



INTERNATIONAL CONFERENCE

ENERGY IN BUILDINGS ATHENS

ΥΠΟ ΤΗΝ ΑΙΓΙΔΑ **TEE**

SATURDAY
NOVEMBER 15, 2025

GEORGIOS EFFRAIMIDIS

ATLANTIS ENGINEERING CCO, HMS CHAIRMAN



«THE AI-POWERED MAINTENANCE REVOLUTION:
WHAT'S WORKING, WHAT'S COMING, WHAT YOU NEED TO KNOW»

09:00-18:00 | @ DIVANI CARAVEL HOTEL, ATHENS

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CMMS/EAM/CAFM

AIMMS - A complete solution to simplify operations, processes and management of your maintenance department

Predictive Maintenance Platform

Sibyl - Turn-key solution for predicting failures and optimizing your maintenance with Industry 4.0 technologies

Total Productive Maintenance

TPM - Modern methods and practices to achieve world class maintenance



MAINTENANCE: A pillar of Sustainable Growth



Energy Saving



Raw Material consumption



Work & Environment Safety



Improve productivity

Climate change



“Paving the way for sustainable maintenance”

The New Maintenance Operating Model



Before

Planner
↓
Scheduler
↓
Dispatcher
↓
Technician
...with handovers and delays

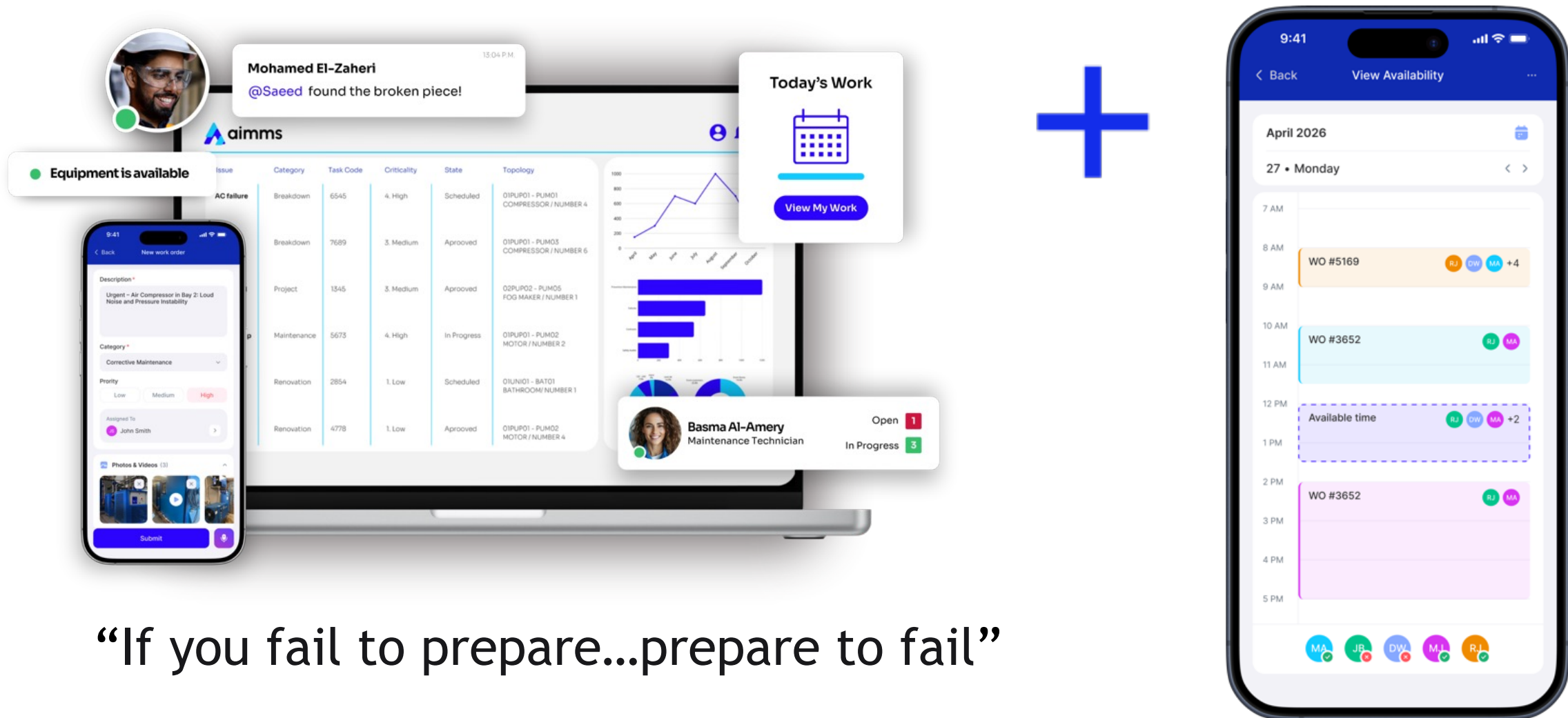


Now

An AI orchestrator connects data, people, and systems in near real time, enabling continuous re-prioritization

Roles evolve from **transaction processing** to **problem solving**

Maintenance Management Tool



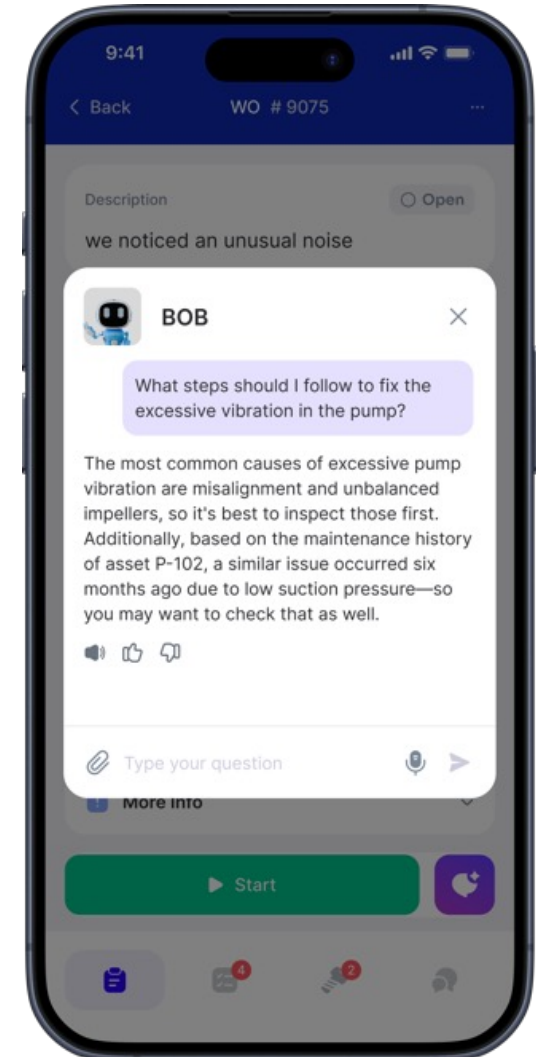
“If you fail to prepare...prepare to fail”

Digital Maintenance Assistant



Hello, I'm BOB.
Can I help you?

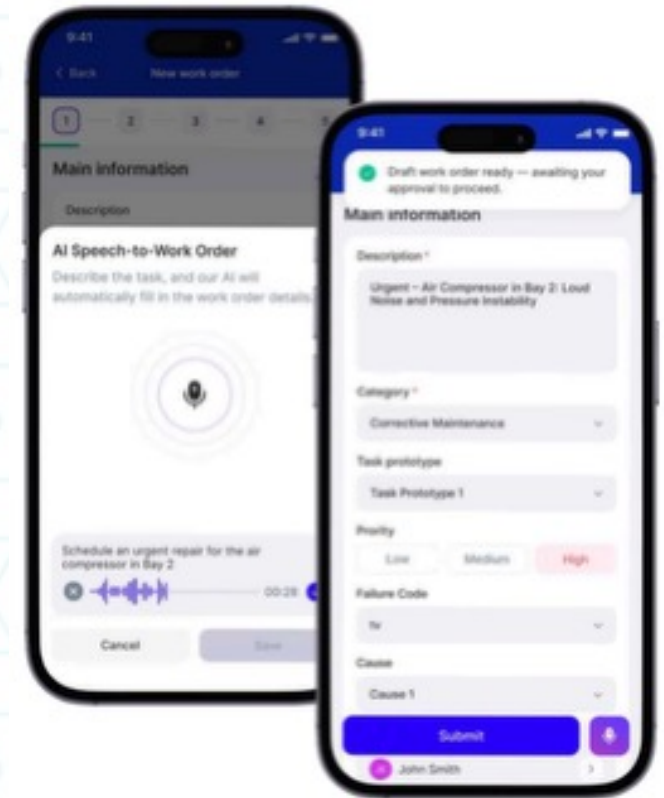
“Introducing **AI** to **MAINTENANCE**”



Maintenance Intelligence

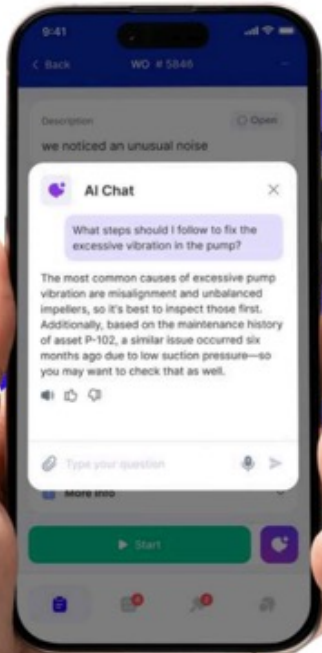
Speech to Action

Work orders smartly filled
based on your commands.
Confirm and deploy in
seconds



Ask Operational Questions and Get Clear Answers

Want to know when a machine was last serviced or why it failed?
Just ask. BOB searches historical logs and gives you a clear
response.

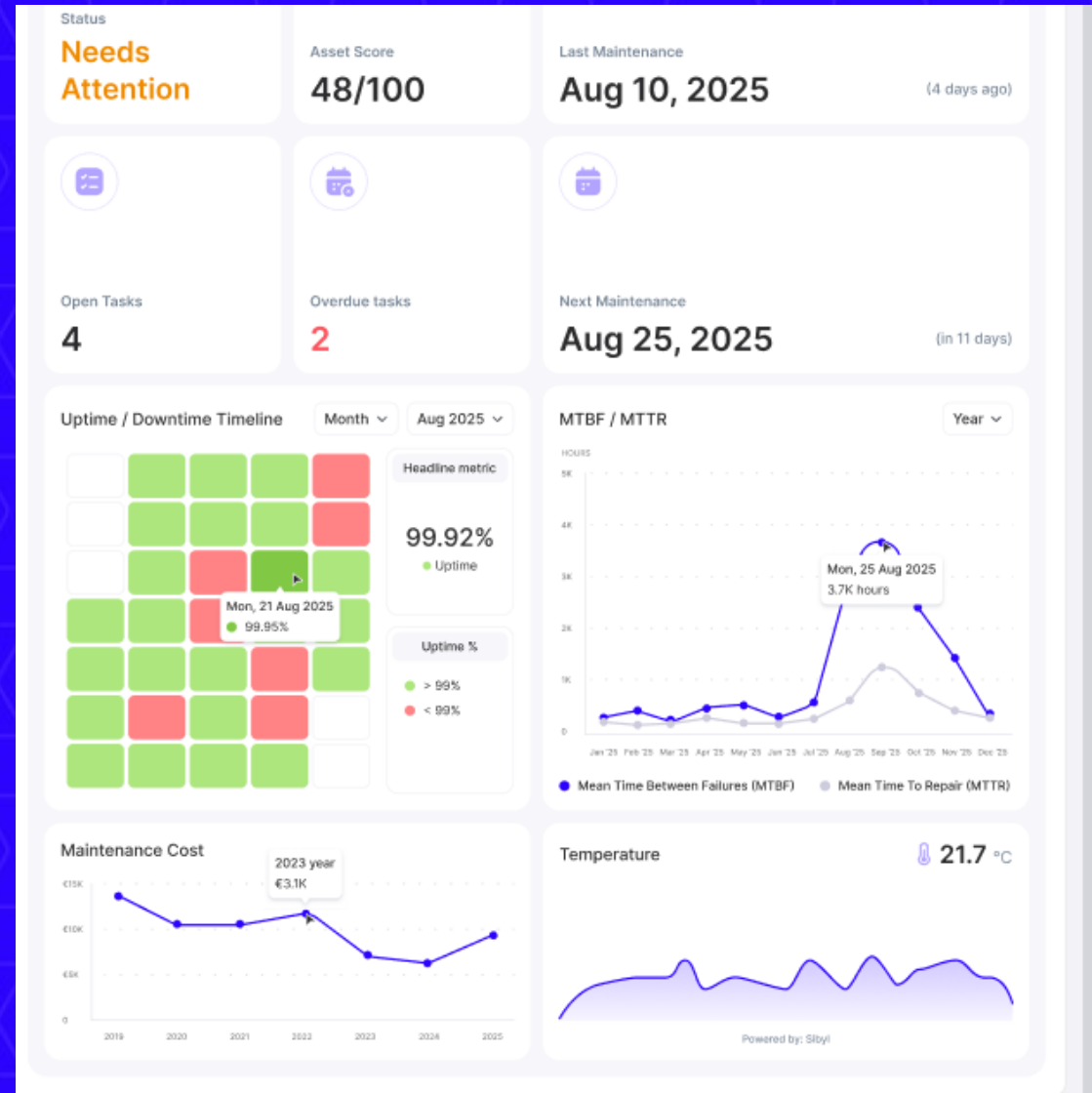


Capability #2

Intelligent Work Management

Dynamic scheduling adjusts hundreds of jobs daily based on asset risk, technician skill, and production priorities.

Smart dispatch delivers the right technician with the right history and repair plan; guided execution reduces variability.

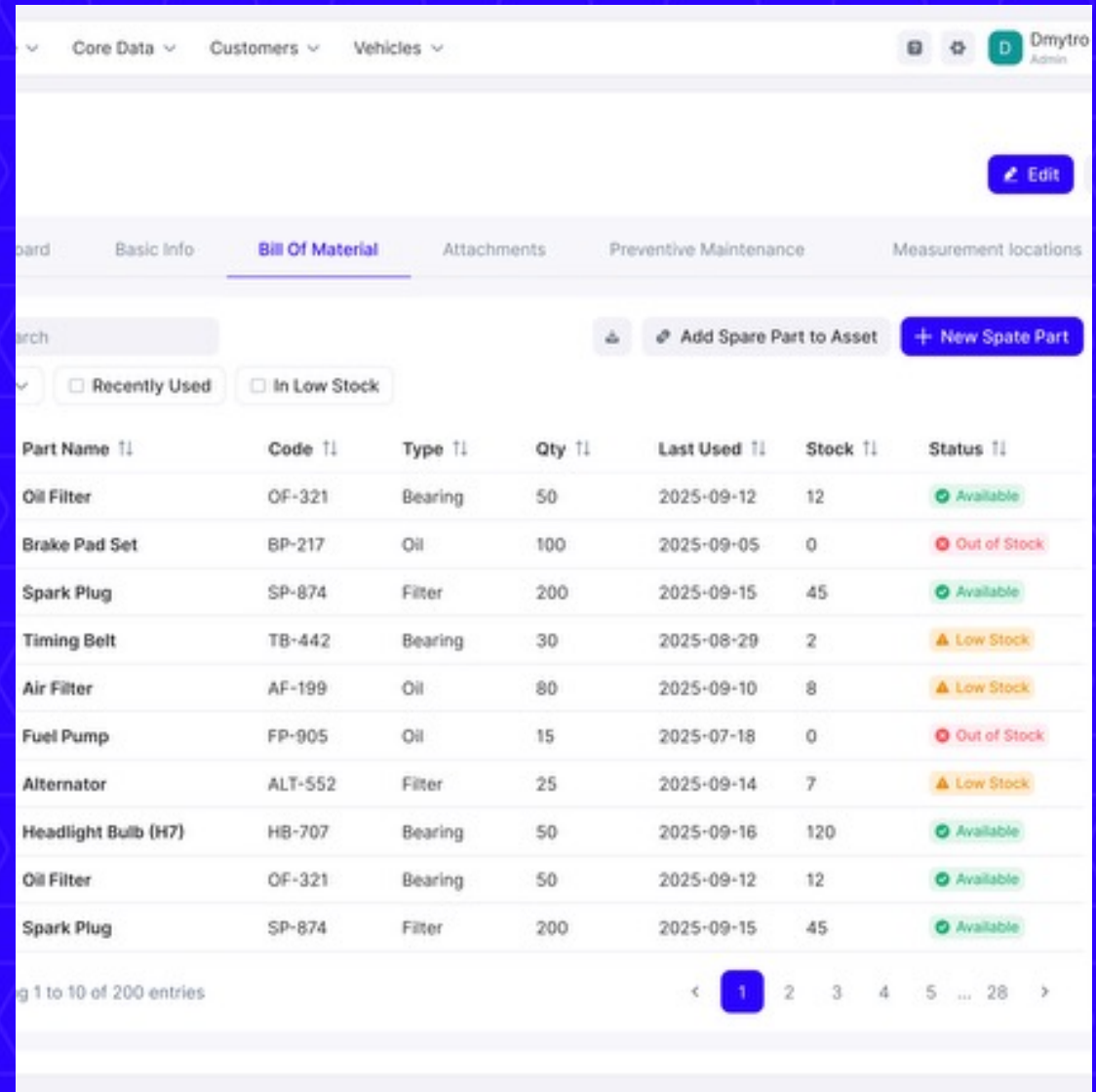


Capability #3

Autonomous Resource Optimization

Predictive parts ordering triggers procurement **days or weeks before failure** using degradation models and lead-time data.

Inventory optimization balances carrying cost against production risk to improve availability while lowering stock.



The screenshot displays a web application interface for managing vehicle parts. The top navigation bar includes 'Core Data', 'Customers', and 'Vehicles'. The main content area is titled 'Bill Of Material' and features a table of parts. The table has columns for Part Name, Code, Type, Qty, Last Used, Stock, and Status. The status column uses color-coded indicators: green for 'Available', yellow for 'Low Stock', and red for 'Out of Stock'. A search bar and filters for 'Recently Used' and 'In Low Stock' are present. Action buttons for 'Add Spare Part to Asset' and 'New Spare Part' are also visible.

Part Name	Code	Type	Qty	Last Used	Stock	Status
Oil Filter	OF-321	Bearing	50	2025-09-12	12	Available
Brake Pad Set	BP-217	Oil	100	2025-09-05	0	Out of Stock
Spark Plug	SP-874	Filter	200	2025-09-15	45	Available
Timing Belt	TB-442	Bearing	30	2025-08-29	2	Low Stock
Air Filter	AF-199	Oil	80	2025-09-10	8	Low Stock
Fuel Pump	FP-905	Oil	15	2025-07-18	0	Out of Stock
Alternator	ALT-552	Filter	25	2025-09-14	7	Low Stock
Headlight Bulb (H7)	HB-707	Bearing	50	2025-09-16	120	Available
Oil Filter	OF-321	Bearing	50	2025-09-12	12	Available
Spark Plug	SP-874	Filter	200	2025-09-15	45	Available

Predictive Maintenance

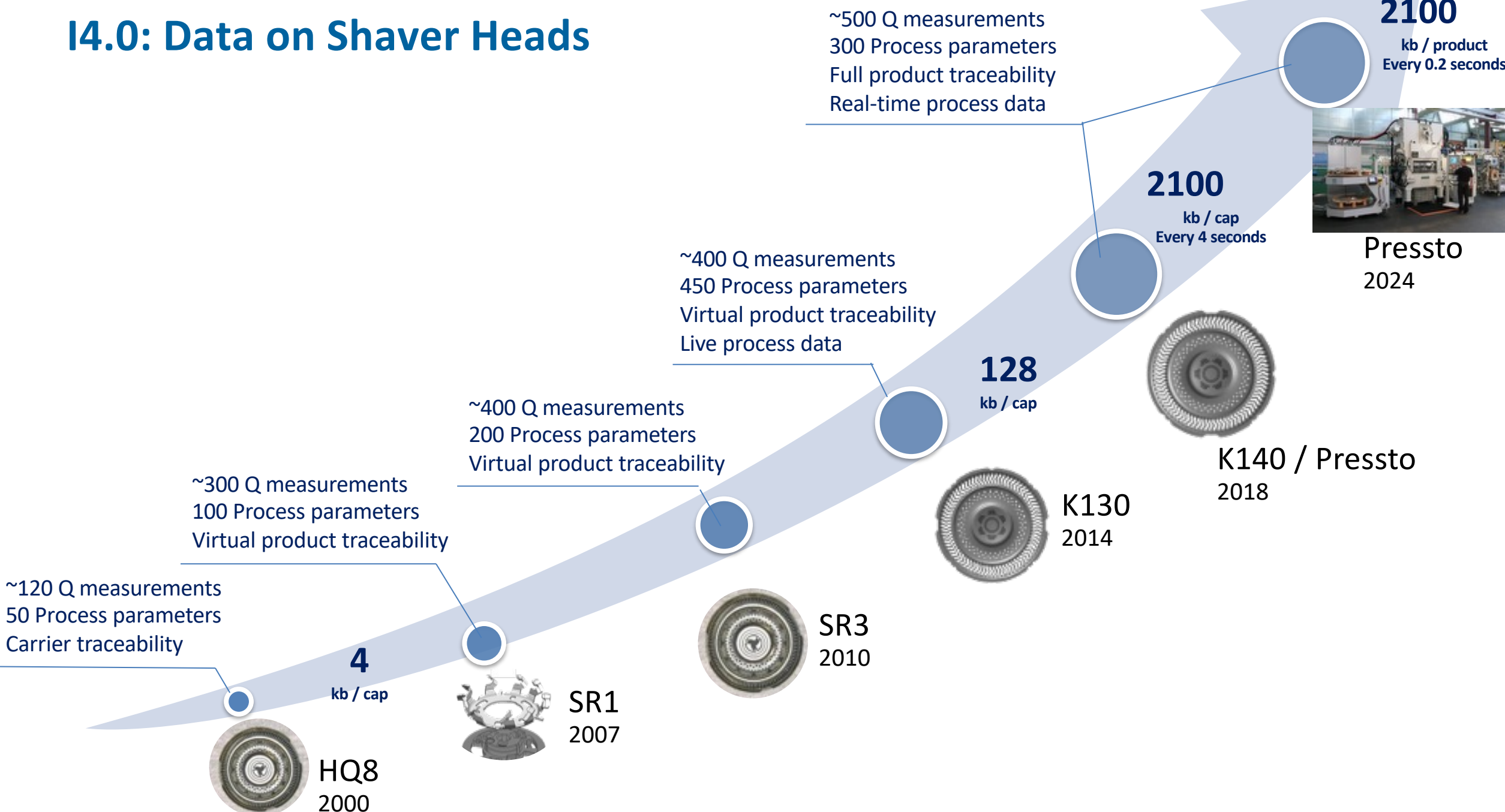


“Machines talk... Do you listen to them?”

Industry 4.0 Use case



I4.0: Data on Shaver Heads



Shaver Manufacturing Use Case



- Up to 800 punches per minute
- Multiple flattening or cutting modules
- Expensive Modules
- Multiple Failure Modes

500

**dimensions
per measurement**

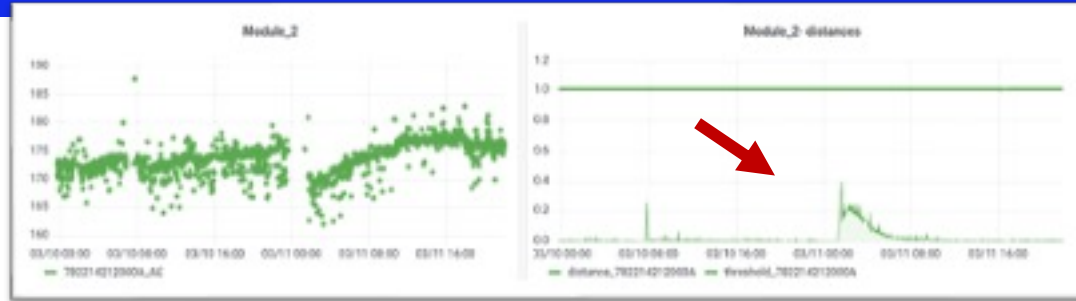
**Acoustic sensors
on each die of the
press (10 sensors)**



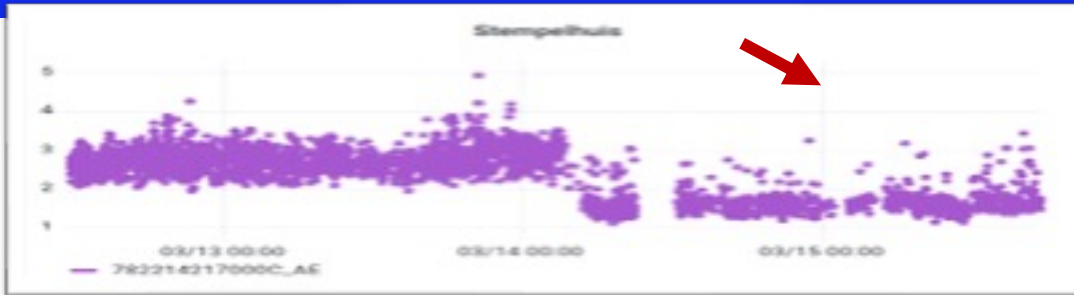
Shaver Manufacturing Use Case



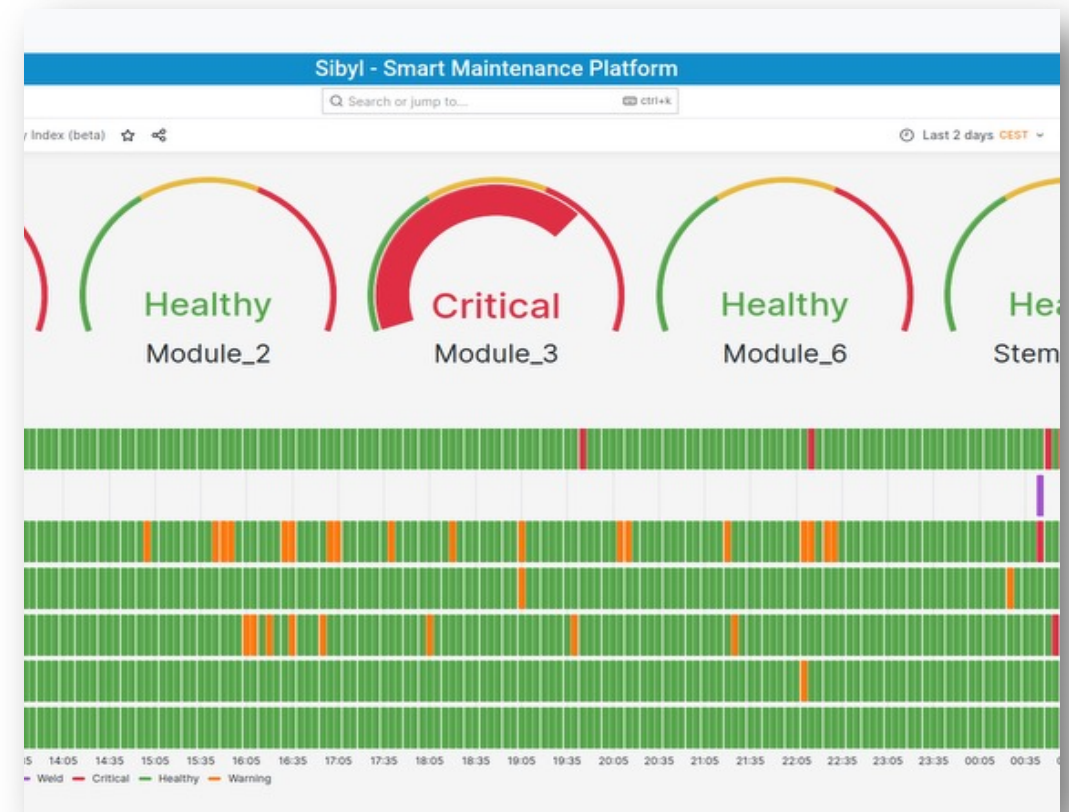
Change of material



Human Intervention (Periodic Quality Check)



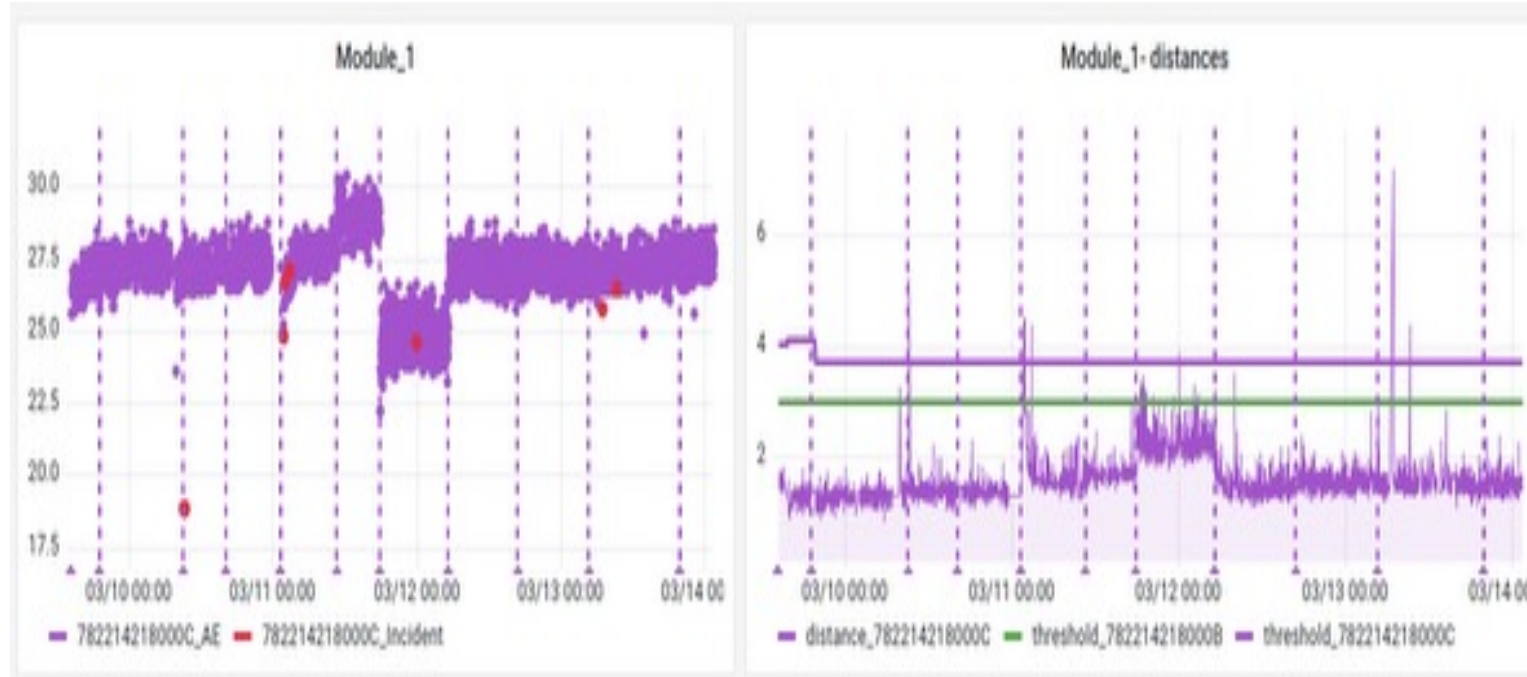
Cold start



Shaver Manufacturing Use Case



Broken Press Die



Sibyl Detects Faults in the dies **3 weeks earlier** than the previous threshold-based technique.

Complex Rotating Equipment

Special Solutions

Assets to monitor

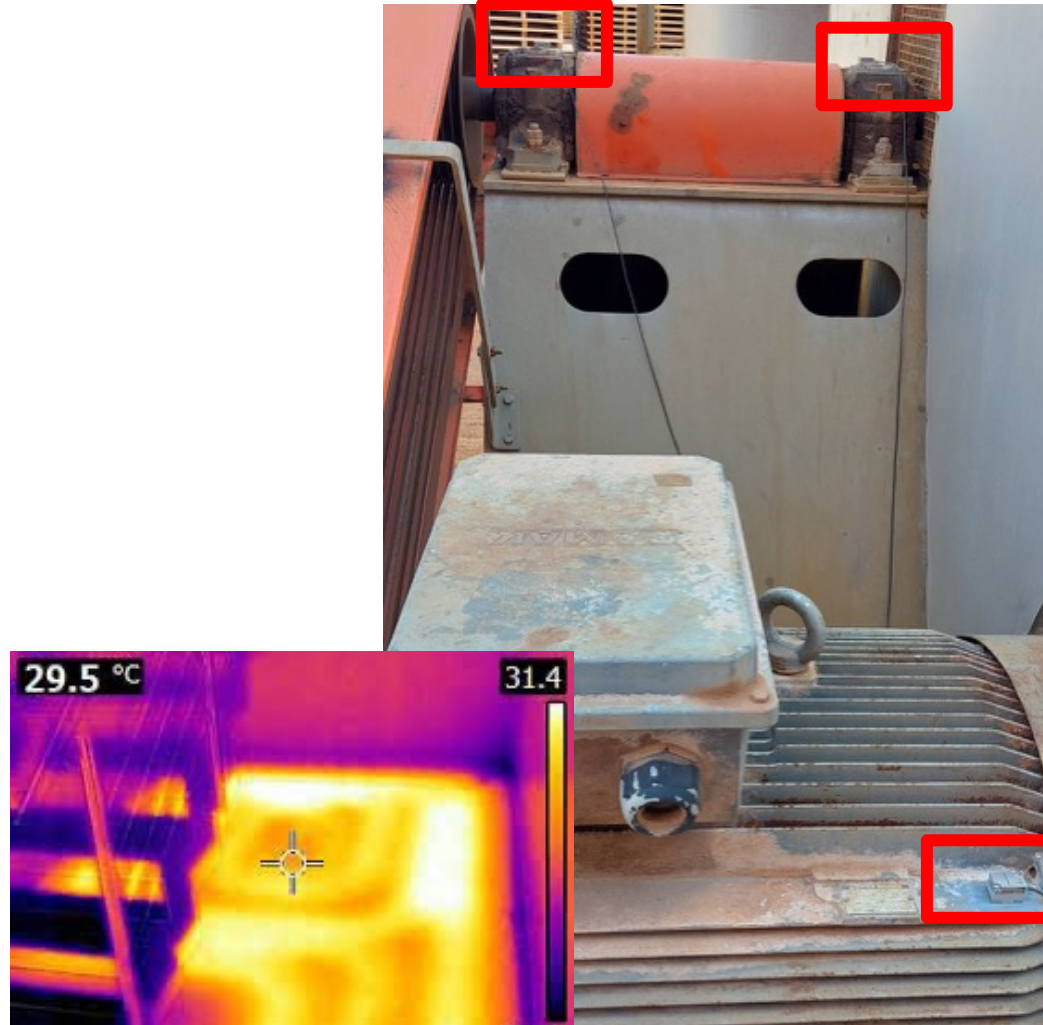
- 4 motors spinning 4 metallic wheel
- Lava (1500°C) dropping to the wheels
- 3 fans blowing air
- Binder (glue) sprays
- Water cooling (for the wheels)



Petrochemical Use Case

Collected Measurements:

- Installed Sensors
 1. Acceleration
 2. Temperature (thermal camera)
- From PLCs
 1. Current
 2. Power Consumption
 3. Distance
 4. Volume
 5. Pressure
 6. RPM



Petrochemical Use Case

Sibyl Detects Fire **10 minutes** earlier than the previous threshold-based technique.



43 Supervised
tree-based
features ML Algorithm

Filter House **Fire** Detection

Skills & Organization Changes



New roles

Maintenance data analyst, AI training specialist, and AI-assisted planners.

01

Skill shifts

From Excel-driven work to natural-language queries and predictive thinking.

02

Retain what matters

Safety culture and deep equipment knowledge
augment, don't replace.

03

The Bottom Line

The biggest change is **culture.**

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ΥΠΟ ΤΗΝ ΑΙΓΙΔΑ ΤΟΥ TEE

THANK YOU! Q & A

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09:00-18:00 | @ DIVANI CARAVEL HOTEL, ATHENS

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