



MANDELA MINING PRECINCT
MINDS FOR MINES

LONGEVITY OF CURRENT MINES (LoCM)

FOCUS AREA:

Resource Extraction Optimisation

About the Mandela Mining Precinct



The Mandela Mining Precinct is a Public-Private Partnership between the Department of Science and Innovation and the Minerals Council South Africa. The Precinct is jointly hosted by the Council for Scientific and Industrial Research and the Minerals Council. The Mandela Mining Precinct is an initiative aimed at revitalising mining research, development and Innovation in South Africa to ensure the sustainability of the industry. This is achieved through the South African Mining Extraction, Research, Development and Innovation (SAMERDI) strategy.

The strategy comprises six research programmes:

1. Longevity of Current Mining;
2. Mechanised Mining Systems;
3. Advanced Orebody Knowledge;
4. Real-Time Information Management Systems;
5. Successful Application of Technologies Centred Around People; and
6. Test Mine.

This summary was developed under the **Longevity of Current Mines (LoCM)** research programme. The programme is aimed to increase the efficiency of ore reserve extraction, improvement in Occupational Health and Safety, the reduction in costs of current conventional mining operations and explore opportunities turning liabilities into assets for future sustainable mining.

LONGEVITY OF CURRENT MINES PROGRAMME: LoCM

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Introduction

The Resource Extraction focus area aims to extend the current conventional type mining life through improved productivity and safety, leading to 10 - 20% improvement in margin, and to reduce health and safety risks at the work face. This process strives to have less people working on the face or reduce the time spent at the face, by introducing technology innovation to assist the production team's daily activities within the focused areas for production activities.

Methodology

- Production and safety improvement are achieved by researching potential new technological business improvement solutions;
- Establish functional requirements and performance criteria with industry stakeholders;
- Developing or amending prototypes/products to align with the requirements and criteria;
- Testing and assessing amended prototypes/products functioning and performance against requirements and criteria;
- Trialing, assessing and demonstrating the products in an operational area;
- Implementation of product with roll-out and adoption best-practice processes

Expected Outcome/s

Product solutions that are:

- implementable,
- meet the criteria and requirements,
- have production improvement capability,
- demonstrate efficiency and capability,
- have value to reduce risk, and
- ease of operation

Examples

- Isidingo Drill
- ULP Dozer / sweeper equipment applications in NRHR mines
- Rocker Shovel system optimization
- Optimise Drilling, Charging and Blasting management systems
- Dynamic Test Facility Utilization Study