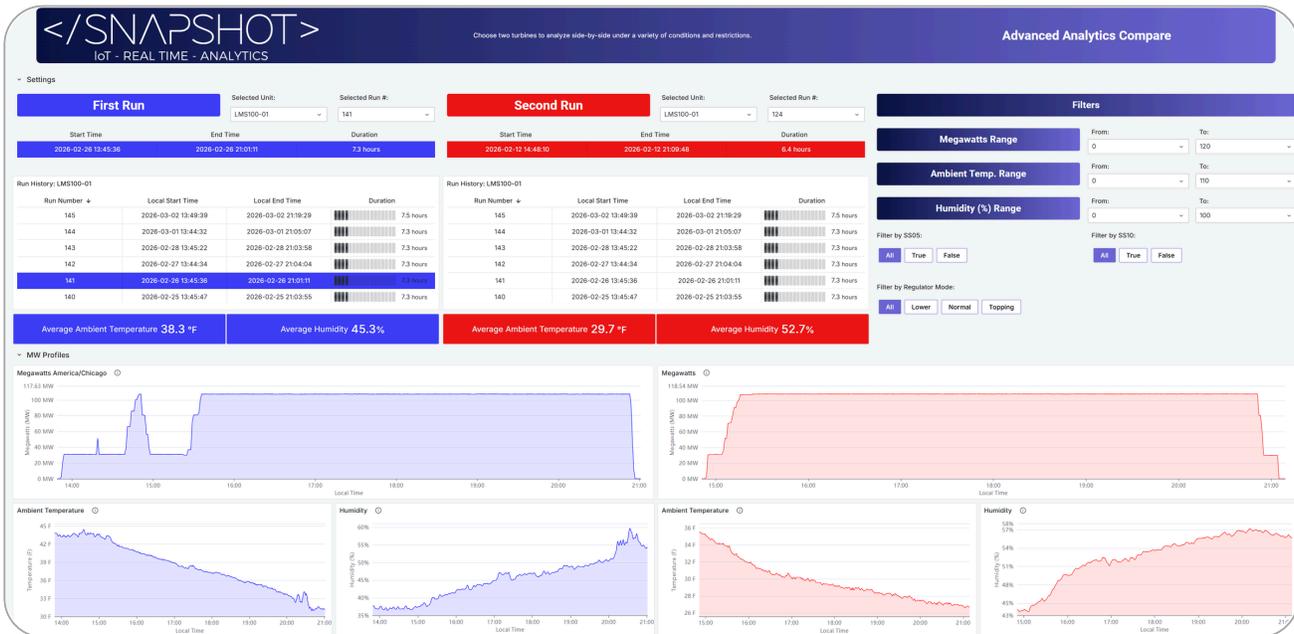


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IoT - REAL TIME - ANALYTICS

Advanced Analytics Comparison (AAC) Side-by-Side Performance Evaluation for Gas Turbine Decision-Making

The Advanced Analytics Comparison (AAC) dashboard enables normalized, side-by-side comparison of gas turbine performance across units or time periods. By aligning datasets under equivalent operating conditions, AAC helps identify performance gaps, degradation, and improvement opportunities without manual data analysis.



Why AAC Matters

- Benchmark fleet, supercore, and unit performance
- Identify degradation vs. historical baselines
- Validate maintenance and upgrade impact
- Compare normal vs. abnormal operating periods
- Support data-driven operational and financial decisions

Data Selection & Filtering

- Compare same or different units across time periods
- Automatic analytics execution across all views
- Filter datasets by:
 - MW output range
 - Ambient temperature
 - Relative humidity
 - Operating mode

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Dashboard Components

All analytics are normalized and evaluated against MW load or N44 Speed, enabling direct comparison across datasets under equivalent operating conditions.

MW Profile

Displays: MW load, ambient temperature, and relative humidity

- Establishes load distribution and environmental exposure
- Provides context for interpreting downstream performance issues

Performance Analytics

Metrics include: LPC Efficiency, HPC Efficiency, NOx15, Heat Rate

- Quantifies efficiency loss, emissions drift, and heat-rate penalties
- Enables rapid comparison of overall unit performance between datasets

Compressor Diagnostics

Separate LPC and HPC Analytics measure: efficiency, work, temperature differential, and pressure ratio

- Identifies compressor fouling and degradation
- Detects airflow and compression performance shifts
- Highlights control-related impacts on compressor behavior

Variable Geometry

Compares IGV, VBV1, VBV2, and VSV positions

- Detects tuning offsets and control logic differences
- Identifies mechanical or actuator limitation affecting airflow
- Explains performance differences driven by geometry positioning

Combustion Analytics

Displays fuel and water flows relative to MW Load or Water Flow Demand

- Identifies combustion tuning differences
- Detects incorrect fuel or water settings
- Surfaces hardware issues (valves leaks, flow inconsistencies)

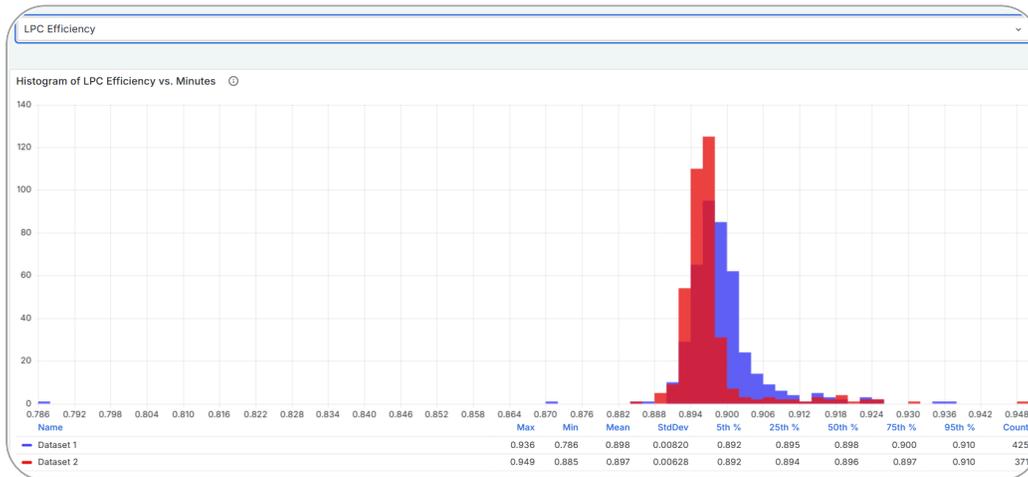
Performance Statistics

Provides statistical summaries for each dataset and parameter including average, median, min/max, and histogram visualization

- Quantifies performance differences with statistical rigor
- supports defensible engineering conclusions
- eliminates need for external analysis tools

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The Advanced Analytics Comparison (AAC) dashboard transforms complex performance data into clear, actionable insight, which enables faster, more confident decisions across operations, maintenance, and engineering.

Accelerate Root-Cause Identification

Rapidly isolates performance gaps across units or time periods, reducing time from detection to diagnosis

Improve Maintenance & Tuning Effectiveness

Validates maintenance actions and identifies tuning or control inefficiencies based on qualified performance impact

Protect and Recover Revenue

Detects efficiency losses early and enables recovery of lost MW and heat-rate performance

Enable Data-Driven Decision Making

Delivers normalized, statistically-grounded comparisons that improve clarity in operational and engineering decisions

The table displays a comparison of various performance metrics between two datasets. The columns represent different statistical measures: Avg 1, Avg 2, Median 1, Median 2, Min 1, Min 2, Max 1, and Max 2. The rows list different performance indicators such as Heat Rate, HPC Efficiency, HPC Pressure Ratio, HPT Efficiency, HPT Pressure Ratio, IC Effectivity, IPT Efficiency, IPT Pressure Ratio, LPC Efficiency, LPC Pressure Ratio, and LPT Efficiency.

Statistic	Avg 1	Avg 2	Median 1	Median 2	Min 1	Min 2	Max 1	Max 2
Heat Rate	8631	7969	7671	7592	7395	7404	66752	93848
HPC Efficiency	0.834	0.833	0.833	0.833	0.815	0.813	0.872	0.858
HPC Pressure Ratio	10.0	10.3	10.5	10.5	1.75	1.78	10.7	10.7
HPT Efficiency	0.948	0.937	0.941	0.938	0.828	0.852	1.11	1.06
HPT Pressure Ratio	0.411	0.410	0.410	0.410	0.340	0.360	0.820	0.670
IC Effectivity	1.14	1.09	1.06	1.06	0.402	0.411	171	15.4
IPT Efficiency	0.597	0.623	0.634	0.635	0.323	0.309	0.647	0.647
IPT Pressure Ratio	0.471	0.472	0.470	0.470	0.440	0.440	0.860	0.850
LPC Efficiency	0.899	0.896	0.898	0.895	0.755	0.789	0.981	0.986
LPC Pressure Ratio	3.85	4.10	4.24	4.28	1.03	1.03	4.30	4.31
LPT Efficiency	0.928	0.915	0.915	0.910	0.903	0.900	1.08	1.05

AAC delivers faster insights, clearer comparisons, and measurable performance improvements by turning turbine data into decisions that directly impact plant reliability and revenue.

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BASE PILLAR

SnapShot is a subscription based monitoring solution to remotely troubleshoot, analyze and predict issues for gas turbines and control systems. The base plan includes SISO's Matrix Box configuration, web dashboards, biannual asset review, and SISO expert support.

ADD PILLARS TO CUSTOMIZE YOUR SITE PLAN



PILLAR 1: PERFORMANCE TRACKING

Review of performance analysis, month over month data review, identification of issues with specific units, and analysis of each major engine component over time. We investigate performance issues, review historical data, provide support, and recommendations to help optimize efficiency and reliability.



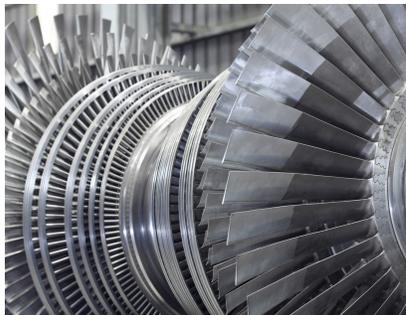
PILLAR 2: RELIABILITY, AVAILABILITY, MAINTAINABILITY

Alarm monitoring solution, diagnostics, and historical tracking to identify patterns and prevent issues. Our experts offer actionable solutions, unit analysis, and regulator monitoring to ensure reliability, efficiency, and balanced operation.



PILLAR 3: COMPLIANCE

Comprehensive cycle monitoring for LMS100 and LM6000 engines, tracking partial and full trip cycles with detailed component analysis. Our web-based reporting dashboard ensures visibility and historical data storage for compliance and performance optimization.



PILLAR 4: REAL-TIME

Real-time monitoring with live dashboard system for KPI tracking, alarm visibility, and automated trip log storage. Custom alerts and remote access ensure rapid response, while a secure, cloud-based system enables seamless support and issue resolution.