BUTTERFLY IQ Platform

WHITE PAPER · PRODUCTION DATA MONITORING AND AI-ASSISTED REPORTING

Read machine data together with production conditions.

Butterfly IQ matches data from the machine's controller or sensors with the job reference, operator and production speed. When a defined threshold is exceeded it raises an alarm, and the alarm can be linked to a work order the maintenance team can track.

Reads from the machine

With read-only access, without touching the PLC program

Matches with production

Job reference, operator and production speed on one screen

Links alarms to work orders

With the Butterfly maintenance workflow

Questions in natural language

Over production data opened for access

EXECUTIVE SUMMARY

See a deviation together with the production condition it occurred in.

Many plants collect machine data and also keep production records. But the two sit on different screens. When the maintenance team looks into a rise in vibration, it has to find out separately which job was running at that moment, with which operator and at what speed.

This separation leaves two questions unanswered: does the deviation appear under a particular production condition? Does it repeat across different jobs or shifts? Answering them means two teams bringing their records together by hand.

Butterfly IQ matches data from the machine's controller or sensors with the job reference, operator and production speed. The live dashboard shows the conditions under which a deviation appeared, and an alarm is raised when defined thresholds are exceeded. Used together with the Butterfly maintenance workflow, the alarm can be linked to a work order the maintenance team can track. With AI-assisted reporting, questions can be asked in natural language over production data opened for access.

IN THIS DOCUMENT

- Why no answer can be found when machine data and production records are kept apart
- Butterfly IQ's four steps: from machine data to a maintenance work order
- Two outputs from the same data: for the maintenance team and the production manager
- AI-assisted reporting: asking the data questions in your own language
- Which teams it suits and the deployment on a press line
- Certificates, KVKK and frequently asked questions

OUTCOME

Machine signal and production record on the same screen. The alarm can be linked to a work order the maintenance team tracks.

THE PROBLEM

Vibration went up. Which job was running at the time?

The maintenance team has the vibration chart in front of it. The production team follows which job ran, with which operator and at what speed, on a separate screen.

To understand whether the deviation appeared under one production condition and whether it repeats in other jobs, the two teams need to bring these records together. Vibration alone says nothing; without knowing which job and what speed it appeared at, the maintenance decision is based on guesswork.

Signal cut off from context

Vibration, temperature and current values are monitored, but the job, operator and line speed at that moment are not visible on the same screen.

Matching is done by hand

Maintenance and production teams put their records side by side afterwards. That is why finding a recurring deviation takes time.

Alarms do not become work orders

When a threshold is exceeded, the warning may stay on a screen. If no work order is opened for the maintenance team to track, the investigation is delayed.

Concern about touching the machine program

If getting the data means changing the controller's program, the automation team rightly has reservations.

Machines of different brands and generations make it harder

Every machine talks to a different controller. Knowing first which signals can be read sets the scope of the project. That is why, with Butterfly IQ, the accessible signals and the connection method are determined together in a site assessment.

THE ANSWER

Butterfly IQ brings the machine signal and the production record to the same screen. When the maintenance team investigates an alarm, it can see which job was running at that moment. The production manager can see under which operating conditions the deviation repeats.

HOW IT WORKS

From the machine to a maintenance work order.

Butterfly IQ reads data in existing controllers, matches it with the production record and carries threshold breaches into the maintenance process.

1 **Read the machine data**

Read PLC or sensor data over a suitable connection without interfering with the machine program. The accessible signals and the connection method are determined in a site assessment.

2 **Match the signal with the production record**

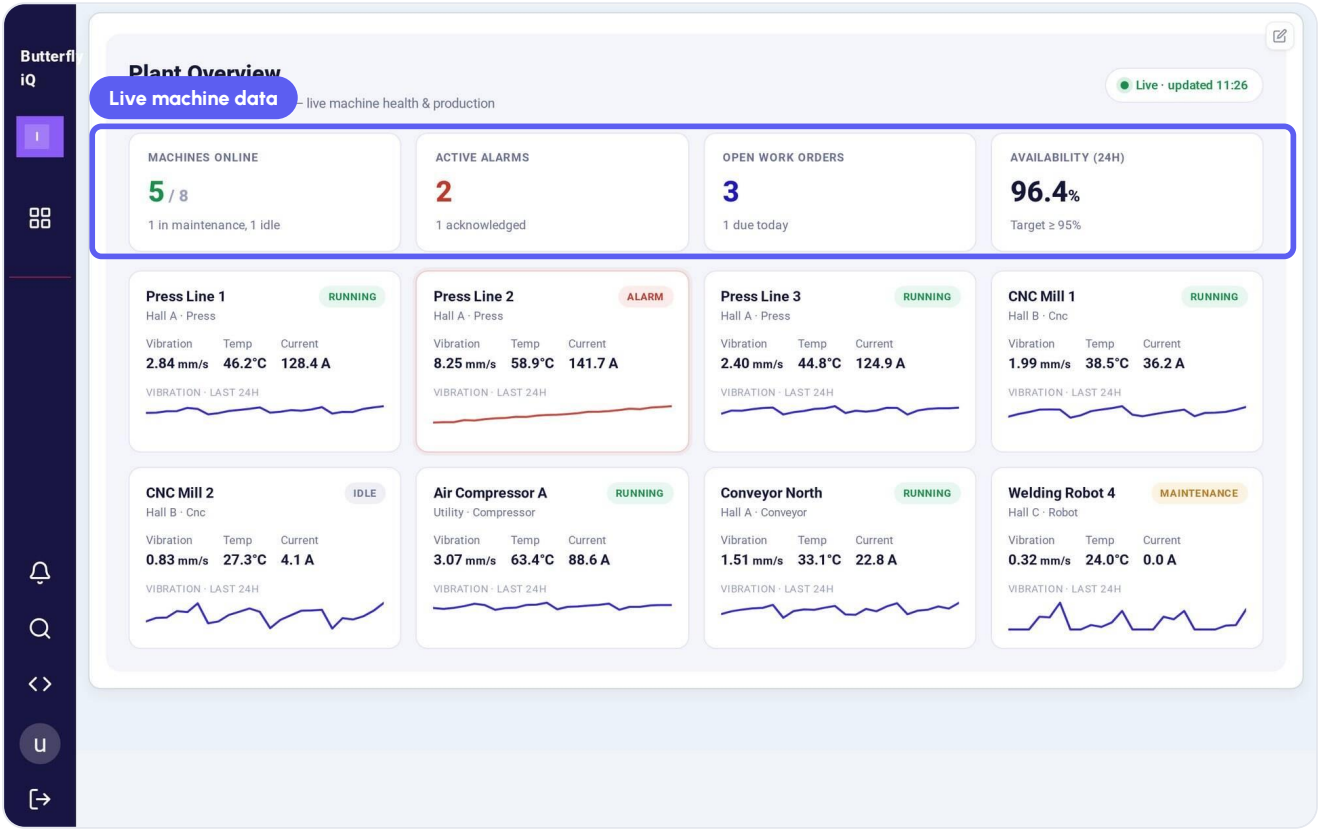
Monitor measurements such as vibration together with the job reference, operator and production speed on a live dashboard.

3 **Link the alarm to the maintenance process**

The alarm raised when a defined threshold is exceeded can be linked to a work order tracked in the Butterfly maintenance workflow.

4 **Ask the data in your own language**

With AI-assisted reporting, ask a question such as "Which shift had more vibration alarms this week?" over production data opened for access.

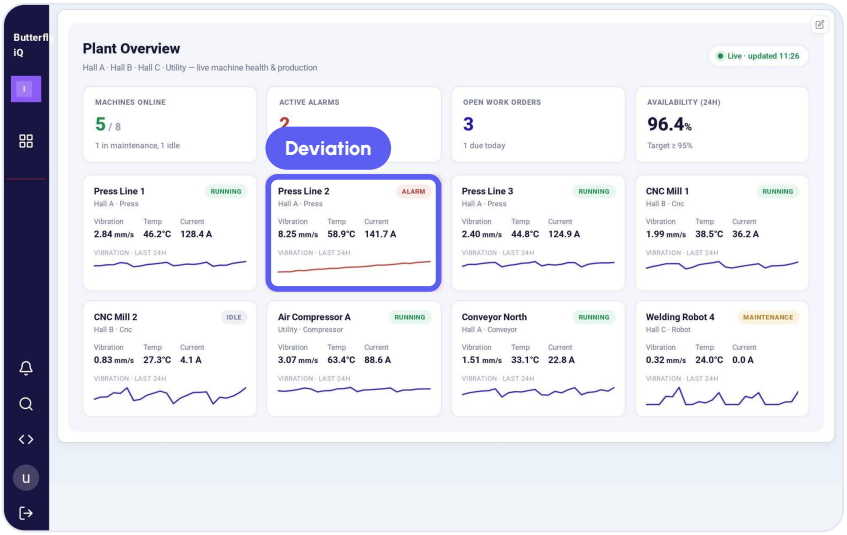


Live dashboard. The status of the machines on the line on one screen: running machines, active alarms and open maintenance work orders.

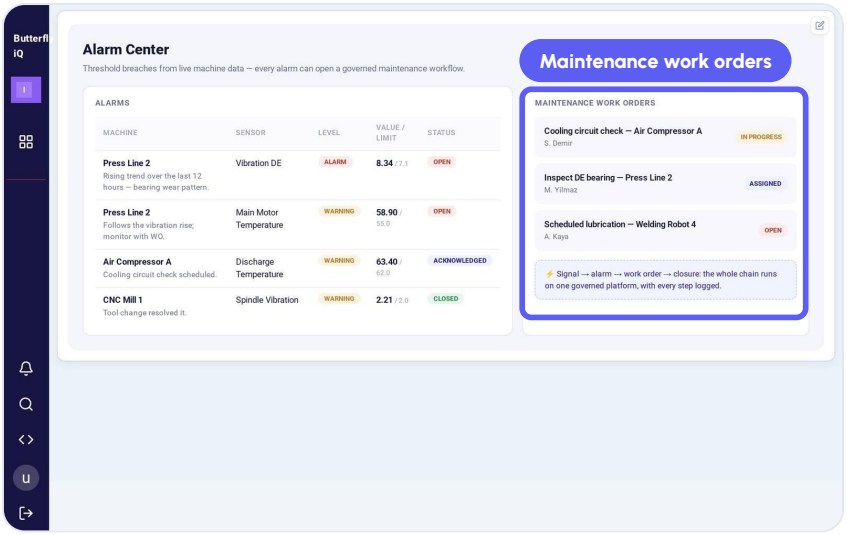
TWO OUTPUTS

Two teams, the same data.

The same data answers two different questions: the maintenance team's "under which condition did this alarm occur?" and the production manager's "where does this deviation repeat?"



Machine showing a deviation. Vibration, temperature, current and the vibration curve of the last 24 hours on the same card.



Alarm center. Threshold breaches and the maintenance work orders linked to them.

For the maintenance team

When investigating an alarm, it sees on the same screen which job was running, with which operator and at what speed.

For the production manager

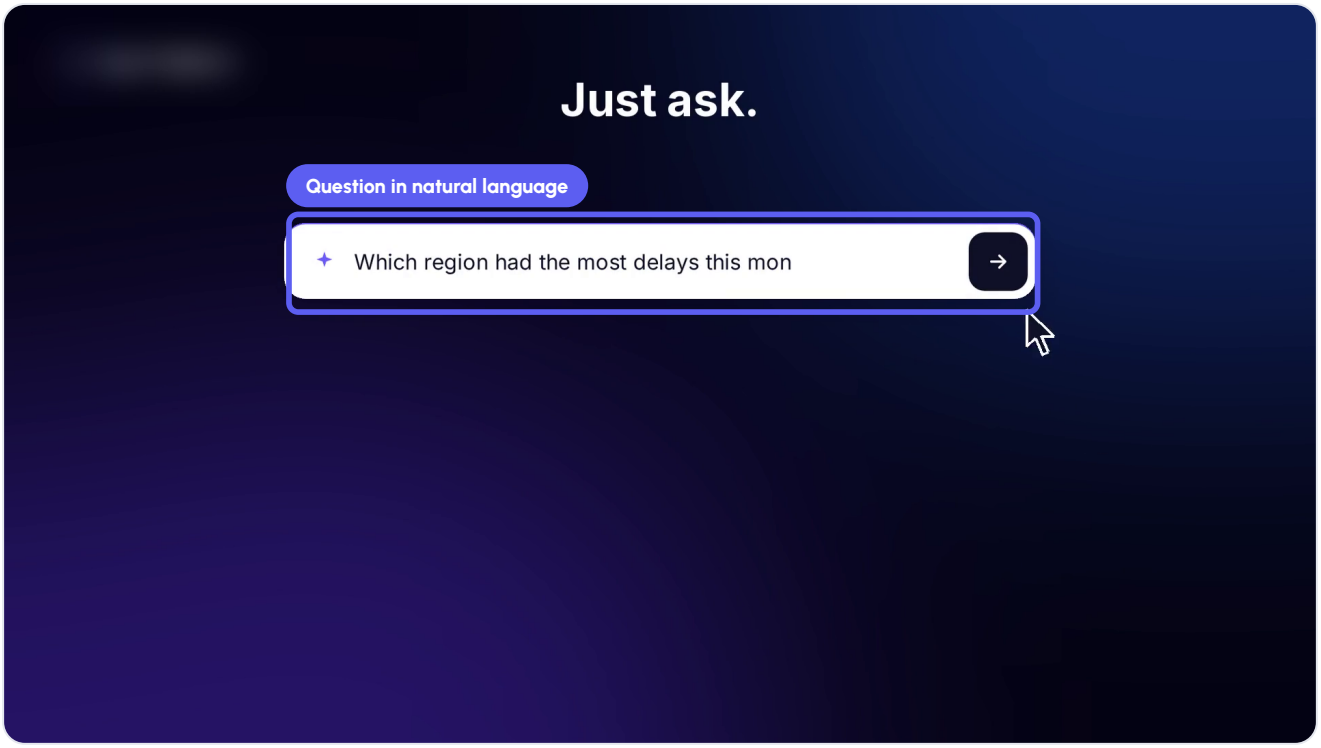
Sees under which operating conditions, in which jobs or shifts the deviation repeats.

Illustrative Butterfly IQ screens; machines, people and values are sample data.

AI-ASSISTED REPORTING

Ask the data in your own language.

Type the question instead of hunting for filters on the dashboard. The answer is prepared from production data opened for access.



Question field. Type the question; the answer is prepared from data opened for access.

Ready-made dashboards answer questions thought of in advance. The questions of maintenance and production managers, however, often come up on the day: "Which shift had more vibration alarms this week?" With Butterfly's AI-assisted reporting, this question is asked in natural language instead of hunting for filters on the dashboard, and the answer is prepared from production data opened for access.

Data opened for access

The question is answered over production data opened for access in Butterfly.

From alarm to work order

The alarm raised when a threshold is exceeded can be linked to a work order tracked in the Butterfly maintenance workflow.

IN SHORT

- Type the question instead of hunting for filters on the dashboard.
- The answer is prepared from production data opened for access.
- When a threshold is exceeded, the alarm can be linked to a maintenance work order.

WHICH TEAMS

Teams that want to read machine data together with production.

Butterfly IQ was designed for teams for whom the machine signal alone is not enough and who want to know in which job and under which condition a deviation occurred.

Automotive suppliers and metal forming

Maintenance manager, production manager

WHY

Vibration on the press line says nothing on its own; without knowing which job and what speed it appeared at, the maintenance decision is based on guesswork.

WHAT IT DOES

Examines vibration and bearing data on the press line together with the job being run and the line speed.

Machine-intensive series production

Plant manager, production and maintenance teams

WHY

If a deviation repeats across different jobs or shifts, that repetition sets the maintenance priority.

WHAT IT DOES

Shows deviations that repeat across different jobs or shifts and helps prioritize maintenance investigations.

Machines of different brands and generations

Automation, OT and plant IT teams

WHY

Every machine talks to a different controller; knowing first which signals can be read sets the scope of the project.

WHAT IT DOES

Determines which signals can be read from existing controllers and evaluates the accessed data on a shared screen.

Four questions to check the fit

TOPIC	QUESTION
Data access	Can PLC or sensor data be read on your machines?
Context	Can signals such as vibration be seen together with the job running at that moment?
Maintenance process	How is the maintenance team notified when a threshold is exceeded?
Reporting	How are production and maintenance reports prepared?

FROM THE FIELD

Machine and production data on a press line on the same screen.

At an automotive supplier plant, vibration and bearing data from the press line are read live from the machine's own controller. The team can monitor these signals on the same screen as the job reference, operator and production speed.

At the plant, data is taken from the controller with read-only access. Methods that would require a change in the controller's program, such as having the machine send the data, were not chosen. Butterfly was installed on the plant's own server.

0 | **changes made to the PLC program; read-only access**

Deployment profile

TOPIC	DEPLOYMENT ON THE PRESS LINE
Measurement points	4 bearing measurement points: main motor front and rear bearings, flywheel front and rear bearings. Each with vibration, imbalance and bearing indicators
Production context	Job reference, operator, production speed, main motor current and temperature, production counter
Read format	A single block: job reference, operator, speed and sensor values are read together
Connection	Encrypted OPC UA connection, certificate-based session
Threshold alarm	Fed by the warning and alarm signals already available in the controller

BENEFIT

- A deviation is seen together with the production condition it occurred in.
- Because the machine program is not touched, the automation team approves the process with confidence.
- Threshold alarms are fed by signals already available in the controller.

TRUST

Production data stays on the plant's network.

Butterfly can be deployed on-premise; data stays on the plant's own network. Machine signals, alarms and work orders are kept under the Butterfly platform's permission model and audit trail.

1 · SOURCE

Controller

The machine program is not changed; data is only read.

2 · CONNECTION

Encrypted OPC UA

With a certificate-based session in the press line deployment.

3 · PLATFORM

Butterfly

On the plant's own server, on its own network.

4 · OUTPUT

Dashboard, alarm, work order

Maintenance and production teams work with the same record.

Personal data and KVKK

Production records may contain personal data such as operator names. In an on-premise deployment this data is processed and stored on the plant's own infrastructure; who has access and how long it is kept are governed by the organization's own KVKK policy. The Butterfly platform provides identity, the permission model and the audit trail so that this policy can be enforced.

Role-based access

Who can access machine data, alarms and work orders is defined with the platform's permission model.

Audit trail

Alarms and maintenance work orders are records under an audit trail in Butterfly.

Certificates

CERTIFICATE	SCOPE
ISO/IEC 27001	Information security management system
ISO 9001	Quality management system
Domestic Product Certificate (Yerli Malı Belgesi)	Business process management software (Butterfly), 100% domestic content, class A, high technology
Technological Product Certificate	Butterfly DXP, Ministry of Industry and Technology of the Republic of Türkiye

All certificates and verification links: butterfly.dev/en/kurumsal/sertifikalar

FREQUENTLY ASKED QUESTIONS

Short answers about Butterfly IQ.

Do we need to interfere with the machine's program?

No. Data is taken from the controller with read-only access; the machine program is not changed.

Which data can we read?

The signals the controller or sensors make available are read. Which signals can be read and the connection method are determined together in a site assessment.

How does an alarm reach the maintenance team?

The alarm raised when a defined threshold is exceeded can be linked to a work order tracked in the Butterfly maintenance workflow.

What triggers a threshold alarm?

Thresholds are defined; when one is exceeded an alarm is raised. In the press line deployment, threshold alarms are fed by the warning and alarm signals already available in the controller.

Can it be deployed on-premise?

Yes. Butterfly can be deployed on-premise; data stays on the plant's own network.

LET'S COVER THESE IN THE FIRST MEETING

- The machine's controller and the signal you want to access
- The question the maintenance team is looking to answer
- Which data can be read and the scenario that can be built with it

Let's do the first review on a single machine.

Let's look together at the machine's controller, the signal you want to access and the question the maintenance team is looking to answer.

Let's assess your site scenario · butterfly.dev