

# ***The Enhanced Capabilities of PI- DataLink 3.x***

*Jason King and Lingfung Mok*

# *New Features*

---

- *Advanced Calculation Capabilities*
- *Boundary Type Field*
- *PI 3 Point Class Support*
- *Enhanced Tag Search*
- *Enhanced Trend Control*



*The Enhanced Capabilities of PI-DataLink 3.x*

**2003 OSISOFT USERS CONFERENCE SAN FRANCISCO CALIFORNIA USA**

# *Advanced Calculation*

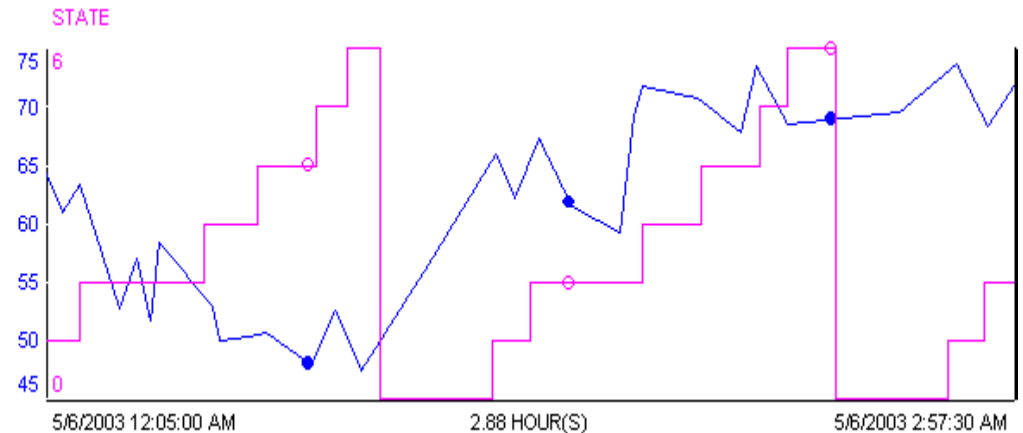
---

- *Filtered and Expression Summaries*
- *Event-Weighted Calculations*
- *Expression Sampling Specification*
- *Count Function*
- *Minimum PctGood*

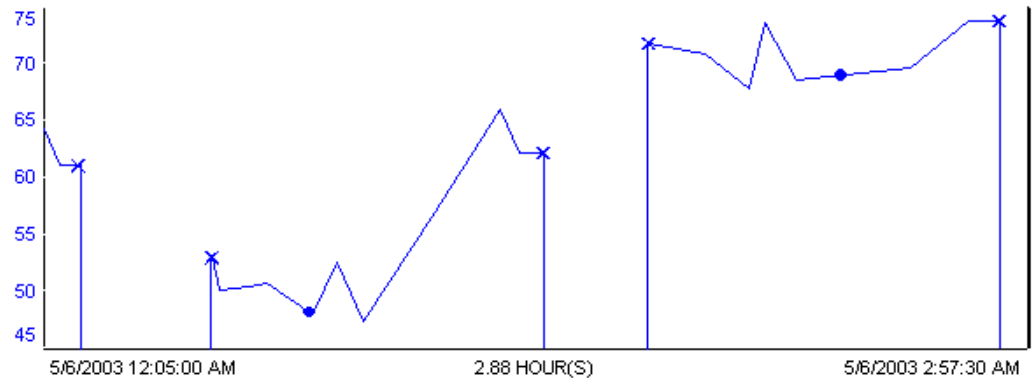


# Filtered Summaries

- *Summary during time period while filter expression is TRUE*



↓ Time-Weighted Total

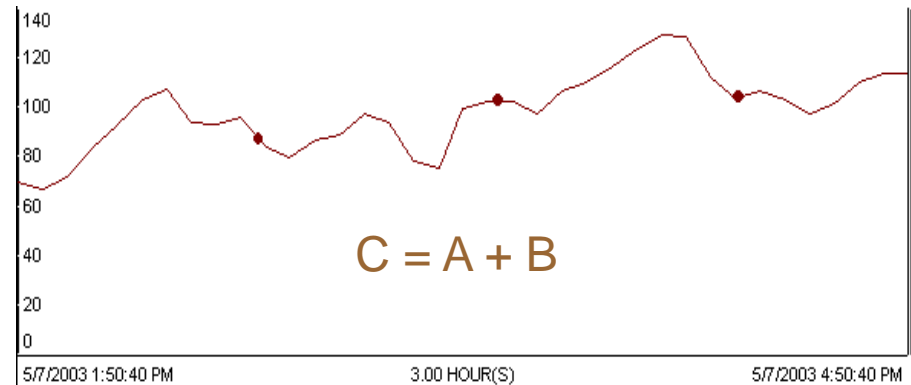
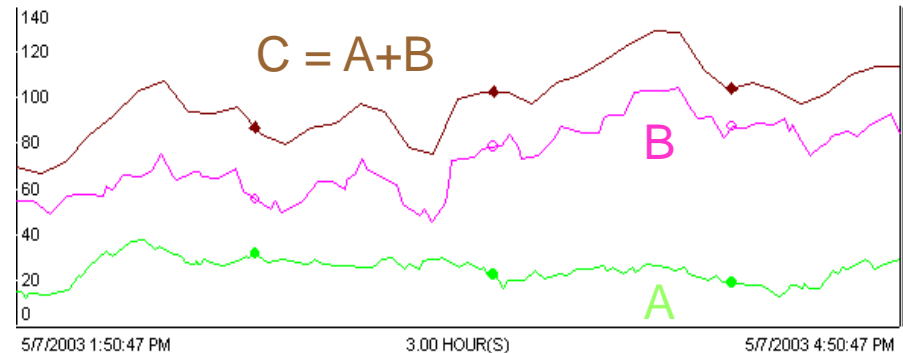


The Enhanced Capabilities of PI-DataLink 3.x

2003 OSISOFT USERS CONFERENCE SAN FRANCISCO CALIFORNIA USA

# Expression Summaries

- *Summary of expressions*
  - *Simple case:*  
*'flowA'+'flowB'*
  - *Complex case:*  
*if 'product'="D"*  
*then 'flowD' else*  
*if 'product'="E"*  
*then 'flowE' else*  
*'flowF'*



# *Time- vs. Event- Weighted*

---

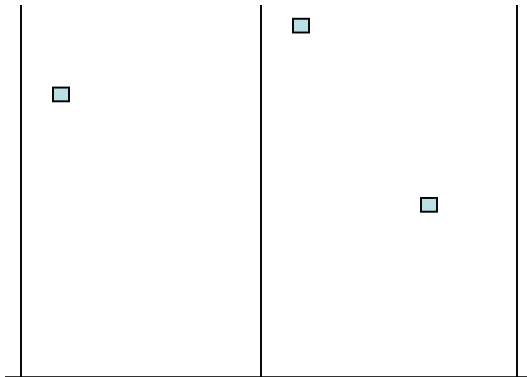
- *Time-Weighted*
  - *Values are weighted in proportion to the values' duration during time period*
  - *More for continuous data*
- *Event-Weighted*
  - *Each value carries the same weight*
  - *More for discrete data*



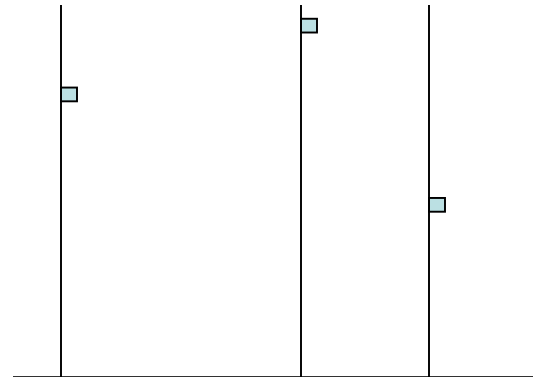
# Expression Sampling

---

- *Interpolated Sampling*
  - *Evaluate expression at evenly spaced intervals*
- *Natural Sampling*
  - *Evaluate expression at archived values*
  - *Optimizes performance for discrete data*



*Interpolated Sampling*



*Natural Sampling*

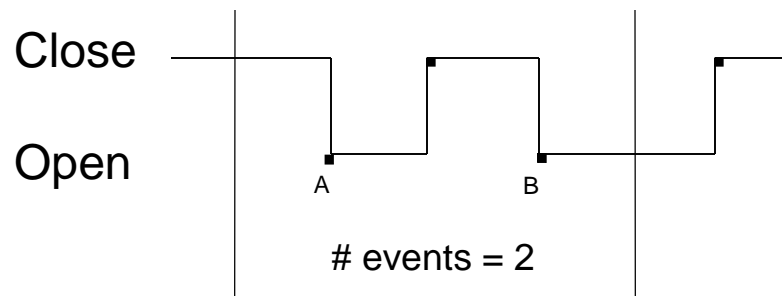


The Enhanced Capabilities of PI-DataLink 3.x

**2003 OSISOFT USERS CONFERENCE SAN FRANCISCO CALIFORNIA USA**

# Count Function

- *Time-Weighted returns # of seconds*
  - *Can be used in conjunction with filter expression to calculate number of seconds in some state*
- *Event-Weighted returns # of values*
  - *Can be used in conjunction with filter expression to calculate how many times a discrete tag was in some state (i.e. valve in “Open” position)*





# *Minimum PctGood*

---

- *What is PctGood?*
  - *Percentage of time period that there is good data*
  - *Should always be checked to make sure reliable*
  - *Available for display in current release*
- *What is Minimum PctGood?*
  - *Ability to specify the smallest percentage of time period at which data is still deemed reliable*
  - *User no longer has to check pctgood to see if data is reliable*



# New Advanced Calculated Data

The image displays four overlapping screenshots of the PI-DataLink 3.x software interface, illustrating the steps to configure advanced calculated data.

- Top Left Screenshot:** The "Data Source" tab is selected. The "PI Tag" radio button is chosen. The "Tagname" field is empty, and the "PI Server" dropdown is set to "localhost". The "Filter Expression [opt.]" field is empty. The "Start Time" and "End time" fields are empty. The "Interval [opt.]" field is empty. Buttons at the bottom include "Cancel" and "<Back".
- Top Right Screenshot:** The "Calculation Type" tab is selected. The "Calc. Mode" dropdown menu is open, showing options: "total", "minimum", "maximum", "stdev", "range", "average", and "count". The "Time Weighted" radio button is selected. The "Event Weighted" radio button is unselected. Buttons at the bottom include "Cancel" and "<Back".
- Bottom Left Screenshot:** The "Filter Expression Sampling" tab is selected. The "Exp. Sampling Mode" dropdown menu is open, showing options: "pt. compressed", "exp. compressed", and "interpolated". The "Exp. Sampling Freq." field is set to "10m". Buttons at the bottom include "Cancel", "<Back", "Next>", and "Finish".
- Bottom Right Screenshot:** The "Output" tab is selected. The "Calculated Results:" field is set to "\$A\$1". The "Minimum PctGood" field is set to "0.0". The "show pctgood" checkbox is unselected. The "show timestamps" checkbox is checked. The "column(s)" radio button is selected. The "row(s)" radio button is unselected. Buttons at the bottom include "Cancel", "<Back", "Next>", and "Finish".



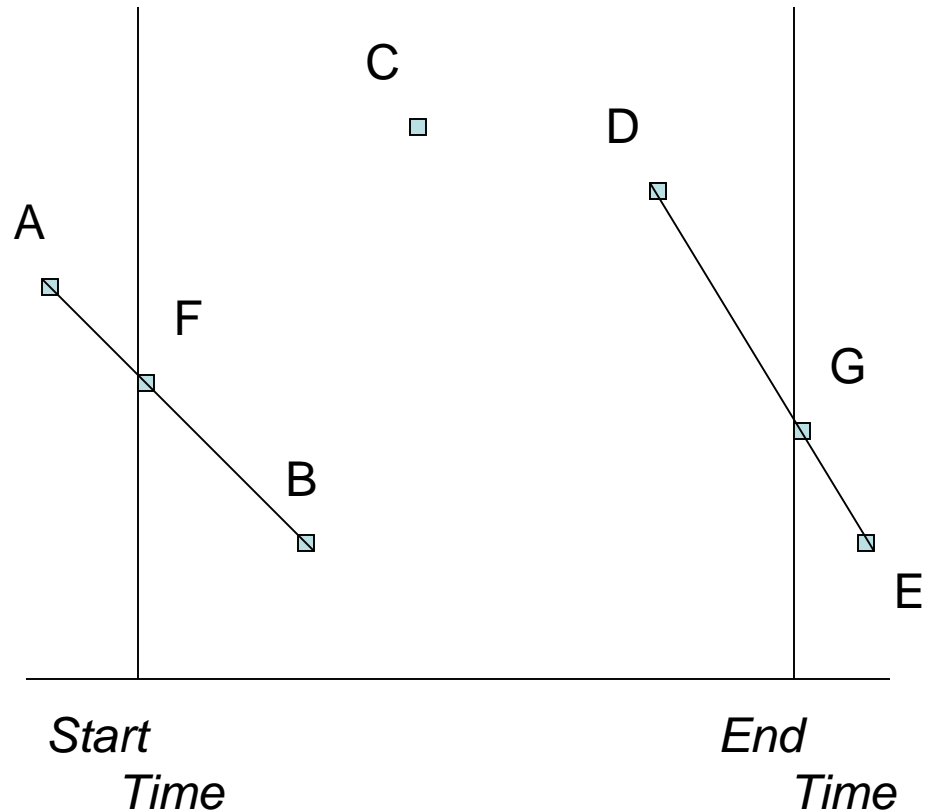
The Enhanced Capabilities of PI-DataLink 3.x

**2003 OSISOFT USERS CONFERENCE SAN FRANCISCO CALIFORNIA USA**

# Boundary Type Field

## Compressed Data Functions

- *Inside*  
(B,C,D)
- *Outside*  
(A,B,C,D,E)
- *Interpolated*  
(B,C,D,F,G)

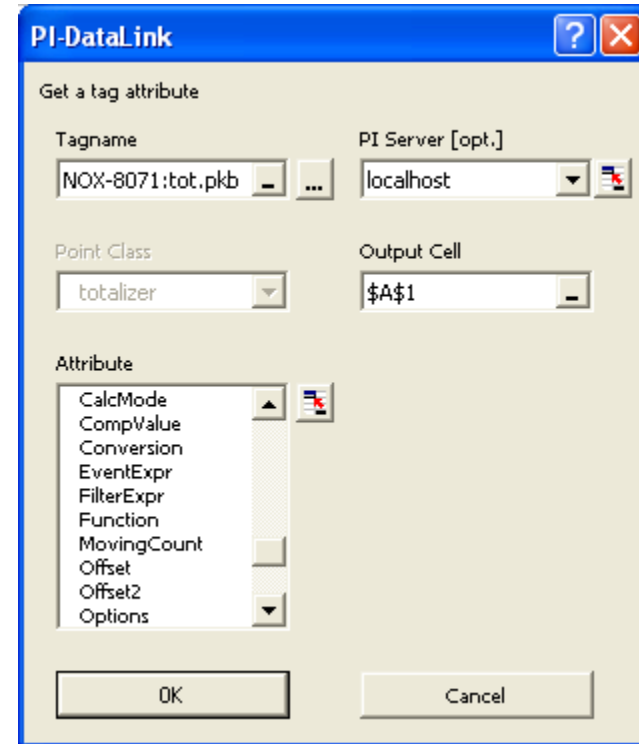


The Enhanced Capabilities of PI-DataLink 3.x

**2003 OSISOFT USERS CONFERENCE SAN FRANCISCO CALIFORNIA USA**

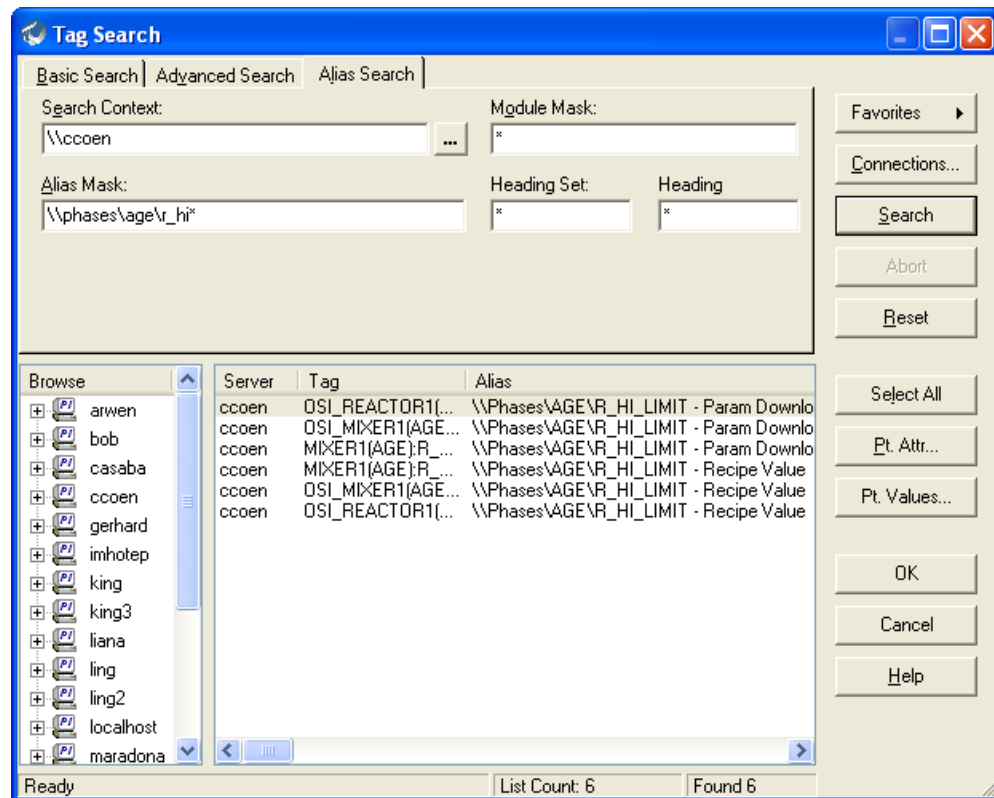
# PI 3 Point Class Support

- *Tag Attribute Dialog Box*
- *Ability to retrieve tag attributes from points in point classes other than classic*



# Enhanced Tag Search

- *Alias Searches*
- *Other advanced search criteria (i.e. snapshot value)*

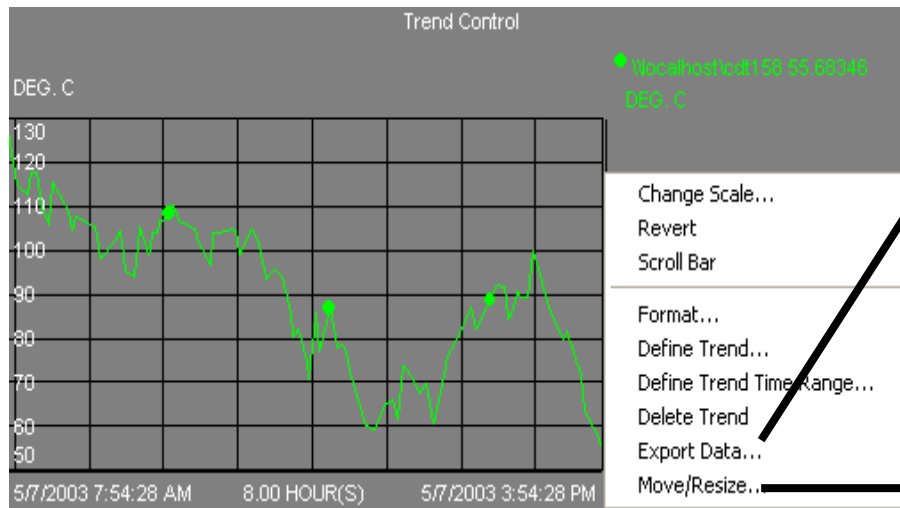


The Enhanced Capabilities of PI-DataLink 3.x

2003 OSISOFT USERS CONFERENCE SAN FRANCISCO CALIFORNIA USA

# Enhanced Trend Control

- *Export Data*
- *Move/Resize*



**Export Data**

Where do you want to put this data?

☒ columns ☐ rows

☐ Use Trace Name as Heading

OK Cancel

**Move/Resize**

Where do you want to put your trend?

OK Cancel

# *Future Enhancements*

---

- *Extended Value Attributes*
- *Display of Annotation Strings*
- *Ad-hoc Trends*



*The Enhanced Capabilities of PI-DataLink 3.x*

**2003 OSISOFT USERS CONFERENCE SAN FRANCISCO CALIFORNIA USA**

# Questions?

---



*The Enhanced Capabilities of PI-DataLink 3.x*

**2003 OSISOFT USERS CONFERENCE SAN FRANCISCO CALIFORNIA USA**





**2003**  
OSISOFT USERS CONFERENCE

RtPm

***RtPM:***  
***Using knowledge of real-time  
events to take action and  
improve profits.***