Data analytics and interrogation of information management systems

Problem statement

How can the multiple and diverse datasets collected by non-technical survey teams be more effectively analyzed to identify information gaps, and ensure accurate planning and decision-making?

Key challenges include limited labelled datasets, multiple different formats of data sources, environmental and operational constraints, and high costs associated with data management.

Key factors/requirements

- Data integration: AI-assisted integration multiple datasets (explosive ordnance, socio-economic, environmental) for comprehensive analysis.
- AI models: leverage machine learning AI models for pattern recognition, and natural language processing AI models to query data (e.g. ask the system “Can you show me all the minefields that have been cleared and the ones that have not yet been cleared in 2024?”).
- User-friendly design: intuitive interfaces to support real-time decision-making.
- Community input: incorporate local knowledge through AI-based platforms.
- Cost-effectiveness: scalable solutions that minimize resource use while maximizing impact.

Proposed response

Development of AI-driven data interrogation models for pattern recognition and data query/extraction, integrated with community input to incorporate local knowledge and context. This system will include natural language processing AI models to query and interrogate data, as well as dynamic dashboards, and tailored visualizations to support decision-making and planning in humanitarian contexts.

Road map for implementation

- User requirement analysis: conduct workshops and collect requirements.
- Prototype development: build initial AI models and visualization prototypes.
- Testing and validation: field-testing with mine action operators.
- Training and deployment: provide training and deploy refined solutions.