



## AI and IAGEN Application Use Case

### Generating Security Protocols with Artificial Intelligence Generative in Vaca Muerta

#### Classification of deliverable report 35: "Generation of Security Protocols" with Generative Artificial Intelligence in Vaca Muerta":

##### Classification 1: By Main Resource

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

comprehensive).

- Justification:

The report addresses operational safety throughout the entire value chain of Oil and gas in Vaca Muerta: drilling, transportation, processing and Environmental risk management. It addresses issues such as air pollution, water, seismicity, waste generation and emissions, so it includes a cross-cutting approach on the three key resources.

##### Classification 2: By Activity within Vaca Muerta

- Selected option: Automation and Standardization of Protocols

- Justification:

The main purpose of the report is to automatically generate and update security protocols through IAGEN. This includes tasks such as predictive analysis, risk detection, regulatory adaptation, monitoring in real-time and digital documentation, all aligned with standardization automated security procedures.

##### Classification 3: Type of AI Technology Used

- Main selected option:

1. Generative AI Models,
2. Machine Learning Algorithms,
3. Natural Language Processing (NLP) Systems,
4. Computer Vision and Image Analysis Systems,
6. AI Platforms for Data Integration and Big Data, 5. AI Systems Based on Intelligent Agents.

- Justification:

The report describes a complete agentic flow for the generation, updating and deploying security protocols using IoT, SCADA, Predictive models, computer vision, chatbots, document analysis legal and simulations. Reference is made to technologies applied in upstream, midstream and downstream, integrating multiple layers of AI.

#### Classification 4: By Strategic Impact on the Industry

1. Selected option: AI for Industrial Risk and Safety Management

2. Justification:

The most notable strategic impact is the reduction of accidents labor, environmental risks and costs associated with incidents, through AI-based adaptive protocols. Benefits are mentioned such as early threat detection, automation of security tasks, improved employee morale and regulatory compliance. All of this aligns with the category of industrial safety managed by artificial intelligence.