HUB TECH IA

Deliverable report 50

AI and IAGEN Application Use Case

Real-Time Monitoring, Pressure, Temperature and Flow Analysis for Minimizing Failures in the Vaca Muerta Industry: A Comprehensive Approach

Classification of deliverable report 50: "Real-Time Monitoring, Analysis of Pressure, Temperature and Flow to Minimize Failures in Vaca Muerta":

Classification 1: By Main Resource

- Selected option: Oil and Gas (main).
- Justification:

The report focuses specifically on real-time monitoring and analysis. of oil and gas extraction wells, optimizing their production and maintenance. Although sustainability benefits are mentioned, the focus is clearly the performance of hydrocarbon infrastructure.

Classification 2: By Activity within Vaca Muerta

- Selected option: Optimization of Production Processes
- Justification:

The report raises how real-time monitoring of pressure, temperature and Flow allows to anticipate failures, optimize well operation, adjust parameters extraction and reduce downtime, all based on the

operational and productive efficiency of the wells.

Classification 3: Type of AI Technology Used

- Main selected option: 2ÿÿMachine Learning Algorithms, 1ÿÿGenerative AI Models, 5ÿÿAI Systems Based on Intelligent Agents, 6ÿÿAI Platforms for Data Integration and Big Data, 4ÿÿComputer Vision Systems (less relevant).
- Justification:

  The report details the use of machine learning algorithms, models generative, predictive analytics, agentic flows, IoT sensors, SCADA and Big Data platforms. The architecture includes dashboards, generation of automatic reporting and real-time data-driven decision-making.

Classification 4: By Strategic Impact on the Industry

- Selected option: AI for Production and Quality Optimization Infrastructure
- Justification:

  The report highlights that intelligent monitoring allows for reducing failures and costs, increase productivity, improve safety, and extend the lifespan of equipment and infrastructure, which has a direct impact on the operation efficient critical infrastructure in Vaca Muerta.