



MANDELA MINING PRECINCT
MINDS FOR MINES

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RTIMS – SHOW AND TELL

A VIRTUAL SHOWCASE OF RTIMS PROJECTS

18 November 2021, Time: 09:00-13:00

PROGRAMME

OPENING SESSION

ITEM	RESPONSIBLE	TIME
Zoom Login	All	08:30-09:00
Programme Director Opening and Welcome Remarks	JJ Verhaeghe, RTIMS <i>Programme Manager</i>	09:00-09:10
Safety and Inclusion Moment	Tshepo Chabalala, <i>Mandela Mining Precinct</i>	09:10-09:15
RTIMS Background	JJ Verhaeghe, RTIMS <i>Programme Manager</i>	09:15-09:25
RTIMS Keynote Address	Stephan Strydom/ Roy Murley, RTIMS TSC <i>Chairperson</i>	09:25-09:35
TECHNICAL PRESENTATIONS SESSION		09:35-13:00

TOPIC	DESCRIPTION	PRESENTER	TIME
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RTIMS TECHNOLOGY AND TECHNICAL CAPABILITY DELIVERY AND MANAGEMENT

Bridging technology innovation and practical quantitative and qualitative mining outcomes	Digital has drawn several smart innovators into the world of mining. MMP in partnership with Digital Twin are developing digital business case validation capability to ensure a sound conscience between the practical value achieved from technology innovation and desired mining outcomes. The value benefits can be significant, both financially and non-financially where safety and ESG performance have emerged to be major drivers of success.	Matthew Duddy, Digital Twin	09:35-09:50
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Safety solutions to the mining industries	The show and tell will be a great initiative to discuss Probe IMT Group of Companies and its associated company offerings in safety solutions to the mining industries, followed by M3SH Company introduction, product, service, and solution offering with reference to the Mandela Mining Precinct RTIMS Program.	Awie Fourie, Probe IMT	09:50-10:05
Mine health model	The integration between the different WP1 partners is perfectly highlighted through the analytics use-case, named the Mine health model. Data, captured by IoT sensors (IMT) is received and processed on site (SU platform) using data clearing and processing protocols (CSIR-NGEI). The processed data is applied to the health model (created by CSIR-NGEI and deployed on the SU edge platform) which will calculate the various sensors health as well as the environmental conditions to give a complete overview of the whole mine though the aggregation of each section. The results will be sent to the cloud (ESRI cloud platform) where it is visualised on a dashboard for users to observe and/or interact with from any location.	Andre Jansen van Rensburg, M3SH Nicolene Botha, CSIR	10:05-10:20
Integrate legacy, different OEM equipment, and Humans equally for fully customizable real time data and decision making uses and unlock value and safety from self-organising and co-operating equipment and systems.	Integrate resources and activities from different OEMs as well as humans in a way that exactly reflects the structure of your organisation. Add custom plugins to refine, and react to data at each level, only sending wanted KPIs or information upwards. Incrementally grow the network by adding one resource at a time and allow third parties to contribute their knowledge to your mine with plugins.	Dale Sparrow, University of Stellenbosch	10:20-10:35
Cyber-physical Systems for in-stope applications	The stope holds a wealth of unused information which is not being integrated into mine wide safety and productivity systems. The lack of instrumentation is mostly due to the extreme conditions and associated technology limitations experienced in the stope. Progress so far in establishing an in-stope, mobile, wireless, and battery-operated communications network with automated sensing, actuation and surface communication is presented.	Carel Kruger, CSIR	10:35-10:45
Underground Location tracking using GPS over leaker feeder/kinetic mesh for vehicle health monitoring and fatigue	GNSS Technology (GPS tracking) is commonly used on surface for location tracking and this project looks to utilize this underground, initially via leaker feeder but also testing the effectiveness of propagation over kinetic mesh. The project will also install vehicle health and fatigue monitoring systems on selected fleet. All this data (GPS position, fatigue and vehicle health) will be integrated into one 3D visual platform for production management.	Duncan Lee, Ramjack Technology Solutions	10:45-11:00
Real-time safety data recording (LoCM) using stope communications technology (RTIMS)	The electronic recording and real-time communication of legally mandated underground safety data is now possible. The integration of the RTIMS stope-communications technology, with the latest LoCM mobile safety recording	Braam Greeff, CSIR	11:00-11:15

	software, now makes it possible for the shift-supervisor to discard the current paper-based logbook system with an electronic capability.		
Q&A	Q&A	All	11:15-11:25
	SHORT BREAK		11:25-11:30

KNOWLEDGE TRANSFER

Dashboards to illustrate live data feeds from different monitoring systems. Access to focused solutions through the RTIMS integrated digital analytical platform.	Dashboards to illustrate live data feeds from different monitoring systems. Access to focused solutions through the RTIMS integrated digital analytical platform.	Carl Bester, ESRI South Africa	11:30-11:45
Knowledge portals (EA)	As mines become increasingly involved, it is evident that conventional cigarette box drawings and scratches are no longer enough to describe mine enterprises. Knowledge System tools are required, one of such is the RTIMS Enterprise Architecture tool. The tool will demonstrate RTIMS enterprise landscape and how all gets connected, so that stories can be told from it.	Marius Auret, CSIR	11:45-12:00
RTIMS Knowledge Portals	RTIMS Knowledge Portals: RTIMS & SATCAP	Tshepo Chabalala & Sagwadi Maswanganyi, Mandela Mining Precinct	12:00-12:10
Q&A			12:10-12:15

STRATEGIC COLLABORATIONS FOR CO-CREATION

Mining for Innovation	Leading Edge Only (LEO), the Global Innovation Marketplace has partnered with Mandela to bring the latest solutions in mining. The platform has individually connected Mandela to an audience of over 2000 relevant innovators, with over 50 direct innovation applications to solve a variety of challenges.	Jayden Halliday, Leading Edge Only (LEO)	12:15-12:30
SATCAP - RTIMS Integration with AR	Comprehend the necessity for holistic approaches, even between SAMERDI programs. One such use case were attempted by addressing SATCAP upskill requirements, integrated with RTIMS research, and using 4IR technology. We introduce the "art-of-possibility" by using warfare technology, to Augment the drilling & blasting Reality (AR) to get better rock advance.	Marius Auret, CSIR	12:30-12:45
Q&A			12:45-12:50
Vote of Thanks and Closing Remarks		JJ Verhaeghe, RTIMS Programme Manager	12:50-13:00

CLOSING - END