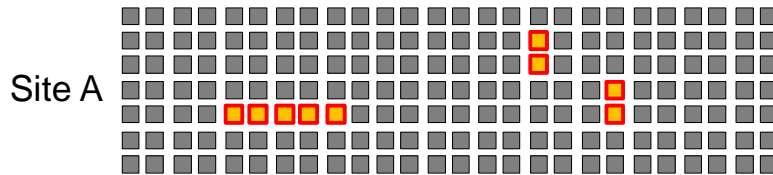
Think Assets instead of PI Points!

- PI Points are extremely good at what they do and for years have been the primary focus of users. Scale of PI Points is growing, consolidation of hardware is cost effective.
 - You have 10 million PI Points on your PI Server, how do you sift through quickly to find the PI Points for those 3 boilers that you're interested in right now?
 - How does an application naturally find those PI Points efficiently?

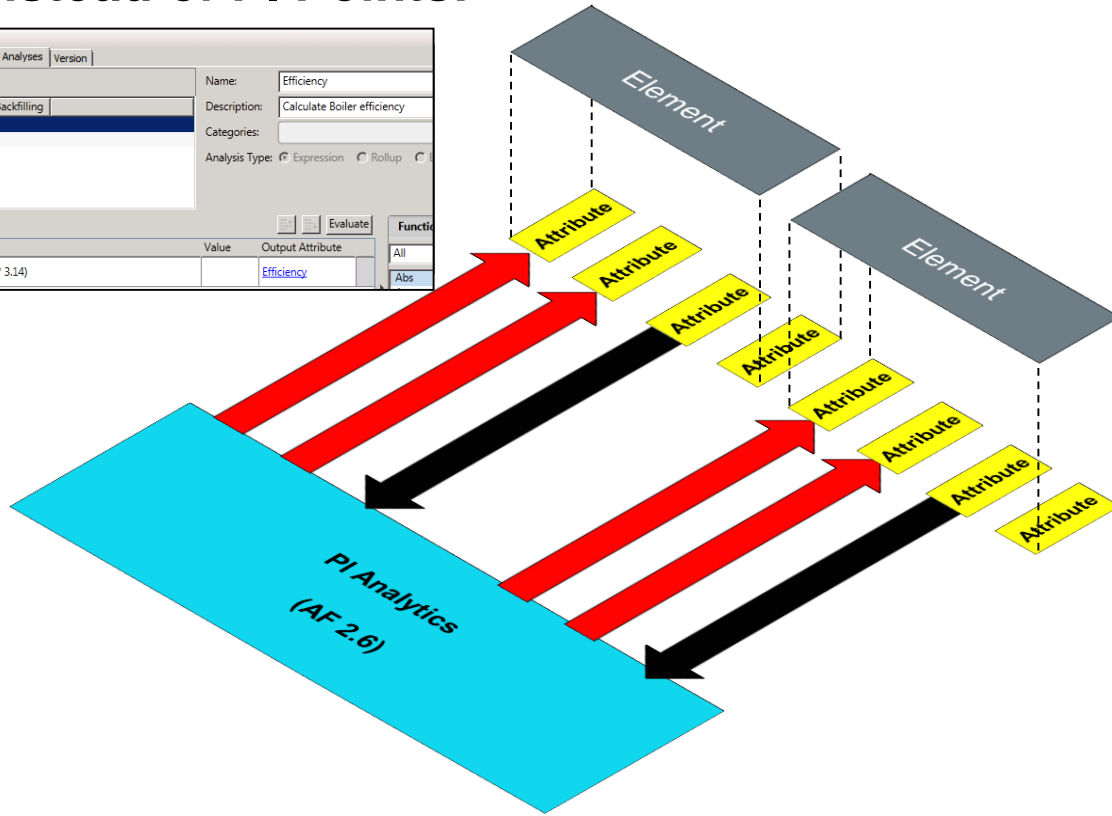
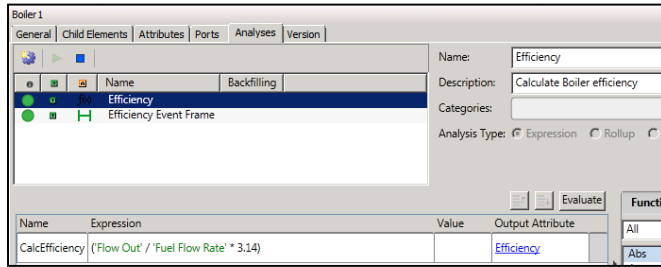


Think Assets instead of PI Points!

- Now let's say you've found those PI Points for the 3 boilers.
 - How can you quickly compare those 3 boilers with one of your other site's boilers? You suspect you're experiencing a similar issue that they've experienced.

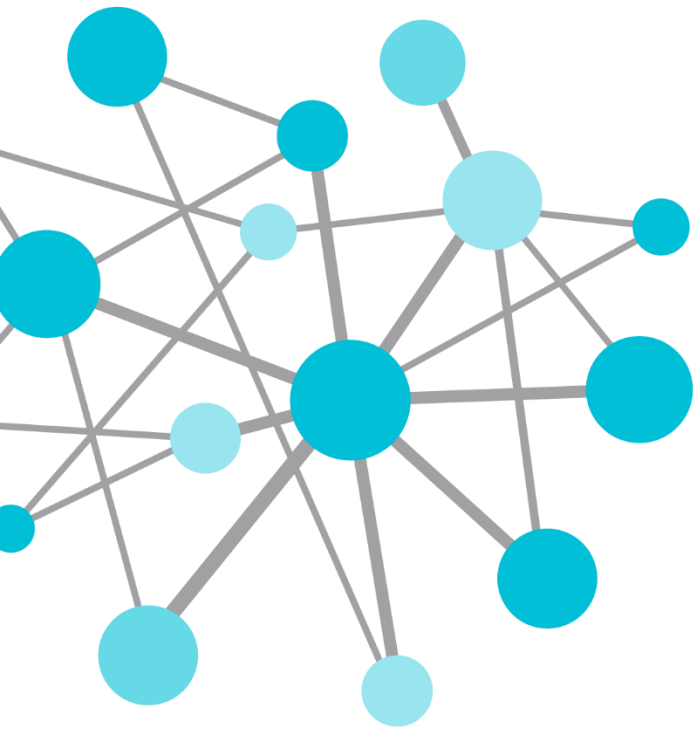


Think Assets instead of PI Points!



Demo 3: Assets and Templates

| | |
|---|--|
| Availability of Data from various Sources | Database AF Demo Element P661_1 Pipe_template Datareferences: <ul style="list-style-type: none">• PI point• PI point aggregated• Table |
| Naming rules versus Template | Database MDBHOST;ACompany Element to Template Change Template |
| Apply knowledge | Add attribute to Template (KPI11 Formula) |



Analyse Assets instead of PI Points!

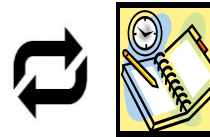
Asset Based Analytics (backed in AF 2.6)

Extruding Process

Boiler Efficiency = $AVG(B1..Bn)$

Boiler1

Flow Out
Fuel Flow Rate



Efficiency = $(\text{Flow Out} / \text{Fuel Flow Rate} * 3.14)$



Boiler
Template



Boiler2

Flow Out
Fuel Flow Rate

Or **myProgrammedCalc** (Flow Out, Fuel Flow Rate) [in a planned release]

Efficiency

Boiler3

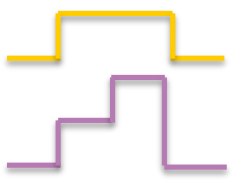
Flow Out
Fuel Flow Rate
Efficiency



Automatic Event Generation



Trigger PI Tags



PI Event Frames Generator

Trigger Hierarchical Events



PI AF Attributes

| Category: Process Parameters | |
|------------------------------|------------------------|
| Agitation | 41.379638671875 rpm |
| Concentration | 44.1733856201172 kg/L |
| Level | 39.4587707519531 L |
| Temperature | 52.3757171630859 deg C |
| Weight | 1743.02749652183 kg |

AF Asset Based Analytics
[Temperature >= 180]

Detect Events



External Systems

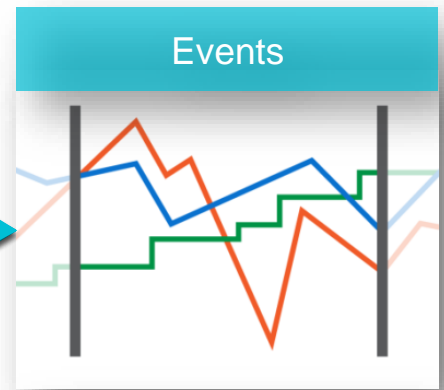


PI Interfaces for BES / MES

Batch Events

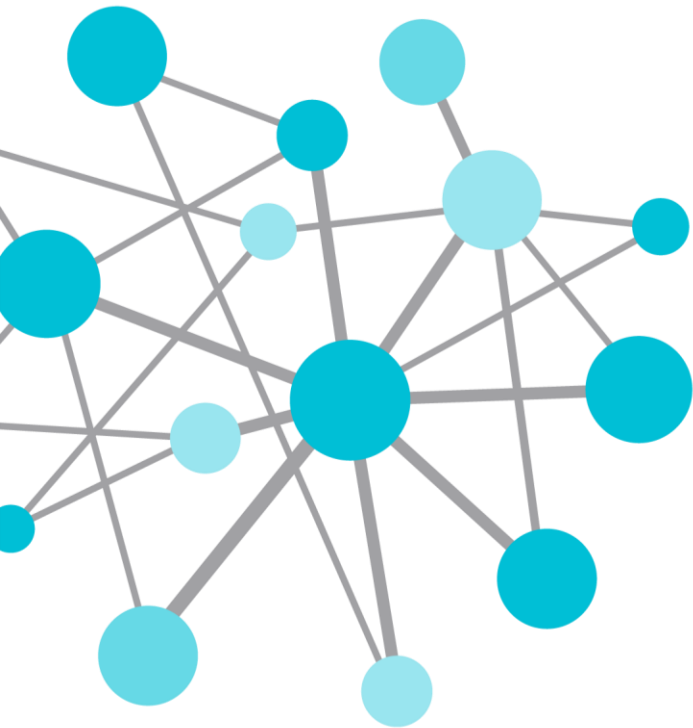


Auto-create Assets & Attributes



Demo 4: Assets based Analytics

| | |
|-----------------------|---|
| Apply knowledge | Analysis in template DB: NuGreen add to Boiler Template Ratio = 'Water Flow'/'Fuel Flow' Backfill |
| Use Structure | Sum up New Test Element with Reference to all Boilers/AvgRatio Backfill |
| Keep an eye on events | Create Template Ratio > 1 for each Boiler Backfill |



THANK
YOU

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