Generative AI supporting organizational processes

Problem statement

Accurate, timely and compliant documentation is essential to meet several knowledge management and reporting requirements, such as drafting national and international mine action standards, and international donor and convention reporting, among others. Such management processes can amount to up to 40 per cent of the costs of operations. How can management processes such as the analysis of the existing body of knowledge and the production of documentation/reports be more efficient and effective?

Key challenges include resource-intensive analysis of diverse sources of data, sometimes multilingual, slow, and error-prone manual processes, and the limitations of current pre-trained large language models and generative AI applications.

Key factors/requirements

- Natural language processing and large language model optimization and expert validation: fine-tuning models and ensuring quality through data annotation and validation.
- Multilingual automated translation: ensure accurate and culturally sensitive translation of mine action terms.
- User interface and data reliability: design for accessibility across technical levels and ensuring precision and error handling in data processing.
- Continuous update and secure infrastructure: deployed on a secure, scalable cloud platform, the model will be continuously updated, with support and training resources.

Proposed response

Development of a fine-tuned large language model for mine action, capable of accurately interpreting terminology, context, and translation. The model will be trained on a high-quality, cross-vetted dataset and tested rigorously in real-world scenarios, incorporating expert and user feedback.

Road map for implementation

- Phase 1 – Establish technological infrastructure.
- Phase 2 – Data collection and model fine-tuning: collect and validate mine action datasets; fine-tune the large language model with context-awareness and multilingual support.
- Phase 3 – Testing and feedback: test the model in real-world scenarios, gather user feedback, and refine.
- Phase 4 – Deployment and integration: deploy the model, integrate with existing tools, and provide training.
- Phase 5 – Ongoing updates and support: offer continuous updates, support, and improvements.