Use Case of AI and IAGEN Application

Site Assessment, Planning, and Reporting on Site Feasibility in Vaca Muerta, Neuquén

Deliverable Report Classification 2: "Site Assessment, Planning, and Reporting on Site Feasibility in Vaca Muerta"

🔹 **Classification 1: By Main Resource**

Selected Option: 🛢️ Oil (main), ✅ Gas (secondary)

Justification:

The report is focused on site assessment for hydrocarbon exploration and exploitation (oil and gas), explicitly highlighting the importance of oil as the primary resource, with a focus on the strategic planning of optimal sites for oil well drilling. Gas is also mentioned, but in a secondary role compared to oil.

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

Selected Option: Information Management and Decision-Making

Justification:

The core activity of the report is the generation of automated reports, predictions, and simulations to assess site feasibility, optimize the placement of new wells, and support strategic decision-making regarding field development. The integration of multidisciplinary data is emphasized to reduce uncertainty and support operational decisions based on deep and precise analyses.

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

Main Selected Option: 1️⃣ Generative AI Models

Justification:

The report emphasizes the use of advanced generative technologies, specifically Generative Adversarial Networks (GANs) and Deep Neural Networks (DNNs), to create development scenarios, predictive maps, and complex simulations. It

explicitly highlights the generation of synthetic data, which is essential when real data is limited.

Additionally, secondary technologies are integrated, such as Natural Language Processing (NLP) and Computer Vision to complement the analysis and automate reporting.

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

Selected Option: Strategic Decision-Making and Data Analysis

Justification:

The strategic impact clearly identified in the report lies in improving the quality and accuracy of site assessments, significantly accelerating the analysis required to make informed strategic decisions regarding investments, well placement, environmental risk assessment, and overall field development planning. The report explicitly aims to reduce operational uncertainty through intensive use of advanced analytics and integration of multidimensional data.