



FINAL PROGRAMME

Conference Day 1 – Wednesday 28 June 2023

- 07:30–08:30 **Registration Opens and Early Morning Refreshments**
- 08:30–08:40 **Welcome and Opening Address**
M. Woodhall, *Conference Chairperson*
- 08:40–08:45 **Safety Briefing**
- 08:45–09:00 **SAIMM Presidential Address**
Z. Botha, *President SAIMM*
- 09:00–09:30 **Keynote Presentation: The future of mining – becoming an insight driven organization**
D. du Preez, *Deloitte, South Africa*

Session 1: Mandela Mining Precinct

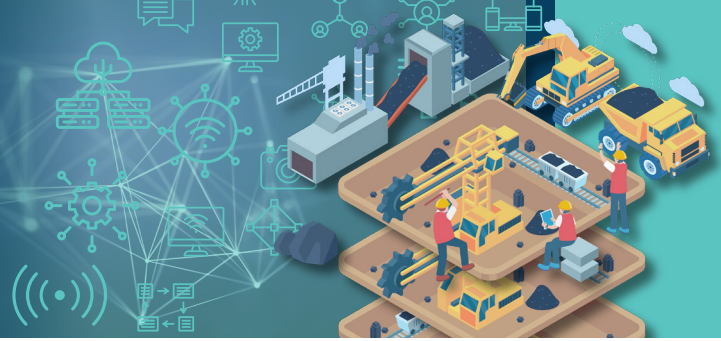
- Session Chair: J.J. Verhaeghe, *Mandela Mining Precinct, South Africa*
- 09:30–09:50 **Requirements of real-time information management systems for the minerals sector**
L.M. Shimaponda-Nawa¹, G.T. Nwaila¹, S.E. Zhang^{1,2}, and J.E. Bourdeau^{1,2}, ¹*University of the Witwatersrand, South Africa* and ²*Geological Survey of Canada, Canada*
- 09:50–10:10 **Application of project and operations management methodologies to a real time information management system for efficiency in the mineral sector**
T. Lehohla, *Consultant, South Africa*
- 10:10–10:30 **Enhancing collaboration of systems through an Open Data Analytics Platform**
C. Bester, *ESRI South Africa, South Africa*
- 10:30–10:50 **Mandela Mining Precinct know more portal**
D. Maree, *ESRI South Africa, South Africa*
- 10:50–11:10 **Mid-Morning Refreshments**

Session 2: Strategy and Quality

- Session Chair: G. Mishra, *De Beers Group, South Africa*
- 11:10–11:30 **Launch of the Mining TARA Website 2.0**
L. Molloyi, *Mining Equipment Manufacturers of South Africa, South Africa*
- 11:30–11:50 **Digital strategy - the role of digitalization and data analytics**
R. Siwale, *FLSmidth, USA*
- 11:50–12:10 **How to evaluate the benefits of digital initiatives in the mining industry – the digital business case evaluation and benefits tracking tool**
M.T. Duddy and A. Torlutter, *Digital Twin Pty Ltd, South Africa*
- 12:10–12:20 **Sponsor Presentation**  **CONUNDRUM**
- 12:20 – 12:30 **Sponsor Presentation**  **BINMAK**
corporation
- 12:30–13:30 **Lunch**

Session 3: Monitoring and Communication

- Session Chair: T.S. Ndlela, *Tokyo Ndlela Attorneys Inc., South Africa*
- 13:30–13:50 **Monitoring systems and sensors**
Y. Felah, *FLSmidth, Germany*
- 13:50–14:10 **Adoption of wireless sensor networks by South African mines**
T.V. Mwayi, *University of the Witwatersrand, South Africa*
- 14:10–14:30 **Vedanta Zinc International is modernizing safety and sustainability through digital transformation**
U. Govender and N. Lawrence, *Vedanta Zinc International, South Africa*
- 14:30–14:50 **Afternoon Refreshments**



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Session 4: People Focused Technology

Session Chair: S. Ramparsad, *Mandela Mining Precinct, South Africa*

14:50–15:50 **Mandela Mining Precinct: SATCAP people-centred solutions**

Change management blueprint for the adoption of modern mining technologies

W.P. Botha¹, N. De Kock², R. Muller³, and S. Ramparsad⁴, ¹*Enterprises University of Pretoria*, ²*Louis Allen*, ³*SML4Change* and ⁴*The Mandela Mining Precinct, South Africa*

Community and SMME training-needs assessment survey tool

S. Bull¹, W.P. Botha², Y. Likaku¹, T. Swettenham¹, and S. Ramparsad³
¹*The Research Institute for Innovation and Sustainability*, ²*Enterprises University of Pretoria* and ³*The Mandela Mining Precinct, South Africa*

Communications and engagement tool for local suppliers and small, medium and micro enterprises

P. Naidoo¹, S. Khan², K. Govindasamy¹, T. Swettenham¹, S. Ramparsad³, ¹*The Research Institute for Innovation and Sustainability*, ²*CSIR*, and ³*Mandela Mining Precinct, South Africa*

Community social-needs assessment tool

Y. Likaku¹, J. Pelders², S. Bull¹, T. Swettenham¹, and S. Ramparsad³, ¹*The Research Institute for Innovation and Sustainability*, ²*CSIR* and ³*Mandela Mining Precinct, South Africa*

Digital leadership competency assessment tool for SA mining operations

V.J. Mahadeo¹, W.P. Botha², K. Govindasamy¹, T. Swettenham¹,

and S. Ramparsad³, ¹*The Research Institute for Innovation and Sustainability*, ²*Enterprises University of Pretoria* and ³*Mandela Mining Precinct, South Africa*

15:50–16:50 **Panel Discussion: 4IR Study**

16:50 **End of Conference Day One**

16:50–19:00 **Networking Cocktail**  **OLD MUTUAL**
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Conference Day 2 – Thursday 29 June 2023

08:30–09:00 **Registration Opens and Early Morning Refreshments**

09:00–09:10 **Welcome and Opening Address**
M. Woodhall, *Conference Chairperson*

09:10–09:15 **Safety Briefing**

09:15–09:45 **Keynote Presentation: Embracing digital ecosystems: Unleashing the potential of Web3 and blockchain in mining**
J. Maass, *SDX Africa, South Africa*

Session 5: Digital Twins and Platforms

Session Chair: M. Woodhall, *South Africa*

09:45–10:05 **Digital twin enabled augmented reality application for remote assistance**

A.P. Brink¹, K. Kruger², A.H. Basson², and T.T. Phadi¹, ¹*Mintek* and ²*Stellenbosch University, South Africa*

10:05–10:25 **An integration platform for smart, integrated mining**
K. Kruger¹, D. Sparrow², and T. Defty², ¹*Stellenbosch University* and ²*Cybarete, South Africa*

10:25–10:35 **Sponsor Presentation** **HATCH**

10:35–11:00 **Mid-Morning Refreshments**



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Session 6: Putting Machinery to Work

Session Chair: E. De Villiers, *Caledonia Mining, South Africa*

11:00-11:20 **Enhancing condition monitoring of mining vehicles using physical models and transfer learning**
L. van Eyk, *University of Pretoria, South Africa*

11:20-11:40 **Trackless Mobile Machinery Digital Twin platform for risk management and productivity enhancement**
S. Turundu, *CSIR, South Africa*

11:40-12:00 **Application of virtual reality in a competency-based training framework**
R. Bergh, *CSIR, South Africa*

12:00-12:20 **The Digital Transformation: Sandvik remote monitoring service**
A. Chikaka, *Sandvik, Zimbabwe*

12:20-13:20 **Lunch**

Session 7: Cost and Materials

Session Chair: A. Mello, *Vuuma Collaborations, South Africa*

13:20-13:40 **Innovation and digitization in the South African mining supply chain**
L. Molloyi, *Mining Equipment Manufacturers of South Africa, South Africa*

13:40-14:00 **Integrated execution and materials management**
P. Ehlers, *MineRP, South Africa*

14:00-14:20 **Creating value and cost competitiveness through asset optimization and focused improvement**
T. Bingudza, *Binmak, South Africa*

14:20-14:30 **Afternoon Refreshments**

Session 8: Applied Learning

Session Chair: M. Erwee, *Samancor, South Africa*

14:30-14:50 **Enhancing asset performance, reliability, productivity and safety through digitalization and real-time asset health and performance monitoring**
T. Nyabote, *Binmak, South Africa*

14:50-15:10 **The application of digital spatial integration in the management of a typical underground diamond mine**
J. Langenhoven¹, J. Van der Walt¹, J. van Den Berg², and E. van Den Berg², and P. Roos², ¹*Petra Diamonds* and ²*MineRP, South Africa*

15:10 **Closing Remarks and End of Conference**