

OCTOBER 24, 2023

AI Ops for IIOT

Unlocking the power of AI Ops for IIoT with AVEVA™ DataHub
& AVEVA™ Advanced Analytics

Zev Arnold

Accenture Industry X - Principal Director

AVEVA

Using AVEVA™ DataHub & AVEVA Advanced Analytics, Accenture has built a platform for AIOps

1 Why?

2 What is it?




3 Some Demos

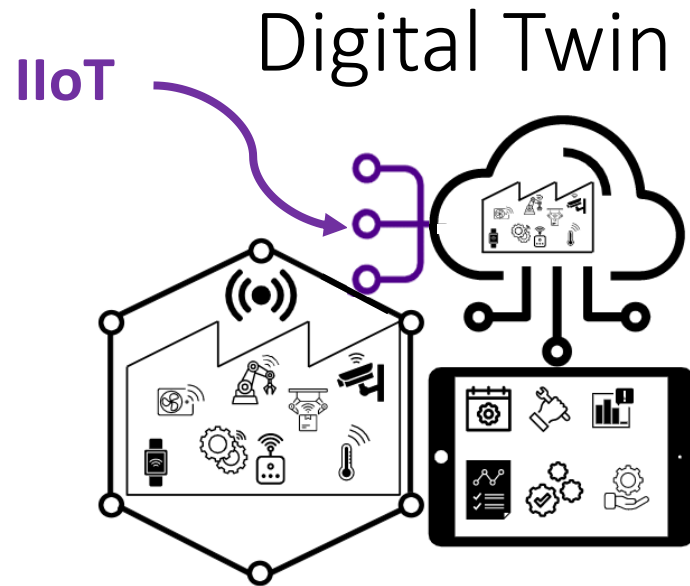
4 Roadmap

1. Why?

IloT is just getting started...

Machine Intelligence Leaders achieve:

-  **10-15%** efficiency improvement
-  **8-14%** cost reduction
-  **10%** reduction in environment impact



...coordinates **cyber-physical systems**, over the **Internet of Things**, to enable an **Internet of Services** that **assists** people and machines in the **execution** of their tasks.

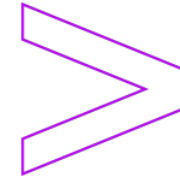
1. Why?

... Accenture is betting on it big...

Industry X

DIGITAL PRODUCTION & OPERATIONS

IN A NUTSHELL



WHAT IS DIGITAL PRODUCTION & OPERATIONS

We support Manufacturer's transformation towards **autonomous operations** across all components of their **operating model**, leveraging Cloud and AI to optimize **end-to-end performance** and reach **sustainable operations**.

clients along their

Accenture Operations Twin (AOT)

What is it?

AOT combines software architecture and accelerators for the accelerated delivery of event-driven digital twin solutions to manufacturing clients.

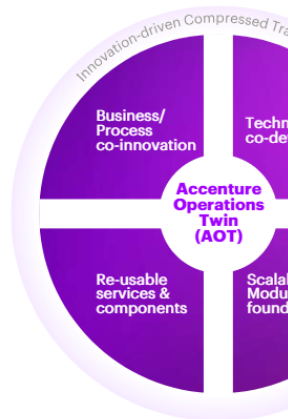
- Creating a virtual representation of manufacturing or production processes
- Building a flexible industrial knowledge graph and enriching it with contextualized data from multiple sources
- Leveraging digital models to support decision making, optimize operations and deliver breakthrough customer service.

AOT includes a customizable set of reusable components for data integration of product, process, and systems data, contextualization, event-based alerting, and advanced analytics. AOT components & accelerators are configurable through low-code interfaces and can be customized and extended by Accenture teams and clients.

Enables teams to rapidly develop, test, pilot and launch new solutions and applications at scale focusing on areas like plant operations, maintenance, quality management, worker productivity & safety, sustainability, advanced process control etc.

Engineered by Industry X asset development team including innovators, designers, developers, architects, and engineers; and complemented by a global network of Industry X experts.

Accenture Industry X



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Manufacturing Strategy and Operating model

Manufacturing Data & Architecture

Manufacturing Operations Management Systems

Operational Excellence (Mfg "Operating System")



Set up strong foundation by **deploying standards, work management processes & lean practices**



Deploy / Optimize MOM systems in an integrated fashion to ensure **safe, reliable and responsible operations**

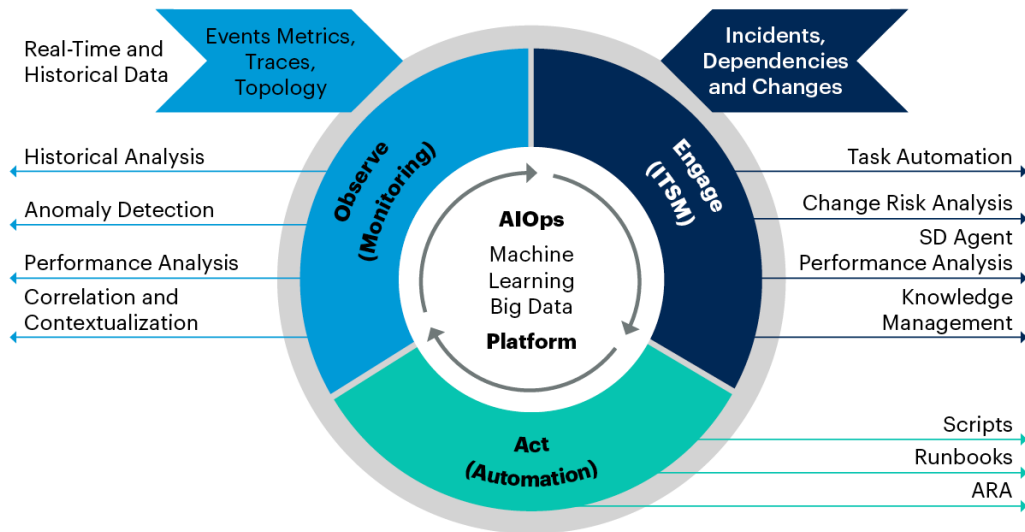


Leverage **digital twin and AI** to reach **closed loop "autonomous" end-to-end operations**

1. Why?

... and AIOps is critical to providing an IIoT platform.

AIOps Platform Enabling Continuous Insights Across IT Operations Management (ITOM)



Source: Gartner
735577_C

Gartner.

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“AIOps combines big data and machine learning to automate IT operations processes, including event correlation, anomaly detection and causality determination.”

Gartner

“Yet, there is no doubt: There is no future of IT operations that does not include AIOps.”

Gartner

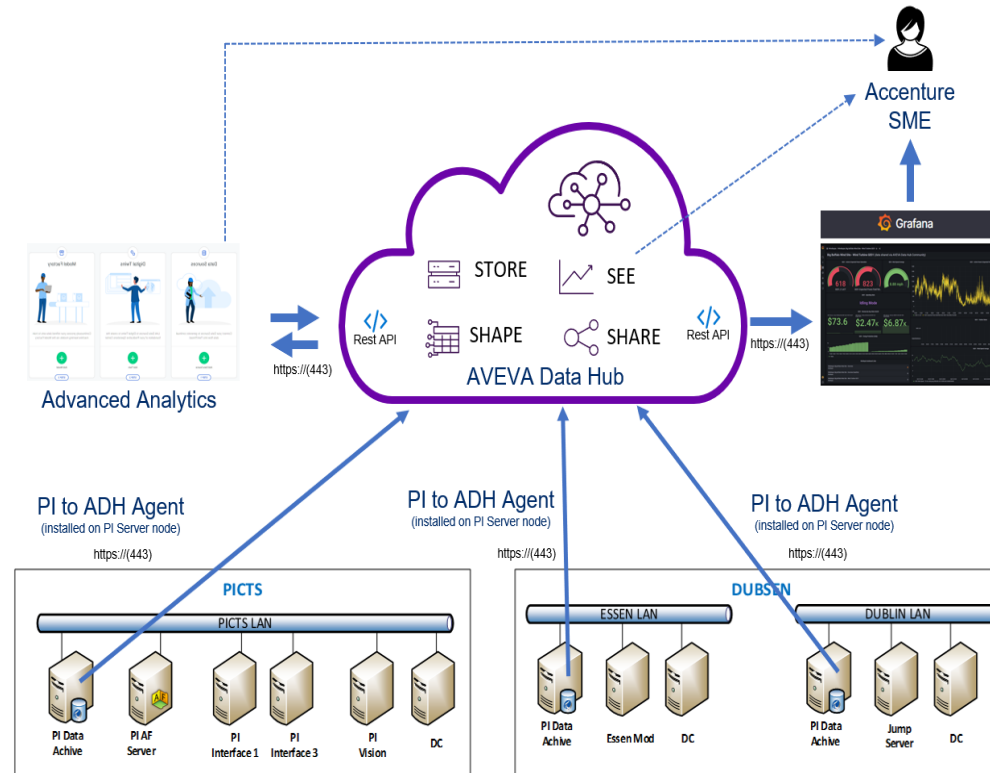
2. What is it?

A replacement for the NOC and a revolution in IIoT operations.

Accenture created a solution on AVEVA DataHub to monitor the health of PI Systems cross-enterprise.

Business Case:

- Accenture is trusted by manufacturing companies across the globe to monitor and support their PI Systems.
- With the **retirement of the OSIsoft NOC**, Accenture's clients rely on it more than ever to ensure that their PI Systems remain reliable, responsive, and resilient.
- Accenture's global PI practice needed to standardize PI System monitoring tools on a scalable platform to meet the growing demand for PI support.



Solution:

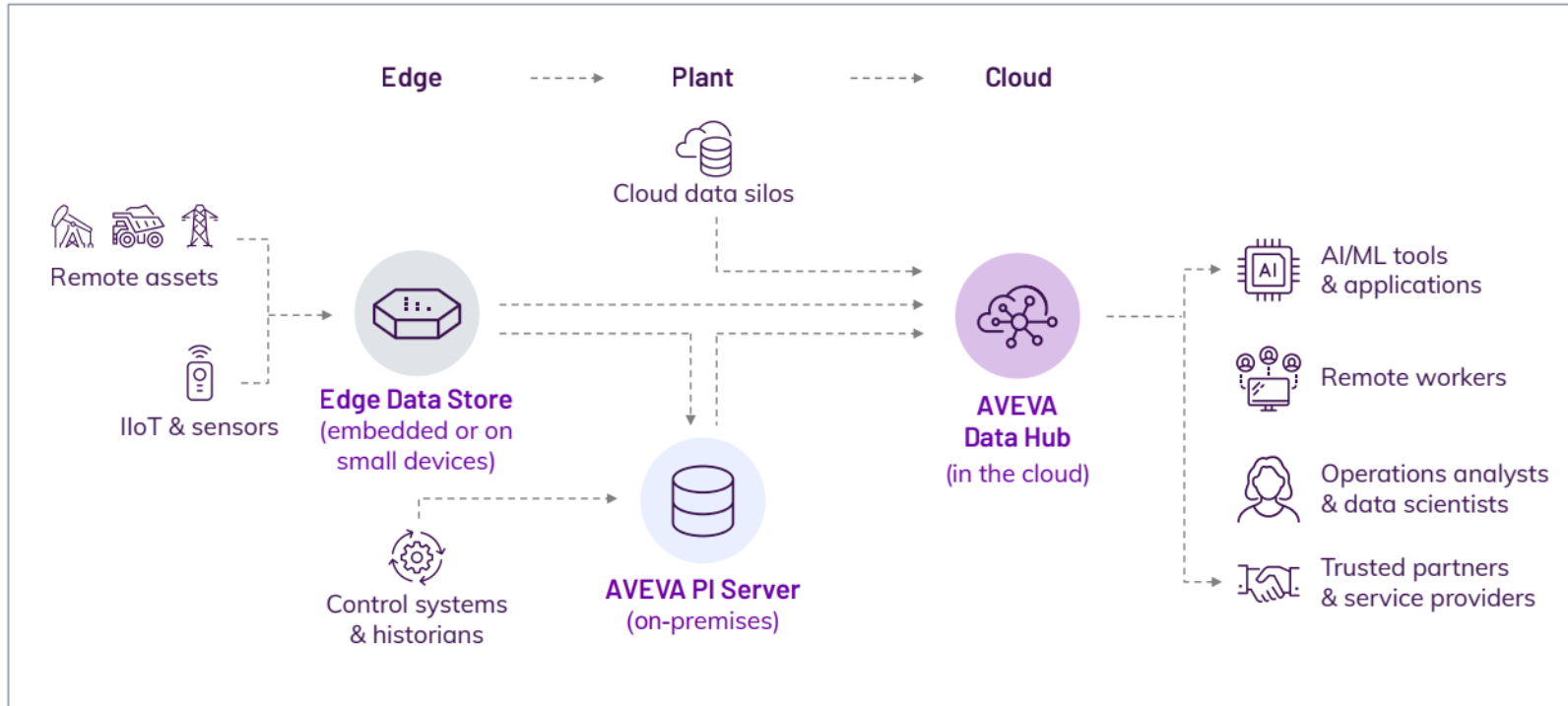
- AVEVA Data Hub natively collects and contextualizes PI System monitoring data from individual PI Systems spread across the globe.
- Advanced Analytics implements contextualized smart monitoring of PI System data, quickly identifying deviations from healthy operations.

Results :

- A secure and standardized platform that allows Accenture to meet clients' growing demand for PI System monitoring at scale.
- Innovative new analytic capabilities that allow more insight into a PI System's performance than traditional solutions.

2. What is it?

The AVEVA™ DataHub was an obvious choice for platform...



Native integration with PI



Multi-tenant architecture



Marketplace for packaged solutions

... paired with AVEVA™ Advanced Analytics

 Digital agents

 Digital twins

 Dashboard Monitors

 Intelligent Alerts

 Intelligent Actions

 Curated datasets

 Digital threads

 Model factories

 Data science templates

 Development APIs

 Office 365 Integration

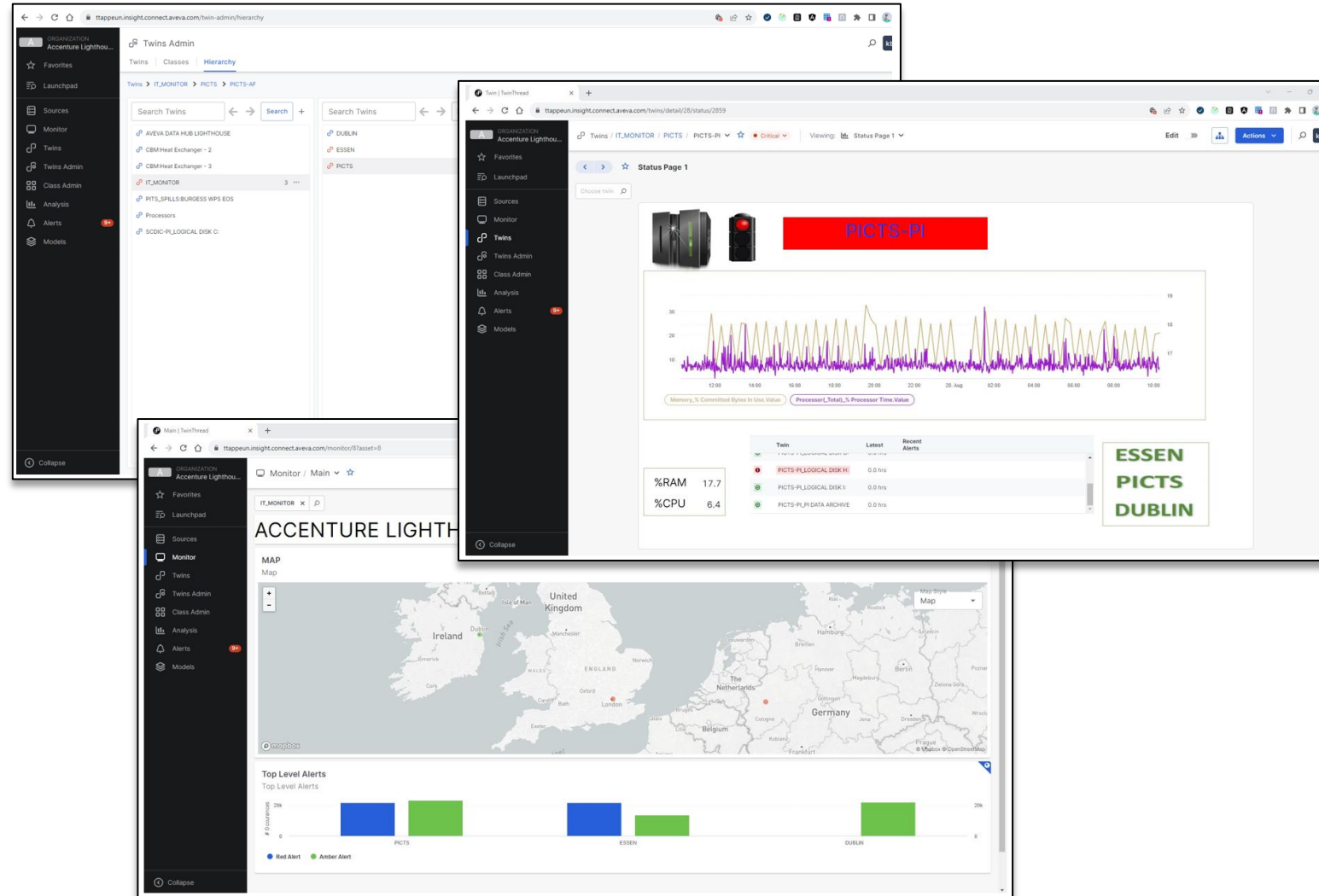
Step 1: Reproduce monitoring from the NOC

Monitoring

Managed PI is able to monitor most PI System components. However, not all OSIsoft products are manageable by Managed PI. In general, if the product is not mentioned in this [document](#) it is not monitored. Specific products not monitored include but are not limited to:

- PI WebParts
- PI ActiveView
- PI Manual Logger
- PI ProcessBook
- PI Datalink
- PI SQC Client
- RtReports
- PI COM Connectors
- PI Cloud Connect
- PI Coresight/PI Vision – Managed PI will transmit inventory and log telemetry; there are currently no **alarms**
- PI Connectors
- PI Integrators
- PI Web API
- Non PI Unint Interfaces - see FAQ
- Beta or CTP Releases

In the following sections the monitoring capabilities and points that Managed PI monitors are discussed. The Managed PI program is constantly reviewing monitored points and alarms in response to changing needs of products and customers. If the monitoring capability is not listed in the following sections, it is not currently provided by Managed PI.



Step 1: Reproduce monitoring from the NOC

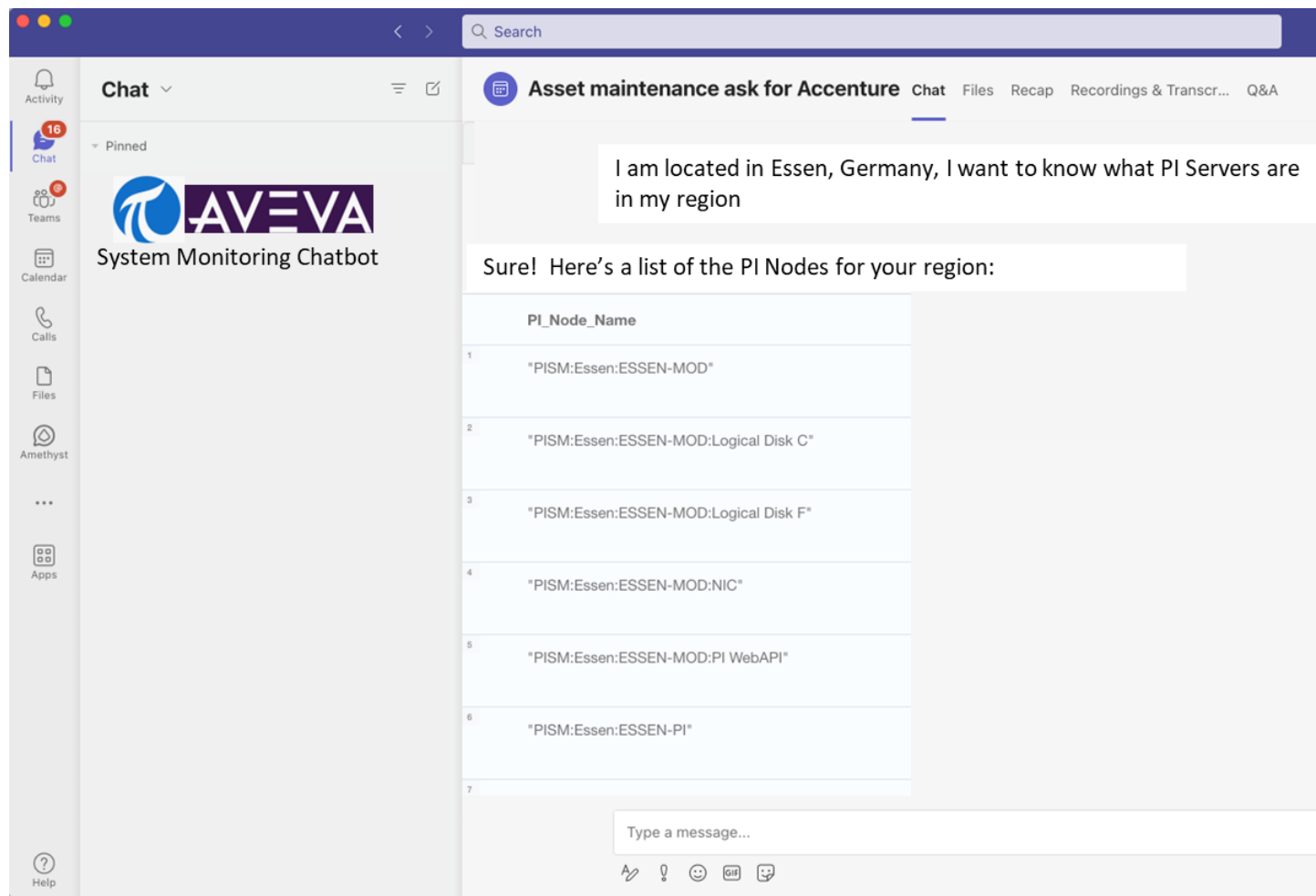
The screenshot displays the AVEVA Data Hub interface for monitoring agents. The main table lists three agents, with the first one selected. The right-hand panel provides detailed information for the selected agent, including its status and transfer metrics.

Description	Status	Version	Data Archive	AF Server	Region	Namespace
LIGHTHOUSE WITH ACCENTURE DUBLIN	Good	2.1.0.0	SCDIC-PI	SCDIC-IH	northeurope	AVEVA Data Hub Li...
Lighthouse with Accenture ESSEN	Good	2.1.0.0	ESSEN-PI	ESSEN-MOD	northeurope	AVEVA Data Hub Li...
Lighthouse with Accenture PICTS	Good	2.1.0.0	PICTS-PI	PICTS-INT3	northeurope	AVEVA Data Hub Li...

LIGHTHOUSE WITH ACCENTURE DUBLIN	
Agent Description	LIGHTHOUSE WITH ACCENTURE ...
Agent Namespace	AVEVA Data Hub Lighthouse
Agent Status	Registered
Agent Version	2.1.0.0
AF Server Index Status	Succeeded
PI Points Index Status	Succeeded
Communication Time	5 Oct 2023, 13:29:23

Transfer Overview	
Transfer Name	DUBLIN PI
Transfer Description	
Transfer Status	Started
Current Activity	Sending Streaming Data
Last Modified	3 Apr 2023, 18:18:34

Step 2: Integrate with GenAI



The screenshot shows a Microsoft Teams chat window. The chatbot, 'System Monitoring Chatbot', has responded to the user's question: 'I am located in Essen, Germany, I want to know what PI Servers are in my region'. The chatbot's response is: 'Sure! Here's a list of the PI Nodes for your region:' followed by a table of PI Node Names.

PI_Node_Name
1 "PISM:Essen:ESSEN-MOD"
2 "PISM:Essen:ESSEN-MOD:Logical Disk C"
3 "PISM:Essen:ESSEN-MOD:Logical Disk F"
4 "PISM:Essen:ESSEN-MOD:NIC"
5 "PISM:Essen:ESSEN-MOD:PI WebAPI"
6 "PISM:Essen:ESSEN-PI"
7

Step 2: Integrate with GenAI – Becky the PI Admin

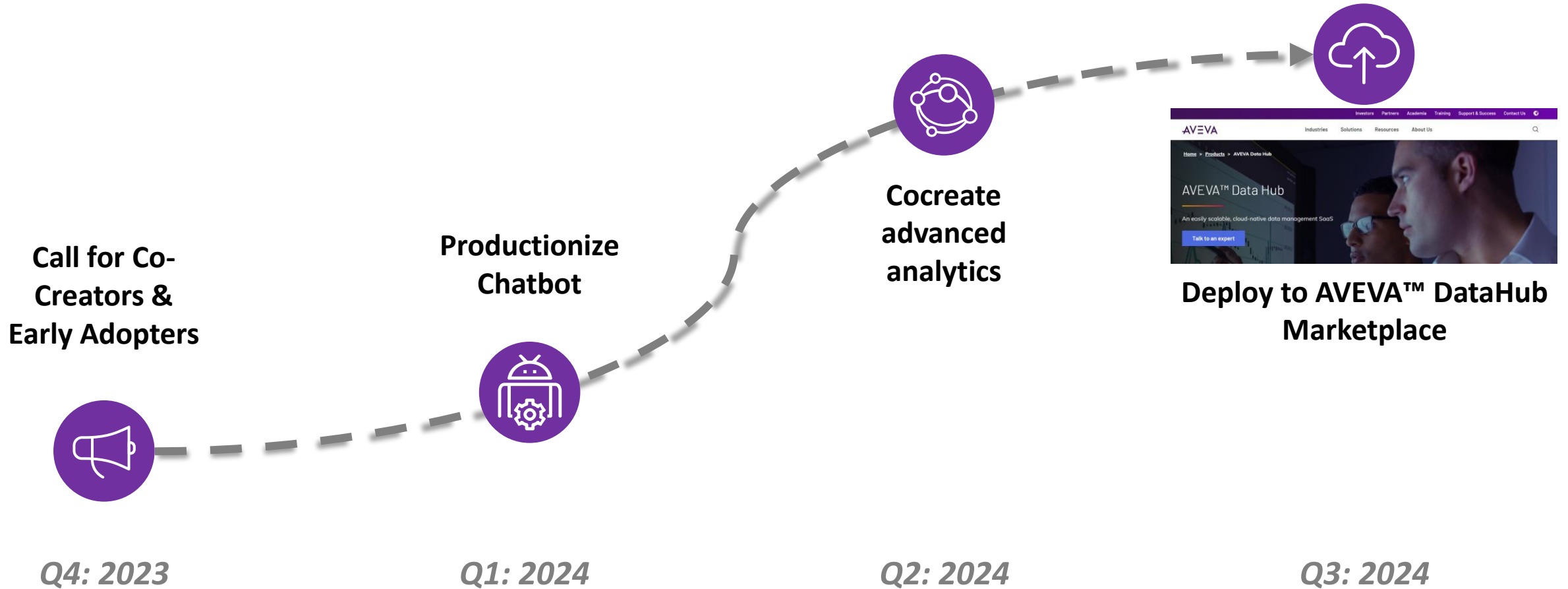


Step 2: Integrate with GenAI – Sara the Plant Engineer



Step 3: Collaborate with early adopters

Roadmap



Recommended Sessions

AVEVA™ DataHub

Uniting AVEVA Data Hub and Advanced Analytics with IOTA View, for Proactive Well Maintenance

Wednesday, October 25 @ 10:20am
Room 2004

Get more out of your data with AVEVA Advanced Analytics

Wednesday, October 25 @ 2:10p
Room 2004

Sharing data across Quebec Iron Ore's IT and OT ecosystem with AVEVA's cloud technologies

Wednesday, October 25 @ 1:30pm
Room 2004

Bringing industrial operations data into your analytics platform with AVEVA Data Hub Data Views

Thursday, October 26 @ 10:45am
Room 2004

Accenture

Vale: Implementing a global operations data infrastructure for transformation

Wednesday, October 25 @ 2:50pm
Track – PI System User

GenAI and PI: Supercharging the Operations Digital Twin

Wednesday, October 25 @ 3:50pm
Track – Partner Solution Talks

Rio Tinto and Accenture, Project Success Story, AVEVA Production Management and PI Historian: better together

Thursday, October 26 @ 10:45am
Track – Process Industries

