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THE SCIENCE OF WHERE ™

Improving Real-Time Data and Operations Management

With PI Integrator, GeoEvent Server and ArcGIS Dashboards

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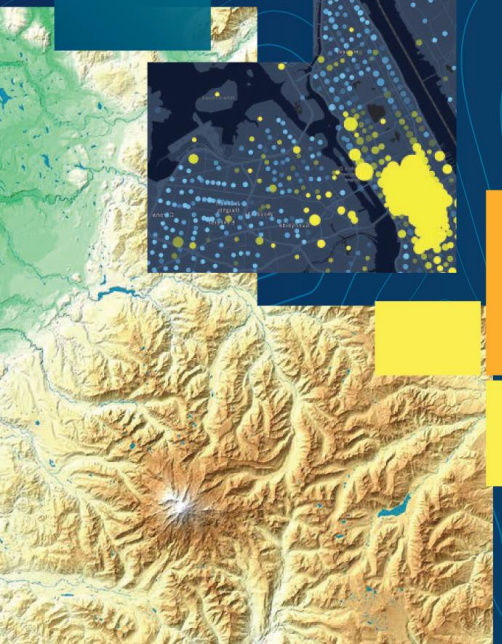
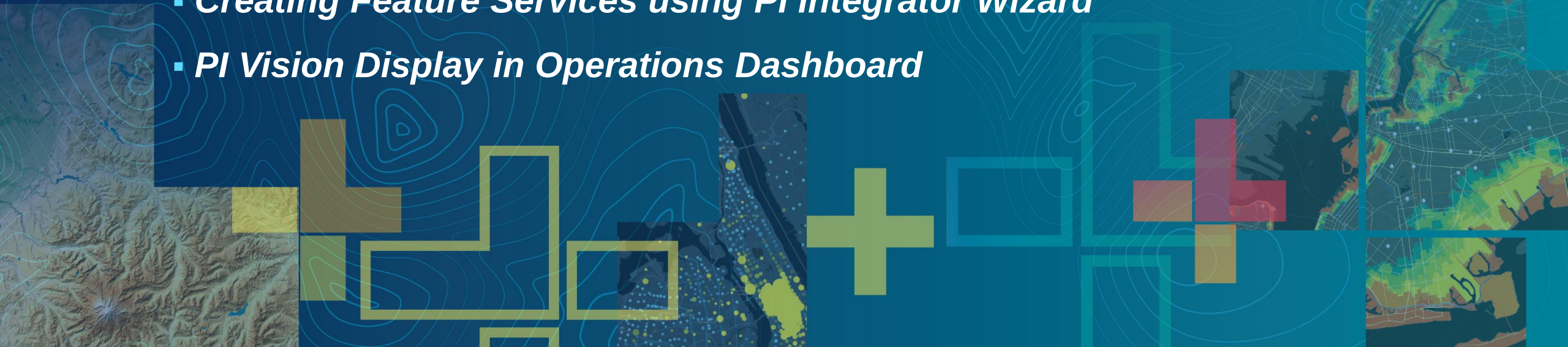


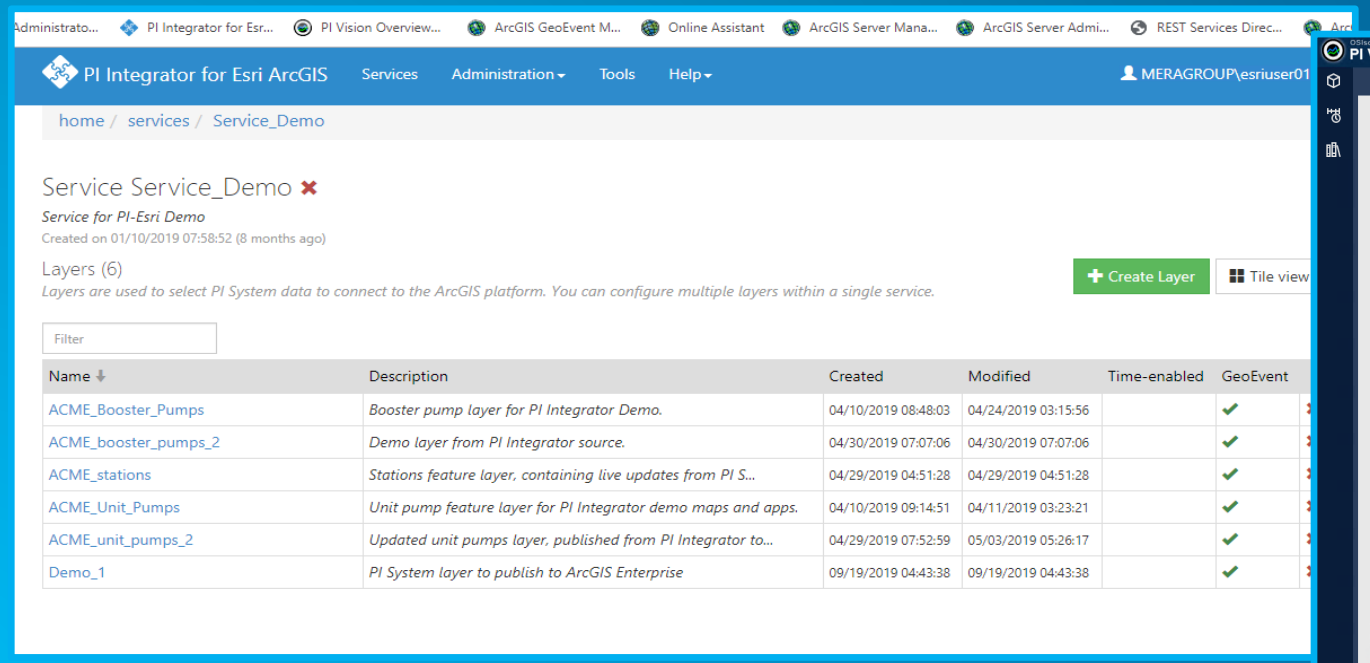
Agenda

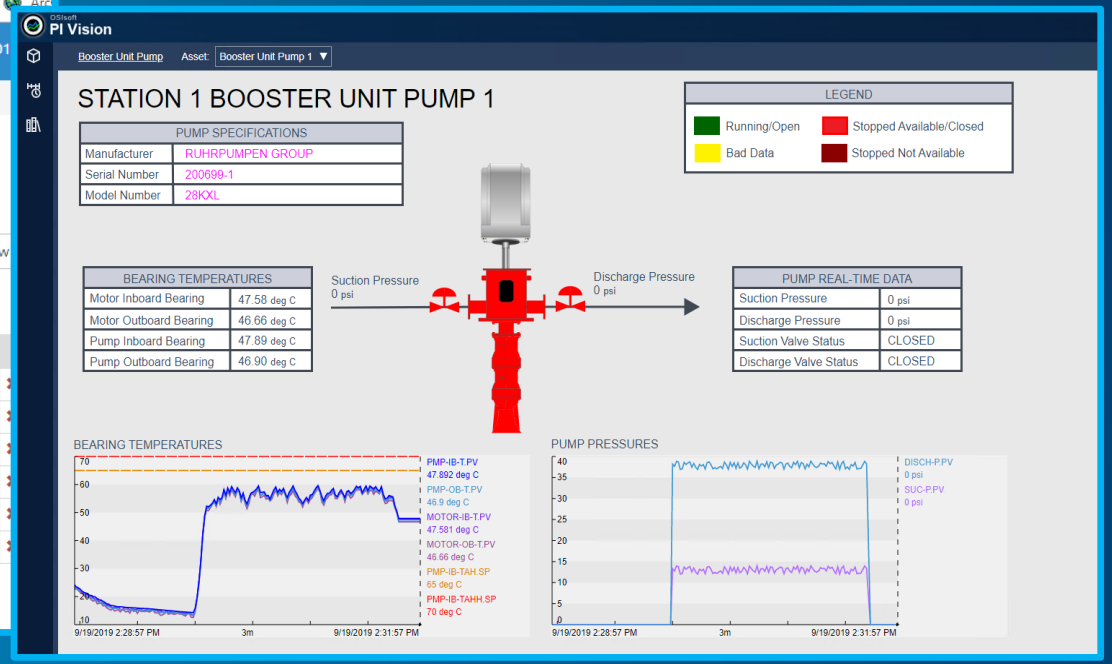
- PI Integrator For ArcGIS – Introduction
  - *Function*
  - Business Benefits
  - Solution Architecture
  - *Story Map with Operations Dashboard views*
- How The Solution was Built:
  - *Creating Feature Services using PI Integrator Wizard*
  - *PI Vision Display in Operations Dashboard*



PI Integrator for Esri ArcGIS – What is it?

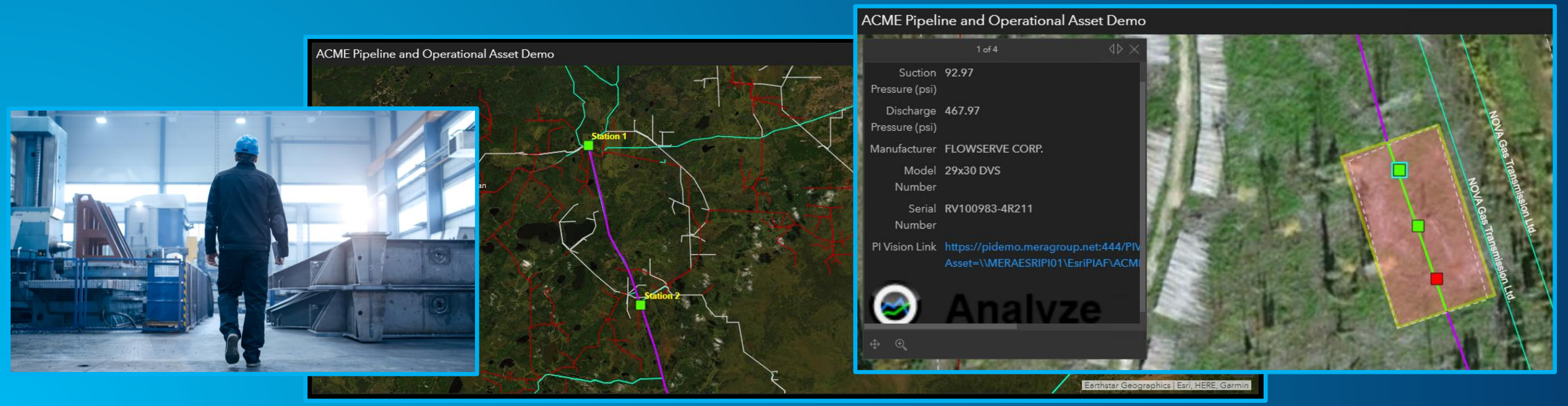
- **OSIsoft: Produces real-time data management software**
- **Function: A versatile platform that brings together the strengths of two powerful systems (PI System & ArcGIS platform)**
- **Combines the “time” aspect of PI System with the “spatial” aspect of the ArcGIS platform**





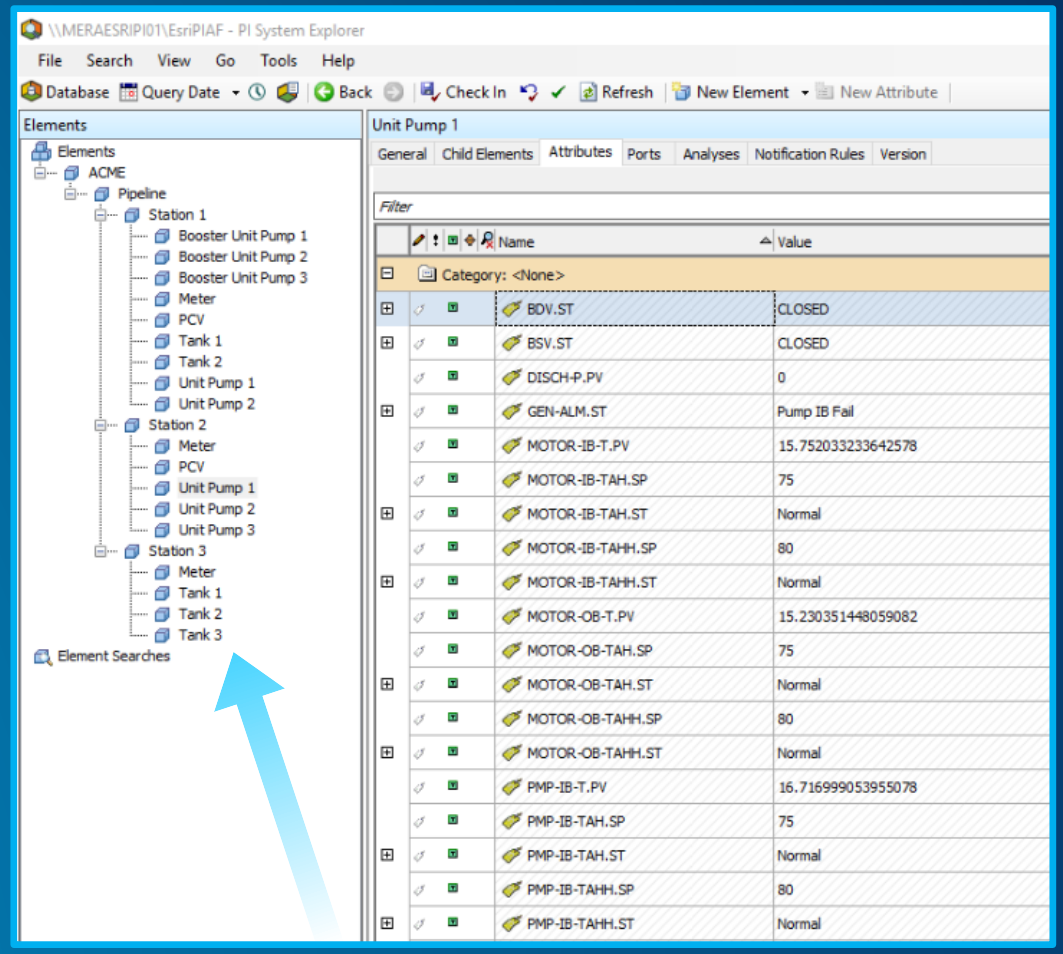
PI Integrator for Esri ArcGIS – The Solution

- **Business Benefits:**
  - ***Enhances Insight*** **over Infrastructure Processes**
  - **Increases Operational Awareness**
  - **Optimize *Safety* and Minimize Risk**
  - ***Easy to Use*****: PI System data can be accessed through a *single view***

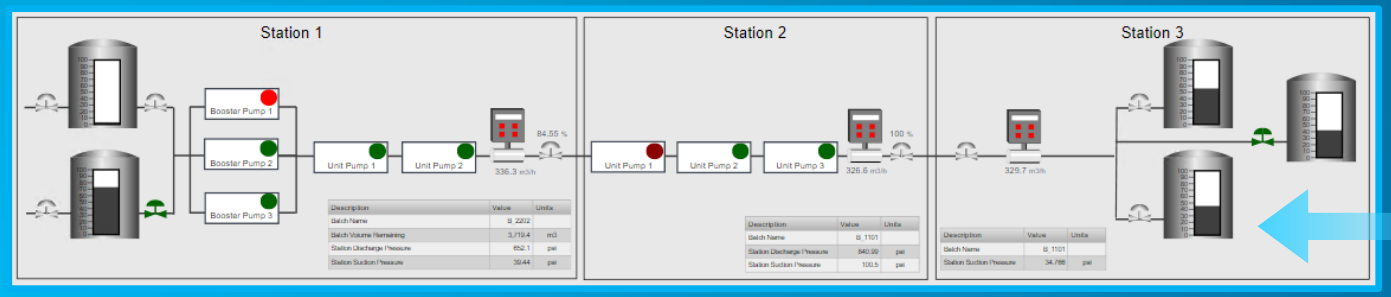


Software Components (Part 1)

1. The PI System
   - ***Scalable*** system for storing operations data
   - Captures time-series data and stores for ***lifetime*** of the asset
   - Facilitates structured *real-time* data and analytics
   - ***Industries***: Power & Utilities, Mining, Water Utilities, Pharmaceuticals, Transportation, Facilities & Energy Management, Oil & Gas



PI System data in PI AF Server



PI Vision Displays (pipeline overview)

Software Components (Part 2)

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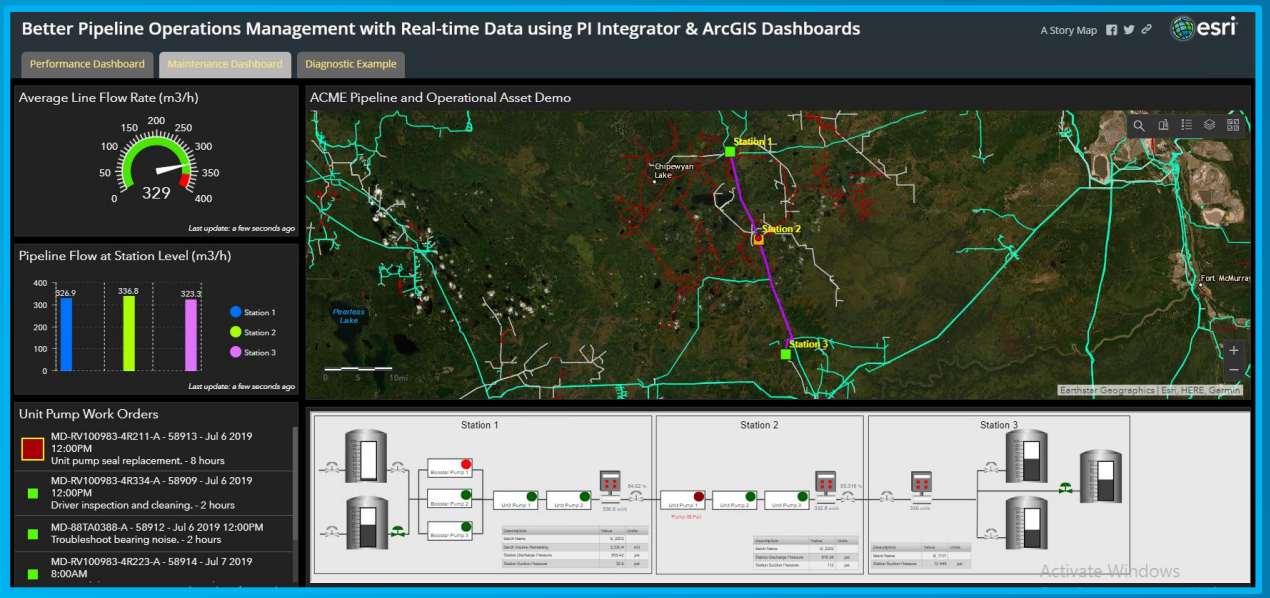
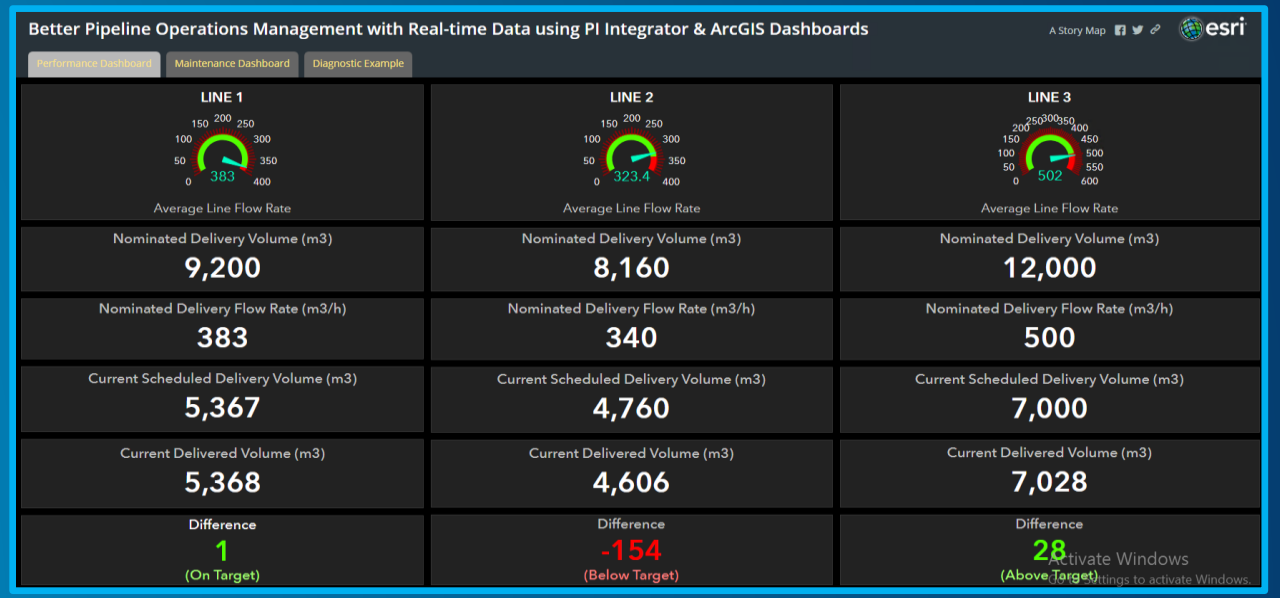
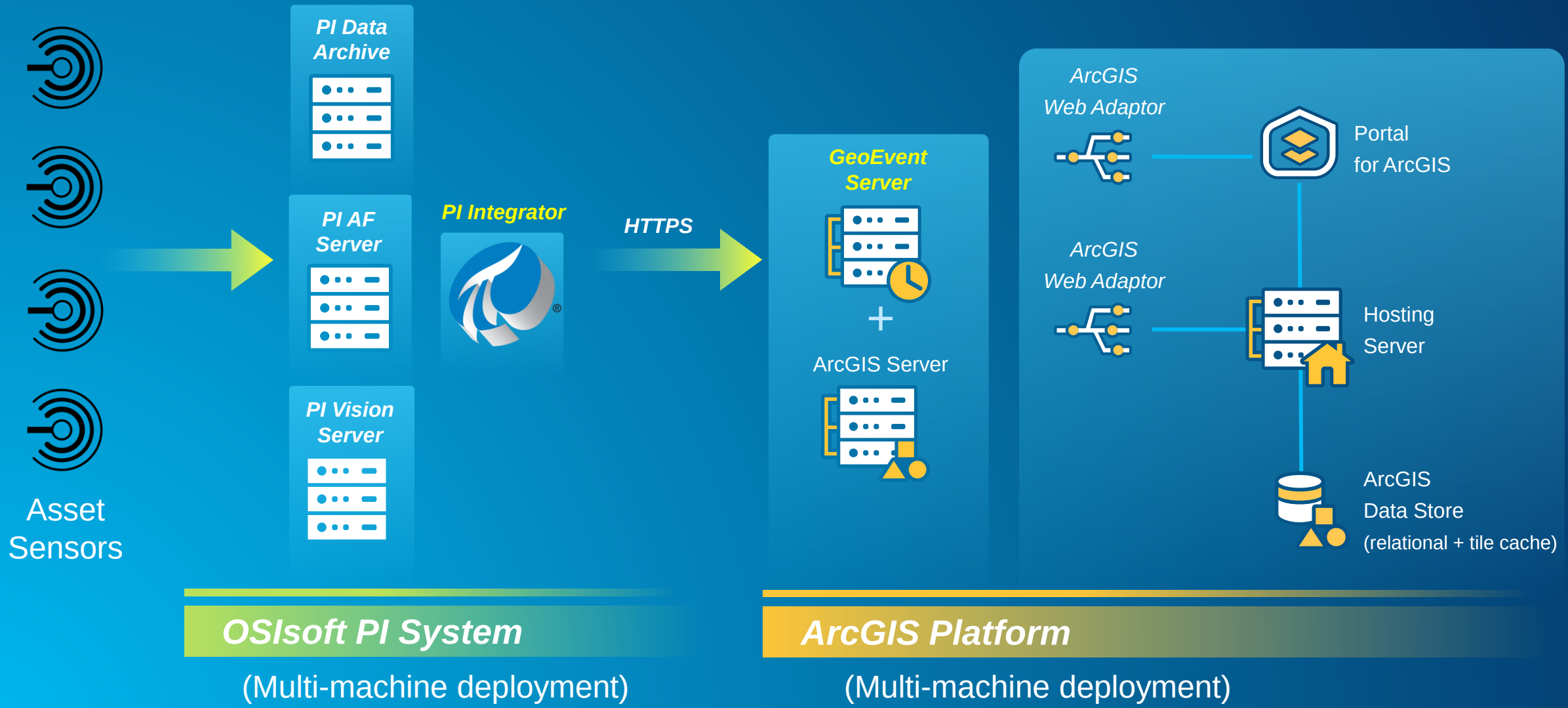
2. The ArcGIS Platform

- Provides real-time ***geographical context*** to your operational assets
- Map ***layers*** are displayed in ArcGIS applications in *real-time*
- Access to a number of different ***applications*** from which you can display, ***analyze***, and edit your data (compatible with web maps, WAB applications, Story Map applications, and Operations Dashboards)



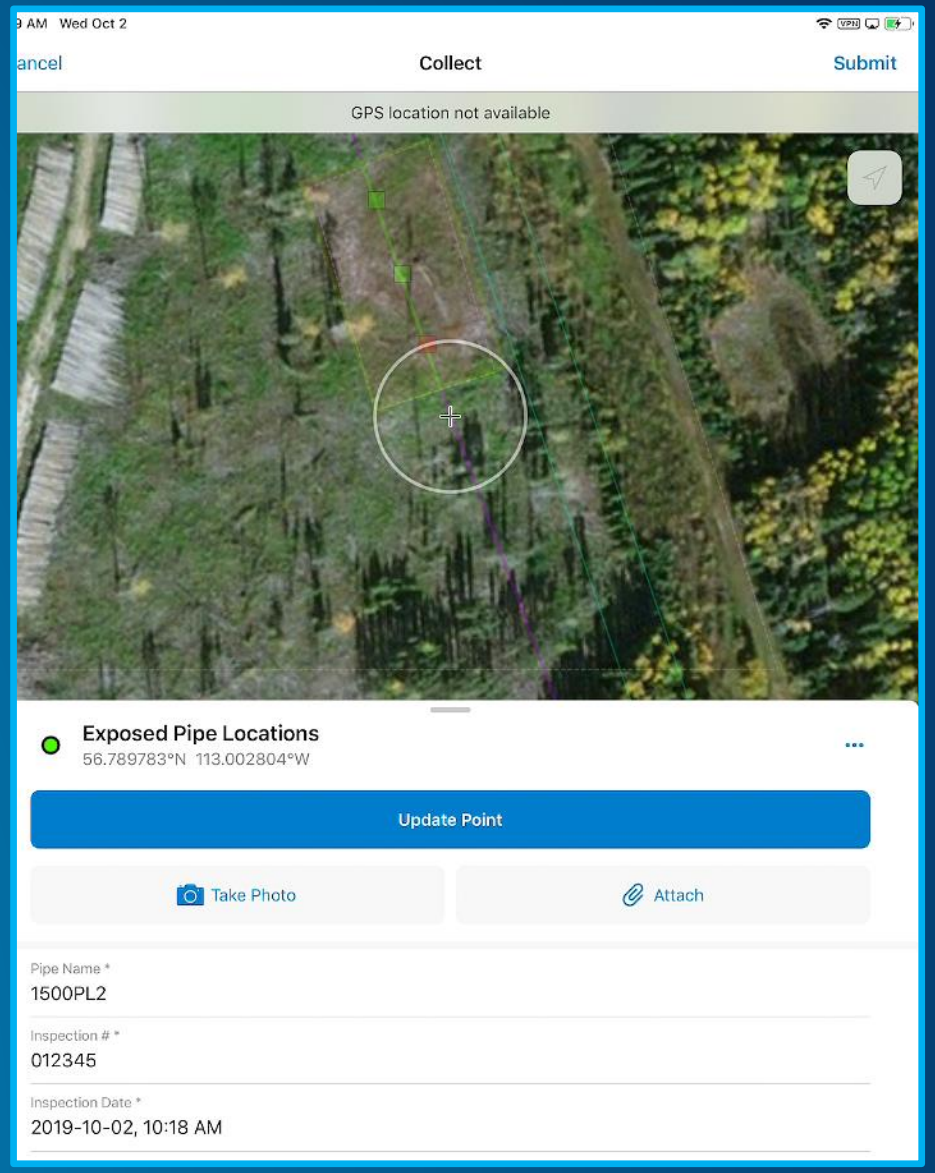


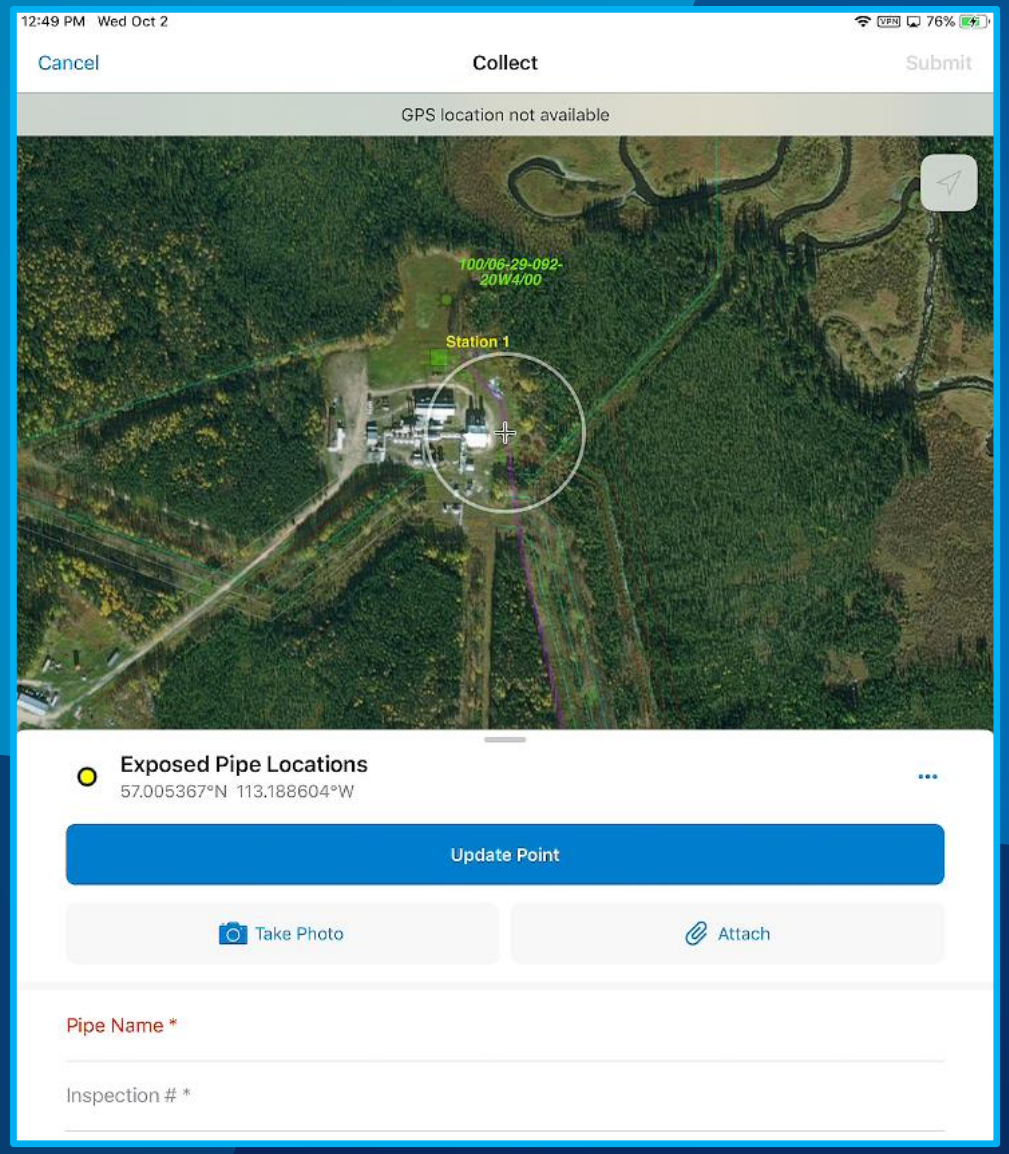
PI Integrator Solution Architecture



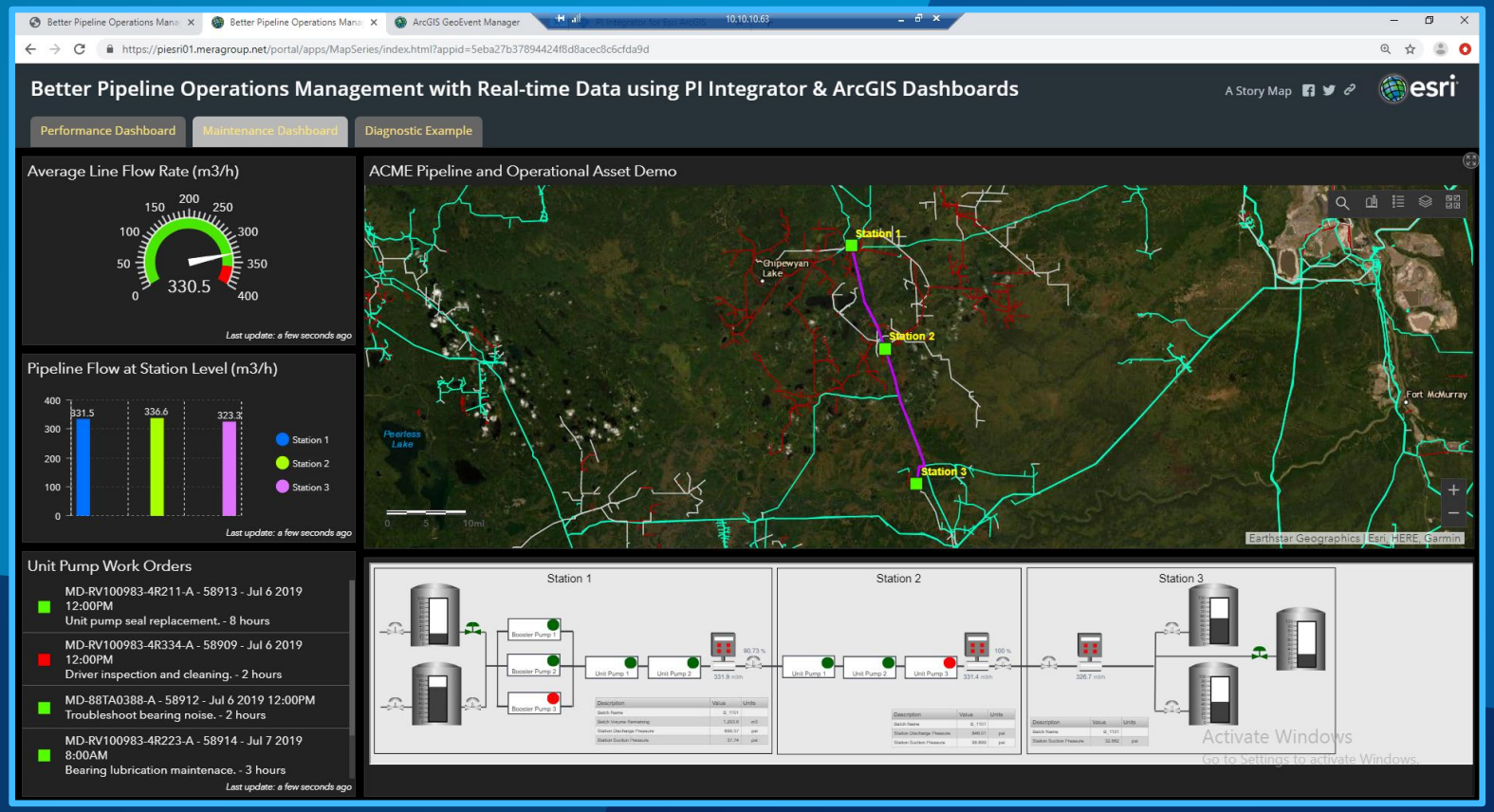
Integration with Collector for ArcGIS

- **Collector Recap**
  - Collect and edit data in the field
  - Core functionality: works online and offline
  - *iOS, Android, Windows*
  - Use feature templates (ArcGIS Online and Enterprise)
- **Introduce real-time data to field data collection:**
  - Combine PI Integrator layers with other map layers to enhance field data collection workflows





DEMO
Integration with Collector for ArcGIS

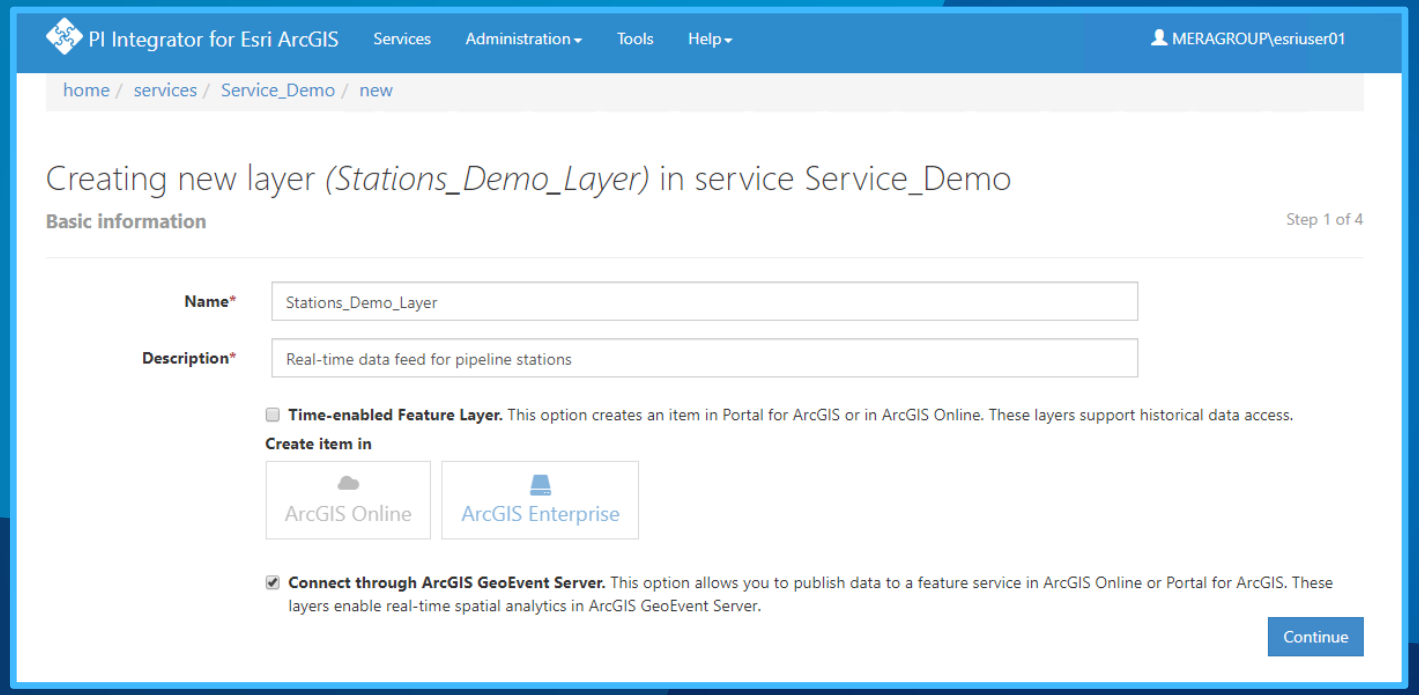


DEMO

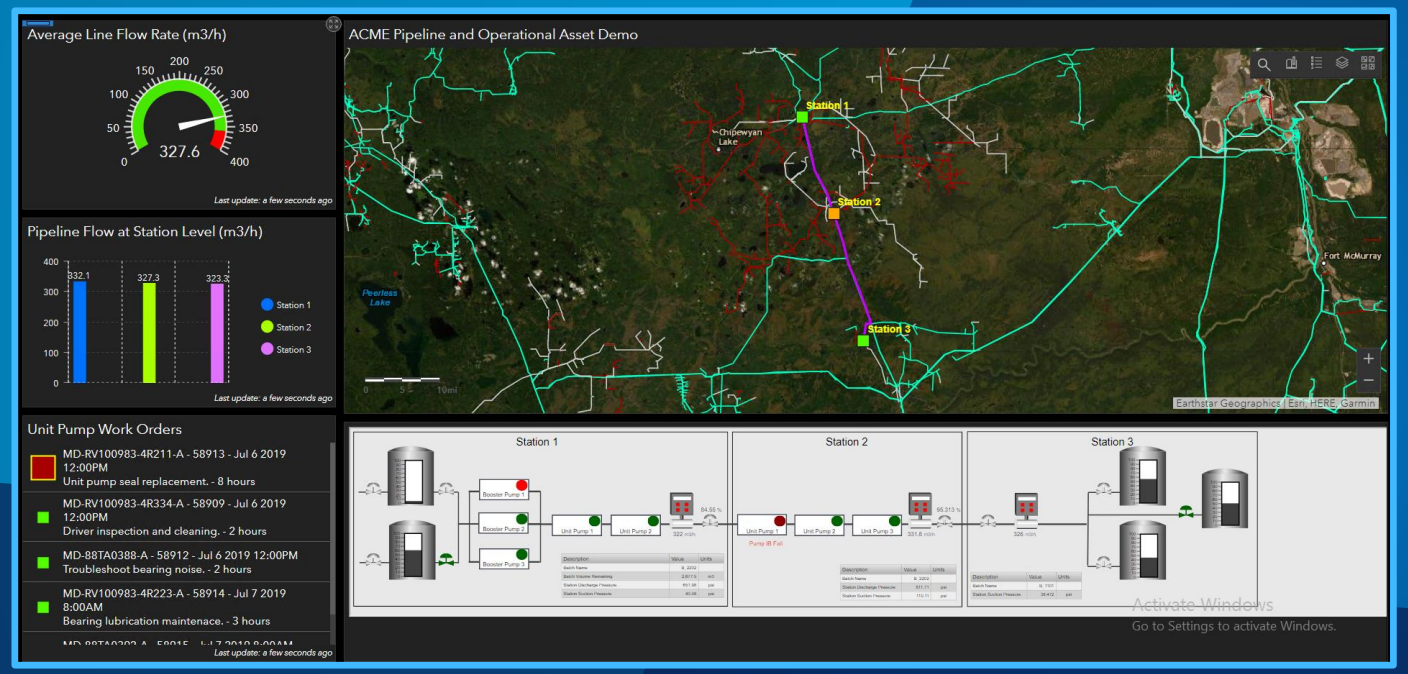
Story Map & Operations Dashboard with PI Vision Displays

Technical *How-to* Demos

A Deeper Dive…



DEMO
Publishing PI System data to ArcGIS Enterprise



DEMO

Operations Dashboard and PI Vision Displays

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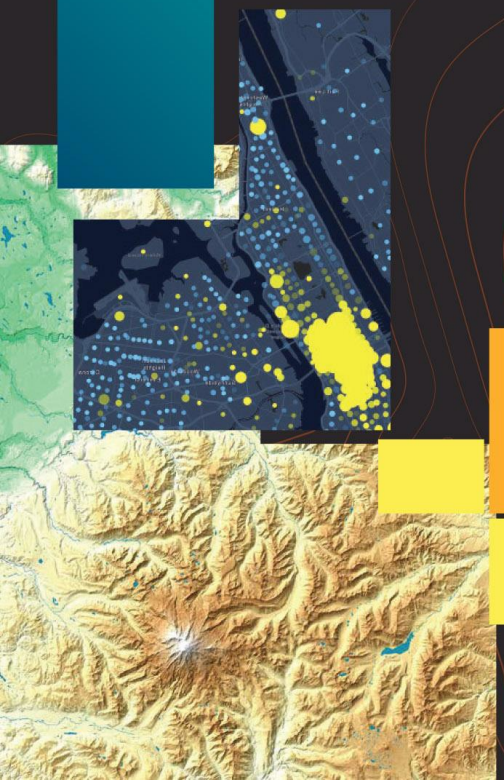
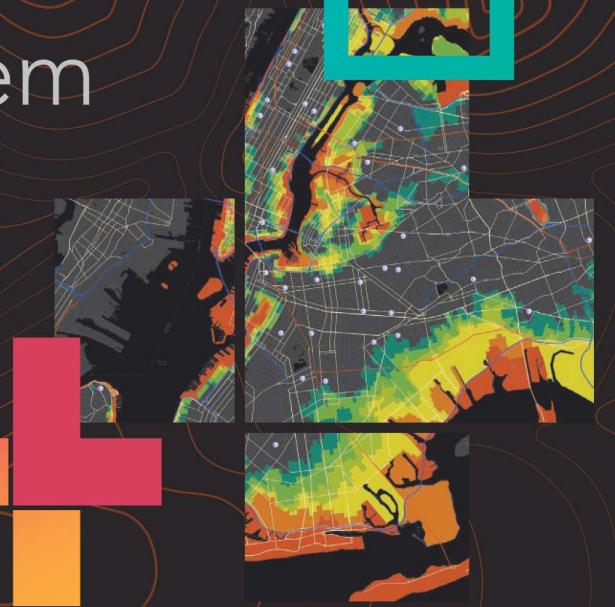
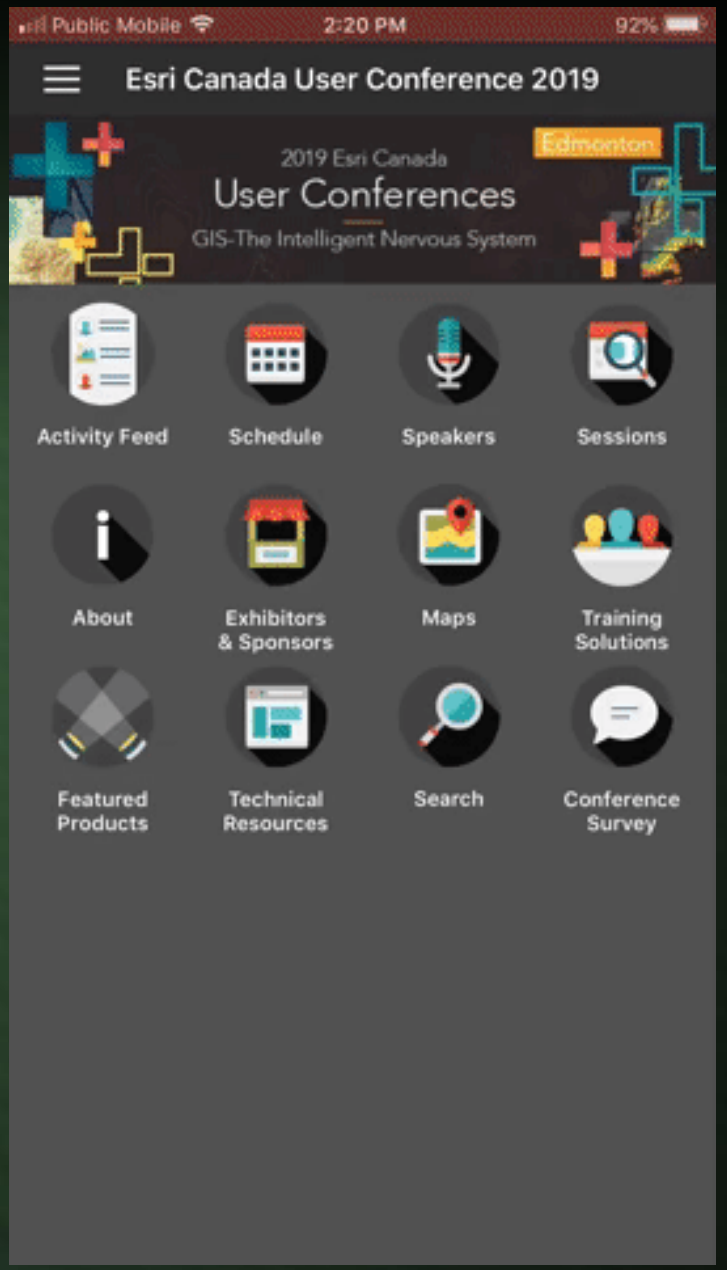
User Conferences

GIS-The Intelligent Nervous System





Session Rating



Better Operations Management with Real-time Data using PI Integrator & ArcGIS Dashboards

A Story Map

Performance Dashboard | Maintenance Dashboard | Diagnostic Example

LINE 1	LINE 2	LINE 3
Average Line Flow Rate	Average Line Flow Rate	Average Line Flow Rate
Nominated Delivery Volume (m3) 9,200	Nominated Delivery Volume (m3) 8,160	Nominated Delivery Volume (m3) 12,000
Nominated Delivery Flow Rate (m3/h) 383	Nominated Delivery Flow Rate (m3/h) 340	Nominated Delivery Flow Rate (m3/h) 500
Current Scheduled Delivery Volume (m3) 5,367	Current Scheduled Delivery Volume (m3) 4,760	Current Scheduled Delivery Volume (m3) 7,000
Current Delivered Volume (m3) 5,368	Current Delivered Volume (m3) 4,606	Current Delivered Volume (m3) 7,028
Difference 1 (On Target)	Difference -154 (Below Target)	Difference 28 (Above Target)

Activate Windows
Go to Settings to activate Windows.

Better Operations Management with Real-time Data using PI Integrator & ArcGIS Dashboards

Performance Dashboard | Maintenance Dashboard | Diagnostic Example

Average Line Flow Rate (m3/h)

Last update: a few seconds ago

Pipeline Flow at Station Level (m3/h)

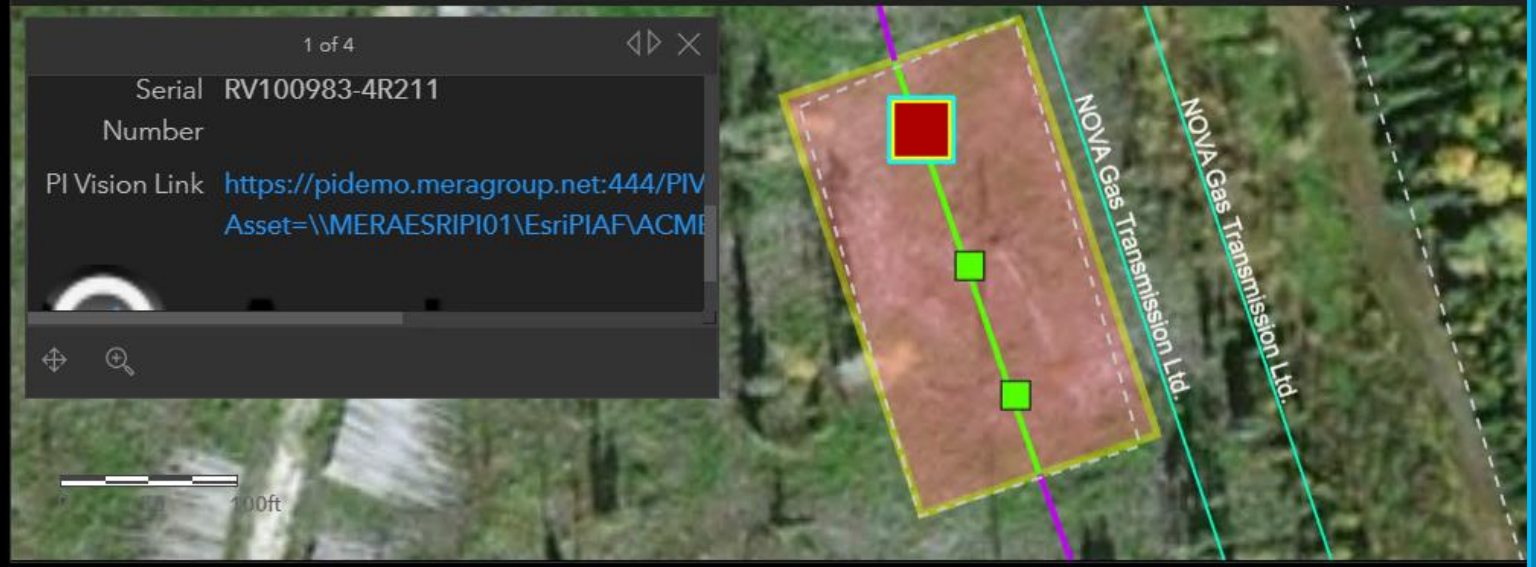
Last update: a few seconds ago

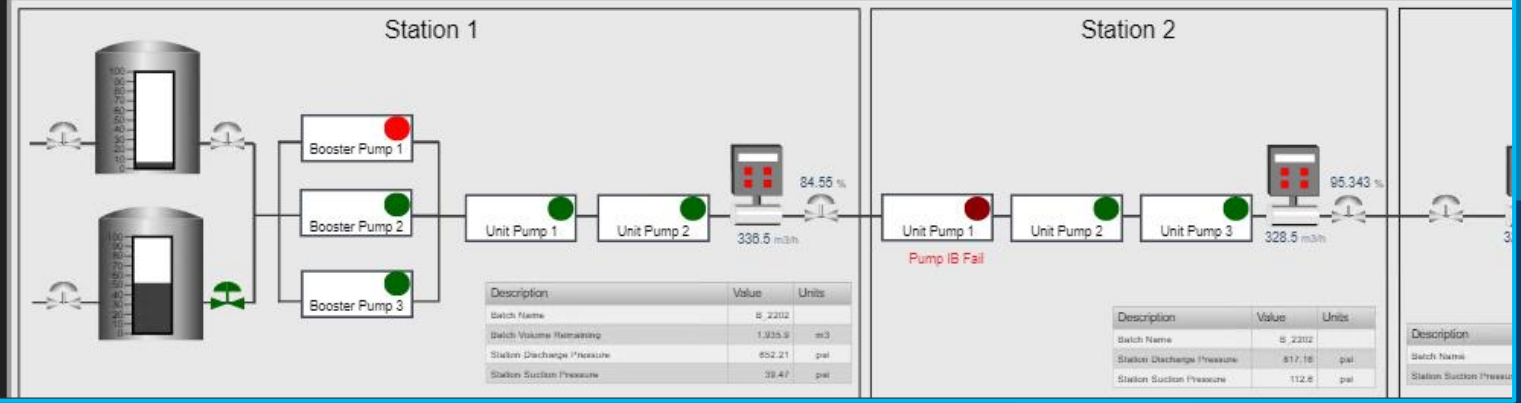
Unit Pump Work Orders

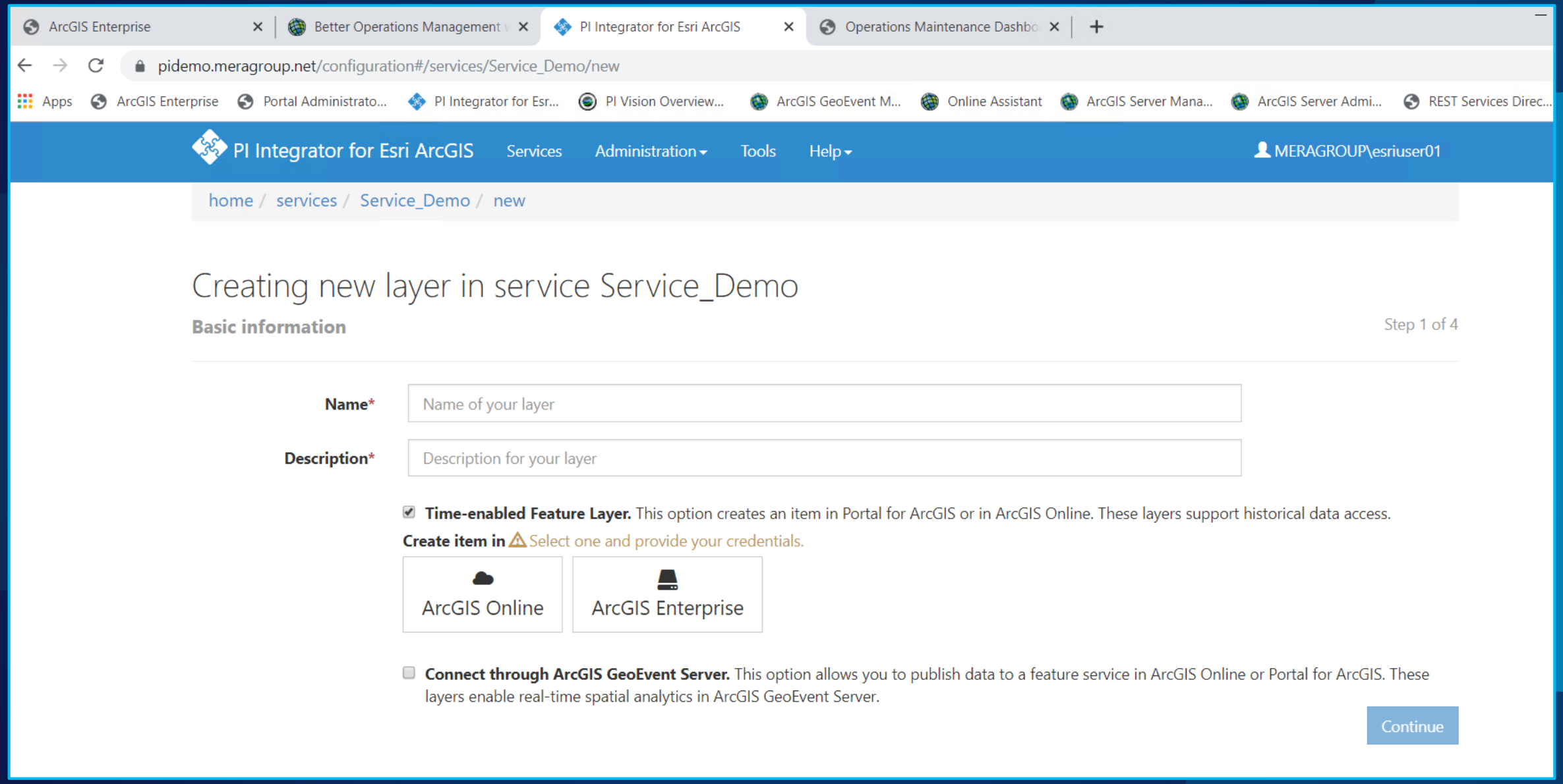
- MD-RV100983-4R211-A - - - hours
- MD-RV100983-4R334-A - 58909 - Oct 16 2019 12:00PM
  Driver inspection and cleaning. - 2 hours
- MD-88TA0388-A - 58912 - Oct 16 2019 12:00PM

Last update: a few seconds ago

ACME Pipeline and Operational Asset Demo






ArcGIS Enterprise
Better Operations Management
PI Integrator for Esri ArcGIS
Operations Maintenance Dashbo
pidemo.meragroup.net/configuration#/services/Service_Demo/new
Apps
ArcGIS Enterprise
Portal Administrato...
PI Integrator for Esr...
PI Vision Overview...
ArcGIS GeoEvent M...
Online Assistant
ArcGIS Server Mana...
ArcGIS Server Admi...
REST Services Direc...
PI Integrator for Esri ArcGIS
Services
Administration
Tools
Help
MERAGROUP\esriuser01
home / services / Service_Demo / new
Creating new layer in service Service_Demo
Basic information
Step 1 of 4
Name*
Name of your layer
Description*
Description for your layer
Time-enabled Feature Layer. This option creates an item in Portal for ArcGIS or in ArcGIS Online. These layers support historical data access.
Create item in Select one and provide your credentials.
ArcGIS Online
ArcGIS Enterprise
Connect through ArcGIS GeoEvent Server. This option allows you to publish data to a feature service in ArcGIS Online or Portal for ArcGIS. These layers enable real-time spatial analytics in ArcGIS GeoEvent Server.
Continue

THANK YOU!

Any Questions?

References

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