HUB TECH IA

Use Case of AI and IAGEN Application

Deliverable Report Classification 1: "Predictive Analysis of Well Performance in Vaca Muerta"

🔷 **Classification 1: By Main Resource**

Selected Option: 🛢 Oil

Justification:

The main activity described in the report is clearly centered on the extraction, drilling, and production of oil. Although gas is also involved as a secondary resource, the emphasis is clearly on optimizing oil production through predictive analysis of well performance.

🔷 **Classification 2: By Activity within Vaca Muerta**

Selected Option: Optimization of Production Processes

Justification:

The report directly addresses the optimization of performance in the extraction and production of hydrocarbons using advanced predictive models. This aligns perfectly with the category "Optimization of Production Processes", which involves the use of predictive models to improve the efficiency in oil and gas extraction.

🔷 **Classification 3: Type of AI Technology Used**

Selected Option: 1️⃣Generative AI Models and 2️⃣Machine Learning Algorithms

Justification:

The report clearly mentions the use of advanced generative models such as GANs (Generative Adversarial Networks) and specific supervised machine learning algorithms like LSTM and Random Forest to carry out predictive analyses of well performance. Both technologies are complementary: GANs generate synthetic data and simulate scenarios, while algorithms like LSTM and Random Forest analyze

historical patterns to generate accurate predictions.

Note: In this particular criterion, both types are clearly presented, and their combined use (Generative + Machine Learning) is relevant.

◆ **Classification 4: By Strategic Industry Impact**

Selected Option: Optimization of Production and Infrastructure

Justification:

The strategic impact explicitly mentioned in the report is the improvement of prediction accuracy for well performance to maximize production and reduce operational costs. This clearly fits within the category "Optimization of Production and Infrastructure", since the main objective is to maximize efficiency and productivity in resource exploitation.