Turbit

RISK INFRASTRUCTURE.

Built for owners and operators. Trusted by insurers.

WIND ENERGY GROWTH BRINGS ESCALATING RISKS.

Aging fleets, bigger wind turbines, rising insurance costs, and volatile energy markets threaten the operational and financial health of wind park owners. Traditional solutions can't keep up.

INCREASING DOWNTIME COSTS

Longer lead and production times for spare parts increase downtime risks.

CONTRACTUAL RISK OFFLOADING

Modern Full Service Agreements (FSAs) have limited liabilities for new, bigger and aging wind turbines.

SKILLED LABOUR SHORTAGE

Reduced workforce intensifies workload and operational complexities.

TRADITIONAL FSA GUARANTEES DON'T SCALE WITH TURBINE SIZE.

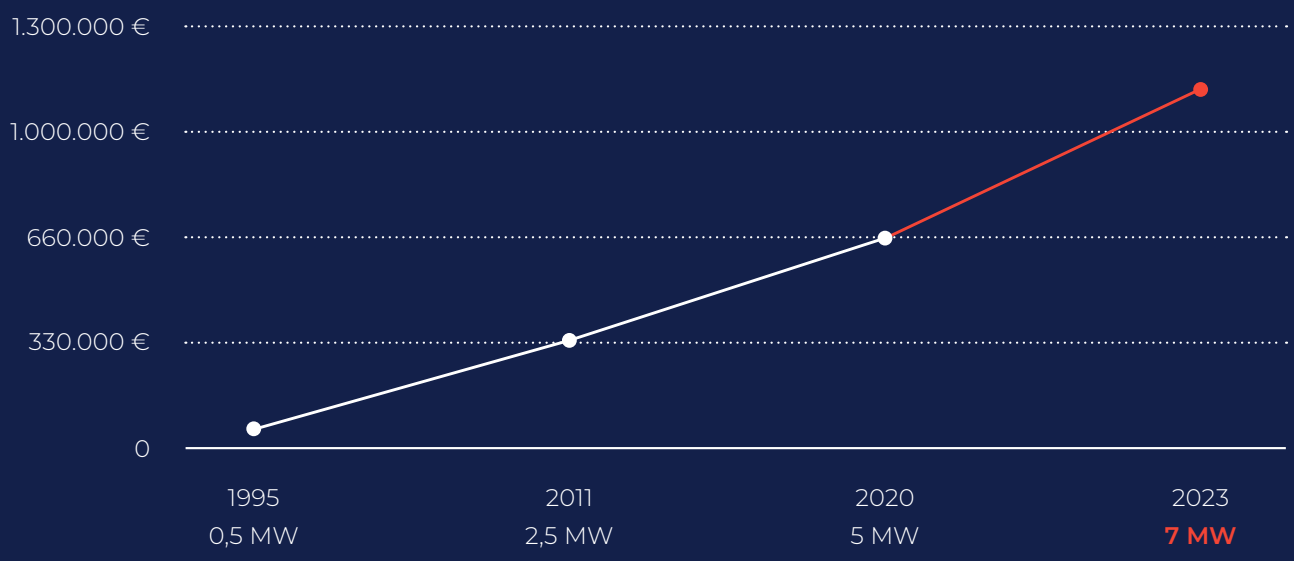
Wind turbines have become larger and more complex, but the financial protection in traditional FSAs hasn't kept pace. As downtime per incident has risen sharply, liability caps are reached faster, exposing owners to higher losses.

The result is greater financial risk, threatening profitability and long-term stability for wind park operations.

LIABILITY CAPS FILL UP FASTER.

LEAVING THE OWNER AT RISK.

Downtime costs per turbine for 12 months per MW class.



TURBIT RISK INFRASTRUCTURE FOR WIND ENERGY.

Turbit streamlines operational and financial risk management for owners and operators.

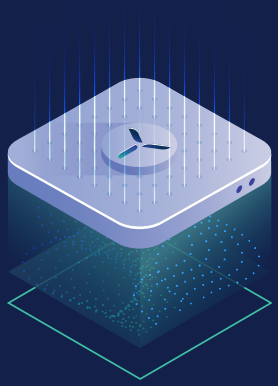
By embedding intelligence directly into operational and maintenance workflows and related contracts such as insurance, Turbit transforms raw machine data into actionable insights. As a result, owners and operators strengthen control and decision-making, optimize maintenance strategies, and reduce financial exposure from downtime and operational expenses (OPEX).

TURBIT MONITORING

Predict turbine failures months in advance.

TURBIT ASSISTANT

Automate and support daily work with a fine-tuned AI for O&M.



TURBIT DATAHUB

Centralize and safeguard all data at scale.

TURBIT BLUE

Unify operational and financial risk protection with AI insurance.

TURBIT MONITORING

Data-driven, highly sensitive, and trusted by insurers.

Turbit's self-learning AI tool uses a continuously growing operational database to detect early signs of component failures, performance issues, and turbine health risks. It delivers precise, actionable alerts, giving operators unmatched clarity, improving efficiency, and enabling smarter decisions.

SELF-LEARNING AI

Continuously improves with a growing operational database (7+ years labelled data) - trusted by insurers.

DATA-DRIVEN

Adapts to diverse portfolios to strengthen performance.

CLARITY OVER NOISE

Provides AI prioritized alerts with context and root cause analysis.

PROACTIVE MAINTENANCE

Offers months of lead time for planning and decision-making.

Case Information

Display Name
Zephyrus_VES-4_Generator

Creation Date
March 12, 2023, 5:25 PM

Last Update Date
May 8, 2023, 8:41 AM

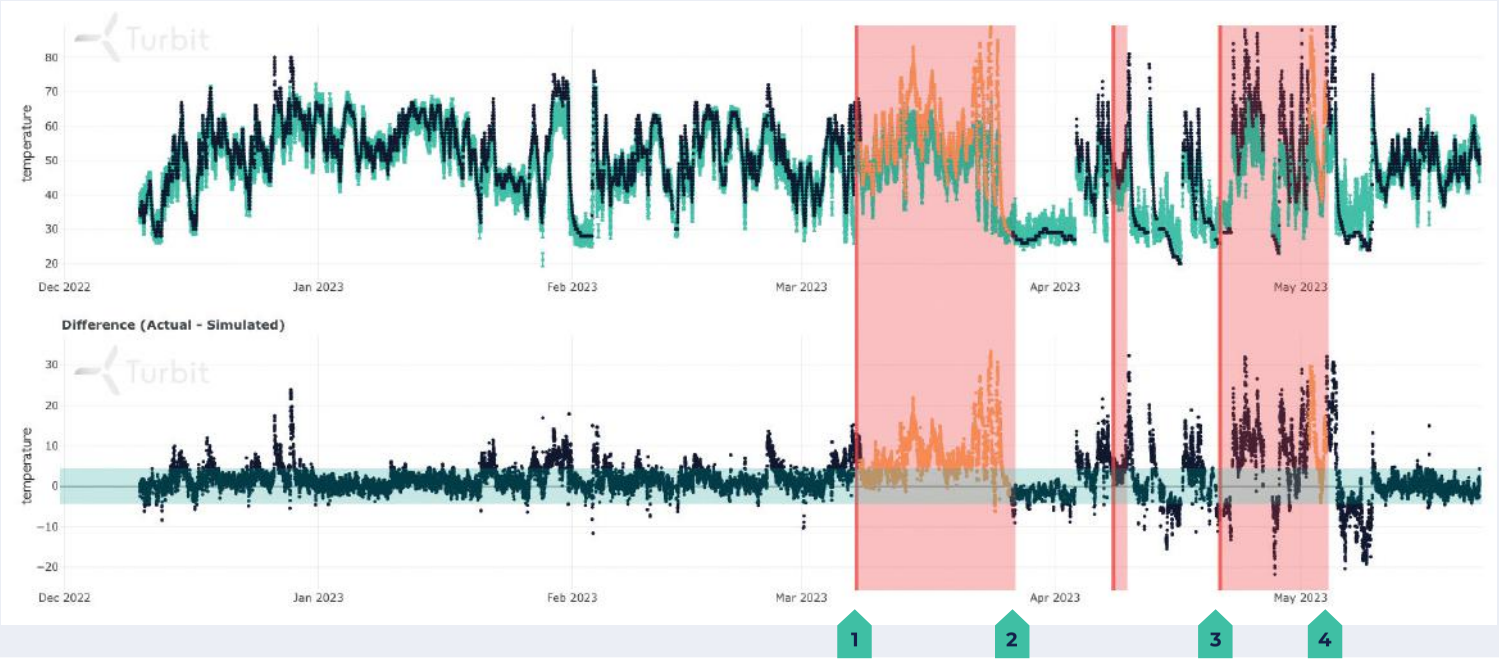
Affected Turbines

VES-4

- temperature_generatorbearing_1.val
- temperature_transformerphase_2.val

Description Summary

Temperatures high in generator; replacement done.



1. MARCH 2023

Turbit detected abnormal temperature in the generator bearing and transformer phases, reaching 90 °C. Planned maintenance was scheduled for July.

2. APRIL 2023

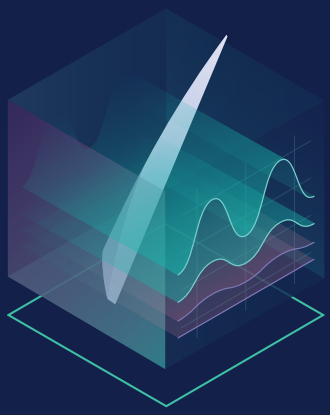
As conditions worsened, the issue was raised again with the Service Provider.

3. MAY 2023

Inspection revealed abnormal noises in the generator.

4. RESOLUTION

Generator bearing replaced within 5 days. No further anomalies since.



BLADE MONITORING

Reduce blade failure risk with unmatched detection precision.

Blade Monitoring is a first-of-its-kind integration that combines advanced AI analytics with high-frequency sensor data from Weidmüller's BladeControl. By analyzing flap and edge vibrations in real time, it detects early-stage blade damage - the most common and costly failure in wind turbines. This allows owners to identify anomalies earlier, prevent cascading damage, minimize downtime, and extend turbine life.

Weidmüller

LESS TOOL CLUTTER

Combines Blade and SCADA Monitoring in one platform.

CUTTING-EDGE AI

Real-Time Spectrogram Analysis with AI brings deeper context for faster, more accurate failure analysis.

TURBIT BLUE INTEGRATION

Enables holistic risk coverage and potential OPEX reduction.

Case Information

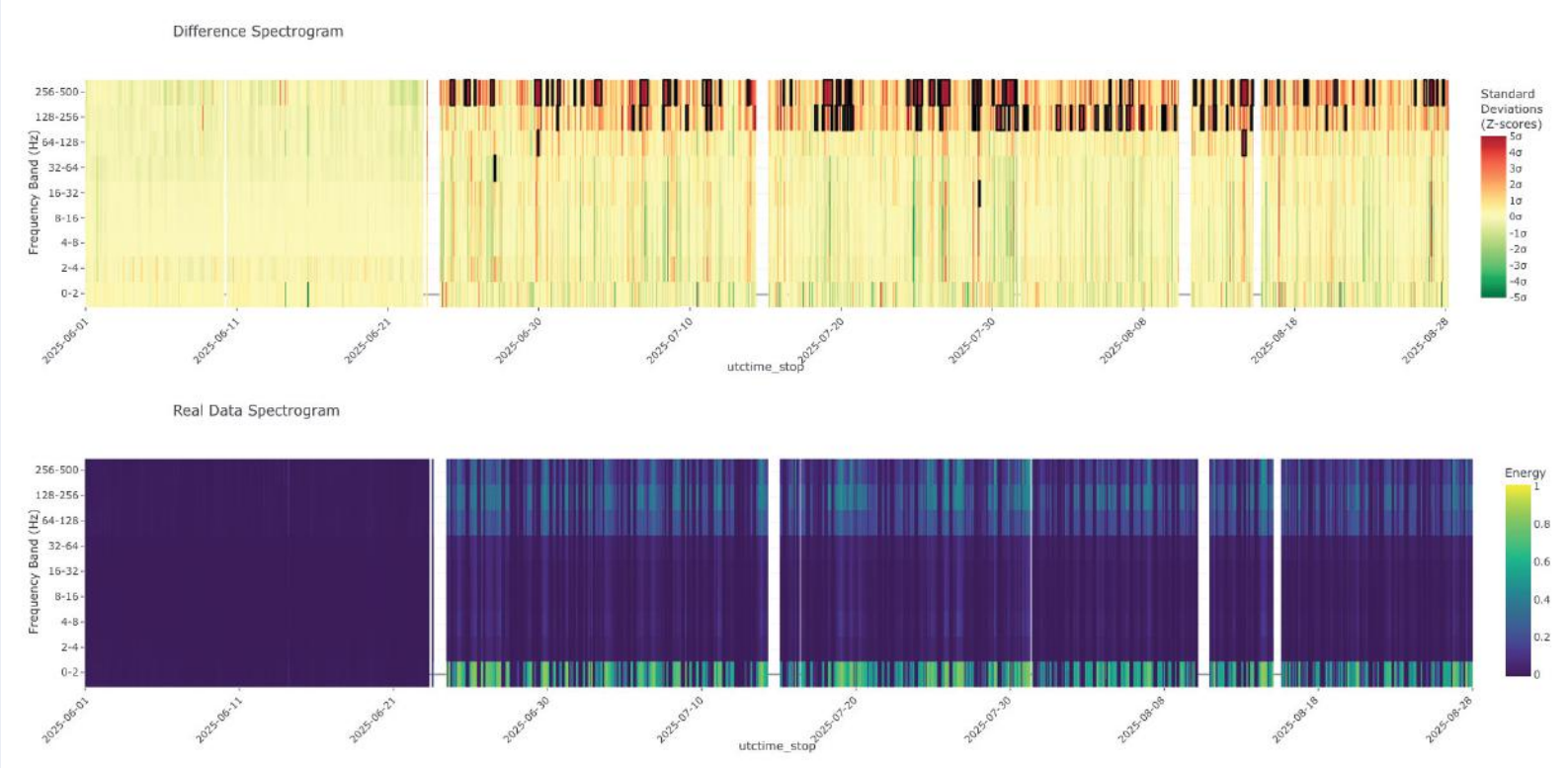
Display Name
VES73891_Blades_12053

Affected Turbines

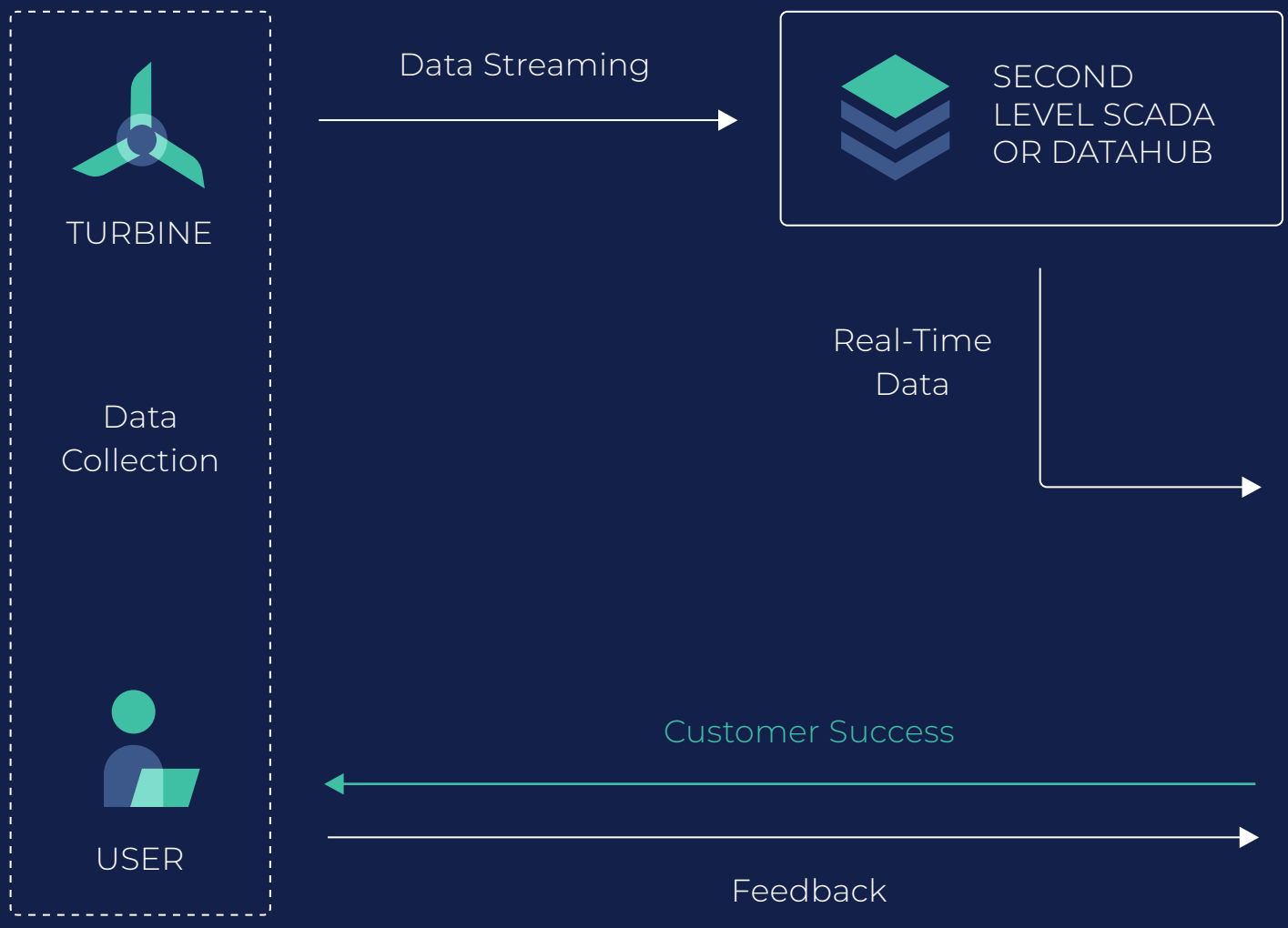
blade_1
sensor_1 sensor_2

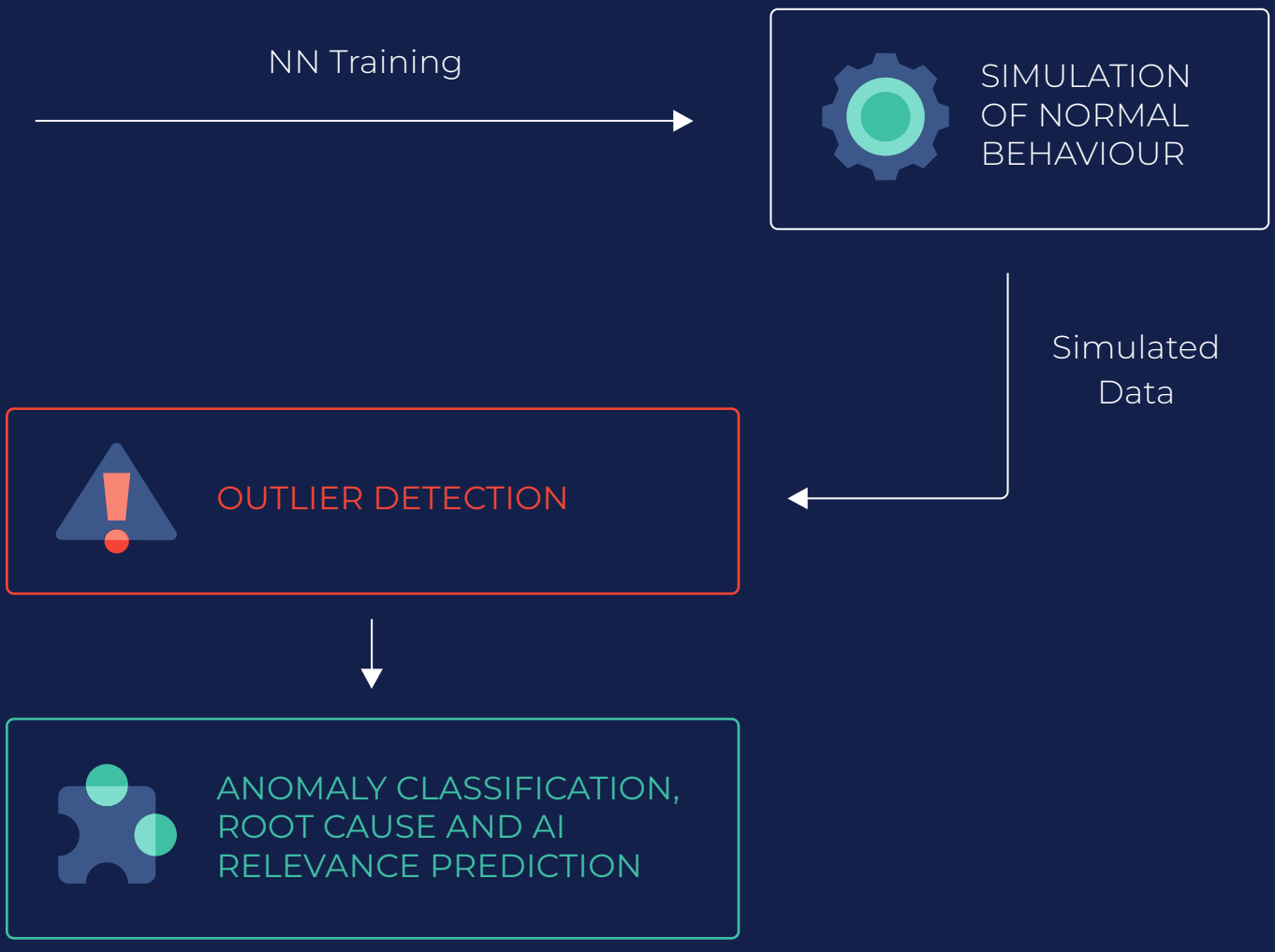
blade_2
sensor_1 sensor_2

blade_3
sensor_1 sensor_2



TURBIT
AI INFRASTRUCTURE.




NN Training
SIMULATION OF NORMAL BEHAVIOUR
Simulated Data
OUTLIER DETECTION
ANOMALY CLASSIFICATION, ROOT CAUSE AND AI RELEVANCE PREDICTION

TURBIT ASSISTANT

Turn your documents into actionable insights while streamlining daily workflows.

This fine-tuned AI System parses all your operational documentation, combining domain-specific knowledge with expert analysis to deliver relevant insights and automate repetitive work. It equips your team with the information they need - driving efficiency, saving time and reducing complexity.

DOCUMENT MANAGER

Categorize and summarize documents automatically.

CHAT

Instantly retrieve knowledge buried in documents to speed up decision-making.

AUTOMATED AI WORKFLOWS

Automate tasks and insights from documents, with no manual input required.

According to report of Windpark-Two are there any actions required? If so, give me a list of actions per wind turbine.

W02T01:
- Immediate attention required for the main gearbox.
- Monitor the condition of the main/rotor bearing, as it shows early signs of wear.

W02T02:
- Routine inspection needed for the main gearbox due to minor discrepancies in operational data.
- No immediate actions required for the main/rotor bearing.

Doc 1.pdf

Please update the defect list of Turbine W03T03 with data from the attached document.

Priority	Source	Component	Date of Initial Identification	Issue Description	Timeline	Update
Medium	W03T03	Main gearbox	2016-04-25	Oil contamination detected; high zinc levels suggest mixing with zinc-containing oil or residues. Cleanliness below recommended standard.	2016-04-25: Contamination detected, filter replacement advised. 2019-07-16: Increased copper levels, but oil within standards. Further monitoring advised.	Report confirms oil cleanliness meets standards. No new defects. Priority remains Medium.

[1] 337.pdf

Please update the defect list of Turbine W03T03 with data from the attached document.

Priority	Source	Component	Date of Initial Identification	Issue Description	Timeline	Update
Resolved	W03T03	Main gearbox	2016-04-25	Contamination detected in oil; high zinc levels suggest mixing with zinc-containing oil or residues. Oil cleanliness below recommended standard.	2016-04-25: Contamination detected, filter replacement advised. 2019-07-16: Increased copper levels, but oil within standards. 2022-10-23: All values within tolerance, no deviations.	Latest lab report confirms contamination resolved. Priority updated to Resolved.

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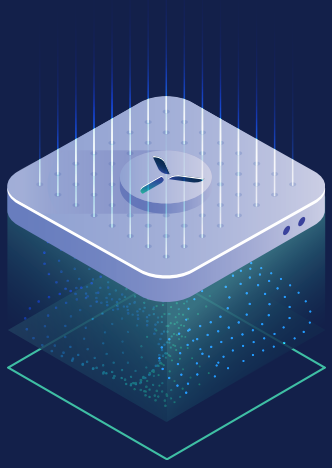


TURBIT DATAHUB

Unlock the full potential of your data.

High-frequency, real-time data is essential for every AI model, business case and operational decision. Turbit Datahub keeps your data complete, consistent, and trustworthy - ready to share with monitoring providers, insurers, or your in-house analytics team. Centralizing your data helps you improve operational reliability, demonstrate value to stakeholders, and get more from every tool you use.

CENTRALIZED DATA

Centralizes all your renewables data, from solar, wind and battery in one place.

AI-READY DATA QUALITY

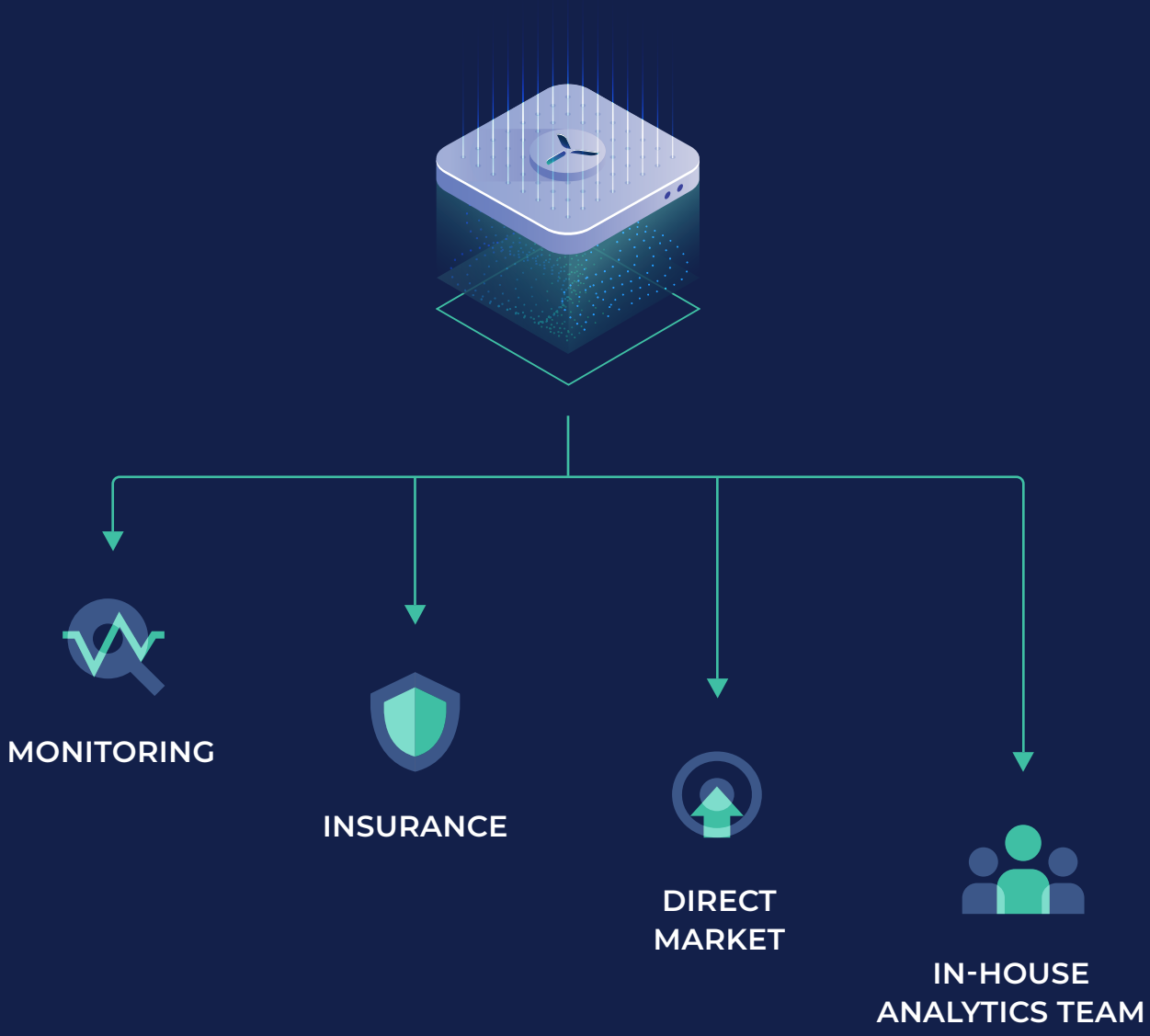
Ensures every data point is accurate, complete, and reliable, maximizing the value of analytics, AI, and business decisions.

DATA POWERTRAIN

Stream high-frequency data to third parties, Turbit Monitoring and Insurance.

DATA FOUNDATION: FUTURE-PROOF YOUR INFRASTRUCTURE.

Each year, data becomes more important in the industry. Data will be the core engine to excel in the market. We build the Datahub to unlock this future.



TURBIT BLUE

Cut operational risk from day one while strengthening your financial stability.

Developed in partnership with HDI Global SE, Turbit Blue combines AI-driven risk prevention with tailored insurance coverage, bringing a new level of protection to wind parks. Risk prevention is embedded directly into operations without changing how claims are handled. Owners can now enjoy a seamless way to safeguard performance and profitability.

OPEX REDUCTION

Protects your portfolio while potentially reducing OPEX by up to 30%.

COMPREHENSIVE COVERAGE

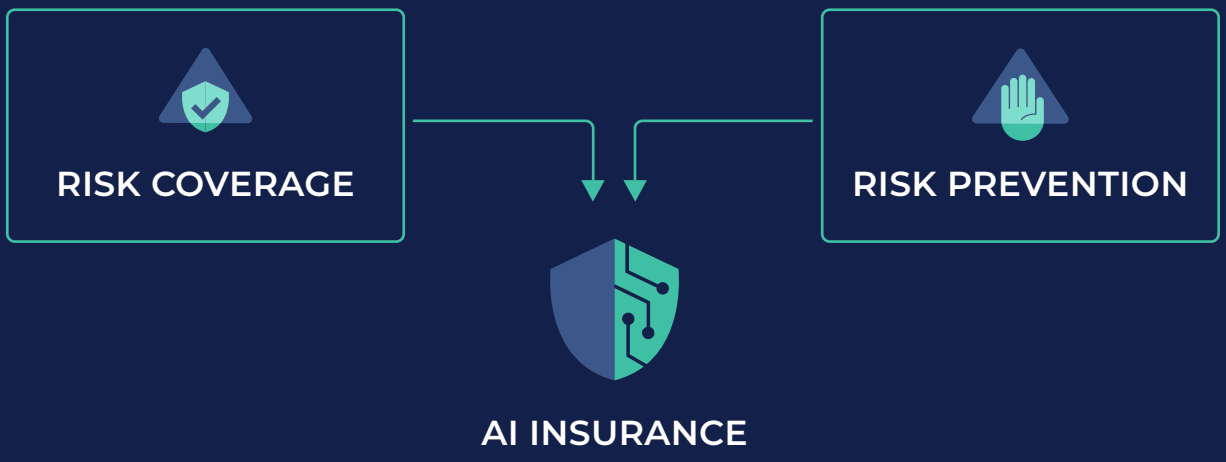
Provides extensive coverage for uncapped risks in modern FSAs, addressing contemporary needs and evolving challenges.

EFFICIENT RISK TRANSFER

Increases transparency and aligns interests between insurer and owner.

How does the smarter risk transfer work?

RISK COVERAGE FROM HDI AND RISK PREVENTION FROM TURBIT - EMBEDDED IN POLICY TERMS.



TURBIT BLUE PRODUCTS

ESSENTIAL

AI Subsidiarity Insurance.

ADVANCED

Full Scope AI Subsidiarity Insurance (FSA without main components).

PREMIUM

Full Scope AI Insurance.

VOICES OF OUR CLIENTS.

Oliver Kayser, SAB WindTeam

With Turbit's solutions and the straightforward collaboration, we get a much better view of our asset base. A real added value for technical operations and asset management.

Dimitry Nilov, Windpunx

Since 2019, Windpunx has been collaborating trustfully with Turbit. We place great emphasis on integrating innovations into the daily tasks of technical operations and work closely with Turbit in this regard.

Alexander Hentschel, Qualitas Energy

With Turbit Blue, we can reliably meet our high standards for performance and safety for both older and newer wind turbines. We regard the cooperation between Turbit and HDI Global as pioneering for modern, efficient, and risk-conscious operations of wind farms.

TURBIT BY THE NUMBERS.

3500+

TURBINES UNDER MONITORING

20k+

ASSET YEARS OF DATA

12k+

NEURAL NETWORKS IN PRODUCTION

40+

CUSTOMERS WORLDWIDE

25+

TEAM MEMBERS

7+

YEARS IN THE INDUSTRY

TALK TO OUR EXPERTS.

Explore how Turbit can enhance your asset management and operations.

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