**NEWS ARTICLE**

AI is key to driving automation in the mining industry

**12 July 2023:** Artificial Intelligence (AI) stands to be a good enabler with the adoption of unmanned equipment and machinery in mining. The industry is already au fait with extracting smart data from sensors, which is the application of technology in terms of machine interconnections and boosting operational safety and efficiency.

“It is a matter of how mining will take advantage of such developments in both the broader industry and individual mining operations themselves,” says **Heinrich Jantzen**, Senior Mining Advisor at leading consulting engineering and infrastructure advisory firm [Zutari](http://www.zutari.com). “The question is how you apply such advances within the mining space, as the industry strives to become a safer occupation and a more sustainable industry. I think the future is quite rosy in terms of AI.”

Zutari is developing specific mining expertise to assist clients to embrace Industry 4.0 and the Internet of Things. “Integration is critical, which refers to finding common ground from logistics to process optimisation and ultimately the engineering services provided,” says Jantzen.

The current focus of unlocking value in mining by means of technology looks at how workers interface with machines themselves. Jantzen believes that digital transformation continues to drive this process across the entire industry. Mining is pushing the envelope in terms of the remote operation of heavy equipment.

“The questions that need to be answered are how much can be done remotely, what is the capability to monitor such remote operations, and how to achieve the automation of fixed heavy assets. This is the ideal combination for mining in terms of what technology can achieve,” says Jantzen.

“Mines face a complex range of operational challenges that make everything quite risk averse. That is really when it boils down to technology driving the status quo. It is about the combination of all these factors and increasing the focus on collaborative adoption of technological solutions.” For example, sensors are critical to generating data and early warning of any risks, but it is AI that will ensure robust, reliable, and actionable data.

Jantzen says the mining industry’s Environmental, Social and Governance (ESG) goals are propelling it along a path towards carbon neutrality, with a range of commitments and initiatives already in place in this regard. However, AI can easily be deployed to reap lower-hanging fruit. This presents the challenge of integrating AI successfully into such a scenario.

An example of how technology can enhance ESG is the ongoing development of collision avoidance systems, particularly for underground use. These have progressed from radio frequencies to using high-resolution laser light, which has the advantage of being able to address both indoor environments and machines.

Technology must build capacity and reliability into mining, says Jantzen. If you cannot balance these aspects, it makes it extremely challenging. While a lot of advances in the mining space have been exponential to date, the result has been isolated pockets of excellence in a general sea of ongoing challenges.

“We really need to collaborate in the sense of standing shoulder to shoulder so we can all learn together,” says Jantzen. Technology changes rapidly, meaning it is easy to fall behind. “We will always have challenges and make mistakes. There will always be risks associated with technology adoption, but we need to improve ourselves and become better. At the end of the day, doing all these things will attract more talent into the mining space,” concludes Jantzen.

***Ends***

**Notes to the Editor**To download hi-res images for this news article, please visit <http://media.ngage.co.za> and click the Zutari link to view the company’s press office.

**About Zutari**

As an engineering and advisory firm, we believe infrastructure has unparalleled potential to create enduring impact. Never more relevant, this potential can be realised only if we plan, design, deliver and manage infrastructure in ways that maximise its value. Our work in water, transport, energy, resources, and built-environment infrastructure does just this – helping to nurture thriving communities, growing economies, and healthy environments.

At Zutari we understand that radical impact doesn’t just happen; it requires more of us to connect differently, work smarter, and stay rooted.

**We connect differently**. Our broad collective of in-house experts connects across traditional disciplines to provide integrated results. We collaborate with clients, partners, and end-users, leaning into diverse perspectives to create superior solutions - together.

**We work smarter**. Our people lead the industry. We draw from deep technical skills, accrued over decades, and embrace the transformative power of digital technology to find simpler, better, and more innovative ways to deliver value.

**We stay rooted**. Few can rival our local capacity and understanding. Building on solid foundations, now 90 years in the making, we are trusted to shape locally relevant solutions through our extensive footprint in Africa and the Middle East.

At Zutari our people connect differently, work smarter, and stay rooted. Working in this way, we reliably deliver impact through infrastructure, making the world a better place – one project at a time.

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