



# Interoperability & Functional Safety Acceleration Strategy (IFSAS)

## Interoperability Alignment Project

GMG has launched a new Interoperability & Functional Safety Acceleration Strategy (IFSAS) to facilitate collaboration to solve interoperability, funded by BHP and Rio Tinto. The future of mining is digital and requires interoperability to be realized. Advanced digital technologies are enhancing – and in many cases revolutionizing – equipment, processes, planning and execution. To make this future happen, we need common definitions, standards, language, decision-making criteria and data exchange capabilities to change how people, equipment and software work together.

There is no easy solution. However, there are four critical elements to success:

1. Build an industry vision and direction for interoperability and functional safety through mining company leadership
2. Develop guidelines and tools
3. Work with, support, and leverage other organizations and their projects, both inside and outside mining
4. Communications and industry engagement – you can't solve interoperability in a vacuum

At this early stage, the aim is to achieve operator alignment on interoperability and to develop a robust strategy to move the industry forward together.

### OUR ASK

We are building a mining company executive leadership committee to align and define the vision and requirements and establish corporate commitments to drive interoperability. As part of the leadership committee, you will participate in:

- In-depth interviews
- Surveys
- Workshops

These focus on aligning on the vision or end state and principles of interoperability and the roadmap to get there.

### THE FUTURE OF MINING

Ultimately, interoperability will lead to more productive, safe and cost-effective mines. The benefits are well-known. For example:

-  **Interoperability** is key to meeting the data requirements for and benefiting from advanced digital technologies like artificial intelligence, machine learning and autonomous systems.
-  **Improved productivity** from interoperability will encourage broader implementation of autonomous technology, removing workers from hazardous environments.
-  Interoperability will facilitate **greater innovations** that drive environmental outcomes, making our products more useful in building a better society.

## Functional Safety

- ⊕ Interoperable onboard systems will **limit the time lost** in maintaining and managing many separate systems and the centralized information will **improve situation awareness**.
- ⊕ Interoperability **enables modular architecture**, bringing in new suppliers with niche expertise.
- ⊕ Increased choice and competition can **lower the cost of autonomous technologies** while standardization can lower costs for suppliers.
- ⊕ A more advanced level of interoperability will make projects for **developing fully integrated supply chains meet their full potential**.

With the right kind of focused effort, we know it is possible. Every mining company and mining region will have unique needs and goals, and those perspectives are all needed. The more global industry voices working in collaboration, the more likely we are to succeed.

**We look forward to hearing what you have to say.** Contact Donald Roberge, [droberge@gmggroup.org](mailto:droberge@gmggroup.org).

Alignment on interoperability will enable greater levels of functional safety, especially for autonomous equipment and robotics from various suppliers. This level of functional safety is essential for protecting our people and communities.

Right now, international standards applicable to mine autonomy are not clearly defined and the requirements for managing functional safety are unclear. While autonomous systems have many safety benefits, they require many interoperable layers of protection.

GMG has already launched the Functional Safety for Autonomous Equipment project to meet the need for alignment. There are three primary components to the project:

- Provide an industry platform for sharing lessons from near-misses to manage functional safety
- Develop guidelines for a common framework for:
  - Managing functional safety
  - A cross-acceptance process for certification of systems or applications
  - Industry alignment on expectations and requirements for functional safety
  - A standard set of safety functions and parameters
- Produce a white paper on the common purpose of standards, including their constraints

