Application Framework

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Agenda

- *AF - What is it?*

- *AF Tools and SDK*

- *AF Demo*

  - *User experience*

  - *Developer experience*

- *PI SDK New and Future Features*

- *AF vs. Module Database*

AF - What is it?

- *Environment for building models in order to perform analyses on them*

Terminology – "Model"
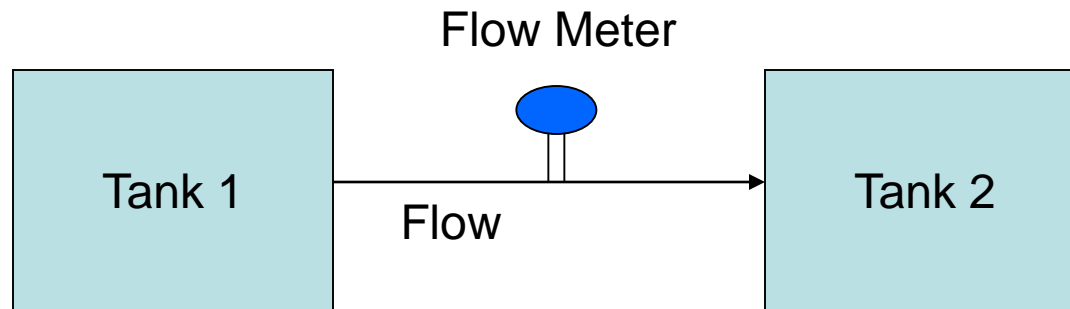
- *A model describes a collection of process units (or elements) and the connections between them*
- *Also known as…*
  - *Flow sheets*
  - *Flow schematics*

Example – A Simple Model

Flow Meter

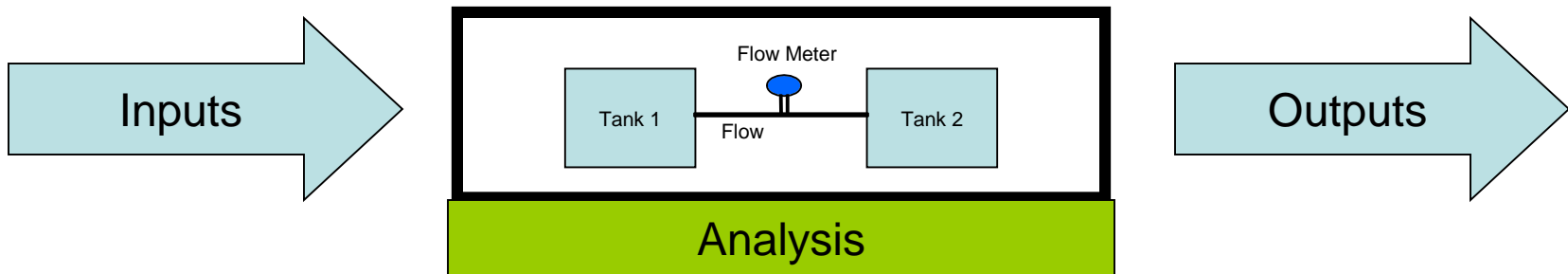| Tank 1 | → | Tank 2 |

Flow

Terminology – "Element"

- *"Process units", such as…*
  - *Tanks, Reactors*
  - *Meters, Analyzers*
  - *Heat Exchangers*
  - *Flows*
- *Have zero or more connections*
  - *In*
  - *Out*
  - *Attached*

Terminology – "Model Analysis"

- *To Evaluate or "Run" a Model*
  - *Assign an Analysis*
  - *Read attribute values of elements*
    - *Inputs*
  - *Evaluate the data*
  - *Generate new attribute values*
    - *Outputs*

Terminology – "Case"

- *A Case is a snapshot created by running a Model Analysis which includes*
  - *Time period of evaluation/run.*
  - *State of the model at run time.*
  - *Data Inputs, Outputs, Adjustments used at run time.*

Working with AF - Tools

- *ProcessBook Modeler*
  - *Build, analyze and present models graphically*
  - *Associate graphical representations with element types*
- *Excel Add-ins*
  - *Configuration*
  - *Data*
- *SMT 3.0 (AF Explorer)*
  - *Manage and browse models, elements, etc.*

Working with AF – SDK

- *Programmatic access to all AF components and controls*

- *Developer's toolkit (wizards) for building Analysis plug-ins*

- *Used by OSIsoft to build all of the tools you will see*

AF Demo

Application Framework

Future of AF…

- *RtReports*
- *ICE 2.0*
- *PI OLE DB*
- *ProcessBook*
  - *Modeler enhancements*
- *Datalink*
  - *AF data and configuration enhancements*

PI SDK

- *Callable from .NET*
  - *Use provided "interop"*
- *Eventually create .NET equivalent*
- *Committed to COM-based PI SDK*

PI SDK 1.3.0 – just released

- *Event Pipes*
  - *PI Modules*
  - *PI Batches*
  - *PI Unit Batches*
  - *PI Transfer Records*
- IPICalculation
- Persisitence
  - *Extended to new types*

PI SDK 1.3.1 – beta soon

- *Data Writing*
  - *PIPoint.Data.UpdateValues*
  - *PIPoint.Data.RemoveValues*
- *Annotations*
- *Calculations*
  - *Familiar API calculations plus new ones*
- *New data retrieval functions*
  - *InterpolatedValues*
  - *TimedValues*
  - *Summaries*

PI SDK 1.3.1

- *PointList operations*
  - *Eventpipe*
  - *Snapshot*

PI SDK 1.3.2 and beyond

- *Buffering of SDK data writing*
- *More PointList.Data methods*
- *More eventpipes*
  - *Exceptions from other databases*
- *Annotations*
  - *Object for structured annotations*
  - *multiple annotations per event*
  - *known types*
- *Archive management functions*

AF versus MDB

- *AF*
  - *Connectivity*
  - *Calculations*
  - *Model based Analysis*
- *MDB*
  - *Hierarchical Data / Navigation*
  - *Batch*

AF versus MDB

- *Both AF and MDB*
  - *Integrate with ProcessBook*
  - *Integrate with DataLink*
  - *Continue to be enhanced*

Call to Action

- *Developers*
  - *Build flow sheet applications on AF*
- *Investigate Sigmafine*
  - *Building good models is manageable*
  - *See "Sigmafine 4.0 – The Next Generation" presentation Tuesday at 10 AM.*
- *Visit the AF and Sigmafine Tables in the Demo Room*

Questions?

ACT — Without Action, there is no Benefit. Empowered people take better Actions!

VISUALIZE — People Need Pictures, Graphs, Trends specific to their Role

DISTRIBUTE — Get the Information to people who need it

ANALYZE — Aggregation, Analysis, Reconciliation, Calculation, Cases

ASSIGN CONTEXT — Make the data relevant to users

GATHER EVENTS & DATA — Data Collection from Inside and Outside the Corporation