



Reimagine Aviation Maintenance with AI



Aircraft on Ground (AOG) events can cost up to **\$150K per occurrence**, according to data from Boeing¹, with significant damage done to both airline reputation and bottom line. With unplanned maintenance issues and lack of deep ground crew expertise resulting in extending gate times, airlines need ways to capture productivity and profitability gains. Data, improved analytics, and optimized workflow promise to do just that.

SparkCognition is using machine learning and natural language processing technologies to enable safe, efficient, and profitable airline operations.



FIGURE 1 SparkCognition Aircraft Solutions

	PROBLEM	SOLUTION	VALUE
PREDICTIVE MAINTENANCE FOR GROUND OPERATIONS	Aircraft maintenance is performed reactively or at scheduled intervals with no predictive capabilities	The SparkCognition™ Aviation Advisor product uses machine learning models to identify known and unknown problematic behaviors in critical aircraft subcomponents (turbines, landing gear, etc.)	Provides additional advance warning of impending failure modes
PRESCRIPTIVE MAINTENANCE FOR GROUND OPERATIONS	Front-line maintainers do not inherently possess working knowledge to assess and triage all possible aircraft fault codes	Cognitive diagnostics provides AI-driven analysis of historical maintenance logs to identify most effective corrective actions for faults	90% reduction in manual root cause analysis research, reducing turnarounds by an average of 20 minutes per incident
PREDICTABLE OPERATIONS FOR FRONT OFFICE	Predictive insights regarding capacity optimization, revenue management, pricing strategy, and customer segmentation are difficult to extract from massive data stores	The SparkCognition™ ML Studio automated machine learning product enables data scientists and non-technical business users to build highly accurate predictive models using their enterprise data	Machine learning models can be developed in hours , not weeks, and without data science expertise

Revolutionary Technology

The Aviation Advisor Product Advantage

IMPROVES PREDICTABILITY IN OPERATIONS

with advanced predictive insights at scale and requires no previous knowledge of machine learning

EXPLAINABLE & ACTIONABLE RECOMMENDATIONS

The Aviation Advisor product empowers users with rich diagnostic features that provide evidence for the AI-derived outcomes

The Cognitive Diagnostics Advantage

MINIMIZES OPERATIONAL COSTS

by removing bottlenecks in organizational workflows to improve maintenance agility

AUTOMATES MAINTENANCE WORKFLOWS

by quickly retrieving optimal repair solutions through rich content analytics from asset maintenance logs and user manuals

The ML Studio Product Advantage

IMPROVES BUSINESS OUTCOMES

by generating self-service predictive insights that enable business leaders to address operational and business challenges

REDUCES NEED FOR INTENSIVE DATA SCIENCE

to create, deploy, and maintain automated machine learning models across the organization

ABOUT SPARKCOGNITION

SparkCognition’s award-winning AI solutions allow organizations to predict future outcomes, optimize processes, and prevent cyber-attacks. We partner with the world’s industry leaders to analyze, optimize, and learn from data, augment human intelligence, drive profitable growth, and achieve operational excellence. Our patented AI, machine learning, and natural language technologies lead the industry in innovation and accelerate digital transformation. Our solutions allow organizations to solve critical challenges—prevent unexpected downtime, maximize asset performance, optimize prices, and ensure worker safety while avoiding zero-day cyber-attacks on essential IT and OT infrastructure. To learn more about how SparkCognition’s AI solutions can unlock the power in your data, visit www.sparkcognition.com.

[1] <https://web.archive.org/web/20080130122957/http://www.boeing.com/commercial/global/opscenter.html>