HUB TECH IA

AI and IAGEN Application Use Case

Training through simulation of critical scenarios in the Industry Oil in Vaca Muerta, Neuquén

Executive Summary – IAGEN Application for Situational Training

Criticism of the Oil Industry in Vaca Muerta.

This executive summary presents a strategic application of generative artificial intelligence (IAGEN) in the energy sector, specifically in training through simulations of critical scenarios in the oil and gas industry Vaca Muerta. This is a key opportunity to improve operational safety, the efficiency of training and the sustainability of operations in one of the the world's largest unconventional deposits.

Use case classification

The report classifies this IAGEN application based on four axes:

1. By main resource: oil and gas (main), water and energy (secondary).
2. By activity: automation and standardization of protocols training.
3. By technology: generative AI models, natural language processing, computer vision and data integration platforms.
4. By strategic impact: risk management and industrial safety.

1. Opportunities for using AI and IAGEN in the sector

The main opportunities identified are the development of simulations immersive solutions that replicate real critical situations (spills, technical failures, emergencies), the customization of educational content adapted to the profile of each worker and the creation of dynamic learning paths.

highlights the possibility of anticipating skill deficits and reinforcing protocols
security with instant feedback.

2. Expected benefits The
implementation of AI and IAGEN in training processes offers the following benefits:
following specific benefits:

- Improved operational safety through realistic simulations that
  prepare staff for critical situations.
- Accelerated learning, thanks to content adapted to the profile and pace
  of each worker.
- Strengthening emergency preparedness by standardizing
  responses and reducing the margin of error.
- Promoting environmental sustainability through the simulation of practices
  with less impact and optimization of resource use.
- Optimization of human and technological resources by automating tasks
  repetitive and focus effort on key skills.
- Reduction of critical incidents by training in error prevention
  common and reinforce protocols.
- Acceleration of new employee onboarding by providing training
  immersive and personalized from day one.

3. Application of AI
The application of generative AI is realized in the automated generation of
personalized educational content, interactive simulations and assessments with
real-time feedback. These tools allow training to be tailored to the
pace, role and prior knowledge of the worker, ensuring greater efficiency in
high-risk operational contexts.

4. Proposed AI Agent
The report proposes the development of an intelligent agent powered by IAGEN that
acts as a comprehensive adaptive training system. This agent collects data
key employee information—such as their role, experience, previous performance, and work style
learning— to automatically generate teaching materials in multiple languages

formats (videos, PDFs, interactive guides), as well as customized simulations of critical industry-specific situations (e.g., oil spills, power outages, or gas leaks). It also builds learning paths.
that prioritize critical skills and adjust content based on the student's progress user.

Its main function is to ensure highly personalized and continuous training aligned with Vaca Muerta's safety and sustainability protocols. It provides immediate feedback, detects knowledge gaps early and
proposes corrective actions, while being able to integrate with IoT sensors and operational databases. Its main benefit is that it allows programs to scale high quality training, reducing time and costs, without the need for technical intervention for its operation by the staff.

5. Conclusion

The implementation of IAGEN in the training processes of the industry Oil in Vaca Muerta represents a significant advance towards a formation safer, more efficient and adapted to the demands of the environment. This transformation Digital allows strengthening the response to critical risks, reducing the impact environmental and promote an organizational culture oriented towards continuous improvement and sustainability.