



**GMSG** Santiago  
Forum 2017

# Interoperability Working Group: Driving Collaboration

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# Autonomous Mining International Survey · June 2017

## Top 5 Most Critical Challenges to Implementation of Autonomous Mining

1. Change Management
2. Proving the Value
- 3. Lack of Interoperability**
4. Lack of Capability/Functionality/Maturity of Current Solutions & Technology
5. Unwillingness to be an Early Adopter

## Top 10 Global Collaboration Areas of Interest that Would Bring the Most Value to Your Organization

- 1. Interoperability**
2. Safety
3. Implementation/Design
4. Business Case
5. OEM Integration/Standards
6. Case Studies/Demos/Tours/Webinars
7. Regulators
8. Architecture/Framework/Data
9. Communications
10. Tech Specs & Standards

# Mining Interoperability

“The ability of information and communication technology (**ICT**) systems, operational technology (**OT**) systems and the **business processes** they support to exchange data and to enable both the **sharing of information and the transfer of control**.

This in turn, provides the ability of **systems and organizations to seamlessly work together** (inter-operate).”

– Mining Interoperability Study  
BHP Billiton, Rio Tinto, Roy Hill, MMH & CORFO

# Background

- Since 2015 GMSG has held workshops on Mining Interoperability
- In 2016 Chile, through its Economic Development Agency (CORFO) shared its interest to become GMSG Partner, and to lead Mining Interoperability working group.
- In early 2017 a series of workshops were held in Australia, Chile, and North America to identify interoperability priorities and requirements of the global mining industry.
- March 2017 Mining Interoperability Working Group was officially led by Chile.
- June 2017 working proposal was reviewed and shared within working group and GMSG members.
- Currently GMSG Mining Interoperability Working Group have 150+ members from 15+ countries.

# Interoperability Working Group Scope

To facilitate the development and adoption of open systems and solutions, and international standards for interoperability of all mining equipment, processes, and operating personnel. Ensuring that the industry automation and integration will not be constrained as new technologies and processes emerge.

# Outcomes 2018

- Identify and describe the business/operating requirements of interoperability in mining, capturing the industry challenges, and articulate the value of interoperability.
- Expected guideline from working group include:
  - Technical terminology
  - Interoperability Use Cases (Objects & Equipments, Data, Process mine, and Process mine-to-mill)
  - Interoperability Reference Architecture Framework
  - Cyber security, privacy & commercial confidentiality

# Requirements for Success 2018

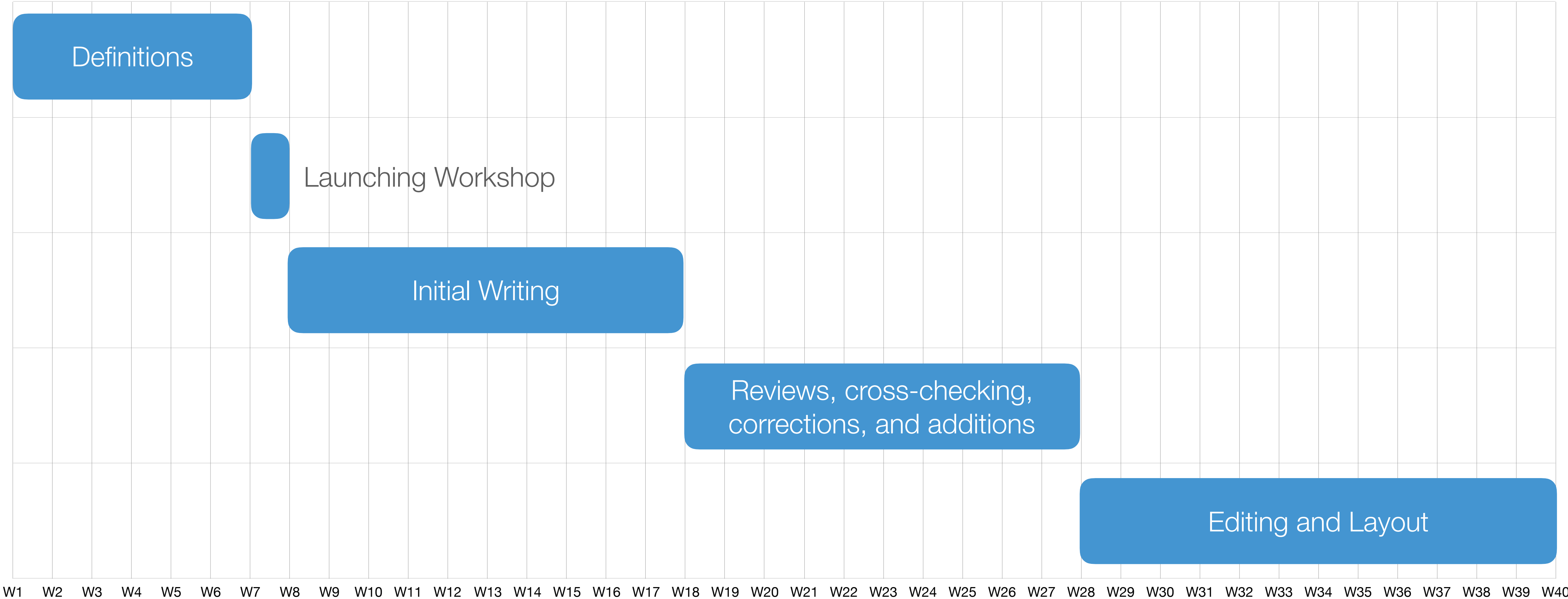
- **Timing is critical:** 1<sup>st</sup> edition needs to be created in less than 12 months.
- **Scope must be fixed at outset** to prevent delays: other topics put in parking lot for 2<sup>nd</sup> edition
- **Avoid duplicate effort:** new guideline should expand on and evolve existing guidelines and standards
- **Definitions are needed:** as much as possible they should be taken from existing international and national standards.
- **Collaborative WG's participation:** Members of Autonomous Guideline, Interoperability, and Open Data working groups should be involved in each others guidelines to ensure consistency and avoid redundancy.

# Key Elements of Plan

- Determination of the value proposition; building a business case/model, defining the ROI, and navigating relationships between vendors, clients and regulators.
- Finalize working Table of Contents (TofC)
- Each section of TofC is basis for a writing group.
- Regular teleconferences to maintain schedule, professional editor to bring sections together.
- An initial Autonomous mining TofC has been created and will be used as a reference guide to start process.
- Interoperability TofC should be based off of working group proposal.



# Schedule





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