



PRELIMINARY PROGRAMME

Conference Day 1 – Wednesday 25 June 2025

07:30-08:30	Registration Opens and Early Morning Refreshments
08:30-08:40	Welcome and Opening Address W. Broodryk, Implats, Conference Chairperson
08:40-08:45	Safety Briefing Venue Official
08:45-09:00	SAIMM Presidential Address E. Matinde, SAIMM President
09:00-09:30	Keynote Address- Leadership's role in setting the enabling environment for productive digital transformation and AI S. van der Woude, Minerals Council South Africa
Session 1:	Digital infrastructure
Session Chair:	M. Auret, CSIR, South Africa
09:30-09:50	Addressing the challenges of digitizing large, complex systems using Distributed Fibre Optic Sensing (DFOS) to create a digital nervous system and achieve rapid operational improvement A. Veldsman, PositionNXT, South Africa
09:50-10:10	A concept demonstration on how to revolutionize mining operations through digitalization transformation with an application using an underground digital wireless communication network L. Erasmus, Council for Scientific and Industrial Research, South Africa
10:10-10:30	Demystifying real time information management systems in underground mining – the gamified 3d digital twin of a conventional stoping operation A. Torlutter, Digital Twin Pty Ltd, South Africa
10:30-10:50	Implementing end-to-end data management solutions on Microsoft Azure E. Loubser, Data Loop, South Africa
10:50-11:20	Mid-Morning Refreshments
Session 2:	People centric modernisation
Session Chair:	S. Ramparsad, Mandela Mining Precinct, South Africa
11:20-11:35	Assessment of modern training innovations for supervisors and trainers in the South African mining sector M. van Schoor ¹ , N. de Kock ² , S. Khan ¹ , R. Müller ³ , R. van Rensburg ³ , K. Govindasamy ⁴ , W. Botha ⁵ , B. Sereme ¹ , M. Mpofu ¹ , J. Pelders ¹ , S. Ramparsad ⁶ , ¹ Council for Scientific and Industrial Research, ² Louis Allen Southern Africa, ³ SML4Change, ⁴ The Research Institute for Innovation, and Sustainability, ⁵ Enterprises University of Pretoria, ⁶ Mandela Mining Precinct, South Africa
11:35-11:50	Competency-based training for mine emergency response R. Bergh, P. Lange, J. Pelders, S. Khan, Council for Scientific and Industrial Research, South Africa
11:50-12:10	Sustainable adoption of technology in the South African mining Industry S. Ntsoelengoe ¹ , J. Pelders ¹ , W. Botha ² , R. Müller ³ , N. de Kock ⁴ , S. Ramparsad ⁵ , ¹ Council for Scientific and Industrial Research, ² Enterprises University of Pretoria, ³ SML4Change, ⁴ Louis Allen Southern Africa, ⁵ Mandela Mining Precinct, South Africa

12:10-12:30	The ESG impacts lens dashboard: An integration of socio-economic transformation, automation and change impact dashboards V. Mahadeo ¹ , S. Ramparsad ² , K. Govindasamy ¹ , W. Botha ² , ¹ The Research Institute for Innovation and Sustainability, ² Mandela Mining Precinct, ³ AutolH, South Africa
12:30-12:50	Green skills and digitalisation in advancing South Africa's Just Energy Transition K. Govindasamy ¹ , T. Swettenham ¹ , S. Ramparsad ² , ¹ The Research Institute for Innovation and Sustainability, ² Mandela Mining Precinct, South Africa
12:50-14:00	Lunch
14:00-14:30	Keynote Address: C.O.R.E. Leadership Framework P. Mantlhakga, Leadersphere Institute, South Africa
Session 3:	Mining automation and optimisation
Session Chair:	E. De Villiers, Caledonia Mining, South Africa
14:30-14:50	An assessment of the impact of digital mining solutions on load and haul operations. Case study of a platinum mine in Zimbabwe M.T. Gwarisa ¹ , T. Tambudze ² , R.P. Gonye ² , ¹ University of Witwatersrand, South Africa, ² University of Zimbabwe, Zimbabwe
14:50-15:10	Identification and analysis of challenges brought by 4IR systems implementation at a surface iron ore mine focusing on autonomous production drills S. Madzivha, University of Pretoria, South Africa
15:10-15:40	Utilisation of drone technology to monitor blasting performance for the undercutting of Lift 2 block cave at Palabora Mining Company T. Chauke ¹ , F. Mulenga ¹ , V.C. Madanda ¹ , N.M. Chiloane ¹ , G. Mtileni ² , M. Cloete ² , T. Lepheana ² , D. Ntuli ² , ¹ University of South Africa, ² Palabora Mining Company, South Africa
15:40-16:00	Grinding circuit throughput optimization through first-principles digital twin modeling Y. Valdez-Navarro ¹ , A. Thivierge ² , Y. Zhanga ¹ , ¹ Hatch Ltd, South Africa, ² Jumine Inc, Canada
16:00-16:20	A traction estimation digital twin case study for a skid-steered ULP vehicle L. van Eyk, S. Heyns, University of Pretoria, South Africa
16:20-16:40	Digital ore grade control: Using blast resistant ore traces to identify ore at any point N. Lategan, Simera-Trace, South Africa
16:40-17:00	Rethinking mining automation: Tackling safety and efficiency challenges at the edge with minezone B. Hart, Metal Management Solutions, South Africa
17:00	End of Conference Day One
17:00	Networking Cocktail



PRELIMINARY PROGRAMME

Conference Day 2 – Thursday 26 June 2025

07:30-08:30 Registration Opens and Early Morning Refreshments

09:00-09:10 Welcome and Opening Address
W. Broodryk, *Implats, Conference Chairperson*

09:10-09:15 Safety Briefing
Venue Official

09:15-09:45 Keynote Address: TBC
W. Swanepoel, *Sibanye-Stillwater, South Africa*

Session 4: Safety and risk management

Session Chair: W. Swanepoel, *Sibanye-Stillwater, South Africa*

09:45-10:05 Advancing geotechnical risk management in mining with spatially enabled and process-driven information systems
M. Bester, *Anglo American, South Africa*

10:05-10:25 Development of a digital ground control management plan (DGCMP) for underground mines using AI algorithms to forecast potentially fall of ground area
D. van Rooyen, *Anglo American, South Africa*

10:25-10:45 Leveraging modern desktop computing power to enable gravity terrain correction processing
P. Linzer, *SRK Consulting, South Africa*

10:45-11:05 Mid-Morning Refreshments

Session 4: Safety and risk management (continued)

Session Chair: W.C. Joughin, *SRK Consulting, South Africa*

11:05-11:25 The application of video analytics in health and safety
E. Swart, *Sibanye-Stillwater, South Africa*

11:25-11:45 A distributed radar system for narrow reef stope geotechnical convergence monitoring
D. van Rooyen, *Anglo American, South Africa*

11:45-12:05 Advancements in TSF monitoring and surveillance through the adoption of digital solutions
D. Calitz, J. Dutchman, C.L. Meyer, J. vd Westhuizen, *SRK Consulting, South Africa*

12:05-12:25 Multi-purposing of passive seismic acquisition for characterization and monitoring of tailing dams performance
T. Kremer, W. Pettit, T. Gaubert-Bastide, J.M. Ars, K. Khazraj, C. Voisin, *SRK Consulting, South Africa*

12:25-12:45 The wavefield of an SCPTu test: It's not as simple as you think
L.M. Linzer^{1,2}, ¹SRK Consulting, ²University of the Witwatersrand, *South Africa*

12:45-13:05 A development roadmap for the digitalization of mining focusing on the impact of smart wearables on occupational health and safety
V.J. Mahadeo¹, M. Shimaconda-Nawa², N. Coulson^{2,3}, M. Hermanus³, ¹Research Institute for Innovation and Sustainability, ²University of Witwatersrand, ³Sarraounia Public Trust, *South Africa*

13:05-14:00 Lunch

Session 5: Sustainable mining

Session chair: S. Nhleko, *North-West University, South Africa*

14:00-14:30 Keynote Address: Sustainable mining: Leveraging multidisciplinary solutions
S. Nhleko, *North-West University, South Africa*

14:30-14:50 A comparative analysis of implicit modelling and geostatistical methods for geometallurgical block modelling and resource estimation
T. Chauke, F. Mulenga, *University of South Africa, South Africa*

14:50-15:10 Utilizing 4D simulation for construction process and schedule optimization in an underground potash project
J. de Klerk, C. Kloppe, E. McLintock, *Fluor, South Africa*

15:10-15:30 The effect of digital transformation in mining on systemic project risks
W.G. Meyer, *ProjectLink Consulting (Pty) Ltd, South Africa*

15:30-15:50 From data to diversity: Addressing AI bias and leveraging emerging tech to build an inclusive mining industry
G. Mishra

15:50-16:10 Afternoon Refreshments

Session 5: Sustainable mining (continued)

Session chair: C. Yzelle, *AMC Consultants, South Africa*

16:10-16:30 Convergence of digitalisation, circular economy and ESG in mining in South Africa
K. Govindasamy¹, T. Swettenham¹, M. Auret², ¹The Research Institute for Innovation and Sustainability, ²Mandela Mining Precinct, *South Africa*

16:30-16:50 A programmatic approach to enhancing surface water calculations and climate data management
J. Cahi, *SRK Consulting, South Africa*

16:50-17:10 Multiplying value through innovative digitalization: A case study of electronic proof of delivery in mining
W. du Plessis, *HybridFuzion, South Africa*

17:10 End of Conference