



MANDELA MINING PRECINCT
MINDS FOR MINES



**REAL TIME INFORMATION
MANAGEMENT SYSTEMS**



Minserv
Mineral Development
& Research Services

Chapter 2

Gen-AI Framework Development Process



Outcomes

WoW: Machine is an assistant to the human
Openness of data requirement
Categorising data
Data architecture for mining IIoT
Action plan with 10-Point
Capacity development Plan for Effective technology Roll-out

AIWG meetings
Finalise AIWG membership
Online workshop
WoW boundary between human & machine
Confirmed capacity plan for AI
Architecture for AI tool

Implement Action Plan
Draft Gen-AI Framework

MMP RTIMS Gen-AI Framework for Mining

Recommended approach to Gen-AI for South African mining's future of work



responsible



inclusive



skilled

AI FRAMEWORK FOR SA MINING

Technical Detail:

The MMP-RTIMS AI Framework for mining, developed by the Ai Working Group (AIWG), provides a structured approach for responsible AI implementation in the South African mining sector. Following the national AI strategy of October 2024, the Framework comprises six chapters: Introduction, Framework Context, MMP-RTIMS Framework Themes, AI Worlds of Work, Framework Use-Case Application, and Conclusion and Recommendation. Its core technical challenge was balancing technology adoption with human-workplace vulnerability, concluding that AI should primarily act as an assistant to humans in mining. The Framework also addressed the integration of national policy with international initiatives, leading to a blueprint for building AI-powered mining operations that leverage opportunities while managing inherent risks.

Benefit:

The development of an AI Framework for SA Mining provides the South African mining sector with a crucial framework to prepare for and strategically integrate AI, particularly Generative AI, into modernization efforts. By defining the evolving relationship between human and machine in the workplace and addressing the risks and opportunities of AI adoption, this co-created framework empowers the industry to leverage innovative technologies while maintaining a human-centric approach, ultimately driving efficient and safe mining operations.

