

NOVEMBER 2022

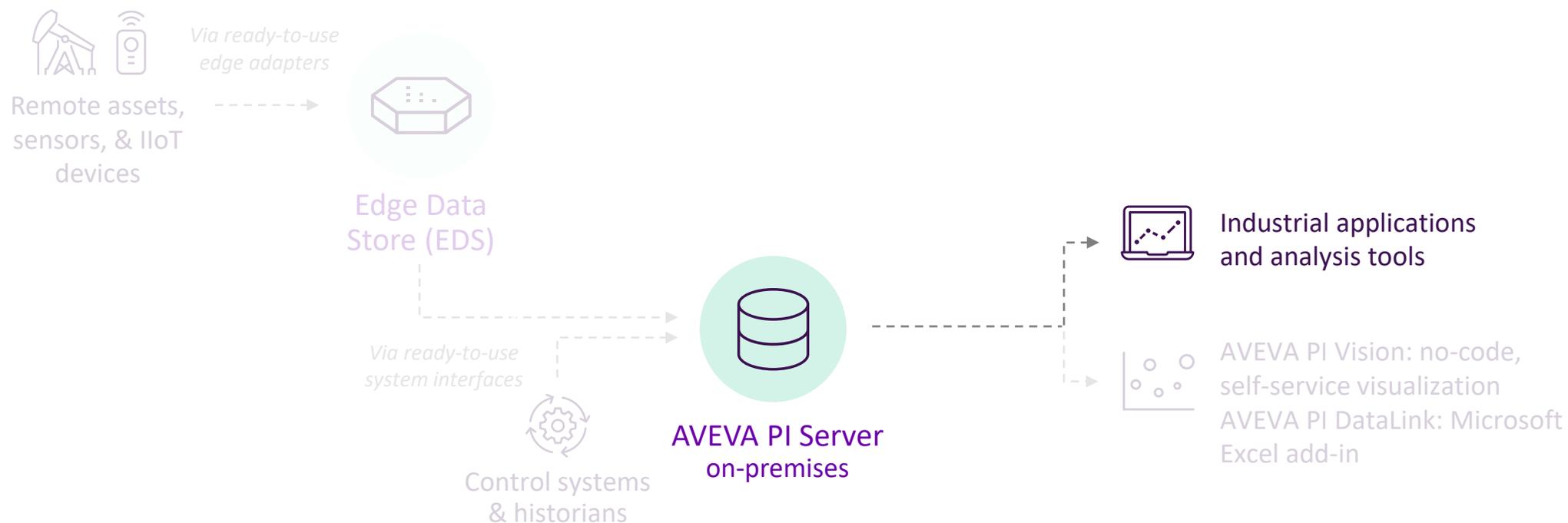
Extending the Reach of the AVEVA™ PI System™ Data

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AVEVA

Proven components accelerate time-to-value





PI Web API

Secure RESTful access to AVEVA PI Server data over HTTPS

- Cross-platform programmatic interface to the AVEVA PI System
- Read and write access to all AVEVA PI Server objects
- Newly introduced PI Point Search Endpoint
- Also handles OMF Ingress

Use cases

Connecting Web and Mobile applications to the AVEVA PI System

Programmatic access for small scale data science

Leverage a visualization suite other than AVEVA PI Vision

Taking advantage of the PI Web API in your organization

EDP Renewables

- Standardized on using PI Web API for ML Predictive Maintenance
- Reduced execution time of calculations from 8-12 hours down to minutes
- Leveraged Asset Framework (AF) to model all assets in key processes, harnessing the power of their 2M tags

2019 - OSIsoft PI World Gothenburg - Products
How to take advantage of the PI WEB API in your organization

EDPR

| | |
|-----------------|-----------|
| 100% renováveis | |
| 12185 MW | |
| 292 WPPs | 14 PvPPs |
| 6958 WTGs | 152 INVs |
| 13 OEMs | 37 Models |

Assets to date: August 2019

OSIsoft

SUZLON

Vestas

World

0:00

A man in a suit is presenting the slide.

<https://resources.osisoft.com/presentations/how-to-take-advantage-of-the-pi-web-api-in-your-organization>

What's next for PI Web API

Recently released: PI Web API 2021 SP3

Increased
value and
scope

New PI Point Search endpoint

Performant PI Point queries following the AF SDK syntax

OMF Ingress Enhancements

Simplified Delete messages and implemented case insensitivity



In development

Seamless
infrastructure

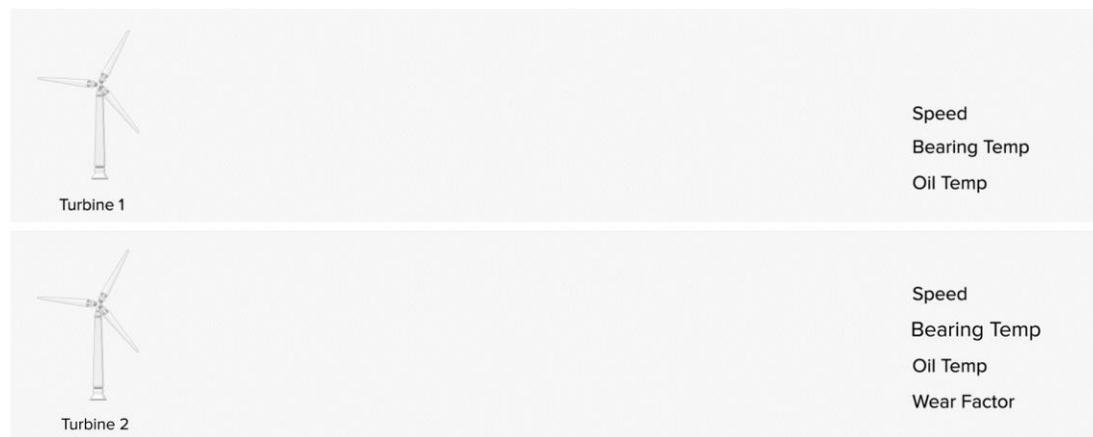
Modern Authentication

Revamping claims for OpenID Connect

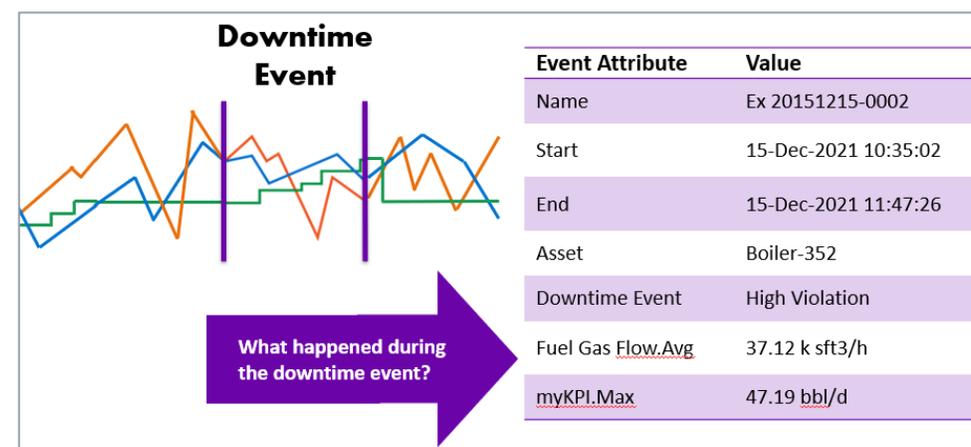
Operational data is not like other data

In raw form, data is difficult to use in analysis and cannot be combined with business data

Time-series data is not naturally aligned

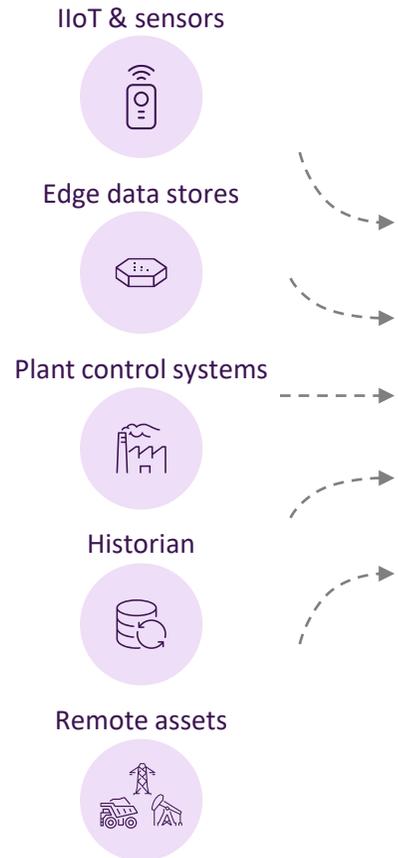


One data stream can represent many discrete events or products

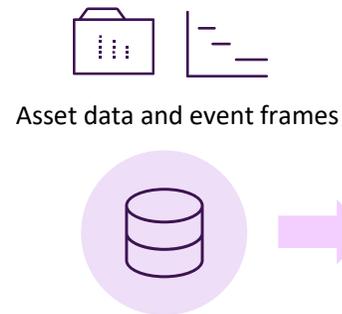


AVEVA™ PI Integrator for Business Analytics

Data Sources



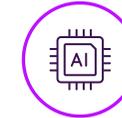
AVEVA PI Server



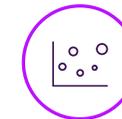
Transmit
Shape
Augment
Cleanse

AVEVA PI Integrator for Business Analytics

AI/ML platforms



3rd party analytic tools



Enterprise reporting



- Apache Kafka
- Amazon Kinesis
- Amazon Redshift
- Amazon S3
- Cognos
- Google Cloud Pub/Sub
- Google Cloud Storage
- Google Big Query
- Hadoop
- Hive
- Microsoft SQL
- MS Azure
- Oracle
- PowerBI
- SAP HANA
- Spotfire
- SAS
- Tableau

What's next for AVEVA PI Integrator for Business Analytics

Recently released: PI Integrator for Business Analytics 2020 R2 Patch 2

Increased value and scope

Native integration to ADLS Gen2

Support user migration from ADLS Gen1 to ADLS Gen2

Update for Google BigQuery

AF change monitoring and data updates for Google BigQuery writer



In development

Manageable software

Stability enhancements

Improve robustness and stability

Additional logging

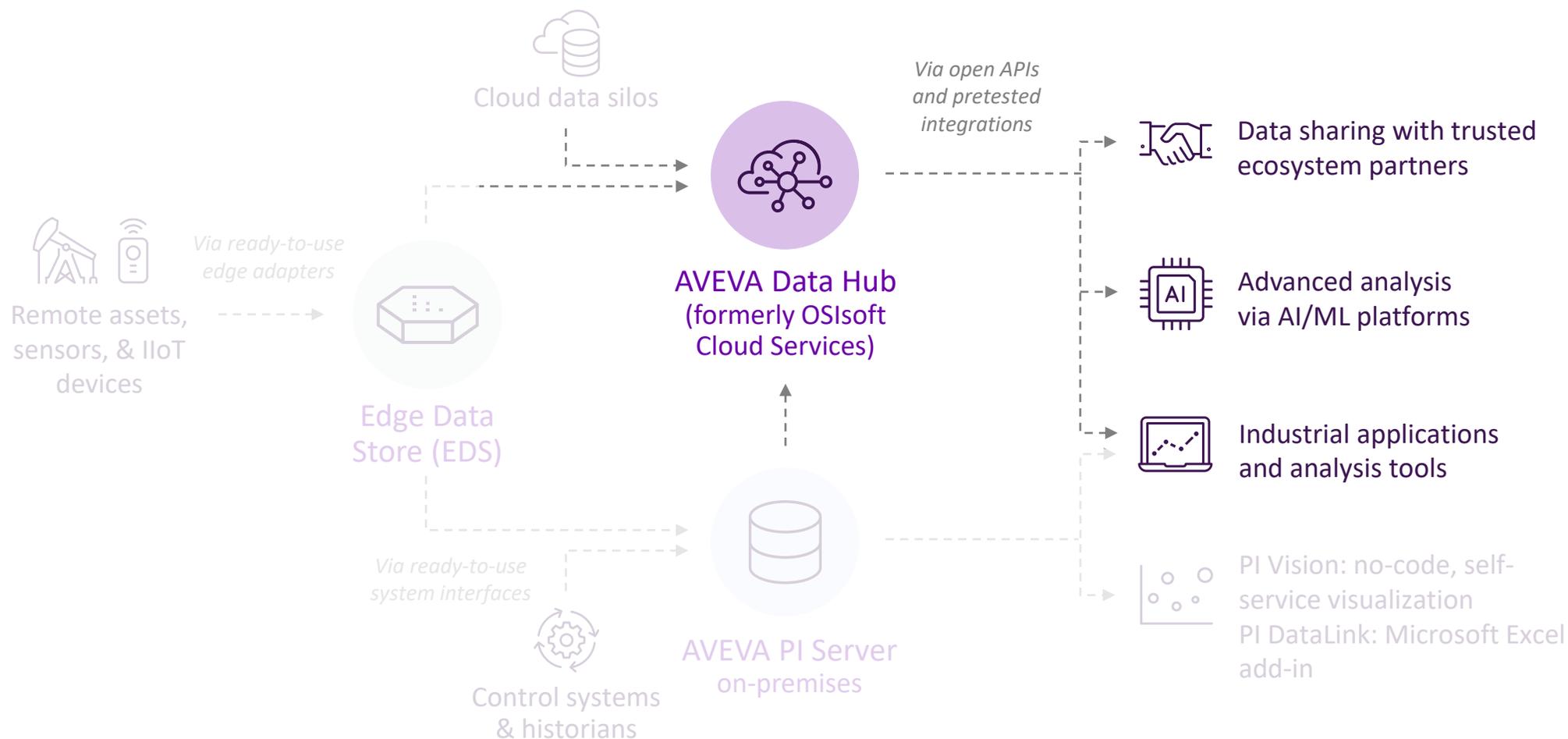
Improve troubleshooting and awareness of system health

Seamless infrastructure

More Authentication Options

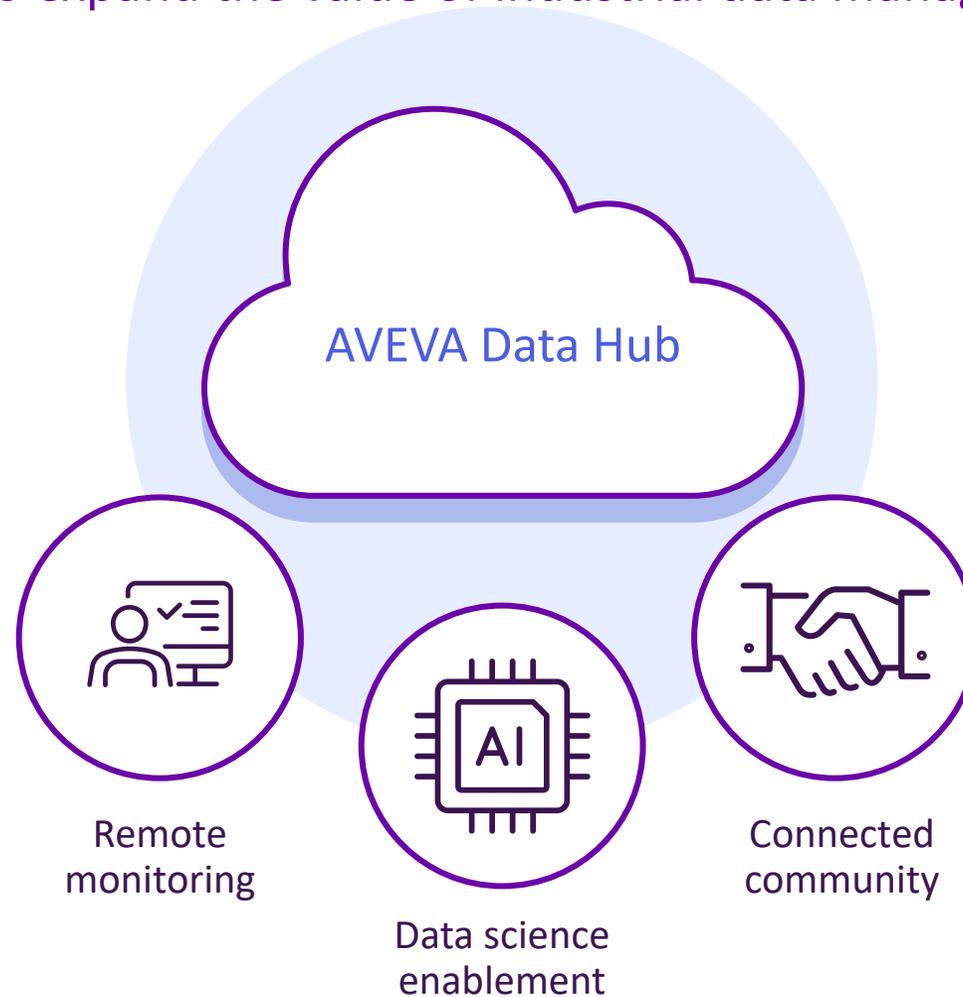
Support for one-way trusted domains

Proven components accelerate time-to-value



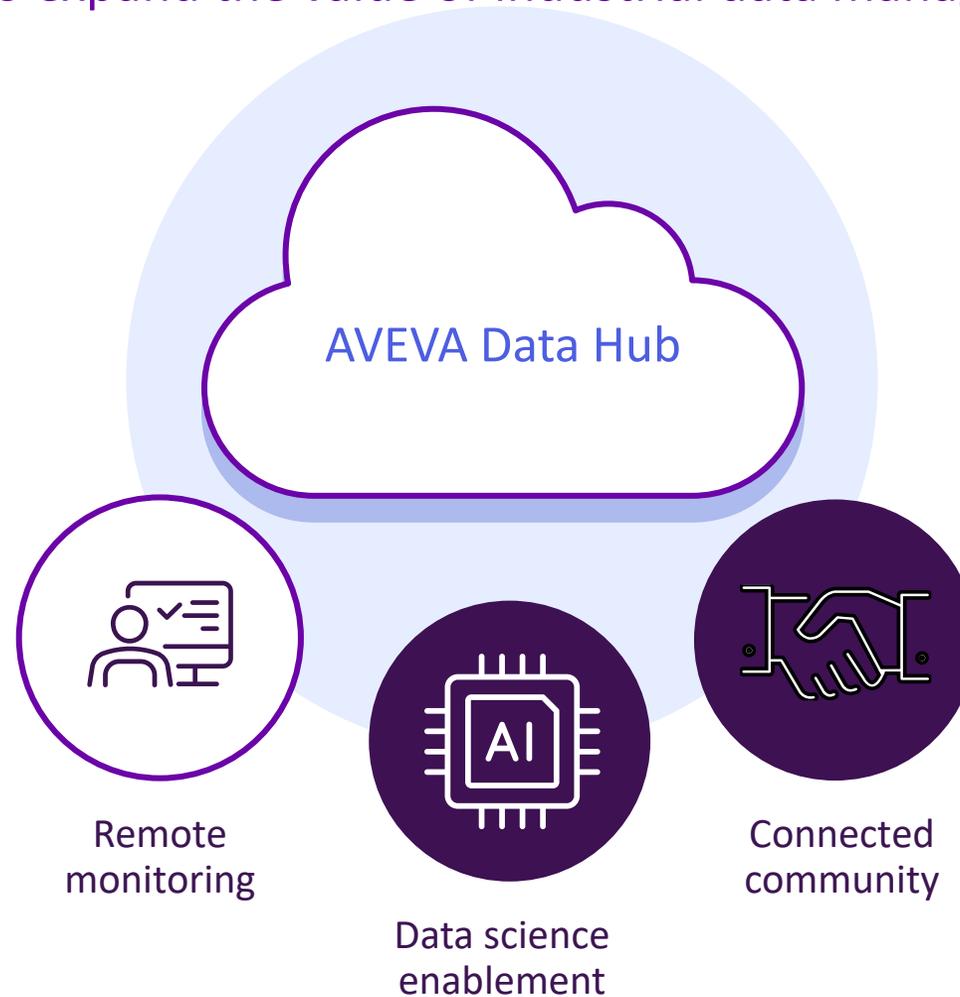
Engage new personas, enable new use cases

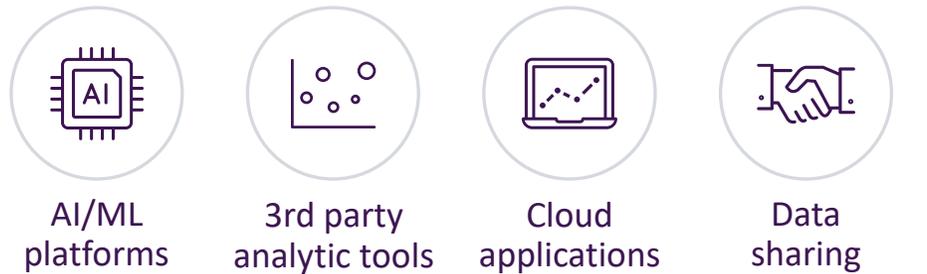
Leverage cloud technology to expand the value of industrial data management



Engage new personas, enable new use cases

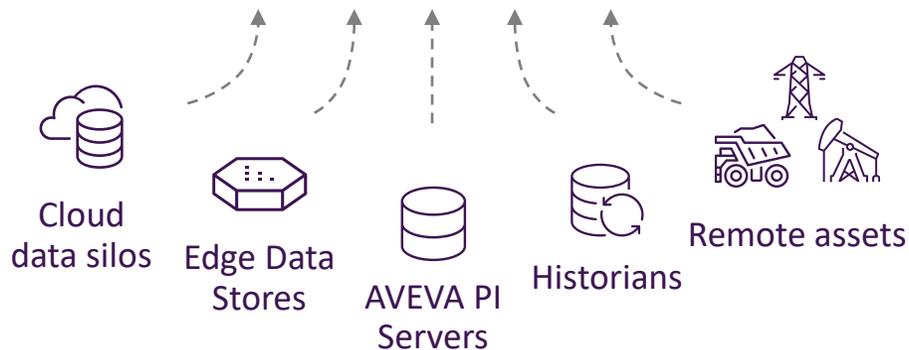
Leverage cloud technology to expand the value of industrial data management





AVEVA Data Hub

Hosted on AVEVA Connect

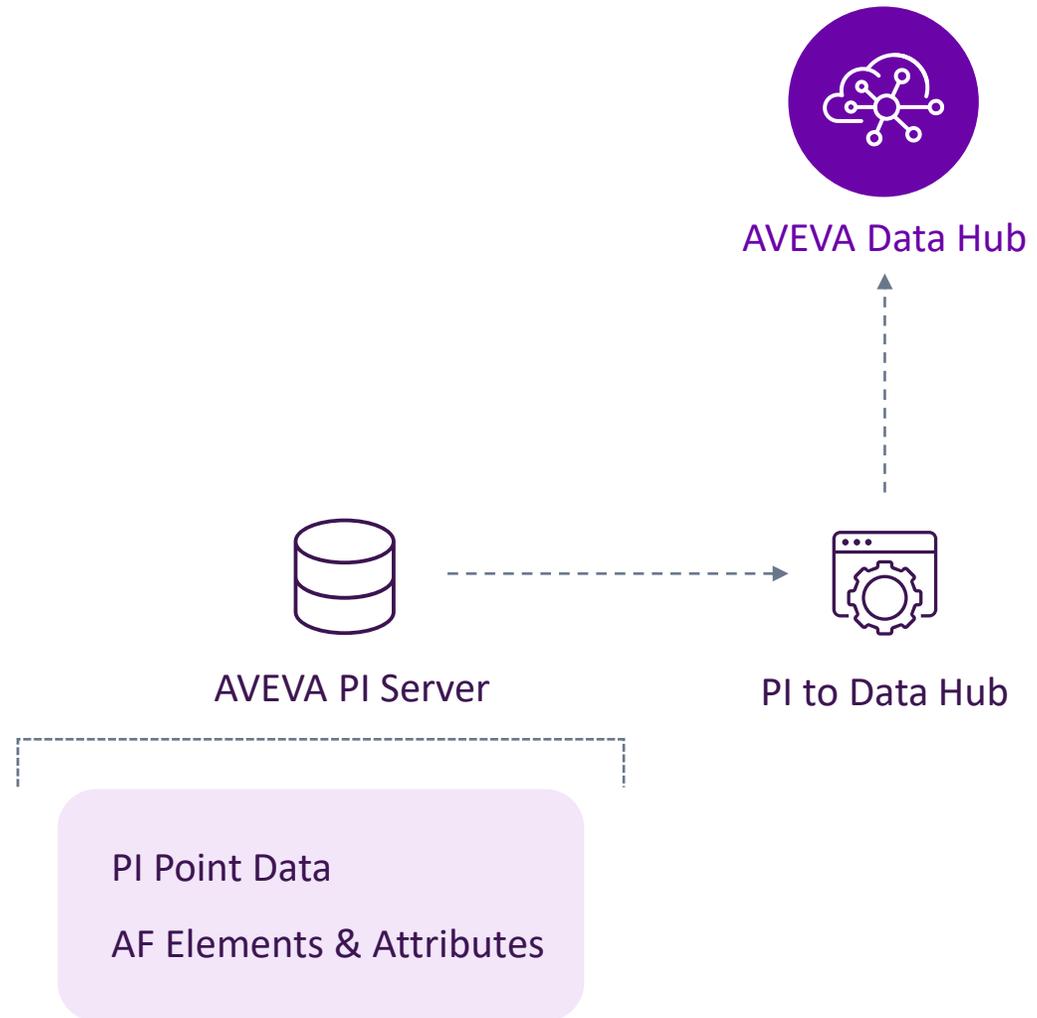


A cloud-native platform for aggregating, storing, enriching, accessing, and analyzing real-time operations data from historians, edge devices, and more

- Managed, secure, multi-tenant platform
- Operated & maintained by AVEVA
- High speed, scalable, elastic, & resilient
- Modern, secure REST APIs

PI to Data Hub

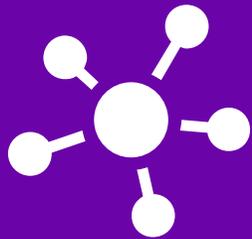
- Easily integrate your AVEVA PI System data with AVEVA Data Hub
- Asset framework (AF) elements & attributes
- Historical & streaming data



Extending PI System data in the cloud with PI to Data Hub

Native ingress to AVEVA Data Hub
Central. Simple. Secure.

Central Configuration



Configure and manage data transfers, security from Data Hub

Simple to use



Simple to install agent runs on-prem

Secure



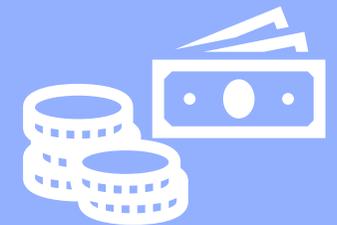
Secure authentication in the cloud
Windows accounts authenticate against on-prem PI Server(s)

Native Software



Off-the-shelf software
24/7 support

Leverage your investment



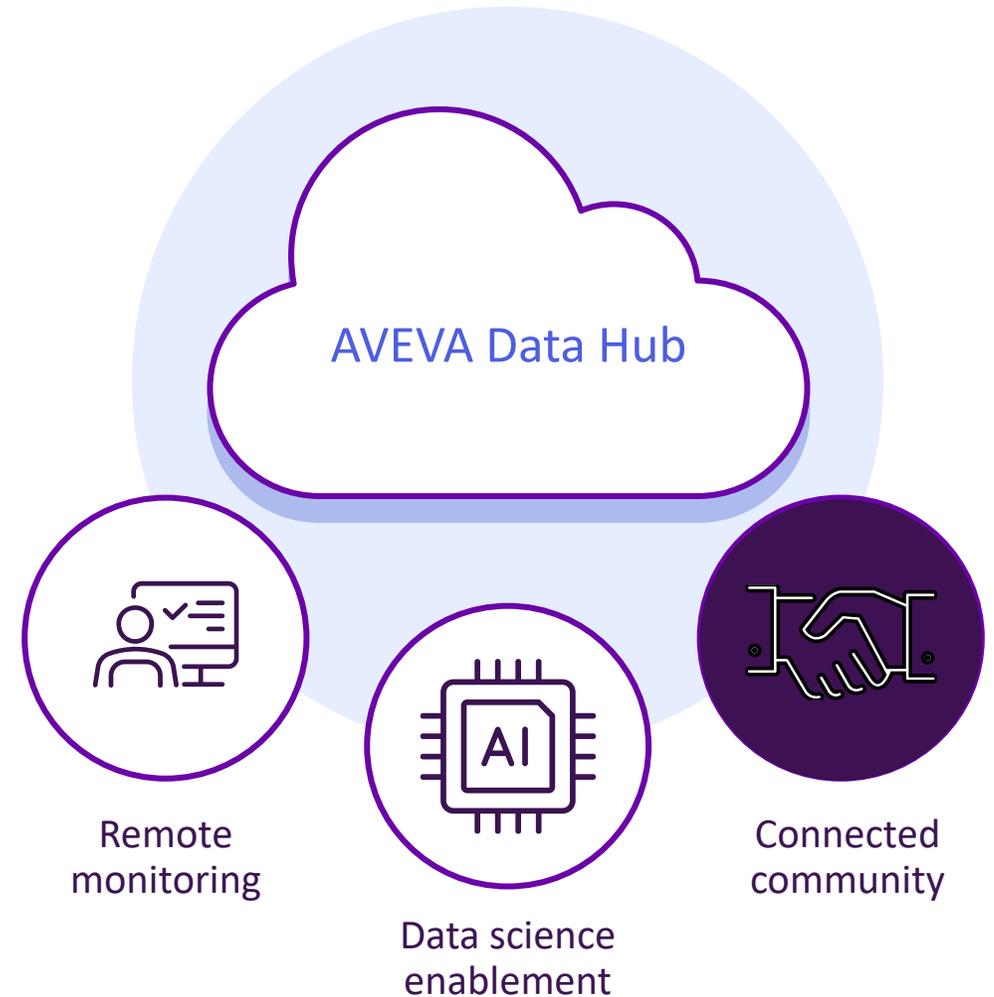
Enable data science, partner applications and community data sharing

AVEVA

Connected Community

Secure data sharing and remote collaboration

- With the **communities feature**, easily share relevant sub-sets of data with key partners, suppliers and logistics companies
- Save costs by enabling the shift to condition-based maintenance
- Leverage new, high-value services such as continuous asset monitoring or automated procurement



AVEVA Data Hub Connected Community

Enables simple & secure operational data sharing across organizations



More secure way of sharing your data



Manage your own users in your AVEVA Data Hub tenant



Easily connect to your trusted business partners in an AVEVA Data Hub community



Control over your shared data



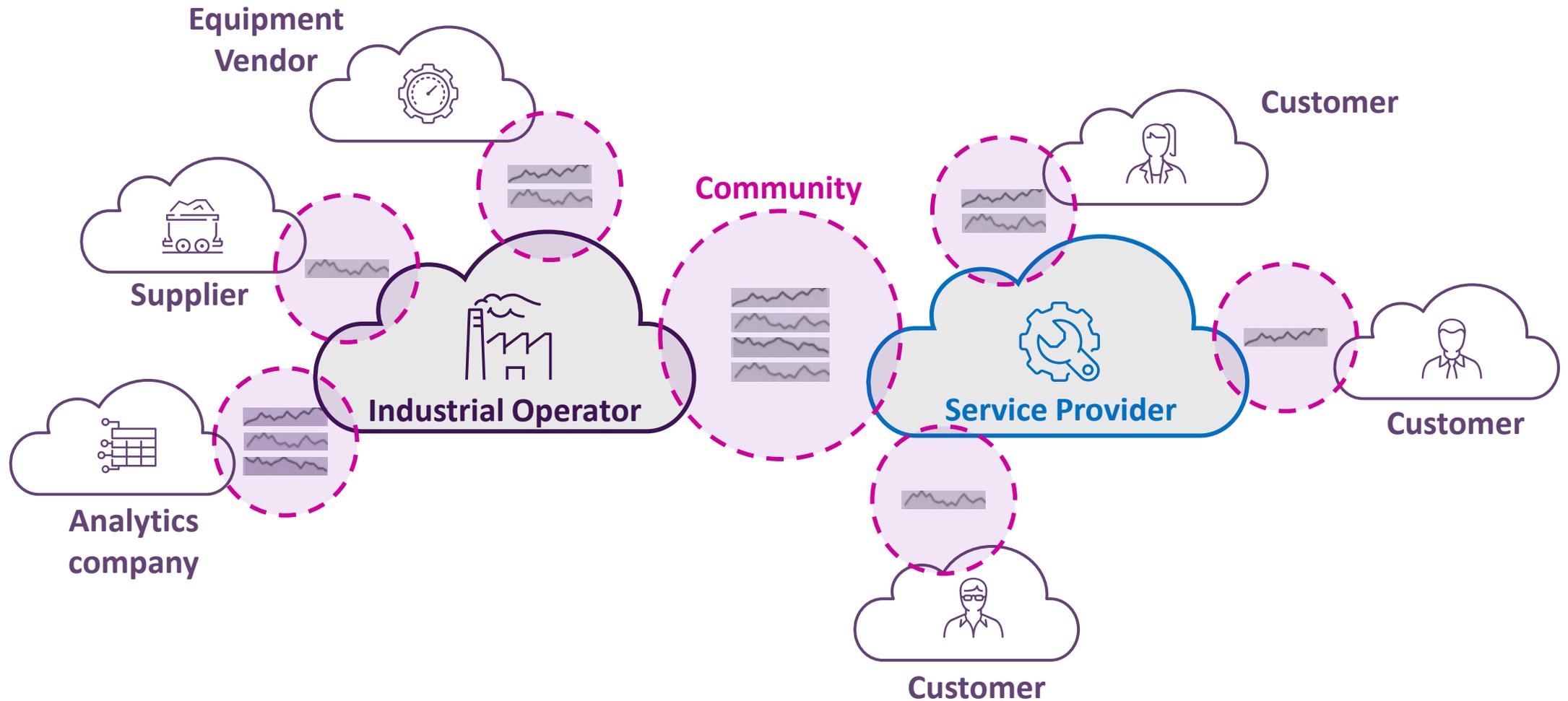
optional

Works great with an AVEVA PI Server (but not required)



Sharing that scales to many business partners

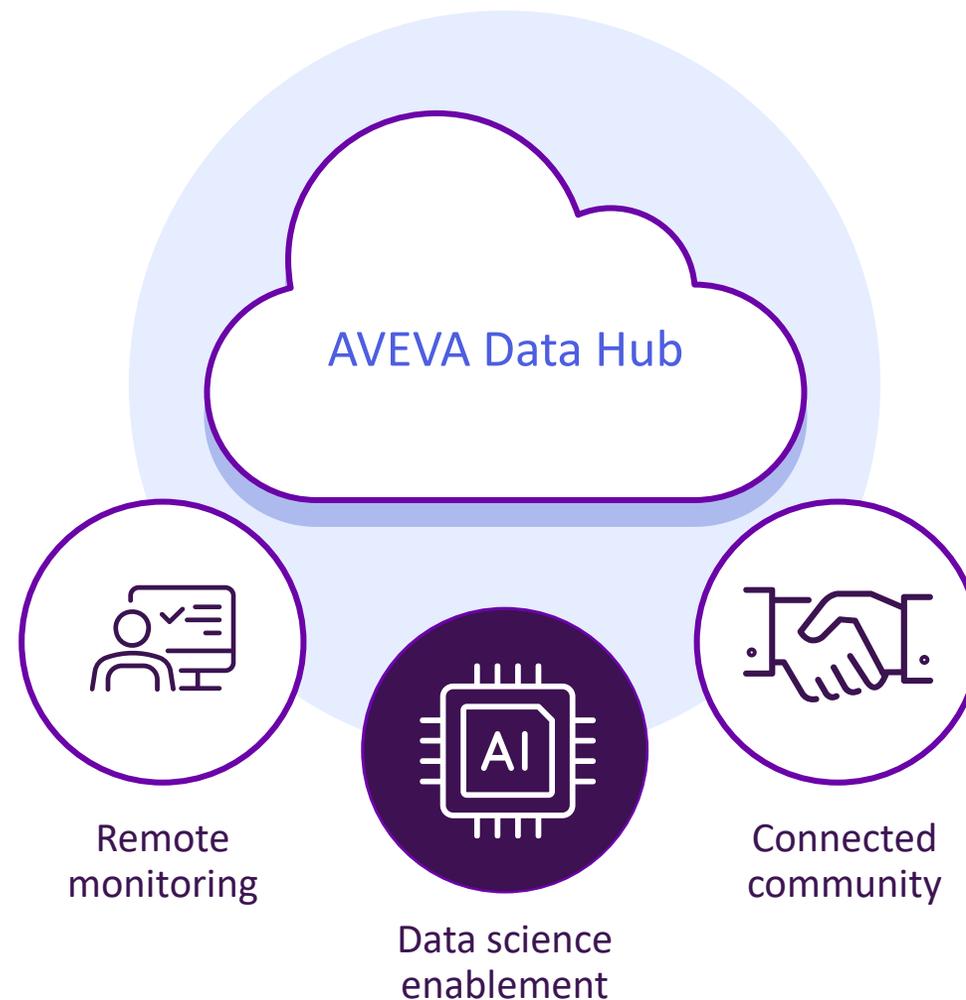
Easily scales to all your partners, even those without PI



Data Science Enablement

Faster data delivery to analysts and data scientists

- Aggregate contextualized and curated data from multiple plants and distributed assets or IIoT devices
- With **Data Views**, run inquiries against large data sets with no impact to operations
- Reduce the need for data wrangling so data scientists can spend their time developing insights
- Get insight for uses such as: predictive maintenance, process optimization, condition monitoring, and demand forecasting



Data Views curate operational data for external consumption



Data Views

Enabling data exploration, integration, & data science

DATA VIEW

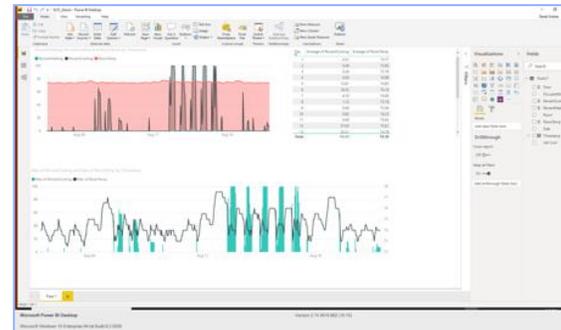
| Timestamp | Name | Wind Farm | Manufacturer | Active Power Value kW | Wind Speed |
|---------------------------|------|-----------------------|--------------|-----------------------|------------|
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| Oct 10, 2022, 1:00:00 AM | AE01 | Big Buffalo Wind Farm | Truvalle | 1101.3666 | 11.011856 |
| Oct 10, 2022, 2:00:00 AM | AE01 | Big Buffalo Wind Farm | Truvalle | 1344.1127 | 10.481206 |
| Oct 10, 2022, 3:00:00 AM | AE01 | Big Buffalo Wind Farm | Truvalle | 1083.0879 | 10.267265 |
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| Oct 10, 2022, 1:00:00 PM | AE01 | Big Buffalo Wind Farm | Truvalle | 1521.683 | 13.470598 |

Data Science Tools & Data Exploration

Data Science via Code

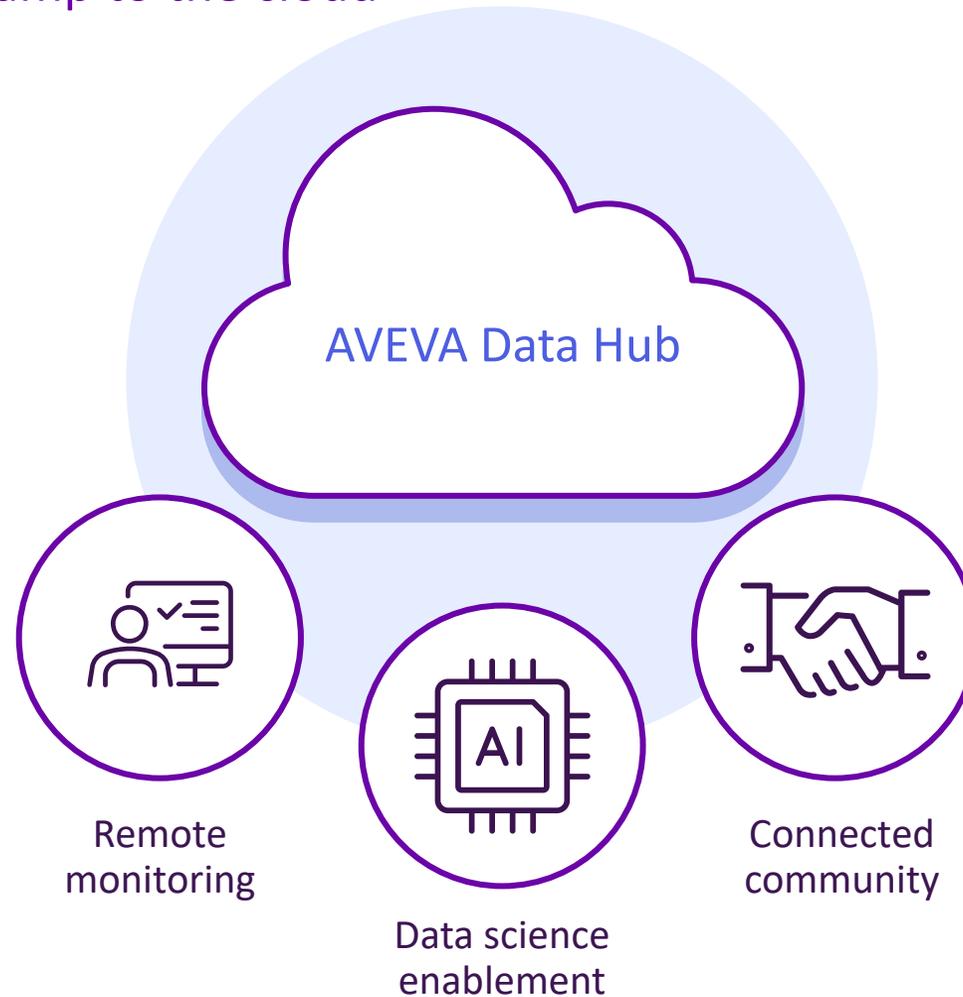
Partners & Apps

Cloud Platforms



Engage new personas, enable new use cases

With the fastest, easiest onramp to the cloud



Learn More about AVEVA Data Hub

Upcoming Talks in the Cloud Track

Day 3: Session 4

Harnessing the power of Sequential Data Store (Sds) and Assets for developers and partners

Developer Technologies

Day 3: Session 5

Aggregating data with Data Hub asset rules and data views for analytics and applications

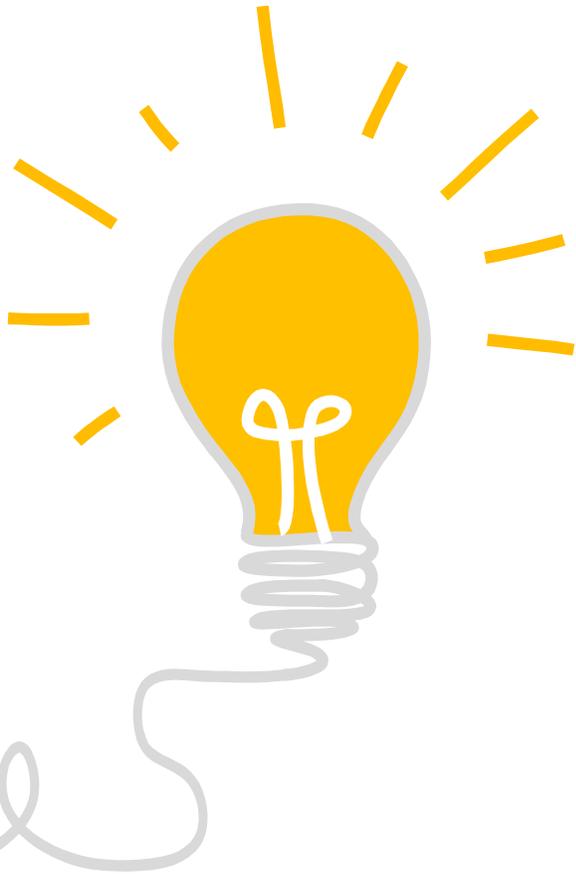
Data Science Enablement

Day 3: Session 6

Uniting the connected community through secure and transparent industrial data sharing

Data Sharing

How can you influence the AVEVA PI System and AVEVA Data Hub roadmaps?



<https://feedback.aveva.com>

Let us know your product feedback!



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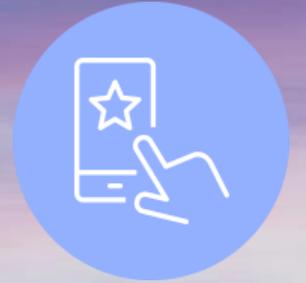
Questions?

Please wait for the microphone
State your name and company



Please remember to...

Navigate to this session in the mobile
app to complete the survey.



Thank you

AVEVA

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AVEVA is a global leader in industrial software, driving digital transformation and sustainability. By connecting the power of information and artificial intelligence with human insight, AVEVA enables teams to use their data to unlock new value. We call this Performance Intelligence. AVEVA's comprehensive portfolio enables more than 20,000 industrial enterprises to engineer smarter, operate better and drive sustainable efficiency. AVEVA supports customers through a trusted ecosystem that includes 5,500 partners and 5,700 certified developers around the world. The company is headquartered in Cambridge, UK, with over 6,500 employees and 90 offices in over 40 countries.

Learn more at www.aveva.com