AI-Driven Anomaly Detection & Compliance Automation for a Leading Oil & Gas Company

Challenge

A major oil & gas company faced persistent delays in repair and maintenance, and increased safety risks due to disconnected operational systems and manual workflows.

- **Disconnected Systems:** Operated with siloed SCADA, asset management, and document repositories, resulting in fragmented visibility and delayed decision-making

- **Lack of Workflow Integration:** No unified flow to connect sensor alerts, SOPs, work orders, and technician assignments

- **No Predictive Maintenance:** Absence of predictive maintenance capabilities meant anomalies were detected too late

- **Compliance & Uptime Impact:** Once incidents were flagged, manual repair coordination caused delays due to inaccessible procedures, inconsistent technician handoffs, and lack of traceability

Approach

- **Sensor Integration:** Connected SCADA (e.g., Honeywell, Emerson) to monitor abnormal behavior in pumps, valves, and compressors

- **Anomaly Detection Engine:** Detected threshold violations and triggered automated incident flags

- **AI-Powered SOP Mapping:** Matched equipment and incident metadata to the correct procedural manuals using LLMs

- **Work Order Automation:** Auto-generated repair tickets with pre-filled details (location, severity, asset ID)

- **Technician Assignment & Checklists:** Deployed role-based mobile checklists through integration with SAP PM and Documentum

- **Compliance Dashboard:** Visual interface with real-time status, KPIs, and audit-ready logs for full lifecycle traceability

Key Results

50-60% Reduction in response time for repair and equipment checks	**500+** Field assets expected to be covered with predictive monitoring	**6+** Seamless integration with enterprise tools including SCADA, SAP PM, ArcGIS, etc.

About Straive

As a data analytics and AI operationalization company, we don't just build top-tier data analytics and AI solutions—we integrate them seamlessly into your core workflows. This approach drives enhanced efficiency, improves user experience, and boosts revenue, setting you apart from the competition.

Serving a diverse range of industries— including Pharmaceutical & Life Sciences, Logistics, Supply Chain & Manufacturing, Research & Publishing, Information Services, EdTech, Banking & Financial services, and Retail Tech, Entertainment & Media— we have a global client base spanning over 30 countries.

Our strategically positioned resource pool operates across seven countries, including the Philippines, India, the United States, Nicaragua, Vietnam, the United Kingdom, and Singapore, where the company is headquartered.

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