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AVEVA™ PI System™ points creation training in hiring challenges

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AVEVA

Agenda

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- Context
- AVEVA PI System point
- Implementation
 - Create a database
 - Interfaces
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Introduction

 **Kruger** : We turn renewable resources into sustainable, high-quality essentials made for everyday life

- Private holding
- 10 Sectors
- 19 manufacturing and production operations
- 5000 employees
- +115 years of history
- 42 Renewable energy power plants

Sectors related to this presentation

Tissue Products

We make best-selling brands for consumers and businesses across Canada and the U.S.A.

Containerboard

Kruger manufactures 100% recycled linerboard and innovative containerboard products.

Publication Papers

Kruger is a leading manufacturer of newsprint, coated paper and a variety of specialty grades.

Specialty Papers

Kruger is constantly developing various grades of eco-friendly specialty papers such as OGR, C1S and.



AVEVA

Business challenge

- Training: as soon a training is done another one is required.
- All our production sites have been recently converted to a full AVEVA PI System environment with HA.
 - Resistance to changes
 - People focus on what they are losing.
- Workforce does not have the same education level everywhere.
- Hiring experienced employees = Hiring what they know and like.
- People must do more in less time. They are tempted take shortcuts.

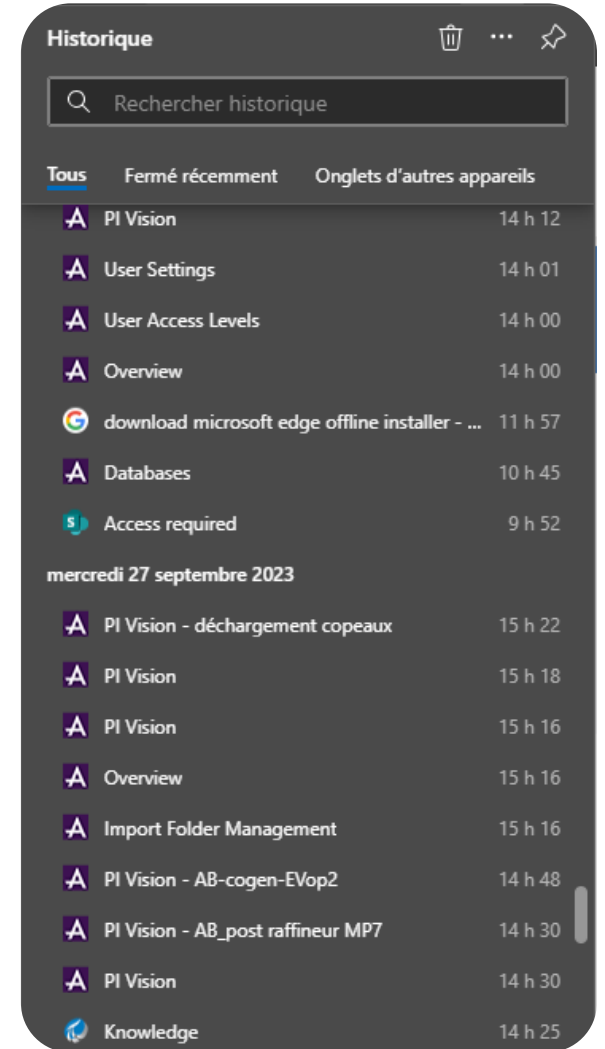
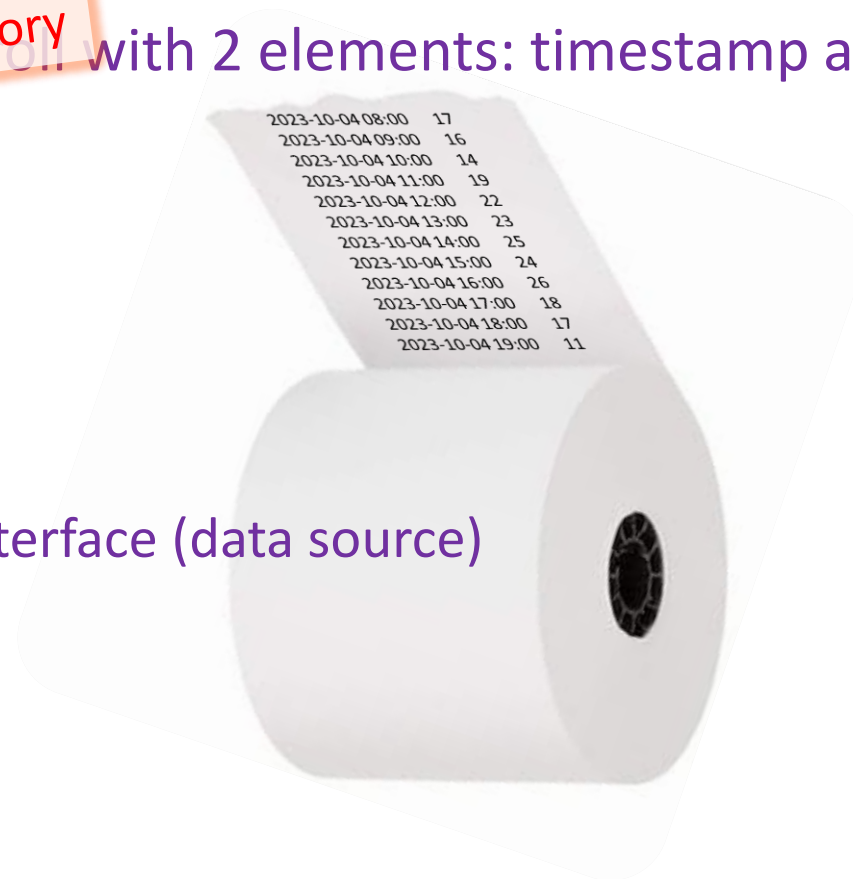
PI Point

What is a AVEVA PI System point (PI point)?

- Container to store the history of an attribute.
- See it as a **Browser history** with 2 elements: timestamp and value.

- Multiple parameters

- Name
- Compression
- AVEVA PI System interface (data source)
- Security



Context

How things work for us when we need a new PI point?

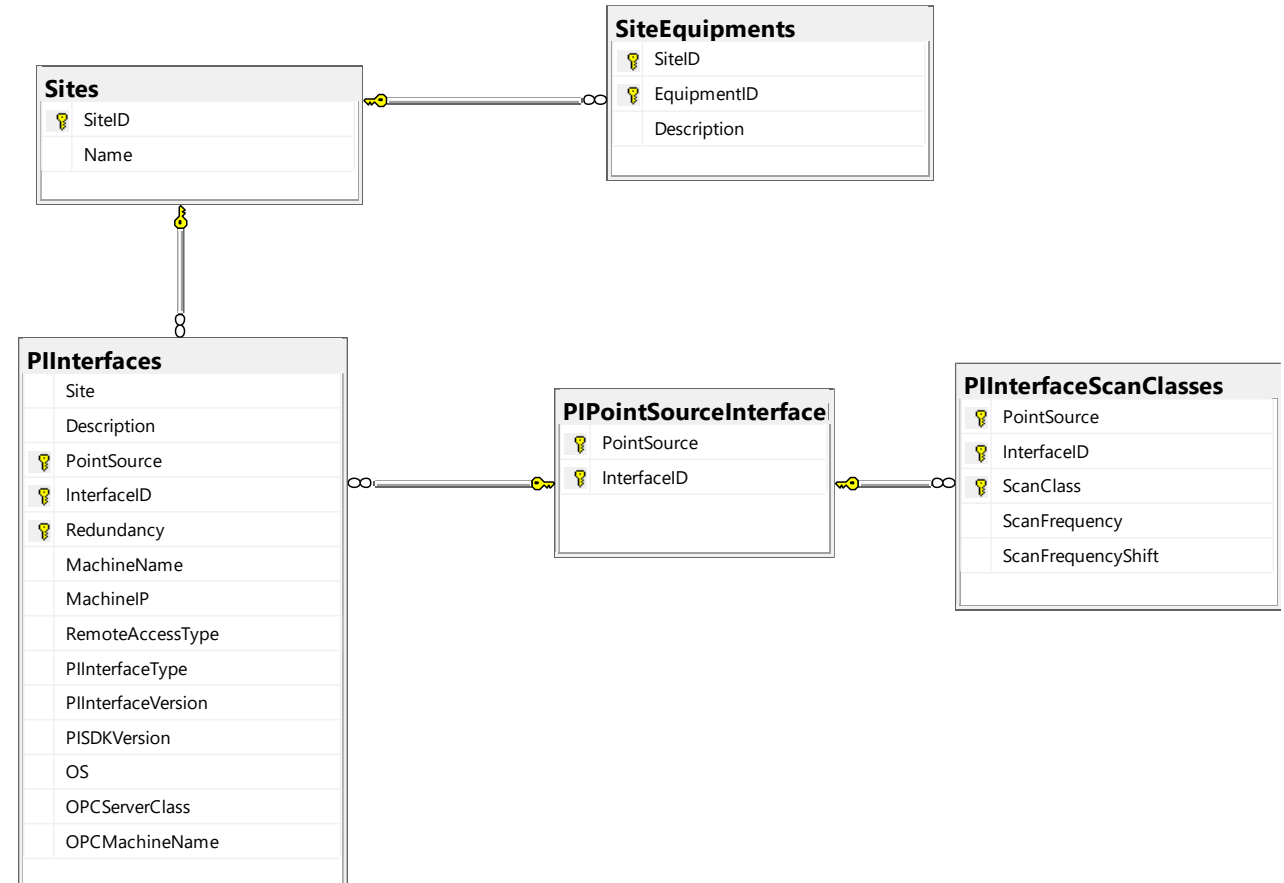
- No PI point creation is allowed.
- Naming convention.
- Mainly using OPC DA interfaces.
- No more than 225 PI points per scan classes.
- Compression: 1% of the span.



Implementation

Create a Database

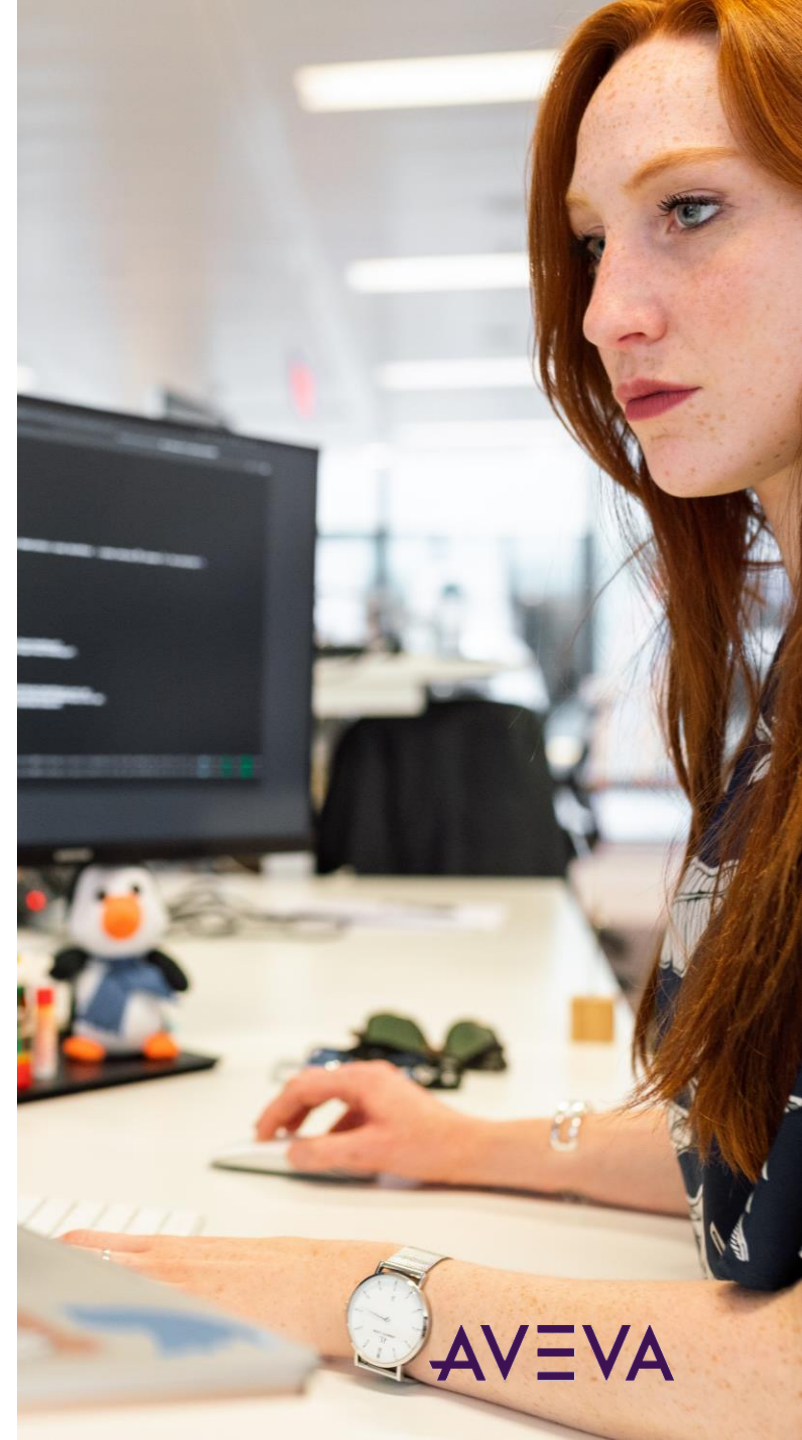
- 5 critical pieces of information
 1. Sites
 2. Site's equipment
 3. List of the interfaces (*)
 4. List of the scan classes (*)
 5. PI Point value type
- SQL Server environment
- Use stored procedures for best performance and security
- (*) Create scripts to gather those information



Implementation

Create an interface

- Best question is no question.
- Form format.
- Only 8/15 questions are required to create a PI Point.
- Develop with PowerShell.
- Only 1 external DLL (OPC Lab QuickOPC).
- For light usage. Create 1 PI point at a time.
- Buzz work alert: Usage of “AI” (decision tree).



Implementation


Tricks / insights

- Propose only coherent values.
- Deduce values.
- Order questions logically.
- Bring functionalities that users want.
- Do not prefill fields with default values.
- Highlight fields in error / required fields.
- Use a vocabulary that users understand.



Implementation

PI Point Creator Assistant

 **Kruger**

Please fill the following question then press the "Create" button

| | | |
|-----------------------|---|---|
| Site/Plant | <input type="text" value="[Select a Site]"/> | ▼ |
| Sector/Equipment | <input type="text"/> | ▼ |
| Type of value | <input type="text" value="[Select a value type]"/> | ▼ |
| OPC Item ID | <input type="text"/> | <input type="button" value="Browse..."/> |
| PI OPC Interface | <input type="text"/> | ▼ |
| Collection Method | <input type="text" value="[Select a collection method]"/> | ▼ |
| Collection frequency | <input type="text"/> | ▼ |
| Description | <input type="text"/> | |
| Short Description | <input type="text"/> | <input type="button" value="OPC Item ID"/> <input type="button" value="Description"/> |
| Data Type | <input type="text" value="[Select a data type]"/> | ▼ |
| Unit of Measure | <input type="text"/> | ▼ |
| Min and Max value | <input type="text"/> | to <input type="text"/> |
| Precision/compression | <input type="text"/> | |

Final Resu

PI Point Creator Assistant

Kruger Please fill the following questions then press the "Create" button

Site/Plant SA - Site A

Sector/Equipment BOI - Boiler

Type of value PV - Process Value

PI OPC Interface SAOPC_QCS7[7] - Site A OPC DA M

OPC Item ID Boilers.Boiler #1.CC1001.Input2

Collection Method Advise

Collection frequency 00:00:30

Description Boilers Boiler #1 CC1001 Input2

Short Description Boilers_Boiler#1_CC1001_Input2

| OPC Item ID | Description |
|-------------|-------------|
| C Item ID | Description |

Minimum fields to create a PI point

Autofill those fields

- Check if points are available in the reserve
- Check for duplicated tags
- Build PI point name according to naming the convention
- Place the PI point in the right OPC group
- Check if all groups are full
- Adjust compression (Archive and interface)
- Set security standards

Build short description from Item Id or desc.

10% of the span

Future improvement

- Build agent to :
 - Automate AVEVA PI System interface configuration synchronization
 - Synchronization of OPC tags
- Multiple PI point creation
- Manage other type of PI interfaces
- Converting the tool to a Web App



AVEVA™ PI System™ points creation training in hiring challenges

Challenge

- With the current hiring challenges, we are required to give recurrent training on how to create PI points.
- Converting all sites to AVEVA PI System data archive server require training.
- How can we get users that are used to work with competing AVEVA products to embrace AVEVA PI System data archive?
- People don't want to deal with compression, naming convention, OPC settings, etc. People want their PI points, and they want it fast.
- PI point naming convention is not always well followed.

Solution

- Build a tool to create PI point with a minimum of data entry.
- Propose functionality to ease the user's work.

Results

- Training users on this tool take 1/3 of the time compared to PI Builder.
- Better feedback from experienced employees with AVEVA PI System data archive.
- Users require 50% less support.



Conclusion

Pros

- Easy to deploy
- People gets back functionalities they thought they lost
- A PI point can be created within a minute
- Standards are automatically followed

Cons

- Requires license for OPC Browser
- Works on OPC server machines (OPC security)





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