

Value @ Scale

Data and AI in Manufacturing
Real-World Examples

TNChE

Thailand, 9 June 2026

The "Big Four" Killers

The shift from a controlled pilot (the "Lab") to a live factory (the "Wild") exposes structural flaws that aren't visible during a demo

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1

The Clean Data Illusion (The #1 Culprit)

Pilots typically run on "curated" datasets—pre-cleaned, static CSVs. Production requires live, messy data from fragmented legacy systems (ERP, CRM, SCADA). And this data needs to be contextualized.

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Use-Case "Vibe" Selection

Companies often choose "flashy" use cases for Board demos rather than "boring" high-volume field workflows (e.g., troubleshooting)

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The "Innovation Silo" (IT/OT/Business Gap)

...when it's time to move to production, the IT department rejects for security/scalabilityor the end-users reject the tool because it doesn't fit their actual daily workflows

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The "Verification Tax"

If the human time spent double-checking the AI exceeds the time the AI saves...

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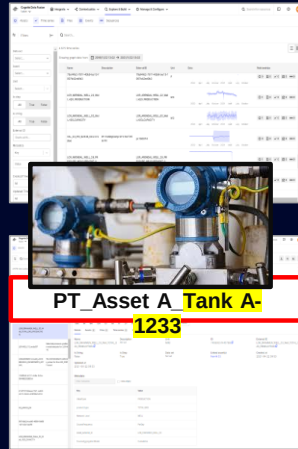


Industrial Data is Diverse, Complex, Inconsistent...

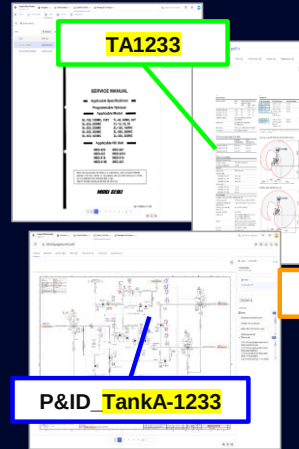
Assets



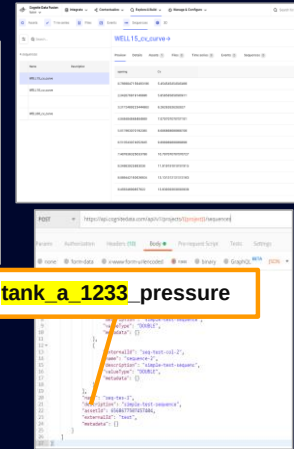
Time series



Files



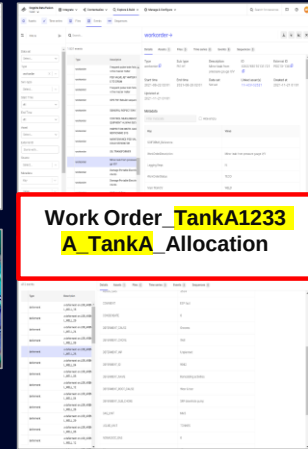
Multivariate Data



Visual data



Events



E.g. Equipment hierarchy from engineering tools or CMMS systems. Possibility to represent multiple hierarchies (e.g. asset, product).

E.g., real-time readings of temperature, pressure, speed, number of good parts produced, number of scraps and other KPIs.

E.g., 2D CAD and scanned drawings, service manual, engineering diagrams, such as P&IDs and isometric drawings, and Bill of Materials.

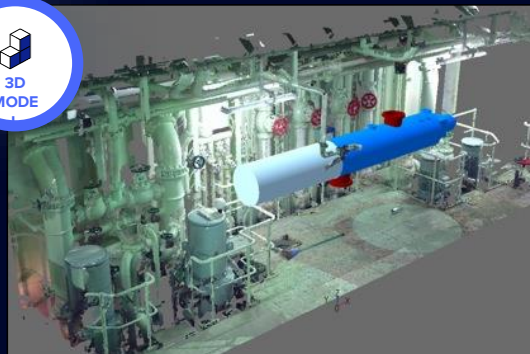
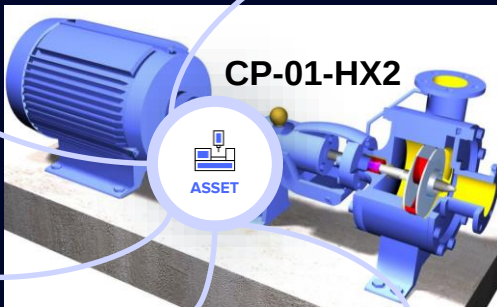
E.g., operating curves, tabular data, multivariate data and LIMS data.

E.g., 3D CAD model of entire plants or components, images of equipment, laser scans/point clouds and 360 images.

E.g., real-time system failures and alarms, identified abnormalities, work orders, conducted inspections and production orders.



Time Series



3D / 3D Point Cloud



Maintenance order : Central Header

CP WORK PSRPI ES

18000000000001 Test work order with the equipment 18043

CP WORK PSRPI ES

Operators / Components / Costs / Partner / Objects / Additional Data / Location / Planning

Person responsible: / 0001 Nazfini

Resultat: AAB-002 / 0001 Work center (KAT7) Costs: 000000

Vendor: PMACT type: 001 Inspection

Address:

Dates: 27.07.2027 Priority: 1 Very high

Rev: 28.07.2027 Revision: 00:00

Sched.Star: 00:00 Actual end: 00:00

Sched.Fin: 00:00

Sched.Type: Forward

RefDate: 27.07.2027

Ref. view: Predecessor Start in past: 0

Version: Adjust dates: 0

Cal. Selection: From Work Factory Cal. ID:

Reference object:

Plant, Loc: 10042702 equipment 27407-2046 test

Assembly:

First operation:

Operation: Test work order with the equipment 18043

Activity: AAB-002 / 0001 Ctrl key: PRO1 Acty Type: 00

Work alarm: 0

Person. no: 0

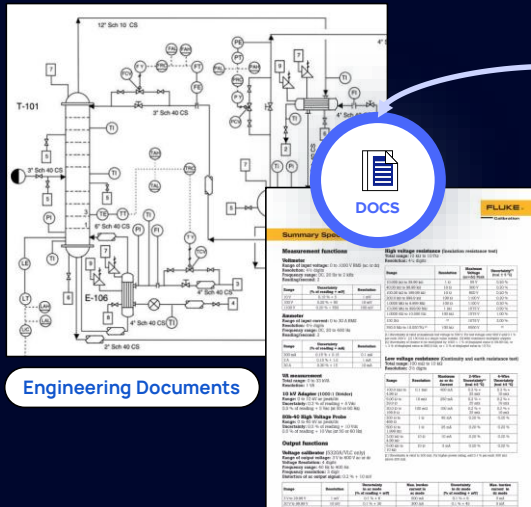
Getty dur: 0

0

Maint. Work Order



Photo / IP Camera

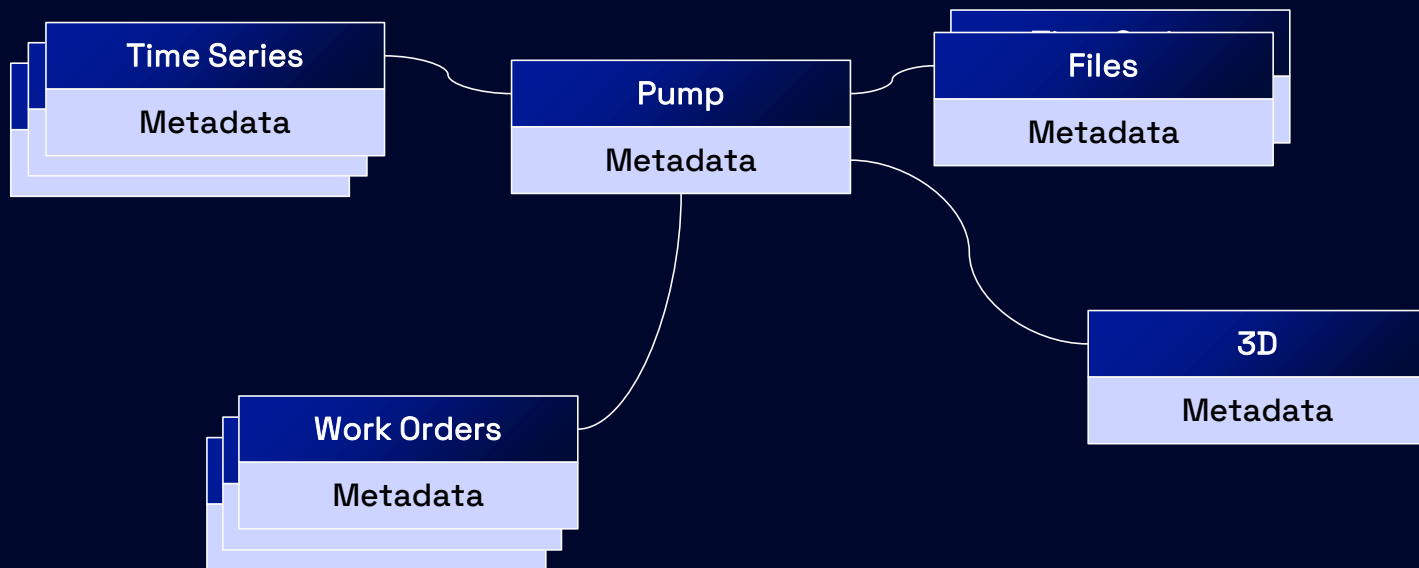


Engineering Documents



The Knowledge Graph – Building Semantic Relationships

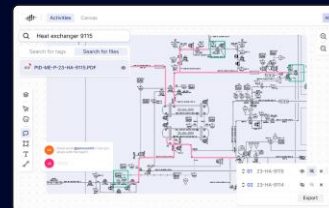
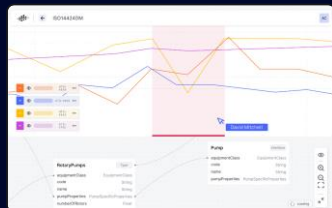
Persisting relationships across operational data





The Knowledge Graph – Enriching With Operational Context

Persisting semantic relationships of the underlying content, beyond the metadata



Motor specifications			
Parameter	Value	Unit	Comments
Power	1000	kW	
Speed	1500	rpm	
Efficiency	95.5	%	
Power factor	0.95		
Service factor	1.15		
Insulation class	F		
Protection	IP55		
Mounting	IMB3		
Terminal box	Terminal box		
Weight	1000	kg	

High voltage motor specifications			
Parameter	Value	Unit	Comments
Voltage	10 kV	V	
Current	100	A	
Power	1000	kW	
Speed	1500	rpm	
Efficiency	95.5	%	
Power factor	0.95		
Service factor	1.15		
Insulation class	F		
Protection	IP55		
Mounting	IMB3		
Terminal box	Terminal box		
Weight	1000	kg	

Time Series

Metadata

Pump

Metadata

Files

Metadata

3D

Metadata

Work Orders

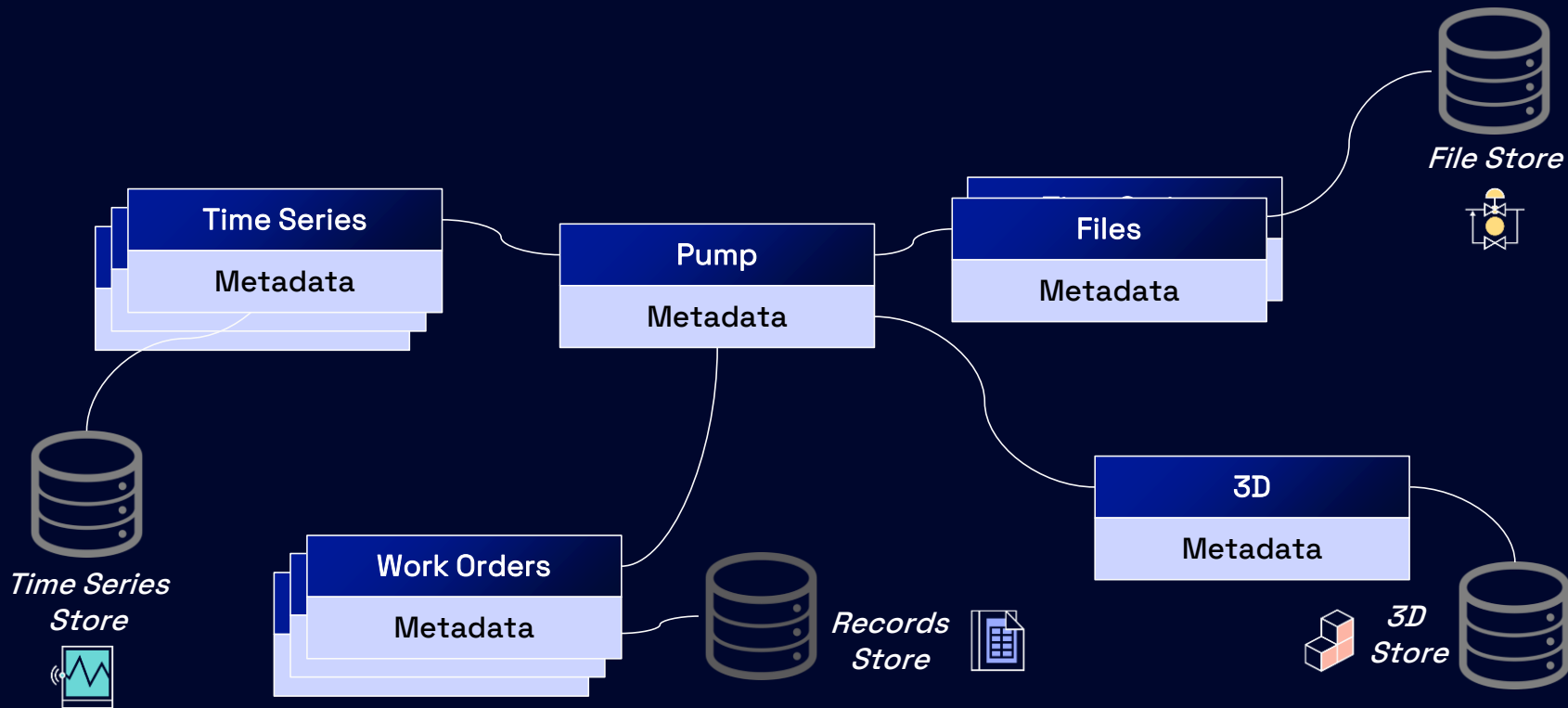
Metadata





The Knowledge Graph – Persisting Relationships Across Optimized Data Stores

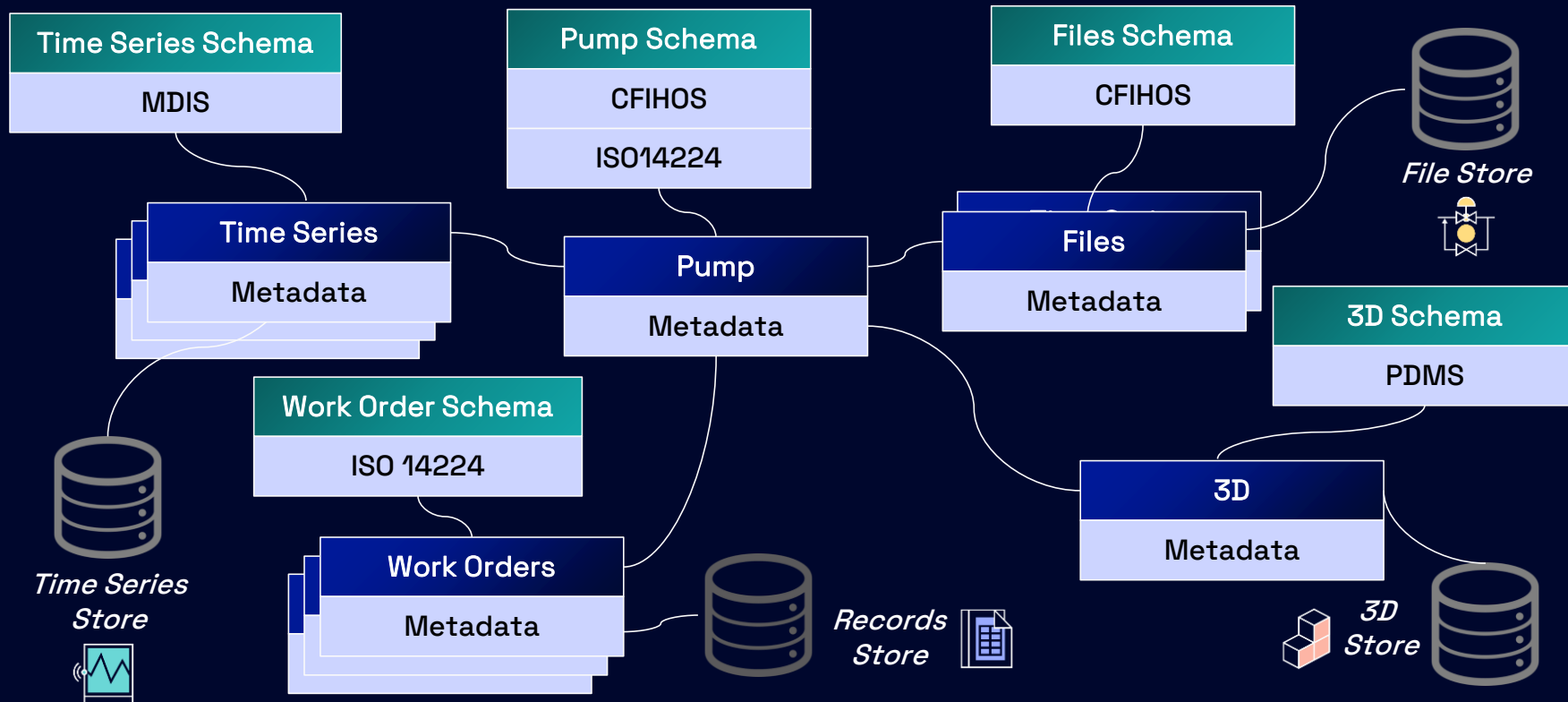
Optimized storage enabling low-latency, interactive-level user performance





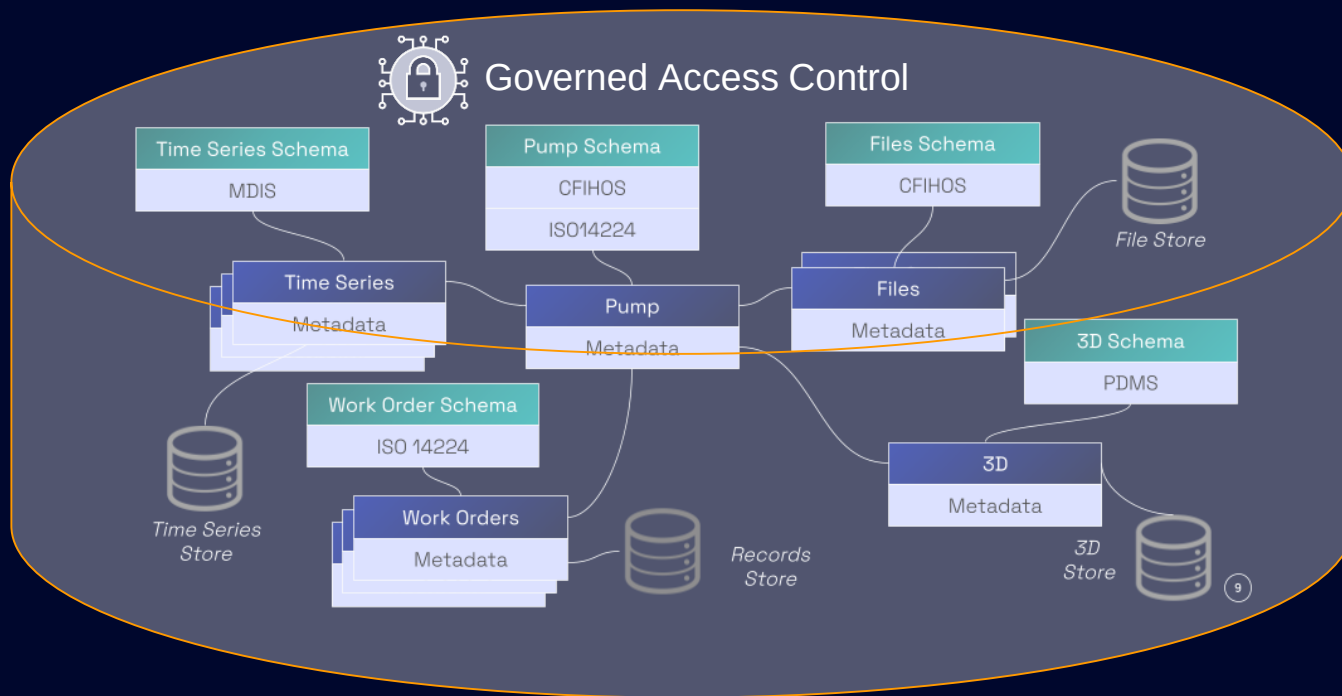
The Knowledge Graph – Standardizing with Industrial Data Models

Supporting multiple data models on one shared knowledge graph



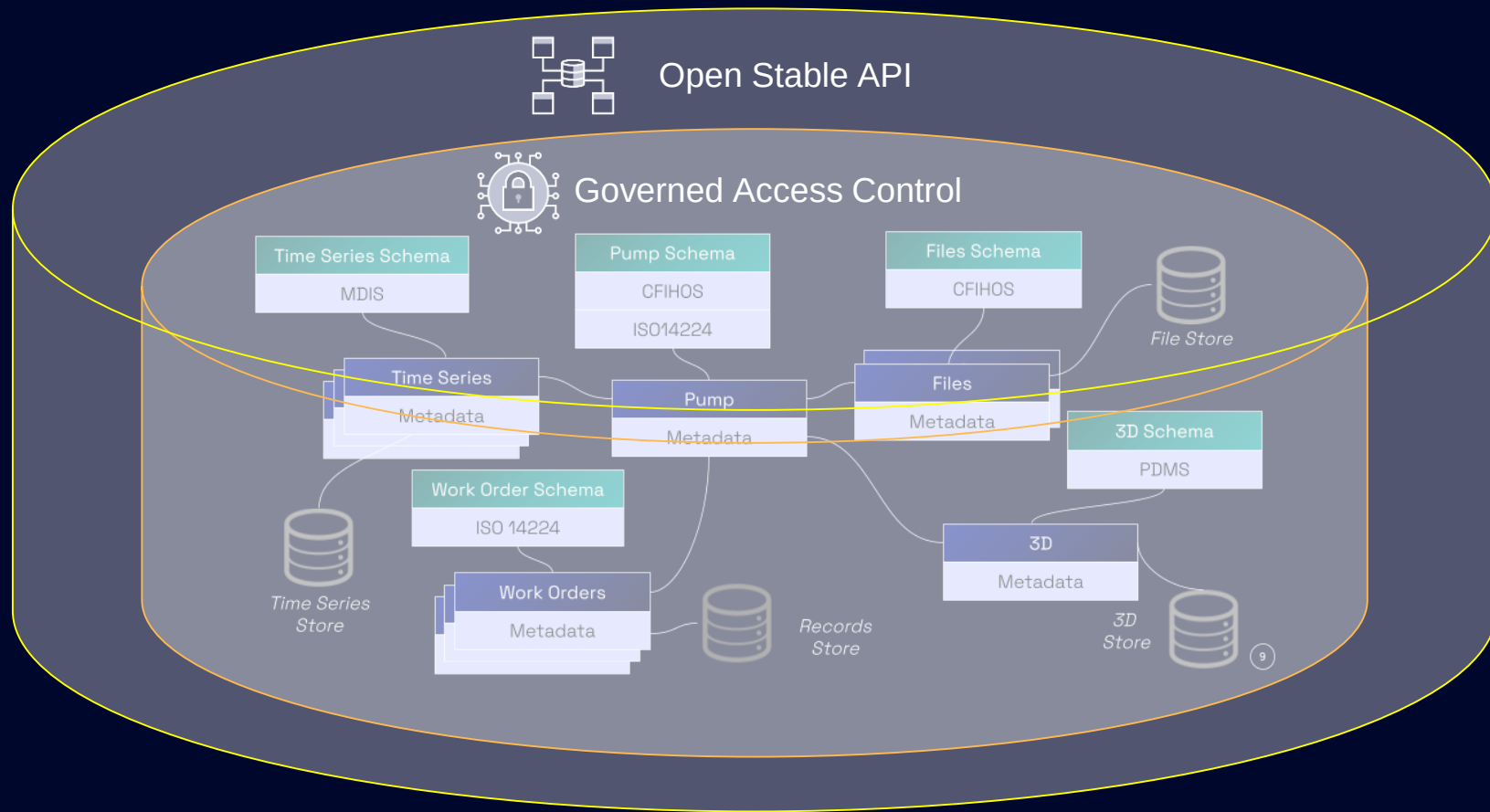


The Knowledge Graph – Secure





The Cognite Data Fusion Knowledge Graph





Value Scaling in Action: Proven Outcomes from Enterprise Deployment



50x40 in 18 months

\$38.9M in 2024

- \$10.8M cost avoidance
- \$5.3M cost reduction
- \$22.8M revenue generation

3 months	1 unit 3 use cases
8 months	8 units 6 use cases
12 months	30 sites 10 use cases
18 months	50 sites 40 use cases



70 plants in 26 months

\$31.5M annual savings from workforce efficiency

- Cognite Data Fusion deployed as the new integrated data platform across the enterprise
- Additional cost savings and increased equipment uptime through data-driven maintenance strategies



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INDUSTRIAL REALITY

Finding, accessing and understanding industrial data is time consuming... if not impossible



POSSIBILITY

Everyone in the organization have meaningful IT, OT, ET and visual data available at their fingertips



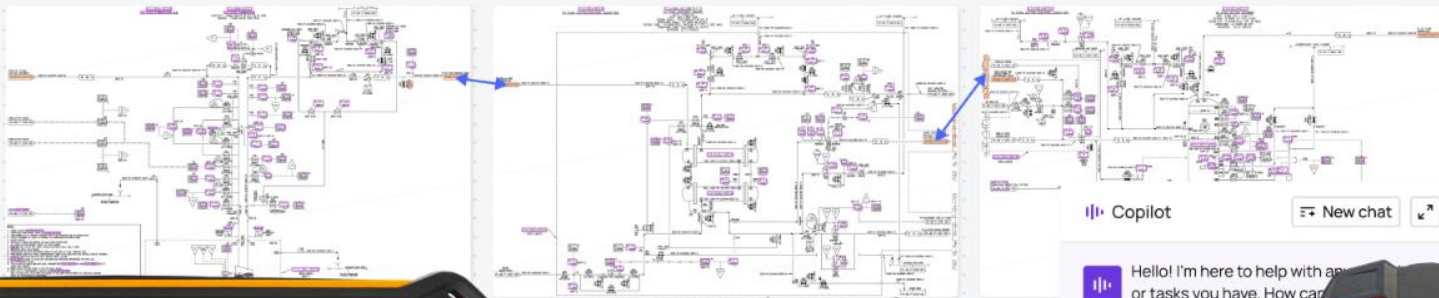
Heat exchanger investigation

AC

Data Model



Search



Copilot

New chat



Hello! I'm here to help with any questions or tasks you have. How can I assist you today?

AC

What is the highest temperature for 22PT1019?



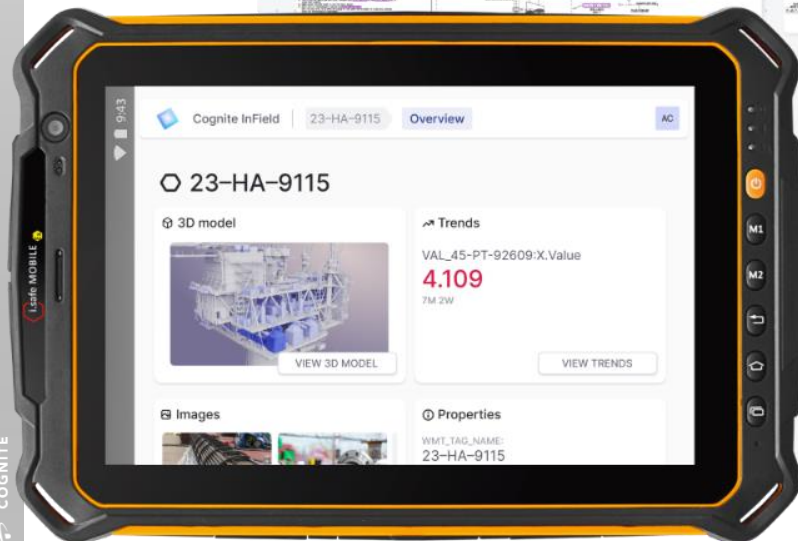
The highest temperature is 18°C

AC

That sounds promising! I'm interested in...

Ask Copilot anything...

18.00 °C



Cooling medium



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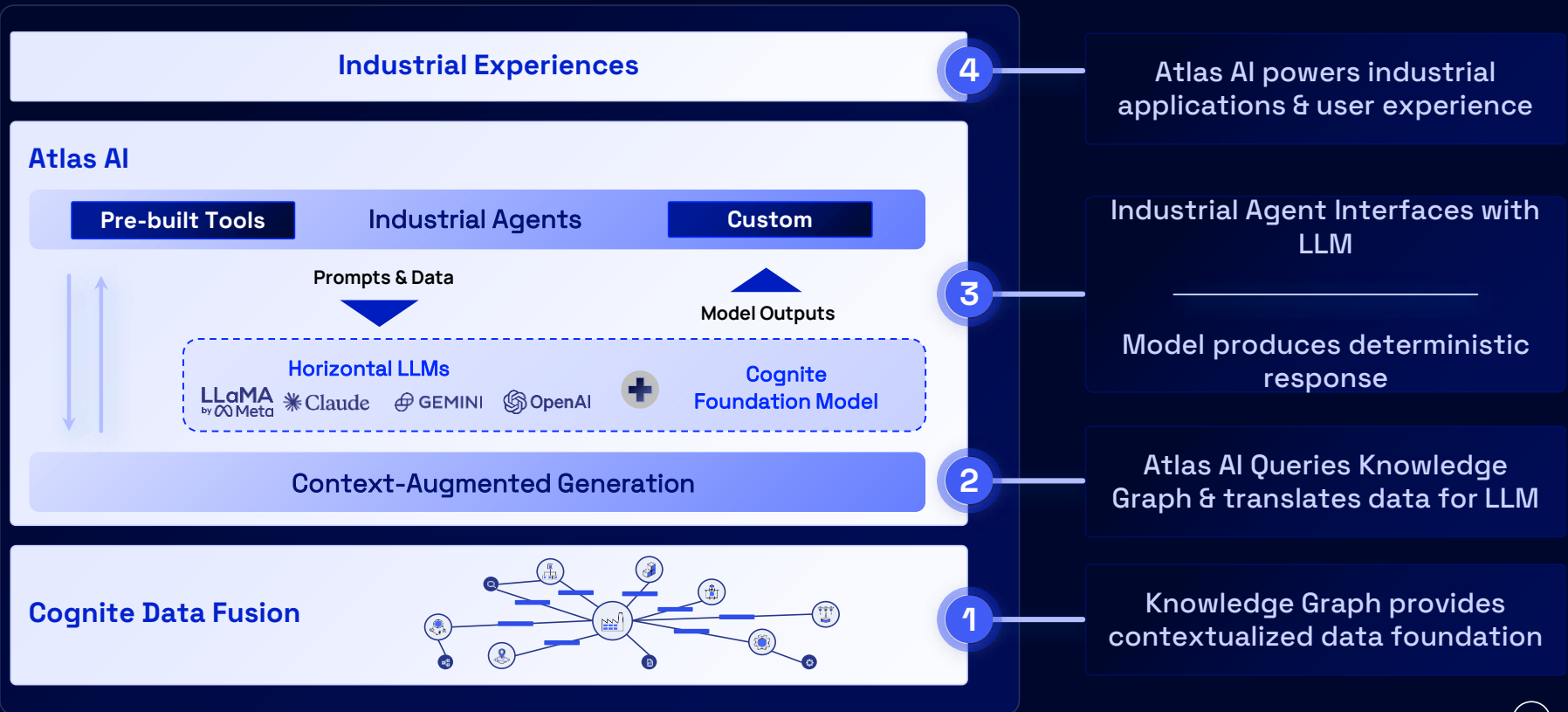
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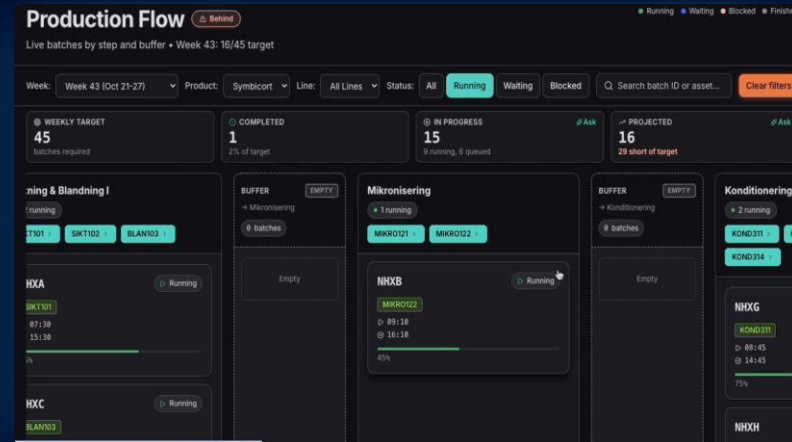
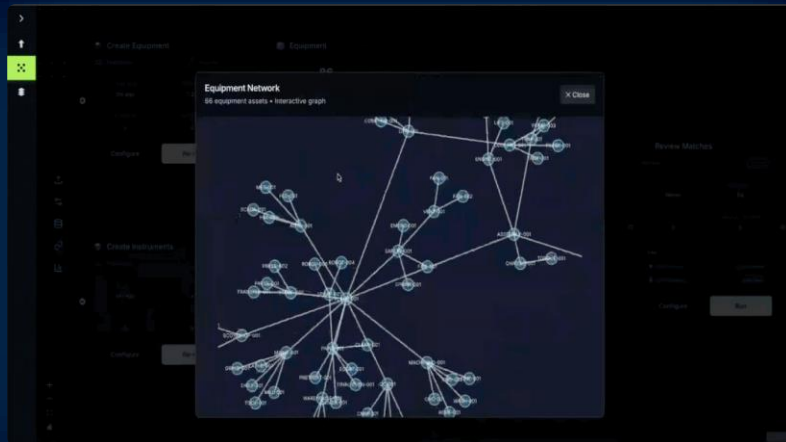


AI-Powered Industrial Applications





Create Custom Industrial Experiences - Fast, Secure and at Scale



A Fully Integrated Experience for Industrial Workflows



Time to value. Delivered in days, not months, powered by AI



Enterprise-grade by default. Security, governance, and compliance built in



Solve the long tail of industrial use cases previously inaccessible

The Emerging Divide

Data & AI-Ready Organizations

- Connected operational data
- Agents embedded in workflows
- Faster, data-driven decisions
- Higher uptime and efficiency



Data & AI-Constrained Organizations

- Fragmented, disconnected systems
- Limited ability to deploy AI
- Slow, reactive decision-making
- Missed operational value

**The biggest risk is not that AI fails.
It's that it works... Just not inside your organization.**

Cognite Recognized as a Leader in Industrial Data Management / DataOps

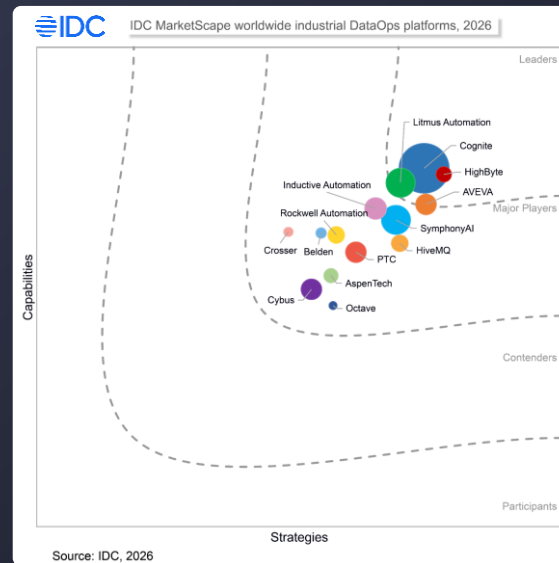


Verdantix positions Cognite as a **Leader**
in Industrial Data Management Solutions



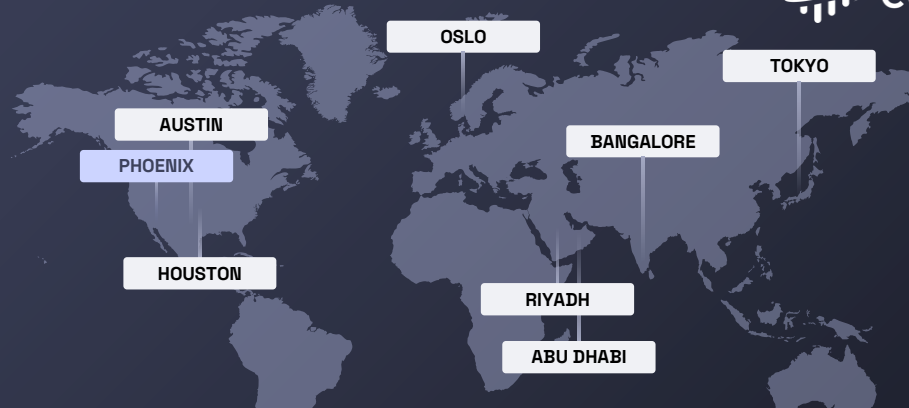
2025

IDC positions Cognite as a **Leader**
in Industrial DataOps Platforms



2026

The Only Industrial AI and Data Platform Built to Scale



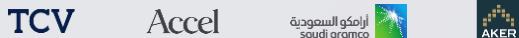
800+ employees

200+ customers

Marquee go-to-market and technology partnerships



Backed by investors with deep industrial knowledge and experience in building software category defining businesses:



Marquee Customers Across Industry Verticals

Energy



Life Sciences



Chemicals



Manufacturing



Power & Renewables



Thank You