Novation Ltd. Unveils Advanced AI Threat Detection Platform for Energy Infrastructure

ALBERTA, CANADA, June 16, 2025 /EINPresswire.com/ -- Novation Ltd., a Canadian engineering and AI consultancy, has announced the launch of its next-generation Threat Detection and Predictive Monitoring System for energy, utilities and public infrastructure, aiming to support critical energy operations across North America. Led by Founder and Lead Data Scientist - Agim Takon, Novation's flagship platform integrates machine learning, computer vision, IoT telemetry, geospatial and SCADA analytics to deliver real-time risk monitoring and anomaly detection for Energy & Power assets, Oil & Gas Operations, Water & Utility Systems, Industrial & Manufacturing Facilities, Transportation and Communication Infrastructure.

> This is not just about building smarter systems. It's about strengthening U.S. energy resilience using ethical, scalable, and adaptive technology,"
>
> *Agim Takon*

"Our system goes beyond basic alarms. We're building adaptive intelligence that predicts failures, detects intrusions, and learns from evolving conditions on the ground—reducing downtime, maintenance costs, and human error," says Mr. Takon.

The platform's expansion comes at a time when U.S. agencies including the Department of Energy (DOE) and Cybersecurity and Infrastructure Security Agency (CISA) have warned about the growing vulnerabilities facing the country's aging and digitally exposed infrastructure. With over $150 billion lost annually due to unplanned outages and asset failure across the energy sector, Novation's AI system is designed to meet urgent operational, regulatory, and national security needs. Recent CISA assessments have also highlighted that over 55% of critical infrastructure operators lack proactive monitoring systems to detect early-stage threats. In real-world deployments, Novation's platform has demonstrated up to 30%-50% reductions in emergency repair costs, 43% improvement in anomaly detection accuracy, and significant acceleration in incident response times.

Some core competences include:
Real-time Intrusion Detection Using YOLOv9-Based Vision Models:
Developing and deploying advanced computer vision pipelines leveraging YOLOv9/v8/v5 (You Only Look Once) for high-speed object detection and spatial anomaly recognition. Its models are custom-trained on a multi-source dataset comprising aerial UAV footage, multispectral satellite imagery, and time-stamped multi-media feeds from critical infrastructure environments.

This architecture supports a high-throughput, low-latency system capable of processing terabytes of visual data daily while delivering real-time risk insights across large and remote geospatial spans of infrastructure, including pipelines, substations, terminals, offshore platforms and other public/commercial sites.

Predictive Failure Modeling on Live Sensor Data using ML cloud technologies and control systems Integration:
Engineering real-time predictive maintenance framework that integrates Supervisory Control and Data Acquisition (SCADA) telemetry streams with distributed processing via Apache Spark Structured Streaming, AWS Sage Maker, Vertex and Azure ML pipelines to anticipate equipment failures and optimize asset lifecycle management. High-frequency data is ingested and processed in real-time for feature extraction and anomaly filtering, and feeds into custom predictive models to forecast failures and estimate asset health.

Compliance and Safety Reporting Aligned with relevant agencies like PHMSA, FERC, and OSHA Regulations:
Designing and implementing an automated regulatory compliance framework to ensure full alignment with safety, operational, and reporting mandates issued by organizations such as Pipeline and Hazardous Materials Safety Administration (PHMSA), Federal Energy Regulatory Commission (FERC), the Occupational Safety and Health Administration (OSHA) and many other regulatory bodies. This system not only ensures regulatory alignment across multiple U.S. federal oversight bodies but also enables predictive compliance monitoring and faster resolution of non-conformances in real time.

Novation Ltd. is currently expanding operations into the U.S., targeting partnerships with utility operators, infrastructure contractors, and public agencies. Its track record includes major projects with multinational corporations across power generation, energy midstream, mining, government agencies and many more. The company’s plan includes establishing a proof-of-concept lab and collaborating with local government and federal innovation programs.

The Founder
Mr. Agim Takon, a trained data scientist and machine learning engineer with over a decade of experience developing real-time analytics and AI models for some of North America's most essential industries. His work reflects a unique blend of technical expertise and sector-specific insight. A member of the IEEE, ACM, and the Canadian Artificial Intelligence Association, Mr. Takon has built a reputation for applying AI in practical, high-stakes environments.

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