



AVEVAWORLD

ACCELERATE INDUSTRIAL INTELLIGENCE

From Industrial Analytics to self-service AI with the TrendMiner Agent

How ENGIE is scaling operational intelligence across 4,000 PI System users

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Frédéric MOTTE, TrendMiner

Agenda

- 01** **ENGIE Presentation**
- 02** **PI Robin Presentation**
- 03** **TrendMiner at Engie**
- 04** **TrendMiner Agent**



ENGIE TODAY



Renewable energy production
and flexibility

103 GW

of installed electricity production
and storage capacity.

**Including
57 GW**

of renewable and
storage capacity.



Infrastructure

372

heating and cooling
networks.

307,600 km

of gas and electricity transport
and distribution networks.



Energy supply
to customers

500 TWh

of energy sold
to our B2B and B2C
customers.

20 M

B2B and B2C
energy supply contracts.

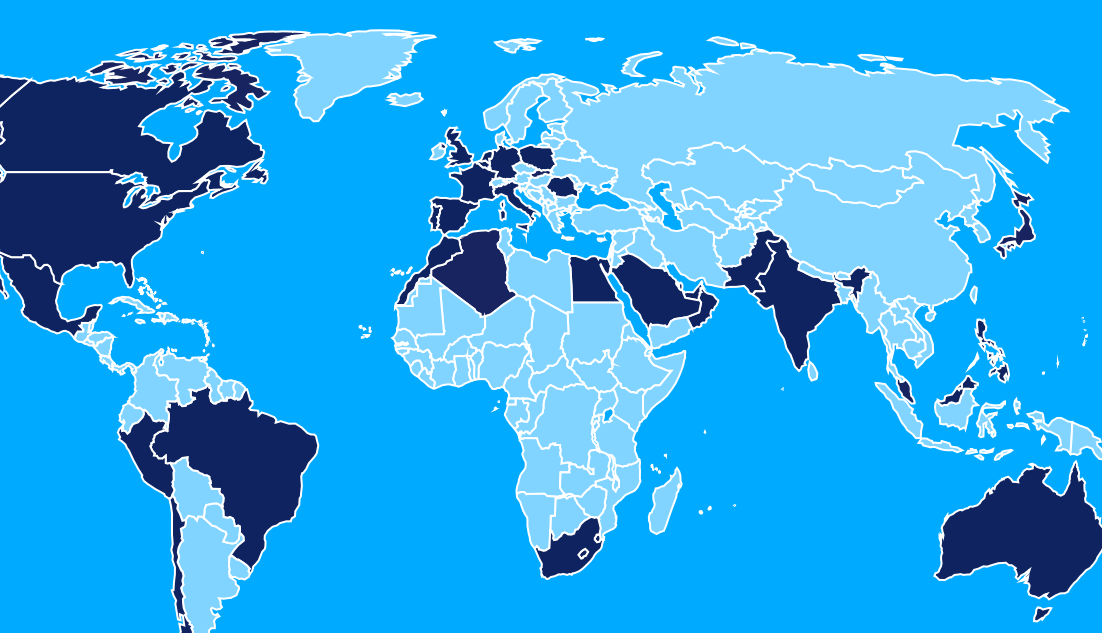
30 countries

€72bn
revenue in 2025

€12bn
average investment/yearly



PRESENT ON 5 CONTINENTS

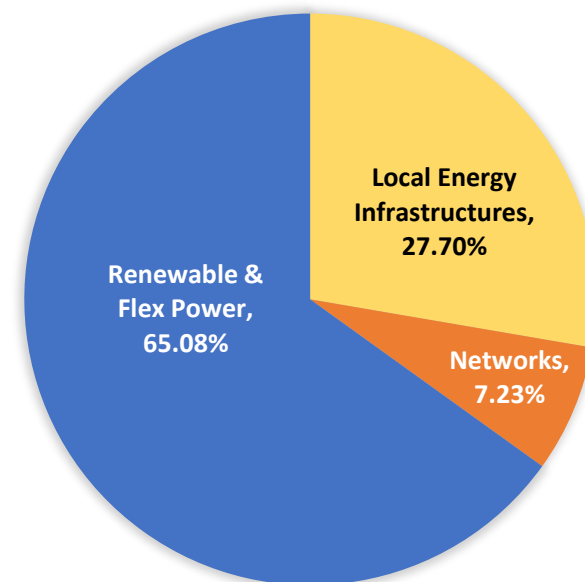
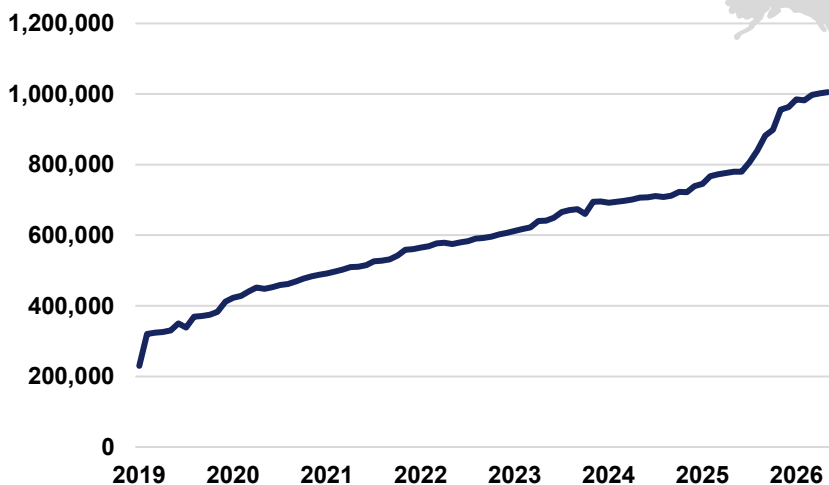


A world map with a blue background. Countries are colored in three shades: dark blue, medium blue, and light blue. Dark blue countries include Canada, the United States, Mexico, Brazil, Argentina, Chile, Australia, India, Pakistan, Saudi Arabia, and several countries in Europe and Africa. Medium blue countries include the United Kingdom, France, Germany, Italy, Spain, Portugal, Greece, Turkey, Egypt, Israel, Jordan, Iraq, Iran, Afghanistan, China, Japan, South Korea, North Korea, and several countries in Africa and South America. Light blue countries include Russia, Canada, the United States, Mexico, Brazil, Argentina, Chile, Australia, India, Pakistan, Saudi Arabia, and several countries in Europe and Africa.

■ : ENGIE presence as of 31 December 2025.

ROBIN today

PI-Robin tag count



1.005.107 tags

4.691 users

508 interfaces

18 Tb stored

>4500 users? Who are they?



Profiles	Usage
• Operators in control room • Process, performance and reliability engineers • Technical specialists at plant or regional levels	Generic • Mimic DCS screens in PI Vision (read-only) • Extend monitoring dashboards • Analyse ad-hoc events (start-ups, failures, excursions) with possible AF Event frames • Correlate process variables
• OT analytics specialist • Advanced process analysts	Specific • PI AF analytics • Python scripts or internal advanced prediction tool

Process

Process follow-up Basic trending



How can we provide access to advanced analytics tools for non-data scientists?



- ✓ Must be fast
- ✓ Must be easy to use (limited learning curve).
 - ✓ Must be based on PI
 - ✓ Must have enough analysis function for every day use
- ✓ Compatible with our on-premises / self-hosted infrastructures

Expert tools, special knowledge/efforts required



The journey with TrendMiner

01

Identification of key success factors:

- Main users per power plant
- KPIs to track
- Dashboards

02

Creation of dashboards and calculation of KPIs

- Follow-up of process parameters
- Counting of operating hours, starts-stops
- Extensibility of core features through Custom Calculations

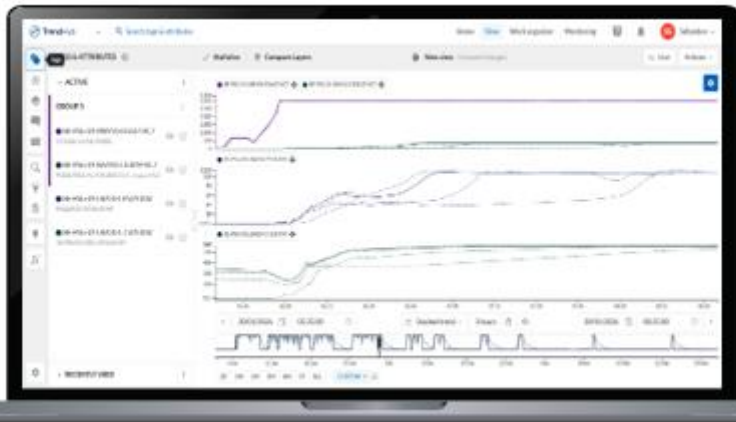
03

Hiring of two interns to make the dashboards and share custom calculations templates on our internal git

Situation today

- ✓ Core group of pre-identified 40 users have been onboarded and are active.
- ✓ Currently onboarding of non-European ENGIE plants.
- ✓ Currently onboarding of hydro plants.

Examples of key trends and dashboards





Tags & ATTRIBUTES ?

Statistics

Compare Layers

New view - Unsaved changes

Live

Actions ▾



ACTIVE



GROUP 3



BE-PSG-01-MBY50-EU637-XC7
VITESSE LIGNE ARBRE

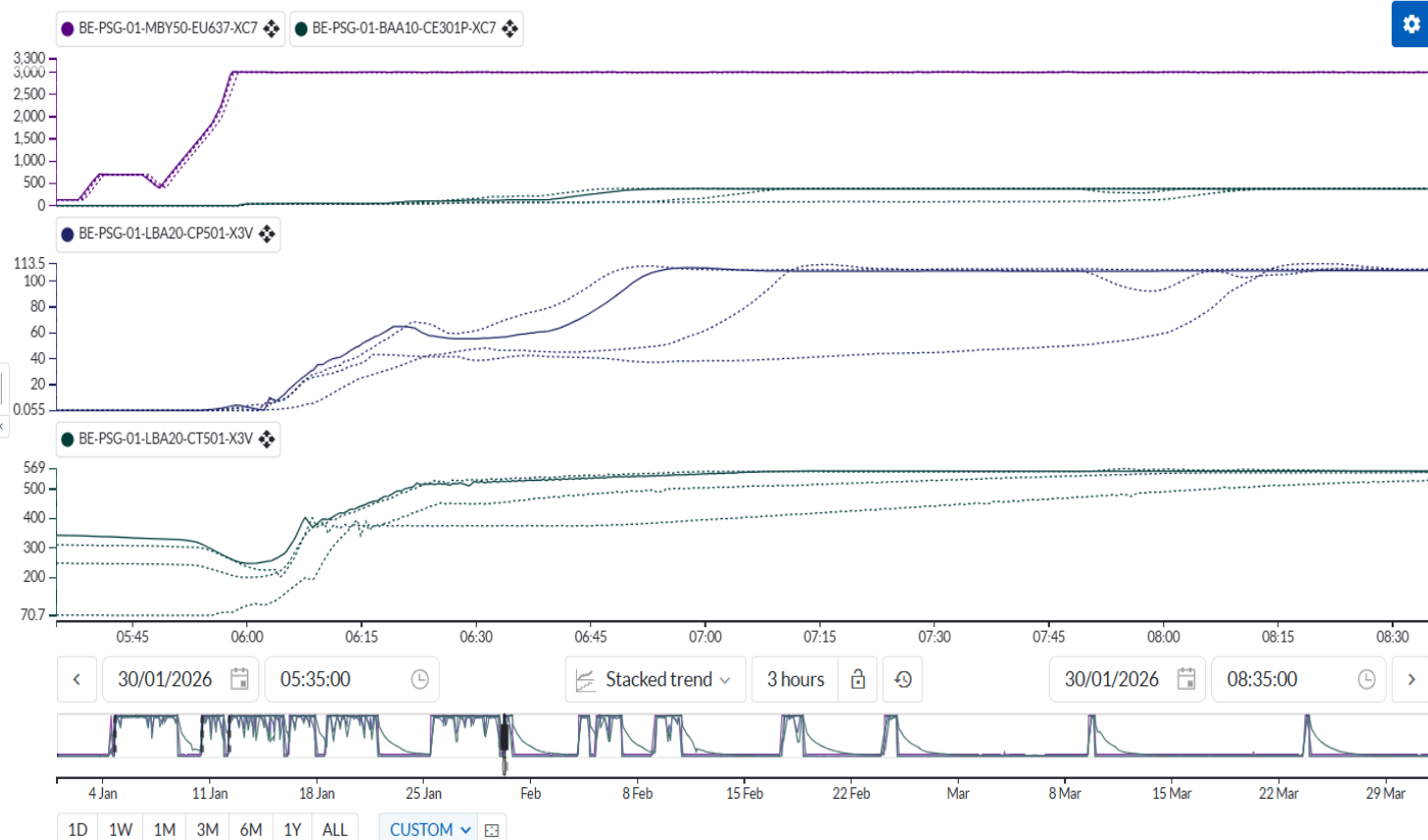
BE-PSG-01-BAA10-CE301P-XC7
PUISSANCE ACTIVE BRUTE (I... Input TAG)

BE-PSG-01-LBA20-CP501-X3V
PRESSION VAPEUR HP

BE-PSG-01-LBA20-CT501-X3V
TEMPERATURE VAPEUR HP



> RECENTLY USED



DEFAULT 1H 2H 8H 1D 7D 30D TODAY YESTERDAY CUSTOM PREVIOUS/CURRENT SHIFT

PHE11

Uit bedrijf

PHE12

Uit bedrijf

PHE11 HP bypass

100.4 °C

Stoomtemperatuur voor

HP ballon

-463.5 mm

HP ballon

-290.5 mm

0.412 Bar

Stoomdruk voor

HP ballon

0.127 Bar

HP ballon

-0.012 Bar

0 T/H

Waterinjectie

Stoom uitgang ketel

10.6 T/H

0.832 Bar

87 °C

Stoom uitgang ketel

0.835 Bar

0.961 T/H

70.7 °C

0.65 %

Bypass klep positie

verschil temperatuur HP drum

0.615

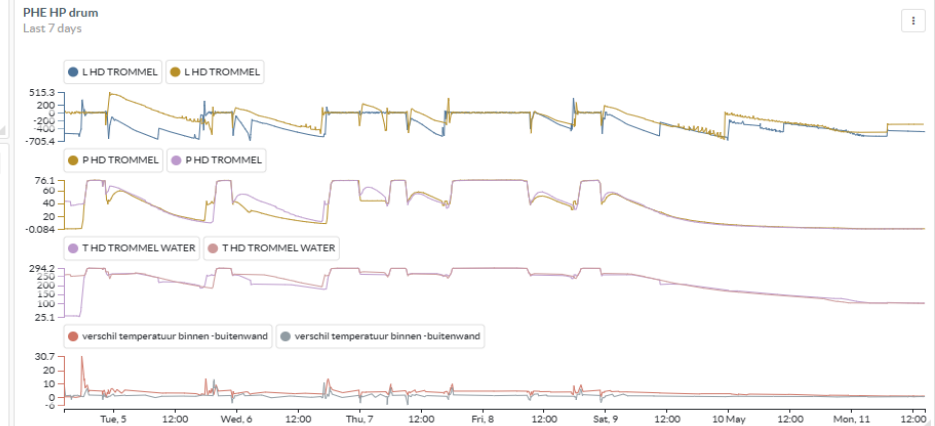
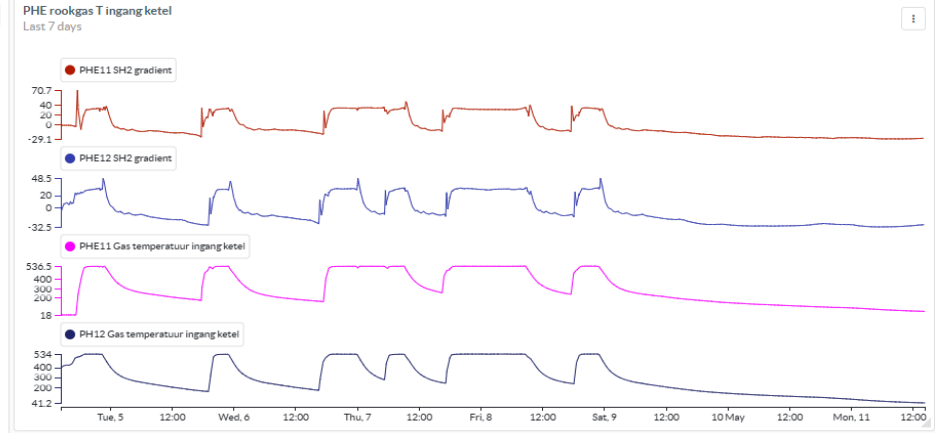
PHE12 HP drum T grad

0.188

PHE12 HP bypass

122.7 °C

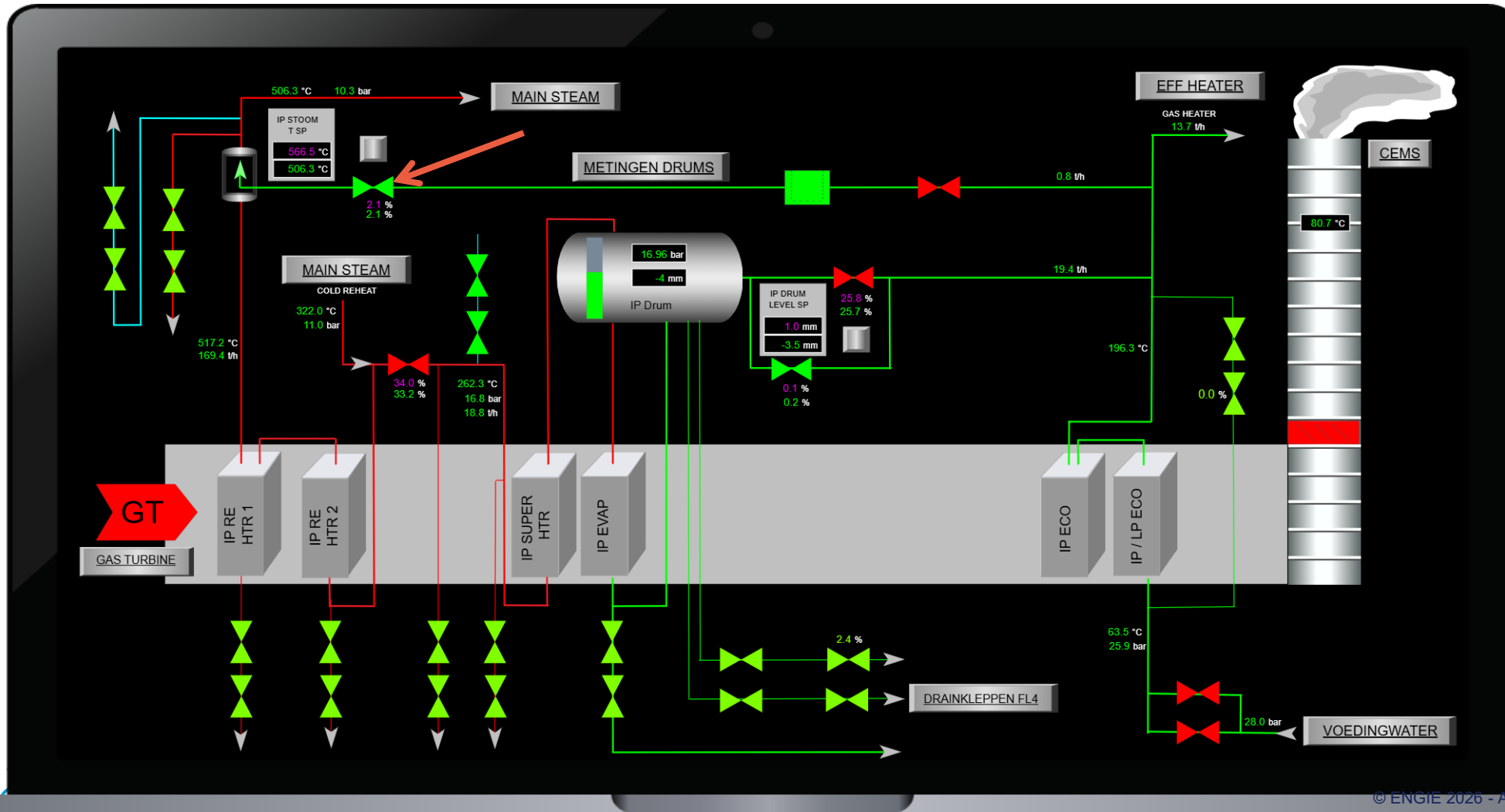
Stoomtemperatuur voor



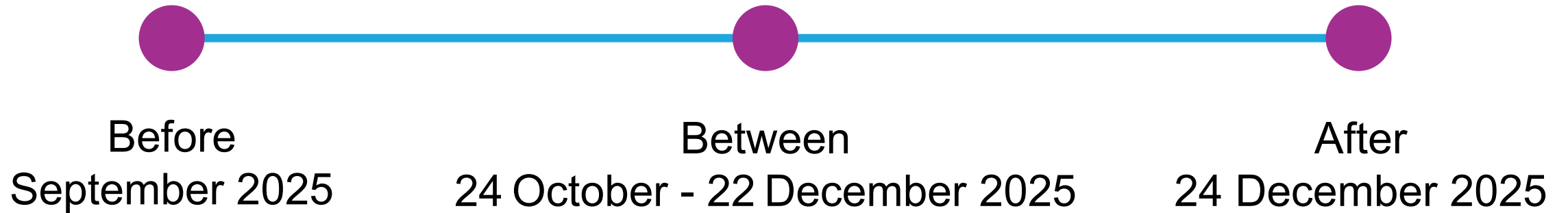


Example of how TrendMiner eases the analysis

Suspicion of a valve leak in a power plant



Important dates



For the analysis, we're going to make layers to easily compare the three periods.
To select relevant data, we also make a filter on the operating conditions

TrendHub

TagsAssets

Search

HomeViewWork organizerMonitoring?SG Sébastien

Tags & Attributes

ACTIVE

AFAtlas

RECENTLY USED

Aveva presentation · Unsaved changes

LiveActions

This view looks empty ...

Start adding tags & attributes by clicking "Search tags & attributes" in the top bar.

OR

Open an existing view

Work organizer

VALUE BASED SEARCH

Select a tag or attribute

Condition

Value

+ Add condition

MINIMUM DURATION

2m

SEARCH PERIOD

This reflects the time range specified in the chart's context period.

< 05/02/2025 16:42:36

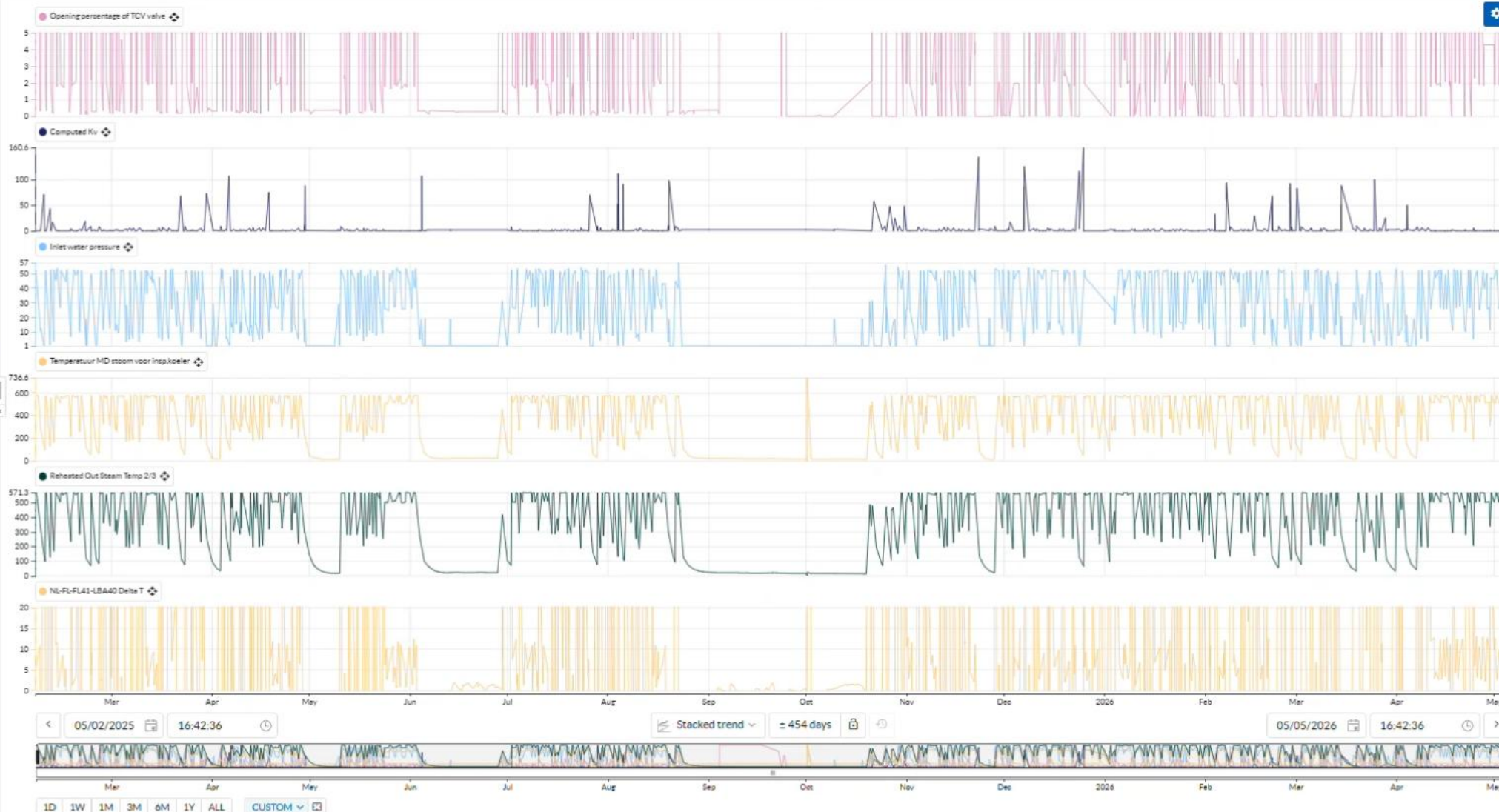
> 05/05/2026 16:42:36

Search

Statistics Compare Layers

Global trend - Unsaved changes

Live Actions

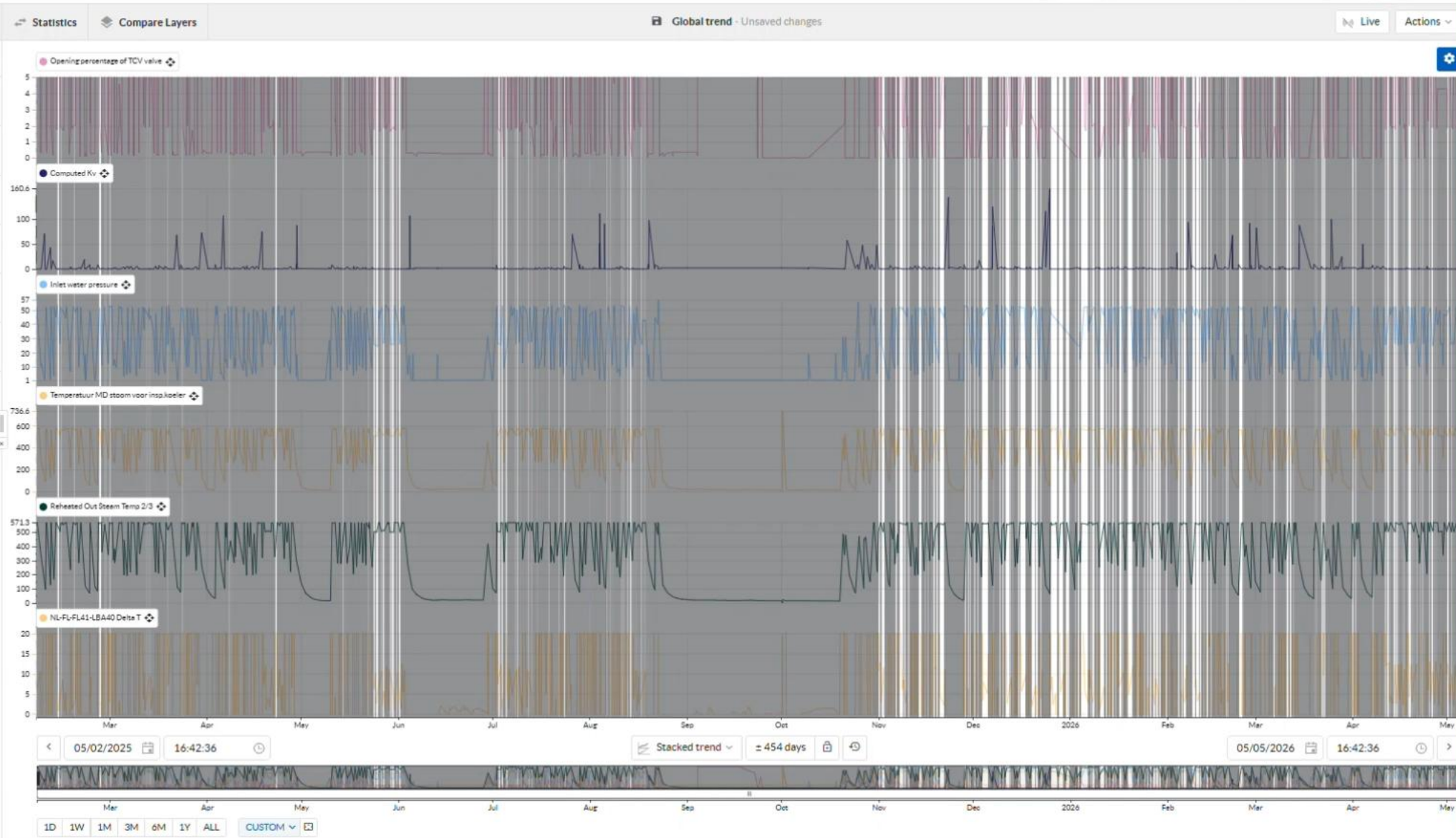


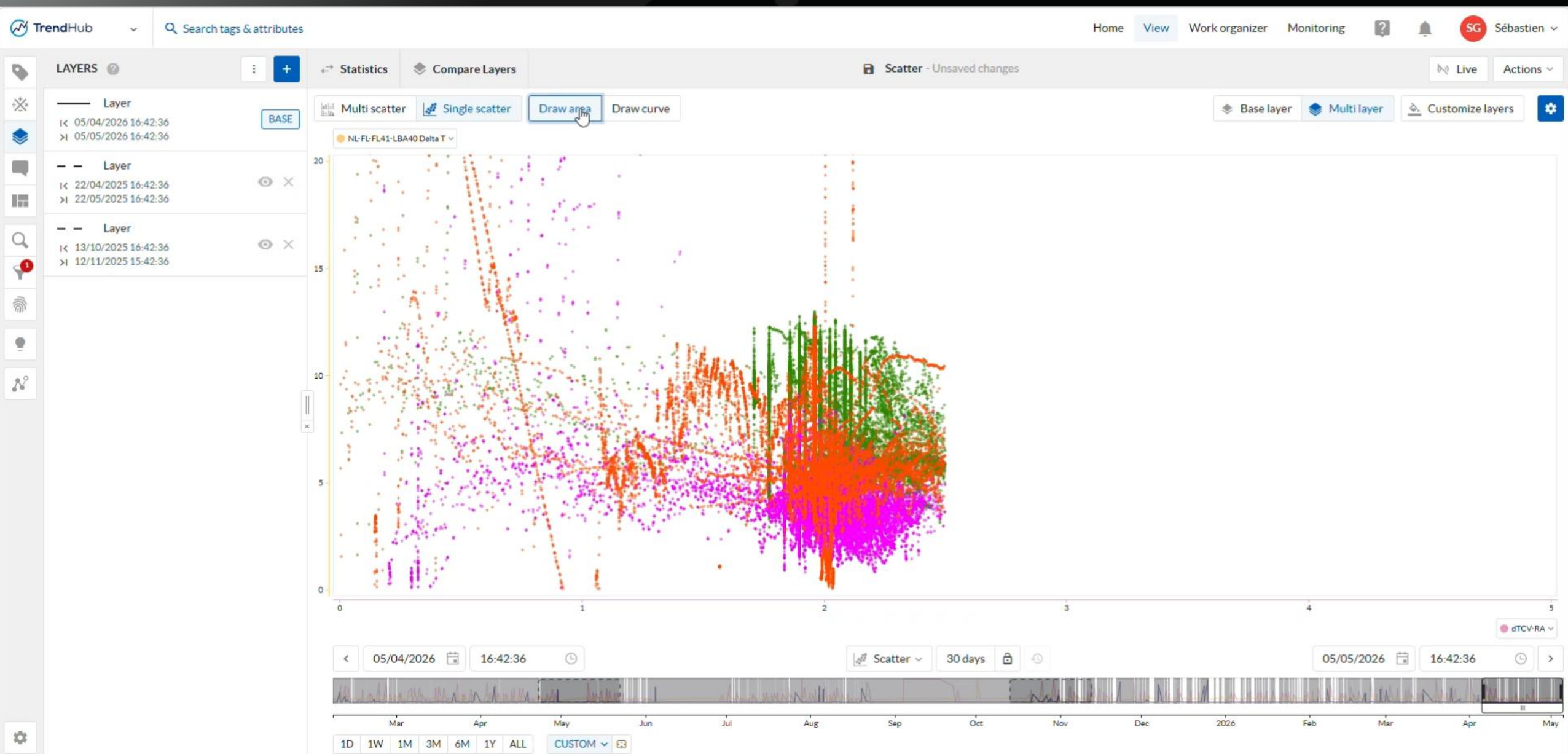
TAGS & ATTRIBUTES

ACTIVE

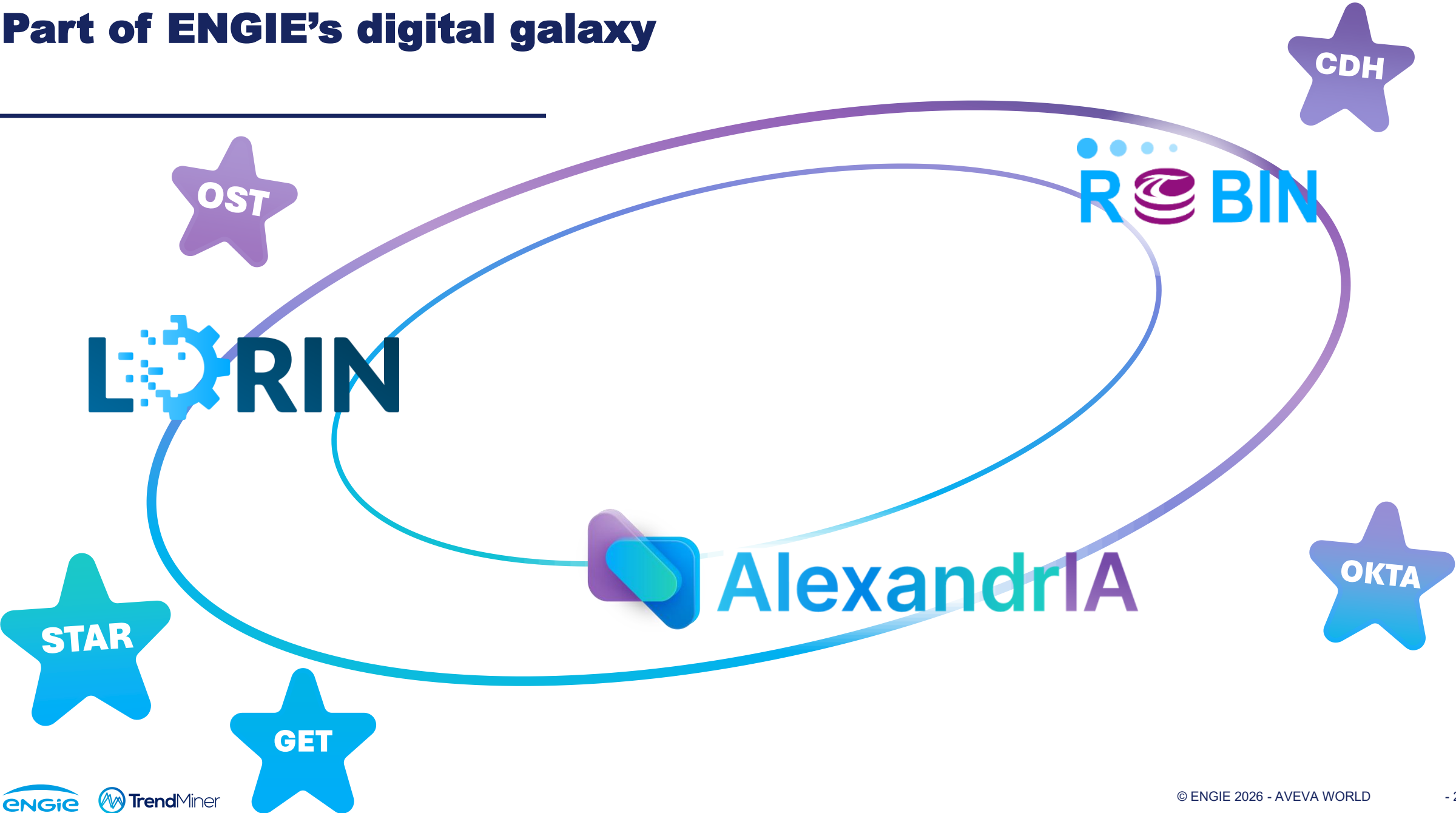
- dTCV-RA
Opening percentage of TCV valve
- KvCalc-RA
Computed Kv
- Pin-W-RA
Inlet water pressure
- NL-FL-FL41-LBA40CT001_XQ50
Temperatuur MD stoom voor insp.koeler
- NL-FL-FL41-LBA40CT904_XJ60
Reheated Out Steam Temp 2/3
- NL-FL-FL41-LBA40 Delta T

RECENTLY USED





Part of ENGIE's digital galaxy



Q Enter whole word or beginning of a word

Search

Shared query:

01/05/2025 - 03/02/2026

Filters

> Location

All locations

Drag a column header and drop it here to group by that column

Reset filters

Reset columns

Change columns

Details	Tags	Shift	Week of last update	Location	Title	Date
>      		1	2026-06	Chilca 1 > TV31	GR 6 ALARMA : Water Detected Steam Seal Header Alarm [L30WDSSH_ALM]	02/02/21
>      		1	2026-06	Chilca 1 > TV31	GR 5 ALARMA : Water Detected Steam Seal Header Alarm [L30WDSSH_ALM]	02/02/21
>      		1	2026-06	Chilca 1 > TV31	GR 4 ALARMA : Water Detected Steam Seal Header Alarm [L30WDSSH_ALM]	02/02/21
>      		1	2026-06	Chilca 1 > TV31	GR 3 ALARMA : Water Detected Steam Seal Header Alarm [L30WDSSH_ALM]	02/02/21
>      		1	2026-06	Chilca 1 > TV31	GR 2 ALARMA : Water Detected Steam Seal Header Alarm [L30WDSSH_ALM]	02/02/21
>      		1	2026-06	Chilca 1 > TV31	GR 1 ALARMA : Water Detected Steam Seal Header Alarm [L30WDSSH_ALM]	02/02/21
>      		2	2026-06	Chilca 1 > TV31	GR 0 - ALARMA : Water Detected Steam Seal Header Alarm [L30WDSSH_ALM]	02/02/21
>      		2	2026-06	Chilca 2	Orden de Arranque TV-42	02/02/21
>      		2	2026-04	Chilca 2	Purga de Tanques	20/01/21
>      		2	2026-04	Chilca 1 > TV31	BITACORA TURNO_TV31_19-01-2026	20/01/21
>      		2	2026-04	Chilca 1	Trasvase de agua a WWP CH1	19/01/21
>      		2	2026-04	Chilca 1	Parada de TG41 por despacho	19/01/21
>      		2	2026-04	Chilca 2	Lectura de Parámetros.	19/01/21
>      		2	2026-04	Chilca 2	Inspección de Equipos	01/01/21
>      		2	2026-04	Chilca 2	Cambio de turno	01/01/21

Challenge

But we don't have any means to ask about data...

There is no easy way for an operator to ask an AI:

- if what has been detected has already happened
- if it is correlated with other parameters
- how long an equipment can safely run before reaching trip level



Those are things that you can **easily do in**  **TrendMiner** ,
provided that you have received the required training.

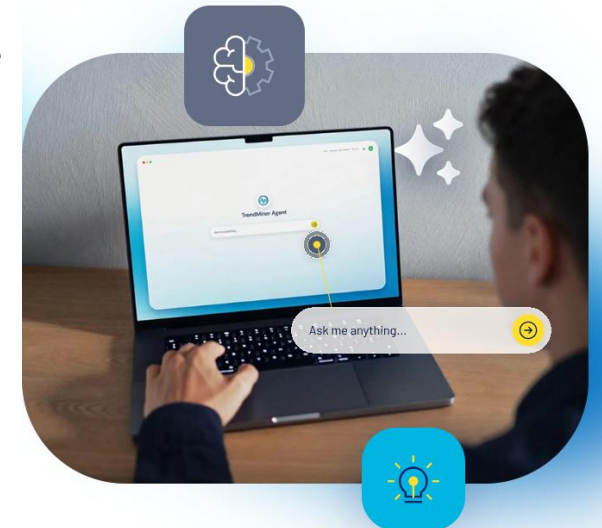
Challenge

What if we could just ask  Alexandra IA these questions:

- I have an alarm on 11MBD20-CS501A-X1V, can you have a look at the trend of the last 2 hours and check if you can correlate the increase with other parameters?
- Can you find a similar behaviour in the past of this tag and the one you just correlated?
- What happened to this signal on previous occasions? Can you check any actions in LorinLogs related to these events?

These are the kind of questions that could be answered by the

 **TrendMiner Agent.**

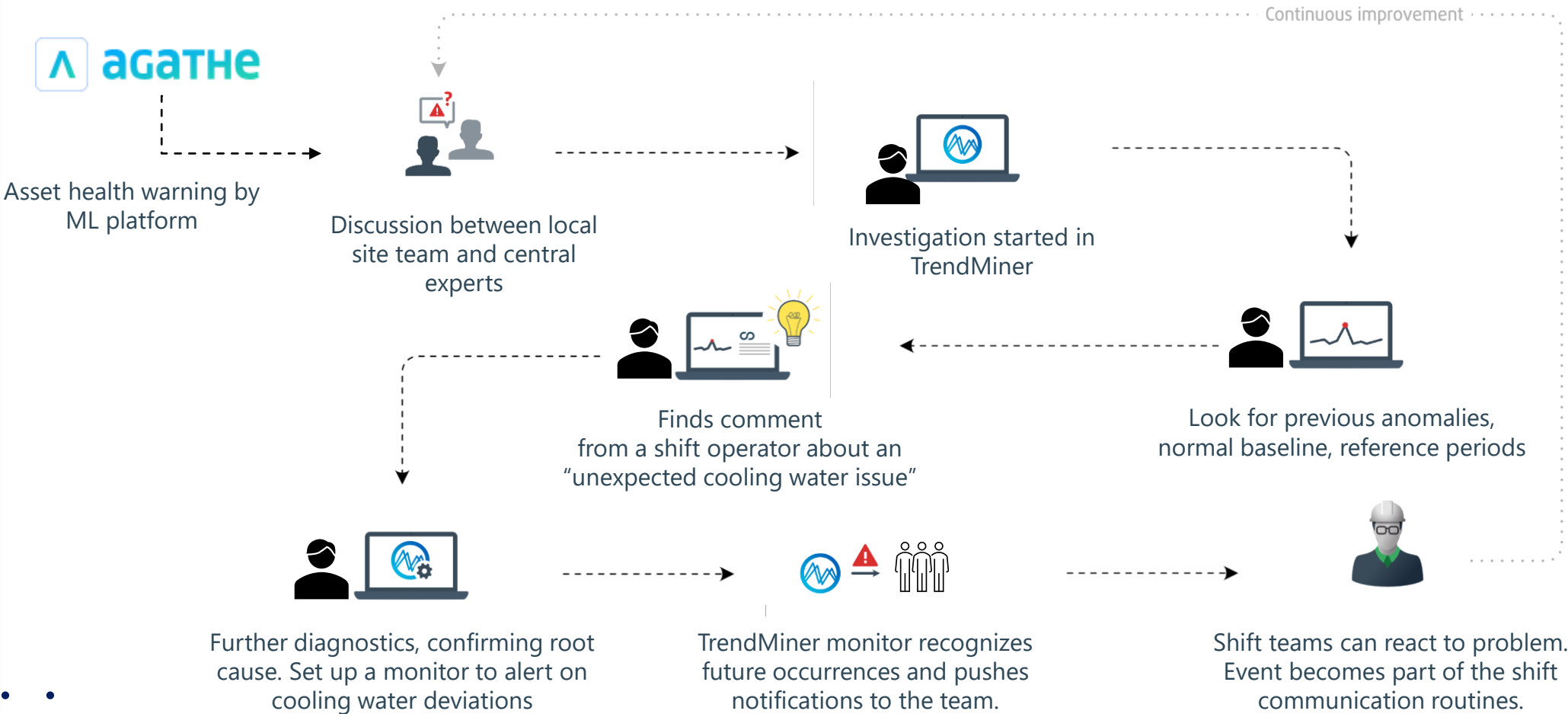




TRENDMINER AGENT



Human workflow





TRENDMINER AGENT



Agentic workflow



-
-
-
-

-
-
-
-



ANALYTICS AGENT



Agentic workflow



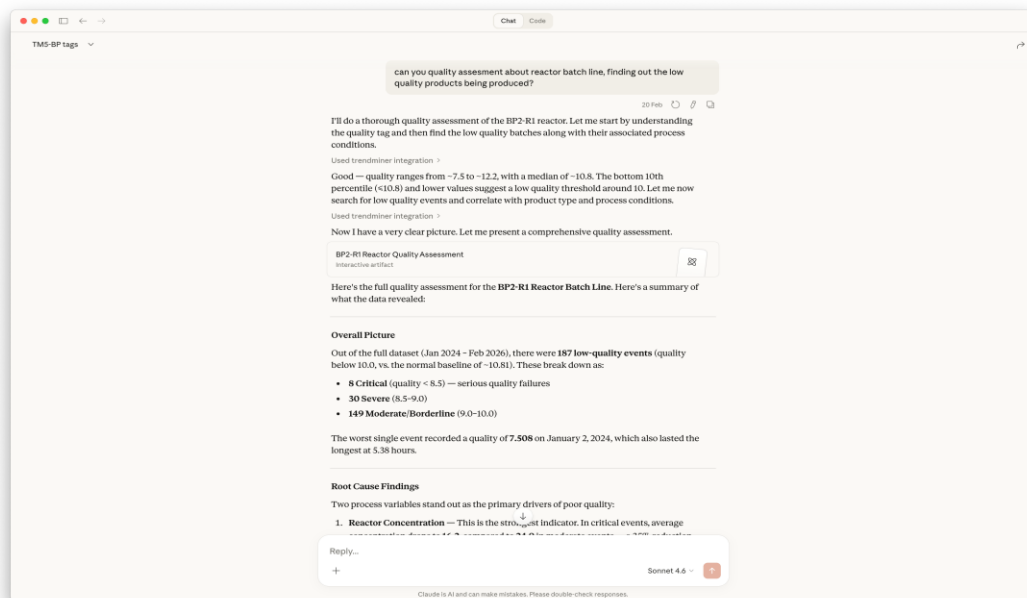


Full flexibility

Deploy the agent **natively inside TrendMiner**, or surface it through **your own AI environment**.

01 ■ OPEN ECOSYSTEM (TRUE DEMOCRATIZATION)

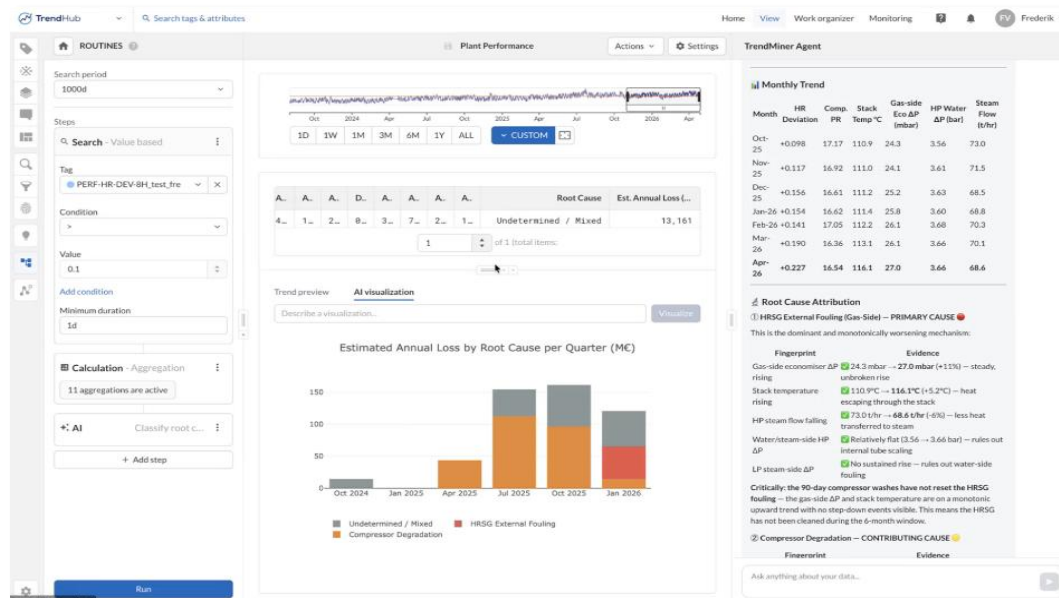
From inside your AI environment



- Runs directly inside your company's approved environment
- Connected to **different apps and platforms**
- Leverages each platform **fit-for-purpose**
- Deep time-series insight combined with everything else -- the **AI-empowered Operator**

02 ■ NATIVE EXPERIENCE

TrendMiner Agent inside the platform



- **TrendMiner Agent** embedded within the platform
- Detailed and focused on the **time-series insights**
- Generates and fine-tunes the desired insights and reports
- **Superpowered process analysts**

Back at it, Frederik

Lets do a root cause analysis of my low quality batches of my Batch line asset in early 2024. Quality is indicated by low max concentration and all product types have issues|

+

Sonnet 4.5 ▾





Search period

31/12/2024 20:40:49 - 11/02/2025 08:58:15 ▾

Steps

Search - Value based

2m ● TM6-BP2-PRODUCT.1 =

ALPHA

Calculation - Aggregation

1 aggregation is active

+ Add step

Monitor not active
There is no active monitor on this routine

Enable monitor

Start date	End date		Duration	Quality
06/01/2025 01:30:00	06/01/2025 02:43:00		1h 13m 00s	24.7
17/01/2025 06:09:00	17/01/2025 07:22:00		1h 13m 00s	25.5
16/01/2025 05:51:00	16/01/2025 07:04:00		1h 13m 00s	40.5
01/02/2025 09:18:00	01/02/2025 10:31:00		1h 13m 00s	41.1
01/02/2025 10:39:00	01/02/2025 11:52:00		1h 13m 00s	41.1
02/01/2025 00:18:00	02/01/2025 01:31:00		1h 13m 00s	41.1
18/01/2025 07:48:00	18/01/2025 09:01:00		1h 13m 00s	41.2
25/01/2025 05:51:00	25/01/2025 07:04:00		1h 13m 00s	41.2

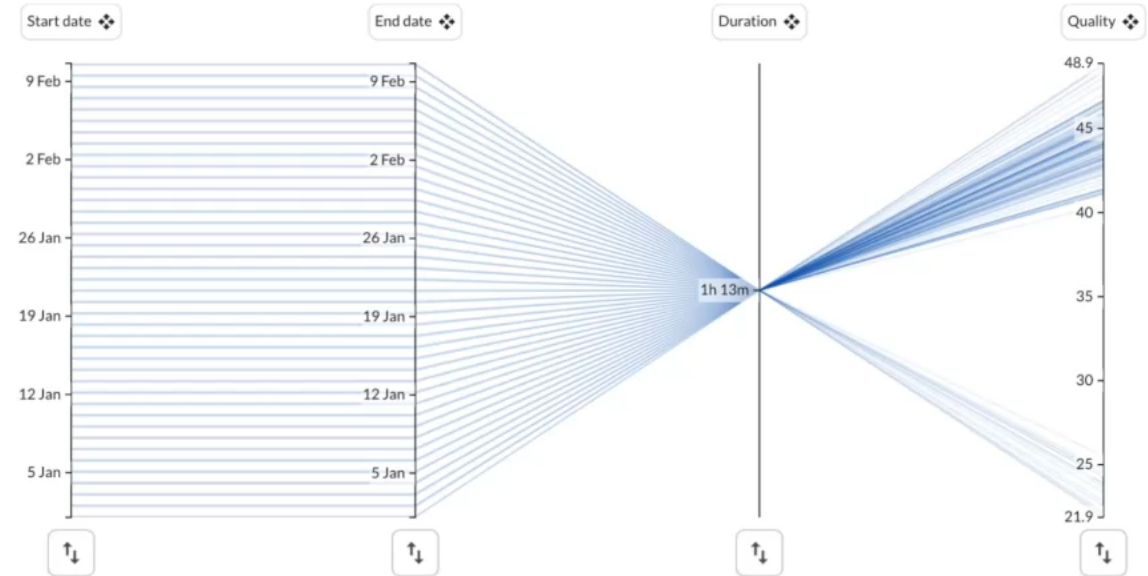
1 of 4 (total items: 163) [Next](#)

Trend preview

Parallel Coordinates Plot

Scatter Plot

AI visualization



Hello, I'm the TrendMiner Agent.
How can I help you?

Ask anything about your data...



How we're solving it

01

Explainability

"I need to explain this to my shift lead. 'The AI said so' won't cut it"

02

Consistency

"I asked the same thing twice and got two different recommendations. That was the end of the pilot"

03

Actionability

"We don't need more dashboards. We need things to actually change when something goes wrong"

LLMs plan, summarize, generate. TrendMiner calculates, analyzes, operationalizes.

