HUB TECH IA

AI and IAGEN Application Use Case

Detection of anomalies and inefficiencies

Process Optimization in Vaca Muerta through Intelligence Artificial Generative

Report Classification 27: "Process Optimization in the Oil Industry in Vaca Muerta through Generative Artificial Intelligence (Anomaly Detection) and inefficiencies):

Classification 1: By Main Resource

• Selected option: Oil, ÿ Gas,   Water + energy (approach)

comprehensive).

• Justification:

This report explicitly addresses comprehensive optimization in extraction,

transportation, storage, refining and distribution of oil and gas in

Vaca Muerta. It also includes efficient water management,

especially in hydraulic fracturing processes, positioning these

three resources as essential in its comprehensive approach.

Classification 2: By Activity within Vaca Muerta

• Selected option: Optimization of Production Processes

• Justification:

The document focuses on automated anomaly detection and

inefficiencies using Generative Artificial Intelligence (IAGen), specifically aimed at improving

operational efficiency, optimizing the

drilling, reduce failures, improve logistics management, optimize processes refining and storage, and maximize the overall productivity of the production processes in the oil and gas industry.

Classification 3: Type of AI Technology Used

• Main selected option:

1ÿÿGenerative AI Models,

2ÿÿMachine Learning Algorithms,

3ÿÿNatural Language Processing (NLP) Systems,

4ÿÿComputer Vision and Image Analysis Systems,

6ÿÿAI Platforms for Data Integration and Big Data.

• Justification:

The report explicitly highlights the use of generative technologies advanced for automated anomaly detection, predictive analytics with real-time machine learning, integrated systems with IoT and SCADA platforms for large-volume collection and analysis data, as well as computer vision and language processing systems natural to facilitate the analysis of technical and operational information in all the stages of the production process.

Classification 4: By Strategic Impact on the Industry

• Selected option: AI for Production and Quality Optimization Infrastructure

• Justification:

The main strategic impact mentioned in the report lies in the IAGen's ability to significantly improve efficiency and productivity of oil operations, reduce operating costs, anticipate and prevent failures, improve operational safety, optimize logistics, and reduce environmental impacts. This clearly positions the report in the category of strategic optimization of both production as well as critical infrastructure in Vaca Muerta.