HUB TECH IA

AI and IAGEN Application Use Case

Report on Exploration, Reservoir Modeling and Analysis of geological data to identify areas with shale gas

Classification of deliverable report 40: "Exploration, reservoir modeling and Data analysis for the identification of shale gas reserves in Vaca Muerta:

Classification 1: By Main Resource

• Selected option: Gas (main).
• Justification:

   The report focuses on the use of IAGEN for gas reserve prediction.
   recoverable, particularly shale gas, in the Vaca Muerta formation. Although
   Oil and other operational aspects are mentioned, natural gas is not
   Conventional is the exclusive focus of geological modeling, simulation and analysis
   and seismic that the document raises.

Classification 2: By Activity within Vaca Muerta

• Selected option: Information Management and Decision Making
• Justification:

   The document specifically addresses how IAGEN tools
   allow strategic decisions to be made based on seismic, geological,
   petrophysical and production, improving dynamic reserve prediction,

design of exploitation strategies, drilling planning and

risk assessment. All of this is geared toward strengthening decision-making

executive and technical level.

Classification 3: Type of AI Technology Used

• Main selected option:

1ÿÿGenerative AI Models,

2ÿÿMachine Learning Algorithms,

4ÿÿComputer Vision and Image Analysis Systems,

6ÿÿAI Platforms for Data Integration and Big Data, 5ÿÿAI

Systems Based on Intelligent Agents.

• Justification:

The report details the use of generative neural networks (GANs, VAEs),

Monte Carlo simulations, predictive ML models (Random Forests, Gradient

Boosting, MLP), computer vision of seismic data with CNNs, and a

intelligent agent-based architecture for collection, modeling,

continuous optimization and simulation. The entire process is integrated with large

volumes of real-time geological and operational data.

Classification 4: By Strategic Impact on the Industry

• Selected option: Strategic Decision Making and Data Analysis

• Justification:

The report focuses on how IAGEN improves the accuracy of

reserve predictions, optimizes well investments, reduces costs

unnecessary and allows you to evaluate scenarios with quantifiable metrics.

detail improvements in efficiency, reduction of uncertainty and greater control of the

risk, which positions the report as a decision-making tool

long-range strategic exploration and production.